

# Case Study 8: Landfill Leachate Treatment

CONTAMINANT	UNTREATED LEACHATE	RECOVERED WATER FROM LEACHATE
<b>metals or salts</b>	<b>µg/L</b>	<b>µg/L</b>
Aluminum	1320	ND
Arsenic	39	ND
Barium	305	1
Cadmium	ND	ND
Calcium	91600	150
Chromium	146	ND
Copper	18	ND
Iron	8670	24
Lead	12	ND
Magnesium	73700	33
Manganese	1480	ND
Nickel	81	ND
Phosphorus	5740	ND
Potassium	56000	543
Selenium	ND	ND
Silicon	35500	ND
Silver	7	ND
Sodium	1620000	3990
Strontium	2370	ND
Titanium	468	ND
Vanadium	132	ND
Zinc	531	ND
CONSTITUENT	UNTREATED LEACHATE	RECOVERED WATER FROM LEACHATE
	<b>mg/L</b>	<b>mg/L</b>
Alkalinity	5000	4
BOD-5	472	2
Chloride-wtr	1580	23
COD	3190	ND
Fluoride-Free	1	ND
N-Ammonia	1110	1.6
TKN	780	ND
pH	8	5.6
SOLIDS-TDS	2380	48
SOLIDS-TSS	100	ND
Specific conductance, us/cm	9940 us/cm	25 us/cm
ND = nondetectable		



**40,000 GPD(151.4 M<sup>3</sup>/Day) Leachate Treatment Plant Since 1997 , Oregon, USA**

- Low-Fouling, Low-Energy FO Process
- Choice of direct FO treatment or Osmotic Bioreactor
- ZLD technology with reduced chemical consumption
- Recovery of more than 90% High quality reuse water

# Case Study 8: Landfill Leachate Treatment(Cont.)

## Objective:

To return leachate solids back to the landfill meeting Environmental Regulation standards



- Solidification - addition of Lime and Portland Cement
- Evaporation – low cost waste heat from reciprocating landfill gas genset cooling (98% reduction by volume)