Airport Management Services Limited

SkyCity Golf Course EM&A Monthly Impact Report

April 2006

15 May 2006

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1 Executive Summary

The purpose of this Project is to construct and operate a 9-hole Golf Course at the east side of the North Commercial District (NCD) on the Airport Island as an interim arrangement prior to the area's future development as a business park (see Figure 1-1). The proposed interim golf facility, known as "SkyCity Golf Course" is intended to serve airport passengers, overseas visitors and airport workers until August 2013.

The Project will be managed by Airport Management Services Limited (AMS) who have employed a Works Contractor, Wing Fat Construction Co. Ltd., to carry out the construction works. Hyder Consulting have been employed as the Environmental Team (ET) for the Construction Period and have engaged ALS Technichem Pty Ltd as the HOKLAS accredited testing laboratory to carry out marine water analysis.

The construction work commenced on 7 March 2006 and it anticipated to last for a period of six to seven months. According to the approved EM&A Manual, impact monitoring during the Construction Period is required for suspended solids, dissolved oxygen and turbidity.

The monthly site audit revealed that there were no significant non-compliances in terms of water, air, noise, waste or landscape and visual, although the Environmental Team made a number of recommendations to the Works Contractor to improve environmental conditions.

Impact monitoring was carried out during April 2006 in accordance with the approved EM&A Manual. Monitoring was carried out on 3, 7, 10, 14, 17, 21, 24 and 28 April. The monitoring results are detailed in this report, which complies with the reporting requirements stated in the approved EM&A Manual.

There were an exceedance of Limit Level and an exceedance of Action Level for suspended solids during April 2006. In addition, there were two exceedances of Action Level for turbidity during April 2006. However, there were no discharges from site during the reporting period as indicated by the Contractor. As such, these exceedances cannot be attributed to site activities and so cannot be considered as exceedances in terms of the EM&A programme. No action or follow-up is thus deemed to be necessary. Notwithstanding, future monitoring results will be examined closely and correlations with any discharge from site will be followed up immediately to ensure that no adverse environmental impacts are caused by this Project.

There were no complaints received and no notifications of summons.

Overall, there are no adverse environmental impacts caused by the Works during the reporting month, although there is room for improvement in overall site environmental management – recommendations have been made and will be followed up in due course.



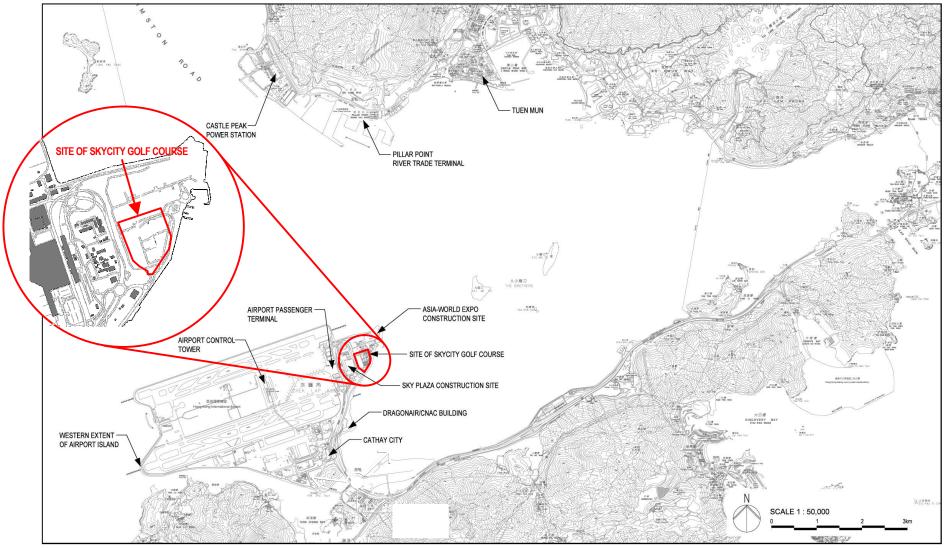


Figure 1-1 Location of SkyCity Golf Course on the Airport Island



2 Site Audit

The monthly site audit examines the implementation status of environmental protection, mitigation and pollution control measures.

Appendix 1 contains the site audit checklist for April 2006. From this the following observations on the implementation status of environmental, mitigation and pollution control measures can be made. Areas for improvement and follow-up are indicated on the checklist and have been highlighted below. The Works Contractor is aware of any shortcomings and has been advised by the ET of any improvements that are required.

2.1 Water Quality

A vehicle wheelwash has been provided at the site egress point. However, the Contractor was reminded to replace the muddy water in the wheel washing bay by clean water frequently. Perimeter U-channels have been completed around most of the site, however, some 20m along the southern part of the site remains to be completed. The Contractor was urged to complete the perimeter drainage before the start of the wet season.

As indicated by the Contractor, no water has been discharged from the site during the reporting month and it is intended that during forthcoming wet weather, water will be collected in the excavated lake bowls and from there percolate down to replenish the groundwater below the site. Because of this, it is not anticipated that there will be any surface runoff from the site.

It is noted that a Discharge Licence under the Water Pollution Control Ordinance has been applied by the Contractor. Once the license is issued by EPD, it should be kept on site for inspection. The Contractor has also been reminded to make silt traps/settlement tanks available on site in case these are needed for discharge off-site.

2.2 Air Quality

No watering of haul roads was apparent despite the dry conditions on site. However, there is presently very little vehicle movement within the site and so no significant fugitive dust emissions were observed. The Contractor should consider use of a water bowser if site traffic increases during dry weather.

It was recommended that stockpiled material (not in use) should be covered by a tarpaulin to prevent material wind-blown dust. Truck loads should be covered by tarpaulin before leaving site to prevent wind-blown dust. Exposed slopes found around the site should be covered and silt deposited on public road should be cleared up.



2.3 Noise

No significant noise problems were noted. The most apparent noise source is overhead aircraft.

2.4 Waste/Chemical Management

Three-colour recycling bins have been placed near to the Contractor's site office. The Contractor has registered as a Waste Producer under the Waste Disposal Ordinance. It was observed that chemical waste storage was being constructed during the site audit.

The main diesel storage tank has been provided with a drip tray, however, a number of smaller oil/lubricant drums elsewhere on site were not provided with drip trays. Although no contamination of the surrounding ground was evident, the Contractor was urged to install drip trays immediately.

2.5 Landscape and Visual

The site is completely surrounded by a hoarding and there are no landscape or visual issues at this time.

2.6 General

The Environmental Permit is displayed at the entrance to the site as required. Although the Contractor has applied and/or received other permits and licences relating to environmental protection, these are not filed in an accessible manner. The Contractor was recommended to ensure that all relevant permits and licences are easily available for inspection, by both the ET and also by EPD.

Overall, the site operation is acceptable from an environmental point of view, but there is room for improvement. The Contractor has been advised of those areas which require immediate attention and this will be followed-up during the next site audit.



3 Marine Water Quality EM&A

Monitoring of Dissolved Oxygen (DO) concentration in mg/ℓ , Suspended Solids (SS) in mg/ℓ and turbidity in NTU, was carried out by the ET to ensure that any deterioration in marine water quality could be readily detected and timely action could be taken to rectify the situation if this was due to site activities. DO and turbidity were measured *in-situ* whilst SS was determined in laboratory.

Other parameters, such as water depth, sea temperature, salinity and DO saturation are recorded for reference, and weather conditions, sea conditions, tidal stage and any particular site activities are recorded for information.

3.1 Monitoring Results

3.1.1 Summary

A summary of monitoring results for the reporting month are provided in Table 3-1, below. Detailed results are provided in Appendix 2, in which exceedances of Action/Limit (A/L) Levels are highlighted.

Station		Temperature (^o C)	Salinity (mg/ℓ)	DO Saturation (%age)	DO Concentration (mg/ℓ)	(3/S (mg/£)	Turbidity (NTU)
	Mean	23.7	28.4	99.9	7.2	7	9
C1	Maximum	25.4	31.8	119.2	8.5	16	20
	Minimum	21.6	24.4	81.4	6.0	3	5
	Mean	23.4	28.8	99.9	7.2	7	10
C2	Maximum	25.6	32.5	118.1	8.4	15	22
	Minimum	21.6	25.0	80.9	6.0	2	5
	Mean	23.4	28.7	99.8	7.2	6	8
M1	Maximum	25.4	32.0	119.8	8.5	13	16
	Minimum	21.3	24.5	81.7	6.0	3	5
	Mean	23.4	29.0	99.9	7.2	6	8
M2	Maximum	25.5	32.1	118.4	8.4	10	19
	Minimum	21.5	25.1	79.9	5.9	3	4

Table 3-1 Summary of Impact Monitoring Data



3.1.2 Equipment and Methodology

Because of the relatively shallow water, *in-situ* measurements and water sampling were conducted at only one water depth – the mid-depth. Water samples for all monitoring parameters were collected, stored, preserved and analysed according to *APHA Standard Methods for the Examination of Water and Wastewater*, 19th Edition, #17.

In-situ DO concentration, turbidity (and temperature, salinity and DO saturation) were carried out using a YSI Model 6820 CE-C-M-Y multi-parameter meter:

Davamatav	YSI Model 6820 CE-C-M-Y					
Parameter	Range Resolution		Accuracy			
DO Concentration	0 to 50 mg/ <i>l</i>	0.01 mg/ ℓ	0 to 20 mg/ ℓ : \pm 2% of reading or 0.2 mg/ ℓ , whichever is greater; 20 to 50 mg/ ℓ : \pm 6% of reading			
DO Saturation	0 to 500%	0.1%	0 to 200%: ±2% of reading or 2% air saturation, whichever is greater; 200 to 500%: ±6% of reading			
Turbidity	0 to 1,000 NTU	0.1 NTU	$\pm2\%$ of reading or 0.3 NTU, whichever is greater			
Temperature	-5 to +70°C	0.01°C	±0.15°C			
Salinity	0 to 70 ppt	0.01 ppt	±1% of reading or 0.1 ppt, whichever is greater			

Table 3-2 In-situ Monitoring Equipment Details

A Kahlisco water sampler was used to obtain the water sample for subsequent SS analysis. Water samples were collected in high density polythene bottles, packed in ice (cooled to 4°C without being frozen), and delivered to ALS' laboratory (HOKLAS accredited) immediately after completion of monitoring. The analysis follows APHA *Standard Methods #2540D*.

A Global Positioning System (GPS) was used to determine the exact monitoring location and water depth was determined using an echo-sounder.

3.1.3 Maintenance and Calibration

All *in-situ* monitoring instruments are calibrated and certified by ALS at 3-monthly intervals throughout the marine water quality monitoring programme.

For DO, the probe (YSI 6820) is calibrated once per monitoring day by the wet bulb method. Calibration at ALS is carried our once every three months in a water sample of known dissolved oxygen concentration. The sensor is immersed in the water and after thermal equilibration, the known mg/l value is keyed in and the calibration is carried out automatically.

For turbidity, the probe (YSI 6820) is calibrated with a solution of known NTU at ALS once every three months. Calibration as per dissolved oxygen, above.

Calibration details are provided in Appendix 3.



3.1.4 Parameters Monitored

The following parameters are monitored and compared to A/L Levels:

- Dissolved Oxygen (DO)
- Suspended Solids (SS)
- Turbidity

Other parameters, such as water depth, sea temperature, salinity and dissolved oxygen saturation ware recorded for reference, and weather conditions, sea conditions, tidal stage and any particular site activities were recorded for information.

3.1.5 Monitoring Locations

Monitoring locations together with grid references are shown in Figure 3-2. Control Stations are designated C1 and C2 and Monitoring Stations are designated M1 and M2.

3.1.6 Monitoring Date, Time, Frequency and Duration

Monitoring of marine water quality is carried out twice-weekly during mid-ebb and mid-flood tides. Table 3-3, below, provides details of the monitoring dates, times and duration:

Date	Duration of Ebb Tide	Monitoring at Mid- Ebb	Duration of Flood Time	Monitoring at Mid- Flood
3/4/06	14:28 to 18:28	16:28	07:15 to 11:15	09:15
7/4/06	19:11 to 23:11	21:11	06:44 to 10:44	08:44
10/4/06	09:42 to 13:42	11:42	15:17 to 19:17	17:17
14/4/06	11:25 to 15:25	13:25	17:25 to 21:52	19:25
17/4/06	13:05 to 17:05	15:05	06:18 to 10:18	08:18
21/4/06	16:54 to 20:54	18:54	04:14 to 08:14	06:14
24/4/06	08:49 to 12:49	08:18	14:07 to 18:07	16:07
28/4/06	11:17 to 15:17	13:17	04:46 to 08:46	06:46

Table 3-3 Monitoring Date, Time, Frequency and Duration

3.2 Action/Limit Levels

The A/L Levels for the impact monitoring stations (M1 and M2) were determined in the approved Interim Baseline Monitoring Report and are shown in Table 3-4:



Consu	ltina
Consu	ıtınıg

Parameter	Action Level	Limit Leve		
DO Concentration	5 th percentile of baseline data = 7.0 mg/ℓ, or 80% of the upstream control station	4.0 mg/ ℓ , or 70% of the upstream control station		
Turbidity	95 th percentile of baseline data = 9.6 NTU, or 120% of the upstream control station	99th percentile of baseline data = 10.5 NTU, or 130% of the upstream control station		
SS	95 th percentile of baseline data = 9.4 mg/ℓ, or 120% of the upstream control station	99 th percentile of baseline data = 9.9 mg/ ℓ , or 130% of the upstream control station		

Table 3-4 Action and Limit Levels for Water Monitoring Stations

In case of exceedance of A/L Levels at M1 or M2, the Event/ Action Plan (shown in Table 3-5, below) shall be followed.

Event	Action						
	ET	Works Contractor					
Exceedance of Action Level	 Identify the source(s) of impact. If not from the Project then provide justification and document this If exceedance is caused by the Project then inform Contractor Check monitoring data and Contractor's working methods Discuss possible mitigation measures with Contractor Repeat measurement on next day of exceedance 	 Confirm notification of the exceedance in writing Rectify any unacceptable practice Check all plant and equipment Amend working methods if appropriate Discuss possible mitigation measures with ET Implement the agreed mitigation measures 					
Exceedance of Limit Level	Identify the source(s) of impact. If not from the Project then provide justification and document this in the EM&A Report If exceedance is caused by the Project then inform Contractor Check monitoring data and Contractor's working methods Agree mitigation measures with Contractor Ensure mitigation measures are implemented immediately Increase the monitoring frequency to daily until no further exceedance of Limit Level	Confirm notification of the exceedance in writing Rectify any unacceptable practice Check all plant and equipment Amend working methods if appropriate Agree possible mitigation measures with ET Implement the agreed mitigation measures immediately					

Table 3-5 Event Action Plan for Marine Water Quality Monitoring



3.3 Summary of Exceedances

3.3.1 Review of Exceedances and Implications

There were an exceedance of Limit Level and an exceedance of Action Level for suspended solids during April 2006. In addition, there were two exceedances of Action Level for turbidity during April 2006. The Event/Action Plan was implemented.

The first action is to determine the source of the exceedance. There has been little rainfall during the reporting month and it has been confirmed there has been no surface run-off or no discharges from site. As such, the cause of these exceedances cannot be from site activities.

As such, these exceedances cannot be considered as exceedances in terms of the EM&A programme. No action or follow-up is thus deemed to be necessary.

Notwithstanding, future monitoring results will be examined closely and correlations with any discharge from site will be followed up immediately to ensure that no adverse environmental impacts are caused by this Project.

3.3.2 Action Taken and Follow-up

The exceedances of Limit Level noted during this reporting month are not considered to be exceedances in terms of the EM&A programme and so no action or follow-up is deemed to be necessary.

3.4 Complaints and Notifications of Summons

3.4.1 Complaints

No complaints were received during the reporting month and there are no outstanding follow-up issues to be addressed.

3.4.2 Notifications of Summons

No notifications of summons were received during the reporting month and there are no outstanding follow-up issues to be addressed.

3.5 Works Programme and Future Monitoring Schedule

Appendix 4 shows the current work programme for the works and Appendix 5 provides the future schedule for marine water quality monitoring.

Based on the work to be carried out in future months, no significant impacts to marine water quality are anticipated.



Consulting

38ha Catchment Area for Outfall No. 8 11.56ha Project Site Boundary Marine Water Quality Monitoring Location (Impact Monitoring) Marine Water Quality Control Stations (Impact Monitoring)

<u>Co-ordinates of Monitoring Locations and Control Stations</u>

	Northing	Easting
M1	22°18'77"	113°56'65"
M2	22°18'94"	113°56'78"
C1	22°18'45"	113°56'50"
C2	22°19'21"	113°56'95"

Note: Co-ordinates based on WGS 1984 datum

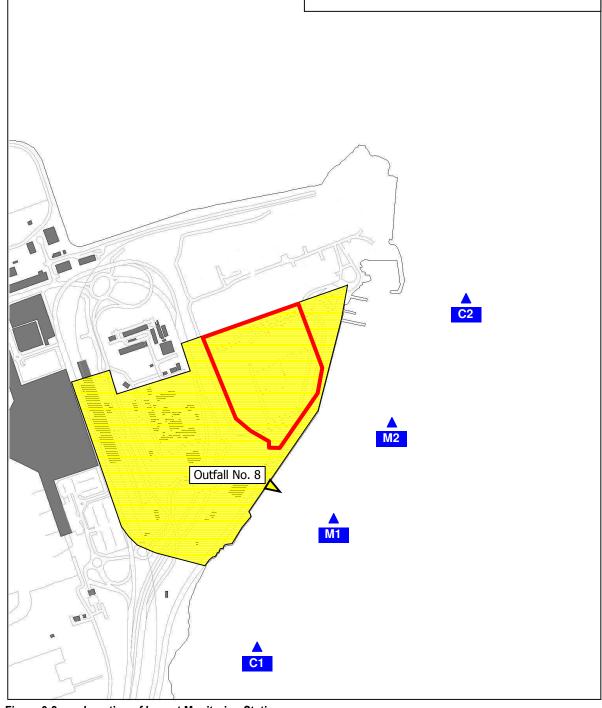


Figure 3-2 Location of Impact Monitoring Stations



4 Comments, Recommendations and Conclusions

The monthly site audit revealed that there were no significant non-compliances in terms of water, air, noise, waste or landscape and visual, although the Environmental Team made a number of recommendations to the Works Contractor to improve environmental conditions.

In terms of marine water quality monitoring, there were an exceedance of Limit Level and an exceedance of Action Level for suspended solids during April 2006. In addition, there were two exceedances of Action Level for turbidity during April 2006. However, there was little rainfall and there were no discharges from site during the reporting period. As such, these exceedances cannot be attributed to site activities and so cannot be considered as exceedances in terms of the EM&A programme. No action or follow-up is thus deemed to be necessary. Notwithstanding, future monitoring results will be examined closely and correlations with any discharge from site will be followed up immediately to ensure that no adverse environmental impacts are caused by this Project.

There were no complaints received and no notifications of summons.

Overall, there are no adverse environmental impacts caused by the Works during the reporting month, although there is room for improvement in overall site environmental management – recommendations have been made and will be followed up in due course.



Appendix 1

Site Audit Checklist



		Inspe	ection No.	2	
Inspe	ction Date 21-4-06 Time 10:00-1/200.am	Inspe	ected By	Client:	- Ml
Site	Aughty Golf Roune Contractor Wing Fal			Contracto	or. Mr. Leung my Nige
Weat		******	· · · · · ·		
Condi	CVercast Drizzle		Rain	Sto	orm Hazy
Tempe	erature 78°C Humidity High		Moderate	Lov	v
Wind	Calm Light Breeze Strong		Direction	W	
	N/A or not obs	served	Yes	No	Photo/Remarks
1 \	Nater Quality Perimeter cut off drains direct off-site water around the site?				\mathcal{C}
1.2	Is all surface runoff directed to silt removal facilities prior to discharge?				•
1.3	Channels, earth bunds or sandbags direct surface runoff to silt removal facilities?				
1.4	is groundwater pumped out from tunnelling and excavations discharged via silt removal facilities?				
1.5	Are there silt removal facilities for settling surface runoff prior to discharge?				:
	1.5.1 Constructed from pre-formed individual cells or silt traps / basins?				
	1.5.2 Adequate capacity?				
	1.5.3 Free from silt and sand?				
	1.5.4 Inspected and maintained after rain storm?				
1.6	Is drainage system well maintained to prevent flooding and overflow?				
1.7	is exposed earth stabilized after earthworks have been completed?				
1.8	Are exposed slope surfaces covered (by tarpaulin or other means)?				(Z)
1.9	Are open stockpiles of excavated and construction materials covered during rainstorms?				
1.10	Any measures to prevent the washing away of excavated and construction materials e.g. sand/silt to drains?				
1.11	Are manholes covered and sealed?				
1.12	Are vehicles and plant cleaned of earth, mud and debris before leaving the site?				(4)
1.13	Are vehicle washing facilities provided at every site exit?				



					N/A or not of	bserved	Yes	No	Photo/Remarks
		1.13.1	Wastewater treater facility emptied of s	d in silt removal facility? silt regularly?	? Silt removal				
		1.13.2	Washing area and	road exiting from wash	ing facility paved?				
		1.13.3	Access road has so bunded to prevent	afficient backfall toward of untreated wastewate	washing facility or r?	r [e
	1.14	Equipmen maintenar	t oil and lubrication ice area?	replacements performe	ed only in bunded				
	1.15	Drainage f	rom maintenance a	rea discharged via an o	oil interceptor?				
		1.15.1	Oil and grease remo	oved regularly?					
1	1.16	Toilets tha	t connect to foul sev	ver or chemical toilets	provided?				
1	.17	Is debris a	nd rubbish prevente	d from entering drains?	?				
1	.18	ls Effluent	Discharge Licence	available for inspection	?				
2	AIF	RQUALITY							
							-		-
2	.1	Are hoardir public acce	ng not less than 2.4	n tall provided beside r	oads or areas with				
2	.2	Are the roa	ds and unpaved are	as watered regularly to	avoid dust				3
2.	3	Are stockpi	es of excavated ma	iterial covered or regula	arly watered?				<u>(P)</u>
2.	4	ls stockpile barriers, fen	of dusty materials k cing or traffic cones	cept to not extend beyons?	nd the pedestrian				
2,	5	ls the public dust?	road around the si	e entrance kept clean :	and free from				
2.6	3	Do the site v	vehicles use the veh	icle wash facility at the	site exits?				
2.7	7	Are material	s transported on tru	cks covered?					<u>(3)</u>
2.8	3 /	Are dusty m	aterials sprayed prid	or to loading?	:				6
2.9	3 /	Are all truck	loads to a level with	in the side and tail boa	erds?				
2.1	A. O V	Are areas wh vatered?	ere demolition/site	clearance/breaking tak	e place regularly				
2.1		s every stoc y imperviou ne three side	s sneemna or maced	ags of cement or day c d in an area sheltered o	overed entirely on the top and				
2.1	2 A th	re potentiall ree sided si	y dusty demolished nelter?	items/debris covered o	or placed in a				
	2.	12.1 Is to kee	he debris sprayed w p wet before it is du	rith water/dust suppress imped onto a debris ch	sion chemical to ute?			·	
2.13	S O	dorous mate te?	erials immediately c	overed and promptly re	emoved from				
2.14	- Ar	e there encl	osures around the p	nain dust-generating a	ctivities?	/			



		N/A or not of	oserved	Yes	No	Photo/Remarks
:	2.15	Is open burning prohibited?				- words remains
2	2.16	Are completed earthworks sealed and hydroseeded and planted as soon as practicable?				
2	2.17	Are vehicles and equipment switched off while not in use?				
2	2.18	Do vehicles and equipment maintained that no excessive smoke or visible vapour emitted?				
Obse	erval	ole dust sources Wind erosion	Vehicle	e/equipment	t movement	· · · · · · · · · · · · · · · · · · ·
		Loading/unloading of materials	Others			·
3	No	ise .				· · · · · · · · · · · · · · · · · · ·
3	.1	Are the construction works scheduled to minimise noise nuisance?				
		, , , , , , , , , , , , , , , , , , ,				
3.	.2	Are the works or equipment sited to minimize noise nuisance? Mobile plant sited away from NSRs? Noisy plant oriented away from NSRs?				
. 3.	.3	Are all plant and equipment well maintained and in good operating condition?				
3.	4	Is idle equipment turned off or throttled down?				·
3.	5	Are powered mechanical equipment covered or shielded by appropriate acoustic materials?				
3.0	6 .	Are quiet plant used as required?				
3.	7	Are silencers/mufflers fitted and maintained?				· · · · · · · · · · · · · · · · · · ·
3.8	3 ,	Are mobile/temporary noise barriers used where specified?				;
3.9	9 <u>1</u>	Do air compressors (≥500kPa of supplying compressed air) and hand neld percussive breakers (>10kg in weight) have valid noise labels?				
3.1	i 0 [Oo compressors and generators operate with doors closed?				
3.1	11 /	Are Construction Noise Permits available for inspection?				
Major ı	noise	e source(s) Traffic	Constru	ıction activi	ties inside o	f site
		Construction activities outside of site	Others_	Sonstruis	tion acti	ities from other site
4 V	Vasi	te/Chemical Management		alsay		U .
•		····			-	
4.1	G	General refuse		•		
	4	.1.1 Accumulation on-site avoided?				
	4.	1.2 Receptacles (e.g. rubbish bins) available?				
	4.	1.3 Disposed of regularly and properly?				
	4.	1.4 Records of quantities generated/recycled/disposed maintained?				



			or not ob	served	Yes	No	Photo/Remarks
4.2	2 Cher	nical waste					
	4.2.1	Stored properly in designated area?					
	4.2.2	Storage in accordance with Code of Practice?					
	4.2.3	Disposed of properly?					
	4.2.4	Trip tickets available for inspection?					
4.3	Chem	nical/fuel storage					
	4.3.1	Is storage area bunded?					\mathcal{O}
	4.3.2	Adequate bund capacity? (>110% of the largest tank)					
	4.3.3	Area storage area provided with locks and located on areas?	sealed				
4	4.3.4	Are oil/fuel drums and plant/equipment provided with of to prevent soil contamination?	irip trays				B
4.4	C&D //	Naterial.	٠		•		
	4.4.1	Reused/recycled where practicable?					
	4.4.2	Inert/non inert materials segregated?					
	4.4.3	Disposed of properly?				<u> </u>	
	4.4.4	Records of quantities generated/recycled/disposed ma	intained?				
4.5	Excava	ited Material					;
	4.5.1	Reused where practicable?					
	4.5.2	Records of quantities generated/reused/disposed main	tained?				· · · · · · · · · · · · · · · · · · ·
4.6	Are spe	ent bentonite slurries or grouts collected, reconditioned a	and [
4.7	Is foam nearby	, oil, grease, litter or other objectionable matters in wated drain/sewer avoided?	er to	/			
Lar	ndscape	and Visual					
5.1	Are reta	ined trees protected by fencing?			· [
.2	Is the wo	ork site confined within site boundaries?	[
.3	Is dama	ge to surrounding areas avoided?					



SITE INSPECTION/AUDIT CHECKLIST Tollow up: Demeter cut off drains along the souther loundary of the inte (~20 m) are still not fully constructed. Please provide the residual part.

(2) Exproved slepe surface is still the uncovered around the inte. This surface should a covered or watered regularly.

(3) Unyraved areas should be watered more frequently during dry periods. @ Stockpiles should be watered more frequently during dry periods. 1 Materials transport on truck are not covered Bleave cover the material. (closed) (closed) (Notical waste storage area is constructing. The Contractor was reminded to follow the EPD's quideline to built the area.

(8) Dil drums without digit troy are still observed. Please provide the digiting. (a) He Straymort water was absenced (closed)

(b) He copy of APRA form NA should be available an site for inspection.

1. I have aux lead by the Contractor, When the licence is (1) Discharge licence has bon applied by the Contractor. secenced, it should be placed at the site. 12) The Nontractor is strongly recommended to keep all licences, presents and relevant documents on ite for impection. (3) Silly notes in the wheel washing, fairlity should be removed, remove it. \$ 13 & (4) are new observations.

Signatures:		
ET Inspector	Client's Site Agent	Contractor's Representative
		. 0
No		
Name: Yony Nig	V Name:	Name: W. K. LZ: LAKO
Date: 21-4-2006	Date:	Date: $\frac{1}{2} \left(-\frac{\zeta_{-0}}{6} \right)$



Appendix 2

Marine Water Quality Monitoring Data



Date	Time	Station	Sample Depth (m)	Water Depth (m)	Sea Temp (°C)	Salinity (ppt)	DO Sat (%age)	DO Conc (mg/ℓ)	Turbidity (NTU)	SS (mg/ℓ)
03-Apr-06	(mid-flood)	M1	3.0	6.0	21.2	27.7	86.8	6.6	10	6
03-Apr-06	(mid-flood)	M2	3.0	6.0	21.8	26.4	86.7	6.5	8	8
03-Apr-06	(mid-flood)	C1	1.5	3.0	22.1	25.0	85.7	6.5	8	7
03-Apr-06	(mid-flood)	C2	3.0	6.0	21.2	27.8	87.9	6.6	12	12
03-Apr-06	(mid-ebb)	M1	3.0	6.0	21.8	26.3	85.7	6.5	7	15
03-Apr-06	(mid-ebb)	M2	3.0	6.0	21.7	26.0	86.7	6.5	10	19
03-Apr-06	(mid-ebb)	C1	1.5	3.0	22.2	25.4	87.1	6.6	6	8
03-Apr-06	(mid-ebb)	C2	3.0	6.0	21.6	27.6	86.3	6.5	10	14
07-Apr-06	(mid-flood)	M1	3.0	6.0	22.5	26.8	80.2	5.9	5	13
07-Apr-06	(mid-flood)	M2	3.0	6.0	22.4	27.6	81.3	6.0	6	9
07-Apr-06	(mid-flood)	C1	1.5	3.0	22.5	27.0	80.8	6.0	11	14
07-Apr-06	(mid-flood)	C2	3.0	6.0	21.9	28.9	80.7	6.0	4	4
07-Apr-06	(mid-ebb)	M1	3.0	6.0	22.5	27.2	81.7	6.0	5	7
07-Apr-06	(mid-ebb)	M2	3.0	6.0	22.3	27.9	79.9	5.9	7	5
07-Apr-06	(mid-ebb)	C1	1.5	3.0	22.4	27.3	81.4	6.0	7	6
07-Apr-06	(mid-ebb)	C2	3.0	6.0	21.6	30.1	80.9	6.0	5	6
10-Apr-06	(mid-ebb)	M1	3.0	6.0	22.5	29.2	100.0	7.3	8	10
10-Apr-06	(mid-ebb)	M2	3.0	6.0	22.9	29.0	102.0	7.4	7	13
10-Apr-06	(mid-ebb)	C1	1.5	3.0	23.8	28.5	103.0	7.4	10	9
10-Apr-06	(mid-ebb)	C2	3.0	6.0	23.0	27.1	100.0	7.4	9	14
10-Apr-06	(mid-flood)	M1	3.0	6.0	23.2	28.9	99.7	7.2	13	16
10-Apr-06	(mid-flood)	M2	3.0	6.0	23.0	29.3	99.2	7.2	8	19
10-Apr-06	(mid-flood)	C1	1.5	3.0	23.7	28.8	99.9	7.2	11	15
10-Apr-06	(mid-flood)	C2	3.0	6.0	23.1	27.6	99.3	7.3	9	22



Date	Time	Station	Sample Depth (m)	Water Depth (m)	Sea Temp (°C)	Salinity (ppt)	DO Sat (%age)	DO Conc (mg/ℓ)	Turbidity (NTU)	SS (mg/ℓ)
14-Apr-06	(mid-ebb)	M1	3.1	6.1	22.9	30.6	94.0	6.8	11	9
14-Apr-06	(mid-ebb)	M2	2.9	5.8	22.7	30.3	92.9	6.7	7	9
14-Apr-06	(mid-ebb)	C1	1.5	3.0	23.2	27.9	92.3	6.7	16	12
14-Apr-06	(mid-ebb)	C2	2.8	5.6	22.7	28.8	93.5	6.8	11	14
14-Apr-06	(mid-flood)	M1	3.0	6.0	23.1	29.3	94.5	6.8	6	6
14-Apr-06	(mid-flood)	M2	2.9	5.8	22.8	30.1	96.2	7.0	10	8
14-Apr-06	(mid-flood)	C1	1.6	3.2	23.0	29.1	94.4	6.8	7	11
14-Apr-06	(mid-flood)	C2	2.9	5.7	23.0	28.8	95.9	7.0	8	11
17-Apr-06	(mid-flood)	M1	3.0	6.0	21.3	31.8	94.6	7.0	7	6
17-Apr-06	(mid-flood)	M2	3.1	6.1	21.7	31.8	94.5	6.9	5	9
17-Apr-06	(mid-flood)	C1	1.7	3.3	21.6	31.6	94.0	6.9	4	7
17-Apr-06	(mid-flood)	C2	3.2	6.4	21.6	32.4	95.5	7.0	15	7
17-Apr-06	(mid-ebb)	M1	3.0	6.0	21.4	32.0	93.1	6.8	7	7
17-Apr-06	(mid-ebb)	M2	2.9	5.8	21.5	32.1	94.5	6.9	6	7
17-Apr-06	(mid-ebb)	C1	1.5	3.0	21.6	31.8	94.9	6.9	5	6
17-Apr-06	(mid-ebb)	C2	3.1	6.1	21.6	32.5	94.1	6.9	10	15
21-Apr-06	(mid-flood)	M1	3.0	6.0	23.4	31.4	101.9	7.2	6	8
21-Apr-06	(mid-flood)	M2	3.1	6.2	23.1	31.8	100.7	7.2	6	5
21-Apr-06	(mid-flood)	C1	1.5	3.0	23.5	31.3	101.5	7.2	11	20
21-Apr-06	(mid-flood)	C2	3.2	6.3	22.9	31.8	100.8	7.2	3	7
21-Apr-06	(mid-ebb)	M1	3.1	6.1	23.7	31.5	102.8	7.3	6	8
21-Apr-06	(mid-ebb)	M2	3.0	5.9	23.6	31.7	103.8	7.3	7	5
21-Apr-06	(mid-ebb)	C1	1.4	2.8	23.8	31.4	103.9	7.3	8	9
21-Apr-06	(mid-ebb)	C2	3.0	6.0	23.2	31.8	102.8	7.3	5	5



Consu	4:-	_

Date	Time	Station	Sample Depth (m)	Water Depth (m)	Sea Temp (°C)	Salinity (ppt)	DO Sat (%age)	DO Conc (mg/ℓ)	Turbidity (NTU)	SS (mg/ℓ)
24-Apr-06	(mid-ebb)	M1	2.9	5.8	25.0	26.0	115.8	8.2	4	8
24-Apr-06	(mid-ebb)	M2	2.9	5.7	25.0	26.4	116	8.3	6	7
24-Apr-06	(mid-ebb)	C1	1.5	2.9	25.1	26.0	116.1	8.2	5	10
24-Apr-06	(mid-ebb)	C2	3.0	6.0	24.8	26.5	116.8	8.3	2	6
24-Apr-06	(mid-flood)	M1	2.9	5.7	25.1	26.5	119.8	8.5	5	7
24-Apr-06	(mid-flood)	M2	3.0	6.0	25.1	26.3	118.4	8.4	3	8
24-Apr-06	(mid-flood)	C1	1.6	3.1	25.3	25.9	119.2	8.5	4	7
24-Apr-06	(mid-flood)	C2	3.1	6.2	25.2	26.0	118.1	8.4	2	5
28-Apr-06	(mid-ebb)	M1	3.0	6.0	25.4	24.8	101	7.2	4	5
28-Apr-06	(mid-ebb)	M2	3.0	6.0	25.5	25.3	101	7.2	4	4
28-Apr-06	(mid-ebb)	C1	1.5	3.0	25.4	24.7	100	7.2	3	5
28-Apr-06	(mid-ebb)	C2	3.0	6.0	25.6	25.5	101	7.2	5	7
28-Apr-06	(mid-flood)	M1	3.0	6.0	25.3	24.5	99	7.1	3	5
28-Apr-06	(mid-flood)	M2	3.0	6.0	25.4	25.1	100	7.1	4	5
28-Apr-06	(mid-flood)	C1	1.5	3.0	25.3	24.4	98	7.0	3	5
28-Apr-06	(mid-flood)	C2	3.0	6.0	25.4	25	100	7.0	5	10

Notes: "-" indicates no data is available

Bold indicates Action Level exceedance

Bold indicates Limit Level exceedance

	Mean	23.2	28.4	97.0	7.0	6.9	9.2
Ma	aximum	25.6	32.5	119.8	8.5	15.6	22.0
М	inimum	21.2	24.4	79.9	5.9	1.6	4.0



Appendix 3

Equipment Calibration Details



Batch:

HK49674

Sub Batch:

- 0

Date of Issue:

24/02/2006

Client:

MAUNSELL ENV MGT CNLT LTD

Client Reference:

Calibration of Tubidimeter

Item:

YSI SONDE Environmental Monitoring System

Model No.:

6820-C-M

Serial No.:

0001093A

Equipment No.:

W-026-23

Calibration Method:

This meter was calibrated in accordance with standard method APHA (19th Ed.) 2130B

Date of Calibration:

23 February,2006

Testing Results:

Expected Reading	Recording Reading		
0.00 NTU	0.00 NTU		
4.00 NTU	4.30 NTU		
16.0 NTU	16.7 NTU		
80.0 NTU	84.6 NTU		
160 NTU	167 NTU		
Allowing Deviation	±10%		

Alice W M Wong

Laboratory Manager - Hong Kong



Batch:

HK49674

Sub Batch :

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Date of Issue:

24/02/2006

Client:

MAUNSELL ENV MGT CNLT LTD

Client Reference:

Calibration of Conductivity System

Item:

YSI SONDE Environmental Monitoring System

Model No.:

6820-C-M

Serial No.:

0001093A

Equipment No.:

W-026-23

Calibration Method:

This meter was calibrated in accordance with standard method APHA (19th Ed.) 2510B

Date of Calibration:

23 February,2006

Testing Results:

Expected Reading	Recording Reading				
1412 uS/cm 6667 uS/cm 58670 uS/cm	1488 uS/cm 6720 uS/cm 59330 uS/cm				
Allowing Deviation	±10%				

पॉटिंe W)M Wong

Laboratory Manager - Hong Kong



Batch:

HK49674

Sub Batch:

0

Date of Issue:

24/02/2006

Client:

MAUNSELL ENV MGT CNLT LTD

Client Reference:

Calibration of Salinity System

Item:

YSI SONDE Environmental Monitoring System

Model No.:

6820-C-M

Serial No.:

0001093A

Equipment No.:

W-026-23

Calibration Method:

This meter was calibrated in accordance with standard method APHA (19th Ed.) 2520 A and B

Date of Calibration:

23 February,2006

Testing Results:

Expected Reading	Recording Reading		
10.0 g/L 20.0 g/L 30.0 g/L	10.1 g/L 20.3 g/L 30.6 g/L		
Allowing Deviation	±10%		

Alice ₩ M)W¢ng

Laboratory Manager - Hong Kong



Batch:

HK49674

Sub Batch:

0

Date of Issue:

24/02/2006

Client:

MAUNSELL ENV MGT CNLT LTD

Client Reference:

Calibration of Thermometer

Item:

YSI SONDE Environmental Monitoring System

Model No.:

6820-C-M

Serial No.:

0001093A

Equipment No.:

W-026-23

Calibration Method:

In-house Method

Date of Calibration:

23 February,2006

Testing Results:

Reference Temperature (°C)	Recorded Temperature (°C)
18.0 °C 40.0 °C	18.2 °C 40.1 °C
Allowing Deviation	±2.0°C

Alīc∳ W/M/Wong Laboratory Manager - Hong Kong



Batch:

HK49674

Sub Batch:

0

Date of Issue:

24/02/2006

Client:

MAUNSELL ENV MGT CNLT LTD

Client Reference:

Calibration of DO System

Item:

YSI SONDE Environmental Monitoring System

Model No.:

6820-C-M

Serial No.:

0001093A

Equipment No.:

W-026-23

Calibration Method:

This meter was calibrated in accordance with standard method APHA (18th Ed.) 4500-0C & G

Date of Calibration:

23 February,2006

Testing Results:

Expected Reading	Recording Reading				
0.00 mg/L 2.88 mg/L 4.88 mg/L 8.52 mg/L	0.00 mg/L 3.00 mg/L 4.96 mg/L 8.46 mg/L				
Allowing Deviation	±0.2 mg/L.				

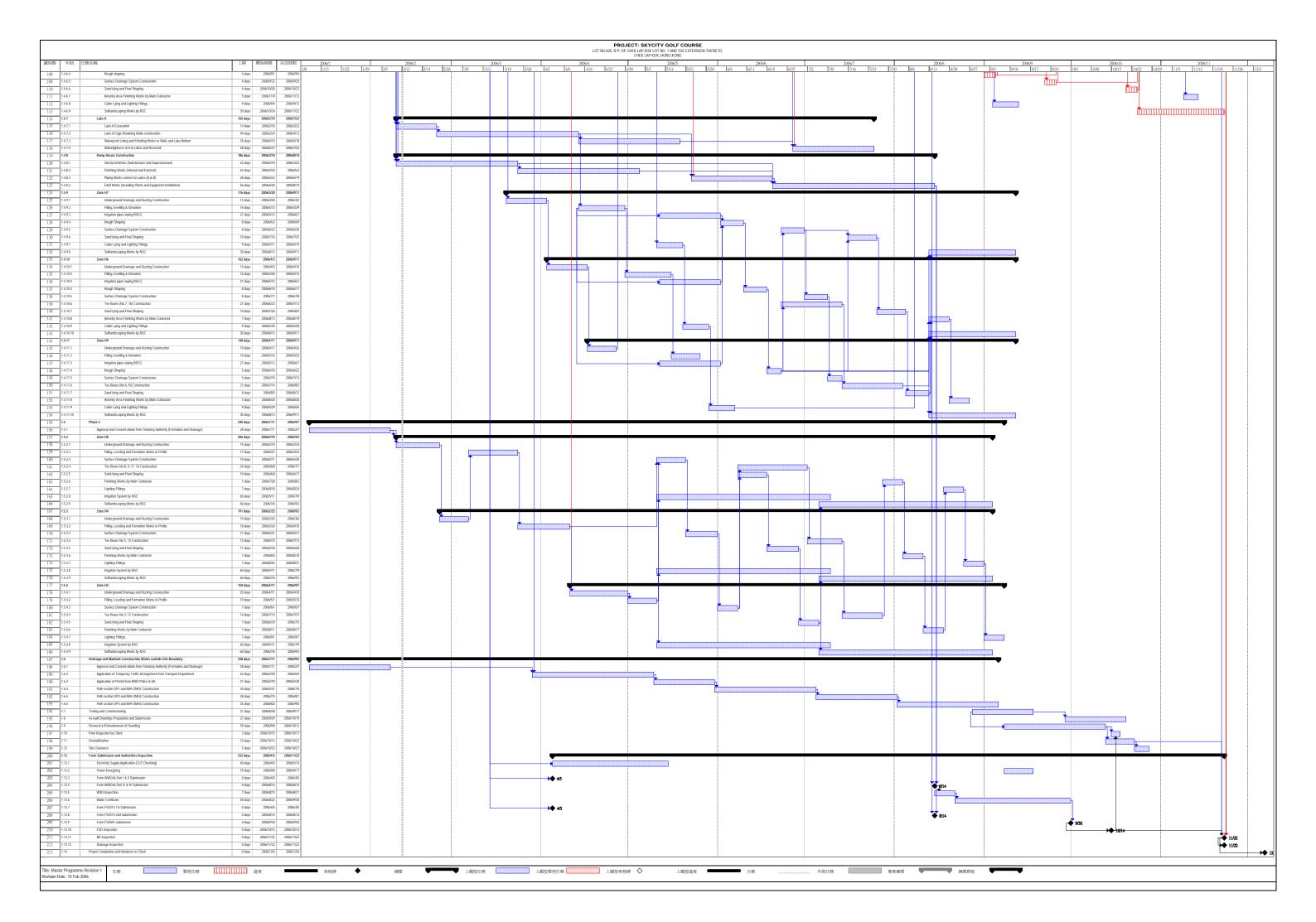
Alice W/M Wong

Laboratory Mariager - Hong Kong



Appendix 4

Works Programme





Appendix 5

Marine Water Monitoring Schedule for Next Month

Sky City Golf Course EM&A Tentative Water Quality Monitoring Schedule for May 2006

Sunday	Monda		Tuesday	Wednesday	Thursday	Friday	Saturday
30-Apr		01-May	02-May	03-May	04-May	05-May	06-May
	Mid-Flood 06:10 04:57 Mid-Ebb 13:23	08:10 10:10 <i>11:24</i> 15:23 17:23				Mid-Flood 06:15 04:15 08:15 22:16 14:14 Mid-Ebb 18:48 16:48 20:48	
	11:24	19:23				14:14 23:22	
07-May		08-May	09-May	10-May	11-May	12-May	
	Mid-Ebb 08:36 08:01 Mid-Flood 14:00 13:12	10:36 12:36 <i>13:12</i> 16:00 18:00 <i>18:49</i>				Mid-Ebb 12:30 10:30 14:30 09:00 16:00 Mid-Flood 19:10 17:10 21:10 16:00 22:21	
14-May		15-May	16-May	17-May	18-May	19-May	20-May
	Mid-Flood 05:15 04:08 Mid-Ebb 12:15 10:23	07:15 09:15 <i>10:23</i> 14:15 16:15 <i>18:08</i>				Mid-Flood 05:03 03:03 07:03 20:50 13:17 Mid-Ebb 17:33 15:33 19:33 13:17 21:49	
21-May		22-May	23-May	24-May	25-May	26-May	27-May
	Mid-Ebb 07:29 07:08 Mid-Flood 12:43 11:50	09:29 11:29 <i>11:50</i> 14:43 16:43 <i>17:36</i>				Mid-Ebb 12:19 10:19 14:19 08:43 15:55 Mid-Flood 19:07 17:07 21:07 15:55 22:20	
28-May		29-May	30-May	31-May	01-Jun	02-Jun	03-Jun
	Mid-Flood 05:08 03:52 Mid-Ebb 12:26 10:24	07:08 09:08 <i>10:24</i> 14:26 16:26 <i>18:28</i>				Mid-Flood 04:50 02:50 06:50 20:44 12:56 Mid-Ebb 17:12 15:12 19:12 12:56 21:29	