TERMS OF REFERENCE (TOR)

FOR THE ENGAGEMENT OF AN ENGINEERING CONSULTANT

FOR THE SUPERVISION AND CONTRACT MANAGEMENT OF THE ABUZABAL DUMPSITE CLOSURE PROJECT

Project Name	Greater Cairo Air Pollution Management and Climate Change Project
Country	Arab Republic of Egypt
Employer	Ministry of Local Development and Environment
Project ID	Loan No.: 9166-EG
Contract Reference	EG-EEAA-548129-CS-QCBS
Main Works Contract Title	Contract for Construction of Works of the Abuzabal Dumpsite Closure Project (One Lot)
Main Works Contract Duration	28 months

SECTION 1: INTRODUCTION AND BACKGROUND

1.1 Project Overview

The Ministry of Local Development and Environment (the "Employer") has received funds from the World Bank toward the financing of the Greater Cairo Air Pollution Management and Climate Change Project and intends to apply part of the proceeds to the Abuzabal Dumpsite Closure Project (the "Main Works Contract"). The works consist of the shaping and safe closure of the existing Abuzabal dumpsite and the related installation of gas and leachate collection systems for the solid waste body, as well as temporary disposal of incoming fresh municipal waste until the Municipal Solid Waste (MSW) facility of Qalubiya at 10th of Ramadan is operational.

1.2 Project Context and Site Conditions

The Abuzabal dumpsite, located in the Qalyubia Governorate, has been in operation since 1997, but causes public nuisance and presents significant environmental and health challenges. The site receives approximately 1,570 tons of MSW per day from Qalyubia Governorate, and the current waste height has reached 33m above the natural ground level. The site is surrounded by three large quarry lakes (Arab Al-Ulyqat lakes) with depths reaching up to 25m, creating unstable slopes and challenging working conditions. Key hazards identified at the site include landfill gas (LFG) accumulation (with methane levels exceeding the

lower explosive limit), regular fires, leachate generation, and slope instability.

The main works require waste disposal of incoming fresh waste while closure works are undertaken . The Contractor is required to maintain daily waste acceptance, compaction, and covering operations throughout the construction period until the MSW facility of Qalubiya at 10th of Ramadan is operational. The Consultant shall establish and monitor an interface-management arrangement between closure works and incoming fresh waste disposal operations, including traffic management, separation of active work and disposal zones, emergency access, fire prevention, public-health risk controls, and daily coordination with the Works Contractor,Qalyubia Governorate, and relevant authorities, as well as periodic coordination with the GCCC Project.

1.3 Rationale for the Assignment

Given the complexity and high risk nature of the dumpsite closure works, the Employer requires a qualified and experienced Engineering Consultant to act as the " Engineer of Abou Zaabal Dumpsite Closure". The Consultant will be responsible for the independent supervision of the Works, in accordance with the duties, obligations, and responsibilities of the Engineer as defined in the applicable FIDIC Red Book Conditions of Contract verification of the Contractor's compliance with all technical, environmental, social, and safety requirements, and the certification of payments (Interim Payment Certificates - IPCs), taking-over, and final acceptance.

SECTION 2: ASSIGNMENT OBJECTIVES

The primary objective of this assignment is to ensure that the Works under the Main Contract are undertaken and completed:

1. **In full compliance** with the Contract,
2. **To the required detailed design and quality standards** for all capping, lining, gas and leachate collection, and geogrid-reinforced wall works.
3. **In strict adherence** to the Environmental and Social Impact Assessment (ESIA) approved by the Egyptian Environmental Affairs Agency (EEAA) and the World Bank's Environmental and Social Framework (ESF)ncluding (more details are presented in Annex 1).
4. **In strict adherence** to the World Bank's Procurement Regulations and Anti-Corruption Guidelines .

5. **With the highest standards** of occupational health and safety, as detailed in Appendix A of the Technical Specifications, available in the folder linked below in Section 3.
6. **In accordance with the approved operational requirements** for the dumpsite closure and waste disposal operations of fresh incoming waste, as detailed in, Appendix B of the Technical Specifications, available in the folder linked below in Section 3.
7. **Within the approved works budget and contract duration** of 28 months.

SECTION 3: SCOPE OF SERVICES

The Consultant shall perform the duties and responsibilities of the " Engineer" as defined in Clause 3 of the applicable FIDIC Red Book, subject to the authority delegated by the Employer in the consultancy contract and the Main Works Contract. Any instruction, determination, approval, certification, variation, extension of time, or other action with contractual or financial implications shall be issued in accordance with applicable FIDIC Red Book, the Employer's approval requirements, and the applicable World Bank Procurement Regulations and prior-review
requirements. The detailed design for the closure of the Abuzabal Dumpsite has been completed prior to the commencement of this assignment. The Engineer's mandate is to supervise the Contractor's compliance with the approved closure design, specifications, and drawings. Any Contractor-submitted detailed designs or method statements are subject to the Engineer's review and approval solely to verify consistency with the approved design and applicable standards.

The assignment of the Supervision Consultant will be implemented in three phases:

- Phase 1: Mobilization and Contract Administration (Months 1 and 2)
- Phase 2: Supervision of Works (Months 3 to 25)
- Phase 3: Commissioning, Handover, and Project Close-out (Months 26 to 28 and beyond)

For more information, use the following Link to access the available Annexes listed below:
https://drive.google.com/drive/folders/1xSgd8I5pvxfI4f-buXpduGC0jC38uP95?usp=sharing

Note: Documents available in the shared folder :

Annex 1 - Technical Specification
Annex 1 -Appendix A - Health and Safety requirements
Annex 1 -Appendix B - Waste Disposal and Operation requirements

Annex 2 - Detailed Drawings
Annex 3 - ESMP Abu Zaabal Dumpsite Closure
Annex 4 - A- Geotechnical Report
Annex 4 - B - Geophysical Report
Annex 5 - Topography survey
Annex 6 ABZ_BOQ_V07_2025.12
Request for Bids Works

.1 Phase 1: Mobilization and Contract Administration (Months 1 and 2)

- Establish Site Presence: **Establish a fully equipped site office at the 10th of Ramadan location approved by the Employer, including all necessary facilities for the Engineer's staff. Works Documentation Review and Approval:**
    - Review and approve (or return with comments) all required work execution documents to be submitted by the Contractor prior to commencement of any work, including but not limited to:
        - Construction Method Statement;
        - Detailed work schedule and program;
        - Contractor's Quality Control Plan (CQC);
        - Contractor Environmental and Social Management Plans (C-ESMP) including but not limited to (Health and Safety Plan, Air Pollution and Noise Management Plan, Solid Waste Management Plan, Labour Management Plan, Community Health and Safety Plan, site Specific Stakeholder Engagement Plan, SEA/SH action plan, Emergency response Plan; etc.,)
        - Site-specific risk assessments and Job Safety Analyses (JSA).
    - Review and approve the Contractor's proposed sub-contractors and key personnel.
    - Review and approve the Contractor's updated topographical and geotechnical investigation reports before any site works commence.
    - Review and approve the Contractor's slope-stability analyses, temporary works designs, MSE wall design submissions, stability pad method statements, and related geotechnical risk assessments before the relevant works commence,

Review and approve the Contractor's geotechnical instrumentation layout prior to works commencing,
Define monitoring frequency and alert/alarm/action thresholds, and specify a protocol for immediate stop-work if any threshold is breached. Establish a geotechnical risk register. to immediately notify the Employer of any instability signs or unacceptable risk conditions.

- **Establish Baseline Data:**
    - Verify the existing site conditions, including topographical levels and contours, as surveyed by the Works Contractor.
    - Observe the Works Contractor's initial gas and leachate monitoring to establish baseline conditions.
    - Review and approve, before any high-risk excavation, drilling, reshaping, or hot-work activity, the Contractor's Landfill Gas and Fire Risk Management Plan, including methane, carbon monoxide, hydrogen sulfide and oxygen monitoring, hotspot identification, evacuation procedures, work-permit controls, and coordination with civil protection authorities.
- **Set Up Project Management Systems and Documentation:**
    - Establish the system for submitting, reviewing, and approving Interim Payment Certificates (IPCs).
    - Establish the system for recording, managing, and responding to Contractor's claims, Variation Orders (VO), and Notices.
    - Prepare and submit a detailed Project Management Plan and Communication Protocol to the Employer for review and approval.

.2 Phase 2: Supervision of Works (Months 3 to 25)

This is the core of the assignment. The Consultant shall supervise: (i) all closure activities of the dumpsite and; (ii) all temporary waste disposal activities of incoming fresh waste, ensuring they are executed as per the contract. Key areas of supervision include:

A. Works Supervision & Quality Assurance/Quality Control (QA/QC)

- **Waste Reshaping and Earthworks**
    - Monitor daily the Contractor's waste profiling and compaction

activities to ensure target densities are achieved.

- Supervise all excavations, ensuring safety measures (including gas monitoring, CO and temperature checks) are strictly followed.
- Verify that temporary and permanent slopes adhere to the specified gradients.
- Verify that the gas monitoring equipment is calibrated before earthworks commence
- Define Lower Explosive Limit percentage threshold as the mandatory stop-work trigger.
- Monitor dust and litter abatement measures.

Waste Disposal Operations Supervision

The Consultant shall supervise and monitor the Contractor's waste disposal operations, including:

- Waste Reception: Inspection of incoming waste, verification of delivery documents, weighing, registration and rejection of inadmissible waste.
- Waste Transport: Monitoring internal waste transportation, traffic arrangements and safe access to disposal areas.
- Unloading and Control: Monitoring unloading, inspection and acceptance of waste at designated disposal locations.
- Waste Placement and Compaction: Monitoring waste placement, spreading, compaction and slope stability in accordance with the specified operating procedures.
- Daily Cover: Monitoring the proper application of daily cover.
- Reduction of Nuisances: Monitoring measures to control dust, odour, litter, waste spillage, pests and fire risks, and ensuring site cleanliness and maintenance.

- **Geosynthetics Installation:**
  - Witness all conformance testing for geotextiles, Geosynthetic Clay Liner (GCL), HDPE geomembranes, and geo-drain layers at the frequencies specified in the technical specifications.
  - Inspect all sub-grade preparation before liner placement.
  - Supervise the installation of geogrids for the Mechanically Stabilized Earth Wall (MSEW), ensuring correct orientation, tensioning, and connection to Keystone facing units.

- Oversee the installation and testing of all HDPE seams (non-destructive: vacuum box, air pressure; and destructive sampling) as per specifications.
- Witness the construction and successful testing of the mandatory test field (min. 200m²) before regular lining works commence.
- Enforce a minimum destructive seam test frequency.

- **Gas and Leachate Collection System:**
  - Supervise the drilling of all gas and nested wells.
  - Inspect and test all HDPE pipes, manholes, and HDPE fittings.
  - Witness the installation of submersible pumps.
  - Supervise the construction of gas substations, the gas compressor station, the high-temperature flare, the gas condensate trap and installation of Combined Heat and Power (if applicable)
  - Oversee the installation of the gravel filter around the collection wells.
- **Stability Pad:**
  - Prior to commencement of stability pad works, review the stability calculations and confirm they remain valid against the actual baseline topographic and bathymetric survey data. Any discrepancy shall be reported to the Employer before works proceed.
  - Verify the quality and gradation of rockfill and construction and demolition waste (CDW) used for the stability pad.
  - Monitor underwater placement using sonar or other approved methods and survey the reached levels over a grid.
- **Roads and Paved Areas:**
  - Supervise the construction of paved and unpaved roads.
  - Ensure proper compaction of subgrade and base courses.
- **Surface Water Management:**
  - Supervise the construction of rip-rap-lined perimeter drains, culverts, and collection chambers.

- **Ancillary Facilities**
    - Supervise the construction of all buildings: Guard Room, Administrative Building, Weighbridge and Control Room, Equipment Parking Shed, and Control & Generator Room.
    - Verify compliance with all structural, architectural, finishing, and MEP specifications.
    - Supervise the installation and calibration of the weighbridge.
    - Establish a weighbridge oversight protocol specifying re-calibration frequency, data recording requirements, and the procedure for resolving discrepancies in recorded waste quantities. Weighbridge data shall be included in Monthly Progress Reports.
- **Environmental, Social, Health and Safety Safeguards (ESHS) (please refer to Annex 1 for the ESHS Requirements):**
    - Monitor the Contractor's compliance with the ESMP, including dust control, noise management, and water quality monitoring.
    - Monitor and report on community health and safety, complaints and grievances.
    - Monitor and report on labor and working conditions, ensuring the Contractor provides contracts, proper welfare facilities, insurance against injuries and death, training, and amenities, etc.
    - Monitor the Contractor's full compliance with (Health and Safety Requirements), including gas monitoring, fire prevention, excavation safety, and the provision of PPE (more details are presented in Annex 1).
    - Conduct regular H&S inspections and audits.
    - Verify the Contractor's emergency response plans and preparedness.

B. Contract Management and Administration (FIDIC Red Book Role)

- **Interim Payment Certificates (IPCs): Submitted monthly after the Engineer's review and certification for the Employer's approval. The Employer/Project Implementing Entity shall process certified IPCs in accordance with the applicable World Bank disbursement and payment procedures.** Receive, review, and certify the Contractor's monthly IPC applications within the

28-day period stipulated by FIDIC.

- Verify measured quantities against the Bill of Quantities (BoQ) and the approved schedule of rates.
- Conduct joint measurements with the Contractor as required.
- Recommend to the Employer the amount to be paid, including any deductions for liquidated damages or non-compliant work.

- **Variations**
  - Review and evaluate any proposed Variation Orders (VO) submitted by the Contractor.
  - Prepare detailed variation cost estimates and justifications.
  - Issue recommendations on Variation Orders and, where delegated, issue instructions in accordance with FIDIC RED Book Conditions of Contract , subject to the Employer's prior written approval and the applicable World Bank prior-review requirements and thresholds set out in the approved Procurement Plan, as updated from time to time. No variation with financial or time implications shall be issued beyond the Engineer's delegated authority.

- **Claims and Disputes**
  - Receive, evaluate, and respond to any Contractor's claim (time extension or additional payment) within the required timeframe (42 days).
  - Make a fair and impartial determination on the claim, acting as an "engineer" as defined under FIDIC.
  - Maintain detailed records of all claims and determinations. If a dispute is not resolved, the Consultant shall assist the Employer in preparing for Dispute Adjudication Board (DAAB) proceedings.
- **Time Management :**
  - Monitor the Contractor's progress against the Works' program
  - Review and consent to any revised programs submitted by the Contractor as long as these are in conformity with Contract, otherwise issue Notice to the Contractor to update the Program for compliance with the Contract.[in accordance with FIDIC Red Book Conditions of

Contract

- Determine and certify any extensions of time (EOT) due to qualifying events.

- **Defects :**
  - Maintain a Defects Liability Period (DLP) register for all completed works.
  - Instruct the Contractor to remedy any notified defects within the DLP.

.3 Phase 3: Commissioning, Handover, and Project Close-out (Months 26 to 28 and beyond)

- **Testing and Commissioning:**
  - Witness and approve all testing and commissioning of the gas and leachate systems, including the flare and leachate evaporation ponds.
  - Witness the performance testing of the weighbridge, CCTV, and fire alarm systems.

- **Taking-Over:**
  - Upon successful Testing & Commissioning and the Engineer's verification through a topographic survey of the final capped surface (results shall be compared against design grades and slopes, and any non-conformance documented and resolved) the take-over certificate shall be issued.
  - Inspect sections of the works and issue Taking-Over Certificates as defined under FIDIC Red Book conditions of contract. The main certificate will be for the entire completed works.

- **As-Built Documentation:**

- Review and approve the Contractor's "As-Built" drawings and documentation (4 hard copies and 4 soft copies in DWG and searchable PDF format, in both English and Arabic).

- **Payment at Completion and Final Account:**
  - Review the Contractor's Statement at Completion , indicating the total entitlements of the Contractor under the Contract including all dues from variations and adjustments, and issue the related Interim Payment Certificate.

- Upon issue the Performance Certificate in accordance with FIDIC Red Book Conditions of contract, the Engineer shall review the Final Statement by the Contractor in accordance with FIDIC Red Book Conditions of contract, and issue the Final Payment Certificate .

- **Project Completion Report:**
    - Prepare a comprehensive Project Completion Report summarizing the project's achievements, challenges, lessons learned, and recommendations.

SECTION 4: REPORTING AND DELIVERABLES

1. The Consultant shall produce and submit the following key deliverables to the Employer (**Inception Report:** Submitted within 30 days of contract signature, including the mobilization plan, supervision organization, communication protocol, document control system, QA/QC procedures, IPC certification workflow, claims and variation management procedures, ESHS monitoring framework, risk register, and reporting templates.
2. **Monthly Progress Reports:** Submitted by the 7th working day of each month, summarizing progress, issues, and planned activities for the next three months. (Six copies in English, each with an Arabic translation of the executive summary).
3. **Interim Payment Certificates (IPCs):** Submitted monthly for the Employer's review
4. **Monthly Environmental, Social, Health and Safety (ESHS) Monitoring Report:** Detailing compliance with the ESMP, ESIA, OHS requirements, labor standards and corrective actions.
5. **Variation Order Requests and Justifications:** Submitted as they arise, with a full justification and cost analysis.
6. **Claim Determinations:** Issued as required under FIDIC, with full reasoning.
7. **Non-Conformance and Corrective Action Register**: Maintained continuously and submitted monthly, including NCRs, corrective action requests, inspection and test plan status, hold/witness points, material approval logs, test results, and closure evidence.
8. **Risk Register**: Updated monthly to cover landfill gas, fire, slope stability, leachate, quarry lake interface, ongoing waste disposal, ESHS risks,

delays, variations, and claims.

9. **Taking-Over Certificates:** Issued as sections or the whole of the works are complete.

10.-. **Final Project Completion Report and Final Account Package**: Submitted within 60 days of the issuance of the Performance Certificate, including lessons learned, final ESHS performance, final quantities, variations, claims status, as-built documentation status, and recommendations for DNP follow-up.

11. **Minutes of all Progress Meetings:** Submitted to the Employer within 2 days after each meeting.

SECTION 5: CONSULTANT TEAM AND QUALIFICATIONS

The Consultant shall propose a multidisciplinary team with the following key personnel (minimum requirements). The Consultant's proposal must include CVs and relevant certifications for each.

Position	Minimum Qualifications and Experience
Team Leader / (Engineer's Representative)	• Bachelor's degree in Civil or Environmental Engineering (Master's preferred). • Minimum 15 years of experience in the management and supervision of large-scale infrastructure projects, with at least ten (10) years in solid waste management or geotechnical engineering. • Proven experience acting as the " Engineer Representative " under FIDIC Red Book conditions for at least two (2) projects in solid waste management of similar complexity, one of which for dumpsite closure. • Professional registration/certification in Egypt or a recognized international body.
Senior Geotechnical / Geosynthetics Engineer	• Bachelor's degree in Geotechnical or Civil Engineering. • Minimum 10 years of experience in the design and supervision of geosynthetic lining systems (HDPE, GCL, geotextiles) for landfill or mining applications.
	• Experience with QA/QC testing and installation of geosynthetics.

Environmental Expert	– Master's degree (preferred) or bachelor's degree in Environmental Science, Environmental Engineering, Ecology, or a related field. – Additional certifications such as ISO 14001 Lead Auditor or Environmental Impact Assessment (EIA) certification would be an asset. – 7+ years of experience in environmental management, with at least 5 years in a supervision ~~or consulting~~ role. – Extensive experience in waste management, landfill rehabilitation, and industrial environmental compliance. – Prior experience conducting environmental audits, impact assessments, and compliance monitoring on large-scale infrastructure or waste projects. – Regulatory Compliance & Auditing: Strong knowledge of national environmental laws, and familiarity with WB Environmental and Social Framework, and World Bank EHS guidelines. – Monitoring & Reporting: Ability to develop, review and evaluate environmental performance data, ensuring compliance with permits and standards. – Impact Assessment & Mitigation: Expertise in air quality, water management, biodiversity, and waste control. – Stakeholder Engagement: Experience in engaging with environmental agencies, local communities, and project stakeholders. Capacity Building: Ability to train and guide the contractor's environmental team on best practices.
Health and Safety Supervisor	– Master's degree (preferred) or bachelor's degree in Occupational Health & Safety, Industrial Hygiene, Environmental Health, or Engineering. – Internationally recognized certifications such as NEBOSH Diploma, IOSH, OSHA 500, or ISO 45001 Lead Auditor are strongly preferred. – 70+ years of experience in construction site safety, risk assessment, and occupational health management. – Prior experience supervising or implementing large-scale waste management, landfill closure, or infrastructure projects. – Strong background in incident investigation, contractor compliance monitoring, and emergency response planning. – Knowledge of Regulatory Compliance & Auditing: Expertise in national safety laws, and familiarity with IFC/World Bank OHS standards, and ISO 45001. – Experience in Risk Management & Hazard Control: Ability to evaluate high-risk activities and ensure safe work practices. – Accident Investigation & Reporting: Strong experience in root cause analysis, safety audits, and corrective action plans. – Training & Capacity Building: Experience in conducting safety drills, toolbox talks, and worker training programs. – Emergency Preparedness: Ability to oversee fire safety, first aid procedures, and crisis management plans.

Health and Safety Officer	– Bachelor's degree in Occupational Health & Safety, Industrial Hygiene, Environmental Health, or Engineering. – Internationally recognized certifications such as NEBOSH Diploma, IOSH, OSHA 500, or ISO 45001 Lead Auditor are strongly preferred. – 5+ years of experience in construction site safety, risk assessment, and occupational health management. – Prior experience supervising large-scale waste management, landfill closure, or infrastructure projects. – Background in incident investigation, contractor compliance monitoring, and emergency response planning. – Knowledge of Regulatory Compliance & Auditing: Expertise in national safety laws, IFC/World Bank OHS standards, and ISO 45001. – Experience in Risk Management & Hazard Control: Ability to evaluate high-risk activities and ensure safe work practices. – Accident Investigation & Reporting: Experience in root cause analysis, safety audits, and corrective action plans. – Training & Capacity Building: Experience in conducting safety drills, toolbox talks, and worker training programs. Emergency Preparedness: Ability to oversee fire safety, first aid procedures, and crisis management plans.
Social and Gender Expert	– Master's degree (preferred) or bachelor's degree in Social Sciences, Gender Studies, Sociology, Anthropology, Development Studies, or Human Rights. – 7+ years of experience in social impact management, labor conditions, and gender-sensitive planning in infrastructure or waste management projects. – Experience in conducting social audits, implementing grievance redress mechanisms (GRMs), and addressing community concerns. – Prior experience working with marginalized groups, labor rights, and social safeguard policies under IFC/World Bank guidelines. – Strong experience in consulting local communities, NGOs, and workers to ensure inclusive decision-making. – Knowledge of national labor laws, gender inclusion strategies, and international labor standards (e.g., ILO conventions). – Ability to oversee and improve grievance handling mechanisms for workers and affected communities. – Experience on prevention and management of GBV cases specifically SEA/SH and sufficient level of awareness of accountability and response as well as different referral pathways. – Provide guidance to contractors on improving social performance and gender inclusion.

Landfill Gas (LFG) & Leachate Engineer	• Bachelor's degree in Mechanical or Environmental Engineering. • Minimum 7 years of experience in the design, supervision, and commissioning of LFG and leachate collection and treatment systems for landfills.
Quantity Surveyor (QS)	• Bachelor's degree in Quantity Surveying or Civil Engineering. • Minimum 10 years of experience in the measurement and certification of civil works contracts, with experience under FIDIC Red Book conditions.
Electrical & Instrumentation (E&I) Engineer	• Bachelor's degree in Electrical Engineering. • Minimum 7years of experience in supervising the installation of weighbridges, CCTV systems, fire alarms, and MEP works for industrial buildings.
Mechanical Engineer	Bachelor's degree in Mechanical Engineering; minimum 7 years of experience . supervising mechanical installations for landfill, waste management, or industrial infrastructure projects, including pumps, piping, flare-related mechanical systems, and testing/commissioning activities.
Two Site Engineers	Bachelor's degree in Civil Engineering; minimum 7 years of site supervision experience on civil infrastructure works, preferably including landfill closure, earthworks, roads, drainage, buildings, and geosynthetics interface activities.
QA/QC Engineers	Bachelor's degree in Civil Engineering or related discipline; minimum 7 years of QA/QC experience, including inspection and test plans, material approvals, non-conformance management, testing registers, and quality documentation for civil works.
Document Controller	Relevant degree or diploma in administration, engineering, information management, or related field; minimum 7 years of experience managing project correspondence, submittals, registers, version control, meeting minutes, and electronic document management systems.

Construction Planner	Bachelor's degree in Civil Engineering, construction management, or related field; minimum 10 years of planning experience using recognized scheduling software, including baseline program review, progress monitoring, delay analysis, and EOT support under FIDIC contracts.
Surveyor	Relevant degree or diploma in surveying, quantity surveying, civil engineering, or related field; minimum 7 years of experience in topographic surveying, quantity-related measurements, setting-out verification, as-built survey review, and survey records for civil infrastructure projects. The Surveyor shall provide survey verification support during earthworks, stability pad construction, road works, drainage works, as-built surveys, and joint measurements.

Note: The Consultant shall propose a staffing schedule and level of effort commensurate with the work program. Core supervision staff shall be full-time on-site during active construction, while specialist experts may be deployed full-time during critical activities and intermittently as justified by the methodology and approved by the Employer.

SECTION 6: EMPLOYER'S OBLIGATIONS

The Employer shall provide the Consultant with:

- All necessary permits and authorizations for the Consultant's staff to access the project site.
- Timely review and feedback on all submissions and recommendations made by the Consultant.
- Access to all project-related information and reports, including the main contract and its appendices.
- Payment for services in accordance with the approved budget and schedule.

SECTION 7: CONTRACT DURATION AND REPORTING

The contract is expected to be for a duration of 28 months, coinciding with the duration of the Main Works Contract. Support during the Defects Notification Period (DNP) shall be aligned with the DNP defined in the Main Works Contract and reflected in the Consultant's contract, level of effort, and payment schedule. The Consultant shall submit a detailed **Inception Report** within 30 days of contract signature. This will be followed by **Monthly Progress Reports** and other deliverables as outlined in Section 4.

SECTION 9: SPECIAL WORLD BANK PROVISIONS

1. **Anti-Corruption:** The Consultant and its personnel shall comply with the World Bank's Anti-Corruption Guidelines.
2. **Conflict of Interest:** The Consultant shall not have any conflict of interest as defined in Section III of the Procurement Regulations. The Consultant cannot be a sub-contractor to the Main Works Contractor.
3. **Use of Sub-consultants Subject to Prior Approval: The** Consultant shall not engage any sub-consultants without the prior written approval of the Employer and, where applicable, the World Bank.

Disclosure of Beneficial Ownership: The successful Consultant shall disclose its beneficial ownership as part of the Contract Award process, using the World Bank's Beneficial Ownership Disclosure Form.

Annex (1)

Environmental, Social, Health and Safety Requirements

1. General Obligations

The Supervision consultant shall supervise the implementation of Environmental, Social, Health, and Safety (ESHS) requirements during the dumpsite closure and rehabilitation works including (civil works and disposal of incoming fresh waste) (As per section 1.2).

The consultant shall ensure all project activities comply with:

- The World Bank's Environmental and Social Framework (ESF), including the cleared Environmental and Social Impact Assessment (ESIA) studies from the World Bank and the Egyptian Environmental Affairs Agency (EEAA)
- Relevant Egyptian environmental, labor, health and safety laws and regulations;
- Applicable international good practices in ESHS.
- The consultant shall hire qualified Environmental, Social, Health and Safety experts during the supervision phase.

All the above instruments are available on the following link: https://www.eeaa.gov.eg/Project/127/Details

2. Detailed Tasks

2.1 Dumpsite Closure Supervision Activities

The consultant shall supervise and monitor the implementation of the ESHS requirements during the dumpsite closure activities **(Closure including civil works and disposal of incoming fresh waste)** and shall at all times take necessary measures and provide appropriate advice to the PCU and the TIU to enable the construction contract to ensure full adherence to the ESHS requirements, in conformity with the contract conditions and specifications.

General Supervision Activities

- Review implementation of the approved ESIA, including compliance to the World Bank Environmental and Social Framework (ESF), and as determined in the Project Environmental and Social Commitment Plan (ESCP) and following up to ensure issues raised are promptly addressed, and/or contractual measures invoked.
- Support the PCU in constructively troubleshooting and resolving problems related to non-compliances with ESMPs as well as any emerging issues on ESHS management aspects.
- Review ESHS plans prepared by the contractor and ensure their implementation, as the Contractor - Environmental and Social Management Plan (C-ESMP), including but not limited to the environmental management plan, Occupational Health and Safety (OHS) plan, emergency response and preparedness plan, Leachate management plan, landfill gas management plan, odor management plan, water management plan, labor management plan, community health and safety plan, traffic management plan, air quality management plan, waste management plan, SEA/SH action plan, and stakeholder engagement plan and suggest any modifications, if needed.

- Review the Contractor ESMP (C-ESMP) and advise the PCU to approve once satisfactory to the Consultant.
- Assist the PCU in ensuring that the environmental, health and safety and social risks management measures incorporated in the Contractor environmental and social management plans (C-ESMPs) are being implemented by the contractor.
- If necessary and justifiable, discuss with PCU the need to amend C-ESMP.
- Review and consider the ESHS risks and impacts of any design change proposals and advise if there are implications for compliance with ESMP, consent/permits and other relevant project requirement.
- Check the ESHS performance through daily presence in all work sites.
- Prepare a monthly ESHS report summarizing the findings, feedback, and corrective actions, and submit it to the PCU for review and approval.
- Undertake audits and inspections of Contractor's accident logs, community liaison records, monitoring findings and other ESHS related documentation, as necessary, to confirm the Contractor's compliance with ESHS requirements.
- Advise on any penalties or remedies, based on the contractual clauses and obligations that should be imposed on the contractor in case of non-compliance as per the contract clauses.
- Check that the Contractor's actual reporting (content and timeliness) is in accordance with the Contractor's contractual obligations.
- Agree and follow-up on remedial action/s and their timeframe for implementation in the event of a noncompliance with the Contractor's ESHS obligations.
- Undertake liaison, from time to time and as necessary, with project stakeholders to identify and discuss any actual or potential ESHS issues.
- Provide input to PCU on the related works to support them in preparing quarter ESHS Progress Reports to be submitted to the World Bank.
- Maintain a site report with the contents and format to be agreed with the PCU. Site diaries will record all events pertaining to administration of contract, instructions issued to the contractor, pertinent requests from the contractor and any other information which will be of assistance in resolving any dispute or claims. The site diary will include the daily diary sheets from members of the supervision staff, and instructions and observations made by the representative of the PCU during any of his site visits.
- Ensure appropriate representation at relevant meetings including site meetings, and progress meetings to discuss and agree appropriate actions to ensure compliance with ESHS obligations. Also, participation in the project supervision missions, upon the request of the PCU or the World Bank (WB).
- Upon request from the PCU, prepare Root Cause Analysis reports for incidents which are classified as serious or severe occupational health and safety, environmental and social incidents.

Detailed Activities for the Environmental Aspects

- The Supervision Consultant shall be presented in the dumpsite on a daily basis to supervise the Environmental performance and to ensure the presence of the contractor's competent environmental expert in the site.
- Support the PCU to keep a track of the environmental and social clearances and permits

required by the contractor from relevant government entities;

- Ensure, through document verification and other practical evidence, that different types of wastes (solid, liquid and hazardous) are well managed including prevention at source, recycling, storage, transportation and final disposal, if necessary.
- Follow-up with the contractor on the periodic environmental measurements at different sites (as per the ESMP) to ensure compliance with air and noise emission levels and other pollutants.
- Conduct regular walk throughs onsite and surroundings to ensure that surrounding fauna and flora are not negatively affected by the ongoing works.
- Ensure proper housekeeping measures in all site facilities.
- Ensure that the contractor monitor the groundwater quality and results that shows compliance with WB General EHS standards which refer to the US EPA National Recommended Water Quality Criteria: pH Level, Soil Moisture Content, Heavy Metals, Organic Compounds may originate from waste materials, Nutrients and Fertilizers especially if there is a potential for leaching into groundwater.
- Ensure that the contractor monitor the leachate quality: Analyze leachate from the waste management facility, as it can be a direct indicator of potential groundwater contamination.
- Ensure no spills or wastes are affecting soils or water bodies.
- Monitor and follow-up on the required contracts between the contractor and the disposal companies responsible for waste water and solid waste disposal within the same site (closure and disposal of incoming fresh waste)
- Monitor the wastewater collection (septic tanks) from construction sites and workers facilities and report to the PCU in any case of noncompliance or overflow.

Detailed activities for the Health and Safety aspects:

- The Supervision Consultant shall be presented in the dumpsite on a daily basis to supervise the Health and Safety performance.
- The supervision consultant shall ensure that the health and safety risks and hazards within the worksite are properly determined, analyzed and documented in the Contractor OHS plans/ manuals.
- Ensure that contractors have competent OHS leadership team (officer, supervisors, foreman…etc.) by checking the CVs of the OHS team and providing advice and recommendations to the PCU for actions needed to strengthen their capacity about the competency and adequacy of the contractor OHS team.
- Ensure that disposal activities of incoming fresh waste do not include any conflict with the dumpsite closure activities that may cause health and safety hazards.
- Ensure that all works onsite are attended and supervised by qualified OHS team members. Number of OHS team members to be proportionate to number of workers on the ground, as per national requirements. For moderate and high-risk activities, ensure that OHS officer is supervising the activity and provided authority to stop works (Stop Work Authority) if needed until the risk factors are eliminated.
- The Supervision Consultant shall review the manual for safety at road works, which includes Occupational Health and Safety Plan (OHSP) and Traffic Management Plan (TMP) (e.g., facilities for pedestrians, signs, markings, and safe transportation of workers

and materials to and from the site) aiming at safety of project workers, nearby communities and road users. The Consultant shall ensure that

the principles and measures stipulated in the manual are adopted and properly implemented by the contractor.

- Ensure that the Contractor is implementing adequate measures to eliminate, prevent or control the risks which include but not limited to (Working at Height - Moving Objects - Slips, Trips, & Falls – Noise - Airborne Fibers & Materials – respiratory diseases – Electrocution -Hand Arm Vibration Syndrome - Material & Manual Handling – Collapse- and in accommodation facilities).
- Ensure that the contractor has proper OHS labor standards and oversee OHS measures taken on contractor camps, workshops, storage facilities, workers accommodation facilities (if provided by the contractor) and construction machinery sites.
- Review of incident/accident logs and ensure proper documentation of all OHS incidents including near misses, minor, lost time incidents and fatalities.
- Ensure the regular reporting of any first aid case, near misses and accidents such as slips, falls, excavation collapse and falls from height. and notify the PCU as per the ESCP, then prepare Root Cause Analysis report in case of serious and severe cases.
- Check and ensure that all records are in place.
- Ensure that the emergency response plan prepared by the contractor is being implemented properly and the drills (as fire) are done regularly.
- Ensure the Regular inspection and maintenance of all construction equipment, such as electric equipment, plugs, and wires.
- The consultant shall monitor OHS compliance through regular safety audits, incident tracking, PPE usage observations, confined space entry logs, and heat illness reporting. Contractors will be held accountable for meeting OHS KPIs defined in the contract.

Detailed activities for the social aspects:

- The Consultant shall be present on a daily basis at the Abu Zaabal site to conduct audits, supervision, and inspections at any location where the Contractor is undertaking activities related to the Works, in order to verify the Contractor's compliance with the applicable social requirements. Inspections may be conducted with or without the presence of the Contractor and/or relevant Client representatives. The Consultant shall also inspect and supervise the Contractor's compliance with applicable Egyptian laws and regulations governing labor and working conditions.
- Review and approve ESHS provisions of method statements, implementation plans, gender-based violence (GBV)/SEA/SH prevention and response action plan and all relevant Contractor's documents.
- Develop monitoring system and check worker daily attendance sheets including names, ID number and date of birth and ensure that recorded names are actually present on-site.
- Ensure non-discrimination in hiring on site and the adequacy of the arrangements for recruiting labor including through having appropriate contracts – adhering to the LMP, ESF, and national laws – stipulating the terms of payments and other workers' rights (e.g., leaves, extra hours, etc.).
- Monitor and ensure timely payment of wages, fair working hours, and correct implementation of contract clauses.

- Ensure the adequacy of the arrangements in workers' working conditions, including informing workers about their rights and duties, and ensuring proper welfare facilities (i.e.: rest areas, restrooms, clean drinking water, changing rooms, prayer area, etc.) in a sufficient and appropriate conditions meeting the national laws and the WB project standards.
- Ensure adequate procedures are in place to prevent child labor and any forced labor, and detect any noncompliance by contractor or sub-contractor to the National Labor Law, other international treaties and the project ESF requirements.
- Check that the insurance against work related accidents covers employees/workers of contractors and sub-contractors covering injuries and/or deaths that take place within the work site/sites and/or during commuting to and from work. The consultant should also check regular on the adequacy of coverage (both for number of insured persons and value of insurance) and the validity of the insurance policy dates.
- Ensure presence of code-of-conduct on site and the understanding and the signature of the code of conduct in the contractor's contract by all types of workers, including those hired by sub-contractors and contractor's engineers and supervisors and that the language includes clear and explicit language about behavior appropriateness and preventing sexual exploitation and abuse/sexual harassment (SEA/SH) both on the work cycle and in the interaction with the communities including at the residential places of the workers.
- Ensure that workers receive regular training on the Code of Conduct, including gender-based violence prevention and workers' rights, while strictly prohibiting and discouraging any form of reprisal or retaliation by the Contractor against workers who express concerns, exercise their rights, or request improvements to working conditions.
- Ensure that adequate measures for suppliers are in place as per ESS2 and the project LMP.
- Carry out random and sudden inspection to the accommodation sites of the workers and ensure the accommodation conditions are safe and appropriate adhering to national laws and IFC Workers' Accommodation guideline.
- Support the PCU and contractor in developing GRM, documenting, addressing and following up on any grievances received related to the project, including on ESHS issues.
- Ensure that grievance mechanism (GM) for workers is established, announced and utilized and verify that the GM has diverse channels (including anonymous channels), that workers are comfortable to use these channels and that their complaints are timely addressed.
- Ensure that any GBV/SEA/SH instances and complaints that come to the attention of the consultant are dealt with confidentially, following the approved SEA/SH prevention and response action plan and the survivors' centered principles.
- Follow-up on the resolution of any complaints or grievances in relation to construction health and safety, labor conditions or environmental pollution, disturbance of population.
- Carry out spot checks (through survey or structured discussions or focus groups) to verify with the workers their satisfaction with the labor practices and procedures and ensure that their concerns are timely channeled to the contractor.
- Ensure that consultation activities are carried out with the surrounding communities and any relevant stakeholders as per the ESMP and the Project Stakeholder Engagement Plan.
- Ensure that Grievance mechanism for community members is established, announced and utilized and verify that the GM has diverse channels (including anonymous channels), that different groups of community members including women are comfortable to use and that their complaints are timely addressed.

- Verify with the neighboring communities of the workers accommodation units that the workers are complying with the code of conduct and that no misconduct or inappropriate behavior is encountered.
- Follow up on the results of any inspections or audits by labor, health and safety regulatory authorities.

ESHS Qualifications:

The ESHS team to undertake the above-mentioned tasks is as per section 5. The ESHS team should be hired after taking the approval of the PCU and the TIU.