The Arab Republic of Egypt
Gharbia Company for Water and Wastewater

Kitchener Drain Project - Wastewater Component

Request for Clarifications

for

Rehabilitation (Rebuild) of Tanta Wastewater Treatment Plant 100,000 m^3/day

Ref. No./ Contract No.	**2/GH/KP/Works/2022**
Implementing Entity	**Gharbia Company for Water and Wastewater**
Loan Operation No.	**N° FI 87454 Serapis No 2017/0090**
Issue Date	**December 2023**

No.	Question	Answer
1) <u>Technical Clarifications (From Q.1 to Q.220)</u>		
1A) Processes, Mechanical & Civil (From Q.1 to Q.181)		
Q.1	Is it allowed to use the existing Water Pipeline 4" for water consumption by using Consumption gauge meter.	Yes, it is allowed to use the existing water pipeline 4'' after installing a water consumption gauge meter and paying for the water used.
Q.2	The existing administration building rehabilitation is out of scope. Please confirm.	The existing administration building rehabilitation is out of scope of the current contract, except for the Scada control room.
Q.3	The existing WWTP # 3 needs rehabilitation is it out of scope please confirm.	Confirmed. Rehabilitation of the existing (stream 3) of Tanta WWTP is out of scope of the current contract.
Q.4	The structure of the inlet pump station is in good condition and will be retained without modification. Please confirm that the refurbished scope does not include the civil and architectural scope of work for the existing inlet pump station structure. Kindly confirm that rehabilitation of the existing plant is out of scope.	Any work related to the existing WWTP (Stream 3) is out of the scope of the current contract. The existing WWTP (Stream 3) is separate from the new WWTP of the current contract.
Q.5	Please advise if the client will provide the contractor with free water and electric power necessary for the works.	Please refer to the following section (Sec. 2.2 of The Schedule of Payments): **2.2 Water and Electricity Costs** *The contractor shall take into consideration that he will pay for the water consumption he needs during the construction, testing, or commissioning activities for his all facilities that include pipelines, water retaining structures, and any other facilities. Also, the Contractor during construction phase shall pay for his power consumption that may be taken from the nearest electricity source allocated within the construction plant. The contractor shall install water and power meters to measure his consumption and pay its costs. All these costs will be included in the Contractor items prices.*
Q.6	Please confirm the operating time for dewatering operation is 24h/d 6 days/week.	Confirmed. Sludge dewatering is 24h/day.

No.	Question	Answer
Q.7	As per IfT 2c., the Contractor is obliged to modify his submitted design to the satisfaction of the Engineer recommendation and accordingly fulfil the final approved design without additional cost! The client is requested to revise this clause and limit the obligations of the Contractor with the fulfilment of the specifications of the tender documents. Any further requirements, not covered by the tender documents, shall be treated as a variation in accordance with Article 13 of the FIDIC Yellow Book	The design submitted to the Engineer for approval shall comply with the outline design, technical specifications and the tender conditions. Approval of the detailed design by the Engineer shall be subject to the same conditions. The Engineer is not authorised to instruct additional requirements in excess of that given in the Contract.
	Please confirm that any modifications requested are within Tender Documents requirements and modification to meet any additional requirements will have cost implications.	
	Kindly confirm our understanding that any modification that may be requested by the Engineer to the submitted design shall be as per the Tender Documents & Specifications and shall be dealt by as a Variation under Clause 13 in the Contract Conditions.	
Q.8	Kindly provide as built civil drawings, hydraulic profile, cable, and pipe routing for the existing WWTP.	No as-built drawings are currently available. Any missing data could be obtained from the site after having Gharbia WSC permission. The existing WWTP (Stream 3) is separate from the new WWTP of the current contract.
	Kindly provide as built PID's for the existing WWTP.	
	Kindly provide us with as built for the underground networks for the intake and bypass and discharge pipes.	
	Kindly provide us with as built for the tie in points. 1- Water supply. 2- Storm and sewage networks.	
	Please provide Number and diameter of raw inlet wastewater pipes, residual pressure.	
	Please provide as built drawing for master plan showing raw water inlet pipes, bypass pipes and effluent pipes and all piping crosses the area reserved for the new plant.	
	Please provide As-built drawings for all existing facilities / structures / utilities inside the plot plan which will interface with the design and execution works of new Tanta WWTP	
Q.9	Please provide drawing for underground existing piping and cables	Tanta 1&2 has recently been demolished which has removed the majority of services in the area. The Employer believes the site to be free of any existing infrastructure except for the following services which are shown on attached drawing No. 14 in Annex#5. • the 800mm dia. pressure main which currently runs through the location of the proposed headworks, • The services which run down the southwest side of the site and, • the overflow pipe which runs through the proposed location of the future drying beds.
	Will the surface cables next to the fence be rerouted because they are located in the same path of the new road and they are the feeder of the current station	
	Please confirm that re-routing of any existing infrastructure (piping, cables, trenches, etc.) shall be out of the tender scope and the site shall be handed over free of any obstacles above ground and underground.	
	"According to site visit on Thursday of 19 October: We noticed the following: 1- Force main pipe of 800 mm for stream No. (3) intersects the new plant headworks shown in (tender general layout) drawing. 2- Bypass pipe for stream No. (3) intersect the new drying beds shown in (tender general layout) drawing. Please confirm that the relocation of these lines is out of our scope."	

No.	Question	Answer
		Of the above services the 800mm dia. pipe will be the only service relocated. This will be done by the WSC before Contract signature. The other services will remain in place. However, this does not relive the Contractor of performing normal due diligence to protect the services. Any available services data can be obtained from the Gharbia WSC and the Contractor is reminded that the Contractor needs to ensure the site is free of services before commencing work.
Q.10	Please provide client approved vendor list.	No vender list will be provided. Please refer to: Section "Scope of Supply of Plant and Installation Services by the Contractor", and "Employer Specific Requirements" ''All electro-mechanical equipment shall be of heavy-duty performance, and to standards applied in North America, Europe, Japan, or local manufacturing origin''.
Q.11	Section VII, WWTP Facilities Requirements, Sludge Treatment Scheme Despite the size of the treatment plant (150 mld in its final phase, current tender is 100 mld), the plant is a CAS without sludge stabilization (neither anaerobic nor aerobic sludge digestion) and without mechanical dewatering, but only thickening and sludge drying beds shall be offered. Considering the huge area required for the sludge drying beds, especially considering its final extension, we recommend implementing mechanical sludge dewatering, e.g. belt presses The client is requested to reconsider whether mechanical sludge dewatering shall be mandatory to all bidders or not?	For the current contract, it is confirmed that: 1. Average flowrate = 100,000 m³/d. 2. No sludge stabilization (neither anaerobic nor aerobic sludge digestions). 3. Only gravity thickeners and drying beds are considered for the sludge processing. 4. Mechanical sludge dewatering is not considered for the current contract.
Q.12	Effluent quality There is a contradiction in the required effluent quality: As per Schedule of Guarantees, Schedule 28, 28.1 Guarantee for Process Performance and Performance Specification, Table 2: Influent and Effluent Wastewater Quality of the WWTP The client is requested to clarify the required effluent quality and define the limits of all relevant constituents in the effluent at the measurement point.	Please refer to the following section (Sec. 28.1 of The Schedule of Guarantees) "Guarantee for Process Performance", and the table of Effluent Quality Guarantee Values for Tanta WWTP. The required effluent quality and parameters limits are shown in the below Table: Please note that there is

<table>
<tr><th>No.</th><th>Question</th><th>Answer</th></tr>
<tr><td></td><td>Please note that a discrepancy is found between Table 2: Influent and Effluent Wastewater Quality of the WWTP.</td><td>no tertiary treatment and only secondary treatment.</td></tr>
<tr><td></td><td>Please refer to Tender Forms "WWTP Performance Guarantee: Effluent & Sludge Quality", states that DO concentration in treated effluent shall be greater than or equal 4 PPM. While volume 1 "technical specifications states that "DO concentration: 2-4 mg/L"

Please advise the value of DO in aeration tank and effluent to be considered in design.</td><td rowspan="10">
<table>
<tr><th>No.</th><th>Parameters</th><th>Value</th><th>Stage</th></tr>
<tr><td>1.</td><td>BOD_5 (mg\l)</td><td>≤ 20</td><td rowspan="10">Test on Completion, Test after Completion, and Handover Test</td></tr>
<tr><td>2.</td><td>COD – Dichromate (mg/l)</td><td>≤ 30</td></tr>
<tr><td>3.</td><td>Total Suspended Solids (mg/l)</td><td>≤ 30</td></tr>
<tr><td>4.</td><td>Total Volatile Solids (mg/l)</td><td>≤ 18</td></tr>
<tr><td>5.</td><td>Dissolved Oxygen (mg/l)</td><td>≥ 4</td></tr>
<tr><td>6.</td><td>Oil and Grease (mg/l)</td><td>≤ 3</td></tr>
<tr><td>7.</td><td>Coliform (MPN/100 ml)</td><td>≤ 200</td></tr>
<tr><td>8.</td><td>Residual Chlorine, (mg/l)</td><td>0.5 - 1.0</td></tr>
<tr><td>9.</td><td>Dry solid content of the thickened sludge (kg TS/m3)</td><td>≥ 4%</td></tr>
<tr><td>10.</td><td>Dry solid content of the final dewatered sludge</td><td>≥ 40%</td></tr>
</table>
</td></tr>
<tr><td></td><td>Please note that a discrepancy is found between Table 2: Influent and Effluent Wastewater Quality of the WWTP. Please clarify which criteria for treated effluent should be followed.</td></tr>
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<tr><td></td><td>The Required Effluent quality parameter varies between Employer’s requirements and required performance guarantees. Kindly confirm the required effluent quality parameters.</td></tr>
<tr><td></td><td>Treated Water Quality: BOD effluent 20 ppm COD effluent 30 ppm TSS effluent 30 ppm Law No.48/1982 (BOD 60 ppm- COD 80 ppm – TSS 50 ppm)
Please confirm required TSE water quality required.
Is it (BOD/COD/TSS: 20/30/30 ppm) or as per law 48/1982 (BOD/COD/TSS: 60/80/50 ppm),
Please note that for influent COD 800 ppm effluent COD cannot be as low as 30 ppm – as for domestic sewage soluble non-biodegradable COD is around 5% from inlet COD. COD effluent (60 to 80 ppm) is reasonable.</td></tr>
<tr><td></td><td>Please confirm that tender shall follow: Law48 of 1982 for discharge municipal wastewater for Non fresh surfaces. Eight successful combined samples(24H) shall start the DLP and initial handing over as per law48 of 1982. And successful trial operation for three months complying with Law48 of 1982 shall deemed successful trial operation, please confirm.</td></tr>
<tr><td></td><td>Kindly Confirm that the effluent Quality Guarantee according to Egyptian Environmental Law48/1982- as per the common applied for secondary treatment in
Which guarantee the following: COD= 80PPM
BOD= 60PPM TSS= 50PPM
No effluent guarantee mentioned for nitrogen in the law, other parameters than the law shall be qualified
inlet= outlet</td></tr>
<tr><td></td><td>Please confirm the following:
The Effluent Quality Guarantee Values for Tanta WWTP shall be according to the Egyptian Environmental Law 48/1982 only and as per attached (attaching the law)
Hence, table mentioned in the same section page125 (Effluent Quality Guarantee Values for Tanta Wastewater Treatment Plant) shall be replaced by Law 48/1982.</td></tr>
</table>

No.	Question	Answer
	Kindly confirm that Table 2: Influent and Effluent Wastewater Quality of the WWTP Table shall be considered as warranted (rely-on) information	
	Please confirm that tenderer shall follow ECP -17 for limits for biological treatment design without sticking to tender design	
Q.13	Please confirm that the suggested process scheme and design criteria is only for guidance and subject to contractor design complying to applicable standards.	It should be indicated that the suggested process scheme and design criteria provided in the tender documents are not merely for guidance. They are integral components of the project and should not be changed. These specifications have been carefully outlined to ensure that the project complies with applicable standards and meets our specific requirements.
Q.14	As per the mentioned point, please confirm that the consultant basic design is for guidance only and not obligatory to follow especially for Biological Treatment	The treatment processes presented by the PIC in the outline design are obligatory to follow, especially for the biological treatment process. The Contractor is required to develop the detailed design of the WWTP based on the treatment technology as specified in this specification. The design guidelines outlined in the Tender documents must be followed.
	The Project Implementation Consultant (PIC) has prepared the Basic Design for the new Tanta WWTP based on Complete Mix Activated Sludge (Conventional Activated Sludge) treatment technology. The presented basic design (included in this document as Part 3(A) Supplementary Information of Section VII) and the WWTP site layout is indicative only for the suitability of the available land area for the treatment technology. The Contractor is required to develop the detail design of the WWTP based on the treatment technology as specified in this specification, provided that it fit within the site boundary shown on the Drawings (included in this document as Part 2 Drawings of Section VII.• Within the limit of the site boundary, the Contractor is free to integrate his compact design, position and size the various elements of the WWTP as the Contractor considers best but only to the extent that they comply with the requirements set out in the Employer Requirements and other relevant documents. Please confirm that tenderer shall follow ECP-17 for limits for biological treatment design without sticking to tender design	
Q.15	Please confirm that IFAS treatment technology is permitted	Conventional Activated Sludge is the only approved treatment technology.
	Regarding to the Project System Description, Kindly Confirm that biological system advanced continuous SBR which is control in time as SBR (Sequential Batch Reactor) and continuous flow with fixed level as conventional system (with overflow wears) and (without decanting system) is technically accepted.	
Q.16	Please confirm that the mentioned drawings are for guidance only and not obligatory for the contractor	The provided drawings are for guidance only, with the mandatory condition that the identified treatment processes must not be altered.
	Volume 3, Drawing NO.2 In tender document, Drawings, the number and location of units in layout is only for guidance please confirm	

No.	Question	Answer
Q.17	Please confirm that consultant drawings are not obligatory for the tenderers, and each Tenderer shall implement his own design and drawings as per Egyptian code and tender requirements	It should be indicated that the suggested process scheme, and design criteria provided in the tender documents are not merely for guidance. They are integral components of the project and should not be changed. These specifications have been carefully outlined to ensure that the project complies with applicable standards and meets our specific requirements. The contracted Company shall develop the detailed design and drawings, submitting them to the Detailed Design Consultant (DDC) for review and approval.
Q.18	Please confirm that the fine screen can be omitted from Headworks as it is not mandatory for CAS treatment technology. Kindly confirm that there is no requirement for the fine screen	The installation of a fine screen is indeed mandatory as per our project requirements. The fine screen plays a critical role in the initial stages of the treatment process to remove debris, solids, and other particles that can potentially disrupt downstream treatment processes and equipment. Its inclusion is essential for maintaining the efficiency and effectiveness of our treatment system.
Q.19	Please confirm to stick to Egyptian code for design capacity for mechanical screen to be designed at peak flow.	It is confirmed that adhering to the Egyptian code for design capacity is the appropriate reference criteria for the mechanical screen to be designed at peak flow.
Q.20	In the tender documents, design criteria for mechanical screens (coarse, medium and fine screens) are given. Please clarify which types of mechanical screen should be designed? Is medium screen required?	Coarse screen, followed by fine screen. For more information, please refer to scope of work in the TD.
Q.21	It is mentioned that a manual standby screen shall be provided to the set of screens able to accommodate the peak flow of the mechanical screens. It is also mentioned that design flow for manual and mechanical screen equal to l.2*peak flow rate. Please clarify which is the design flow of the manual standby screen	All mechanical (coarse and fine screens) must be designed in accordance with the Egyptian Code. The manual screen is solely intended to assist in emergencies.
Q.22	Mechanical fine screening system (screens, conveyors, compactor and containers) is mandatory please confirm. Mechanical course screening system (screens, conveyors and containers) is mandatory please confirm.	Confirmed.

No.	Question	Answer
	All mechanical course and fine screens are in duty, manual course screen shall be provided asst and by for both, neither mechanical course screens nor mechanical fine screens units will be provided as stand by please confirm.	
Q.23	Please confirm that UV disinfection technology is permitted	Please refer to Section 2.25 Chlorination Plant - Vol.1 Technical Specification – Process& Electromechanical. The only approved disinfection technology is gaseous chlorination disinfection.
Q.24	Please note that tender drawings show biogas generation system " digesters, boilers, gas holders and heat exchangers" while, neither scope of works nor price schedules mention any of them. Please confirm that digesters and biogas system are not required.	The biogas generation system is not included in the current contract.
	In case the biogas generation system is required for future extension, please clarify any related required works at this stage.	
Q.25	It was mentioned in the layout drawing that (digester-boiler-heat exchange- gas holder tank) units are in our scope, but there was no mention of them in technical specifications - please confirm that they are in our scope.	All anaerobic digesters works are out the scope of the current contract.
	"Digesters - Heat Exchanger - Boiler - Gas Holding Tanks" were added to the Layout as Sludge treatment units. however, the digestion requirements were not mentioned in the remaining sections of the Tender Documents. Please confirm the need for Digestion as part of Sludge treatment and provide digestion performance requirement.	
	As shown in general layout digestor, boilers and heat exchanger are for seen please advise about what shall be consider in our design for this system.	
Q.26	Please confirm that anaerobic sludge digester and energy recovery system are not required at this stage.	Confirmed. The Anaerobic sludge digester and energy recovery system are not included in the current Contract.
Q.27	The drying beds as plotted in the tender lay out is considerably limited, which is anticipated as a result of the implementation of the digester. Additionally, it is important to note that the digester is not included within the scope of this tender and will be carried out at a later stage. Consequently, we kindly request your guidance on whether We should take into account the digester and its potential impact on the drying beds area.	All activities related to the digesters shall be carried out in an area located outside the boundaries of the designated zone for the wastewater treatment plant (WWTP) covered by the current contract.
Q.28	Please provide site coordinates for the available area designated to scope of the work in this tender excluding future works for biogas generation.	Please refer to the general layout drawings (drawing No.2-V ol.3).
Q.29	Please confirm to follow SRT criteria in the Egyptian code for Complete Mix to be from 3 to 15 day	Confirmed.
Q.30	Please confirm that belt filter press is accepted for sludge dewatering due to shortage of area	Drying beds are the only approved sludge

No.	Question	Answer
	If your answer to above question is negative, then please confirm that sludge dewatering machines as Belt Filter Press, Centrifuges can be provided to dewater the mixed sludge before transferring to landfill to avoid usage of sludge drying beds.	dewatering process.
Q.31	Referring to influent loads in Table No. 2 mentioned above, it is noted that ratio of TSS to BOD is lower than normal values of domestic wastewater. Please provide log sheet for raw and treated water analysis for the existing plant.	The log sheet for raw and TWW is not available.
Q.32	Please confirm that turbo blowers are accepted.	Turbo blowers require regular maintenance, which can be more complex and costly compared to traditional blowers. Turbo blowers are not accepted.
	Kindly accept that the air blowers type to be turbo Blower type	
Q.33	Please note that pump specification is missing. Please provide pump specification	Pumps specifications are provided in Vol. 1 – Process & Electromechanical Specifications.
	Please confirm that pumps specs as per ECP or provide pumps specific specifications	
Q.34	Please provide the following levels: 1- water level at existing inlet works 2- water level at drainage point 3- finish floor level	Any missing data could be obtained from the site after having Gharbia WSC permission.
	Kindly mention the maximum water level at the inlet chamber	
	Please provide the following: - The Finished ground level, - The pipe length from CCT to drain	
	Kindly mention the number & the diameters of for cemain pipes	
	Please provide the inlet raw water force main data: _ -Number of Pipelines-Pipe diameters -Residual pressure (max water level @ inlet chamber)	
	Force main Pipes: - it is required to determine the diameters and numbers of pipes for first stage and second stage.	
	In tender document, Drawings, the coordinates of the layout are provided in general layout, the last two points in east direction are missing please provide.	
	Please provide us with the coordinates of the corners shown in the attached layout	
	Please specify the final point of discharge (effluent) what is the expected minimum and max water level?	
	Please clarify which is the number of inlet pipes, pipe material and inlet pipe diameter.	

No.	Question	Answer
	Kindly accept that access to site could be granted to the Contractor prior the Commencement Date to allow the Contractor to perform any mobilization, geotechnical investigation works, surveying works, etc.	
	Please specify the areas designated for mobilization activities during the implementation period.	
Q.35	Please confirm that tender scope is including 2 years spare parts in addition to the provisional sum mentioned in schedule "1" item "1-6.3" Other Provisional Sums.	The tender scope includes the supply tools and obligatory spare parts for 2 years operation of WWTP. The price of the obligatory spare parts and tools shall be included in the price of the equipment as indicated in the Schedule of Prices.
Q.36	Please clarify, the required spare parts are for 2 or 3 years. Please confirm that spare parts shall be supplied according to manufacturer recommendation	Please refer to the detailed items presented in the Scope of Supply – Section 6.
	Please confirm that it is required 3 years spare parts only as per suppliers recommendation (including minimum requirements mentioned in the point) and starting from works completion	
Q.37	Please provide odour treatment system requirement and specification.	The odour treatment system shall be proposed by the contractor, and it will be subject to the Employer's technical evaluation.
	Please confirm that odour is required only for the quitining chamber and shall be of activated carbon system.	
	Please provide specification for the required odour control system. Please specify which treatment units to be considered for odour control.	
	please confirm that supplying and installing odour control system for the plant is in our scope	
	Employer' Requirement: Page 215 16. Odour • The plant shall be designed such to minimize discernible odours from it at any point within 50 meters of the site boundary under prevailing wind conditions at any time of the year. • Proposals for containing and treating odours and directing them away from areas of habitation should be included in the design. However, these should not affect the performance of the plant with regard to treatment of wastewater. • Odour control facilities is required and shall be provided in the WWTP's Site. Considering the sludge drying beds, sludge storage area and other treatment units please confirm that odour control systems shall be provided.	
	We kindly ask you to provide more technical details for the requirements of odour treatment: - From which locations polluted air shall collected? - What is the air exchange rates for the locations where the polluted air is collected? -Please clarify which is the required concentration/limit of the treated foul air and where it is measured.	

No.	Question	Answer
Q.38	Please provide workshop equipment list specifications. Also advise if existing building shall be demolished or be reused.	Please check Section "Performance Specifications-Scope of Supply – Specific Requirements". The list of workshop equipment will be provided to the contractor during the contract period.
Q.39	Please confirm that scope of contractor is terminated at existing effluent manhole before drainage point	The treated effluent piping to the existing drain outfall. The construction of the outfall structure shall be the responsibility of the Contractor. The Contractor shall be responsible during the bidding period to coordinate with the Gharbia Company for Water and Wastewater to collect and verify the data and the water level in the drain under his responsibility. The recommended material for construction of treated effluent pipes shall be HDPE/DCI.
Q.40	Please specify number of client representative and engineers for witness test	For any witness testing there shall be one witness from the Client and one from the Engineer.
Q.41	There is discrepancy between general layout and final surveying plan regarding the boundary limit Please advise	The general layout plan shows the area for the current works under consideration. The survey plan shows an additional six feddan to the northwest of the site for future expansion of the WWTP. This six feddan may be used for the Contractors site establishment during the construction period at no additional cost to the Contractor. This area, on completion of the Contract must be cleared of any Contractors equipment or establishment and left in a clean and tidy state. Please see attached drawing No.13 in Annex#4.
Q.42	Please confirm that sufficient graded land for Temporary Site facilities, Laydown area will be provided to the contractor within the plant plot area Please indicate location	Land available for the Contractor for temporary site establishment is shown on drawing No.13 in Annex#4. Should the Contractor require land in addition to this the Contractor shall source this himself.
Q.43	Please confirm that Soil investigation shall be carried out by the Tenderer during tender stage Tenderer requests a permission to do Soil investigation during tender stage Reference to the above-mentioned project, we hereby OC - Metito JV request to perform Soil investigation and during tender stage	This is to confirm that the detailed soil investigation shall be conducted by the awarded contractor as stipulated in the tender documents. This investigation is an essential step to provide accurate

No.	Question	Answer
	We would like to take your acceptance for entering an excavator and other equipment's to make new 4 boreholes in the site of the project, so that we can make an assuring soil report	and comprehensive data for the construction stage. In addition, regarding the possibility of conducting a soil investigation during the tender stage. It is allowed to perform such an investigation at your own cost prior to submitting your offer. However, please make sure to follow the relevant guidelines and regulations outlined in the tender documents to ensure that your investigation aligns with our project's requirements.
Q.44	Please confirm that source of water & power supply and tie in for sewage will be made available to the contractor within site boundaries during Project duration	Please refer to Section "Summary of Schedule: Schedule 1: Preliminary & General- Feeding of Power Supply.
Q.45	The existing fence will be demolished and will be rebuilt by the contractor, Pease confirm. Please confirm the need for fence and gates.	Confirmed. The fence and gates shall include the six feddan in which the Contractor is allowed to establish his site establishment.
Q.46	is the current fence in our scope of work (should we demolish it and build a new one).	Yes.
Q.47	Please specify the required design lifetime of the plant	The design period is for: Phase 1: target year is 2037. Phase 2: target year is 2057.
Q.48	Please confirm our understanding that all electromechanical equipment must originate from North America, Europe, Japan or have local manufacturing origin only.	Please refer to Section VII. Employer's Requirements Employer Specific Requirements.
Q.49	Kindly Confirm that Peak flows are 7500 & 11250 m^3/h occurring for 4 hours per day not 24 hours. Kindly confirm that flows are 1250 &1875 m^3/h occurring for 4 hours per day not 24 hours	Confirmed, the P.F = 7500 m^3/h, and 11250 m^3/h. (not for the 24 hours). Confirmed, the min. flowrate = 1250 m^3/h, and 1875 m^3/h. (not for the 24 hours).
Q.50	Please confirm that rectangular primary sedimentation tanks are not allowed under this project sow	Rectangular primary sedimentation tanks are not permitted or included in the current contract.
Q.51	Regarding Item 1-4.6 "Supply of survey and field equipment" and Item 1-4.7 "Maintain survey and field equipment" Please provide the requirements in order to able to price it (i.e. Number, type and specification of equipment, etc.)	Please refer to the detailed items presented in the Scope of Supply – Section 6.
Q.52	Please note that based on drying beds dryness of dewatered sludge cannot reach 40%. 18 – 20 % dry solids in dewatered sludge is reasonable. Please advise.	Please check Metcalf & Eddy for more details.

No.	Question	Answer
Q.53	The technical specification indicates " An aeration tank baffle shall be provided " Please confirm that tank & internals are per contractor design.	The awarded Contractor shall prepare his detailed design for review and approval by the DCC.
Q.54	The technical specification indicates "blowers shall have acoustic enclosures to ensure that the noise level at 3 m from blowers is below 50 dB level " Please confirm that the accepted noise level is 80 dB as per volume 3 (Tender Documents Open Procedures one stage Tanta Plant-YB- Tanta WWTP works - 27072023 HCWW) page 216.	Confirmed the accepted noise level is 80 dB as per volume 3 (Tender Documents Open Procedures one stage Tanta Plant-YB- Tanta WWTP works - 27072023 HCWW) page 216.
Q.55	Please confirm following 2.24.10 for air blower stating that "the noise level within the building shall be not more than 80 decibels 'A' scale when measured along a contour 3 m from any single item of system during starting, running, and stopping. This level will be subject to a tolerance of +5% over the audible frequency spectrum measured at mid band." As suppliers provided that 50 db level at 3 m form blowers not achievable with acoustic enclosures especially for large blowers.	Accepted
Q.56	The technical specification indicates " Thickened sludge pumps shall be of the progressive cavity…. with motors rate IP68" Please confirm that thickened sludge pumps motors shall be IP55.	The technical specification indicates " Thickened sludge pumps shall be of the progressive cavity with motors rate IP68" should not be changed.
Q.57	Qmax = 1.8 Qav Please confirm that Qmax = Qpeak	Confirmed.
Q.58	It is indicated " The maximum height of any part of the Permanent Works shall be 7m above the finished ground level " as per tender drawing (the hydraulic profile), the top point of the head work is +8, Please confirm that is for guidance and the building height should be according to the hydraulic calc.	The maximum height of any part of the Permanent Works shall be 7m above the finished ground level.
Q.59	The tender drawings include a Legend & Symbols drawing for the (P&I), however the P&ID drawings are not included in the tender doc., Please provide them for guidance (if available).	P& ID drawings are not available.
Q.60	- Please provide the GENERAL LAYOUT in CAD format (if possible) and clarify the existing building and assigned area for proposed treatment. Also, please, confirm that the units No 12,13,14,15 (on layout) are not required	CAD drawing of the Layout will be available for information purposes to the successful candidate. Confirmed.
Q.61	Kindly provide all the drawing mentioned in section 4 drawings in AutoCAD files format	CAD drawings will be available for information purposes to the successful candidate.
Q.62	Please be noted that it is mentioned in same volume -Specific Requirements "However, the Contractor shall take into consideration during design that the minimum flow rate	Confirmed.
Q.63	In referenced table 1, the design minimum flow is given as 0,3 * Qav. In Employer's Requirements it is mentioned that the Contractor shall take into consideration during design that the minimum flow rate could be about 50% of the average flow at year 2037. Please clarify that what is the minimum influent design flow to the WWTP.	The design minimum flow is given as 0,3 * Qav.

No.	Question	Answer
	Please be noted that it is mentioned in same volume -Specific Requirements "However, the Contractor shall take into consideration during design that the minimum flow rate could be about 50% of the average flow at year 2037", Please advise the minimum flow percentage referring to the Average flow	
Q.64	Please confirm the understanding that The Construction of all civil and electromechanical works shall satisfy the requirements of phase1 only except for civil works only of headworks constructions works for both phases shall be applied	Confirmed.
Q.65	Please confirm that during operation period for DLP or even the optional one-year O&M That all chemical consumables, power consumables, water consumables, generator fuel, screenings, grit & sludge disposal are in client's scope of work	All mentioned costs shall be covered by the Contractor, during the one-year Operation, Maintenance, and Training.
Q.66	Please confirm the understanding that tenderer is required full operation and maintenance activities for the first 9 months and to supervise the client operators for the remaining 3 months	The Contractor shall be responsible of one year Operation, and Maintenance including three months of client staff training.
Q.67	The Contractor is requested to design the WWTP general layout indicating all units and buildings for final Stage. The minimum number of treatment streams shall be TWO, and stream average flow capacity is 100,000 m3 per day for phase 1 (2037). The Contractor shall ensure the proper distribution of the raw wastewater flow between the treatment lines (two or more) is accomplished. Kindly confirm that we can design the plant 2 streams for Phase I & 3 streams for Phase II Kindly confirm that the average flow capacity is 50,000m3/day for each stream for Phase I	Please refer to the Layout Drawing in the TD.
Q.68	Please confirm that requested load peak shall be applied on average daily flow including supernatant and as per following calculation for BOD (as Example not limited to) BOD=500ppmX100,000m3/day*1.15=57,500KgBOD/day	Please refer to the design criteria provided in the tender documents, and the Egyptian Code.
	Kindly Clarify that the design flow of all inlet works= 1.2 or it is only for the Peak flow for slow down chamber & mechanical screens	
Q.69	Kindly confirm that the design flow = 1.2 * peak flow without the supernatant flow returned from the thickener, drying beds, scum pit for primary &secondary clarifiers & Grease pit	Confirmed.
Q.70	Please confirm that circular Grit Removal Chamber–Aerated Type is accepted	For aerated grit chamber "Vortex Type" is not accepted.
	Employer's Requirements: Page 197	

No.	Question	Answer
	The Contractor is requested to provide the treatment process stream for the WWTP with the following: 1. Design and represent the layout of the WWTP based on the requirements of the final stage required capacity. 2. Inlet automatic mechanical screens (coarse and fine) and standby manual screen. 3. Inlet bypass structure overflow weir, sluice gates and bypass piping. 4. Aerated or Vortex grit chamber. 5. Oil & Grease removal tank. Technical specifications: page 45 **2.27.3 Aerated Grit Removal System** A. System Description: i. Grit and Oil & Grease shall be removed from the wastewater influent in a longitudinal aerated channel. Grit shall be extracted by scraping during the backward motion of the bridges to the front end of the channels, and then lifted up by submersible pumps to the silos, while Oil & The above wording snapped from tender document please advise vortex whether aerated grit is mandatory or the two options will be accepted.	
Q.71	Kindly confirm that there is no need for bypass manual screen & can use the manual screen as bypass screen & stand by for any mechanical screen	A separate bypass is needed.
Q.72	Please confirm that mono rail and jib required cranes are manually operated, and type Selection shall be as per tenderer design	Confirmed.
Q.73	Please confirm material of construction of the silo to be galvanized carbon steel.	It is not preferred to use galvanized carbon steel.
Q.74	Please clarify the required, as the tank will be aerated via diffused air system	Diffused air shall be used for the Aeration Tanks.
Q.75	Please confirm that only aeration blowers shall be equipped with VFD	Confirmed.
Q.76	Kindly confirm the execution phase for Phase I is 30 Months Please confirm that construction period 30 months including 3 months plant Commissioning and startup	**The time for completion is 819 days (27 months). Please note this duration is 93 days shorter than that given in the original request for proposals. This duration includes the 3 months plant commissioning and startup.**

No.	Question	Answer
		A formal modification advising this change will be issued by the EIB in due course.
Q.77	Kindly accept that the aeration network to be form stainless steel 304 as the Poly propylene max temperature is 80 Celsius degrees, and delivered air from air blowers are usually of 110+C which will impact the PP pipes and it's life span	Please refer to the technical specifications “Process and Electro mechanical”.
Q.78	Please confirm that blowers power consumption calculation (Opex) to be based on ambient temperature 30 deg. Celsius, RH 60% and WWTP 20 deg. Celsius.	Please refer to the technical specifications “Process and Electro mechanical”.
Q.79	Please confirm that tube/disc fine bubbled diffusers are accepted	Please refer to the technical specifications “Process and Electro mechanical”.
Q.80	Please accept that telescopic and quick release valves system can be substituted by manual penstocks for sludge extraction for clarifier sand thickeners	Please refer to the technical specifications “Process and Electro mechanical”.
Q.81	Please confirm that all plant valves and penstocks shall be manual type	Please refer to the technical specifications “Process and Electro mechanical”.
Q.82	Please confirm using progressive cavity pumps	Please refer to the technical specifications “Process and Electro mechanical”.
Q.83	Please Confirm that cathodic protection works is not required in the tender	Please refer to the technical specifications “Process and Electro mechanical”.
Q.84	It is mentioned that the Contractor is requested to design the treatment plant based on the requirements of the first phase (2037), except the civil work of the headworks (approach channel, screens, and grit removal chambers, distribution box, etc.) will be designed on the requirements of the second phase (2057). It is also mentioned that the civil work of the headworks (approach channel, screens, and grit removal chamber shall be designed and constructed for year 2057. Please clarify that these units (approach channel, screens, and grit removal chambers, distribution box, etc.) shall be designed and constructed for second phase (2057)? If these units will be designed and constructed for second phase, should these units be equipped with electromechanical equipment for second phase (2057)?	Please refer to the technical specifications “Process and Electro mechanical”.
Q.85	should we supply and install belt conveyor after the screens.	Please refer to the technical specifications “Process and Electro mechanical”.
Q.86	Should we provide rough and smooth mechanical screens or only rough ones	Please refer to the technical specifications “Process and Electro mechanical”.
Q.87	Referring to power consumption tables for hydraulic load - please confirm that we should supply bridges equipment for primary sedimentation and final sedimentation and chlorine building and sludge thickener	Please refer to the technical specifications “Process and Electro mechanical”.

No.	Question	Answer
Q.88	It was mentioned in the air blower station specifications that high voltage air compressor C/W control panels can be used as additional air supply - please clarify.	Please refer to the technical specifications “Process and Electro mechanical”.
Q.89	Referring to gravity thickener - should we provide it with polyelectrolyte injection system.	Please refer to the technical specifications “Process and Electro mechanical”.
Q.90	It is mentioned that the contractor shall consider that the standby percentage of all main mechanical equipment such as (pumps, blowers etc.) shall be 50%. It is also mentioned that the number of standby blowers shall be minimum 50% (fifty percent) of the number of working blowers. Please confirm that it is not required to provide 50% standby for all equipment, other than pumps and blowers	Please refer to the technical specifications “Process and Electro mechanical”.
Q.91	In referenced section it is mentioned that inlet flow is measured by parshall flume. Please confirm that it is required to measure the inlet flow by parshall flume.	Please refer to the technical specifications “Process and Electro mechanical”.
Q.92	B. These spares shall include the following as minimum requirements: • One complete sets of rubber wearing strips for sludge scrapers for each type of scraper. • Two complete sets of submerged rubber coating casters for eachtype of scraper. • One electric motor complete from each rating • One complete set of air contactor in the control cabinet. • One complete set of brushes (cleaning mechanism). • One set of bearing for each motor type. • One reducing gear box. • One of each type of solenoid valves. • 10 % of all pipes, valves, fittings, special pieces, etc. from each kind of size. Regarding the last item in spare parts (10% of all pipes, valves, fitting, special pieces, etc. from each kind of size) please clarify	Please refer to the technical specifications “Process and Electro mechanical”.
Q.93	Please confirm that it is only requested to sludge flow measurements for RAS flow	Please refer to the technical specifications “Process and Electro mechanical”.
Q.94	Referring to thickened sludge pumps - can we provide it with motors of rate IP 56	Please refer to the technical specifications “Process and Electro mechanical”.
Q.95	Please accept that bypass /overflow required capacity should be calculated according the maximum can the existing mentioned pipe line can withstand with velocity limits for full pipe as per ECP.	No. Please refer to the Vol. 1 - Process and electrotechnical technical specifications, and the scope of work.

No.	Question	Answer
Q.96	Please confirm the understanding of the items only specified standard origin, and other equipment origin than mentioned are accepted	Please refer to the Vol. 1 - Process and electrotechnical technical specifications, and the scope of work.
Q.97	Please clarify which is the required sludge dry solids content (kg/rrr') after thickening and drying process?	Please refer to the Vol 1 Process and electrotechnical technical specifications. Any missing details must be provided in your technical offer and shall be technically evaluated.
Q.98	Please clarify how the dried sludge shall be removed from the sludge drying beds?	Please refer to the Vol 1 Process and electrotechnical technical specifications. Any missing details must be provided in your technical offer and shall be technically evaluated.
Q.99	G. An aeration tank baffle shall be provided to direct surface velocities downwards thus maintaining the necessary flow velocities for the depth of tank specified in the contract. The above wording snapped from tender documents, you may kindly clarify its meaning.	Please refer to the Vol. 1 - Process and electrotechnical technical specifications. Any missing details must be provided in your technical offer and shall be technically evaluated.
Q.100	B. Scraper Bridge • The fixed bridge shall be constructed by the mechanical contractor and shall be made of structural steel designed for a uniformly distributed live board of 500 kg/m^2. The bridge shall have an effective walkway width of not less than 1000 mm which shall be decked with approved open type galvanized mild steel. Double rail hand railing shall be fitted to each side of the bridge. "The following wording is our proposed modification for the above snapped clause: B. Scrapers Bridges The fixed bridge shall be constructed by the mechanical contractor and shall be made of structural steel designed for a uniform distributed live load of 250 kg /m2. The bridge shall have an effective walkway width of less than 1000 mm which shall be decked with approved open type galvanized mild steel. Double rail hand railing shall be fitted to each side of the bridge. please confirm."	Please refer to the Vol. 1 - Process and electrotechnical technical specifications. Any additional details must be provided in your technical offer and shall be subject to the technical evaluation.
Q.101	Please confirm that CO2 fire extinguisher standard capacity is 5kg not 6kg as mentioned in the referred section. This based on the performance specifications set by industry standards and regulations.	Please refer to the Vol. 1 - Process and electrotechnical technical specifications.

No.	Question	Answer
		Any additional details must be provided in your technical offer and shall be subject to the technical evaluation.
Q.102	Please provide the tender specifications for internal and external insulation type for water structures and building.	Please refer to the Vol. 2 – Civil Works technical specifications.
	Please provide the tender specification related to the Architecture works	Any additional details must be provided in your technical offer and shall be subject to the technical evaluation.
Q.103	Kindly confirm that the speed of motor up to 3,000rpm is related to drive system only not for the blower speed	Confirmed.
Q.104	Kindly confirm that means the loads increase by 15% on average flow (100,000m3/day For Phase I)	Confirmed.
Q.105	The prediction of the drying rate is an empirical part of the designing the system. Drying of the sludge can be divided into two different stages, namely drainage and evaporation. The design of SDB is based mainly onsite specifications, as well as environmental and climatic factors. Which change constantly from season to another. So please accept min dryness to be 28 to 35%	The awarded contractor shall provide detailed calculations for the drying beds to the Detailed Design Consultant (DDC).
Q.106	Kindly confirm that The Contractor will be responsible for undertaking the Operation and Maintenance of each WWTP and providing training to the Employer's Operation and Maintenance personnel for 12 months excluding all utilities, electrical energy, lubricants, chemicals, catalysts, facilities, spare parts& fuel expenses	No. The Contractor will be responsible for undertaking the Operation and Maintenance of each WWTP and providing training to the Employer's Operation and Maintenance personnel for 12 months including all utilities, electrical energy, lubricants, chemicals, catalysts, facilities, spare parts& fuel expenses.
Q.107	Kindly confirm that the design flow for the plant is equals 1.5 x Average flow as per Egyptian code of practice	Please refer to the design criteria provided in the Tender Document. The design criteria must adhere to the Egyptian Code.
	"Under title (5-5 flows to be used for water treatment units' design) you can find the following: for chlorine contact tank hydraulic design, 1.5 * the average flow shall be used." The dimension of chlorine contact tank shall be selected based on retention time within (10-30) minutes minimum & max Limits. "In order to design the chlorine, contact tank and based on the Egyptian code reference points above, the following wording is our proposal to calculate the volume of chlorine contact tank: Chlorine contact tank volume = (minimum 10 min - max 30 min) * 1.5 average flow, please confirm."	
	Technical specifications - Page 5:	

No.	Question	Answer
	<table><tr><td>Contact tank</td><td>The initial coliform count for Influent wastewater (MPN/100 ml) = $6*10^8$</td></tr><tr><td></td><td>The required chlorine dosage for effluent standards = 5-20 mg/l</td></tr><tr><td></td><td>Effective retention time = (15 - 30) min.</td></tr><tr><td></td><td>Tank depth = 2 – 4 m</td></tr><tr><td></td><td>It is preferable to design the chlorination system based on CT (concentration * time)</td></tr><tr><td></td><td>$No = Nt (1+0.23 CT)^3$ Where: N_t = No. of fecal coliform after time (T) =3000 as per standards No = No. of faecal coliform at influent to contact tank = $6*10^8$ T = contact time in minutes as per design C = Chlorine dose ppm</td></tr></table> Technical specifications - Page 39: **2.25.15 Contact Tank** A. The treated wastewater shall be disinfected by chlorine before entering the chlorine contact tank. B. Preliminary Design Parameters: 1. No. of Tanks – 1 for each plant. 2. Minimum Detention Time – 20 – 40 minutes. 3. The chlorine contact tank shall be baffled concrete tank to ensure proper contact time and disinfection. The above wording snapped from tender document please advise which range will be accepted	
Q.108	Kindly confirm that we can design the chlorine contact to be two tanks that be designed for phase I& II	The design is for Phase 1 & Phase 2. For the current contract, construction is only for Phase 1.
	Please specify whether effluent pipeline from chlorine contact tank to discharge point shall be designed for 2037 or 2057 flows.	
	Please specify whether the effluent pipeline will be designed based on the first stage flow or based on the second stage flow, in other words the effluent pipeline from the chlorine contact tank to the drain channel shall be one pipeline for each stage or one for the first stage and another one for the second stage.	
Q.109	Please confirm the following: A minimum of (8) sets of consecutive flow proportional 24-hour composite samples in the outlet of the plant shall be taken and analyzed for the parameters BOD5, COD and TSS. Settled Only. Samples shall be used for analyzing the BOD5 and COD in the outlet to avoid the manipulation of the BOD content by excess sludge contained in the sample (settling time: 60 min). These sampling are the only ones required to be performed for the Completion of Construction Works and Initial Hand over, and to identify the starting date of the Defect Liability Year by the success of its results". يرجي التأكيد ان هذا البند هو المرجعيه الوحيده للتسليم الابتدائي وبدايه سنه الضمان ونجاح تجارب التشغيل	Please refer to the Technical Specifications Vol.1: Section 5 – Testing Requirements.

No.	Question	Answer
Q.110	Please confirm that the dryness of thickened sludge is 3% as per mentioned in the tender documents	Please refer to the design criteria provided in the tender documents, and the Egyptian Code.
Q.111	1. Please confirm that we can use the existing Admin building for tender Scope without building new one 2. Please confirm that the tender scope is a new lab complete with equipment & furniture to be supplied to existing plant lab. 3. Please confirm to supply new workshop equipment to the existing Workshop	1. The existing administrative building is intended to service both the existing and new streams of the WWTP. 2. Confirmed. 3. No, a new workshop must be constructed and provided with all necessary equipment items as described in the Tender Documents.
Q.112	Kindly confirm that the interconnecting pipes to be of material of construction HDPE, GRP or concrete	Please refer to the Vol. 1, and Vol.2 of the technical specifications.
	Please clarify which type of pipe material should be used between units?	The interconnecting pipes to be of material of construction HDPE, GRP, DI or concrete, and is subject to the Engineer approval.
Q.113	Please confirm that working hours for all equipment shall be as per tenderer's design	Confirmed.
Q.114	Please confirm utilizing of the drain levels mentioned in tender documents and drawings	Any recent or missing data including the drain levels could be obtained from the site after having Gharbia WSC permission.
Q.115	Please confirm that tenderer allowed to use the mentioned plant in case of by pass or over flow is required on the inlet of the plant	Not accepted.
Q.116	Please confirm that there is no any requirements for rehabilitation works for the existing plant & also there isn't any connection between the existing plant & the new plant	Confirmed except for the new Scada control room which will be located in the existing administration building.
	Please confirm that there is no connection between the existing plants & the new plant (Electromechanical and civil)	
Q.117	Please confirm that tenderer is allowed to design two new effluent pipelines for each phase	Please refer to Section “Summary of Schedule: Schedule 18: Effluent Facilities including Pipeline, Drain effluent Protection at Effluent point, etc.
Q.118	From the tender drawings, aeration tanks quantities are 6 with total volume of 39,000m3 Approx., as result retention time is 9.4 hrs which exceeds ECP-2017RT (3-5 hour sonly), Please confirm that Retention time of the biological tank should not be more or less than the ECP range.	Retention time of 3 - 5 hours is too short to achieve the required effluent quality. The contracted Company shall develop the detailed design, detailed calculation sheet and drawings, submitting them to the Detailed Design Consultant (DDC) for review and approval.

No.	Question	Answer
Q.119	Kindly please provide the design /process calculation and hydraulic calculation as to be taken as guide and reference for tenderer's design Please provide the process design calculation.	Please refer to the design criteria provided in the Tender Document.
Q.120	Please specify all units/tanks related to this point. Plotting on the lay out the area and location dedicated for those mentioned tanks	Please refer to the Section VII: Employers Requirements- in the tender documents.
Q.121	Please confirm that flow measurement's location shall be as per tenderer design, other please specify the locations	As per tenderer, and subject to the DDC approval.
Q.122	Please Confirm the DLP period of 12 months starting from taking over certificate	The DLP will commence after the issue of the Taking Over Certificate. There is no sectional taking over.
Q.123	Please confirm that training period (3 months) will be included in within the first quarter of the Defects Liability Period.	The training of Tanta WWTP's Staff will be delivered during the Defect Liability Period as required by the Engineer and Employer, the tenderer will submit his own training plan within the technical offer which shall be agreed with the Engineer and Employer during the Contract Period.
Q.124	The area shown on layout for drying beds and sludge storage area is only sufficient to build drying beds (without storage area) for stage1 (100'000m3/day). Please advise if mechanical dewatering to be considered. If yes please inform about the percentage of sludge to be treated mechanically & provide specifications for the mechanical dewatering system.	It is believed that the sludge storage area would be enough. The contracted Company shall develop the detailed design, detailed calculation sheet and drawings, submitting them to the Detailed Design Consultant (DDC) for review and approval.
Q.125	The required dry solid content for the final dewatered sludge is > 40% and the proposed drying strategy is Drying Beds. Please note that achieving >40% dried sludge via drying beds requires a high retention time thus, large area requirements greater that available are in the WWTP. please confirm that Mechanical dewatering is allowed under this TD. The required dry solid content for the final dewatered sludge is > 40% and the proposed drying strategy is Drying Beds. Please note that achieving >40% dried sludge via drying beds requires a high retention time thus, large area requirements greater that available are in the WWTP. it is requested to reduce the dry solids content in dewatered sludge to 18% and allow mechanical dewatering for phase 2 (2057).	Rejected. Mechanical dewatering is allowed under this TD.

No.	Question	Answer
Q.126	The required dry solid content for the final dewatered sludge is > 40% and the proposed drying strategy is Drying Beds. Please note that achieving >40% dried sludge via drying beds requires a high retention time thus, large area requirements greater that available are in the WWTP. please confirm the final dry solids content in the dewatered sludge.	Confirmed.
Q.127	Annex 2 Volume (2) A is missing, please provide. Please provide as well workshop and tools list. Please provide the schedule of workshop equipment and tools.	Please refer to the Section VII: Employers Requirements- in the tender documents.
Q.128	it is mentioned that minimum number of streams should be 2 while the average flow capacity of each stream should be 100,000 m3/day - please clarify.	For the 100,000 m³/d, the minimum number of streams is 2.
Q.129	It is mentioned that the capacity of the station will be 100,000 m3/day at first phase until 2037 and it will reach 150,000 m3/day in the second phase in 2057. remedial work will be carried out for the first phase only in 2037 (civil/electromechanical) except for the civil works of head work, all stages will be covered and the general site design will cover all stages. please confirm.	Please refer to the Section VII: Employers Requirements- in the tender documents.
Q.130	Will the current generator room be connected to the new plant	No.
Q.131	Please clarify the source of electricity and water for the new plant	Please refer to the Section VII: Employers Requirements- in the tender documents.
Q.132	please confirm that the specifications of binary water treatment are according to table (2) page 206 section VII.	Please refer to the Section VII: Employers Requirements- in the tender documents.
Q.133	It was mentioned that drying beds includes tractor mounted horizontal auger to mix, knowing that drying beds dry by sun exposure and by equipment - please confirm.	Please refer to the Section VII: Employers Requirements- in the tender documents.
Q.134	Should we take into consideration an extra load for dumps of septic tanks from trucks into STP.	No.
Q.135	Please confirm that supplies for inlet and screens is only for the first phase.	Confirmed.
Q.136	Please clarify whether Qmin is 30% according to page 196 or 50% according to page 206.	Qmin = 0.3 Qav.
Q.137	Plant / Page (101/252). Kindly elaborate what will be included in the form “Plant” in the technical form’s submission	Includes all items of the WWTP.
Q.138	Kindly confirm that the origin of the Plant and Installation Services will be included in “Proposed Subcontractors for Major Items of Plant and Installation Services” form in the Technical Tender not in the Price schedule forms	Confirmed.
Q.139	Regarding Item 1-4.3 "Running costs and maintenance of Engineer's site office" Please provide the requirements in order to able to price it (i.e. Number of persons, equipment, appliances, etc.)	Details are to be outlined by the contractors in their offers but should include as a minimum 4 rooms, plus a kitchenette and toilets/washrooms combined each for female and male. The 4 rooms shall not be

No.	Question	Answer
		less than 50m2 and have desks and chairs. The offices shall be located away from any noise or dust nuisance. Offices to have backup generator. The Consultant shall bring their own computers and photocopiers.
Q.140	Regarding Item 1-4.1 "Establish / dismantle Engineer's site office" Please provide the requirements in order to able to price it (i.e. arrangement, furniture, utilities, equipment, appliances, etc.)	The usual fully operational office should be provided.
Q.141	Regarding Item 1-4.5 "Running cost of and maintenance of vehicles" Please provide the requirements in order to able to price it (i.e. Number, type and specification of vehicles, etc.)	Numbers and amounts will be determined against the available Provisional Sums will be instructed during the contract period subject to the Engineer's approval.
Q.142	Please confirm that performance (Power and chemical consumption) damage mentioned are related only to 100% load unit rates which shall be used for the calculation of One Year Operation Cost (OPEX)	Confirmed.
Q.143	Please confirm that yearly actual consumption to be calculated based on average values before it is compared with committed value.	Confirmed.
Q.144	Schedule 26: Operation, Maintenance, and Training for the Plant for DLP (one year), OPEX Full Operation and Maintenance Activities for the Plant for the first (9) months of the Defect Liability Year including Contractor O&M labours, fuel, spare parts, oil & grease, chemicals, and chlorine. Electricity costs is excluded as it will be paid directly by Gharbia Water & Wastewater Company	Electricity costs are not excluded and will be paid by the Contractor for the Operation & Maintenance and Training for the Plant for the DLP (One Year).
Q.145	Please confirm our understanding that financial evaluation of tenderers will involve CAPEX for only one year operation	During the tender evaluation the OPEX costs for one year will be evaluated.
Q.146	Applicable Standards, Section VII, Vol 1, Technical Specifications, 1. Design Criteria A number of more than 100 international standards are defined as applicable in Vol 1, Technical Specifications, page 1-3, which are binding and the more stringent shall prevail. •The client is requested to reduce the number of applicable standards to those regularly used in international projects in Egypt, such as: ECP, ASME, DIN, ISO, IEC •For the process design, ATV or Metcalf and Eddy shall be applied. The process design shall be verified with a dynamic simulation model, such as BIOWIN.	1. The inclusion of a large number of International Standards is intended to ensure comprehensive coverage and address any potential gaps or missing specifications in the Egyptian codes. It's important to note that these standards are binding, and the more stringent standards always take precedence. The usual approach is to focus on the standards commonly used in international projects in Egypt, such as ECP, ASME, DIN, ISO, and IEC. In case of any gaps, the long list of standards should be used according
	Kindly clarify whether the preparation of detailed designs shall be based on Egyptian Code or the International Standards	

No.	Question	Answer
		to the instructions of the Detailed Design Consultant (DDC). 2. For the process design, the Egyptian Codes and Metcalf and Eddy shall be applied.
Q.147	Electro-magnetic flow meters shall be positioned such that there is a minimum length of straight pipe equivalent to 10 pipe diameters directly up stream before the inlet to the flow meter and a minimum length of straight pipe equivalent to 5 pipe diameters immediately downstream of the meter. Performance requirements and potential disturbances to the flow may dictate an increased length of straight pipe upstream or downstream is required. Most of 25 electromagnetic flow meter recommends 5 or greater upstream distance and 2 or greater downstream distance please advise?	This should be indicated in your technical offer.
	In addition, a 4-20 mA analogue signal shall be provided to drive a pen of a three-pen recorder (the two other pens being driven from the two other controllers associated with its respective pumping system). The pen recorder shall be a 7- day circular recorder and each pen shall be arranged to operate at different radii despite have similar residual chlorine levels. The recorder shall be wall mounted adjacent to the chlorination equipment. Can we replace the classic paper chart recorder with electronic one, which is paperless?	
	A simple control system shall be supplied and installed under the scope of this contract comprising of the following: *Three (NO) remote I\O units to be installed in the Headworks, Biological treatment and chlorination building respectively. *One PLC &HMI units to be installed in the control room. *Fiber optic cabling for interconnection of the system Is it acceptable to have only one plc panel with all I/O units?	
Q.148	Please nominate the minimum and max ambient temperature.	The minimum and max ambient temperature: 16-35°C.

<table>
<tr><th>No.</th><th>Question</th><th>Answer</th></tr>
<tr><td>Q.149</td><td>
<table>
<tr><th rowspan="2">Main Units</th><th colspan="2">Stage 1 (2037)</th><th colspan="2">Stage 2 (2057)</th></tr>
<tr><th>Civil Works</th><th>Mechanical and Electrical Works</th><th>Civil Works</th><th>Mechanical and Electrical Works</th></tr>
<tr><td>Headworks</td><td>✓</td><td>✓</td><td>✓</td><td>-</td></tr>
<tr><td>Distribution chambers of primary sedimentation tank</td><td>✓</td><td>✓</td><td>-</td><td>-</td></tr>
<tr><td>Primary sedimentation tanks</td><td>✓</td><td>✓</td><td>-</td><td>-</td></tr>
<tr><td>Distribution chambers of aeration tank</td><td>✓</td><td>✓</td><td>-</td><td>-</td></tr>
<tr><td>Aeration tanks</td><td>✓</td><td>✓</td><td>-</td><td>-</td></tr>
<tr><td>Blower building for aeration tanks</td><td>✓</td><td>✓</td><td>✓</td><td>-</td></tr>
<tr><td>Distribution chambers of final sedimentation tank</td><td>✓</td><td>✓</td><td>-</td><td>-</td></tr>
<tr><td>Final sedimentation tanks</td><td>✓</td><td>✓</td><td>-</td><td>-</td></tr>
<tr><td>Chlorination building</td><td>✓</td><td>✓</td><td>✓</td><td>-</td></tr>
<tr><td>Chlorine contact tanks</td><td>✓</td><td>✓</td><td>-</td><td>-</td></tr>
<tr><td>Return and excess sludge pumping stations</td><td>✓</td><td>✓</td><td>✓</td><td>-</td></tr>
<tr><td>Gravity thickeners</td><td>✓</td><td>✓</td><td>-</td><td>-</td></tr>
<tr><td>Sludge drying beds</td><td>✓</td><td>✓</td><td>-</td><td>-</td></tr>
<tr><td>Sludge stabilization and long term sludge storage area</td><td>✓</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>Main pipes between treatment units</td><td>✓</td><td>✓</td><td>-</td><td>-</td></tr>
<tr><td>Transformer building</td><td>✓</td><td>✓</td><td>✓</td><td>-</td></tr>
<tr><td>Generator building</td><td>✓</td><td>✓</td><td>✓</td><td>-</td></tr>
</table>
The above table showing stage (1 & 2) detailed construction works (civil and electromechanical) in front of each building. Please check and advise.</td><td>Confirmed.</td></tr>
<tr><td>Q.150</td><td>Employer' Requirement: Page 196
8. The Contractor is requested to design the WWTP general layout indicating all units and buildings for final Stage. The minimum number of treatment streams shall be TWO, and stream average flow capacity is 100,000 m³ per day for phase 1 (2037). The Contractor shall ensure the proper distribution of the raw wastewater flow between the treatment lines (two or more) is accomplished.
The above wording snapped from tender document, please clarify the meaning of (the highlighted sentence) stream average capacity is 100,000 m3/d.</td><td>The average flowrate for phase 1 (2027) = 100,000 m3/d.
For this phase, the minimum number of streams shall be Two.</td></tr>
</table>

No.	Question	Answer
Q.151	"Kindly nominate the minimum accepted area for following units: - Administration building, (including laboratory). - Workshop building. - Store building. - Sludge storage area."	Please refer to the tender drawings. The awarded Contractor shall develop the detailed design, including details of the mentioned buildings, detailed calculation sheet and drawings. All detailed drawings shall be submitted to the Detailed Design Consultant (DDC) for review and approval.
Q.152	"In tender drawings (General layout) building (No. 22) called electricity & material room - Please nominate minimum accepted area. - What is the function needed from this building?"	Please refer to the Vol. 1, and Vol.2 of the technical specifications. The awarded Contractor shall develop the detailed design, including details of the mentioned buildings, detailed calculation sheet and drawings. All detailed drawings shall be submitted to the Detailed Design Consultant (DDC) for review and approval.
Q.153	Please specify the water temperature to be used in OPEX calculation	20°C.
Q.154	Please confirm that the process shall be designed for carbon removal and nitrogen removal as well.	Rejected. The design for the current TD is only for carbon removal.
Q.155	Please clarify which is the TKN concentration (mg/1) in the influent wastewater?	Please refer to the table of the influent characteristics.
Q.156	It is mentioned that grit shall be extracted by scraping during the backward motion of the bridges to the front end of the channels, and then lifted up by submersible pumps to the silos, while Oil & Grease shall be removed from the surface of the channels by a surface skimmer during the forward motion of the bridge to the far end of the channels. Separated grit from Grit Chambers is to be collected from the Silos to movable containers. Please clarify which is the minimum number of silo and storage time or volume of each grit silo?	The number of silo and storage time or volume of each grit silo should clearly be identified in your technical offer and shall be technically evaluated.
Q.157	Please clarify that what is the population equivalent value for first phase (2037) and second phase (2057)?	The average flowrate for phase (2037) = 100,000 m3/d. The average flowrate for phase (2057) = 150,000 m3/d.
Q.158	Please clarify if Screw conveyor and Screening press are required for the fine/medium screening handling system?	Confirmed.

No.	Question	Answer
Q.159	Referring to Section VII - Employer's Requirements in the Specific Requirements - Flow and Loads effluent criteria values has been indicated by the less than sign (<). Please confirm that the values given in the Table 2 will be less than or equal symbol (:S) instead of less than sign (<).	The Table is correct.
Q.160	It is mentioned that the other treated wastewater quality parameters shall be as stipulated in the Egyptian law 48/1982. Can you please provide details about **Egyptian law No.48/1982?**	The specified effluent quality limits are outlined in the tender documents.
Q.161	Please clarify how many days of chlorine drum storage is required and which is the required drum volume?	These details must be provided in your technical offer and shall be technically evaluated.
Q.162	Please clarify if the administrative building, guard house and workshop building shall be constructed as part of this contract? If yes, could you please provide information for gross area and construction details for each building?	Confirmed. The proposed areas of the mentioned buildings should be indicated in your technical offer. Then the awarded Contractor is required to develop the detailed design of the mentioned buildings and facilities based as specified in this specification, for review and approval of the Detailed Design Consultant (DDC).
Q.163	It is mentioned that primary Sedimentation tanks shall be provided as well as Aeration Tank sludge age can be selected between 7-20 days. Settled sludge in primary sedimentation tank as primary sludge consists to a high portion of organic matters, as faeces, vegetables, fruits, textiles, paper etc. Furthermore, the unused biomass has to be removed from the biological treatment system as excess sludge. The excess sludge contains not-hydrolysable particulate materials and biomass due to metabolisms. Primary as well as excess sludge creates offensive odour during thickening and drying processes if it is not stabilised in the system. Sludge gravity thickeners can be covered and odour could be removed but sludge drying beds cannot be covered so malodorous odour in the plant cannot be avoided. In order to prevent it, please confirm that Primary Sedimentation tanks shall be cancelled and Aeration Tank sludge age shall be selected to 2:20-25 days in order to obtain aerobic sludge stabilisation to avoid offensive odour from the sludge drying beds.	Rejected.
Q.164	Kindly confirm our understanding that any determination exchanged by the engineer shall not be final (i.e. not approved by employer) and further objection could be shared by the employer to the contractor which may put obstacles to proceed with the works.	Please refer to the FIDIC – Yellow Book.
Q.165	Schedule for Air Blower Building is missing. Please provide.	Air Blower Building is mandatory item.

No.	Question	Answer
Q.166	Please clarify whether the swing diffuser holder assembly with hoist is mandatory or an option. B. Grit separation equipment shall include air piping and valves, swing diffuser holder assembly, header pipes, hoist, and diffusers. Baffles shall be structural steel plate, 50 mm thick redwood, or manufacturer's standard. System shall receive air from an external supply.	Mandatory.
Q.167	G. Penstocks for outlet water from all sedimentation tanks and for sludge discharge. Each settling tank has a penstock at the distribution chamber for maintenance and/or isolation, accordingly using these penstocks will also stop the water outlet for each tank, please clarify whether the penstocks for outlet water from all sedimentation tanks are mandatory or an option. For the sludge outlet we suggest (for each tank) to use a telescopic valve complete with bypass gate valve which shall be used for maintenance of the telescopic valve and for drain manovering, please confirm that telescopic valve complete with isolating gate valve for sludge discharge is accepted.	Confirmed.
	Please confirm that penstocks /weirs /weirs penstocks for second phase are not required in any common structures/units for the two phases and can be done in the first phase by brick wall for the second phase isolation	
	4.12.5.2 Motorized Gates, Valves (Process Design Recommendation) A. Penstocks of width and valves of size greater than 500 mm at screens, grit removal, aeration process, air blowers and process pumps (wastewater/sludge) shall be motorized type. Please confirm requirement to be applied only where the two condition exists ;to be bigger than 500mm and at the specified locations	
Q.168	Please accept that unit isolation concept can be applied from the final settler tank 's distribution chamber penstock and substituting the mentioned penstock	Rejected.
Q.169	H. Sand and Silo (Hydro Dynamic Separator): i. The grit separator shall be designed to efficiently remove grit from wastewater inflows to protect downstream components of the Treatment Plant. They shall utilize the special characteristics of controlled hydro dynamic flow, to separate settle-able solids and operate at high hydraulic loadings to minimize facility space requirements. Please clarify, whether sand silo is mandatory for sand separation or sand classifier can be used.	Confirmed, Silo is mandatory.

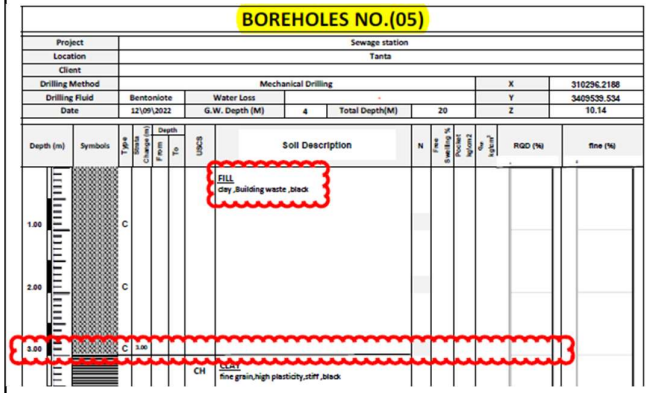
<table>
<tr><th>No.</th><th>Question</th><th>Answer</th></tr>
<tr><td>Q.170</td><td>Kindly Clarify If irrigation system is required or not.</td><td>Confirmed, irrigation system is required for the landscape.</td></tr>
<tr><td>Q.171</td><td>Could you please confirm if the underground networks of the demolished buildings have been removed?</td><td>Confirmed.</td></tr>
<tr><td>Q.172</td><td>"Please provide the foundation recommendations as the following (but not limited to):
a. Excavation level.
b. Allowable net and/or gross bearing capacity.
c. Thickness of replacement.
d. Recommended foundation system for each building.
e. Modulus of sub-grade reaction."
There is a Fill layer appeared in some boreholes logs with thickness varied from 0.5 to 3.0 m. however, its missing in the proposed soil model (as shown in below figure).
 

Table 9.1-: Idealized Geotechnical Parameter
<table>
<tr><th>Layer</th><th>Unit weight (kN/m³)</th><th>Friction Angle (degree)</th><th>Cohesion (kg/cm²)</th><th>Modulus of elasticity (kg/cm²)</th><th>COMPRESSION INDEX Cc</th><th>RECOMPRESSION INDEX Cr</th></tr>
<tr><td>Clay</td><td>18</td><td>---</td><td>0.85</td><td>250</td><td>0.30</td><td>0.02</td></tr>
<tr><td>Sand</td><td>18</td><td>34</td><td>---</td><td>300</td><td>---</td><td>---</td></tr>
</table></td><td>The awarded contractor is responsible for conducting detailed soil investigations and accordingly shall develop the detailed design. The detailed design should include detailed calculation sheets, and drawings. All detailed drawings must be submitted to the Detailed Design Consultant (DDC) for review and approval.</td></tr>
<tr><td>Q.173</td><td>The followings are missing from the geotechnical report
Kindly, provide the soil type regarding seismic analysis.
Cement type and amount recommendations are missing.
The recommendations of insulation/isolation system are missing.</td><td>This is to confirm that the detailed soil investigation shall be conducted by the awarded contractor as stipulated in the tender documents. This investigation is an essential step to provide accurate and comprehensive data for the construction stage.</td></tr>
</table>

No.	Question	Answer
Q.174	Please confirm that cost of consumables during commissioning and pre-commissioning periods including fuel, spare parts, oil & grease, chemicals, and chlorine shall be out of contractor scope and paid by the employer Please confirm that cost of power consumption during commissioning and pre-commissioning periods shall be out of contractor scope and paid by the employer	Rejected.
Q.175	Maintenance supervision period of 3 months at the end of the O&M year including fuel, spare parts, oil & grease, chemicals, and chlorine shall be out of contractor scope and paid by the employer. because the main operation activities are undertaken by the employer stuff.	Rejected.
Q.176	Please confirm that liquid chlorination system (Hypochlorite) is accepted	Rejected.
Q.177	To keep area for digestion and other tanks which will not be part of scope of this tender 1-Please specify all units /tanks related to this point 2-Plotting on the layout the area and location dedicated for those mentioned tanks	Digestors are beyond the scope of the current contract, and in future will be constructed off-site.
Q.178	Please clarify the scope required in supervising the O&M works for 3 months as mentioned at item 26-2 Item and the scope required for O&M support for O&M support for 3 months at item 26-5	Please refer to the TD. The Contractor shall be responsible of one year Operation, and Maintenance including three months of client staff training. The training of Tanta WWTP's Staff will be delivered during the Defect Liability Period as required by the Engineer and Employer, the tenderer will submit his own O& M plan. Also, his training plan within the technical offer which shall be agreed with the Engineer and Employer during the Contract Period.
Q.179	1-6.7 Inspections / Testing by 3rd Party 1-6.7 Witness performance tests at place of manufacture Please confirm the understanding the items mentioned all already priced with provisional sum of 10,000 euro and 20,000 respectively and tenderer shall not consider any additional price for the requirement	Correct.
Q.180	In tender documents' drawings: -For the borderlines shown in the layout drawings, which separating between the existing plant and the demolished (clear area for contraction) would you please provide the (x,y) coordinates for all points. -During our site visit, Gharbia (WSC) representative officially nominate that beside the southern fence of the plant there are an electrical cables and pipelines exist. would you please exactly specify the used area and whether it will be remained in its place or will be shifted. Inside the project clear area for new constructions, please clarify what are the hatched areas (red colour) shown in the tender layout drawings.	The coordinates of the borderlines are not available. After commencement of the contractor, the coordinates will be provided to the contractor by the Engineer. For services information, please refer to the answer to question 9. The red hatched areas shown on drawing No.2 of the tender documents are to be ignored.

No.	Question	Answer
Q.181	Schedule 25 -Environmental, Social, Health and Safety ESHS Specifications Clause N° please provide the mentioned clauses in the schedule ESHS costs are deemed to cover operations on plant work site (as defined in Clause 1.3 of ESHS Specifications, in Volume 1). Interim payment certificates shall include the portion of each ESHS cost amounting to the percentage of the actual progress achieved in executing the ESHS measures in compliance with the ESHS Specifications and approved by the Engineer. Please provide the mentioned clause 1.3 ESHS specification.	Please ignore these statements. The ESHS shall comply with the EIB Standards, the link for which is given on page 221 of the request for tenders.
1B) SCADA & Control (From Q.182 to Q.196)		
Q.182	It's mentioned in the general system requirements that future SCADA connectivity is required, however SCADA is included in the price schedules. Please clarify whether the SCADA is required for the current phase or not. The plant shall be controlled by PLC suitable for SCADA and telemetry connection and shall incorporate a Human Machine Interface (HMI) within a dedicated Motor Control Centre (MCC). Please clarify and provide details about the telemetry connection and requirements.	SCADA system is a mandatory part of the supply and should be provided according but not limited to: - - Volume 1: Process& Electromechanical Specifications- Chapter 4 “Measurement Instrumentation & Control”- Section 4.12, and Section 4.12.3 Scope of Work. - The contractor system design. The additional SCADA specifications attached in Annex#2, which will form part of the final contract documentation.
Q.183	Please advise the SCADA is required or not? and if yes, please advise the required number of PC workstation, monitor screen, ups and printer?	SCADA is mandatory SCADA system is a part of the supply and should be provided according to: - Volume 1: Process& Electromechanical Specifications- Chapter 4 “Measurement Instrumentation & Control”- Section 4.12, and Section 4.12.3 Scope of Work. - The contractor system design. - The additional SCADA specifications attached in Annex#2, which will form part of the final contract documentation. The system structure and number of servers, workstations etc. to be proposed by the contractor considering the system availability, reliability and redundancy and supported by the system calculations.

No.	Question	Answer
Q.184	Please confirm that the PLC CPU, power supply and communication will not be redundant where it's not mentioned on tender specs	The power supply should be redundant. Other modules redundancy is optional.
Q.185	Please, confirm that the number of LCP or RTU are subject to each contractor design as well as committing to the project specifications.	Confirmed. Considering that each identified part of the plant should have at least one LCP & RTU.
Q.186	Level status will be shown on the HMI and no need to add pilot led for second indication Please confirm.	Pilot led is required.
Q.187	No need to have an analogue input module with 18 bit resolution as minimum however the 12/16 bit resolution will be standard, available and applicable for our applications. Please advise, and also note that 18 bit /conformal coating is manufacturing by one supplier only (Allen Bradley), and 16/12 bit is available for Schneider/Siemens/Allen Bradley.	Confirmed. Using the standard modules.
Q.188	Please confirm that we can use PLC & HMI component's to be standard type instead of conformal coating type which will be installed in building far away from biological treatment area.	All the components in the harsh areas should be protected against the environmental conditions. The protection type and degree should be provided for each component.
Q.189	Please advise the PLC system will be for phase-01 only, or for both phases. If for both phases, then advise the contractor will supply the I/O's cards for phase-02 or just to enable phase-01 system to add extensions I/O's card in the future.	Confirmed for Phase-01. The system should be extendable for Phase 02 I/O's.
Q.190	Technical specifications: Page 142 - One PLC &HMI units to be installed in the control room. As you mentioned that the PLC will be only in the control room panel, will you need a PLC redundancy please confirm.	Redundant PLC/HMI system should be supplied and installed in the control room and to be interfaced with SCADA system. The tenderer may propose a SCADA system without PLC/HMI in the control room as a main or an alternative offer.
Q.191	Technical specifications: page 142 B. SCADA system : Citect SCADA (Schneider) 2018 C. Reporting system: AVEVA historian (Schneider) 2020 D. Communication: Must support dnp3 protocol You have mentioned the software to be use in SCADA system, is it just for example or we need to stick with it only Please Advise?	The mentioned software is recommended but the supplier may propose an equivalent reliable software package as per his design. The software offered should be well known and installed in many similar projects. (supporting documents to be provided).
Q.192	Technical specifications: page 148	All the components in the harsh areas should be protected against the environmental conditions. The protection type and degree should be provided for each component.

No.	Question	Answer
	R. PLC environmental conditions as per (IEC1131-2). The attention of the contractor is drawn to the fact that wastewater station is a highly polluted with corrosive gases. The contractor shall take protective actions to ensure long service life of the components proposed, and to use conformal coating to PLC modules located in harsh environments only. You mentioned that the confermal coated components is needed only in hazards area, as you determined the panel's location, will the components in that locations will be coated or not please advise?	
Q.193	Technical specifications "We need to more details about the SCADA system IT, Just one server needed or redundancy is a must? How many clients is needed? A video wall is needed or not? Also, the printers needed?	Redundant servers are required. The no. of workstations, printers, video walls, …etc to be offered as per the supplier system design.
Q.194	Technical specifications: Page 49 F. The plant shall be controlled by PLC suitable for SCADA and telemetry connection and shall incorporate a Human Machine Interface (HMI) within a dedicated Motor Control Centre (MCC). The HMI shall be only within the PLC panels not within the mcc, please confirm Technical specifications: Page 50 G. The blowers are frequency controlled to maintain the required pressure in the main air header with changing air demand. The HMI shall be only within the PLC panels not within the mcc, please confirm	HMI is required for both PLC and MCC panels.
Q.195	It is requested to submit the PLC's I/Os' list. However, it is not mentioned in the items "Documents to be Included in the Tender Submission" of Section VII Part 2. Please confirm if the submission of IO list is requested during the Bidding Stage.	I/Os list is required in the bidding stage as per the supplier system design.
Q.196	Please advise the following electrical work will be designed for phase-01 (100,000 m3/day) or for phase-01&02 (150,000):- a- Ring main units. b- Medium voltage switchgears. c- Transformers. d- Generator. e- Low voltage switchgears. f- PLC/SCADA systems.	The electrical work will be designed and supplied for Phase 1 (2037). PLC/SCADA will be designed and supplied for Phase 1 (2037).

No.	Question	Answer
1C) Electrical (From Q.197 to Q.220)		
Q.197	In case of power greater than 800KVA contractor has to construct a transformers room. G. Transformers must have another stand – by units complete with kiosks and of the power as the main transformers If the Transformers ratings will be higher than 800KVA we will construct a Tr. rooms and Indoor type transformers will be used instead of Kiosk Tr., please confirm	Confirmed for transformers ratings higher than 800 KVA.
Q.198	The low-tension switchboard should be Form 3b to allow easier maintenance and better dismantling of apparatus Regarding Low Voltage Panels/MCCs please confirm using panels form 2b.	The low-tension switchboard including Low Voltage Panels/MCCs shall be form 3b.
	Technical specifications: Page 78 C. The low-tension switchboard should be Form 3b to allow easier maintenance and betterdismantling of apparatus. Is it possible to use form 2b instead of form 3b, Please Advise?	
Q.199	The low-Tension Switchboard bus bar should be sectionalized type made from tinned electrolytic copper with maximum current density of 1.5 A/mm2 Regarding LV panels and MCCs please confirm it's busbars current density to be 2A/mm2.	Rejected, Contractor to follow tender specifications.
	The current density shall not exceed 1.5 Amp/mm2 Regarding Bus bars please confirm the applicability of using B.B with current density 2A/mm2.	
	Outdoor cables laid directly in ground shall be steel wire armored while indoor cables shall be unarmored. For Outdoor cables laid directly in ground STA cables type are applicable to be used.	
	Technical specifications: Page 79 J. The low voltage circuit breaker inside low Tension Switchboard should be AIR Circuit Breaker for current rating starting from 630 A and for lower than 630A MCCB is used. Is it possible that the low voltage circuit breaker inside low Tension Switchboard to be AIR Circuit Breaker for current rating starting from 1000 A and for lower than 1000 MCCB is used? Please confirm.	

No.	Question	Answer
	Technical specifications: Page 79 K. The low voltage circuit breaker inside low Tension Switchboard should be withdraw-able Circuit Breaker for current rating higher than 400 A. Is it possible that the low voltage circuit breaker inside low Tension Switchboard to be withdraw-able Circuit Breaker for current rating higher than 800 A? please confirm.	
	Technical specifications: Page 79 L. The low voltage circuit breaker inside low Tension Switchboard should be motorized for ratings higher than 600 A. Is it possible that the low voltage circuit breaker inside low Tension Switchboard to be motorized for ratings higher than 800 A? Please confirm.	
Q.200	Kindly exclude the high voltage air compressor as we calculate the required air flow for the treatment process & add about from10-15% excess air flow to be sure that the delivered will be sufficient for the treatment process & achieve the required DO concentration	Subject to contractor design, please refer to item 2.28.5 (L): High voltage air compressor c/w control panels can be used as additional air supply.
Q.201	Please advise the incoming medium voltage is 10.5 or 11 KV?	The Contractor shall be responsible to coordinate with Electricity Company to secure the permanent medium voltage supply and M.V. cables from nearest source to the new RMU or MV switchgear inside the treatment plant (Provisional Sum). All other equipment shall be as per contractor design.
	Please advise if the incoming medium voltage power feeding cables in contractor scope or not?	
	Employer Requirements: page 198 27. The Contractor shall be responsible to coordinate with Electricity Company to secure the permanent medium voltage supply and M.V. cables from nearest source to the new RMU inside the treatment plant. The cost of these works shall be paid against a provisional sum as indicated in the Schedule of Prices. It shall be the responsibility of the Contractor to visit the sites and know the electrical authority specific requirements. Please clarify the scope of work which including in the provisional sum of electrical power supply from electricity company. Also, Please Confirm, the MV switch gear and transformers inside Plant are not include in the provisional sum of electricity.	
	It is mentioned that "the medium tension power supply to the site shall be secured by the Contractor up to the ring main units inside the plant borders as detailed in Clause 1.3 and Clause 1.5.12 of this technical specification". The referred Clauses 1.3 and 1.5.12 could not be found in the technical specification. Please clarify	

No.	Question	Answer
	Medium voltage ring main units RMUs shall be of (3+1) The price of the panel is at the contractor's expense or at the owner's expense, or includes the electrical connection	
Q.202	Please advise the quantities of the power transformers, will be only (one duty) or (one duty+ one standby).	(One duty + One Standby) Transformers shall be (duty + stand-by).
Q.203	Please advise about the transformer capacity calculation will depend on total rated power or total absorbed (consumed) power where it's not mentioned on tender specs.	Transformer capacity shall depend on rated power.
Q.204	Please advise the generator will cover 100% of plant loads as a prime or standby.	The diesel generating plant shall be designed to cover the basic plant load under emergency condition excluding non-continuous loads comprising of cranes, normal ventilation, and dewatering pumps (stand-by use) to ensure continuous operation of the plant that meet the required of the treated effluent criteria and sludge thickening and dewatering as per the Functional Guarantee. The diesel generator shall be designed on Prime use basis. See Annex#3.
	Employer Requirements: page 214 11. Emergency Power • Provide a diesel generator which shall start automatically in the event of power failure at the works. The diesel generating plant shall be designed to cover the basic plant load under emergency condition excluding non-continuous loads comprising of cranes, normal ventilation, and dewatering pumps (stand-by use). The Contractor's design and operation and maintenance procedures shall allow for operation of the WWTP when there is pumped flow to the WWTP and power failures of various durations of the WWTP. The diesel generator shall be designed on Prime use basis. "Please Confirm, the diesel generator will cover 100% from total load without non-process loads as cranes, ventilation and dewatering pumps. Please Confirm, the diesel generator will be prime use and the load will be 80 % from the generator capacity?"	
Q.205	Please advise about the generator capacity calculation will depend on total rated power Or total absorbed (consumed) power where it's not mentioned on tender specs.	Generator capacity shall depend on consumed power.
Q.206	Please advise the following electrical work will be designed for phase-01(100,000m3/day) or for phase-01&02(150,000); a- Ring main units. b-Medium voltage switchgears. c-Transformers. d-Generator. e-Low voltage switchgears.	The Contractor is requested to design the treatment plant based on the requirements of the first phase (2037), except the civil work of the headworks (approach channel, screens, and grit removal chambers, distribution box, etc.).
	Employer Requirements:	

No.	Question	Answer
	(i) The Construction of all civil and electromechanical works shall satisfy the requirements of phase 1 (2037) as indicated in Table 1. Please confirm, that the transformer capacity and the generator capacity shall be designed only for phase 1 loads (2037) and in future we will add new transformers and new generator for phase 2 loads (2057). Please Confirm, the MV switchgear, LV switchboard will cover phase 1 loads (2037) only and the panels will be extendable for new phase 2 (2057) The required transformer for the first stage or for the two stages?	
Q.207	"Outdoor cables shall be steel wire armored" we require that Outdoor cables directly buried shall be steel wire armored while Outdoor cables on cable ladder in cable trenches shall be unarmored. Please advise.	Outdoor cables shall be as following: 1. Directly buried Cables (armoured) 2. Cables laid in Pipes (Cable Duct) (unarmoured) Please refer to technical specifications item 3.17.
Q.208	Please confirm the acceptable grid resistance for power will be 2 ohm and 0.5 ohm for the control/instruments grid	Please refer to Technical Specifications item 3.19.
Q.209	Employer' Requirement: Page 208 4. All electro-mechanical equipment shall be of heavy-duty performance, and to standards applied in North America, Europe, Japan, or local manufacturing origin. The above wording snapped from tender document, we understand that North America, Europe, Japan, or local origins are the only acceptable origins **please confirm**.	Confirmed.
Q.210	Turkey origin with ERO 1 certificate for electromechanical equipment is accepted **please confirm**.	Confirmed, Euro1 certificate shall be submitted along with proposed equipment.
Q.211	Technical specifications: Page 16 A. All equipment shall be de-rated for continuous operation in accordance with an ambient temperature of 45oC and in accordance with BS 7671 Part 2, Section 522-01, 522-02, 522- 11, Table 4C1 and 4C2. B. All materials and equipment which are subject to certification by testing authorities shall be certified as being tested at an ambient temperature of 45oC. The ambient temperature of project and to electrical equipment (Transformers, cables, MV switchgear, LV switchboard, busbar, VFD, etc…) is 45°C, please confirm.	Confirmed, ambient temperature is 45°C.
Q.212	Technical specifications: Pages 62 & 63	The paragraph is self-explanatory, Contractor to follow tender specifications.

No.	Question	Answer
	Motor De-Contactor Plug and Socket A. The supply cable to the drive motor shall incorporate a suitably rated weatherproof de-contactor plug and socket. B. The male section of the unit shall be connected directly to the drive motor using suitablyrated flexible cable. The female socket shall be securely supported in a position to ensure that the latch button is readily accessible from the bridge. B. The main cable from the collector shall be a single multi-core which is to be terminated at the motor end of the bridge with an IP65 junction box. From the terminal box individual three or two core cables shall be run to the various items of equipment included in the bridge contract. Settling Tanks Control panel shall be fed directly from slipring and all motors shall fed directly from control panel, please confirm.	
Q.213	Technical specifications: Page 80 U. ATS switch board must be included. ATS shall be included in main L.T switchboard panel, please confirm.	Confirmed, ATS shall be included in main L.T switchboard panel.
Q.214	Please confirm that the switchgear degree of protection will be IP54 for outdoor & IP 42 for indoor Please, confirm that MDB and Low voltage Switchgear which has a current capacity equal or more than 500 Amp, shall be a Type test, and the LV panel less than 500 A shall be as suppliers standard	Please follow specifications item 3.3.8 General Specifications of Switchboards.
Q.215	Please advise if the Sub-MCC's should be provided with one incoming circuit breaker or two.	Two incoming circuit breakers.
Q.216	Kindly provide us with as built for the Electrical tie in point. As-Built for existing cables 3x400mm2 MV Cables is required	No as-built drawings are currently available. Any missing data could be obtained from the site after having Gharbia WSC permission.
Q.217	The electric power required for the operation of the WWTP shall be received from the Electricity Company via the medium tension network of the City at 11 KV, 50 Hz.Please Provide the total cable length and the available power source rating for the plant (Mentioned 2MVA in another document)	Please refer to the payment Schedule#1 Preliminary and General: Item 1-6.5. The Contractor shall be responsible to coordinate with Electricity Company to secure the permanent medium voltage supply and M.V. cables from nearest source to the new RMU or MV switchgear inside the treatment plant (Provisional Sum). All other equipment shall be as per contractor design.

No.	Question	Answer
Q.218	Specifications a) Scope of Supply of Plant and Installation Services by the Contractor it's mentioned in item no 12 the following: Ancillary buildings such as administration building, air blower building, chlorine building, transformers, and generator buildings, as requested in the architectural and civil specification complete with all services such as lighting, water supply, telephone lines, internet, waste and storm drainage, telecommunication, fence, signboards, etc. **Please clarify what is the scope required for the telecommunication?**	Contractor is requested to submit his proposal based on his own design with all required devices, protocols etc. considering the system availability, reliability and redundancy to provide the ability to control/monitor the system and receive notifications if there were any alarms or system errors. The telecommunication system shall meet the following objectives: 1. Integration and interfacing of all systems to improve standardization of PLC/HMI, configuration and hardware components. 2. Operator-friendly displays operating with optimal information. 3. Maintenance-friendly systems which provide quick trouble-shooting of events, alarm and system trips. contractor shall follow IEC 61663, IEC 8802, IEC 61643. The SCADA control room shall be in the existing administration building.
Q.219	Similarly, “across works” systems such as service water, security systems Installation and testing of fire detection, fire suppression and security systems **Please clarify the detailed scope of the security systems**	Contractor is requested to submit his proposal based on his own design with all required devices, protocols etc. to guarantee a secure operation in project premises, by protecting facilities, controlling access and monitoring process areas, contractor shall follow IEC 62443.
Q.220	Please confirm the need for CCTV system for site layout.	Based on contractor design.

No.	Question	Answer
2) Procurement & Financial Clarifications (From Q.221 to Q.282)		
Q.221	Please advise for number of vehicles to be provided by contractor for client use during construction.	Numbers and amounts will be determined against the available Provisional Sums and will be instructed during the contract period subject to the Engineer's approval.
Q.222	Kindly accept our request to extend the bid closing date for one month in order to submit a proper technical and competitive commercial proposals	The Employer accepted to extend the submission date to be on Wednesday 31st of January 2024. **A formal modification advising this change will be issued bt the EIB in due course.**
Q.223	Due to the recent trends in material pricing which are showing high fluctuations (upside and downside) arising from the market turbulence caused by the unusual conditions in the current period. Kindly consider allowing to reinstatement the items to be covered under the escalation formula can be mutually agreed upon (including but not limited to labor, fuel, steel, copper, etc..)	The Contract has been developed to ensure it is fair and equitable between the Contractor and Employer. For this reason, the currency of the tender is in Euro whilst payment will be made in Euro and Egyptian Pounds depending on the source of the services / good Please refer to Section II, ITT 17.7 The prices quoted by the Tenderer shall be: Fixed.
Q.224	Repayment amortization rate of advance payment: 20% The contractor would like to request for the amortization percentage of the advance payment to be like the value of the advance payment being 15%, for the project to maintain a neutral cashflow.	Please refer to the Contract Conditions Part A – Contract Data, 14.2(b) The advance payment will be 20% and the amortization rate will not be changed and remain 25%.
Q.225	We have identified a contradiction between the schedule of price and the invitation letter clauses about the bank to be considered for the currency exchange. Please advise.	There is no contradiction in this point, there are different situation that an exchange rate might be applied: 1- In the case of Tender Security and Evaluation of financial offers: The applied exchange rate is in accordance with the Egyptian Central Bank of Egypt. The time of the exchange rate: 7 days prior to the deadline for receiving technical and financial Tenders. Section II, ITT 20.1 and 38.1. 2- In the case of Payment: The source of official selling exchange rates for payment

No.	Question	Answer
		purposes is: The Central Bank of Egypt. The date of the exchange rate for payment purposes is the date of payment. 3- For the evaluation of financial capacity and submitted turnover: Exchange rates shall be taken from the publicly available source of Exchange rate (Info Euro) which is available through this link (https://commission.europa.eu/funding-tenders/procedures-guidelinestenders/information-contractors-and-beneficiaries/exchange-rate-inforeuro_en). Any error in determining the exchange rates in the Financial Tender may be corrected by the Implementing Entity. Section III (b)
Q.226	As per PCoC 14.5 b and c, and also Preamble to Price Schedules, no payment shall be affected after shipping neither after delivery to site. The payment for the goods will be affected after completion of installation only. Considering that the AP is defined as 10% only, this will lead to a massive negative cashflow and the burden for the contractor to pre-finance a considerable portion of the contract value. • We ask to accept payment of goods against presentation of shipping documents (B/L, CMR, etc) and shall provide the details of the payment due upon the following milestones: supplies against B/L, installation, T&C, civil works, O&M	The Employer accepted to increase the advance payment to be 20%. The payment will be Upon the Engineer's approval on the interim payment.
Q.227	Kindly specify all items that will be considered as part of the provision sum Please clarify if the provisional sum is not enough to cover the items in the scope of the provisional sum. Please clarify what will the contractor do?	The Provisional Sums are included to be used by the Employer, such items under this budget line are subject to the Engineer's approval. Please refer to the Schedule of Payments, Section IV. Tender Forms. Numbers and amounts will be determined against the available Provisional Sums will be instructed during the contract period, in addition, any variations will be subject to the Engineer's approval.
Q.228	Kindly confirm that form EXP-4.2 (b) is not applicable as its not reflected in section III. Evaluation, Qualification and Eligibility Criteria	EXP-4.2 (b) is required. The tenderer's qualifications and eligibility will be subject to preliminary and administrative evaluation.

<table>
<tr><th>No.</th><th>Question</th><th>Answer</th></tr>
<tr><td></td><td></td><td>Please refer to Section III, A. Eligibility and Qualification.</td></tr>
<tr><td>Q.229</td><td>Kindly advise if there are a minimum number of projects required to demonstrate the experience in section 5. Environmental and Social and Health and Safety (ESHS) Experience and Capacity</td><td>Tenderer should adhere to the minimum requirements stipulated in Section III, 5. Environmental and Social and Health and Safety (ESHS) Experience and Capacity.</td></tr>
<tr><td>Q.230</td><td>Please confirm to submit technical offer in English format only.</td><td>Confirmed.</td></tr>
<tr><td>Q.231</td><td>Please confirm that the supply & installation of medium voltage switch gears & MV main power supply cables outside the plant are included in the provisional sum.</td><td>Please refer to the payment Schedule#1 Preliminary and General:
Item 1-6.5.
The amount will be modified and shared with the interested tenderers.</td></tr>
<tr><td>Q.232</td><td>Please note that there is discrepancy between the following document regarding the total project duration
- Invitation for Tenders: "the construction period is 28.5 months"
- Part 1 - Tender Procedures, Section I. Instructions to Tenderers: “time to complete the Plant and Installation Services from the effective date specified in the Contract Data for determining time for completion of pre-commissioning activities is: 855 days”
- Part 3 - Section IX. Particular Conditions - Part A - Contract Data: "time for Completion of the Works is 30 Months"
Please Advise the followings:
1- The total project duration
2- The relation between the Commencement date & effective date</td><td>The time for completion is 819 days (27 months). Please note this duration is 93 days shorter than that given in the original request for proposals.

A formal modification advising this change will be issued bt the EIB in due course.

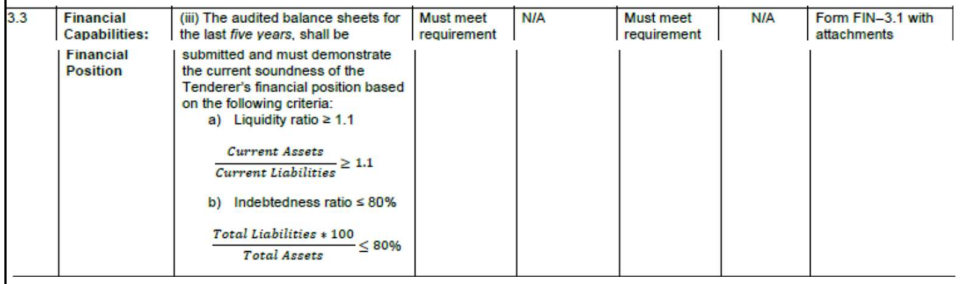
The commencement date is that referred to in Clause 1.1.3.2 of the FIDIC Conditions of Contract. In this particular case the ‘effective date’ means the same as the Commencement Date.</td></tr>
<tr><td>Q.233</td><td>The currencies indicated in the schedules as follow:
<table><tr><td>Unit Rate (EUR)</td><td>(EUR)</td><td>(EGP)</td></tr></table>and as instructed in Tender Data Sheet and Particular Conditions that all rates shall be priced in Euro we propose the following:
<table><tr><td>Unit Rate (EUR)</td><td>Outside Country (EUR)</td><td>Within Country (EUR)</td></tr><tr><td>A</td><td>B</td><td>C</td></tr></table>A=B+C
Please Confirm</td><td>Agreed.

Tenderers will indicate the prices in Euro currency for the services and commodities expected to supply from
within the Promoter’s country and the same from outside the Promoter’s country, but the payments will be as per the instructions stated in ITT 18.1

Please amend the payment tables by removing EGP and write (within the purchasing Country, Euro currency).
See Annex#1.</td></tr>
</table>

No.	Question	Answer
Q.234	Is it allowable to establish a Joint-Venture with a Chinese company for process and electro-mechanical purposes	Firms originating from all countries of the world are eligible to tender for this contract. Please refer to Section III. Evaluation, Qualification and Eligibility Criteria.
Q.235	Please extend the bid submission date for 45 days so that we can provide the best offer. Kindly accept extending the submission date 6 weeks after receiving the answers for the bidder's clarifications	The Employer accepted to extend the submission date to be on Wednesday 31st of January 2024. **A formal modification advising this change will be issued bt the EIB in due course.**
Q.236	Regarding to the calculations of the Liquidity Ratio and Indebtedness Ratio, we wish to confirm alignment of the calculation for avoidance of doubt. Large contractors would have significant down payment balances, which are of majority with term exceeding 12 months (non-current). The Indebtedness Ratio would also refer to net working capital in the Total Assets. Otherwise, alternative calculation methods may generate different ratios and limit competition by excluding top-tier contractors with large balance sheets. "Adj. Total Liabilities (Bank Debt+ Non-Current Liabilities)" "Adj. Total Assets (NWC + Non-Current Assets)"	Tenderers should comply with the financial conditions stated in Section III Evaluation, Qualification and Eligibility, Criteria 3. Financial Situation and performance.
Q.237	Form ENV–5.3 / Page (90/252) and Form OHSAS–5.4 / Page (92/252) .it is indicated to refer to Form PER-5.7 Please provide	PER-5.7 is not exist. Please refer to Form PER-5.6 "List of Available ESHS and Construction Personnel".
Q.238	Kindly confirm that Employer shall provide all necessary documentation, authorizations & declarations that will guarantee smooth customs clearance procedures and will fulfil any customs requirements whenever needed.	Confirmed.
Q.239	Kindly confirm that any extra storage or demurrage costs incurred by the contractor resulted from the delay of the employer in issuing the required documentations (mentioned above) for customs clearance or payment of official receipts will be charged back to the employer.	The Employer will exert the required efforts to support the Contractor in issuing the tax exemption letter soon after the contract signature. Moreover, the Employer will provide the Contractor with other documents (where possible and needed) in order to support the contractor in the customs clearance process.
Q.240	Kindly confirm that Contractor will be responsible for local transportation & custom clearance for the imported equipment till delivery to site.	Confirmed. Please refer to the incoterm stated in Section I. Instructions to Tenderers, item 17.5 and Section II. Tender Data Sheet, item 17.5 (a) & (d).
Q.241	Kindly provide the required types of insurance shall be provided by tenderers and its values or percentages	Please refer to the Section IX. Particular Conditions 18.2(d) and 18.3.

No.	Question	Answer
Q.242	Please confirm that payment shall be on monthly bases for operation and maintenance required	Confirmed.
Q.243	نرجوا من سيادتكم التكرم بالموافقه علي تأجيل موعد العطاء الي موعد اخر حتي يتسني لنا الانتهاء من اعمال التصميم والتسعير لمقايسه المشروع Please extend the deadline for receiving the technical and financial offers, in order to finalize the design and pricing activities.	The Contracting Authority agreed to extend the deadline for receiving the tender offers to be on Wednesday 31st of January 2024 at 12:00 noon local time. **A formal modification advising this change will be issued bt the EIB in due course.**
Q.244	We understand that with the required Specific Construction and Contract Management Experience in "Four Similar Contracts," the main contractor as a "Single Entity" can meet these requirements jointly with a specialized subcontractor nominated by the main contractor. Please confirm.	Confirmed. Please refer to Section III Evaluation, Qualification and Eligibility Criteria A. Eligibility and Qualifications table, point 4.2(a).
Q.245	In the tender document package received, we understand that file No.3 which is an MS Word format file titled "Tender Documents Open Procedures one stage Tanta Plant-YB- Tanta WWTP is the file we should consider for bid preparation. Please confirm/advise.	The tenders must use the forms provided in the tender documents (section IV) for the preparation of their technical and financial tenders. Tenderers must use the provided templates without changing the format or text provided, unless there are changes provided within the clarifications replies or any provided tender modification. Tenders that will be provided without the provided tender forms may be rejected.

No.	Question	Answer
Q.246	With reference to **Section IV. Tender Forms Form, 3. Financial Situation and Performance, Item 3.3, FIN 3.1 - Financial Situation and Performance Form**  Would you please accept one of our following suggestions as to faciliatie on us complying with your requirments? 1. **Suggestion No.1 :** To approve that one of the JV partners complying with the employer requirments- **to be All Parties Combined** 2. **Suggestion No.:** To Change the following Criteria **a)** Liquidity ratio ≥ 1.1 to **be less than or equal 1.1** b) Indebtedness ratio ≤ 80% **to be less than or equal 85 %** Highly apperciated your understanding, consideration and usual cooperation	Tenderers must comply with the tender documents.
Q.247	Kindly confirm that any necessary documentation to apply the indicated exemption shall be provided by the Employer.	Confirmed.
Q.248	Please confirm our understanding the Value Added Taxes applicable on the Local supplies/services only shall be included in the Contract Price.	Not confirmed the project is exempted from VAT taxes, please refer to the answer of question#274.
Q.249	14.1 (b) - Contract Price Kindly confirm that the Employer shall be named as a consignee regarding any imported equipment, materials, and services that shall be utilized for the permanent Works of the Project.	All the imported supplies and equipment should be named to the Contractor's name indicating the Employer as a direct beneficiary and owner, so the contractor can declare the equipment from the Customs area excluding taxes and customs.

No.	Question	Answer
Q.250	Kindly inform us with the possibility of increasing the Advance Payment to 20% to obtain a neutral cash flow	The Employer accepted to increase the advance payment to be 20%. The payment will be Upon the Engineer's approval on the interim payment.
Q.251	Kindly accept that the due payment duration of the monthly interim payment could be 28 days instead of 56 days.	Please comply with what is stated in the tender documents.
Q.252	List of Definitions (a) Kindly confirm that clarifications and their response will be considered as part of the Addendum / Addenda.	It will be a part from the contract.
Q.253	kindly accept to have the following as Conditions Precedent to the Commencement Date: • Receiving of the Advance Payment • Receiving of necessary permits • Access to the Site free from legal/physical obstacles	Please refer to contract conditions.
Q.254	Kindly confirm the exact name of the Employer between "Gharbia Water and Wastewater Company (Gharbia WSC)" or "Gharbia Company for Water and Wastewater- Gharbia WSC" to be inserted in the Tender Security	Gharbia Company for Water and Wastewater شركة مياه الشرب والصرف الصحى بالغربية
Q.255	Kindly clarify what is the exact Project Name to be inserted in submission documents and the Tender Security	Rehabilitation (Rebuild) of Tanta Wastewater Treatment Plant 100,000 m³/day
Q.256	Kindly accept to apply an escalation formula which includes basic materials / labor (such as labor, fuel, cement, etc.)	Please refer to Section II. Tender Data Sheet ITT 17.7 (The prices quoted by the Tenderer shall be: Fixed).
Q.257	Fluctuation equation is mandatory pursuant to Article “47” of Law 182 year 2018 & Article “97” of it’s executive regulations. Please provide the “table of adjustment data” in order to complete it for works in the local currency “EGP”.	As per Section II. Tender data Sheet, ITT 2.1 “The use of the financing shall be subject to EIB no-objection, tender procedure will be carried out in line with EIB GtP which is available on the EIB's website. Please refer to Section II. Tender Data Sheet ITT 17.7 (The prices quoted by the Tenderer shall be: Fixed).
Q.258	Specific Provisions 3.1 Engineer’s Duties and Authority The Engineer shall obtain the specific approval of the Employer before taking action under the following Sub-Clauses of these Conditions: Sub-Clause 13.1 [Right to Vary]; Instructing a Variation, except if such Variation	Please refer to Section IX. Particular Condition Part A – Contract Data article 3.1 (The Engineer shall

No.	Question	Answer
	would increase the Accepted Contract Amount by less than the percentage specified in the Contract Data. Sub-Clause 13.3 [Variation Procedure] Approving a proposal for Variation submitted by the Contractor in accordance with Sub-Clause 13.1 [Right to Vary], 13.2 [Value Engineering] or 13.3 [Variation Procedure], except if such Variation would increase the Accepted contract Amount by less than the percentage specified Please indicate this percentage.	obtain the approval of the Employer before Instructing any Variation).
Q.259	Please accept adding the response to Clarifications. and giving high priority to the accepted contractor's offer. The documents forming the Contract are to be taken as mutually explanatory of one another. For the purposes of interpretation, the priority of the documents shall be in accordance with the following sequence: (i) the Contract Agreement. (ii) the Letter of Acceptance. (iii) response to Clarifications. (iv) the Letter of Tender. (v) The Contractor' s Accepted offer. (vi) the Particular Conditions, (vii) these General Conditions, (viii) the Employer's Requirements, (ix) the Completed Schedules, and (x) and any other documents forming part of the Contract.	Please refer to the Contract Agreement, item 2. The clarifications requests and answers are considered as part from the contract and will be considered under number (ix) The Contractor's Tender (technical and financial) and any other documents forming part of the contract.
Q.260	Please confirm that the Contractor shall receive a full hard copy of all Contract's documents after signing the Contract Agreement	Confirmed.
Q.261	"Kindly clarify the following items. 1. 10% of the Accepted Contract Amount, payable in Egyptian Pounds and Euros for each respective part of Contract Price. 2. Repayment of the advance payment shall start after certification of 10% of the accepted contract amount less provisional sum. 3. Deductions shall be made at the amortization rate of 25%."	Please read the FIDIC Yellow Book General Conditions, article 14.
Q.262	Tender Procedures - Section IV. Tender Forms Financial Tender - Letter of Financial Tender Item (e) / Page (133/252) It is referring to item (d) for discount clause, however it should refer to item (f) Please confirm in order to amend it	In item (d) Tenderers will insert the total amount of discount (if any). In item (f) Tenderers will provide more details about the granted discount (if any).
Q.263	Please advise if the Amount of Schedule 27 "Operation and Maintenance for additional one year, OPEX (Optional Works)" shall be included in the Price of Tender 'Item (e)"	This table is an optional price and will not be included in the tender total price.

No.	Question	Answer
Q.264	Please confirm our understanding that the Price of Tender to be inserted in item (e) shall be as follow; Outside Country (Imported) Amount (EUR) in figures & words and Within Country (Local) Amount (EUR) in figures & words	Confirmed.
Q.265	The Schedule of Payment, 2.4 Dayworks / Page (139/252) 4.1 Method and Rules of Measurement / Page (143/252) Schedule 1 - Preliminary and General / Page (160/252) Kindly confirm that the Percentage rate required to be inserted by the Tenderer in accordance to 1-5.5 (Schedule 1 - Preliminary and General) Shall be applied on the dayworks as well	The percentage rate shall be applied to the daywork rates.
Q.266	1- Kindly confirm that the provisions under the Delayed Payment "Clause 14.8" shall be applicable. 2- Kindly inform the reference interest rate that shall be applicable on the foreign currency in case of delayed payment.	Please refer to Section IX. Particular Conditions, Part A- Contract Data, clause 14.8.
Q.267	5.1 - Period for notifying unforeseeable errors, faults and defects in the Employer's Requirements Kindly inform with the possibility of allowing a period of 28 days from the receiving of the relevant document instead of 14 days from the commencement date.	Please comply with the conditions of the tender documents.
Q.268	Section IX. Particular Conditions Sub-Clause 8.3 [Programme] Kindly accept to reinstate the relevant Clause as original FIDIC conditions as we believe that the delay of revised program could be mitigated by other obligation than the increase of performance security	Please comply with the conditions of the tender documents.
Q.269	Kindly confirm that Employer shall provide all necessary documentation, authorizations & declarations that will guarantee smooth customs clearance procedures and will fulfill any customs requirements whenever needed.	Confirmed.
Q.270	Kindly confirm that Payment of official receipts (customs duties & VAT) should be done by the employer in a timely manner without any delays.	The government of the Borrower shall exempt the Project works, tools, equipment and vehicles – except for passengers' vehicles – financed out of the proceeds of the Loan from any taxes, including the value added taxes, fees or customs duties and any applicable taxes, fees or customs duties during the whole period of the implementation of the Project. The project is exempted from taxes and customs, and nothing will be paid from the loan for any taxes/customs not for any other stamps/ any relevant costs.
Q.271	Kindly confirm that any extra storage or demurrage costs incurred by the contractor resulted from the delay of the employer in issuing the required documentations (mentioned above) for customs clearance or payment of official receipts will be charged back to the employer.	The Employer will exert the required efforts to support the Contractor in issuing the tax exemption letter soon after the contract signature.

No.	Question	Answer
		Moreover, the Employer will provide the Contractor with other documents (where possible and needed) in order to support the contractor in the customs clearance process.
Q.272	Kindly confirm that Contractor will be responsible for local transportation & custom clearance for the imported equipment till delivery to site.	In addition to the incoterm stated in Section I. Instructions to Tenderers, item 17.5 and Section II. Tender Data Sheet, item 17.5 (a) & (d).
Q.273	Kindly provide the required types of insurance shall be provided by tenderers and its values or percentages	Please refer to the Section IX. Particular Conditions 18.2(d) and 18.3.
Q.274	Kindly provide values/percentage for any deduction will be applied on the invoices (Governmental fees, stamps ...etc-if any)	The government of the Borrower shall exempt the Project works, tools, equipment and vehicles – except for passengers' vehicles – financed out of the proceeds of the Loan from any taxes, including the value added taxes, fees or customs duties and any applicable taxes, fees or customs duties during the whole period of the implementation of the Project. The project is exempted from taxes and customs, and nothing will be paid from the loan for any taxes/customs not for any other stamps/ any relevant costs. The awarded contract will be subject for a project exemption letter. Please refer to Tender Data Sheet, Section II, ITT 17.5(d).
	As our understanding that this project is exempted from VAT taxes and duties on goods. Please confirm all local supplies as (steel reinforcement, concrete, cement, pipes …. etc.) are exempted from 14 % VAT	
	kindly confirm that the employer will bear the cost of syndicate stamp duties and/or governmental stamp duties, if any.	
	Please clarify the following in regard to the applicable syndicate stamp duties (دمغات النقابات): 1. The number of contracts copies; 2. Number of syndicates applicable to that stamp duty (if any); 3. Will these syndicate stamp duties be applied to the EGP portion of the contract only or the total contract value (EGP + Foreign portion)?	
	Kindly clarify if the governmental stamp duties are applied (ضريبة الدمغة العادية والإضافية). If applied, please clarify whether it will be on the EGP portion of the contract only or the total contract value (EGP + Foreign portion).	
	Kindly confirm that Prices shall not include customs duties, VAT and withholding tax on imported equipment (costs with official receipts from Customs Authorities), also Prices shall not include VAT on local equipment	
	Kindly confirm that Payment of official receipts (customs duties & VAT) should be done by the employer in a timely manner without any delays.	
	Kindly provide values/percentage for any deduction will be applied on the invoices (Governmental fees,stamps ...etc-if any)	

No.	Question	Answer
	Kindly confirm that Employer shall provide the project exemption codes that are registered in the VAT & customs authority that confirms that the project is exempted and recorded in the customs authority system as official Exemptions letters only from VAT & Customs duties are not accepted from customs authority to apply the exemptions as these letters should be used to register in customs system (Nafeza) and the system extract a project code to apply the exemption with supporting letter from the Employer to the customs authority. The above procedures are the sole responsibility of the Employer.	
	Please confirm that in addition to taxes and customs no governmental deductions shall be applied for this project. If any to be applied, please provide details.	
	We understand that the project is fully exempt from taxes, customs, duties, stamps, levies, VAT, and any relevant cost except for passengers' vehicles; the client will provide the required documents to the contractor whenever required; kindly confirm.	
	The Schedule of Payment, 2.4 Dayworks / Page (139/252) 4.1 Method and Rules of measurement / Page (143/252) Kindly confirm that all Deductions & Cost (Social Insurance, Stamp duties, Insurance Policies, Cost of Bonds, … etc.) will be considered as a Cost.	
	As it is stated clearly under Sub-clause 14 that "nothing will be paid from the loan for any taxes/customs and any other stamps/ any relevant costs". Kindly confirm that the Contract price shall exclude the following: - Custom Duties. - VAT applicable on Contract amount, "Table Tax applied on Contracting Services". - VAT applicable on Custom Duties for imported Project supplies.	
	Kindly specify all the applicable governmental levies and deductions and their relevant percentages that will be applied and deducted from the invoices	
	Kindly confirm that Prices shall not include customs duties, VAT and withholding tax on imported equipment (costs with official receipts from Customs Authorities), also Prices shall not include VAT on local equipment	
Q.275	Part A -Contract DATA Please confirm that overall liability is at 100 %.	Please refer to Section IX. Particular Conditions, Part A – Contract Data, Maximum total liability of the Contractor to the Employer, 17.6.
Q.276	Part A -Contract DATA Please confirm that there are no other liquidated damages other than mentioned above	The maximum amount of delay damages is 10% of the final Contract Price. The Engineer still has the right to fine the contractor in case of having specific violations as per the contract conditions. Example:
	Please confirm that all Liquidated Damages- LDs -(Delay + power and chemical consumption) are capped at 10 %.	

No.	Question	Answer
	Penalty for Exceeding OPEX Commitment: Contract penalties shall be due for failure to meet the Commitments for Operating Costs stated in this Schedule. The damages shall be calculated as described in the following section. Part A -Contract DATA Delay damages for the Works Maximum amount of delay damages Please confirm that all Liquidated Damages- LDs -(Delay + power and chemical consumption) are capped at 10 %.	Section IX. Particular Conditions, Part B - Specific Provisions, Safety Procedures article 4.8.
Q.277	Please confirm that in our case consortium, it is acceptable to submit 2 separate bid bonds in the name of every consortium member covering the overall amount.	Please refer to ITT 20.1, section II. The amount is as stated **(1,250,000** Euro or equivalent in EGP ***(only one million and two hundred and fifty thousand euros)).*** Tenderers can submit two individual tender securities. The consortium's data should be mentioned in the tender securities.
	Please clarify the amount of the tender security weather 1,350,000 Euro as mentioned in ITT 20.1 or 1,250,000 as mentioned in the invitation letter of tender. Please confirm that it is acceptable to submit 2 separate bid bonds in the name of every consortium member covering the overall required bid bond amount.	
	In the case of consortiums, can we submit two individual tender securities (in the name of each consortium member) with an amount of 625,000 € Euro each to cover the required tender security of 1,250,000 € Euro. Taking into consideration that it is a common practice with the employer upon dealing with consortiums.	
	Please clarify the amount of the tender security weather 1,350,000 Euro as mentioned in ITT 20.1 or 1,250,000 as mentioned in the invination letter of tender	
Q.278	Please confirm that the required paper copies are only 2 and not 4 as mentioned in the clarification meeting dated 23rd October 2023	Please refer to ITT21.1: In addition to the originals of the Technical and Financial Tenders, the number of copies is: *(2)* paper copies and one (1) PDF copy (flash drive from the technical tender in the technical tender envelope and a copy from the financial tender in the financial tender envelop).
	Please confirm that the required paper copies are only 2 and not 4 as mentioned in the clarification meeting dated 23rd October 2023	
	Please confirm our understanding that the Technical Tender shall consist of (Original + 2 Paper Copies + 1 Scanned PDF on flash drive)	
Q.279	Please Confirm that All items shall be priced in EUR. This includes prices of all local and civil works will be priced and the imported Electro-mechanical equipment	Please refer to Tender Data Sheet, Section II, ITT 18.1:

No.	Question	Answer
	As our understanding that the payment for the items priced in EURO imported shall be paid in EURO currency.	***[The currency of the Tender and the payment currency(ies) shall be described below:*** ***- Tenderers shall quote in Euro currency: The unit rates and prices shall be paid to the awarded contractor in the Schedules separately in the following currencies:*** ***(i) for those inputs to the Plant, Installation Services and design services that the Tenderer expects to supply from within the Promoter's country, will be priced in Euro and paid in Egyptian Pound; and*** ***(ii) for those inputs to the Plant, Installation Services and design services that the Tenderer expects to supply from outside the Promoter's country, will be priced in euros and paid in euros.*** ***The source of official selling exchange rates for payment purposes is: The Central Bank of Egypt.*** ***The date of the exchange rate for payment purposes is the date of payment.]***.
	Please confirm the understanding that local equipment and services shall be priced in Euro currency and will be paid in Egyptian Pound according to the exchange rate declared by central bank of Egypt on the date releasing payment of each Invoice.	
	Section II. The Tender Data Sheet ITT 17.7 states that, the prices quoted by the Tenderer shall be fixed So we would request that the entire payments be made in Euros; kindly confirm	
	Please confirm the understanding that local equipment and services shall be priced in Euro currency and will be paid in Egyptian Pound according to the exchange rate declared by central bank of Egypt on the date releasing payment of each Invoice	
	Please Confirm that All items shall be priced in EUR. This includes prices of all local and civil works will be priced and the imported Electro-mechanical equipment.	
Q.280	Please accept the following payment Terms: 10% down payment To be completed to 75% after delivery at the project site To be completed to 90% after equipment on erection To be completed to 100% after the successful commissioning and testing and issuance of the completion certificates	Payment will be based on submission of interim payment as per the tender conditions. Please refer to Section IX. Particular Conditions (PC) Part A- Contract Data The contractor may submit an on-demand retention bond (bank guarantee) before the submission of the second interim payment.
	Please confirm that payment shall be on a monthly basis for operation and maintenance required.	

No.	Question	Answer
	Kindly accept to apply payment installment against delivery on site for local or Imported Plant(s) and Materials.	This bank guarantee must be issued from an Egyptian Bank or any Bank with a correspondent Bank in Egypt.
	Kindly accept to apply a payment installment against disclosing Shipping documents for the imported materials/ supplies.	
Q.281	Percentage of Retention 14.3 C: 5% Please confirm that tenderer allowed to provide LG with the same value and percentage to cover the mentioned point	The contractor may submit an on-demand retention bond (bank guarantee) before the submission of the second interim payment. This bank guarantee must be issued from an Egyptian Bank or any Bank with a correspondent Bank in Egypt.
	Kindly accept that the Retention could be replaced by an escalated unconditional irrevocable bank security in lieu of cash for the project duration until the taking over certificate has been issued then to be halved till the date of the Defects Notification Periods applying the same percentage as in the Contract Data; to obtain a neutral cash flow	
	Percentage of Retention 5% Please confirm that tenderer allowed to provide LG with the same value and percentage to cover the mentioned point	
	For the project to maintain a neutral cash flow, kindly consider our request to replace the retention money with a retention bond of the same amount.	
282	Is there provision in the Contract in case rock or concrete is found at the site.	The Contract makes for provision unforeseen ground conditions in Clause 4.12. If the circumstance of the unforeseen condition is agreed by the Engineer the contractor will be entitled to a potential extension of time and costs as defined in Clause 1.1.4.3. Cost must be presented in a clearly demonstratable format.

Annex#1

Modified payment tables

Schedule # **Preliminary and General**

Item	Description	Unit	Qty	Unit Rate (EUR)	Total from outside the purchasing country (EUR)	Total within the purchasing country (EUR)
Sub Total Schedule 1						
Sub Total Schedule #						

Annex#2

SCADA/PLC System Basic Design

1. SCADA/PLC General Requirements

This chapter is to describe the basic design and the scope of work of the SCADA/PLC system proposed for Tanta WASTE WATER TREATMENT PLANT. The contractor is requested to propose the recent technology available and applicable to the project in this field.
This supervisory control and data acquisition (SCADA/PLC) system is being provided for control and management of the waste water treatment plant in Tanta.
The SCADA/PLC system will also become a major source of information to the plant operators in all aspects of its operations. The SCADA/PLC system shall therefore establish a framework for information management. An open, reliable and flexible design is required that will support the network operator's business processes.
The SCADA/PLC/PLC system shall be configured as an Open System with non-proprietary hardware and an open software structure. Generic industry standards are to be followed where consistent with Open System design philosophy.

2. SCADA/PLC System Architecture

The SCADA/PLC/PLC system shall be organized in a three -level structure:

- LEVEL 1: Master station HMIs
- LEVEL 2: PLC controls.
- LEVEL 3: Field instrumentations.

The lower level shall be based on data acquisition from the filed instruments and return actions to the actuators to change the status of the control equipment as per the current situation and the decision making procedures.
The Mid-level shall be based on process control equipment at pumping stations which collect data from field devices, perform data validity checks and pass this information to the master stations. This level in return accepts control commands from the master stations and operates devices in the substation.
The upper level shall comprise the main computer installations at Tanta WWTP. This level is called the master station and functions to communicate with the plant parts to acquire data, maintain the system database and perform all interaction with operators via the workstation enhanced GUI interfaces. The master stations also perform alarm reporting, data and report logging, trending of measurements and historical archival of data.
The importance of the Waste water control center requires a high degree of system availability. In order to meet this requirement, redundant hardware and software support systems shall be provided and the system shall be designed to ensure that no single points of failure exist which may significantly degrade the availability of any of the basic SCADA/PLC functions.
The SCADA/PLC master station will be located at the existing administration building in the existing plant (Tanta 3).
Tanta WWTP is consisting of primary sedimentation tanks, Aeration tanks, final sedimentation tanks that should be connected to and presented in the SCADA/PLC system.
The system capacity and no of points monitored will be proposed by the contractor and subjected to the approval of the employer representatives.

All operator functions and actions are interchangeable between any and all workstations independent of which desk they are assigned to.

3. SCADA/PLC Scope of Work

The contractor is requested to propose the supply, installation, testing and commissioning and put in operation a complete SCADA/PLC system to provide a total remote operation and control of the daily activities of all the process equipment including the pipe lines, pumping stations, actuators, valves, …etc in Tanta WWTP in all the process area including the new parts.
The SCADA/PLC system shall provide functions fit to enable day to day management of Tanta WWTP assets and provide sufficient management information required from such a system to enable Gharbia WSC to determine the effective performance of the plant.
The system should be capable of delivering a set of applications which provides a facility for waste water processing and treatment.
The CONTRACTOR's responsibility is, but not limited to, project delivery, project engineering, equipment and construction procurement and on -site construction. The CONTRACTOR shall carry out investigations, studies, calculations, design and documentation as necessary to execute the project and to provide for its ongoing operation and maintenance based on the information given and in accordance with the TENDER DOCUMENT.
The Employer will assist the CONTRACTOR to obtain existing technical documentation available on completed and ongoing projects which will assist the CONTRACTOR's design.
The CONTRACTOR shall confirm all information provided by site survey.
The scope of work includes:

- Site survey;
- Engineering and detail design calculations;
- Procurement and supply of all materials;
- Factory testing;
- Transport and delivery to site;
- Installation, testing, and commissioning of all equipment and systems;
- Preparation of drawings and other documents for manufacture, installation, testing, commissioning and operation/maintenance;
- Preparation of as-built documents (including drawings) and project records;
- Supply of spare parts;
- Training of personnel nominated by CLIENT;

The computer based SCADA/PLC system shall monitor and control the waste water treatment plant.
The core SCADA/PLC system shall comprise proven non-proprietary hardware and an open software structure, and shall require no further development work. Custom software may be appropriate to effectively implement pump scheduling and waste water balance applications.

4. Design Considerations

The following system design criteria shall be followed in the design for the Waste Water Management SCADA/PLC system to ensure that the system adopts the latest proven technology:

- Definition of a well-defined multi-layer control system design philosophy;
- Design of the system based on availability criteria;

- Utilization of proven industry-accepted software operating systems and database technologies;
- Utilization of the Egyptian standards and codes plus the recognized international standards for electro-technology (i.e. relevant IEC, OSI, IEEE, ANSI, EU, ITU-T and similar standards);
- Utilization of Open Systems concepts for computer process level interface wherever possible (i.e. use of Open Process Control (OPC) standards for interface to other process systems and use of Foundation Fieldbus digital protocol for field process applications);
- Utilization of Open Systems International (OSI) 7-layer data communications model for computer network development;
- Utilization of open standard data communications protocols for RTU communications (i.e. IEC 61850, IEC 60870-5-101/104 and DNP-3);
- Utilization of open standard data communications protocol for inter-control centre communications (i.e. Inter-Control Centre Protocol (ICCP) TASE.2);
- Utilization of ITU-T Synchronous Digital Hierarchy (SDH) for digital transmission systems.

5. SCADA/PLC Hardware Configuration

The master station systems shall be configured with sufficient primary computer memory for the ultimate system and shall be equipped with data transmission interfaces for communication with the pumping stations in order to meet the specified response times when the system has been extended to its ultimate capacity.
The master station hardware will be designed and subjected to the contractor proven and certified system and consists of but not limited to the following:

- Servers;
  - SCADA Server
  - Historical Server
  - Interface Servers
- Workstations;
- Large displays;
- Printers;
- Communication Network;
- Others.

The PLC controllers represents the data collection, processing and data transmission to the master station, the PLCs will be Allen Bradely, Siemens or equivalent.
The field instruments to be followed as per detailed in the previous chapter.

6. SCADA/PLC Software Configuration

6.1 System description

The master system software shall be designed to meet the requirements of the ultimate capacity of the SCADA/PLC system without further program development. Future additional extension to the plant shall be added by defining their parameters interactively with the system generation/configuration software.
The SCADA/PLC system shall provide information storage, retrieval and display facilities. The

storage facilities shall be in the form of a real time relational database management system, plus special modules for historical archival and retrieval to graphic screen based presentation displays.
The SCADA/PLC system database shall preferably be based on the relational model optimized for real time system operation. It is recommended to use Oracle, SQL, etc or equivalent.
The database management system shall provide facilities to retrieve, insert, delete or modify data. The system shall allow data definition through a data dictionary (including definition of ownership and data usage), and data validation through integrity checks.
A separate “data historian” server system shall be provided which shall store operational data for at least five years. It shall allow users to access subsets of the stored data on request in a variety of different formats.
The SCADA/PLC system shall include a full graphic display system with a well-defined and consistent graphical user interface. All operator interaction shall occur via this facility.
The SCADA/PLC/PLC system shall automatically report abnormal conditions and alarms through a standardized alarm/event annunciation system.
The generated reports from the system shall be including:

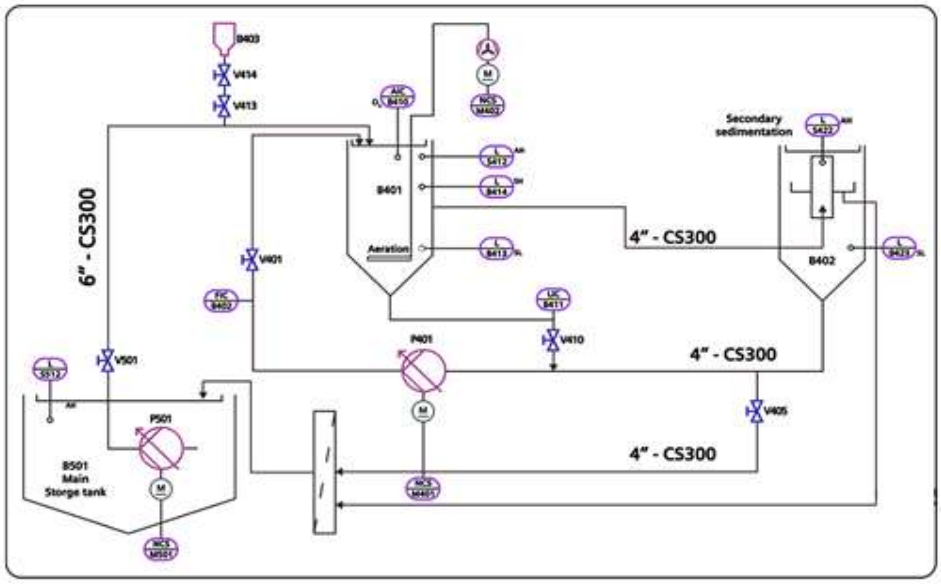
- System reports;
- Employer customized reports.

The SCADA/PLC system shall include facilities for event/alarm logging, screen trending, recording and screen copying.
SCADA/PLC software shall include facilities for waste water flow, process and treatment cycles and pump schedule planning, and for waste water flow calculations. These facilities may be custom modules rather than part of the proprietary software.
SCADA/PLC software shall be universal and well known and experienced in similar projects such as Factory Talk, Citect SCADA, Wonderware or equivalent.

6.2 SCADA graphic representations

Pictorially, the hardware presentation may be as simple as flat lines that represent pipes, simple graphic representations of valves, and motors that may change color according to current status such as opened or closed for valves and running or stopped for the motors.
The appearance can also be very elaborate with 3D graphics of spinning motors and rotating valves.
More likely though, something in between with 2D piping that is possibly color-coded based on process and field device graphics that change color according to conditions.

6.3 SCADA applications in waste Water Treatment



6.4 SCADA numerical information

Depending on the plant preference for graphics, minimally the screens would include some numerical information for process instruments and probably the unit of measurement such as GPM or gallons per minute, pressure readings in psi, etc.

6.5 SCADA/PLC Communications Protocols

The protocols used for communications between the SCADA/PLC master stations, PLCs and field devices shall be the following standard protocols or equivalent:

- DNP 3.0,
- IEC 60870-5-101/104
- IEC 61850.
- Field bus protocols.

The communication network shall be a reliable type including wired, wireless and fiber optic cables where applicable.

6.6 Historian Servers

Historian servers shall be designed not to be limited to provide the following functions:
• capture and store large volumes of real-time data at fast scan rates while being able to respond to user requests in a timely manner;
• present the data to users in a variety of formats without requiring additional developments or applications;
• allow end users to retrieve the data directly, rather than being dependent on SCADA/PLC system personnel for its provision;
• provide a minimum of 5 years of data readily available on line;
• provide efficient long-term data storage and retrieval.
• The system shall provide the capability of sampling and recording/archiving data on an industry standard commercial Relational Data base Management System (RDBMS)

• The system shall be provided as means of recording and archiving data for easy access by user programs and by report generation system.
• The historical RDBMS shall always have process data of the real time database updated and refreshed in less than 1 sec.

6.7 System Backup/Redundancy Requirements

6.7.1 General

The system shall be configured to ensure that no single point of failure can cause the loss of a critical function.
Critical functions defined for this system are:

- data acquisition
- data processing
- historical data storage
- supervisory control
- alarm/event processing
- network security subsystem

6.7.2 Computer System Redundancy

Computer system redundancy shall be achieved by providing dual server computer configurations for SCADA/PLC application servers.

6.7.3 Operator Station Backup

Failure of an individual SCADA/PLC operator workstation computer shall transfer its functions to the
designated back-up workstation (i.e. another operator or supervisor workstation) without loss of data.
All operator functions shall be available at every workstation on the system if enabled. Password
protection shall be provided to ensure only authorized access to a particular workstation mode can be obtained.

7. System Dimensioning

The system as provided shall be able to perform all system functions. Spare capacity shall be capacity over and above this requirement. The system shall support full utilisation of all initially implemented spare capacity.

8. System Performance

The system performance requirements shall be achieved with the ultimate SCADA/PLC database capacity.
This loading shall be simulated in the Factory Acceptance Tests.
There shall be no loss of telemetered or processed data under any level of system activity.
The figures presented below represent a minimum acceptable standard for the system. The CONTRACTOR shall ensure that sufficient studies and detailed calculations are performed and provided to ensure that the proposed system meets all aspects of the requirements.

9. System Availability

The SCADA/PLC system shall be designed to provide an annual system availability of greater than 99.90% without the loss of one or more system functions. This will be verified during final commissioning. The MTBF and MTTR should be calculated for the individual components, subsystems and the complete system.
The TENDERER shall provide fully detailed supporting calculations for the proposed system availability.

Annex#3

Diesel- Driven Stand- By Electric Generating Unit

1. Generating Set

A. This specification covers the requirements for design, fabrication, testing installing, commissioning and maintenance during the guarantee period of a complete Diesel electric generator unit, including all devices and equipment specified, as required for trouble free service. Materials and equipment furnished under this specification shall be delivered to the site completely equipped, wired, tested and ready for operation.

B. The generating unit shall be Prime Power, Sound & Weatherproof Enclosure Type.

Design Criteria

Enclosure main dimensions are well selected to provide optimum performance and mainly made of galvanized or electrostatic painted metal sheets with suitable thickness not less than 6mm and provided with suitable rigid supports to protect it from any curvature.

Enclosure is designed in a way that ensures efficient sound and weatherproof that support well performance and ease of preventive maintenance.

- **Doors:**

  Hinged lockable door provides access to both sides of engine and alternator.

- **Air intake:**

  The air intake and outlet shall be provided with louvers and shall be sized for the requirements of the genset.

- **Exhaust silencer:**

  Canopy supplied with isolated heavy-duty industrial exhaust silencers (mufflers).

- **Emergency- stop push buttons:**

  Emergency stop push buttons shall be installed outside the enclosure, near the door, wired to shutdown circuit of the generator control system.

- **Internal components and systems:**

  Fuel system with fuel daily tank, fuel connections.
  Generating set control panel.
  Internal lighting, close to the ceiling, provides illumination inside the canopy.
  Junction box with lockable door is provided for connection of load cables.

- **Earthing:**

  Earthing stud linking internally all major components including engine alternator, fuel tank,

control Panel enclosure, with a facility to connect it to external Earthing cable.

- **Easy in control:**

  Enclosure is equipped with a window to in front of the control panel to provide easy control panel observation.

The Diesel electric stand-by generator shall include the following:

a. Diesel-engine generator to serve capacity requirements.
b. One set of batteries with battery charger for starting of the engine as outlined.
c. Engine-generator controls and distribution panels.
d. All necessary control devices to provide a complete, operable system.
e. Station auxiliaries including daily and monthly fuel storage tanks.

2. Requirements

The Engine-Alternator system shall supply sufficient power to the loads in normal operation and in starting mode taking into account the deration due to ambient & installation conditions according to ISO 3046 & 5828 and IEC 60034.

3. Engine

A. The engine shall be Diesel-fuel, four strokes, water cooled with mounted radiator, fan and water pump. It shall have multi-cylinders, in line or V-type and supercharged.

B. Diesel engine will be started electronically but there are some conditions such as:

- Should use copper cables between Starter and battery.
- Built-in battery charger shall be used for charging the batteries to be ready for operating the engine at start.
- Speed of Diesel engine = 1500 rpm.

a) Margine Capacity

The engine rated output should be at least 10% more than the power required by the alternator to produce its rated output when its speed doesn't exceed 1500 rpm. The engine shall be able to support a load of 10 percent in excess of its continuous rated output, for a period of not less than one hour without overheating or other mechanical trouble.

Free rotating exhausts valves. Exhaust valve seat inserts shall be provided. A positive displacement lube oil pump shall supply full pressure lubrication. The engine shall have air, fuel and oil filters with replaceable elements, and a fuel transfer pump. Engine speed shall be governed by an automatic governor to maintain alternator frequency within 5 percent of alternator output, from no-load to full load. The engine shall have a 12-volt battery charging DC, alternator with a transistorized voltage regulator. Remote 2-wire starting shall be by a low volt, solenoid shift, and electric starter. M.P.S. should not exceed 10 m/sec and the M.E.P. Not exceeds 20 kg/cm^2.

b) Engine Instruments

The engine instruments panel shall contain an oil pressure gauge, coolant temperature gauge, and battery charge rate ammeter.

c) Engine Controls

The generating set shall contain a complete engine start stop control which starts engine on closing contact and stops engine on opening contact. A cranking limiter shall be provided to open the starting circuit in approximately 45 to 90 seconds if the engine is not started within that time. The engine controls shall also include a suitable 3 position selector switch with the following positions: RUN - STOP - REMOTE, high engine temperature, low oil pressure and over speed shutdown with signal light and alarm terminals shall also be provided.

The efficiency of alternator must be not less than 85% and power factor 80%.

4. Brush-less Alternator

A. The alternator shall be a pole revolving field design with temperature compensated solid state voltage regulator and brush-less rotating rectifier exciter system. No brushes shall be allowed. The stator shall be directly connected to the engine fly wheel housing, and the rotor shall be driven through a semi flexible driving flange to ensure permanent alignment.

B. The insulation system shall be class "H" with temperature rise class "F" or "B" and enclosure protection not less than IP23.

C. The three phases, board range alternator shall provide 3 phase voltage 4 wire system 400/220 volts, 50HZ and nominal power rating. The supplier shall submit a necessary suitable control panel under his responsibility.

5. Excitation System

An exciter is a small source of direct current (DC) that energizes the rotor. The rotor generates a moving magnetic field around the stator, which induces a voltage difference between the windings of the stator. This produces the alternating current (AC) output of the generator. The manufacture system specifications shall be according to manufacturer design parameters.

6. Unit Performance

A. Frequency Regulation shall not exceed 3 Hz from no load to rated load. Voltage regulation shall be within ±2 % of rated voltage, from no load to full rated, the instantaneous voltage drop shall be less than 16 % of rated voltage when full, 3 phase load at 0.8 power factor is applied to the alternator.

B. Recovery to stable operation shall occur within 2 seconds. Stable or steady state operation is defined as operation with terminal voltage remaining constant within plus or minus 1 % of rated voltage.

C. A rheostat shall provide a minimum of ± 5 % voltage adjustment from rated value the efficiency of the unit should not be less than 85 %.

7. Alternator Instrument Panel

A. The alternator instruments panel shall be wired tested. It shall contain panel lighting manual reset circuit breaker, frequency meter, running time meter, voltage adjusting rheostat, AC voltmeter (dual rang, indicates all voltages), AC ammeter, (dual range, indicates current each phase), meter switch, voltmeter - ammeter phase selector with OFF position.

B. Single-phase instrumentation includes a voltmeter, two ammeters and no selector switch. The panel shall include a built-in charger for battery charging.

C. The controller shall contain a communication port to connect with the control system via (MODBUS / TCP).

8. Generating Set Mounting

A. The electric generating set shall be equipped with vibration isolators and mounted on a welded steel base, which shall provide suitable mounting at any level surface.

B. The mobile unit can be mounted on a trailer with four wheels and can be towed by any tractor or any track. It will be equipped with any approved type of brakes. The stability and rigidity of the trailer shall be the responsibility of the supplier.

9. Accessories

A. All accessories needed for the proper operation of the generating set shall be furnished. These shall include a muffler, flexible exhaust connection, starting batteries, battery cables, battery rack, fuel tank lines and detailed operation and maintenance manuals with parts list.

B. The accessories shall also include a transfer pump complete with all necessary facilities.

10. Fuel System

The fuel system for the engine shall consist of the items listed below:

- **Fuel oil strainer and filter full flow:**

Strainers shall be provided ahead of the engine fuel pump. The full-flow filters shall be provided after the engine fuel pump. Strainers shall be of the metal edge or screen type as recommended by the engine manufacturer. The filter plainly marked. The case shall be mounted in an accessible location, which will permit changing strainers and filter elements without disconnecting the piping or other engine-mounted equipment.

- **Fuel-pump:**

Engine fuel pump shall be of the positive displacement, engine driven type and capable of supplying the necessary quantity of fuel under all conditions of operation. Relief valves shall be provided to prevent equipment damage due to the buildup of excessive pressures, which might result from restrictions in the discharge lines. In addition, a hand-operated fuel oil priming pump shall be provided.

- **Fuel oil drip:**

Nozzle drip lines overflow.... etc shall not drain on the floor. A means shall be provided for collecting these lines and return of excess fuel to the day tank automatically.

- **Fuel oil lines:**

Shall be provided with solid connections between fuel piping and engine as required.

- **Fuel oil daily and monthly storage tanks:**

One fuel daily tank shall be included with the generating unit. The daily tank capacity should be enough to operate the unit for continuous 8 hours based on the engine fuel consumption rate. It shall include a level switch and connect with generator hardwire for interlock. And to be connected with PLC.

A monthly storage tank shall be supplied and installed in the pumping station as shown on the layout drawing. The tank capacity shall be 10 times the capacity of the daily tank. The tank shall be complete with all piping and valves.

The tank shall be double shell type constructed of steel plate free of imperfections and constructed as a rigid unit with internal partitions or bracing, if necessary, with thickness 6 mm. All seams shall be welded from both sides or with penetrating welding methods. The tank shall be installed in an elevated position. A large clean-out opening shall be provided on the tank top. The tank shall be fitted with a level gauge and an inlet valve arranged for gravity feed. High- and low-level alarms shall be provided with indicators in the engine control panel. Fittings for overflow piping shall be provided. All fuel piping between the day tank and engine shall be factory completed. It shall be included ultrasonic level transmitter to give the fuel in the tank by liter. It shall connect with PLC/HMI.

It’ s a must that the Tenderer submit in his technical offer a detailed description and drawings for the fuel system.

11. Voltage Regulator

The voltage regulator shall be solid state using no electron tubes or electrolytic capacitors and of the type and size as recommended by the generator and regulator manufacturers. It shall be designed to provide an overall general performance as follows:

A. Steady State:

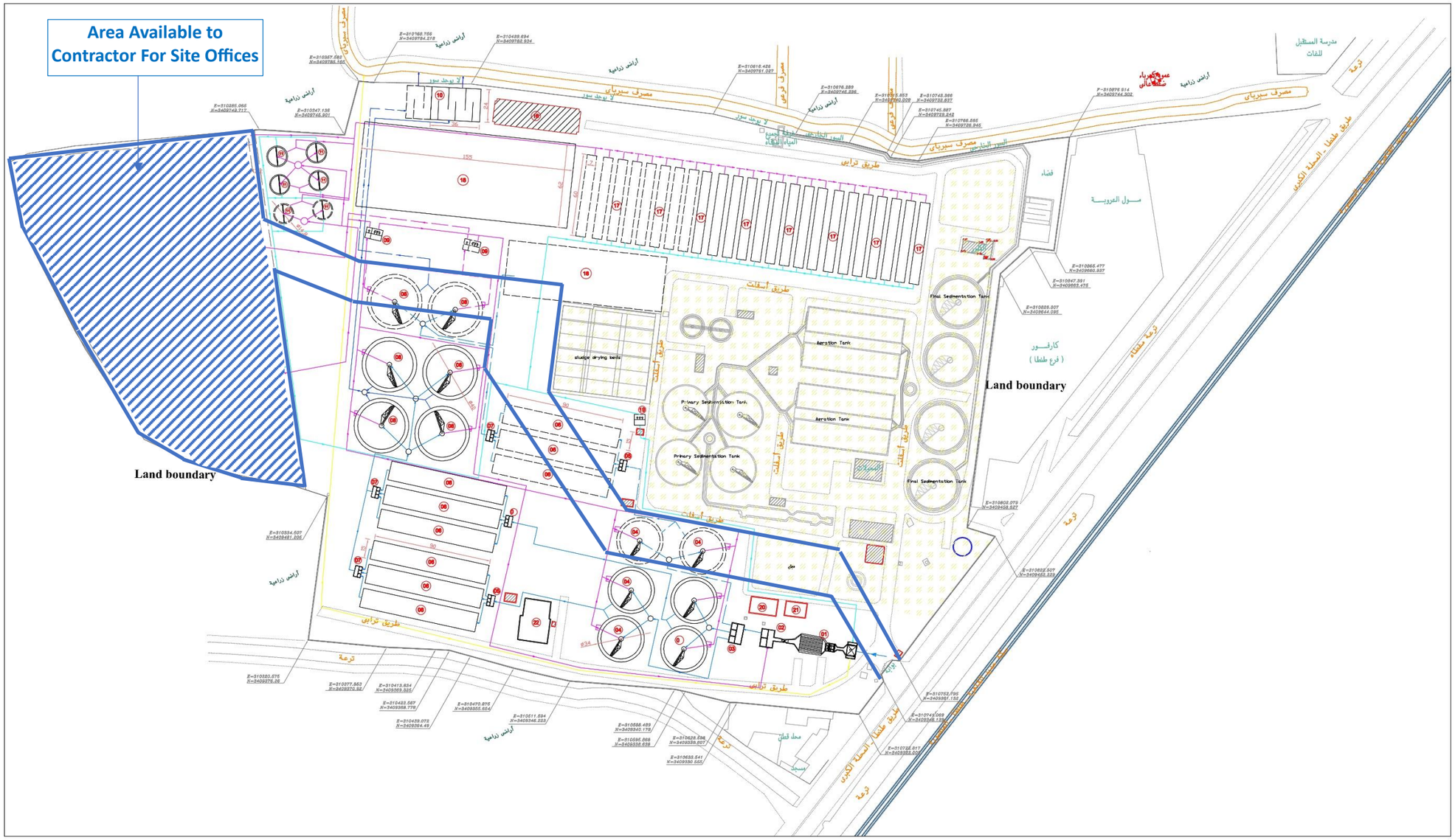
- With any constant load between no-load and full-load and at any power factor from 0.80 to 1.0 and in the ambient temperature specified, voltage regulation shall be 1 %.
- With a constant load and ambient temperature, voltage drift shall not exceed 1% during any one-hour period.

B. Transient:

- 12% maximum voltage drop with application of 50% rated load with two seconds maximum recovery time to steady state when operating at 50% load.
- 12% maximum voltage rise with removal of 50% rated load with two seconds maximum recovery time to steady when operating at 100% load.

Annex#4

Drawing No. 13: Area Available to Contractor for Site Offices



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LEGEND

NO.	NAME
1	INLET, SCREEN AND GRIT REMOVAL
2	PARSHALL FLUME AND DISTRIBUTION CHAMPER
3	DISTRIBUTION CHAMBER TO PRIMARY SEDIMENTATION TANK
4	PRIMARY SEDIMENTATION TANK
5	DISTRIBUTION CHAMBER TO AERATION TANK
6	AERATION TANK
7	DISTRIBUTION CHAMBER TO FINAL SEDIMENTATION TANK
8	FINAL SEDIMENTATION TANK
9	RETURN & EXCESS P.S
10	CHLORINE CONTACT TANK
11	SLUDGE THICKENER
12	DIGESTOR
13	BOILER
14	HEAT EXCHANGER
15	GAS HOLDER TANK
16	CHLORINE BUILDING
17	DRYING BEDS
18	SLUDGE STORE
19	SUPERNATANT PUMP
20	STORE BUILDING
21	WORKSHOP
22	ELECTRICITY & MATERIAL ROOM

GOPA Infra

COWI

PREPARED BY	
CHECKED	
APPROVED	

Arab Republic of Egypt

European Investment Bank

European Investment Bank Group

Sludge line

water line

Subernatant line

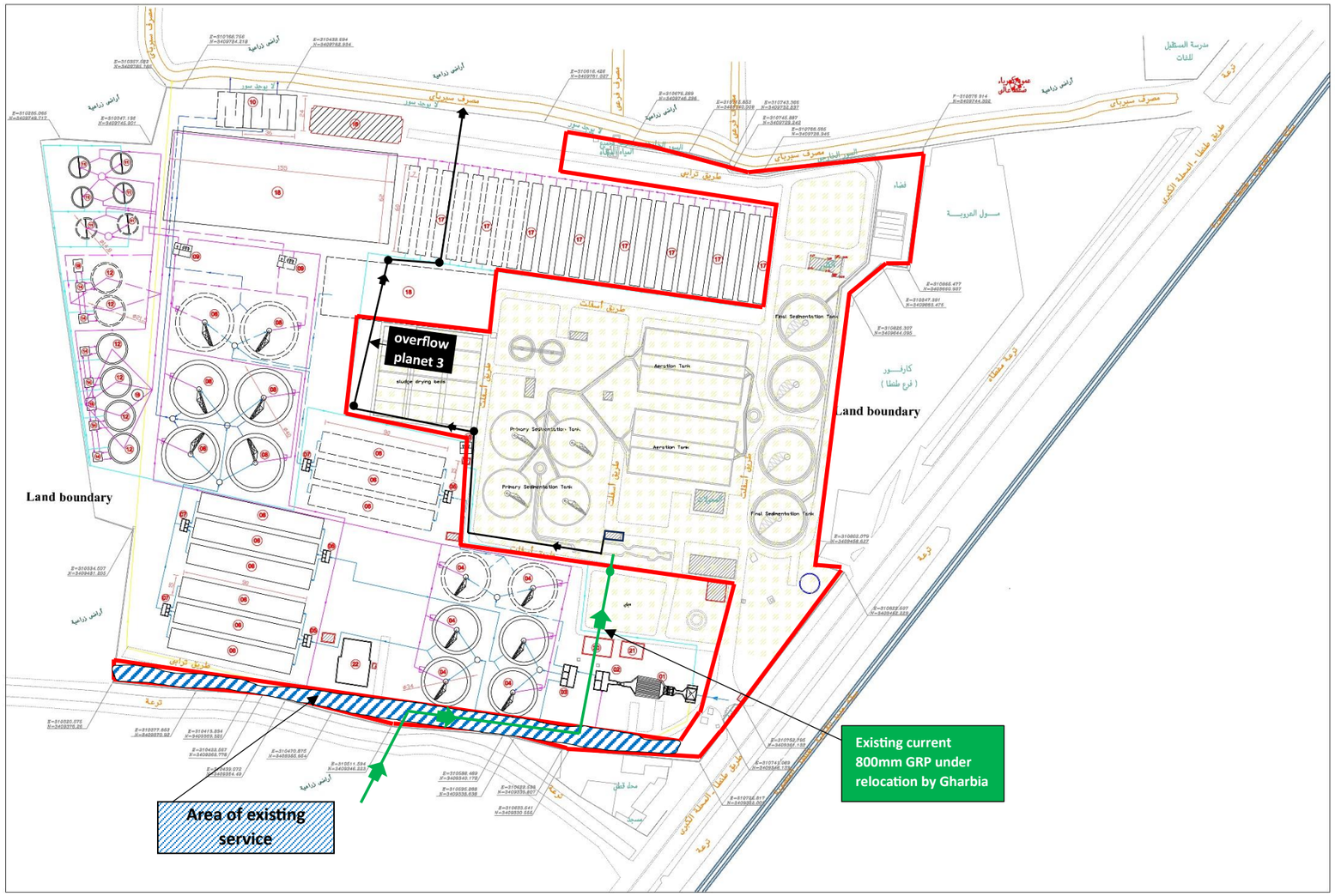
water line from F.S.T

By bass line

Project TANTA WASTEWATER TREATMENT PLANT	SCALE	N.T.S
	DRAWING No.	13
Area Available to Contractor For Site Offices	DATE	APRIL 2023

Annex#5

Drawing No. 14: Location of Services



LEGEND

NO.	NAME
1	INLET, SCREEN AND GRIT REMOVAL
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12	DIGESTOR
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15	GAS HOLDER TANK
16	CHLORINE BUILDING
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18	SLUDGE STORE
19	SUPERNATANT PUMP
20	STORE BUILDING
21	WORKSHOP
22	ELECTRICITY & MATERIAL ROOM

GOPA Infra COWI

PREPARED BY	Dr. Tarek Sorour
CHECKED	Dr. Tarek Sorour
APPROVED	Eng. Mark Etheridge

Arab Republic of Egypt

European Investment Bank Group

Sludge line
water line
Supernatant line
water line from F.S.T
By bass line

Project	SCALE	N.T.S
TANTA WASTEWATER TREATMENT PLANT	DRAWING No.	14
GENERAL LAYOUT	DATE	APRIL 2023