Letterhead of Deloitte Touche Tohmatsu

20 October 1998

The Secretary of the
Environmental Affairs Panel
Legislative Council
Legislative Council Building
8 Jackson Road
Central
Hong Kong

Dear Sir,

Re: Strategic Sewage Disposal Scheme - EIA

Enclosed please find a copy of my letter to the Director of EPD dated 13 October 1998 written in my personal capacity. I will be pleased if you would let members of the Panel have a copy as I believe that it is very pertinent in the way we proceed and spend Hong Kong's hard earned money to derive a sewage system that is sustainable and affordable.

You will be aware that I have received my technical advice from my good friend Dr. John Russell of Melbourne, Australia and if you need detailed answers, we will have to either bring him up to Hong Kong or talk to him over the telephone.

Yours faithfully,

Peter H.Y. Wong

Encl :

Letterhead of Deloitte Touche Tohmatsu

13 October 1998

The Director of Environmental Protection,
Environmental Protection Department,
Southorn Centre,
133 Hennessy Road,
Hong Kong.

Dear Sir,

Re: Strategic Sewage Disposal Scheme - EIA Study

As promised in the ACE meeting on 28th September 1998, I will now set out my views in order to challenge the very fundamentals of the Study to satisfy myself that we arrive at a solution that is technically robust, economically and environmentally sustainable over the long term and affordable to the users. I hardly need remind you that the Hong Kong people, through the Legislative Council, are increasingly reluctant to accept higher charges for services that they see as their right. This is more so in times of economic stringency and uncertainty which we are now facing.

Historical Justification

The initiating study in 1989 was driven by the Total Toxic Metals (TTM), the E-coli levels and the amount of nutrients in the water bodies causing red-tides. These were seen as grave threats leading to loss of amenities and deterioration in our health.

The Hong Kong Government has taken action and I must give my congratulations to the many programmes well done. The Master Sewerage Plans and the Water Control Zones, the Chemical Waste Treatment Plant, the SSDS - Stage I (even though there are delays), the bringing in of sewage charges, enforcement of Water Control Zones and bringing in of controls over various forms of farming, the bringing to book of the industrial and commercial dischargers, etc..

Perhaps because of the success of these policies, but more likely because of the upgrading of general facilities, many of the serious industrial polluters have mended their ways or have relocated elsewhere. This led to the ultimate decision not to use lime to take out the TTM

and go for the Chemically Enhanced Primary Treatment (CEPT) instead. It must be remembered that CEPT does little for E-coli reduction or nutrient removal.

Where are we now and where are we going?

The consultants remarked on the consistency of the present sewage. I would like an update on the TTM levels of our sewage to see where we are now (the last time I received figures showed that we were on track in reducing TTM levels and my rough calculations indicate that we are now even ahead of predictions) and also to get some recent predictions of where we will be in the next few years.

My paper is upon the basis that efforts to clean up our sewage at source will continue in the years to come and will maintain our sewage below the "no detrimental effects" level.

Level of Treatment

There are calls for secondary and tertiary levels of treatment. However, I cannot see how these precautionary responses can be justified in terms of marginal capital and recurrent costs as set out. I would however counsel that for say a period of 10 years, land at Lamma be reserved in case there are unforeseen needs to go for these higher levels of treatment. It is a reality that distributed higher levels of treatment is not feasible because land originally reserved have now been used for other purposes and even if such land is available, our NIMBY District Boards and residents would put up fierce opposition.

Disinfection

Disinfection for discharge into inshore waters close to the dolphin habitats has been approved whilst recognising the precautionary principle but this is at a considerable extra capital and recurrent cost. The choice for U.V. or chlorine has not been made and it will not be an easy answer when viewed against the costs and side effects.

Having looked at Scenarios 2, 3 and 4 per Table 9 for E-coli without disinfection, I am satisfied from the dolphins' viewpoint, 4a is without danger since they are not seen there. 2 and 3 are marginal and if we can limit the discharge during periods of slack tidal flow, we should be able to make effective use of the assimilative capacity of our water bodies.

CEPT

We already have CEPT in place at Stonecutters but as pointed out, the sludge (2,000 tonnes per day) will be incinerated and landfilled. This proposition is hardly sustainable.

We should seriously consider whether over time, we can educate and even mandate our citizens to improve our sewage to approach domestic sewage quality that it is safe enough to be discharged through a deep oceanic outfall without CEPT.

It is a fact that in Port Phillip Bay, Melbourne, Australia, the stringent controls over sewage have resulted in general acceptance of the untreated discharge as not being a threat to the Bay's amenities and has now become a valuable nutrient source for the local fishing industry. Why can we not aim for the same high standards if the result is so desirable?

Sustainability

Is it not a sustainable objective to reduce our sewage to such a carbonaceous consistency that it can be pumped out to an outfall to become a nutrient rich resource for fishes? Doubtless, there will be other forms of waste treatment such as biological treatment of waste to inshore water bodies or incineration of bulk waste that can provide the electrical power to drive pumps. Then we do not need to incinerate and landfill the sludge and hence we have a sustainable and affordable sewage treatment process.

I request that the consultants consider my proposal as a further Scenario and really consider the assumptions used, in particular the definition of mixing lengths, in the context of the Beneficial Uses and WQO/Cs.

China

Of course, when asked, China would immediately react that Hong Kong solves its own waste disposal problems within its own boundaries. But this is where foresight and wisdom are needed. The discharges of the Pearl River Delta are a regional problem and neither the Guangdong authorities nor Hong Kong can solve this problem in isolation.

Shenzhen cannot solve its waste water problems without discharging somehow into Hong Kong waters. The answer is obviously a matter of collaboration and see what trade-offs are beneficial to both sides so we end up with WIN-WIN situations.

Hong Kong's Win

If the concept of a straight oceanic outfall in Lema Channel can be accepted and the technical problems of the fault-lines (Alaska has solved the gas pipelines over active faults) can be satisfactorily resolved (and there has been no such occurrence in the last 100 years) then we should consider what trade-offs there are for China.

(i) Shenzhen has to clean up its own act and unless they put in very very expensive tertiary treatment, they will have to discharge partially treated sewage into Hong Kong's inshore waters that are frequented by the dolphins.

Can Shenzhen link up its effluent to Stonecutters Island to be treated and discharged through Hong Kong's outlet into the Lema Channel? Can they avail themselves of our CEPT facilities just when we are ready to wean ourselves off them thereby extending the CEPT's usefulness?

(ii) Hong Kong's considerable savings (my estimate of this straight through solution, will only cost HK$8 billion to build) can be utilised partially in PRD to generate improvements that are of benefit to the region in general and Hong Kong in particular.

Hong Kong's economic capacity to finance environmental improvements is well in excess of the PRD and further, in the present state of PRD's environment, the marginal effect of that spending in the PRD would be far far in excess of what can be achieved in Hong Kong. Also it is in Hong Kong's interest that the spend occurs sooner than later out of PRD's existing budgets. So a smaller spend by Hong Kong in the PRD can reap benefits far in excess of a much larger spend in Hong Kong.

It would be very productive if the consultants can let us have their preliminary views and costs of my proposal prior to our next meeting.

Collaboration

Although the Hong Kong EPD and Guangdong EPB have been meeting, talks are of a "getting to know you nature", substantive collaborative work has yet to begin. It is vital that joint studies in every field of pollution be initiated so that point and non-point sources are identified and analysed. Similarly eco-sensitive items can be catalogued and jointly, actions to protect and improve the conditions of threatened species and habitats can be prioritised and concerted actions funded and taken. Truly effective action can only be achieved by full participation of Hong Kong and Guangdong. This is certainly true if red tides are to be successfully dealt with over the long term in the region.

I would appreciate it if the EPD and the Consultants can give their prioritised list of vital joint studies and the outline of a strategic collaborative frame work for the region.

Risk Assessment

There does not appear to be a risk assessment of any component of the SSDS against the malfunction of a major component. The recent explosion in one out of the three Melbourne gas plants triggered a complete disruption of supplies. The engineers have professed in the past that "this will never happen to us" but it can.

The existing plans seem to indicate that Kowloon and Hong Kong Island North sewage will only flow to Stonecutters for CEPT treatment before it flows to Mount Davis on its way to Lamma and beyond. I would strongly suggest that provision be made to allow Kowloon sewage to be diverted to Mount Davis (by-passing Stonecutters treatment) and hence can be temporarily discharged into the ocean and not into the harbour. This will require extra pumping facilities before the Kowloon sewage reaches the Stonecutters facilities.

Incremental Building

Whilst CEPT is still being used, an outfall (Option 1 - it is agreed that the current outfall close to Stonecutters and effectively in the harbour has to be terminated as soon as possible) West or East of Lamma may be acceptable. The extra cost of the Lema Channel outfall should be tested and justified when evaluated against further evidence of the efficacy of the level of treatment needed against the quality of the sewage.

It is also necessary to work with Guangdong EPB officials to familiarise them with the problem so that they can gain confidence in the robustness of the proposed solution and also plan joint action. Environmentalists tend to be purists but here we have to realistically consider trade offs to see where the precautionary dollar can be better spent. Pollution recognises no borders and precautionary money should be better spent by the beneficiary to cure the source even if that source is outside its borders. If that also helps the source country to tackle its own problems, we have a true "WIN-WIN".

Way ahead

I am confident that the vision of an eventual consistent carbonaceous "raw sewage" that can be pumped straight out into a Lema deep oceanic outfall that can kill off the E-coli through dispersion through the water column as a result of oceanic flows is the sustainable solution that we must aim for.

There is no reason why this vision cannot be combined with that of Shenzhen so we come up with a Win-Win situation. In time, energy and chemical costs will rise and this long term vision will keep such energy and resource usage to a minimum.

Furthermore, what would otherwise produce sludge that needs chemicals and heat to incinerate only to be expensively landfilled is turned into nutrients for a revived fishing industry.

Upon this vision, I would challenge the entire basis of stage II of the SSDS study. The capital cost would be reduced to HK$8B and recurrent HK$0.4B per year. I would further challenge the Consultants to come up with an even more visionary solution without the constraints placed upon then by their brief. We are uniquely placed to formulate a solution for which our grandchildren will thank us.

Yours faithfully,

Peter H.Y. Wong

P.S. I have included this as a P.S. because it does not directly respond to the E.I.A. Study. We need a holistic study that takes into account the funding and how those costs are to be recovered. In many other jurisdictions, sewage has been privatised very successfully and recovery of charges have not been a problem. Based on our past performance, I feel that we can make use of their win-win experience to Hong Kong's advantage.