This questionnaire has been designed by a work team of the Technological Center CARTIF to obtain information about the wastewater treatment plant in the field of the MEDAWARE project - Development of tools and guidelines for the promotion of the sustainable urban wastewater treatment and reuse in the agricultural production in the Mediterranean countries

1 BASIC DATA OF THE WASTEWATER TREATMENT PLANT

Name:	Mr. Özgür Özdemir	Position:	Head of Channel and Treatment Office
Name:	Mr. Emre Eren	Position:	Head of Wastewater Office

1. Where is your local wastewater treatment plant located?

Address:	Kayseri Atıksu Arıtma Tesisi (Kayseri Wastewater Treatment Plant-KASKİ), Kocasinan						
City:	Kayseri	County:	Turkey	State:	-	Zip:	-
Telephone number	+ 90 352 6974267	Fax number	+ 90 352 6974268	E-mail address	ozguro@kaski.gov.tr		

2. How many stages of treatment does your facility use?

Primary	X☐	-Coarse and Fine Screens, Oil and Grease Separator, Primary Sedimentation.
Secondary	☐	
Tertiary	X☐	-Biological Phosphate Removal Tank, Aeration Tanks (Nitrification-Denitrification), Sludge Digester.
Other	☐	

3. What is the capacity of the treatment plant?

Liters per day (average)	: $110x10^6$
Number of People and/or Employees	: 48
Peak Daily Flow Estimate	: $253x10^6$

4. How is the sludge disposed of?

Burned	☐	Landfill	X☐
Fertilizer	☐	Other	☐

5. Where does the treated wastewater go after it leaves the plant?

River or Stream	X☐	Lake	☐
Ocean	☐	Other	☐

6. In what year was the plant built?

2004 (Temporarily Acceptance)

7. Have there been any modifications of the plant in recent years?

Coarse and Fine Screen Modifications

8. Are there any plans for additional improvements to the plant?

Building an Additional Sludge Drying Bed Unit

9. Wastewater analysis information (influent)

Wastewater BOD	310 mg/L
Wastewater COD	640 mg/L
Wastewater Suspended Solids	320 mg/L

10. Treated water- Local government requirement - If known (effluent)

Wastewater BOD	35 mg/L
Wastewater COD	90 mg/L
Wastewater Suspended Solids	25 mg/L

2 WASTEWATER TREATMENT INFORMATION

11. Primary Treatment Processes

	Processes	*Size (if know)*	*Main operational problems (if exists)*
X☐	Bar or bow screen	30 mm	_____
X☐	Grit removal	980 m^3	Clogging by Textile Effluent Components
X☐	Primary sedimentation	5000 m^3	_____
☐	Comminution	_____	_____
☐	Oil / fat removal	_____	_____
☐	Flow equalisation	_____	_____
☐	pH neutralisation	_____	_____
☐	Imhoff tank	_____	_____
☐	_____	_____	_____
☐	_____	_____	_____

12. Secondary Treatment Processes

	Processes	*Size (if know)*	*Main operational problems (if exists)*
☐	Activated sludge	_____	_____
☐	Extended aeration	_____	_____
☐	Aerated lagoon	_____	_____
☐	Trickling filter	_____	_____
☐	Rotating bio-discs	_____	_____
☐	Anaerobic treatment/UASB	_____	_____
☐	Anaerobic filter	_____	_____
☐	Stabilisation ponds	_____	_____
☐	Constructed wetlands	_____	_____
☐	Aquaculture	_____	_____
☐	_____	_____	_____
☐	_____	_____	_____

13. Tertiary Treatment Processes

	Processes	*Size (if know)*	*Main operational problems (if exists)*
X☐	Nitrification	47000 m^3	_____
X☐	Denitrification	116000 m^3	The unit is not flexible because there is no adjustable internal cycle
☐	Chemical precipitation	_____	_____
☐	Disinfection	_____	_____
☐	(Direct) filtration	_____	_____
☐	Chemical oxidation	_____	_____
X☐	Biological P removal	12.000 m^3	Not flexible due to A2/O process
☐	Constructed wetlands	_____	_____
☐	Aquaculture	_____	_____
☐	_____	_____	_____
☐	_____	_____	_____

14. Advanced Treatment Processes

	Processes	*Size (if know)*	*Main operational problems (if exists)*
☐	Chemical treatment	_____	_____
☐	Reverse osmosis	_____	_____
☐	Electrodialysis	_____	_____
☐	Carbon adsorption	_____	_____
☐	Selective ion exchange	_____	_____
☐	Hyperfiltration	_____	_____
☐	Oxidation	_____	_____
☐	Detoxification	_____	_____
☐	_____	_____	_____
☐	_____	_____	_____

Other comments

Kayseri Urban Wastewater Treatment System features
-A Biological treatment unit was (design sludge age = 25 d),
-Anaerobic sludge digester at the preliminary sludge line,
-Biological phosphorus removal tank,
-PLC/SCADA system

Kayseri UWWTP can be defined as a new and good treatment system working properly.

3 CONTROL AND MONITORING SYSTEMS

15. Which are the most critical process parameters that may affect the efficiency of the wastewater treatment plant?

	Parameter	*Process*	*Current Automatic Control?*
☐	Wetwell levels	On-off pumping	Yes ☐ No ☐
X☐	Sludge depth	Primary treatment	Yes ☐ No ☐
X☐	Solids Retention Time (SRT)	Conventional activated sludge	Yes ☐ No ☐
X☐	Dissolved oxygen concentration	Conventional activated sludge	Yes X ☐ No ☐
X☐	Return flowrate from the clarifier	Conventional activated sludge	Yes X ☐ No ☐
☐	Internal recycle	Biological nutrient removal	Yes ☐ No ☐
☐	Methanol feed rate	Biological nutrient removal	Yes ☐ No ☐
☐	Air / solids ratio	Dissolved air flotation thickening	Yes ☐ No ☐
☐	Sludge depth	Gravity thickening	Yes ☐ No ☐
☐	Belt speed	Gravity belt thickening	Yes X ☐ No ☐
☐	Chemical dosage rate	Chemical addition for water-solids separation	Yes ☐ No ☐
☐	Chlorine dosage rate	Chlorination	Yes ☐ No ☐
☐	_____	_____	Yes ☐ No ☐
☐	_____	_____	Yes ☐ No ☐
☐	_____	_____	Yes ☐ No ☐
☐	_____	_____	Yes ☐ No ☐
☐	_____	_____	Yes ☐ No ☐
☐	_____	_____	Yes ☐ No ☐
☐	_____	_____	Yes ☐ No ☐
☐	_____	_____	Yes ☐ No ☐
☐	_____	_____	Yes ☐ No ☐
☐	_____	_____	Yes ☐ No ☐

16. In your opinion, what are the main problems with the control system of the wastewater treatment plant?

Lack of qualified technical person

17. In your opinion, what treatment processes / parameters should be monitored / controlled automatically?

- Oxygen measurement (in the aeration tank)
- pH (in the sludge digestion tank)
- in case there is Methanol addition :NH_4-N
- Level control (at the pumping stations)

If you have any questions about this document, please contact us by e-mail at yolnun@cartif.es

Thank you for your collaboration.