$A_{Eo}$ : 2842.10 km²
PNP : NHN+ 32.70 m
Lage : 113.44 km oberhalb der Mündung links

# Q
m³/s

Pegel : Greven Nr. 3331000000100
Gewässer : Ems
Gebiet : Obere Ems

## Tageswerte

| Tag | 2010 Nov | 2010 Dez | 2011 Jan | Feb | Mrz | Apr | Mai | Jun | Jul | Aug | Sep | Okt | Nov | Dez |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | 11.6 | 23.7 | 27.6 | 31.8 | 25.2 | 16.0 | 9.12 | 9.60 | 5.34 | 4.15 | 7.61 | 4.54 | 5.81 | 4.70 |
| 2. | 10.6 | 21.4 | 42.1 | 29.9 | 23.6 | 14.9 | 8.52 | 7.49 | 5.35 | 3.88 | 7.06 | 4.24 | 5.71 | 6.19 |
| 3. | 9.88 | 20.5 | 43.8 | 30.7 | 23.0 | 14.9 | 8.35 | 5.66 | 5.11 | 3.77 | 6.31 | 4.15 | 5.75 | 9.37 |
| 4. | 12.0 | 19.4 | 40.3 | 33.6 | 22.1 | 26.1 | 8.06 | 5.23 | 4.94 | 4.51 | 6.99 | 4.02 | 6.04 | 11.3 |
| 5. | 16.4 | 20.2 | 38.4 | 36.6 | 21.6 | 28.3 | 8.20 | 5.01 | 4.95 | 6.14 | 12.5 | 4.40 | 5.71 | 10.8 |
| 6. | 36.4 | 29.3 | 38.2 | 38.3 | 20.8 | 21.2 | 7.69 | 5.31 | 4.91 | 5.46 | 10.5 | 4.77 | 5.47 | 12.2 |
| 7. | 76.3 | 27.7 | 83.2 | 36.0 | 20.4 | 18.8 | 7.75 | 6.95 | 4.54 | 6.17 | 13.9 | 6.51 | 5.41 | 16.7 |
| 8. | 67.0 | 24.0 | 167 | 33.2 | 19.7 | 17.1 | 6.96 | 7.41 | 4.39 | 5.16 | 13.7 | 8.35 | 5.39 | 23.0 |
| 9. | 43.8 | 22.2 | 283 | 29.9 | 20.0 | 15.9 | 6.84 | 12.3 | 4.19 | 5.00 | 15.7 | 9.29 | 5.23 | 19.8 |
| 10. | 35.9 | 21.8 | 323 | 28.6 | 20.4 | 14.8 | 6.82 | 8.04 | 4.06 | 5.03 | 12.7 | 9.31 | 5.07 | 19.5 |
| 11. | 47.1 | 47.6 | 213 | 35.4 | 21.1 | 14.1 | 6.68 | 7.19 | 4.14 | 4.63 | 9.71 | 9.17 | 5.16 | 15.3 |
| 12. | 69.4 | 122 | 128 | 52.2 | 20.6 | 14.5 | 6.45 | 6.37 | 3.91 | 4.83 | 13.6 | 20.0 | 4.96 | 13.5 |
| 13. | 90.5 | 172 | 118 | 67.0 | 19.9 | 14.8 | 6.59 | 5.85 | 3.95 | 6.14 | 13.7 | 29.9 | 4.58 | 17.1 |
| 14. | 144 | 124 | 218 | 70.7 | 19.4 | 13.5 | 6.32 | 5.45 | 4.56 | 8.44 | 9.83 | 19.4 | 4.58 | 24.4 |
| 15. | 231 | 73.5 | 306 | 60.4 | 19.3 | 12.9 | 6.39 | 5.47 | 5.18 | 13.0 | 8.08 | 13.4 | 5.10 | 27.6 |
| 16. | 190 | 50.5 | 227 | 60.8 | 18.8 | 12.3 | 6.61 | 6.06 | 5.72 | 8.85 | 7.58 | 10.9 | 4.66 | 33.9 |
| 17. | 113 | 43.3 | 146 | 52.9 | 18.2 | 12.0 | 8.18 | 12.3 | 6.36 | 6.40 | 6.82 | 9.70 | 4.68 | 75.1 |
| 18. | 73.8 | 37.8 | 99.0 | 42.5 | 17.7 | 11.7 | 8.21 | 8.95 | 5.46 | 5.50 | 6.59 | 9.51 | 5.01 | 70.2 |
| 19. | 53.0 | 33.4 | 89.6 | 36.7 | 17.4 | 10.6 | 7.10 | 8.13 | 4.90 | 13.0 | 7.33 | 10.6 | 5.02 | 48.6 |
| 20. | 42.4 | 31.8 | 91.0 | 33.5 | 16.1 | 11.3 | 6.91 | 9.87 | 4.67 | 12.9 | 6.37 | 9.62 | 4.77 | 38.8 |
| 21. | 37.7 | 27.8 | 85.1 | 30.4 | 16.2 | 10.8 | 6.46 | 8.85 | 4.79 | 7.70 | 6.04 | 8.80 | 4.72 | 50.3 |
| 22. | 35.4 | 27.9 | 70.0 | 27.7 | 15.9 | 10.3 | 6.37 | 7.65 | 4.46 | 8.14 | 5.76 | 7.98 | 4.92 | 56.7 |
| 23. | 32.0 | 27.8 | 63.4 | 25.5 | 15.5 | 10.1 | 6.14 | 13.0 | 4.17 | 9.66 | 5.48 | 7.51 | 4.77 | 54.2 |
| 24. | 32.5 | 28.3 | 59.4 | 24.8 | 15.2 | 9.70 | 5.91 | 9.70 | 5.88 | 10.0 | 5.37 | 7.36 | 4.92 | 53.3 |
| 25. | 35.2 | 26.3 | 56.8 | 24.5 | 15.4 | 9.22 | 5.98 | 7.38 | 8.44 | 7.24 | 5.30 | 7.31 | 4.73 | 57.8 |
| 26. | 40.6 | 25.6 | 68.7 | 24.6 | 15.5 | 8.90 | 5.47 | 7.25 | 7.34 | 6.22 | 4.79 | 6.89 | 4.72 | 47.9 |
| 27. | 39.4 | 26.4 | 63.8 | 26.5 | 14.8 | 9.19 | 5.52 | 6.74 | 6.34 | 12.3 | 4.96 | 6.70 | 4.79 | 39.2 |
| 28. | 32.2 | 27.0 | 51.7 | 27.7 | 14.6 | 12.0 | 5.70 | 6.36 | 5.41 | 20.2 | 4.86 | 6.52 | 4.74 | 35.2 |
| 29. | 28.9 | 26.7 | 43.0 | | 13.9 | 13.7 | 5.22 | 6.13 | 5.47 | 13.6 | 5.17 | 6.55 | 4.94 | 32.3 |
| 30. | 25.7 | 25.1 | 38.1 | | 13.8 | 10.2 | 5.32 | 5.78 | 4.31 | 10.0 | 4.85 | 5.92 | 4.80 | 41.9 |
| 31. | | 24.9 | 34.5 | | 14.9 | | 6.12 | | 3.98 | 8.48 | | 5.75 | | 57.1 |

## Hauptwerte

| | 2010 Nov | 2010 Dez | 2011 Jan | Feb | Mrz | Apr | Mai | Jun | Jul | Aug | Sep | Okt | Nov | Dez |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tag | 3. | 4. | 1. | 25. | 30. | 26. | 29. | 5. | 12. | 3. | 26. | 4. | 13.+ | 1. |
| NQ | 9.88 | 19.4 | 27.6 | 24.5 | 13.8 | 8.90 | 5.22 | 5.01 | 3.91 | 3.77 | 4.79 | 4.02 | 4.58 | 4.70 |
| MQ | 57.1 | 40.7 | 108 | 37.6 | 18.4 | 14.0 | 6.84 | 7.58 | 5.07 | 7.96 | 8.31 | 9.00 | 5.07 | 33.0 |
| HQ | 251 | 184 | 338 | 73.3 | 26.3 | 32.6 | 9.71 | 15.4 | 9.32 | 21.3 | 16.9 | 32.0 | 7.05 | 83.2 |
| Tag | 15. | 13. | 10. | 14. | 1. | 4.+ | 1. | 23. | 25. | 28. | 7. | 13. | 4. | 17. |
| $h_N$ mm / $h_A$ mm | 52 | 38 | 102 | 32 | 17 | 13 | 6 | 7 | 5 | 7 | 8 | 8 | 5 | 31 |

| | 1980/2010 | | 1981/2011 31 Kalenderjahre | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Jahr | 1991 | 1989 | 2009 | 1994 | 1984+ | 2007 | 1991 | 1993 | 1993 | 1992 | 1991 | 1982 | 1991 | 2011 |
| NQ | 2.68 | 7.12 | 9.04 | 10.9 | 12.8 | 7.65 | 4.33 | 2.80 | 0.830 | 1.34 | 0.687 | 3.17 | 2.68 | 4.70 |
| MNQ | 12.0 | 17.1 | 22.3 | 23.0 | 21.9 | 15.7 | 9.99 | 7.51 | 5.77 | 5.29 | 6.11 | 8.54 | 11.8 | 16.5 |
| MQ | 32.5 | 43.4 | 59.7 | 46.4 | 47.2 | 27.3 | 18.9 | 13.8 | 11.5 | 11.3 | 13.0 | 17.9 | 31.7 | 42.9 |
| MHQ | 101 | 138 | 174 | 123 | 136 | 65.6 | 51.1 | 47.1 | 37.7 | 35.5 | 40.8 | 57.2 | 98.9 | 137 |
| HQ | 402 | 391 | 479 | 265 | 299 | 219 | 297 | 312 | 369 | 194 | 124 | 309 | 402 | 391 |
| Jahr | 1998 | 2002 | 2003 | 1982 | 1981 | 1986 | 1984 | 1981 | 1981 | 2007 | 1998 | 1998 | 1998 | 2002 |
| $Mh_N$ mm / $Mh_A$ mm | 30 | 41 | 56 | 40 | 44 | 25 | 18 | 13 | 11 | 11 | 12 | 17 | 29 | 40 |

| | | Abflussjahr (*) 2011 Jahr | Datum | Winter | Sommer | Kalenderjahr 2011 Jahr | Datum |
|---|---|---|---|---|---|---|---|
| NQ | m³/s | 3.77 | am 03.08.2011 | 8.90 | 3.77 | 3.77 | am 03.08.2011 |
| MQ | m³/s | 26.7 | | 46.3 | 7.45 | 21.8 | |
| HQ | m³/s | 338 | am 10.01.2011 bei W = 723 cm | 338 | 32.0 | 338 | am 10.01.2011 bei W = 723 cm |
| Nq | l/(skm²) | 1.33 | | 3.13 | 1.33 | 1.33 | |
| Mq | l/(skm²) | 9.39 | | 16.3 | 2.62 | 7.66 | |
| Hq | l/(skm²) | 119 | | 119 | 11.3 | 119 | |
| $h_N$ | mm | | | | | | |
| $h_A$ | mm | 296 | | 255 | 42 | 242 | |

| | | 1981/2011 (*) 31 Jahre | | | | 1981/2011 | |
|---|---|---|---|---|---|---|---|
| NQ | m³/s | 0.687 | am 15.09.1991 | 2.68 | 0.687 | 0.687 | am 15.09.1991 |
| MNQ | m³/s | 4.29 | | 9.93 | 4.47 | 4.47 | |
| MQ | m³/s | 28.5 | | 42.8 | 14.4 | 28.4 | |
| MHQ | m³/s | 238 | | 231 | 98.1 | 249 | |
| HQ | m³/s | 479 | am 04.01.2003 bei W = 749 cm | 479 | 369 | 479 | am 04.01.2003 bei W = 749 cm |
| $HQ_1$ | m³/s | 170 | | | | | |
| $HQ_5$ | m³/s | 271 | | | | | |
| MNq | l/(skm²) | 1.51 | | 3.49 | 1.57 | 1.57 | |
| Mq | l/(skm²) | 10.0 | | 15.1 | 5.07 | 10.0 | |
| MHq | l/(skm²) | 83.9 | | 81.4 | 34.5 | 87.6 | |
| $Mh_N$ | mm | | | | | | |
| $Mh_A$ | mm | 317 | | 236 | 81 | 315 | |

## Extremwerte

| | Niedrigwasser (n) m³/s | l/(skm²) | Datum | Hochwasser m³/s | l/(skm²) | cm | Datum |
|---|---|---|---|---|---|---|---|
| 1 | 0.687 | 0.242 | 15.09.1991 | 800 | 281 | | 10.02.1946 |
| 2 | 0.731 | 0.257 | 21.09.1959 | 479 | 168 | 749 | 04.01.2003 |
| 3 | 0.830 | 0.292 | 04.07.1993 | 402 | 142 | 735 | 03.11.1998 |
| 4 | 1.00 | 0.352 | 21.09.1947 | 394 | 139 | | 06.12.1960 |
| 5 | 1.02 | 0.361 | 21.08.1949 | 374 | 132 | | 24.02.1970 |
| 6 | 1.27 | 0.446 | 12.09.1929 | 369 | 130 | 752 | 01.07.1981 |
| 7 | 1.34 | 0.471 | 09.08.1992 | 347 | 122 | 725 | 30.01.1995 |
| 8 | 1.37 | 0.483 | 14.08.1990 | 338 | 119 | 723 | 10.01.2011 |
| 9 | 1.46 | 0.513 | 13.09.1964 | 334 | 118 | 739 | 31.12.1986 |
| 10 | 1.50 | 0.528 | 21.08.1921 | 318 | 112 | 719 | 15.01.2011 |

## Dauertabelle

| Unterschreitungsdauer in Tagen | Unterschrittene Abflüsse m³/s: Abflussjahr (*) 2011 | Kalenderjahr 2011 | 1981/2011 31 Kalenderjahre: Obere Hüllkurve | Mittlere Werte | Untere Hüllkurve |
|---|---|---|---|---|---|
| 364 | 323 | 323 | 460 | 243 | 89.6 |
| 363 | 306 | 306 | 397 | 208 | 84.3 |
| 362 | 283 | 283 | 353 | 183 | 83.7 |
| 361 | 231 | 227 | 325 | 165 | 79.9 |
| 360 | 227 | 218 | 268 | 151 | 78.8 |
| 359 | 218 | 213 | 254 | 141 | 78.4 |
| 358 | 213 | 167 | 232 | 133 | 73.1 |
| 357 | 190 | 146 | 218 | 126 | 72.0 |
| 356 | 172 | 128 | 206 | 120 | 71.9 |
| 350 | 122 | 83.2 | 170 | 96.6 | 57.0 |
| 340 | 73.8 | 60.4 | 134 | 75.0 | 44.7 |
| 330 | 60.8 | 51.7 | 112 | 62.9 | 38.1 |
| 320 | 47.1 | 39.2 | 87.0 | 54.5 | 34.1 |
| 300 | 36.0 | 29.9 | 65.5 | 43.1 | 26.9 |
| 270 | 27.7 | 20.0 | 49.5 | 32.8 | 20.0 |
| 240 | 20.5 | 14.8 | 38.3 | 26.4 | 14.8 |
| 210 | 14.9 | 12.0 | 31.9 | 21.0 | 12.0 |
| 183 | 12.3 | 9.29 | 28.6 | 17.3 | 9.29 |
| 150 | 9.22 | 7.41 | 24.9 | 14.1 | 7.41 |
| 130 | 8.08 | 6.70 | 23.3 | 12.3 | 6.45 |
| 120 | 7.51 | 6.40 | 21.8 | 11.5 | 6.05 |
| 110 | 7.19 | 6.22 | 20.5 | 10.8 | 5.33 |
| 100 | 6.82 | 6.04 | 19.6 | 10.0 | 4.98 |
| 90 | 6.46 | 5.75 | 18.9 | 9.42 | 4.51 |
| 80 | 6.32 | 5.47 | 18.2 | 8.73 | 4.03 |
| 70 | 6.04 | 5.35 | 17.4 | 8.12 | 3.75 |
| 60 | 5.70 | 5.16 | 16.4 | 7.49 | 3.49 |
| 50 | 5.45 | 4.96 | 15.9 | 6.74 | 3.09 |
| 40 | 5.18 | 4.86 | 15.3 | 6.08 | 2.45 |
| 30 | 4.91 | 4.73 | 14.3 | 5.30 | 2.04 |
| 25 | 4.79 | 4.67 | 13.7 | 4.98 | 1.72 |
| 20 | 4.56 | 4.56 | 12.9 | 4.58 | 1.51 |
| 15 | 4.40 | 4.40 | 12.3 | 4.24 | 1.34 |
| 10 | 4.17 | 4.17 | 11.1 | 3.85 | 1.03 |
| 9 | 4.15 | 4.15 | 10.8 | 3.77 | 1.03 |
| 8 | 4.15 | 4.15 | 10.6 | 3.67 | 1.02 |
| 7 | 4.14 | 4.14 | 10.4 | 3.58 | 1.00 |
| 6 | 4.06 | 4.06 | 9.77 | 3.43 | 0.970 |
| 5 | 4.02 | 4.02 | 9.49 | 3.27 | 0.969 |
| 4 | 3.98 | 3.98 | 9.46 | 2.96 | 0.901 |
| 3 | 3.95 | 3.95 | 9.44 | 2.63 | 0.820 |
| 2 | 3.91 | 3.91 | 9.43 | 2.16 | 0.820 |
| 1 | 3.88 | 3.88 | 9.25 | 1.58 | 0.780 |
| 0 | 3.77 | 3.77 | 9.03 | 0.687 | 0.687 |

(*) Abflussjahr: 1.11. des Vorjahres bis 31.10.
HQ1: DGJ, 4.3.3; HQ5: Pearson-Verteilung; Extremwerte seit 1901

LANUV NRW