

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:	Monther Hind	Position:	General Manager of Al-Bireh WWTP
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1. Where is your local wastewater treatment plant located?

Address:	Al-Bireh Municipality		
City:	Al-Bireh	County:	Palestine
		State:	
Zip:	00972		
Telephone number	2 2404737	Fax number	2 2404431
E-mail address	pweg@p-ol.com		

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

Primary	<input type="checkbox"/> ✓	_____
Secondary	<input type="checkbox"/> ✓	_____
Tertiary	<input type="checkbox"/> ✓	_____
Other	<input type="checkbox"/>	_____

3. What is the capacity of the treatment plant?

Liters per day (average)	4000 m3/day
Number of People and/or Employees	38000 PE (served population)
Peak Daily Flow Estimate	480 m3/h (dry weather)
	720 m3/h (rainy weather)

4. How is the sludge disposed of?

Burned	<input type="checkbox"/>	Landfill	<input type="checkbox"/> ✓
Fertilizer	<input type="checkbox"/>	Other	<input type="checkbox"/>

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

River or Stream
Ocean

Lake
Other ✓

6. In what year was the plant built?

Al-Bireh WWTP was built in 2000 year

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

_____ No _____

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

_____ No _____

9. Wastewater analysis information (influent)

Wastewater BOD	500 mg/l
Wastewater COD	1150 mg/l
Wastewater Suspended Solids	650 mg/l

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

Wastewater BOD	12 mg/l
Wastewater COD	106 mg/l
Wastewater Suspended Solids	7 mg/l

2 WASTEWATER TREATMENT INFORMATION

11. Primary Treatment Processes

Processes	Size (if know)	Main operational problems (if exists)
Bar or bow screen	2 automatic bar screens, 1 Manual, 15 mm spacing.	Accumulation of aggregates/ rainy weather
<input type="checkbox"/> Grit removal	_____	Pipe blocking by bottles and other materials
<input type="checkbox"/> Primary sedimentation	_____	_____
<input type="checkbox"/> Comminution	_____	_____
<input type="checkbox"/> Oil / fat removal	_____	_____
<input type="checkbox"/> Flow equalisation	_____	_____
<input type="checkbox"/> pH neutralisation	_____	_____
<input type="checkbox"/> Imhoff tank	_____	_____
<input type="checkbox"/> _____	_____	_____
<input type="checkbox"/> _____	_____	_____

12. Secondary Treatment Processes

Processes	Size (if know)	Main operational problems (if exists)
<input type="checkbox"/> Activated sludge	_____	_____
<input type="checkbox"/> Extended aeration	2 (6900 m ³)/ one tank is under operation	Foaming on the surface (mainly during seasons changing)
<input type="checkbox"/> Aerated lagoon	_____	_____
<input type="checkbox"/> Trickling filter	_____	_____
<input type="checkbox"/> Rotating bio-discs	_____	_____
<input type="checkbox"/> Anaerobic treatment/UASB	_____	_____
<input type="checkbox"/> Anaerobic filter	_____	_____
<input type="checkbox"/> Stabilisation ponds	_____	_____
<input type="checkbox"/> Constructed	_____	_____

wetlands

- Aquaculture _____

13. Tertiary Treatment Processes

<i>Processes</i>	<i>Size (if know)</i>	<i>Main operational problems (if exists)</i>
<input type="checkbox"/> Nitrification	_____	_____
<input type="checkbox"/> Denitrification	_____	_____
<input type="checkbox"/> Chemical precipitation	_____	_____
Disinfection (UV unit)	Average capacity 240 m ³ /h	_____
<input type="checkbox"/> (Direct) filtration	_____	_____
<input type="checkbox"/> Chemical oxidation	_____	_____
<input type="checkbox"/> Biological P removal	_____	_____
<input type="checkbox"/> Constructed wetlands	_____	_____
<input type="checkbox"/> Aquaculture	_____	_____
<input type="checkbox"/> _____	_____	_____
<input type="checkbox"/> _____	_____	_____

14. Advanced Treatment Processes

<i>Processes</i>	<i>Size (if know)</i>	<i>Main operational problems (if exists)</i>
<input type="checkbox"/> Chemical treatment	_____	_____
<input type="checkbox"/> Reverse osmosis	_____	_____
<input type="checkbox"/> Electrodialysis	_____	_____
<input type="checkbox"/> Carbon adsorption	_____	_____
<input type="checkbox"/> Selective ion exchange	_____	_____
<input type="checkbox"/> Hyperfiltration	_____	_____
<input type="checkbox"/> Oxidation	_____	_____
<input type="checkbox"/> Detoxification	_____	_____
<input type="checkbox"/> _____	_____	_____

3 CONTROL AND MONITORING SYSTEMS

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

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

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

Maintenance the plant PLCs

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

Oxygen

Concentration_____

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

Thank you for you collaboration.