

CONSTRUCTED WETLAND SYSTEM FOR TREATMENT AND REUSE OF WASTEWATER IN THE CAMPING "LA CAVA"



ORIGINAL NEED

The camping site "La Cava" is located in the countryside near Poppi, a small city in the province of Arezzo.



The plant is a part of the FP5 demonstration project co-financed by the European Community SWAMP (*Sustainable Water Management and Water Purification in Tourism Facilities*). Goal of the SWAMP project is to implement efficient and sustainable constructed wetland treatments of wastewater for tourism facilities in isolated places and rural areas with 10 to 1000 person equivalent, enhancing the reuse of treated water and a rationale management of water resource. Partners of the projects are: Austria (Oekologisches Project, Graz ; Enhardt & Partners, Graz ; AEE, Gleisdorf); Italia (Ambiente Italia s.r.l., Milano; Iridra s.r.l, Firenze); Germania (Target, Hannover ; AWA, Uelzen); Lettonia (Sia Aprite, Cesis; Carl Bro, Riga).

LOCATION

Municipality of Poppi
Province of Arezzo
Tuscany
Italy

COMMITTANT

Camping "La Cava"

NUMBER OF PERSON EQUIVALENT

80

WASTEWATER TYPOLOGY

Civil

PLANT TYPOLOGY

HF (2 basins)

AREA (M2)

total 241 (115 + 126)

YEAR OF REALIZATION

2004

The following data about its characteristics are already available:

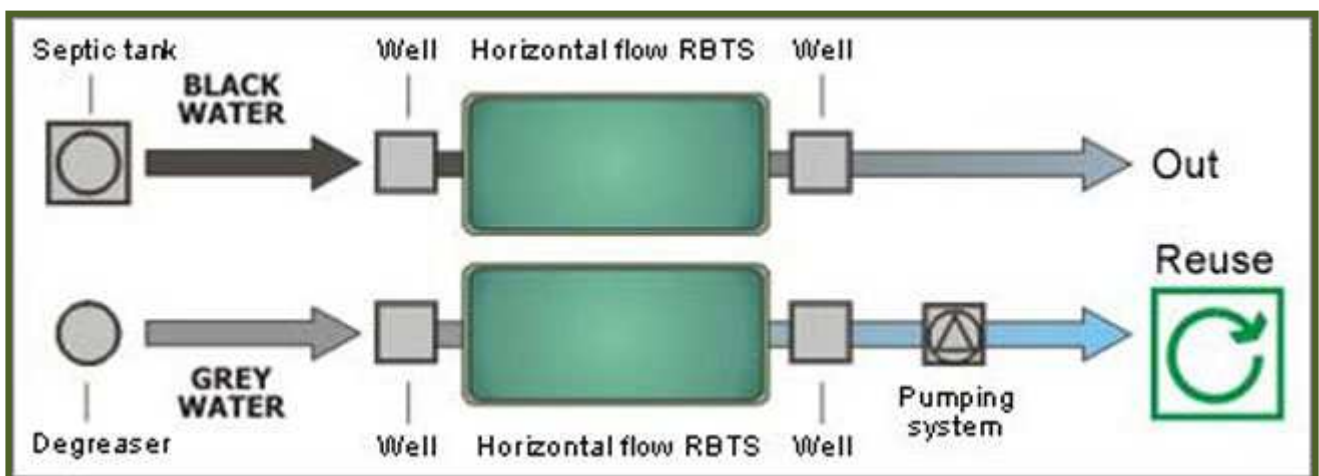
Sea level:	400 m.s.l.m.
Season:	March-November
Capacity:	accommodation: 6 bungalows with 24 beds tents: 48 places permanent: 8 persons
Water consumption:	(theoretical calculations) maximum 12 m ³ /d average 7 m ³ /d minimum 2 m ³ /d
Wastewater production:	80 p.e. app.

Due to the requirements of national legislation, we have chosen the simplest way to treat the wastewater using a horizontal flow constructed wetland system.

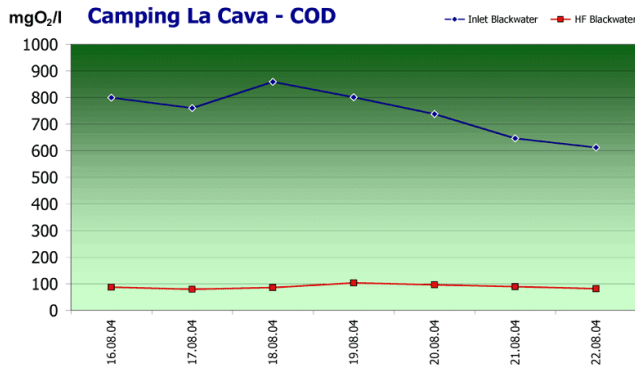


DESCRIPTION

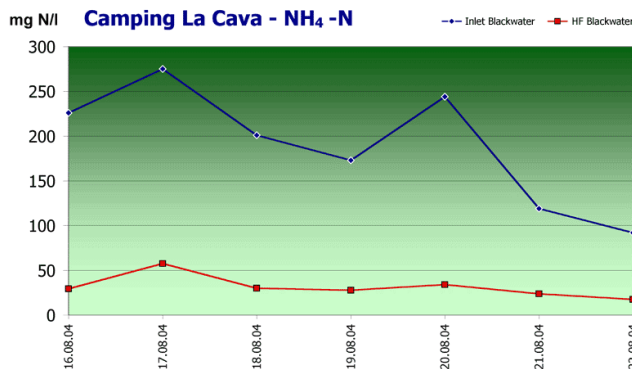
Water saving devices would mainly include waterless devices. There are no sewer systems close to the facility, so it will be necessary to adopt a local treatment system. Treated wastewater would be reused for irrigation of the green area.



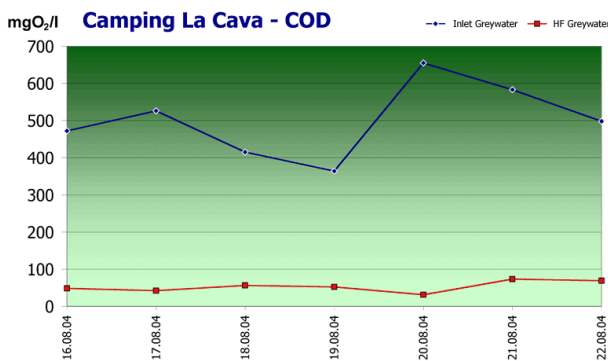
Scheme of the plant



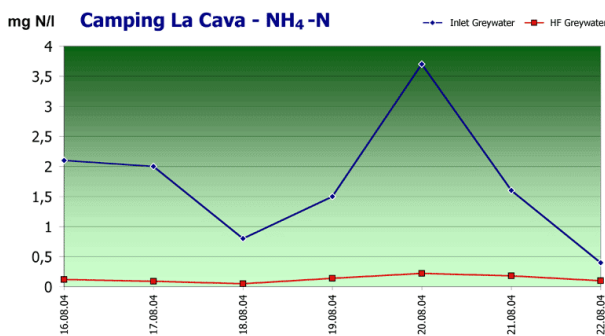
Blackwater
COD (mg O₂/l)
 Indicator commonly used to monitor organic matter content in wastewater.



Blackwater
Ammonia NH₄-N (mg N/l)
 A pollutant with a high impact on the freshwater environment. It has also a low degradation rate.



Greywater
COD (mg O₂/l)
 Indicator commonly used to monitor organic matter content in wastewater.



Greywater
Ammonia NH₄-N (mg N/l)
 A pollutant with a high impact on the freshwater environment. It has also a low degradation rate.

