Republic of Serbia

MINISTRY OF FINANCE

Department for Contracting and Financing of EU Funded Programmes (CFCU)

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CONTRACTING AUTHORITY'S CLARIFICATIONS No. 7

"Construction and commissioning of waste water treatment plant at TPP Kostolac B"

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No.	Question	Answer
1	**GENERAL** According to the tender dossier, Paragraph 9.7.1 of Volume 3 Employer's Requirements "A soil investigation will be performed by the contractor. The results of this investigation shall be used for the choice of the foundation system and the relevant calculations." Due to the importance of the definition of the geotechnical characteristics in order to choose the best foundation systems and calculate the associated costs, and in the case that there will not be a geotechnical study available included in the tender documents, we kindly ask for permission to enter the site and carry out on-site tests at the date and time of your best convenience, during the tender stage.	It is not possible to perform the on-site tests during tendering phase. The chosen Contractor will be given opportunity to conduct required on-site tests. Precise geotechnical data are currently not available. The Preliminary Design states following: *"Based on the results of previously conducted field and laboratory researches conclusions regarding the lithological composition of the terrain at the location of objects and geo mechanical characteristics of represented materials were made. Field researches and laboratory tests of soil at the location of TPP Kostolac B were performed by the organization „Georad", OOUR „Georad" and results were presented in the "Study on geo mechanical characteristics of soil at the location of future TPP Kostolac B" (Georad, 1978). Investigative drilling of 6 investigative boreholes was conducted and the length of boreholes was 30m (TED-1 do TED-6). Representative samples of soils were*

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		taken from the boreholes and laboratory tests were performed (identification and classification examination, determination of physical and mechanical characteristics of soil). The borehole closest to the location of future WWTP is TED-3. Based on the results of drilling and laboratory tests it has been concluded that the soil at the location of facility has following layer characteristics: *1) at the surface of terrain is humus thickness around 0.6 m,* *2) beneath humus is the layer of loess thickness around 3.9 with following characteristics:* $\gamma = 20\ kN/m3$ $c = 20\ kN/m2$ $\phi = 23°$ $M = 15000\ kN/m2$ *3) furthermore there is a layer of loess clay thickness 4.10 m, with following characteristics:* $\gamma = 20\ kN/m3$ $c = 10\ kN/m2$ $\phi = 26°$ $M = 20000\ kN/m2$ *4) bellow is the layer of sandy clay thickness 0.4 m, with following characteristics:* $\gamma = 20\ kN/m3$ $c = 10\ kN/m2$ $\phi = 22°$ $M = 25000\ kN/m2$ *5) on a larger depths su clay sand and fine grained sand, which haven't been laboratory tested. Depth of ground water is around 9.20m in the layer of sandy clay (4). Foundation of all objects in FGD is in loess layer (2) except for the sludge silos for which foundation is in the layer of loess clay*

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		(3).” The data in the above mentioned text (in italic font) should be used as indicative ones bearing in mind following: 1. Geotechnical characteristics of the terrain on which WWTP will be located could be different from the presented data 2. Location of TPP Kostolac and WWTP foreseen by the Project is between two rivers 3. As stated in Appendix C: Civil Works Design Requirements Chapter 1.4.1.1. “CONTRACTOR will have to carry out a soil investigation…”.
2	**GENERAL** Please, we ask for a cad drawing that includes B3 and New Chemical location.	Cad drawing is not available at the moment.
3	**WWTP-S** We understand that to control all process stages in the SBR, a pH, redox and dissolved oxygen probe/transmitter are necessary, please confirm if you consider necessary include this analyzers in this project.	Yes it is necessary to include them in the project.
4	**WWTP-S** We understand that sanitary sewage from the new process into unit B3 is not our scope. Please confirm.	SBR facility shall treat water from B3 and FGD unit. Sanitary waste waters from future B3 unit are under the scope of the project. The pipes for the collection of sanitary waste waters from future unit B3 is not under the scope of the project. The total capacity of the sanitary WWTP is 1500 PE and that includes a new block B3, as stated in ER 8.3.4 SANITARY WASTE WATER TREATMENT PLANT WWTP-S.
5	**WWTP-S** We have estimated that water table is two meters below ground level, and the SBR reactors protrude	Location permit (conditions) does not contain any special requirements related to the SBR reactor's height,

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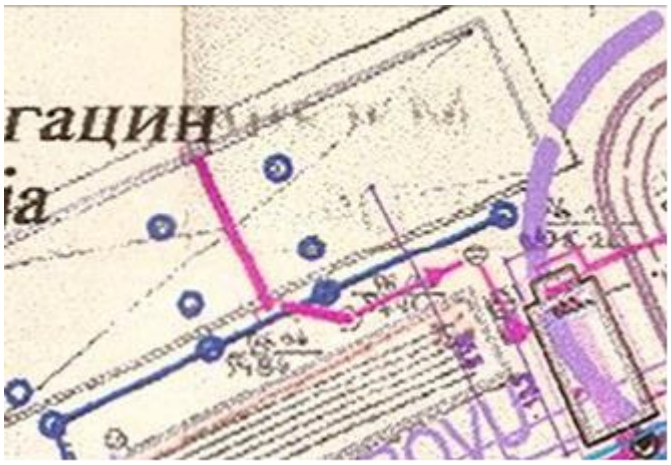
	more than 1 m above ground level, in order to fit foundation slab and not increase civil works. Please confirm if the SBR reactors could be protruded more than 1 meter.	therefore it is up to the Tenderer to define the SBR reactor's height according to its technical solution.
6	**WWTP-U** In order to send all drainages to equalization basin and due to piezometric line, please, confirm if a pumping drainage pit must be added.	The question is not clear. It has to be clarified to which waste water streams the question relates and also the sources of those streams have to be specified. We confirm that is necessary to add collecting pit with pumps.
7	**WWTP-U** Please confirm if pink pipe indicate in the image "(V3.1annex2.01) 333-13-TEKO B WW-CV-LAY-05-B_WWTP General Lay Out" below is the oil and lubricant from the warehouse.  *Is this an existing pipe? or we must include in our scope.*	It is not existing pipe. This has to be included in scope of works.
8	**WWTP-U** We are thinking to connect HFO inside boiler from B3 network to the existing network from HFO inside boiler from B1 and B2. Please indicate the level of the existing network and level of the B3 network and confirm the maximum hourly flow to consider for these streams.	The mentioned connection of HFO inside boiler from B3 network to the existing network from HFO inside boiler from B1 and B2 is possible in accordance with the proposed technical solution. The maximum hourly flow is not available at the moment, Employer's requirements in Chapter 9.2.1 HFO and

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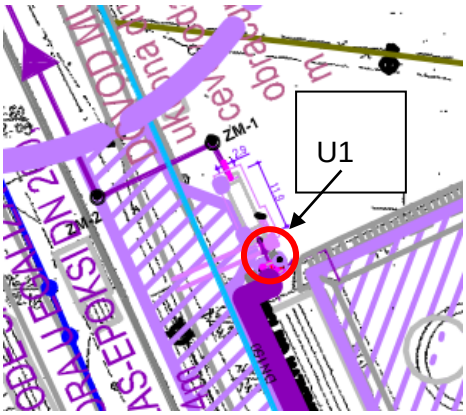
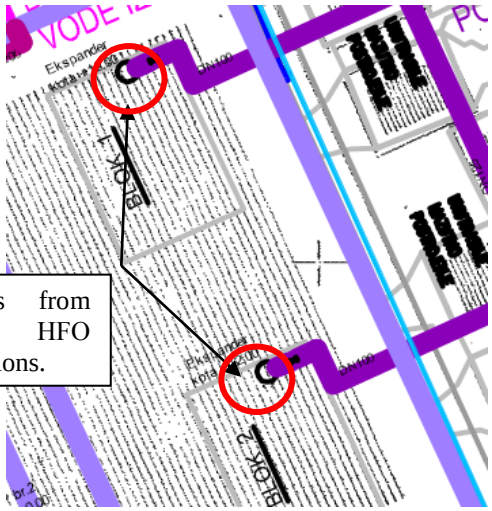
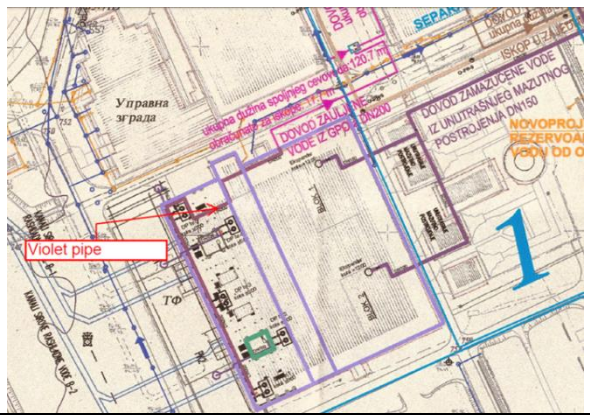
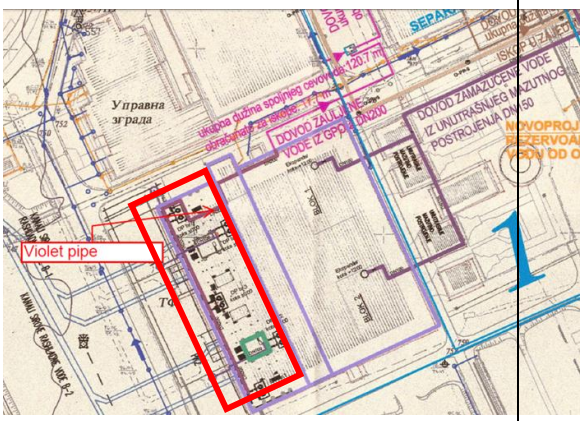
		Oily Waste Water Sources contains the estimations of daily flows.
9	**WWTP-U** Please locate in "(V3.1annex2.01) 333-13-TEKO B WW-CV-LAY-05-B_WWTP General Lay Out" Sump tank U1 and drain pits from Boiler's HFO heating stations.	 
10	**WWTP-U** Please confirm if violet pipe indicate in the image "(V3.1annex2.01) 333-13-TEKO B WW-CV-LAY-05-B_WWTP General Lay Out" below is existing. 	No, it is not existing.

No.	Question	Answer
11	**WWTP-U** Please locate the battery limits for the Machine Hall waste water sources in "(V3.1annex2.01) 333-13-TEKO B WW-CV-LAY-05-B_WWTP General Lay Out"	
12	**WWTP-ODG&HPV.** We think it can be better to supply air into equalization basin to get metals oxidation instead of submersible agitators. Please confirm if it's possible to change this equipment.	No it is not possible as stated in Employer's requirements Chapter 9.3.3.2.
13	**WWTP-ODG&HPV.** In (V3.1annex2.05) 333-13-TEKO B WW-ME-PID-02-B_WWTP-ODG&HPV PID Diagram, not include polyelectrolyte dosing previous to primary clarifier. Please confirm that it's not necessary this dosing.	According to Employer's requirements Chapter 9.3.2. "the polyelectrolyte and FeCl3 will be added in the Chemical Reactor No2".
14	**WWTP-ODG&HPV.** According to the tender dossier, Paragraph 10.2.1 of Volume 3 Employer Requirements, "FGD's hydrocyclones overflows interconnection with WWTP-ODG&HPV Plant. The FGD effluents transfer to WWTP-ODG&HPV by pumps and piping supplied and installed by the WWTP Contractor" Please locate the new sump pit for Unit B3 and confirm if these pumps must include for us. In the lump-sump price ODG&HPV not include an item for this.	Location of the new sump pit for Unit B3 is currently not available (Unit B3 is future unit). The pumps have to be delivered by the Tenderer. Pump price shall be included into lump-sum.
15	**WWTP-ODG&HPV.** Please confirm if it is necessary include a sump pit and pumps to redirect FGD effluents from B1 and B2 to the new WWTP-ODG&HPV. Please locate in	The pumps have to be delivered by the Tenderer. Pump price shall be included into lump-sum.

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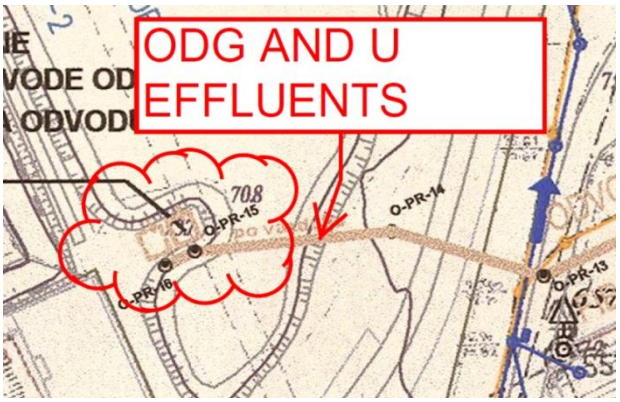
	"(V3.1annex2.01) 333-13-TEKO B WW-CV-LAY-05-B_WWTP General Lay Out".	
16	**WWTP-ODG&HPV.** According to the tender dossier, Paragraph 10.2.1 of Volume 3 Employer Requirements, "Water Chemical Treatment Plant waste water. Re-direction of existing drains channeling in order to send the sand filters backwashing effluents and the runoff rain waters from the area surrounding the chemicals unloading station to the neutralization basin". Please confirm if this network is our scope because in "(V3.1annex2.01) 333-13-TEKO B WW-CV-LAY-05-B_WWTP General Lay Out" isn't painted.	We confirm that this network is in the scope of work.
17	**WWTP-ODG&HPV.** We kindly ask for a bill of quantities or more information about the works that we have to consider for the last part of the ODG and U effluents network where this network will connect to the existing channel. See the image below "(V3.1annex2.01) 333-13-TEKO B WW-CV-LAY-05-B_WWTP General Lay Out". 	Available information are presented in Tender Dossier. BoQ is not foreseen by this type of contract (Yellow FIDIC). Vol 4 of Tender Dossier defines the budget breakdown.
18	Please locate the existing piping of Runoff storm water in *"(V3.1annex2.01) 333-13-TEKO B WW-CV-LAY-05-B_WWTP General Lay Out" from Units B1 and B2.*	Please see the drawing in Annex 7.1 to Clarifications No. 7 where three (3) open channels are marked. The channels are collecting storm water to the pumping station after which it is pumped to the recipient.

No.	Question	Answer