

**CORRIGENDUM No. 3 to the
TENDER DOSSIER**

Sabac Wastewater Treatment Project

Publication ref.: EuropeAid/130447/C/WKS/RS

Tender no.: 08SER01/13/51

The following alterations and/ or corrections are made to the Tender Dossier:

Volume 1 Section 1 – Instructions to Tenderers

1. The former text:

Article 17.1	The complete tender must be submitted in one original, clearly marked "original" and 6 copies, also clearly marked "copy". In the event of any discrepancy between them the original will prevail.	
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Shall read as new text:

Article 17.1	The complete tender must be submitted in one original, clearly marked "original" and 3 copies, also clearly marked "copy". In the event of any discrepancy between them the original will prevail. The successful tenderer shall be requested to supply 3 additional copies.	
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Volume 1 Section 4 – Questionnaire

2. The former text:

Form 4.6.10	6. Inlet Pump Station, Screen House & Blower room- layout	Scale 1:100
4. Drawing requirements	7. Inlet Pump Station Screen House & Blower room – main section	Scale 1:100
Contents of table	8. Grit and grease removal chamber – plan and sections	Scale 1:100

Shall read as new text:

Form 4.6.10	6. Not used	-
4. Drawing requirements	7. Not used	-
Contents of table	8. Not Used	-

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Volume 3 Section 1 – General Design Requirements

3. The former text:

3.1.2.4 end of the first paragraph The site is crossed by a rail track (see Volume 5) which continue along bridge structures over the Cer rim canal.	
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Shall read as new text:

3.1.2.4 end of the first paragraph	<p>..... The site is crossed by a rail track (see Volume 5) which continue along bridge structures over the Cer rim canal.</p> <p>Although currently the railroad is not in use, it shall be maintained for future service, allowing traffic via the two gates, as shown on drawing 5.4</p> <p>Inside the premises of the plant, the railroad shall have a double function as a rail track and as internal site road, as is shown on drawing 5.4</p>	
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4. The former text:

3.1.4.9 Last paragraphGiven the above-mentioned 100-year recurrence flood level in the Sava, the protection embankment crown for the WWTP location shall be at 79.55 masl, whereas site levelling elevation shall be 78.70 masl, with minimal top elevation of structural walls at 79.55 masl.	
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Shall read as new text:

3.1.4.9 Last paragraph	<p>.....Given the above-mentioned 100-year recurrence flood level in the Sava, the protection embankment crown for the WWTP location shall be at 79.55 masl, whereas site levelling elevation shall be 78.70 masl, with minimal top elevation of structural walls at 79.55 masl.</p> <p>These works shall not be part of the scope of works for the present EU Contract.</p>	
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Volume 3 Section 2 – Particular Design and Process Requirements

5. The former text:

Table 1		Construction Phase 1A Construction
	Thickened waste activated sludge storage tank and transfer pumps	Optional
	Sludge blending tank and transfer pumps	Optional

Shall read as new text:

Table 1		Construction Phase 1A
	Thickened waste activated sludge sump and transfer pumps	Yes
	Sludge blending tank and transfer pumps	Yes

6. The former text:

3.2.7.2	Excess Sludge thickening	
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Shall read as new text:

3.2.7.2	Replace paragraph 3.2.7.2 and table 21 completely with the following <u>(modifications are underlined)</u> :	
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3.2.7.2 Excess Sludge Thickening

Excess Sludge (ES) will be discontinuously discharged from the return & excess sludge pumping station into **WAS (waste activated sludge) storage tanks** at the sludge thickening facilities. The facilities shall be constructed for **Phase IA**. The excess sludge storage tanks shall be used for synchronisation of the excess sludge discharge cycles of the activated sludge system and the operation time of the mechanical thickening facilities.

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Table 1: Design Criteria for Excess Sludge Thickening

Parameter	Value	Unit
Type	Mechanical (gravity-Belt) thickener	
Number of WAS storage tanks	<u>1</u>	
Specific excess sludge production	≈ 35	g DS/PExd
Dry solids content of ES	0.7 - 1	%
Discharge cycles (ES from AST)	7	d/w
Volume of WAS storage tanks	<u>1 day storage</u>	
Agitator in homogenization tank	submersible	
Number of mechanical thickeners	1+1	
Effective belt width	1 - 3	m
Hydraulic loading rate	7 - 47	l/s
Outlet solids concentration	5 - 7	%
Solids loading rate	200-600	kg/m/h
Polymer requirement	3 - 7	kg/mgDS
Polymer preparation and dosing system	n+1	complet
<u>Sludge blending tanks</u>		
<u>Number of blending tanks</u>	<u>1</u>	
<u>Agitator in blending tank</u>	submersible	
Volume of storage tank	2 day storage	
Dry solids content of thickened ES	≥ 5.0	%
Type of pumps	positive displacement	

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The **WAS** storage tanks shall be provided with agitators for intermittent operation as well as height adjustable supernatant discharge device.

Surplus sludge shall be fed into the tanks by pressure pipes from the **WAS**-pumping station. The sludge volume shall be mixed and homogenized discontinuously in intervals in order to prevent compaction of sludge on the tank bottom. The sludge shall be conditioned with polymer and fed into a feed/distribution box, where the sludge is distributed evenly across the width of the moving belt.

The mechanical sludge thickening facility shall comprise sludge thickening machine with sludge feeding pumps, equipment for automatic preparation and dosing of polyelectrolyte with dosing pumps and in-line mixers, and local switchboards. Each dewatering machine shall be provided n + 1 feed pumps from the positive displacement type and its own dosing station.

Excess sludge shall be fed to the mechanical thickening machines by individual suction and pressure pipework. Each suction pipe shall be equipped with an inductive flow measurement device (EFM) for continuous sludge flow measurement with registration, remote transmission, and operation control of the sludge thickening process.

Eccentric (positive displacement) dosing pumps with (FC) shall be provided for dosing of organic polymer for sludge conditioning. Polyelectrolyte dosing control shall be flow proportional against a preset standard ratio, which depends on the particular sludge characteristics and which shall be determined during trial operation.

Filtrate shall be piped by gravity into the supernatant pumping station of the WWTP.

The sludge thickening facilities shall be located in an operation building that shall be comprised of two sections for the installation of the machinery with ancillary equipment and local control panels, and the local power sub-distribution and control room. The operation room shall be designed in such a way that all requirements for noise/odour control and working security are fulfilled. Access to the machines, pumps and components (such as valves and local control panels) shall be secure and unhindered. The operation room shall be provided with a crane hoist for installation and service requirements. With regard on the humid environment in the operation room sufficient heating, ventilation and natural lighting shall be provided.

Low-voltage power supply and operation control of the mechanical dewatering facilities shall be arranged in a separate control room. It shall have sufficient size for installation of the required number of control cabinets for the individual electric drives, feeder and measuring cabinets of the local sub-distribution as well as control boards for PLC and measuring instruments. The local PLC shall be interlocked with the main operation control of the plant. It shall have sufficient natural lighting and ventilation with access from outside, only.

Thickened sludge shall be collected in a sump and by means of thickened sludge pumps transferred into a blending tank with storage capacity for minimum of 2 days peak production, providing homogenized inflow of primary and excess sludge for anaerobic digesters. Blending tank shall be equipped with an emergency overflow, connected by gravity line to the internal sewerage pumping station.

Until the digesters have been completed (under Part 3), the thickened sludge from the blending tank shall be conditioned and transferred directly to the dewatering units.

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Once the digester has been constructed, blended and homogenized thickened sludge shall be fed into the anaerobic digesting plant by eccentric (positive displacement) pumps, which shall be arranged as separate pumping station.

Each digester shall be served with its own pumping station/group with at least $n + 1$ pumps.

The pumping station shall be comprised of manually adjustable eccentric (positive displacement) pumps.

The pressure pipes are to be connected to the individual heat exchangers of the digesters via inline mixers and shall be provided with inductive flow measurement devices (EFM) for continuous sludge flow measurement as well as pH-value and temperature measurement with registration, remote transmission, and operation control of the digestion process.

All piping shall be executed in stainless steel grade W 1.4571 (BS 320 S 31) or HDPE/Polypropylene pipes. Inspection manholes, access ladders and service platforms with lifting devices for heavy equipment, and coverings shall be provided accordingly.

The pumping station shall be located in the service building of the sludge digestion plant. Low-voltage power supply and operation control of the raw sludge pumping station shall be interconnected with the central power supply and operation control of the sludge digestion plant.

Power supply and operation control (PLC control with timer control) of the operation sequences shall be provided.

7. The former text:

3.2.10.2, page 81	1 No. Car, >100 hp, 4 seats, 4x4, AC, including fuel and maintenance.	
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Shall read as new text:

3.2.10.2, page 81	2 No. Car, >100 hp, 4 seats, 4x4, AC, including fuel and maintenance.	
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Volume 4 Section 4.1

8. The former text:

Schedule 2 – Civil Works,	2.16 Waste activated sludge storage and transfer pumping station	LS
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Shall read as new text:

Schedule 2 – Civil Works,	2.16a Waste activated sludge storage and transfer pumping station	LS
	2.16b Thickened waste activated sludge sump and pumping station	LS
	2.16c Sludge blending tank and pumping station	LS

9. The former text:

Schedule 2 – Optional Items for Civil Works,	2.26 Thickened waste activated sludge storage tank and pumping station	LS
	2.27 Sludge blending tank and pumping station	LS
	2.28 Biological and / or chemical phosphorus removal system	LS
	2.29 Not used	-

Shall read as new text:

Schedule 2 – Optional Items for Civil Works,	2.26 Not used	-
	2.27 Not used	-
	2.28 Biological and / or chemical phosphorus removal system	LS
	2.29 Dewatered sludge storage building (facility)	LS

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10. The former text:

Schedule 3 – Mechanical Works,	3.14 Waste activated sludge storage and transfer pumping station	LS
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Shall read as new text:

Schedule 3 – Mechanical Works,	3.14a Waste activated sludge storage and transfer pumping station	LS
	3.14b Thickened waste activated sludge sump and pumping station	LS
	3.14c Sludge blending tank and pumping station	LS

11. The former text:

Schedule 3 – Optional Items for Mechanical Works	3.24 Thickened waste activated sludge storage tank and pumping station	LS
	3.25 Sludge blending tank and pumping station	LS

Shall read as new text:

Schedule 3 – Optional Items for Mechanical Works	3.24 Not used	-
	3.25 Not used	-

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Volume 5

12. The former drawing:

	DWG 5.6 - WWTP P&F diagram - sludge line.pdf	
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Shall read as new drawing (attached):

	DWG 5.6 - WWTP P&F diagram - sludge line Q and A 14-07-2011 TRACK.pdf	
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