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:	**Didem GEDİK**	Position:	Head of Process Control

1. Where is your local wastewater treatment plant located?

Address:	**ASKİ – Adana Bati Atiksu Aritma Tesisi Yenidam Koyu Civari, Seyhan**						
City:	Adana	County:	Turkey	State:	-	Zip:	01122
Telephone number	**+ 90 3224288350**	Fax number	**+ 90 3224286655**	E-mail address	didemgedik1967 @yahoo.com		

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

Primary	☐	_____
Secondary	☐X	Full secondary biological treatment for carbon removal
Tertiary	☐	_____
Other	☐	_____

3. What is the capacity of the treatment plant?

Liters per day (average)	**227.000.000**
Number of People and/or Employees	**60**
Peak Daily Flow Estimate	**260.000.000**

4. How is the sludge disposed of?

Burned	☐	Landfill	☐
Fertilizer	☐	Other	☐x

Sludge disposal on a sanitary landfill belonging to the treatment plant

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

River or Stream	☐	Lake	☐
Ocean	☐	Other	☒

Discharge into DSI (State Hydraulic Works) Drainage Channel

6. In what year was the plant built?

2000 – 2003 period

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

No

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

A nitrification-denitrification unit is foreseen in the year 2025.

9. Wastewater analysis information (influent)

Wastewater BOD	221
Wastewater COD	456
Wastewater Suspended Solids	227

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

Wastewater BOD	25
Wastewater COD	125
Wastewater Suspended Solids	35

Discharge limits are met after treatment.

2 WASTEWATER TREATMENT INFORMATION

11. Primary Treatment Processes

	Processes	*Size (if know)*	*Main operational problems (if exists)*
☐x	Bar or bow screen	50 mm course, 10 mm fine screen	Clogging problems now and then
☐x	Grit removal	1877 m^3	Clogging problems now and then
☐x	Primary sedimentation	18720 m^3	_____
☐	Comminution	_____	_____
☐x	Oil / fat removal	Together with grit removal tanks	Clogging problems now and then
☐	Flow equalisation	_____	_____
☐	pH neutralisation	_____	_____
☐	Imhoff tank	_____	_____
☐	_____	_____	_____
☐	_____	_____	_____

12. Secondary Treatment Processes

	Processes	*Size (if know)*	*Main operational problems (if exists)*
☐x	Activated sludge	26500 m^3	No problems
☐	Extended aeration	_____	_____
☐	Aerated lagoon	_____	_____
☐	Trickling filter	_____	_____
☐	Rotating bio-discs	_____	_____
☐	Anaerobic treatment/UASB	_____	_____
☐	Anaerobic filter	_____	_____
☐	Stabilisation ponds	_____	_____
☐	Constructed wetlands	_____	_____
☐	Aquaculture	_____	_____
☐x	Mechanical dewatering by filter belt press, 3 units	50 tons dry solids per day	No problems

☐x	Anaerobic sludge digestion	54000 m^3	No problems

13. Tertiary Treatment Processes

	Processes	*Size (if know)*	*Main operational problems (if exists)*
☐	Nitrification	_____	_____
☐	Denitrification	_____	_____
☐	Chemical precipitation	_____	_____
☐	Disinfection	_____	_____
☐	(Direct) filtration	_____	_____
☐	Chemical oxidation	_____	_____
☐	Biological P removal	_____	_____
☐	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

The treated effluent of Western Adana UWWTP meets the current discharge limit values and prevents pollution of the Mediterranean Sea.

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 ☐
☐	Sludge depth	Primary treatment	Yes ☐ No ☐
☐X	Solids Retention Time (SRT)	Conventional activated sludge	Yes ☐ X No ☐
☐X	Dissolved oxygen concentration	Conventional activated sludge	Yes ☐ X No ☐
☐	Return flowrate from the clarifier	Conventional activated sludge	Yes ☐ 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 ☐
☐X	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?

The difference between design and real operational values/parameters causes operational problems in the treatment plant (unexpected/unforeseen situations).

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

Wastewater flow, pH and aeration basin O_2 concentration should be monitored automatically.

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

Thank you for you collaboration.