MINISTRY OF WATER AND IRRIGATION

Jordan Valley Authority

Ref. JVA/8/1/3593

Date 5/5/2024

ADDENDUM NO.1

TENDER No (FARA/2/2024)

Non-Revenue Water Reduction of Sections of the Northern King Abdullah Canal in the Jordan Valley Service Area - Rehabilitation of 13 Km of Northern King Abdallah Canal

Dear Sirs,

This addendum consists of :

1. (11) eleven pages including the responses & the related attachments to inquiries and clarifications submitted by interested bidders.
2. Soft copy (CD) Containing the requested drawings.
3. The extension of the submission deadline of proposals to be on 22th May, 12:00 p.m. Amman time instead of 8th May 2024.

This addendum shall be considered as an integral part of the Tender Documents.

Sincerely Yours,

Hesham

Chairman of the Special Procurement Committee
Secretary General
Jordan Valley Authority
ENG.Hesham Alhesa

Tender No. (FARA/2/2024) Non-Revenue Water Reduction of Sections of the Northern King Abdullah Canal in the Jordan Valley Service Area
Rehabilitation of 13 Km of Northern King Abdullah Canal

Addendum No. (1)

Q1: With reference to the TECHNICAL SPECIFICATION ON PAGE 13, PARAGRAPH 10, concerning the REPLACEMENT STRUCTURAL CONCRETE, point B '' REPLACEMENT OF EXPANSION JOINT'', is it possible to consider the replacement of Expansion Joint as measured items in order to accurately determine the approximate quantity required?

Ans. 1: Delete item No. 2.2 (Surface Preparation for non-damaged panels / Concrete Repair Works). Please find attached amended BOQ B-2/2 page.

Q2: Could you kindly highlight the meaning and/or details of the 'KEY' in reference to BOQ item No. 3, 'Isolation Works, and could you please consider the isolation work for the key as a measured item.?

Ans.2: The key for isolation works is the way the contractor will form the junction between the isolated section and the surfaces outside the isolated section, such as on the berms to prevent leakage and support the isolation, the isolation details is subject to the contractor`s methodology, section and details should be submitted by the contractor. The price should include any needed quantities for such details to complete the work in the proper way.

Q3: Could you provide clear copies of the following drawings: DRAWING NO. F-02 - WADI AL ARAB FLUME SECTION, FC-01 - WADI AL ARAB FLUME PLAN AND ELEVATION, AND P-01 - PRV LAYOUT PLAN? The text on the drawings is currently unreadable

Ans. 3: Please find attached soft copy (CD) contains the requested drawings.

Q4: Regarding the canal's civil/structural aspects - canal rehabilitation, specifically concerning the existing expansion joints: In the context of installing the lining system, we understand that the lining is to be placed above the existing concrete channel after repair. However, we are unsure if repairing the existing expansion

joints is necessary. Could you please clarify this? If repair is indeed required, could you also provide detailed information on the approximate locations of these existing expansion joints?

Ans. 4: See the answer of Q1 above.

Q5: Could you please provide guidance/recommendation on the appropriate timeframe for resuming water flow after concrete pouring for the channel.?

Ans. 5: The timeframe to resume water flow in the canal after concrete pouring is not specified to limited time. Nevertheless, the time is recommended to be as soon as possible which means the nearest the time needed to resume water flow after concrete pouring the best timeframe is. Taking into consideration the time needed for concrete curing and hardening time in accordance with manufacturers and Engineer instructions.

Q6: Technical submittals: At this stage, is the contractor required to submit a Construction Method Statement and Project Schedule?

Ans. 6: It is not required to submit construction method statement nor project schedule.

Q7: Referring to B.O.Q. Item 5 (c), as we begin gathering requirements for cement, epoxy coatings suppliers, and professional engineers, there are concerns regarding the uncommon application of epoxy-based coatings over cement-based waterproofing. It might be better to apply two layers from a single product type

Ans. 7: Abide by the required materials mentioned in the tender documents.

Q8: Could you kindly provide the longitudinal slopes of the canal [AND/OR] the longitudinal slopes of its segments?
back to Q8 for a small explanation:
Could you kindly provide the Profile of the canal?

Ans. 8: See the answer of Q3 above.

Q9: Reference to B.O.Q Item No. 1 for Bypass works, is it possible to increase the length of the working section UP TO [1,500] L.M?

Ans. 9: It is possible to increase the working section up to 1500 L.M provided that all requirements dependent on the bypass works are maintained as per tender documents and engineer instructions.

Q10: Since it is currently difficult to estimate the quantity of fencing to be dismantled and reinstalled, or the amount of fencing that will need replacement, we kindly request the addition of the following items to the B.O.Q

Description	Unit	Quantity
Dismantling, maintenance, and reinstallation of existing fencing	l.m	
Dismantling and removal of damaged existing fencing from the site.	l.m	
Supply and installation of new fencing	l.m	

Ans. 10: The reinstatement works are required from the contractor including all fences (of the canal + related farmers) and their prices are considered included in BOQ items.

Q11: Please specify the width of cleaning on both sides of the canal?

Ans. 11: The width of cleaning shall be not less than 1m from each side (right and left).

Q12: During the site visit, we noticed some buildings and agricultural activities along the canal banks, making them inaccessible. These encroachments will definitely cause hindrance and delay in completing the work. Therefore, it's essential to remove these obstacles before starting the work to avoid delays.? are going to do that?

Ans. 12: It is the contractor responsibility to avoid and remove any obstacles such as fences, etc... and to reinstate all surfaces and services as per Engineer and employer instruction.

Q13: Since it's currently impossible to determine the quantity of existing expansion joints needing replacement, we kindly request the addition of a separate item for the replacement of existing expansion joints in B.O.Q

Ans. 13: See the answer of Q1 above.

Q14: Due to the need for external quotations to price the tender items and additional deep study of canal bypass works, we kindly request an extension of the tender for an additional four weeks.

Ans. 14: The submission date will be at 12:00 noon Wednesday 22th May, 2024 (Jordan local time).

Q15: Please confirm there's no technical proposal to be submitted in this tender Just two envelope one for bid bond and the other for financial proposal

Ans.15: Confirmed no technical proposal required to be submitted.

Q16: Please confirm the value bid bond is 300,000 JOD and the validity is for 90 days

Ans.16: Confirmed.

Q17: We are writing to respectfully request an extension for the tender submission date regarding the/m subject tender. The original deadline for the tender submission, which is 08 May 2024, poses a significant challenge for our organization to prepare and submit a comprehensive tender proposal.
We kindly request an extension of another 4 Weeks for the tender submission. We kindly request your prompt attention to this matter and would appreciate receiving a response regarding the extension request at your earliest convenience

Ans. 17: See the answer of Q14 above.

Q18: It mentioned in the BOQ - item 1: Pressure reducing valve assembly " The price also includes cast in- situ chamber, reinforced concrete (250 kg/cm2) with Heavy-Duty cast-iron surface cover and frame, submersible pump, pressure transmitter," please confirm if there is a submersible pump included in the price of the PRV? And if it is included, please provide us with the head & flow for the pump.

Ans. 18: Confirmed. It is the contractor responsibility to select the suitable head & flow for one portable submersible pump based on site conditions and tender drawings for all PRVs' chambers required.

Q19: What is the type / brand of JVA SCADA System?

Ans. 19: The type of JVA SCADA system is not necessary since the contractor shall connect all PRVs and all other needed devices with the existing RTUs along KAC (King Abdullah Canal).

Q20: It mentioned in the BOQ - item 1: Pressure reducing valve assembly " all as indicated in the specifications and Standard drawings" there is no drawings for the PRV please provide us with them.

Ans. 20: See the answer of Q3 above.

Q21: Please provide us with specs for float switch & Pressure transmitter that indicated in the BOQ-Item 1: Pressure reducing valve assembly.

Ans. 21: Please find attached pressure transmitter and float switch technical specifications.

Q22: Could you please provide the total length and quantity of concrete structural elements such as Car Bridges, Pedestrian Bridges, and Gates that will span the canal in the rehabilitation area? Are there any specific recommendations or details for lining works in this area?

Ans. 22: No any concrete works required for concrete bridges and no any specific recommendation or details for lining works in this area (bridges). Regarding the gates please refer to BOQ item No. 6 and supplementary conditions of contract page No. 37.

Q23: The Geosynthetic Clay Liner (GCL) is mentioned in the technical specifications on page 42, but it does not appear in the BOQ. Could you please clarify this discrepancy?

Ans. 23: The GCL mentioned in the technical specifications on page 42 under section No. 17.3.2.C (Protection) is an optional work if the contractor will use it its price shall be included in the BOQ item No.3 unit rate.

Q24: BOQ item 1.2 ; Cleaning the Canal :
Please provide method of measurement for the quantities (m3) to be removed from the body and banks of the existing Canal since most of the materials consist of vegetations, weeds & sediments and the use of survey equipment is not possible for such material volume measurement.

Ans. 24: Please find attached amended BOQ B-2/1 page.

Q25: BOQ item 2.1.1 ; Demolition and Removal :
This item includes only demolition and removal of existing damaged 80mm thick concrete bed/side panels of the Canal. Please provide another measured and paid item for concreting new 80 mm panels to re-place the removed panels in order to receive the other upper lining works required for the Canal.

Ans. 25: No such new lining item is required for 80mm thick to replace old concrete bed/side panels of the Canal. Hence the only lining required is the 12 cm reinforced concrete. Provided that it is required to supply compacted selected backfill material instead of these panels (80 mm) and level it to match the existing level of old panels.

Q26: BOQ item 2.1.2 ; Embankment works :
This item constitutes of excavating and carting away 400mm thick materials then backfilling 250 mm with well compacted fill. Please verify if the quantity to be measured for payment, after adding 20 cm working space from each side, is for the 400 mm thick excavated volume or for the 250 mm thick well compacted

Ans. 26: The required backfilling is 250mm thick well compacted for each layer of fill material until reach the full 400 mm thick excavated volume. Hence the backfilling is required to be on layers' basis and this quantity is for excavation only and the backfill material price is considered included in this quantity also i.e. this item covers both excavation and backfill. Regarding the working space 20cm it is not included in the given quantity. Nevertheless it is required to be executed and its price is considered included in the unit rate of this item.

Q27: BOQ item 2.2 ; Surface preparation for non-damaged panels:
This item constitutes repairing existing cracks and sealing of existing joints (per L.m). Please verify what is the linear meter measured in this item, is it the length of the cracks and joints within the bed and sides of the Canal?

Ans. 27: See the answer of Q1 above.

Q28: BOQ item 3 ; Isolation Works:
This item includes one layer each of lower Geotextile and upper HDPE geomembrane. And since the HDPE layer will be unavoidably vulnerable to damage while laying the steel reinforcement for the concrete lining layer on top of it. Please verify if another separation Geotextile layer should be provided on top of the HDPE layer as well to avoid such damage.

Ans. 28: No any additional geotextile layer is needed. In addition, It is the contractor responsibility to protect the HDPE membranes as per requested in the technical specifications.

Q29: Since the Tender requires thorough investigation of working procedures and obtaining prices for different material and equipment from abroad, we kindly ask to extend the date of submission of bids by at least two weeks.

Ans. 29: See the answer of Q14 above.

س٣٠: في Preliminaries – (Bill No.1) يرجى توضيح ما يلي:
أ- بند (A) المطلوب تزويد سيارات (Pickup) عدد ٣ الوحدة (شهر) ، و الكمية (٥٤)، يرجى توضيح كيف سيتم تسعير هذا البند علماً بأن مدة المشروع (١٨) شهر.
ب- بند (B) ما المقصود بـ (M.Month) الكمية ٣٦، يرجى توضيح كيف سيتم تسعير هذا البند.

ج٣٠:
أ- سيتم التسعير على أساس شهري حيث ان المطلوب هو تزويد سيارات عدد ٣ لكل شهر و طيلة مدة تنفيذ العطاء و حيث ان مدة التنفيذ تساوي ١٨ شهر أي أنه (٣ سيارات*١٨شهر = ٥٤ شهر).
ب- كما تم ذكره في إجابة الفرع أ من هذا السؤال اعلاه حيث انه أيضا التسعير سيتم على أساس شهري للسواقين و المطلوب هو توفير عدد ٢ سواقين طيلة مدة تنفيذ العطاء (١٨ شهر) أي أنه (٢*١٨ = ٣٦ شهر).
المقصود ب(M.Month) هو (Man.Month).

س٣١: يرجى التأكيد على أن ملكية المضخات أو النظام الخاص بـ (Dewatering) ستعود ملكيته للمالك و ليس للمقاول بعد تسليم أعمال المشروع

ج٣١: ستعود ملكية المضخات أو النظام الخاص بـ(Dewatering) للمالك بعد تسليم أعمال المشروع شريطة أن تكون بحالة جديدة (بعد إجراء الصيانة لها) و كما هو موضح في الشروط الخاصة الإضافية للعقد صفحة رقم ٣٧.

	3-In channel Gravity Pipeline: The In-channel Gravity Pipeline system will use a pipeline laid within the channel body between two barriers, this pipeline is raised from the channel bed using pipe boosters to elevate the pipeline and keep enough working space below the pipe to allow maintenance of the channel bed under the pipe and a bypass the water inside this pipe. The pipe is placed at an elevated point of the canal section, whereby the pipe inlet should be placed at a calculated level which guarantees enough water head to allow water to flow in the pipe, maximum water surface elevation should remain within the channel, and ensure enough working space below the pipe. The valves can then be opened to allow the water to flow through the bypass pipe. Therefore, the system components include: a-Temporary Cofferdams: to barricade water from entering the work area (especially fabricated steel barrier, precast concrete, sandbags, or other materials). b-Butterfly valves: to regulate water flows. c-Pipelines: High-density polyethylene (HDPE) or other types of pipelines are used to transport the water from the canal upstream section. The segment lengths are determined by the most economical approach and the requirements of the Employer. The preliminary calculation of the gravity pipe section size is 1600mm with a total diversion length of 150m. The final system sizing, including calculation hydraulic performance, and type of barriers, and inlet type, should be designed by the contractor. And the calculations should be approved by the engineer. (Diversions sizing is only for guidance, but the final selection will be based on the approval of contractor`s calculation). 4- Isolation for works space (via partition walls): This option entails the installation of a partition to retain water from entering the repair area, isolating more than 50% of the cross-section of the canal, as shown in the drawings, which will partially eliminate the need for pumping (considering higher demands may incur during the summer season). However, this may compromise water tightness due to layer patching rather than a uniform application. The main components include: a- Partition to retain water from entering the repair area b- Steel beams for bracing The final system details, including calculation hydraulic performance, and type of barriers, and inlet and outlet type, should be designed by the contractor, proper treatment for construction joints should be included in the methodolgy to confirm the water tightness such as: using water stop. And the calculations should be approved by the engineer. (Diversions details is only for guidance, but the final selection will be based on the engineer and JVA approval).				
1.2	**Cleaning the Canal**	LS	LS		
	Cleaning Sediments Inside Canal Removing and cleaning the canal from the sediments. The Contractor should submit a method statement that describes the procedure and sequence of the process of cleaning and preparing the canal. The Contractor should remove all the surplus materials including sediments outside the project area.				
1.2.1	The price includes all labor, transportations machines, equipment, pulling tools and all accessories needed to complete the work. The Contractor shall ensure continue of supply for the lateral intakes for irrigation and drinking water along the targeted area. The contractor shall coordinate with JVA and related authorities in order to determine shutdown date and time as per specifications and Engineer instructions (to Amman and Irbid) targeted area.	Cu.m	22,000		
	Cleaning Sides (Top Banks) of the Canal Removing and cleaning sides of the canal from any vegetation, weeds including cleaning the both sides (top banks) with each side has 1m width of cleaning. This item includes removing all weeding ,trees, bushes, vegetation, rubbish, roots, and any other objectionable material.				
1.2.2	The Contractor should submit a method statement that describes the procedure and sequence of the process of cleaning and preparing the canal. The Contractor should remove all the surplus materials including debris, plants and weeds, outside the project area. The price includes all labor, transportations machines, equipment, pulling tools and all accessories needed to complete the work.	L.M	13,000		
B-2/ 1		CARRIED TO COLLECTION			

Item	Description	Unit	Estimated Quantity	Unit Rate (JD)	Amount (JD)
2	**Surface preapration** the exisiting canal body should be evaluated and each segment should be calssified to damaged or non-damaged concrete panles according to the definition on teacnical specifiction, classifcation should be approved by the engineer.				
2.1	**Surface prepration for damaged panels**				
2.1.1	**Demolition and Removal** Demolish all damaged existing concrete lining side panels or/and bed as per engineer instructions and approval and haul away debris to dumping areas approved by JVA authorities or engineer instructions.	Sq.m	22,000		
2.1.2	**Embankment works** Excavate 400mm thick in any type of soil, rock, concrete...etc., behind side panels and under the bed whether this excavation is made by hand or machine to the required levels, including removing excavated materials to dumping areas approved by authorities , shoring , protection works needed for safety , working spaces & final sub-grade leveling (min. 20 cm) & compacting 95% degree modified proctor & including backfilling with selected and approved material.	Cu.m	9,000		
2.2	**Surface prepration for non-damaged panels** **Concrete Repair Works** Concrete repair works shall include: Repair existing cracks on non-replaced side panels and bed. Sealing of existing joints, as per drawings.	-	-	Cancelled	Cancelled
3	**Isolation Works** Supply and install HDPE membrane 1.5 mm underlayed by non-woven geotextile to cover the full canal section and berms as per the drawings, and engineer instructions, including all extra length for overlaping and key in proper way	Sq.m	230,000		
4	**Concrete Lining Works** Forming of 12cm reinforced concrete on top of canal prepared surfaces and over the isolation works, the works shall include all necessary to complete the job as per Manufacturer instructions and recommendations, Drawings, Specifications and Engineer's instructions. The section should include the following:				
4.1	Cast in situ reinforced concrete (C30/37) section 12cm - with 1 layer of mesh reinforcement as per drawings	Cu.m	22,000		
4.2	Cast in situ plain concrete grade 18 pavement slabs for both sides of berms as per drawings	Cu.m	3,300		
4.3	Formation of transverse joints each 4 m along canal length including sealing of new joints, and installation of water stop each 24 m along canal length	L.S	L.S		
B-2/ 2		CARRIED TO COLLECTION			

26. PRESSURE MEASURING SYSTEMS

GENERAL

THE REQUIREMENT

A. **General:** The CONTRACTOR shall provide pressure measuring systems, complete and operable, in accordance with the Contract Documents.

CONTRACTOR SUBMITTALS

B. **General:** Shop Drawings, Owner's Manual, and Records Drawings shall be submitted in conformance with the requirements of Section 01300 - Contractor Submittals.

PRODUCTS

ELECTRONIC PRESSURE TRANSMITTERS

C. Pressure transmitter shall be a two wire device with the following features: continuously adjustable span, zero and dampening adjustment, integral indicator scaled in engineering units, solid state circuitry, 4-20 madc output. Accuracy shall be +/- 0.25 percent of span. The diaphragm material shall be Hastelloy. Body material shall be 316 stainless steel. Process connections shall be ½ inch NPT. Pressure transmitters shall be **Fischer & Porter Model PSTP, Rosemount** or equal.

D. The following shall be considered for pressure transmitters willl be provided:

- Body/Bolt material shall be 316 SS electronic for the
- Process Connection ¼ in. NPT
- NEMA Rating 4

DIAPHRAGM SEALS FOR PRESSURE MEASURING SYSTEMS

E. **Components:** Diaphragm seals shall consist of bottom housing, lower ring, and diaphragm capsule, fill screw, flushing connection, and a top housing.

F. **Operating Principles:** The diaphragm seal shall attach to the inlet connection of a pressure instrument to isolate its measuring element from the process fluid. The space between the diaphragm and the pressure element shall be completely filled with silicone. Displacement of the liquid fill in the pressure element through the movement of the diaphragm shall transmit process pressure changes directly to a gauge, transmitter, switch or other pressure instruments. The diaphragm seal shall have a removable bottom housing to permit servicing and refilling.

G. **Materials:** All exposed surfaces, housings, and diaphragm shall be constructed of 316 stainless steel.

H. Manufacturers, or equal

1. **Ashcroft 100**

I. Diaphragm seals shall be provided for each instrument.

EXECUTION

GENERAL

J. Pressure measuring systems shall be handled, installed, calibrated, loop-tested, pre-commissioned, and performance tested according to the manufacturer's service, supervision, and training indicated in recommendation letter and operating manuals that provided by manufacturer.

- END OF SECTION -

27. LEVEL SWITCH (FLOAT SWITCH)

The level switch should have the minimum below characteristics:

1. Type: Mercury free ball float switch.
2. Function/ performance:
   - Differential: Less than 20 cm.
   - Type of Switch: SPDT snap switch
   - Switch Rating: 1 amp at 220 VAC.
3. Physical:
   - Float: Type 316 stainless steel, Teflon or non-stick coating, minimum 5 in diameter.
   - Totally encapsulated switch.
   - Cable shall be heavy-duty, PVC or equivalent jacketed integral to float.
4. Options/Accessories Required:
   - Provide stainless steel hardware.
   - Lead wire shall be a waterproof cable of sufficient length so that no splice or junction box is required in the vault.
   - Provide cast-aluminum weatherproof junction box outside the sump pit with terminals for all floats and tapped as required for conduit connections.
   - Provide mounting equipment as per manufacturer recommendations.