

MONITORING REPORT
Technological and Environmental Management Network Ltd
January 3, 2002

DREDGING AND RECLAMATION PROGRAMME IN KINGSTON HARBOUR

The R1 bund preparation continues:.

Monitoring trips were carried out on the following dates:

Thursday 27th December: Aerial flight observing the dredging operations connected with the preparation of the R1 Bund. (Photo attached)

January 3rd Bund preparation inspection

Comments:

No screens visible.

WATER QUALITY SUMMARY (DATA AND OBSERVATIONS)

- 1) Background data collected by TEMN for the EIA indicated low background levels of suspended solids in Hunts Bay, the channel (0 – 6mg/l) at the time of sampling. (See table 1)
- 2) Data collected by Jan De Nul on November 29, (just before the start of the dredging) indicate much higher background levels of suspended solids in Hunts Bay: (Recent rain showers)
 - 100 -150mg/l at the surface
 - 400 – 600mg/l 1.5m below the surface
 - Off scale (>1000mg/l ?) 20 – 30cm above the floor of the sea
- 3) Data collected by Jan De Nul on December 13, during the dredging indicated:

For Hunts Bay (offshore discharge pipe to the west)

Suspended solids concentration of 50 – 150 in the upper 1m of the water column;
Suspended solids concentration of 700 - > 1000 near the sea floor.

For Hunts Bay (near Causeway Bridge)

Suspended solids 10 – 30mg/l in the top 2.5m of the water column
Suspended solids 100 – 400 mg/l .5m above the sea floor.

For the dredge site (channel)

Suspended solids of 100 – 250mg/l in the upper .5m of the water column.

Suspended solids relatively uniform at depths greater than .5m. below the surface.

East of The Dredge (just outside the channel)

Suspended solids 0 – 10mg/l from .5m below the surface to 1m from the sea floor.

Suspended solids greater than 1000mg/l .5m above the sea floor

4) Visual observations made during the operation of the dredge indicated a plume that settled readily. Young fishers could be seen operating from a beacon near the dredge.

CONCLUSIONS/ENVIRONMENTAL IMPACT

- Background data collected by JDN for suspended solids are much higher than that collected by TEMN (factor of ten). This could indicate the highly variable conditions that can exist in the Bay.
- Suspended solids taken by JDN in Hunts Bay during the dredging (Dec 12), indicate turbid conditions in the Bay similar to JDN November 29 data
- In Hunts Bay the station near the causeway bridge had a suspended solids level less than JDN background levels. This could indicate the stability of the bund.
- At the dredge site the impact of the dredging was evident and uniform throughout the water column.
- The low Suspended solids value determined for the site to the east of the dredge indicated little risk to the Port Royal Mangroves at the time.
- The rapid disappearance of the plume could indicate the rapid settling of coarse material being dredged at the time.

Table 1

| Indicator Parameter | Phase 1 Background Levels | Standard/Criteria value |
|---|---|-------------------------|
| Total suspended solids (TSS) mg/l | 0 -7 | <10mg/l (1) |
| Biological oxygen demand (BOD) mg/l | 18mg/l to 27mg/l | <1.7 (1) |
| Dissolved oxygen (DO) mg/l | 4.6mg/l to 8.8mg/l | 4.8mg/l (2) |
| Hydrogen Sulphide (H ₂ S) µg/l | 88ppm - 99ppm. (Total Sulphide In sediment pore water) | 2µg/l (2) |
| Lead | <1.3µg/l | 8.1µg/l (2) |
| Chromium | <.5 – 1.1µg/l | 50 µg/l (2) |
| Copper | <1.0µg/l | 3.1µg/l (2) |
| Cadmium | <1.0µg/l | 9.3 µg/l (2) |

- 1) NRCA Proposed Coral Reef Standard
- 2) USEPA Criterion Continuous Concentration(CCC)

