

LIST OF REFERENCES

- ADAS (2001). *The Safe Sludge Matrix*.
<http://www.adas.co.uk/env/environment/Publications/SMM.pdf> (visited 13/9/02).
- Almasi, A. and Pescod, M. B. (1996). Wastewater treatment mechanisms in anoxic stabilization ponds, *Water Science and Technology*, **33** (7), 125-132.
- APHA (1998). *Standard Methods for the Examination of Water and Wastewater*, 20th edition. Washington DC.: American Public Health Association.
- Archer, H. E. and Mara, D. D. (2002). Waste stabilisation pond developments in New Zealand. In *Proceedings of the 5th International IWA Specialist Group Conference on Waste Stabilization Ponds.*, Auckland, New Zealand. New Zealand Water and Wastes Association
- Arthur, J. P. (1983). *Notes on the design and operation of waste stabilization ponds in warm climates of developing countries*. Technical Paper No.7. Washington D.C. The World Bank.
- Awuah, E., Anohene, F., Asante, K., Lubberding, H. and Gijzen, H. (2001). Environmental conditions and pathogen removal in macrophyte- and algal-based domestic wastewater treatment systems, *Water Science and Technology*, **44** (6), 11-18.
- Bartone, C. R. (1985). Re-use of wastewater at the San Juan de Miraflores stabilisation ponds: public health, environmental and socioeconomic implications, *PAHO Bull*, **19**, 147-164 (*referred to in Ellis and Rodrigues (1995)*).
- Belcher, H. and Swale, E. (1978). *A Beginner's Guide to Freshwater Algae*, London: Institute of Terrestrial Ecology, HMSO.
- Bellinger, E. G. (1980). *A Key to Common British Algae*, London: The Institution of Water Engineers and Scientists.
- Boller, M. (1997). Small wastewater treatment plants - a challenge to wastewater engineers, *Water Science and Technology*, **35** (6), 1-12.
- Bond, P. (1998). *Waste Stabilisation Ponds: Are they Feasible in Yorkshire?* M.Eng Thesis, Civil Engineering, Leeds.
- Bountin, P., Vachon, A. and Racault, Y. (1987). Waste stabilisation ponds in France: an overall view, *Water Science and Technology*, **10/11 (33)**, 45-49.

- British Standards Institution (1999). *Wastewater treatment plants - Part 5: Lagooning processes*. Brussels. European Committee for Standardization.
- Bryant, C. W. and Rich, L. G. (1984). Stabilization of organic carbon and nitrogen in consolidating benthal deposits, *Water Science Technology*, **17** (6/7), 929-940.
- Bryant, C. W. and Bauer, E. C. (1987). A simulation of benthal stabilization, *Water Science and Technology*, **19** (12), 161-167.
- Bucksteeg, K. (1987). German experiences with sewage treatment ponds, *Water Science and Technology*, **19** (12), 17-23.
- Calcedo, J. R., Espinosa, C., Andrade, M. and Gijzen, H. (2002). Effect of anaerobic pretreatment on environmental and physicochemical characteristics of duckweed based stabilization ponds, *Water Science and Technology*, **45** (1), 83-89.
- Carre, J. and Baron, D. (1987). Effects of maturation on the characteristics of wastewater stabilization sludges, *Water Science And Technology*, **19** (12), 169-175.
- Carre, J., Laigre, M. P. and Legeas, M. (1990). Sludge removal from some waste-water stabilization ponds, *Water Science And Technology*, **22** (3/4), 247-252.
- Cauchie, H. M., Salvia, M., Weicherding, J., Thome, J. P. and Hoffmann, L. (2000). Performance of a single-cell aerated waste stabilisation pond treating domestic wastewater: A three-year study, *International Review of Hydrobiology*, **85** (2-3), 231-251.
- CEMAGREF (1997). *Le Lagunage Naturel : Les lecons tirees de 15 ans de pratique en France*, 1. Coedition Cemagref Editions.
- Central Public Health Engineering Research Institute (1970). *Oxidation Ponds*. Technical Digest No.12. Nagour. (as referred to in Mara(1976))
- Cogman, C. A. (1995). *Waste Stabilisation Ponds and their Performance in the UK*. MEng Thesis, Civil Engineering, University of Leeds, UK, Leeds.
- Council of the European Communities (1986). Council Directive 86/278/EEC of 12 June 1986 on the protection of the environment, and in particular of the soil, when sewage sludge is used in agriculture, *Official Journal of the European Communities*, L 181.
- Council of the European Communities (1991). Council Directive of 21 May 1991 concerning urban waste water treatment (91/271/EEC), *Official Journal of the European Communities*, L135/40.

- Cross, J. W. (2002). *The Charms of Duckweed*. <http://www.mobot.org/jwcross/duckweed/> (visited 12/8/02).
- Darlow, T. (2000). *Waste Stabilisation Ponds: A Feasibility Study of Their Increased Use in the UK*. M.Res Thesis, Civil Engineering, Leeds.
- Department for Environment Food and Rural Affairs (2002a). *Further Protection to Rivers and Coastal Waters*. <http://www.defra.gov.uk/news/2002/020627c.htm> (visited 16/9/02).
- Department for Environment Food and Rural Affairs (2002b). *Sewage Treatment in the UK: Implementation of the EC Urban Waste Water Treatment Directive. Re-use and Disposal of Sewage Sludge*. <http://www.defra.gov.uk/environment/water/quality/sewage/report02/07.htm> (visited 11/9/02).
- Ellis, K. V. (1983). Stabilization Ponds - Design and Operation, *Critical Reviews in Environmental Control*, **13** (2), 69-102.
- Ellis, K. V. and Rodrigues, P. C. C. (1995). Multiple-Regression Design Equations for Stabilization Ponds, *Water Research*, **29** (11), 2509-2519.
- Environment Agency (2002). *Sewage Sludge*. <http://www.environment-agency.tv/ye/qa-qa-doc/s-enviro/stresses/4use-rel-dis/5release-land/4-5-1.html> (visited 11/9/02).
- Fair, G. M. and Geyer, J. C. (1954). *Water supply and waste-water disposal.*, New York. London: John Wiley and Sons. Chapman & Hall (as referred to in *Marais* (1970)).
- Ferrara, R. A. and Avci, C. B. (1982). Nitrogen dynamics in waste stabilisation ponds, *Journal of the Water Pollution Control Federation*, **54** (4), 361-369.
- Fitzgerald, G. P. (1964). The Effect of Algae on BOD measurements, *Journal of the Water Pollution Control Federation*, **36** (12).
- Gloyna, E. F. (1976). Facultative Waste Stabilization Pond Design. Symposium No.9, In *Ponds as a Wastewater Treatment Alternative*, Gloyna, E. F., Malina, J. F. and Davis, E. M. ed., Austin, Texas.
- Godeaux, D., Nameche, T. and Vassel, J.-L. (2000) Situation du Lagunage en Region Wallonne. *Unpublished*
- Golueke, C. G., Oswald, W. J. and Gotaas, H. B. (1957). Anaerobic digestion of algae, *Applied Microbiology*, **5**, 47-55.

- Gomes de Sousa, J. M. (1987). Wastewater stabilization lagoon design criteria for Portugal, *Water Science and Technology*, **19** (12), 7-16.
- Green, F. B., Bernstone, L. S., Lundquist, T. J. and Oswald, W. J. (1996). Advanced integrated wastewater pond systems for nitrogen removal, *Water Science And Technology*, **33** (7), 207-217.
- Griffin, P. and Pamplin, C. (1998). The advantages of a constructed reed bed based strategy for small sewage treatment works, *Water Science And Technology*, **38** (3), 143-150.
- Griffin, P. and Upton, J. (1999). Constructed wetlands: A strategy for sustainable wastewater treatment at small treatment works, *Journal of the Institution of Water and Environmental Management*, **13** (6), 441-446.
- Hermann, E. R. and Gloyna, E. F. (1958). Waste Stabilization Ponds-III Formation of Design Equations, *Sewage and Industrial Wastes*, **30** (8), 963-975.
- Holt, J. G. (1993). *Bergey's Manual of Determinative Bacteriology*, 9th Edition. Baltimore, USA: Williams and Wilkins.
- Horne, A. J. (1995). Nitrogen removal from waste treatment pond or activated-sludge plant effluents with free-surface wetlands, *Water Science And Technology*, **31** (12), 341-351.
- Hosetti, B. B. and Frost, S. (1995). A review of the sustainable value of effluents and sludges from wastewater stabilization ponds, *Ecological Engineering*, **5** (4), 421-431.
- Iwema, A., Carre, J. and Minot, D. (1987). Sedimentation and digestion on pond bottoms- An attempt to establish a short-term material balance, *Water Science and Technology*, **19** (12), 153-159.
- Johnson, M. and Mara, D. D. (2002). Research on waste stabilisation ponds in the United Kingdom-II. Initial results from pilot-scale maturation ponds, reedbed channel and rock filters. In *Proceedings of the 5th International IWA Specialist Group Conference on Waste Stabilization Ponds.*, Auckland, New Zealand. New Zealand Water and Wastes Association
- Konig, A., Pearson, H. W. and Silva, S. A. (1987). Ammonia Toxicity to Algal Growth in Waste Stabilization Ponds, *Water Science and Technology*, **19** (12), 115-122.
- Lai, P. C. C. and Lam, P. K. S. (1997). Major pathways for nitrogen removal in waste water stabilization ponds, *Water Air And Soil Pollution*, **94**, 125-136.

- Lake Aid Systems International Ltd. (1998). Case Study: Wick St Lawrence trial Accel-o-Fac WWTP, Avon, UK.
- Lake Aid Systems International Ltd (2001). *Errol Scotland Aero-Fac WWTP Now On Line- First Data Reports*.
http://lasinternational.com/artman/publish/article_2.shtml (visited 31/5/02).
- Lawty, R., Ashworth, J. D. and Mara, D. D. (1996). Waste stabilisation pond decommissioning: A painful but necessary decision, *Water Science and Technology*, **33** (7), 107-115.
- Li, J. H., Wang, J. and Zhang, J. L. (1991). Removal of Nutrient Salts in Relation with Algae in Ponds, *Water Science and Technology*, **24** (5), 75-83.
- Lienard, A., Boutin, C. and Bois, R. (1993). Coupling of reed bed filters and ponds - an example in France, *Water Science And Technology*, **28** (10), 159-167.
- Lovelace, N. (2002). Sewage disposal-New technique works a treat, In *New Civil Engineer*, pp 23-24.
- Mainer, R. M., Pepper, I. L. and Gerba, C. P. (2000). *Environmental Microbiology*, San Diego, California, USA: Academic Press.
- Mainwaring, W. (1991). *An Evaluation of the Sturts Farm System for Waste Water Treatment, Incorporating Ponds Fringed with Reeds, a Reed Bed and Flowform Cascades*. BSc(Hons) Thesis, Environmental Science, Polytechnic South-West, Plymouth, UK.
- Malan, W. M. (1964). *A Guide to the Use of Septic Tank Systems in South Africa*. 219. Pretoria, South Africa. National Institute for Water Research.
- Mara, D. D. (1976). *Sewage Treatment in Hot Climates*, Chichester: John Wiley and Sons.
- Mara, D. D. (1995). Waste Stabilization Ponds and Effluent Standards, In *Water and Wastes in New Zealand*, March edition.
- Mara, D. D. (1996). Waste stabilization ponds: Effluent quality requirements and implications for process design, *Water Science and Technology*, **33** (7), 23-31.
- Mara, D. D. and Mills, S. W. (1994). Who's afraid of anaerobic ponds?, In *Water Quality International*, **2**, pp 34-36
- Mara, D. D. and Pearson, H. (1986). Artificial freshwater environment: waste stabilization ponds. In *Biotechnology* (Eds, Rehm, H. J. and Reed, G.). VCH Verlagsgesellschaft: Weinheim.

- Mara, D. D. and Pearson, H. (1987). *Waste Stabilization Ponds: Design Manual for Mediterranean Europe*, Copenhagen, Denmark: World Health Organisation Regional Office for Europe.
- Mara, D. D. and Pearson, H. (1998). *Design Manual for Waste Stabilization Ponds in Mediterranean Countries*, Leeds: Lagoon Technology International Ltd.
- Mara, D. D., Cogman, C., Simkins, P. and Schembri, M. (1998). Performance of the Burwarton Estate waste stabilization ponds, *Journal of the Institution of Water and Environmental Management*, **12** (4), 260-264.
- Mara, D. D., Mills, S. W., Pearson, H. W. and Alabaster, G. P. (1992). Waste stabilization ponds - a viable alternative for small community treatment systems, *Journal of the Institution of Water and Environmental Management*, **6** (1), 72-78.
- Marais, G. V. R. (1970). Dynamic behaviour of oxidation ponds. In *Proceedings of the 2nd International Symposium for Wastewater Treatment Lagoons*, McKinney, R. ed., University of Kansas, Kansas City, Missouri. June 23-35 1970.
- Marais, G. V. R. and Shaw, V. A. (1961). A Rational Theory for the Design of Sewage Stabilization Ponds in Central and South Africa., *Transactions, South African Institute of Civil Engineers*, **3** (205),
- McGarry, M. G. and Pescod, M. B. (1970). Stabilization Pond Design Criteria for Tropical Asia. In *2nd International Symposium for wastewater treatment lagoons*, McKinney, R. ed., Kansas City, Missouri.
- Metcalf & Eddy (1991). *Wastewater Engineering Treatment, Disposal and Reuse*, 3rd edition. New York: McGraw-Hill.
- Middlebrooks, E. J., Jones, N. B., Reynolds, J. H. and Torphy, M., F (1977). *Lagoon Information Source Book*, Michigan: Ann Arbor.
- Ministry of Works and Development (1974). *Guideline for the Design, Construction and Operation of Oxidation Ponds*. Wellington, New Zealand. Ministry of Works and Development.
- Morris, G. (1999). Personal Communication, (UK Environment Agency, Leeds).
- Muttamara, S. and Puetpaiboon, U. (1997). Roles of baffles in waste stabilization ponds, *Water Science And Technology*, **35** (8), 275-284.
- Nameche, T., Chabir, D. and Vasel, J. L. (1997). Characterization of sediments in aerated lagoons and waste stabilization ponds, *International Journal of Environmental Analytical Chemistry*, **68** (2), 257-279.

- Neel, J. K., McDermott, J. H. and Monday, C. A. (1961). Experimental Lagooning of Raw Sewage, *Journal of the Water Pollution Control Federation*, **6** (33), 603-641.
- Nelson, K. L. (2000). Personal Communication, (University of California, Berkeley, USA).
- Nelson, K. L. (2002). Development of a mechanistic model of sludge accumulation in primary wastewater stabilization ponds. In *Proceedings of the 5th International IWA Specialist Group Conference on Waste Stabilization Ponds.*, Auckland, New Zealand. 2-5th April 2002. New Zealand Water and Wastes Association
- Nelson, K. L. and Jimenez, B. C. (2000). Sludge accumulation, properties and degradation in a waste stabilization pond in Mexico, *Water Science and Technology*, **42** (10-11), 231-236.
- Palmer, C. M. (1969). A composite rating of algae tolerating organic pollution, *Journal of Phycology*, (5), 78-82.
- Pano, A. and Middlebrooks, E. J. (1982). Ammonia nitrogen removal in facultative wastewater stabilization ponds, *Journal of the Water Pollution Control Federation*, **54** (4), 344-351.
- Parker, C. D. and Skerry, G. P. (1968). Function of solids in anaerobic lagoon treatment of wastewater, *Journal of the Water Pollution Control Federation*, **40** (2), 192-204.
- Patterson, D. J. and Hedley, S. (1996). *Free-Living Freshwater Protozoa: A Colour Guide*, New York: Wiley.
- Pearson, H. (1990). The Biology of Waste Stabilization Ponds. In *Proceedings of the International Seminar on Wastewater Reclamation and Reuse for Aquaculture*, Edwards, P. and Pullin, R. ed., Calcutta, India. 6-9 December 1988. Environmental Sanitation Information Center, Asian Institute of Technology, Bangkok, Thailand
- Pearson, H. W. (1996). Expanding the horizons of pond technology and application in an environmentally conscious world, *Water Science and Technology*, **33** (7), 1-9.
- Pearson, H. W., Mara, D. D. and Bartone, C. R. (1987a). Guidelines for the Minimum Evaluation of the Performance of Full-Scale Waste Stabilization Pond Systems, *Water Research*, **21** (9), 1067-1075.

- Pearson, H. W., Mara, D. D., Mills, S. W. and Smallman, D. J. (1987b). Factors Determining Algal Populations in Waste Stabilization Ponds and the Influence of Algae on Pond Performance, *Water Science and Technology*, **19** (12), 131-140.
- Potten, A. H. (1972). Maturation ponds: experiences in their operation in the United Kingdom as tertiary treatment process for a high quality sewage effluent, *Water Research*, **6**, 781-795.
- Racault, Y. (1993). Pond malfunction - case-study of three plants in the south-west of France, *Water Science And Technology*, **28** (10), 183-192.
- Racault, Y., Boutin, C. and Seguin, A. (1995). Waste stabilization ponds in France - a report on 15 years experience, *Water Science And Technology*, **31** (12), 91-101.
- Reddy, K. R. (1983). Fate of nitrogen and phosphorus in a wastewater retention reservoir containing aquatic macrophytes, *Journal of Environmental Quality*, **12** (1), 137-141.
- Reed, S. C. (1985). Nitrogen removal in wastewater stabilization ponds, *Journal of the Water Pollution Control Federation*, **57** (1), 39-45.
- Reed, S. C., Middelbrooks, E. J. and Crites, R. W. (1988). *Natural Systems for Waste Management and Treatment*, New York, St.Louis, San Francisco: McGraw Hill.
- Santos, M. C. R. and Oliveira, J. S. (1987). Nitrogen transformations and removal in waste stabilization ponds in Portugal: seasonal variations, *Water Science and Technology*, **19** (12), 123-130.
- Saqqar, M. M. and Pescod, M. B. (1995). Modelling sludge accumulation in anaerobic waste-water stabilization ponds, *Water Science And Technology*, **31** (12), 185-190.
- Schembri, C. (1996). *Evaluation of Waste Stabilisation Ponds in Mid-Shropshire, England*. MSc Thesis, Civil Engineering, University of Leeds, UK.
- Schneider, R. W., Middlebrooks, E. J. and Sletten, R. S. (1983). Cold region wastewater lagoon sludge accumulation, *Water Research*, **17** (9), 1201-1206.
- Schneider, R. W., Middlebrooks, E. J. and Sletten, R. S. (1984). Wastewater lagoon sludge characteristics, *Water Research*, **18** (7), 861-864.
- Scottish Water (2002). *Key Facts*. http://www.esw.co.uk/htm/about_us.html (visited 11/9/02).
- Shillinglaw, S. N. and Pieterse, A. J. H. (1977). Observations on algal populations in an experimental pond system, *Water SA*, **3** (4), 183-192.

- Shilton, A. (1996). Ammonia volatilization from a piggery pond, *Water Science and Technology*, **33** (7), 183-189.
- Silva, S. A., Deoliveira, R., Soares, J., Mara, D. D. and Pearson, H. W. (1995). Nitrogen removal in pond systems with different configurations and geometries, *Water Science And Technology*, **31** (12), 321-330.
- Smith, M. D. and Moelyowati, I. (2001). Duckweed based wastewater treatment (DWWT): design guidelines for hot climates, *Water Science and Technology*, **43** (11), 291-299.
- Soares, J., Silva, S. A., deOliveira, R., Araujo, A. L. C., Mara, D. D. and Pearson, H. W. (1996). Ammonia removal in a pilot-scale WSP complex in northeast Brazil, *Water Science and Technology*, **33** (7), 165-171.
- Strahler, A. N. (1969). *Physical Geography*, 3rd edition. New York: Wiley.
- Stringham, M. and Watson, W. (2001). *Managing Waste Lagoons to Control Mosquito Breeding*. <http://www.ces.ncsu.edu/depts/ent/notes/Urban/wnv-manage.htm> (visited 15/8/02).
- The Met Office UK (2000). *UK Climate*. <http://www.met-office.gov.uk/climate/uk> (visited 2/3/00; 22/11/01; 2/7/02).
- Thirumurthi, D. (1969). *Design Principles of Waste Stabilization Ponds*. SA2: 311-330.
- Toms, I. P., Owens, M., Hall, J. A. and Midenhall, M. J. (1975). Observations on the performance of polishing lagoons at a large regional works, *Water Pollution Control*, 383-401.
- Townshend, A. R. and Knoll, H. (1987). Cold Climate Sewage Lagoons Proceedings of the June 1985 Workshop. Winnipeg, Manitoba.
- US Environmental Protection Agency (1983). *Design Manual Municipal Wastewater Stabilization Ponds*. EPA-625/1-83-015. Ohio, Cincinnati. U.S. EPA.
- Van Heuvelen, W. (1970). A Decade of Change in the Waste Stabilization Lagoons in the Missouri River Basin. In *Second International Symposium for Waste Treatment Lagoons*, McKinney, R. ed., Kansas city, Missouri.
- Vuillot, M. and Boutin, C. (1987). Waste stabilization ponds in Europe: a state of the art review, *Water Science and Technology*, **19** (12), 1-6.

Water Environment Federation (1998). *Design of Municipal Wastewater Treatment Plants (WEF Manual of Practice 8) Volume 2*. Water Environment Federation, American Society of Civil Engineers.

Water UK (2002). *UK Water Industry Facts*. <http://www.water.org.uk> (visited 11/9/02).

Wynnes, I. R. (2002). Personal Communication, (Montgomery Watson Harza).

Zimmo, O. R., Al-Sa'ed, R. M., van der Steen, N. P. and Gijzen, H. J. (2002). Process performance assessment of algae-based and duckweed- based wastewater treatment systems, *Water Science and Technology*, **45** (1), 91-101.