

2017-2018 Spring

CEV 451E WATER SUPPLY & ENVIRONMENTAL SANITATION

Week 2: Water Quality and **Flow Characteristics**

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Domestic wastewater discharge standards for Turkey
 (discharge to receiving environment)
 Population: 10 000-100 000

PARAMETER	UNIT	2-HOUR COMPOSITE SAMPLE	24-HOUR COMPOSITE SAMPLE
BIOCHEMICAL OXYGEN DEMAND (BOD ₅)	(mg/L)	50	45
CHEMICAL OXYGEN DEMAND (COD)	(mg/L)	140	100
SUSPENDED SOLIDS (SS)	(mg/L)	45	30
pH	-	6-9	6-9

TÜRK STANDARTLARI ENSTİTÜSÜ-TS 266
İÇİLEBİLİR SULARIN FİZİKSEL VE KİMYASAL ÖZELLİKLERİ*

Memleketimiz İçin Kabul Edilen İçme Suyu Standardı (TS-266)			
1.ZEHİRLİ MADDELER	Kurşun (Pb)	-	0,05 mg/l
	Selenyum (Se)	-	0,01 mg/l
	Arsenik (As)	-	0,05 mg/l
	Krom (Cr ⁺)	-	0,05 mg/l
	Siyanür (CN)	-	0,2 mg/l
	Kadmiyum (Cd)	-	0,01 mg/l
2.SAĞLIĞA ETKİ YAPAN MADDELER	Florür (F)	1.0 mg/l	1,5 mg/l
	Nitrat (NO ₃)	-	45 mg/l
3.İÇİLEBİLME ÖZELLİĞİNE ETKİ YAPAN MADDELER	Renk	5 birim	50 birim
	Bulanıklık	5 birim	25 birim
	Koku ve tad	kokusuz normal	kokusuz
	Buharlaştırma Kalıntısı	500 mg/l	normal
	Demir (Fe)	0,3 mg/l	1500 mg/l
	Mangan (Mn)	0,1 mg/l	1,0 mg/l
	Bakır (Cu)	1,0 mg/l	0,5 mg/l
	Çinko (Zn)	5,0 mg/l	1,5 mg/l
	Kalsiyum (Ca)	75 mg/l	15,0 mg/l
	Magnezyum (Mg)	50 mg/l	200 mg/l
	Sülfat (SO ₄)	200 mg/l	150 mg/l
	Klorür (Cl)	200 mg/l	400 mg/l
	pH	7.0 - 8.5	600 mg/l
	Bakiye Klor	0,1 mg/l	6.5 - 9.2
	Fenolik Maddeler	-	0,5 mg/l
Alkali Benzil Sülfonat	0,5 mg/l	0,002 mg/l	
Mg+Na ₂ SO ₄	500 mg/l	1,0 mg/l	
			1000 mg/l
4.KİRLENMEYİ BELİRTEN MADDELER	Toplam Organik Madde	3,5 mg/l	-
		-	-

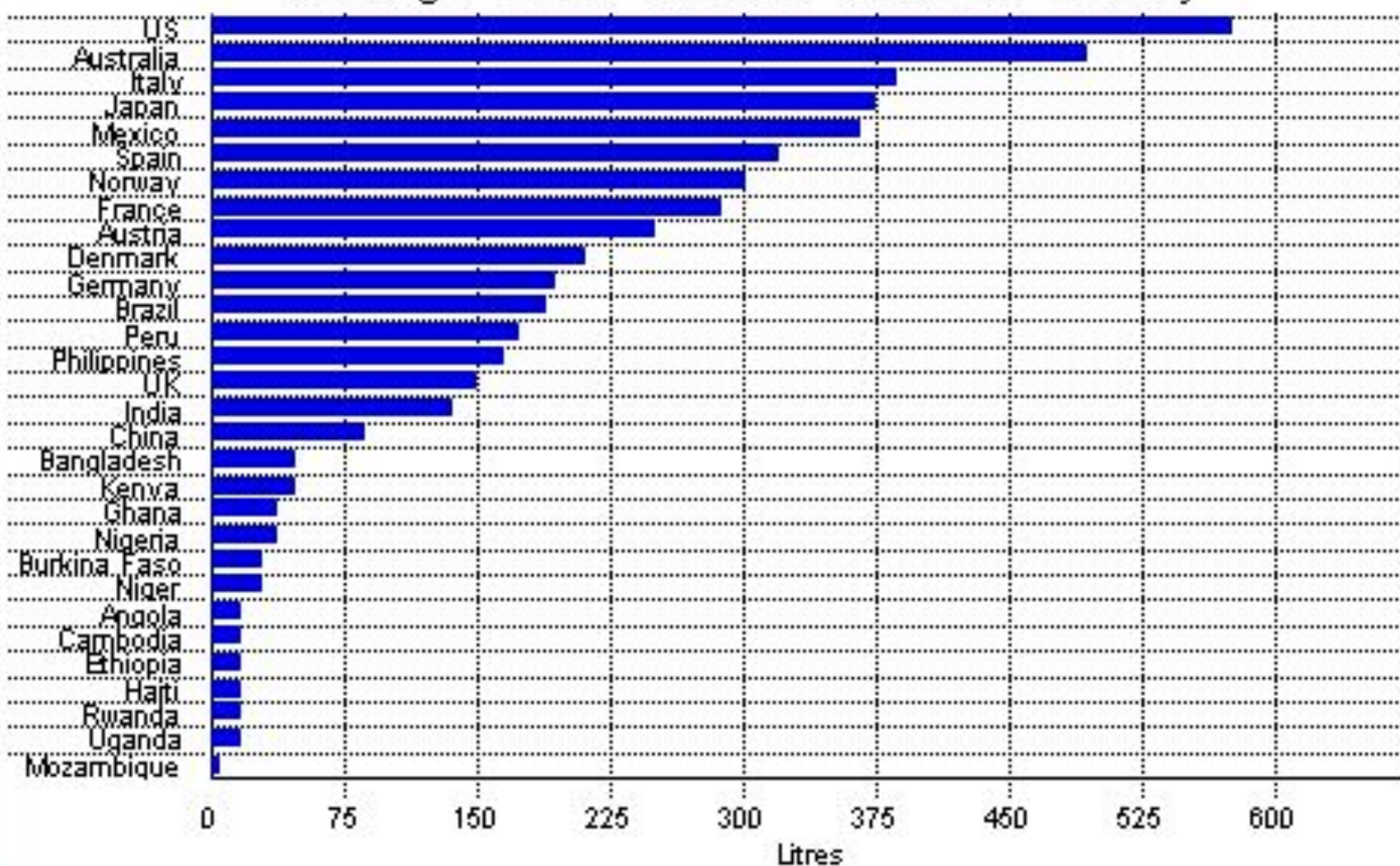
(* Kaynak: Işık Mühendislik Firması web sayfası: www.aquasu.com)

WE SAID:

$$Q = P \times q$$

Design discharge = **population** x **water demand per capita**

Average Water Use Per Person Per Day




United Nations Development Program - Human Development Report 2006

Factors affecting population growth:

- Lifetime expectancy
- Birth rate
- Economics
- Migration characteristics
- Land use characteristics(industry/agriculture/tourism)
- Available land
- Traditions/beliefs/governmental politics
-

Factors affecting water use:

- Climate
- Water quality and availability
- The state of the WW system
- Life standards (income)
- Traditions/beliefs/habbits
- Industrilization ratio
- Price and metering type of water
- Leakage losses
-



Population
characteristics



Borrowed from: http://en.wikipedia.org/wiki/File:Ganges_river_at_Varanasi_2008.jpeg