

EGG WASHING PROCESS WATER TREATMENT PARTNER, MALTA

Project Description

The end customer is an egg producing company. The produced eggs from a 500.000 chicken resident equals a 2800 P.E. plant in terms of produced organic load at a relatively low hydraulic load that only equals 500 P.E. Together with newterra gmbh the plant constructing company started up the 1st phase in 2005 treating 35 m³/day. Due to the successful business start and long term reliability of the process water treatment plant the end customer decided to extend the capacity towards 100 m³/d in 2009. Target of the plant has always been to reduce the organic load by 99,9 % so the treated water can be released into a very sensitive river beside the plant. The plant extension has been realized very successfully during 2009 and since then the performance has been extraordinary.

Performance characteristics

Flow: 100 m³/day
 Membrane surface area: 420 m² (3 x MA04-40)
 Flux rate: 11 l/m²h

Waste water feed:
 Total daily flow (DWF) 100 m³/day
 Peak flow (3x DWF for 30 min) 12.5 m³/h
 Total BOD₅ loading 1693 mg BOD₅/l
 Total COD loading 4528 mg COD/l
 Amm.-N 50 mg/l
 Total TN loading 216 mg/l
 Total P 25 mg/l
 TSS 1564 mg/l
 pH 9-12

Discharge into sensitive river area



Technical Data

| | Design Inlet | Design Outlet | Effluent sample (6/11/9) | Effluent sample (6/11/9) | Effluent sample (4/12/9) | Effluent sample (18/1/10) | Effluent sample (10/2/10) | Average results | % average removal |
|-----------|--------------|---------------|--------------------------|--------------------------|--------------------------|---------------------------|---------------------------|-----------------|-------------------|
| BOD | 1693 | 5 | 2 | 2.6 | 2 | 3 | 1.5 | 2.7 | 99.9 |
| COD | 4528 | 25 | 18 | 14 | 19 | 71 | 24 | 28.5 | 99.6 |
| Amm-N | 50 | 5 | 0.106 | 0.08 | 0.04 | 0.09 | 0.22 | 0.9 | 99.8 |
| Total-N | 216 | 20 | 3.06 | 3.9 | 12.9 | 4.2 | 13.6 | 9.6 | 98.6 |
| Total-P | 25 | 1 | 0.146 | 0.13 | 0.27 | 0.22 | 0.28 | 0.3 | 99.4 |
| SS | 1564 | 5 | 2 | 3 | 3 | 2 | 3 | 3.0 | 99.9 |
| Nitrate-N | | | | 2.5 | 3.1 | 4.2 | 11.5 | 5.3 | |

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