**LOT 1**

**Annex 1:** **Laboratory Equipment and Furniture**

**Item I – 1: The Laboratory equipment** **–** **Command building for LTP and WWTP**

| **Pos.** | **Description** | **Unit** | **Qty.** |
| --- | --- | --- | --- |
| 1.1 | Spectrophotometer UV-VIS, 190-1100 nm, turbidity 1-1000 NTU, with automatic calibration, wavelength accuracy ±1nm, 16GM memory LAN and USB interfaces complete with manual, methods, touch pen, protective cover, power cable, USB cable and stick, calibration cuvette and cleaning cloth | set | 1 |
| 1.2 | Thermo-reactor with 24 slots of 16 mm, microprocessor thermoregulation, auto OFF, temperature range 20-150 °C, replaceable safety covers, overheating protection complete with power cable and manual | set | 1 |
| 1.3 | Set of reagents and vials for BOD, COD, NH4+, TKN, TP and spectrophotometric analyses of leachate and process wastewater and treated effluent | set | 1 |
| 1.4 | BOD (Biochemical Oxygen Demand) respirometric measurement system, measuring range 0-40,… 0-4000 mg/l, real time clock and date, with 6 measuring places, complete with BOD bottles, USB and SD Card interface, power supply cable and manual | set | 1 |
| 1.5 | Laboratory incubator, with natural air convection, temperature range 5-50°C, acid prof stainless steel interior, multi-segment time and temperature programs, inner capacity 135 l, internal memory with option to export via USB, LAN or WiFi | set | 1 |
| 1.6 | Buchner's funnel, made of porcelain, with filter adaptable cones, Buchner flask with funnel adapter set, two-stage diaphragm pump and filter paper sets | set | 1 |
| 1.7 | Membrane vacuum pump, 15l/min, PTFE coated parts in contact with media | pcs | 1 |
| 1.8 | Imhoff sedimentation funnel of Borosilicate glass, crystal clear, 1000 ml | pcs | 2 |
| 1.9 | Funnel stand by Imhoff | pcs | 1 |
| 1.10 | Annealing furnace, working temperature 700-1150 °C, vertical lifting door, PID temperature controller, timer, with removable ceramic sole and aluminised protective gloves and set of crucibles | pcs | 1 |
| 1.11 | Laboratory conductivity meter measuring range 0-1000 S/cm, TDS measuring range 0-100 mg/l, USB interface, 50 data set storage memory | pcs | 1 |
| 1.12 | A set of standard solutions, and other consumables for a chemical laboratory | set | 1 |
| 1.14 | Digestion unit with 10 places, fast heating from 20-450 °C, exhaust manifolds of borosilicate glass, alarm and automatic cooling | pcs | 1 |
| 1.15 | Distillation unit 40 ml/min, programmable, automatic control of cooling water, dilution water and alkali, with automatic tube drain | pcs | 1 |
| 1.16 | Analytical scale, 220 g, minimum measuring capacity 0.1 mg, draught shield, I/O terminal, USB device | pcs | 1 |
| 1.17 | Drying oven with ventilator, temperature range 5-300°C, capacity 112 l, 2 shelves, forced air convection, door lock, open door alarm, LAN port and USB port | pcs | 1 |
| 1.18 | Incubator | pcs | 1 |
| 1.19 | Water bath 40 l with cover and drain, temperature range 0-100°C, PID controller, capacity 35x50 ml flasks | pcs | 1 |
| 1.20 | Membrane filtration system with 3 places, filter holder and manifold of stainless steel, filter funnel of stainless steel 300 ml, glass bottle for filtrate with capacity of at least 5000 ml with drain, vacuum pump 30 l/min | set | 1 |
| 1.21 | Laboratory pH meter, measuring range 0-14, with temperature sensor, set of electrodes and calibration standard | pcs | 1 |
| 1.22 | Waterproof puncture thermometer, measuring range -20-320°C | pcs | 2 |
| 1.23 | Shaking incubator, capacity 50 l, planar orbital motion, 200-3000 rpm, suitable to accept large assortment of platforms and clamps to accommodate flasks, petri dishes, test tube racks | pcs | 1 |
| 1.24 | Universal attachment for shaker | pcs | 1 |
| 1.25 | Portable turbidity meter 0-1000 NTU | pcs | 1 |
| 1.26 | Desiccator of borosilicate glass | pcs | 1 |
| 1.27 | Oximeter, programmable with 4GB internal data memory and software | pcs | 1 |
| 1.28 | Ultrapure water appliance, 10 l/h, with 10 l tank | pcs | 1 |
| 1.29 | ORP (Oxidation Reduction Potential) meter | pcs | 1 |
| 1.30 | Laboratory pH/ORP/temperature meter with calibration standards and set of electrodes |  |  |
| 1.31 | Laboratory vertical autoclave, capacity of 150 l, automatic suction of water for the needs of steam generator, three temperature sensors, working temperature 150 °C, microprocessor control pf sterilization and cleaning program, touch door closing system, connection for PC, safety mechanism for door, automatic opening at the end of the sterilization and cooling processes | pcs | 1 |
| 1.32 | Wire basket for autoclaves | pcs | 3 |
| 1.33 | Automatic extraction unit with 6 extraction positions, hot solvent and closed system technique, extraction capacity 42 samples per day, measuring range 0.1-100%, temperature control range 30-300°C | pcs | 1 |
| 1.34 | Compressor | pcs | 1 |
| 1.35 | Telescopic rod with end stops, 165-450 mm long, bakers volume of 1000 ml | pcs | 1 |
| 1.37 | Set of laboratory glassware, automatic micro-pipettes, twiners, washing bottles, sampling bottles, reagent bottles, etc, as required for regular monitoring | set | 1 |
| 1.38 | Protective cloth, goggles and gloves | set | 1 |
| 1.39 | First aid kit | pcs | 1 |

**Item I – 2: The Laboratory equipment –** **Administrative building**

| **Pos.** | **Description** | **Unit** | **Qty.** |
| --- | --- | --- | --- |
| 2.1 | Technical scale, 4200 g, with LCD display and fast calibration, interface with easy integration with other devices and PC | pcs | 1 |
| 2.2 | Analytical scale, 220 g, minimum measuring capacity 0.1 mg, draught shield, I/O terminal, USB device | pcs | 1 |
| 2.3 | Drying Oven, temperature range 5-300°C, capacity 112 l, 2 shelves, forced air convection, door lock, open door alarm, LAN port and USB port | pcs | 1 |
| 2.4 | Annealing furnace, working temperature 700-1150 °C, vertical lifting door, PID temperature controller, timer, with removable ceramic sole and aluminised protective gloves and set of crucibles | pcs | 1 |
| 2.5 | Laboratory PH meter, 0-14 pH with calibration reagents and set of probes | set | 1 |
| 2.6 | Waterproof puncture thermometer, measuring range -20-320°C | pcs | 1 |
| 2.7 | Spectrophotometer UV-VIS, 190-1100 nm, turbidity 1-1000 NTU, with automatic calibration, wavelength accuracy ±1nm, 16GM memory LAN and USB interfaces complete with manual, methods, touch pen, protective cover, power cable, USB cable and stick, calibration cuvette and cleaning cloth | set | 1 |
| 2.8 | Oximeter, programmable with 4GB internal data memory and software | pcs | 1 |
| 2.9 | Distillation unit 40 ml/min, programmable, automatic control of cooling water, dilution water and alkali, with automatic tube drain | pcs | 1 |
| 2.10 | Membrane filtration system with 3 places, filter holder and manifold of stainless steel, filter funnel of stainless steel 300 ml, glass bottle for filtrate with capacity of at least 5000 ml with drain, vacuum pump 30 l/min | set | 1 |
| 2.11 | Moisture analyser/Hygrometer, 1-210 g weighing range, sensor accuracy 1g, moisture measurement range 0.01-100%, maximum heating temperature 250°C, weighing pan 110 mm, microprocessor controller, for automatic and manual operation | pcs | 1 |
| 2.12 | Calorimeter 0-50000 J, automatic ignition, automatic bucket fill, Semi-automatic oxygen feeding and release | pcs | 1 |
| 2.13 | A set of glassware and other consumables for a chemical laboratory | kit | 1 |
| 2.14 | A set of laboratory chemicals to start the work of the laboratory | kit | 1 |
| 2.15 | Shredder machine | pcs | 1 |

**Laboratory furniture**

**Item I – 3: The Laboratory furniture – Command building for LTP**

| **Component** | | **Unit** | **Qty** |
| --- | --- | --- | --- |
| 3.1 | Laboratory table 170x70x90 cm | pcs | 1 |
| 3.2 | Hanging element for the laboratory 170x30x60 cm | pcs | 1 |
| 3.3 | Scale table 100x65x90 cm | pcs | 1 |
| 3.4 | Laboratory table 130x70x90 cm | pcs | 1 |
| 3.5 | Laboratory table 185x70x90 cm | pcs | 1 |
| 3.6 | Laboratory table 185x70x90 cm | pcs | 1 |
| 3.7 | Chemical Laboratory fume hood (“Digestor”) | pcs | 1 |
| 3.8 | Security cabinet | pcs | 1 |
| 3.9 | Laboratory one-piece sink 210x70x90 cm | pcs | 1 |
| 3.10 | Laboratory wall-mounted cabinet 145x30x60 cm | pcs | 1 |
| 3.11 | Laboratory chair | pcs | 2 |
| 3.12 | Laboratory cabinet 100x50x200 cm | pcs | 1 |

**Item I – 4: The Laboratory furniture – Administrative building**

| **Component** | | **Unit** | **Qty** |
| --- | --- | --- | --- |
| 4.1 | Chemical Laboratory fume hood (“Digestor”) | pcs | 1 |
| 4.2 | Security cabinet | pcs | 1 |
| 4.3 | Laboratory one-piece sink 120x70x90 cm | pcs | 1 |
| 4.4 | Hanging element for the laboratory 100x30x60 cm | pcs | 1 |
| 4.5 | Laboratory table 175x70x90 cm | pcs | 1 |
| 4.6 | Laboratory table 150x70x90 cm | pcs | 2 |
| 4.7 | Laboratory table 191x70x90 cm | pcs | 1 |
| 4.8 | Corner laboratory table 150/150x70x90 cm | pcs | 1 |
| 4.9 | Scale table 100x65x90 cm | pcs | 1 |
| 4.10 | Laboratory cabinet 100x50x200 cm | pcs | 1 |
| 4.11 | Hanging element 150x30x60 cm | pcs | 1 |
| 4.12 | Laboratory chair | pcs | 2 |