

## 12 REFERENCES

- Agriculture & Fisheries Department, Capture Fisheries Division (August 1998), Port Survey 96/97.
- CES (Asia) Ltd. (1997), Lantau Port Development – Stage 1 : Fish Fry Survey Final Report.
- CES (Asia) Ltd. (1997), Lantau Port Development – Stage 1 : Fish Fry Survey - Extension Final Report.
- CES (Asia) Ltd. (1997), Lantau Port Development – Stage 1 : Fisheries Resources Survey Final Report.
- CES (Asia) Ltd. (1997), Lantau Port Development – Stage 1 : Marine Mammal Survey Final Report.
- CES (Asia) Ltd. (January 1998), Ma Wan Dangerous Goods Anchorage : Detailed EIA Key Issues Report.
- Clark R. B. (1992), Marine Pollution, 3<sup>rd</sup> edition, Oxford University Press.
- Danish Hydraulic Institute (June 1998), Technical Note N10 Cumulative Effects of Reclamation on Harbour Regime Final Report for the South East Kowloon Development Feasibility Study.
- Doerffer J. W. (1992), Oil Spill Response in the Marine Environment, Pergamon Press.
- Environmental Protection Department (1992-1996), Marine Water Quality in Hong Kong.
- Environmental Protection Department (1992-1997), Bacteriological Water Quality of Bathing Beaches in Hong Kong.
- ERM Hong Kong Ltd. (April 1994), Risk Assessment at Tsuen Wan Dangerous Goods Anchorage – Phase 1: Volume 1 - Report.
- ERM Hong Kong Ltd. (April 1994), Risk Assessment at Tsuen Wan Dangerous Goods Anchorage – Phase 1: Volume 2 - Appendices.
- ERM Hong Kong Ltd. (1995), EIA Study for the Backfilling of South Tsing Yi and North of Lantau MBAs Final Report.
- ERM Hong Kong Ltd. (January 1996), Tsuen Wan Dangerous Goods Anchorage: Alternative Site Search Study - Stage 2 Study. Executive Summary.
- ERM Hong Kong Ltd. (January 1996), Tsuen Wan Dangerous Goods Anchorage: Alternative Site Search Study - Stage 2 Study. Volume 1: Summary and Ranking Report.
- ERM Hong Kong Ltd. (August 1995), Tsuen Wan Dangerous Goods Anchorage: Alternative Site Search Study - Stage 2 Study. Volume 2: Risk Assessment. Final Report.
- ERM Hong Kong Ltd. (January 1996), Tsuen Wan Dangerous Goods Anchorage : Alternative Site Search Study – Stage 2 Study. Volume 3 : Initial EIA.
- ERM Hong Kong Ltd. (January 1997), Environmental Impact Assessment Study for Disposal of Contaminated Mud in the East Sha Chau Marine Borrow Pit.
- Halcrow Asia Partnership Ltd. (1994), Lantau Port Development Final Report – Stage 1 Container Terminals No. 10 & 11 Ancillary Works (Design)
- HMIP (1994) Environmental Economic and BPEO Assessment Principals for Integrated Pollution Control, Environmental Quality Standards and Assessment Levels for Coastal Surface Water.
- Hodgkiss I. J., Lee K. Y. (1983), Hong Kong Seaweeds, Hong Kong Urban Council.
- International Maritime Organization (1993), Field guide for Oil Spill Response in Tropical Waters.
- International Maritime Organization (1993), Manual on Oil Pollution – Section IV : Combating Oil Spills.
- Jefferson Thomas A. (1998), Dolphins in East Lantau Waters of Hong Kong – Assessment of Potential Effects Lantau Port Development, Ocean Park Conservation Foundation.
- Jefferson Thomas A. (1998), Population Biology of the Indo-Pacific Hump-backed Dolphin in Hong Kong Waters : Final Report, Ocean Park Conservation Foundation.
- Mason C. F. (1991), Biology of freshwater Pollution, 2<sup>nd</sup> edition, Longman.

disturbance are likely to be recolonised by benthic fauna. The breakwaters can also function as habitat enhancing devices by providing suitable hard substrates for the colonisation and establishment of intertidal and subtidal faunal assemblages.

In the event of a major fuel spill near the entrances of the DGA, the identified ecological sensitive receivers may be adversely affected. However, as described in Section 11.2.2, the event frequency of a fuel spill near the DGA is low and the frequency of a fuel slick reaching the fish culture zone in less than 2 hours is even lower. Immediate action will be required in the event of a major fuel spill near the southern entrance of the TLCDGA so as to minimize the potential for adverse environmental impacts at the Ma Wan fish culture zone. The immediate implementation of the protocols and operational procedures defined in the MD's OPCP would ensure impacts upon the marine environment and ecological sensitive receivers would be minimized as far as possible.

Impacts from dredging on *Sousa chinensis* are not considered to be significant as the area does not comprise a core area for these species as revealed by the sighting records. Potential impacts to the dolphin are primarily indirect including effects on food availability arising from sediment resuspension in the water column, and less significant direct impacts from noise disturbance and physical harm potential from vessel movements. Practicable efforts should be taken to minimize potential impacts on dolphins arising from the construction works. No blasting of rock 'outcrops' on the seabed will be carried out. It is considered that the full implementation of the recommended mitigation measures is likely to minimize the potential for both direct and indirect impacts on dolphins from the DGA construction and operation.

### 11.3. Recommendations

The schedule of recommended mitigation measures to be implemented during the construction and operation of the TLCDGA is presented in Appendix F. The recommended environmental monitoring and auditing (EM&A) requirements for the proposed TLCDGA are also outlined in the schedule. It is considered that EM&A will be necessary to monitor and audit the efficacy of measures to mitigate any impacts on water quality resulting from construction of the DGA. EM&A will also be necessary to ensure that the correct disposal requirements for the various wastes generated from construction activities are enforced. It is recommended that if monitoring results indicate that the dredging or sandfilling works have caused an adverse impact on water quality at the Ma Wan fish culture zone and beaches on Ma Wan, the construction programme should be carefully reviewed so as to slow down the rate of dredging or sandfilling such that the water quality at these sensitive receivers is in compliance with the water quality criteria. The proposed EM&A requirements will be developed in detail in the EM&A Manual so as to ensure that the recommended mitigation measures are implemented and that the environmental standards and criteria are achieved.

Further to the sediment sampling undertaken during this DEIA Study, the successful Tenderer (detailed design stage) would be required to undertake a detailed sediment quality assessment to identify precisely the location and extent of contaminated sediment and to present the findings within a Sediment Quality Report.

It is recommended that the maximum total daily dredging rate during the DGA construction shall not exceed 9,524 m<sup>3</sup>/day (i.e. for dredging of both contaminated and uncontaminated sediment), as based on the reduced weekly production rate following adoption of the additional mitigation measure on restricting the number of dredgers working at one time. For dredging of contaminated sediment alone, the maximum daily dredging rate shall not exceed 7,143 m<sup>3</sup>/day, as based on the preliminary weekly production rate adopted in the water quality assessment of 50,000 m<sup>3</sup>/week.

For the proposed mitigated method of sandfill placement by pipeline discharge, it is recommended that the sandfill discharge rate shall not exceed 2,500 m<sup>3</sup> over one hour. Dredging works and sandfill

- Maunsell Consultants (Asia) Ltd. (December 1997), Final Report for TELEMAC 3D Tidal Flow and Sediment Plume Modelling.
- Maunsell Consultants (Asia) Ltd. (May 1998), Tsuen Wan Bay Further Reclamation, Area 35 Engineering, Planning and Environmental Investigation, Volume 6 : EIA Final Assessment Report.
- Maunsell Consultants (Asia) Ltd. (July 1998), Working Paper : TELEMAC 3D Oil Spill and Bacterial Dispersion Modelling for Tang Lung Chau DGA.
- Maunsell Consultants (Asia) Ltd. (September 1998), Technical Report on Reprovisioning and Marine Impact of Dangerous Goods Anchorage at Tang Lung Chau, Issue 2.
- Maunsell Consultants (Asia) Ltd. (October 1998), Siltation Assessment for the Tang Lung Chau Dangerous Goods Anchorage.
- Maunsell-Scott Wilson (1991), South-East Tsing Yi Port Development Planning and Engineering Feasibility Study for Container Terminal No. 9 Final Report.
- Morton B. and Morton J. (1983). The Sea Shore Ecology of Hong Kong, Hong Kong University Press.
- National Research Council (1989), Using Oil Spill Dispersants on the Sea, National Academy Press.
- Nelson-Smith A. (1989), Oil Pollution and Marine Ecology, Paul Elek (Scientific Books) Ltd.
- Scott Wilson Kirkpatrick (1994), Focused EIA for the West of Sulphur Channel (WSC) MBA Final Report.
- Vladimir Novotny, Harvey Olem, Van Nostrand Reinhold (1994), Water Quality Prevention, Identification and Management of Diffuse Pollution.