

Guinea Flour Labour Camps Water Treatment Plants



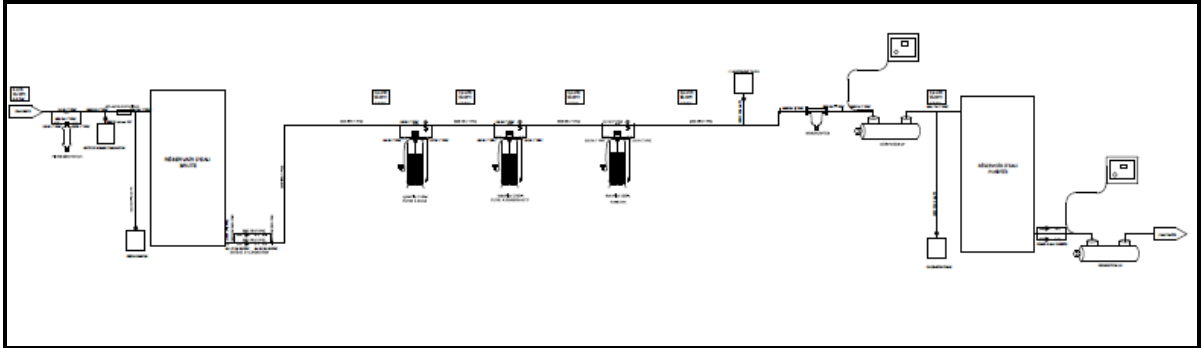
Plant Description:

- There are 10 containerised water treatment plants in Guinea.
- Plants are fully covered protected from ambient temperature with isolation and sensitive to the environment.
- Treated water meets WHO potable water standards.
- Contract involves process design, detail designs, engineering, supply, commissioning and operator training.

Client:	Dorçe A.Ş.
Commissioned:	2013
Capacity:	28 m ³ /d
Discharge consent:	WHO standards
Brief description:	Containerised potable water treatment plants.

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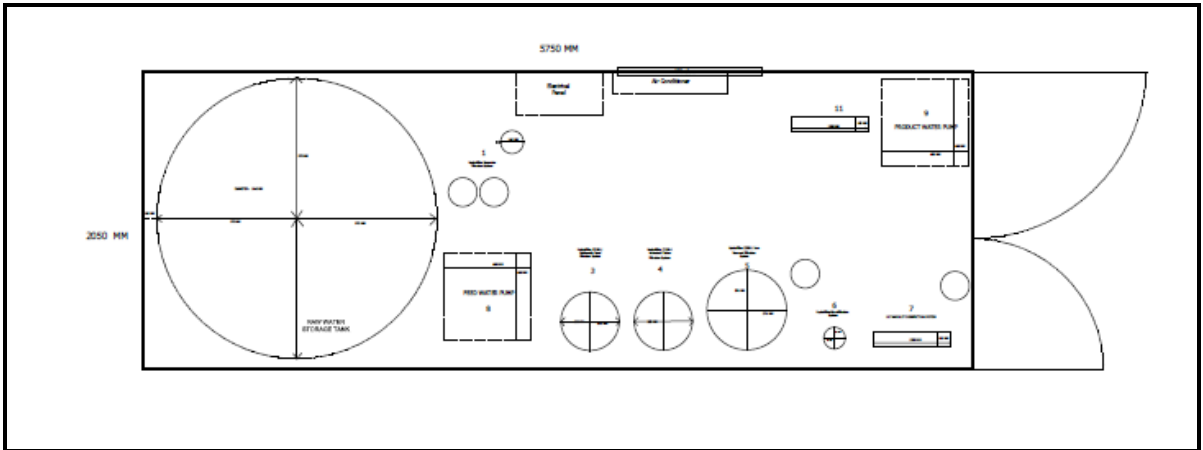
Process flow sheet

Process Description:

Plant is fully covered in a container and has isolation against ambient temperature.

Water is supplied from the river is fed from the raw water tank within the container to the treatment system with hydrophore. Water passes through pre filtration, chemical treatment, sand filter, activated carbon filter, iron filter, neutralisation, chlore disinfection, Ph adjustment and UV disinfection in sequence and afterwards stored at 3 treated water depots ready to use. Before pumped to use passes through final UV disinfection.

Plant is designed for fully automatic operation with minimum supervision.



Lay-out

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Design data;
Flow : 28 m³/d

Influent Analysis:

Parameter	River Water Values
Temperature	20-25 °C
Turbidity	31 NTU
TSS	25,1 mg/L
TDS	50,1 mg/L
Total Organic material (TOC)	1,9 mg/L
Total hardness	50 – 100 mg/L CaCO ₃
Alkalinity	22 mg/L CaCO ₃
Cadmium	0,0011 mg/L
Chrome	<0,005 mg/L
Copper	0,013 mg/L
Lead	0,009 mg/L
Manganese	0,062 mg/L
Nickel	<0,005 mg/L

Arsenic	<0,001 mg/L
Sulphate	0,8 mg/L
Chloride	6,5 mg/L
Bicarbonate	12,5 mg/L
Ammonia	0,03 mg/L
Nitrite	0,01 mg/L
Nitrate	4,6 mg/L
Iron	0,1 mg/L
Manganese	0,02 mg/L
Silica	< 15 mg/L
Ph	7,1
Feacal Coliforms	250 / 100 ml
EC	117 µS/cm

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Meets WHO water standards.

	Turkish Standards TSE 266	World Health Organisation WHO	US Environmental Protection Agency EPA
Turbidity (NTU)			
Turbidity	25	5	5
Microbiological Parameters			
Coliform Bacteria	<1	0	<1
Organic Chemical Parameters(mg/lit.)			
Total Trihalometans		400	100
Inorganic Chemical Material (mg/lit.)			
Aluminium,Al	0,2	0,2	1
Arsenic, As	0,05	0,05	0,05
Barium,Ba	0,3		1
Cadmium,Cd	0,01	0,01	0,01
Chromium (Total)	0,05	0,05	0,05
Fluoride,F	1,5	1,5	0,7-2,4
Lead,Pb	0,05	0,05	0,05
Mercury Hg	0	0	0
Nitrate,NO ₃	50	50	45
Selenium,Se	0,01		0,01
Silver,Ag	0,01		0,05
Antimony,Sb	0,01		0,01
Beryllium,Be			0
Asbest > 10 mikron			7 million lif/lit.
Radiological Parameters			
Gross Alfa			15

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Gross Beta			50
Aesthetical Parameters(mg/lit.)			
Chlorure,Cl	600	250	250
Colour (unit)	20	15	15
Copper,Cu	3		1
Detergents	0,2		0,5
Iron,Fe	0,2		0,3
Manganese,Mn	0,05	0,5	0,05
Odour threshold (unit)			3
pH	6,5-9,2	6,5-8,8	6,5-8,5
Sulphate,SO ₄	250	250	250
TDS	1500	1000	500
Zinc,Zn	5		5
Additional Parameters(mg/lit.)			
Calcium,Ca	200		
Hardness,CaCO ₃		500	
Magnezium,Mg	50		
Potassium,K	12		
Sodium,Na	175	200	
Residual Chlore	0,1-0,5	5	
Ammonium,NH ₄	0,05-0,5	1,5	

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