



Republic of the Philippines  
Department of Agriculture  
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## BSWM- BIDS AND AWARDS COMMITTEE SUPPLEMENTAL BID BULLETIN NO. 1

**CONTRACT: Procurement of 1 unit of Mobile Soil Laboratory for CY 2023- IB NO: BSWM-2023-10-060**

This Addendum is being issued in accordance with Section 22.5.2 of the IRR of RA 9184, to clarify and modify some provisions of the Bidding Document. **THIS SHALL FORM AN INTEGRAL PART OF THE BID DOCUMENT.** Likewise, the succeeding agreements and reminders were discussed during the Pre-Bid Conference held last October 27, 2023 at the BSWM Convention Hall and via Videoconferencing-Zoom.

### AMENDMENTS ON THE BIDDING DOCUMENT:

ORIGINAL/ CLARIFICATION/s	AMENDED/AGREEMENTS
<b>Section II. Instructions to Bidders- Clause 5:</b>  <b>SLCC:</b>  To allow aggregated contracts.	<b>Section II. Instructions to Bidders- Clause 5:</b>  <b>SLCC:</b>  Aggregated Contracts is not allowed. The SLCC criterion is required in order to <b>ensure that the government is contracting with an entity that has accomplished at least one project with a value no less than fifty percent (50%) of the contract to be bid.</b> This assures the government that the <b>bidder has sufficient experience and reliable track record</b> or it is not the first time that the prospective bidder will be required to accomplish such an undertaking, and therefore, <b>provides the government a level of security that such bidder, if awarded the contract, will be able to satisfactorily fulfill the contract requirements.</b>
<b>ABC: PhP 43,000,000.00</b>	ABC for Vehicle including installation and customization of various equipment and supplies under Component I is PhP 13,000,000.00  ABC for various Technical and Scientific equipment under Component II is PhP 30,000,000.00  Note: Bids received in excess of the above ABC shall be automatically rated failed.
<b>In case of foreign bidders, please refer to Section 23.4.1.2 of RA 9184 which states that:</b>  Foreign bidders may be eligible to participate under any of the following circumstances in accordance with the guidelines issued by the GPPB:  a) When provided for under any Treaty or International or Executive Agreement as provided in Section 4 of the Act and this IRR; b) When the foreign supplier is a citizen, corporation or association of a country, the laws or regulations of which grant reciprocal rights or privileges to citizens, corporations or associations of the Philippines; <b>c) When the goods sought to be procured are not available from local suppliers; or</b> d) When there is a need to prevent situations that defeat competition or restrain trade  <i>Please refer to Appendix 9 of RA 9184 for Guidelines in the determination of Eligibility of Foreign Suppliers, Contractors, And Consultants to Participate in Government Procurement Projects.</i>  <b>Since the End-User conducted a market study, and there were available bidders/suppliers locally, Foreign Bidders is not allowed.</b>	
	<b>Registration of LTO (to be registered as government vehicle)</b>
	<b>With insurance coverage:</b>  <b>Vehicle- at least 3 years</b>



**NOTE:**

All photocopied documents must be stamped and signed "Certified True Copy". And all pages/documents must be duly signed by the authorized representative (both original and duplicate copies).

For easy reference, all bidders are requested to provide dog-ear codes/ tabs in the presentation of their documents.

○ **Reminders:**

- ✓ Bidders' responsibility to read, study, and review the Bidding Document and Bid Bulletin/s of the procurement project.
- ✓ Further clarification/s on the Bidding Document shall be in writing and must be submitted 10 days before the Opening of Bids.
- ✓ All bidders who wish to join the bidding shall download the attached document from PhilGEPS website to be included in the Document Request List (DRL).
- ✓ Bidders may download the updated Bidding Forms at GPPB Website (<https://www.gppb.gov.ph/downloadables.php>).
- ✓ Authorization letter and a copy of company ID shall be presented by the Representative of the Bidder who will submit the bid proposal and who will attend the Opening of Bids, on-site or online.
- ✓ In case of withdrawal of submitted bid, a letter stating their intention to withdraw from the project should be submitted by the bidder not later than the scheduled deadline of submission and opening of bids.
- ✓ Bidders declared to have the Lowest/ Single Calculated Bid will be subject for post-qualification.
- ✓ Bidder shall submit the additional requirements listed on the NOTICE as LCB/ SCB within five (5) calendar days from receipt of Notice. *Non-compliance can be grounds for post-disqualification.*

A complete set of **Bidding Document** may be acquired by interested Bidders until **November 13, 2023, 3:00PM** from the address and website.

**DEADLINE/SCHEDULE OF SUBMISSION AND OPENING OF BIDS:**

**Deadline of submission of bid proposals is on November 14, 2023, 9:00AM.**

**Opening of Bids is on November 14, 2023, 9:30AM** at BSWM Convention Hall and via videoconferencing

For guidance and information of all concerned.

**(Sgd)DENISE A. SOLANO**  
BAC Chairperson

Technical Specifications

Item	Specification	Statement of Compliance
<i>[Bidders must state here either “Comply” or “Not Comply” against each of the individual parameters of each Specification stating the corresponding performance parameter of the equipment offered. Statements of “Comply” or “Not Comply” must be supported by evidence in a Bidders Bid and cross-referenced to that evidence. Evidence shall be in the form of manufacturer’s un-amended sales literature, unconditional statements of specification and compliance issued by the manufacturer, samples, independent test data etc., as appropriate. A statement that is not supported by evidence or is subsequently found to be contradicted by the evidence presented will render the Bid under evaluation liable for rejection. A statement either in the Bidder’s statement of compliance or the supporting evidence that is found to be false either during Bid evaluation, post-qualification or the execution of the Contract may be regarded as fraudulent and render the Bidder or supplier liable for prosecution subject to the applicable laws and issuances.]</i>		

Item No.	Item Description	Quantity	Statement of Compliance
1	<b>Supply, Delivery, Modification of vehicle and Installation of equipment for Mobile Soils Laboratory</b>		
	<b>Component I. Commissioning and modification of vehicle to house the required instruments, equipment, and other accessories.</b>		
	<b>A) Vehicle Specifications:</b>	1	
	10-wheeler truck, <b>manual transmission, airconditioned</b>		
	Range Power: minimum 280 bhp (brake horse power)		
	RPM Range: minimum 2400 rpm (revolution per minute)		
	Fuel Type: Diesel		
	Displacement: minimum 7790 cc (cubic centimeters)		
	Torque: maximum 882 Nm (Newton-meter)		
	Gross Weight range: minimum of 26000 Kg (kilogram)		
	Verification: brochure and/or datasheet specifications		
	Overall Height: maximum of 2940 mm / 9.64 ft		
	Overall Length : minimum 11900 mm / 39.04 ft		
	Payload: minimum 18995 kg, inclusive of trailer		
	Tire: 11R22.5-16PR		
	Wheelbase: minimum 7195 mm / 23.60 ft		
	Engine: 6 Cylinder, In-line, Common-Rail Direct Injection, Blue Power Diesel Engine		
	Rear Body Length: minimum 9754 mm / 32 ft.		
	Inclusive of spare tires (4 pcs) and early warning device		
	Inclusive of vehicle specification plate, engraved		
	Inclusive of Tools for repair: Toolbox, crescent wrenches, vehicle jack, combination wrenches, pliers, vice grips, wire cutter and electrical tape, ratcheting screwdriver set, 3-lb sledgehammer, tire air pressure gauge, flashlights, metal dowel rod, truck trip inspection tool, safety glasses, gloves, crowbar, fuses		
	<b>B) Customization specifications:</b>		
	provision and installation of furnitures, fixtures, and other accessories		
	electrical works, inclusive of convenience outlet, lighting		
	Provision for sample storage cabinet, stainless steel, laminated		
	Office and ICT equipment:		
	Office table (2)- furniture to add antivibration mechanisms /foam cushion capable of withstanding vibration during travel		
	chairs (4)- leather, ergonomic, with seatbelt, embedded / detachable to mobile vehicle		
	Stool (2) - stainless, leather cushion		
	<b>Laptop (1)-</b>		
	Processor: i5-13th Gen / R5 Zen3+(RDNA2 based) Storage: at least 500GB M.2 PCIe NVMe SSD Memory: at least 16GB, DDR4 (upgradable) Screen size: at least 15.6-inch Display Type: IPS Operating System: Windows 10/11	From GSITD	

	Pro MS Office: Microsoft Office 2021 (license)		
	<b>Laboratory Housing Specifications:</b>		
	Length: minimum 32.80 ft / 10000 mm Width: minimum 6.56 ft / 2000 mm Height: minimum 6.56 ft / 2000 mm		
	Three (3) main sections: 1) Soil and Water Analysis Section: min 3.33m x 2.0m x 2.0m (lxwxh) 2) Soil Physical Analysis Section: min 3.33m x 2.0m x 2.0m (lxwxh) 3) Soil Microbiological Analysis Section: min 3.33m x 2.0m x 2.0m (lxwxh)		
	list of equipment per section is listed below		
	<b>Laboratory fixtures:</b>	QTY	
	Standard Laboratory Sink, Stainless steel	3	
	Water Tank, 300 - 500 Liters, stainless steel	1	
	Water suction line <b>with</b> water purifier	1	
	Waste Water Reservoir- 70 L, Either PTFE / PEEK	1	
	Windows, awning, aluminum frame with glass	3	
	doors -side door (1 swing) -rear door (2 swing) provision of collapsible stairs	2	
	Exhaust fan	2	
	Stainless or Vinyl Flooring, with anti-slippage mechanism		
	Lockable overhead cabinets on either sides, with shelves	6	
	Laboratory tables, chemical resistant tabletop, with drawers and cabinets, <b>antivibration mechanisms /foam cushion capable of withstanding vibration during travel v</b>	6	
	Aircon (2 HP) split type	2	
	Aluminum composite 3mm - outside and Inside wall , Wall insulation (2") chemical and thermal resistant (lot)	1	
	<b>C) Standard inclusions and accessories:</b>		
	truck stabilizer leg (4-legs) <b>with a capacity of at least 2-4 tonnes per leg -</b> Manual (hydraulic)	1	
	Rear and front Camera with storage memory card (min of <b>512 GB</b> )	2	
	CCTV Surveillance System Monitors entrances, exits, and laboratory area; At least 2 units of camera, true IP 66 camera, 1080p or higher resolution, 15 frames per second or greater; Includes centralized recording solution with Video Management Software and Network Video Recorder structured cabling for intranet and internet Scope of work includes installation, testing, and maintenance of CCTV system	1	
	Wireless Prepaid Wifi Router	2	
	2.4 & 5.0 Ghz dual band Wifi- Network Type: 3G and 4G LAN port : 4 LAN port With 2 Antenna for stable data transmission No installation, just plug and surf Connect up to 10 devices		
	CO2 Fire extinguisher	3	
	Specification: Classification: C Approximate Weight - 5 lb.		
	Dry Chemical Fire Extinguisher	3	
	Specification: Classification: 40B:C Approximate Weight - 5 lb.		
	<b>Power Source:</b>		
	<b>1. Generator - 6-15 kVA, diesel engine</b> movable, can be pulled-out during operation and isolate from main body to avoid vibration on sensitive equipment		
	<b>2. AC (Alternating Current) Power Source - 220-240V, 60Hz</b>		
	<b>3. Solar Panel (alternative power source) at least 6KVA, Hybrid System</b>		
	Transfer Switch Electrical Distribution System		
	Registration of LTO ( <b>to be registered as government vehicle</b> ) and insurance (3 years) inclusive of the following: Commercial invoice or original sales invoice from the country of origin Original sales invoice of body Appropriate COC (Certificate of Coverage) Certified True Copy of DTI-BIS endorsement Original Affidavit of Rebuilt executed by the owner and/or mechanic with the TESDA NC 11 stating, among others, the date of completion Original CSR for engine and chassis Original PNP-HPG MV Clearance Certificate MVIR (Motor Vehicle Inspection Report) CCES (Certificate of Compliance to Emission Standard)		
	customization of label, design and finish of the mobile soils laboratory according to the DA Branding/ BSWM- NSHP Branding (to be provided by the End-User during contract implementation)		
	<b>D) After sales services specifications:</b>		



	with two (2) years warranty on parts and services of the vehicle with end-users training on operation and maintenance of the vehicle		
	<b>Component II. Provision of laboratory instruments and technical and scientific equipment</b>	1	
	<b>Laboratory Equipment List:</b>	Qty	
	<b>A) Soil and Water Analysis</b>		
	<b>pH Meter (Refillable)</b>	2	
	Specifications:		
	pH Range: 0 to 14.00 pH		
	Accuracy: ±0.002 pH		
	Integral Electrode Holder & 100/240 VAC Adapter		
	Power Requirements: 9 V DC adapter, 1.3 A (100/240 VAC, SMPS)		
	Has the ff accessories:pH Electrodes (Refillable), ATC probe		
	4, 7, 10 pH buffer standards		
	<b>Conductivity Meter</b>	2	
	Specifications:		
	Range: 0.050 µS to 500.0 mS		
	Accuracy: ±1 % full scale		
	Resolution: 0.1 °C / 0.1 °F		
	Compensation: ATC / MTC		
	Power Requirements: 9 V DC adapter, 1.3 A (100/240 VAC, SMPS)		
	Has the ff accessories:EC Electrodes (Refillable), ATC probe		
	Power Requirements: 220-240 V, 60Hz		
	<b>Reciprocating Shaker</b>	1	
	Specifications:		
	Operating Speed: Variable speed 60 – 260 osc/min		
	Stroke: 1.5” Horizontal		
	Timer: 1min - 19h 59min		
	Type of mounting: Benchtop, Suction cup feet to prevent creeping		
	Payload: min 20 kg		
	Power: 230V, 60Hz		
	Includes: Utility box carrier with anti-slide surface and one (1) rubber coated crossbar is available to hold various combinations of beakers, flasks, etc		
	Power Requirements: 220-240 V, 60Hz		
	<b>UV-Vis Spectrophotometer w/ laptop and printer</b>	1	
	Specifications:		
	Photometric System – Double beam with rear beam access		
	Monochromator – Double monochromator		
	Source – Xe Lamp / Tungsten -D2 Lamp		
	Wavelength Range – 190-1100 nm		
	Detectors – Silicon photodiode detectors for simultaneous measurement of all channels		
	Wavelength accuracy (nm) ± 0.2		
	Wavelength reproducibility (nm) < 0.025		
	Limiting Resolution – 0.1nm		
	Spectral bandwidth 0.1 to 5 nm at 0.01 nm		
	Data collection rate 250 data points per second		
	Simultaneous determination on multiple wavelengths		
	Unit with sipper (5 extra tubings ), 5 extra quartz cuvettes, with laptop, 2KVA AVR, printer, UV workstation software compatible with equipment, and complete genuine office and OS		
	Interchangeable between sipper and cuvette type		
	Power Requirements: 220-240 V, 60Hz		
	Laptop specifications:	1	
	Processor: i5-13th Gen / R5 Zen3+(RDNA2 based) Storage: at least 500GB M.2 PCIe NVMe SSD Memory: at least 8GB, DDR4 (upgradable) Screen size: at least 15.6-inch Display Type: IPS Operating System: Windows 10/11 Pro MS Office: Microsoft Office 2021 (license)		
	Printer specifications:	1	
	Can print up to Legal size (8.5 x 14 in), color, black Can copy and scan up to A4 size, color, black Has wireless capability Has mobile printing capability Print speed: Black - up to 8 ppm; Color - up to 5 ppm Print quality: Black - up to 1200 x 1200 dpi; Color - up to 4800 x 1200 dpi Copy speed: Black - up to 5 cpm; Color - up to 3 cpm Copy resolution: up to 300 x 300 dpi Scan resolution: up to 1200 dpi Paper handling: Input - up to 60 sheets; Output - up to 25 sheets		

	Connectivity: Hi-speed USB; Built-in WiFi 802.11 b/g/n 200 - 240 VAC"		
	<b>Single Channel Pipetors</b>	4	
	Specifications:		
	Chemically resistant, Fully Autoclavable		
	Volume Adjustable, interchangeable, easy-grip ejector with carousel, 1000 pipette tips per unit		
	Volumes: 1000-10,000 µl 1000-5000 µl 100-1000 µl 10-100 µl		
	<b>Bottle Top Dispenser (100 mL)</b>	1	
	Specifications:		
	Capacity: 10-100 mL		
	Subdivision: 10 mL		
	with container bottle (2.5 L) and adapters with recirculation and discharge valve		
	<b>Bottle Top Dispenser (50 mL)</b>	2	
	Specifications:		
	Capacity: 10-50 mL		
	Subdivision: 5.0 mL		
	with container bottle (2.5 L) and adapters with recirculation and discharge valve		
	<b>Centrifuge</b>	1	
	Specifications:		
	Accuracy: 0.05		
	Timer: up to 99min		
	Power Consumption (Temperature): 500W		
	Highest Speed, Rpm (Revolutions): 5000		
	Max Rcf, G (Temperature): 4620		
	Setting Type (Revolutions): Variable		
	Power Needed, VAC (Energy): 100		
	Tube Sizes (Rotors Offered): 100 mL		
	Rotor capacity: 8 x 100 mL tubes		
	Overall Capacity, Ml: 1000		
	With centrifuge tube: 100 mL (30 pcs)		
	<b>Block Digester with Scrubber</b>	1	
	Sample positions: Interchangeable between 20 pcs (250 mL) and 40 pcs (100 mL)		
	Maximum Temperature (in °C): 430		
	Digestion vessel size (in ml): 100 & 250		
	Maximum Power consumption (in W): 1100		
	Non-corrosive casing		
	With digestion programs (minimum 100) with auto lift feature		
	Accessories: Round bottom digestion vessel, 100 ml for micro-Kjeldahl, 40 pcs; 250 mL for 20 pcs Adaptor for interchangeable block digester (20 placer and 40 placer) Kjeldahl Neutralizer (extraction system/scrubber)		
	<b>Nitrogen Distillation Unit</b>	1	
	Specifications:		
	Measuring range: 0.1-200mg nitrogen		
	Recovery is greater than 99.5% at Nitrogen (N) levels between 1 and 200mg		
	Distillation time: 3-4 min at 30mg N (6.5 min at 200mg N)		
	Distillation capacity: approx 40mL/min		
	Self-adjusting cooling water control		
	With Voltage Regulator		
	Power Requirements: 220-240 V, 60Hz		
	<b>Atomic Absorption Spectroscopy with Laptop</b>	1	
	Wavelength range: 185.0 to 900.0 nm		
	Monochromator: Aberration-corrected Czerny-Turner mounting, Number of grating grooves: 1600-1800 lines / mm, Focal length: 330 mm		
	Detector: Photomultiplier tube		
	Optics: Optical double-beam		
	Background correction method: BGC-D2 (D2 lamp method) (185.0 to 430.0 nm)		
	Number of turret: at least 8		
	Lamp mode: EMISSION, NON-BGC, BGC-D2		
	Measurement mode: Flame continuous method, flame emission method, flame absorption method		
	Simultaneous determination on multiple wavelengths		
	Standard Accessories: Autosampler - at least 100 samples Sampling Kit Compressor - Silent Type Nebulizer setup		





<b>Dehumidifier</b>	<b>2</b>	
Specifications:		
Benchtop style; max speed: approx 4500rpm		
Extract approx. 20-25L of water per day to maintain humidity below 50%		
Automatic defrost system		
Power Requirements: 220-240 V, 60Hz		
<b>Laboratory Refrigerator (General Use)</b>	<b>1</b>	
Specifications:		
Temperature Range: 2~8°C		
Capacity: Maximum 200 L		
Refrigerant: R134a, CFC free ( R600a optional )		
Defrost Method: No frost		
Cooling Type: Forced air cooling		
Power: 135 W; Power Supply: 220V, 50/60Hz		
<b>Magnetic Stirrer/Hot Plate (Dual)</b>	<b>1</b>	
Specifications:		
Motor rating output: 9 W		
Speed range: 50 - 1500 rpm		
Heat output: 1000 W		
Temperature setting range: 0 - 500 °C		
Heat and stirring control: Turning knob		
Power Requirements: 220-240 V, 60Hz		
<b>Top Loading Balance</b>	<b>1</b>	
Specifications:		
Capacity: 620g		
Readability and Repeatability: 0.01g		
Linearity: 0.02g		
Operating Ambient Temperature: 10 - 30		
Power requirement: AC adaptor ( DC12V, 1A )		
Power Requirements: 220-240 V, 60Hz		
<b>Vortex Mixer</b>	<b>2</b>	
Specifications:		
Construction material: zinc alloy and technopolymer		
Support system: 4 anti-sliding feet or equivalent		
Orbital diameter: 4.5 mm		
Speed: up to 3000 rpm		
Operating modes: touch, continuous		
Power Requirements: 220-240 V, 60Hz		
<b>Analytical Balance</b>	<b>1</b>	
Specifications:		
Capacity: 220 g		
Minimum Display: 0.1 mg		
Operating Ambient Temperature: 5-40°C 20-85%		
Temperature Coefficient Sensitivity (ppm/°C): ±2ppm/°C(no condensation)		
Power requirement: 12V, 1A		
<b>B) Soil Physical</b>		
<b>Automated Saturated Hydraulic Conductivity System (2 station) with 1 Laptop</b>	<b>1</b>	
Specifications:		
Applicable methods: Constant Head and Falling Head		
Sample Ring Volume: 98.2-100 mL		
Sample Ring Inside Cross-Sectional Area: 20.67 cm2		
Reservoir Volume: 930-1000 mL		
Pressure Transducer Range: -100 kPa to +100 kPa		
Pressure Precision Transducer comes w/ Micro USB cable, Analog Ribbon Connector Cable, Software Flash Drive, Instruction Manual		
Software Application: can control up to 20 independent units simultaneously.		
provision for main water reservoir ( min capacity: 10L ) with accessories		
Power Requirements: 220-240 V, 60Hz		
Inclusive of Laptop computer		
Processor: i5-13th Gen / R5 Zen3+(RDNA2 based)		
Storage: at least 500GB M.2 PCIe NVMe SSD		
Memory: at least 16GB, DDR4 (upgradable)		
Screen size: at least 15.6-inch		
Display Type: IPS		
Operating System: Windows 10/11 Pro		
MS Office: Microsoft Office 2021 (license)		
<b>Particle Size Analysis System</b>	<b>1</b>	
Includes:		
5pcs Sedimentation Glass Cylinder, 1L		
2 pcs Sodium Hexametaphosphate, AR Grade, 500g		
5 pcs Plastic Pestle		



Operating System: Windows 10/11 Pro MS Office: Microsoft Office 2021 (license)		
Temperature detection and recording: Yes		
Standard Accessories and Inclusions: Detector, 475 mL jar and 1265 mL jar (for larger scale biology studies), 2 O-Rings, USB cable, Software Reader, Instruction Manual, Data logger, and at least 1 yr warranty on parts and service		
<b>Digital hand held microscope</b>	<b>1</b>	
Specifications:		
Flexible Led Control (FLD)		
Automatic Magnification Reading (AMR)		
Magnification: 10X-220X		
Resolution (2560x1920)		
Connection type (USB 3.0)		
Inclusions: Platform stand/holder, Lens cleaner, Cable, Software		
<b>Root Image Analyzer</b>	<b>1</b>	
Non-destructive		
Image resolution: up to 1200 DPI		
System: Microsoft Windows 7, 8, 10		
Scan Head Dimensions: 30-40 cm long × 4-5cm diameter		
Requirements: 1GB Memory/RAM 1GHZ + Processor		
Inclusions: at least 5 root tubes		
Root Tube Dimensions:		
Inner Diameter: atleast 6 cm (5cm min)		
Outer Diameter: atleast 7 cm (5cm min)		
Wall Thickness: atleast 3 mm		
Length: atleast 100 cm		
<b>Leaf Image Analyzer</b>	<b>1</b>	
Specifications:		
Non destructive and handheld		
Measuring Thickness: min 1.4cm max2 cm x Width: min 14 max 17 cm x		
Length: min 15cm max 350 cm		
Resolution: 0.01 cm <sup>2</sup>		
Accuracy: ±1% for samples >10 cm <sup>2</sup>		
Operating Temperature: 0-50°C		
Data Storage: at least 16 GB SD card		
<b>Drying oven</b>	<b>1</b>	
Specifications:		
Air convection: natural		
Chamber capacity: 15L		
Controller: microprocessor with external LCD graphic display		
Temperature range: +5°C to +300°C		
Door type: solid/door viewing window		
Interior: acid-proof stainless steel		
Housing: power coated sheet		
Power Requirements: 220-240 V, 60Hz		
<b>Incubator</b>	<b>1</b>	
Specifications:		
Temperature Range: 17-40 °C		
Temperature Uniformity: ±1.2°C		
Temperature Stability: ±0.2°C		
Shelves: 2-3 layers		
Weight: Max 8 kg		
Electrical: 100-240 V, 50-60 Hz		
<b>Tabletop Laminar Flow</b>	<b>1</b>	
Specifications:		
UV radiation level: 18 mW / cm <sup>2</sup> / sec		
Radiation type : UV (λ = 253.7 nm), ozone-free		
Digital time setting of direct UV exposure: 1 min–24 hrs / non–stop		
UV protection: >99.90% Polymethyl methacrylate		
Working area: L 600-700mm × W 400-500 mm		
Overall dimensions (W×D×H): 700-750mm × 500-600mm × 500-600 mm		
Working surface material: Steel with chemicals resistant powder coating		
Working area: 645 × 490 mm		
Nominal operating voltage: 100-240 V, 50/60Hz		
<b>Laboratory Refrigerator</b>	<b>1</b>	
Specifications:		
Effective capacity: maximum 160 liters		
Net weight: maximum 75 kg		
Compressor: Hermetic type, 90 W		
Refrigerant: HFC		
Defrosting: Cyclical defrosting & evaporator temp. detection system		
Temperature control: 2°C to 14°C		
Temperature display: Digital		
High/Low temperature alarm system: ±2°C to ±14°C from temperature setting value		

	Power Supply: 220V, 60Hz		
	<b>Tabletop Autoclave</b>	<b>1</b>	
	Specifications:		
	Capacity: maximum 24L		
	Door: Manual, Automatic		
	Designed Pressure: -0.1/0.3MPa		
	Water Tank Volume: maximum 3.5L		
	Working Temp: 121-134°C		
	Vacuum system: High efficiency vacuum pump		
	Atmospheric Pressure: 76~106 kpa		
	Ambient Temp.: 5~40°C		
	Standard Accessories: USB/Printer		
	Power supply: 220V		
	Consumption: 3kVA		
	Gross weight: maximum 60 kg		
	<b>Single Chanel Pipetors</b>	<b>1</b>	
	Specifications:		
	Chemically resistant and fully autoclavable		
	Volume Adjustable, interchangeable, easy-grip ejector, with carousel, 1000 pipette tips per unit		
	Volumes:		
	1000-10,000 µl		
	1000-5000 µl		
	100-1000 µl		
	20-200ul		
	10-100 µl		
	<b>d) Standard inclusions:</b>		
	inclusive of AVR and/or UPS for various sensitive equipment:		
	UV-Vis		
	AAS		
	Carbon Dioxide Respirometer Reader		
	Motorized ASTM Liquid Limit Machine		
	To include supplies and consumables in support to the equipment		
	includes provisions to ensure storage and safety of equipment during transport (e.g. fixtures, dampening pads, antivibration pad, equipment brace, plexi glass.)		
	with Calibration Certificate from Competent Calibration Laboratory (PAB Accredited Calibration Laboratory or with Statement of Metrology)		
	<b>e) After sales services specifications:</b>		
	Inclusive: Commissioning and installation of all required instruments, equipment, and other accessories.		
	Providing training & demonstration for the operation of all instruments		
	Providing technical back-up (monitoring and troubleshooting) and after-sales services and guidance for improving the efficiency of the lab		
	Calibration, standardization & operation of all instruments		
	with standard two (2) years warranty on parts and services for all equipment		
	with insurance coverage for all technical and scientific equipment (3 years)		
	Submission to include proposed floor plan for the Mobile Soil Laboratory, subject for approval of the BSWM during the contract implementation.		