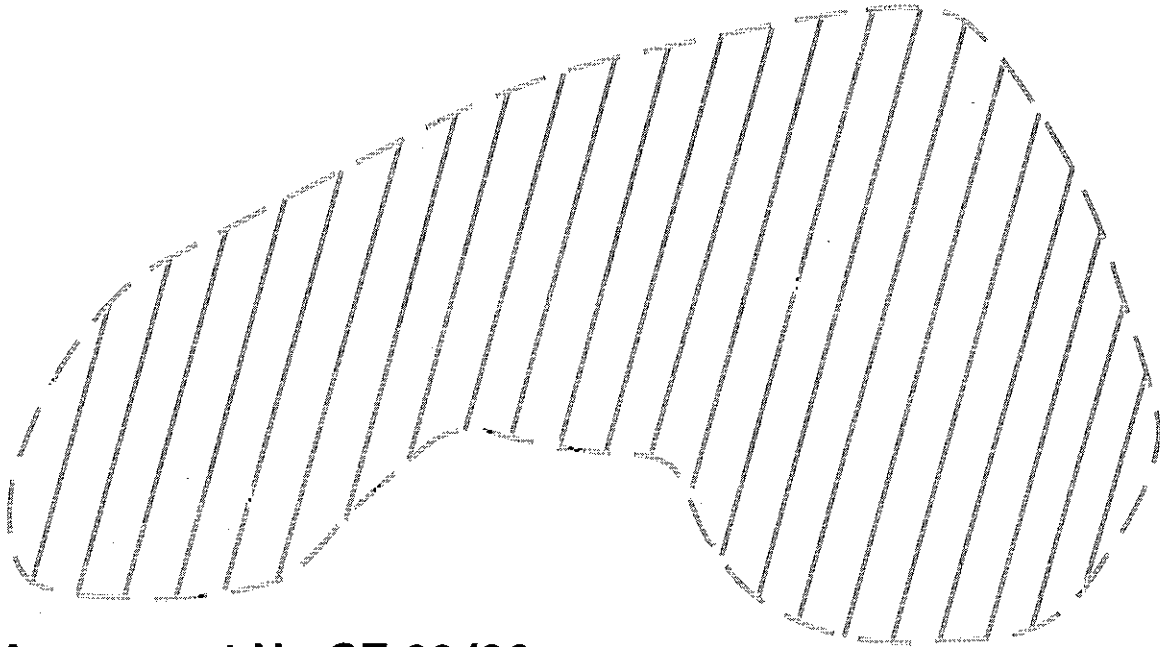




土木工程署
Civil Engineering Department



Agreement No CE 60/96

Northshore Lantau Development Feasibility Study

Environmental Impact Assessment

Final Report

- Volume 3 -

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Scott Wilson (Hong Kong) Ltd in association with **ERM Hong Kong Ltd**
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Executive Summary

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	Chapter 2	Project Description
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	Chapter 4	Noise
	Chapter 5	Water Quality
Volume 2	Chapter 6	Solid Waste Management
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	Chapter 9	Fisheries Impact Assessment
	Chapter 10	Hazard to Life Assessment for Dangerous Goods
	Chapter 11	Historical, Archaeological and Cultural Heritage Assessment
	Chapter 12	Land Contamination
	Chapter 13	Landscape and Visual Impact Assessment
	Chapter 14	Environmental Monitoring & Audit
	Chapter 15	Implementation Schedules
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	Annex B	Air Quality Impact Assessment
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	Annex K	EIA Study Brief (SB-044/BC)
Volume 5	Annex C3 (only)	Construction Noise Impact Assessment – Predicted Noise Levels

Environmental Monitoring & Audit Manual (Annex L)

Annex A

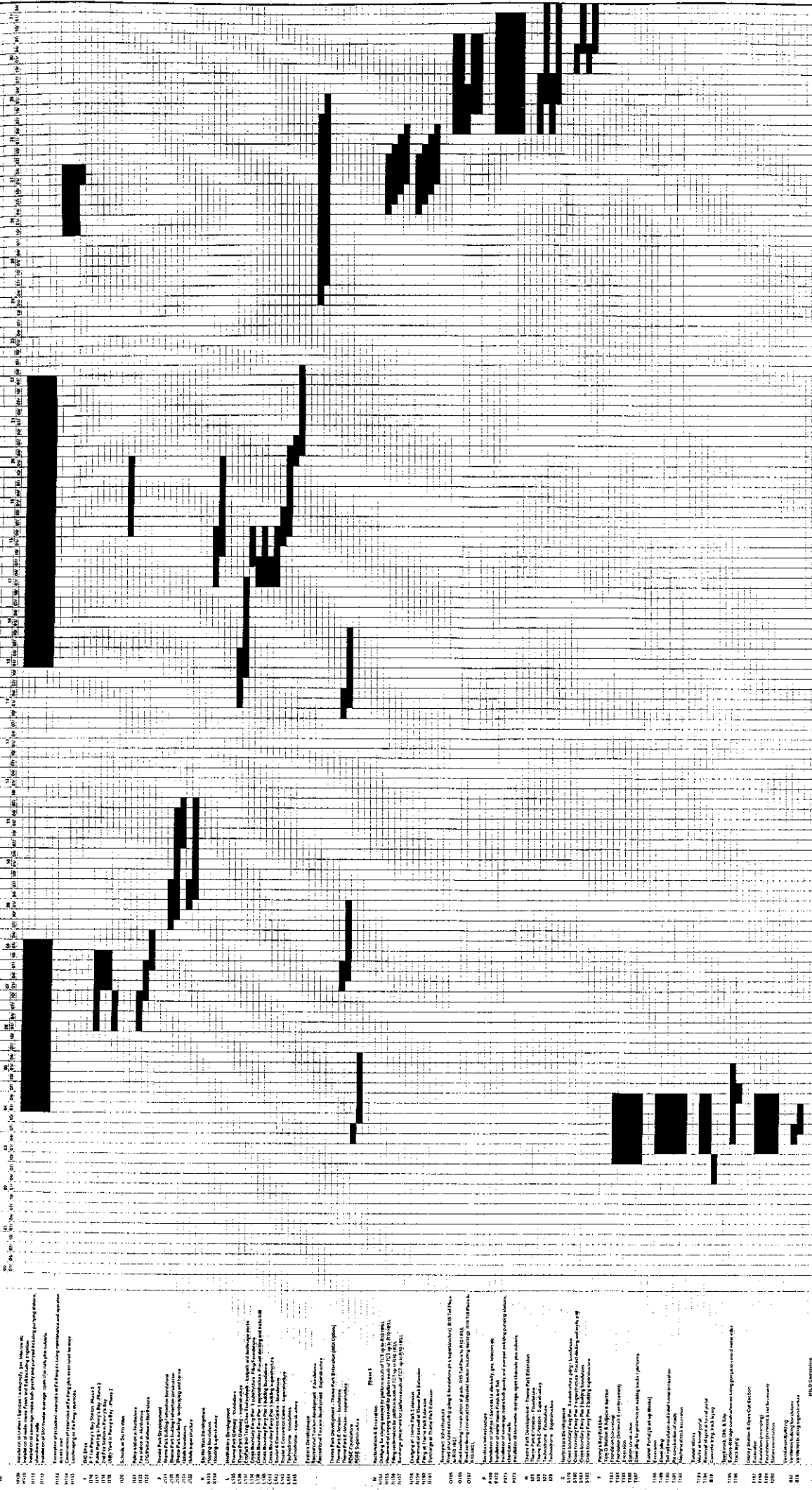
Construction Programme & Phasing

Table A 1 - Construction Programme

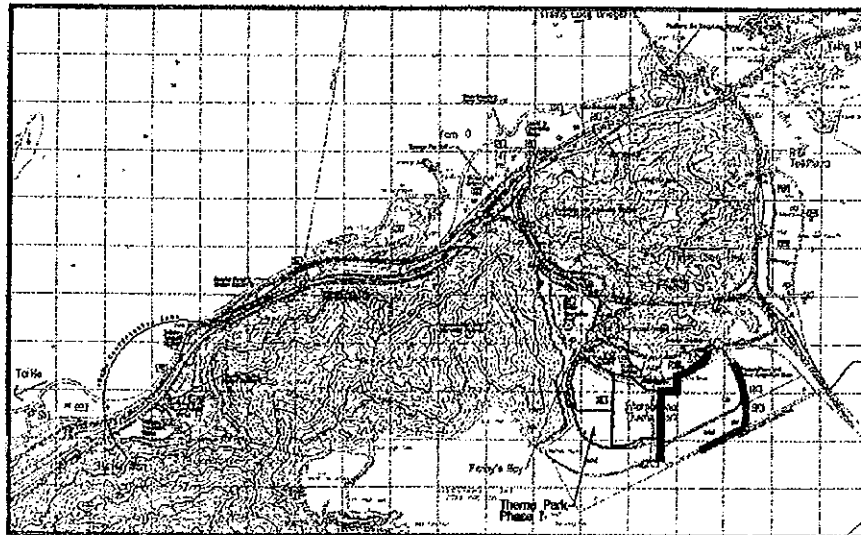
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Teil A 1 - Construction Programme

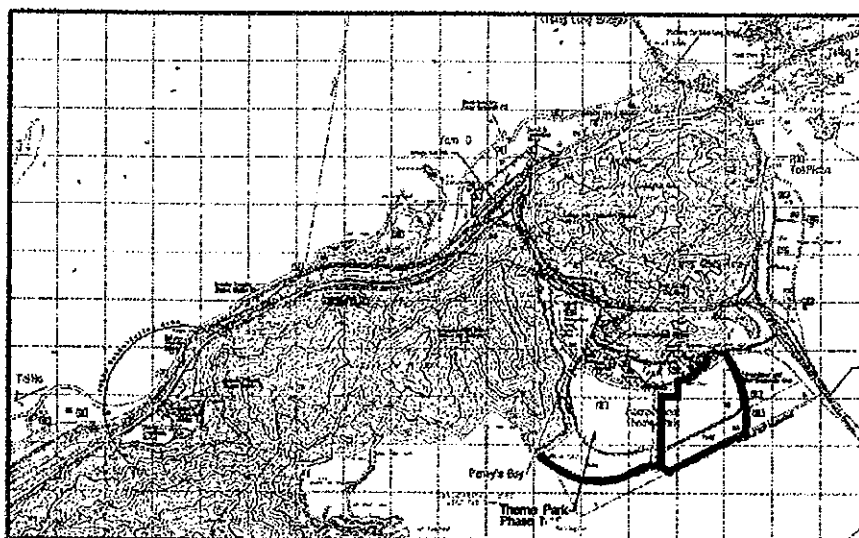
SUPPLEMENT, August 2011



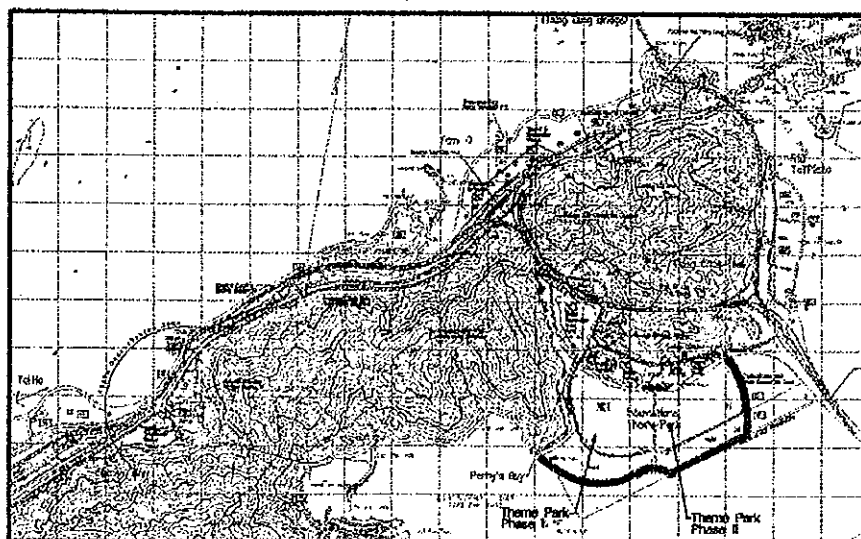
MSO Completion



April 2002



April 2004



April 2006



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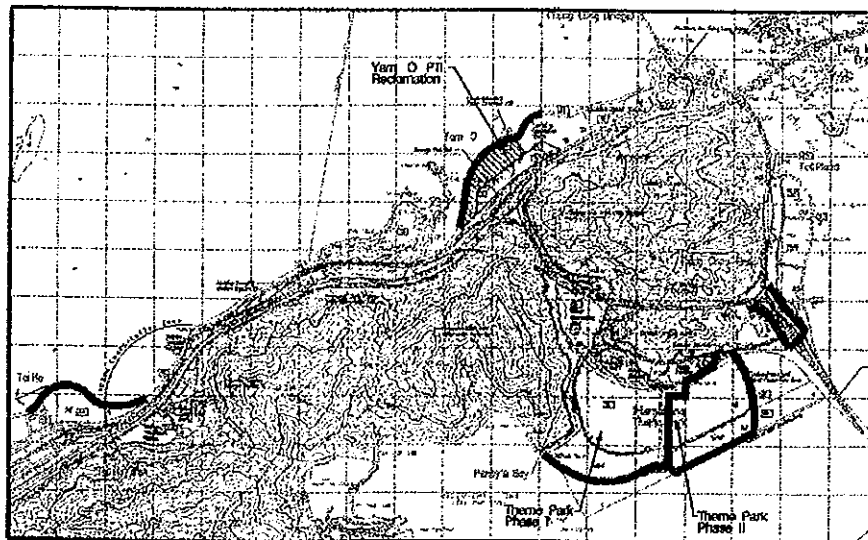
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NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY
RECLAMATION PROGRAMME 2000 - 2006

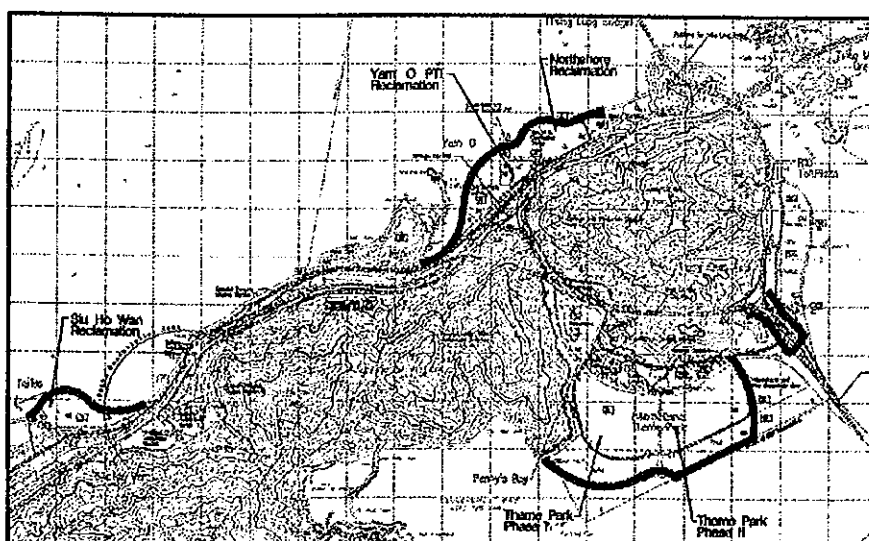
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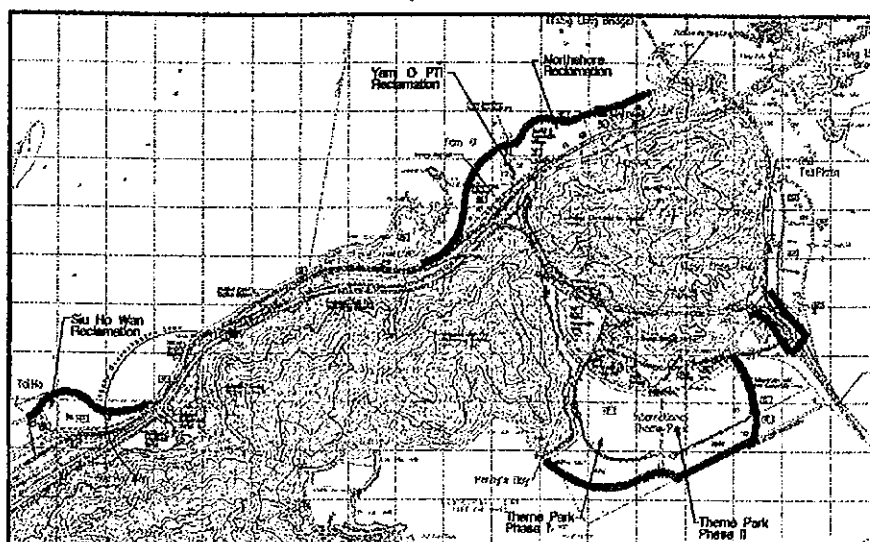
FIG. A1



April 2014



April 2016



April 2018



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DEPARTMENT
土木工程署

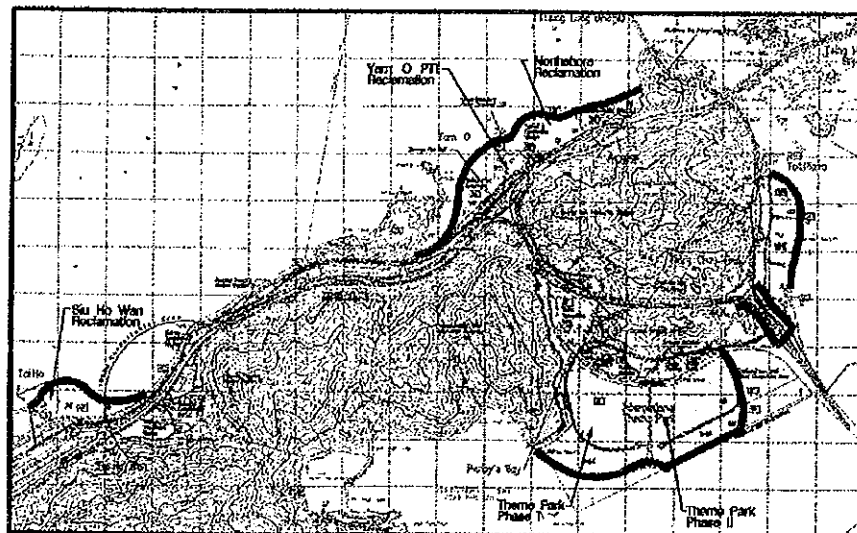
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NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY
RECLAMATION PROGRAMME 2012 - 2018

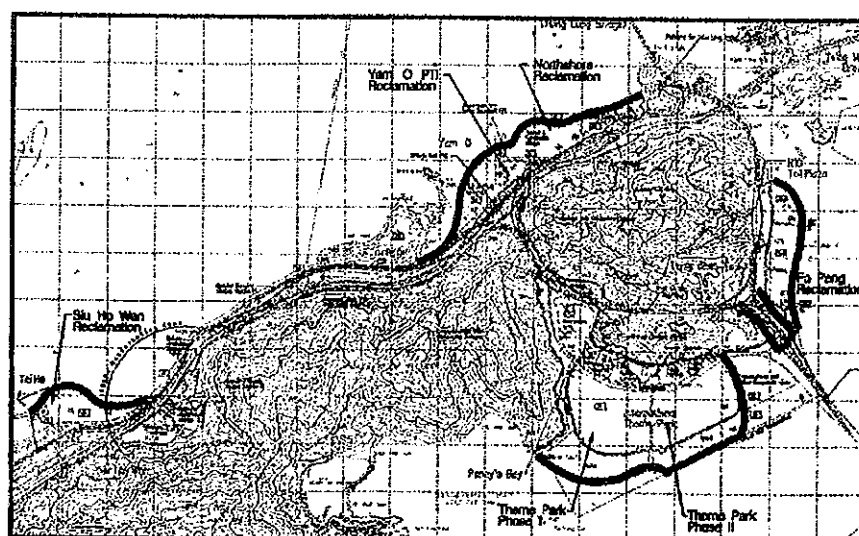
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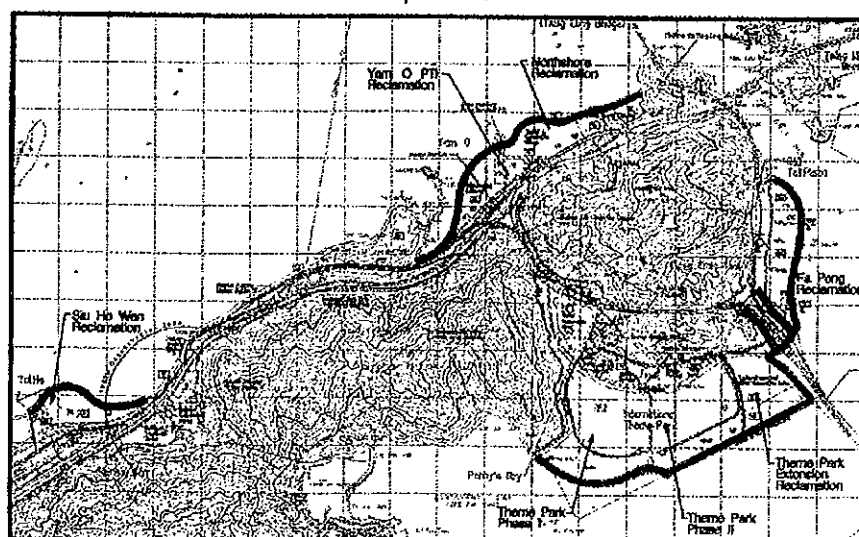
FIG. A2



April 2024



April 2026



April 2028



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NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY
RECLAMATION PROGRAMME 2022 - 2028

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FIG. A3

Annex B

Air Quality Assessment - Supporting Information

Cumulative Works From 4/2000 to 3/2028

Construction period:

16 holiday
24 holiday
16 holiday
5 holiday
24 day/month

(i) Dust Emission Rate for Each Construction Works Area

Activities	Yam O DTP Reclamation	Yam O Excavator (CKMR)	Shiray Rail Link	CKMR (TCT Excavation)	Penix's Bay Steps 1	Penix's Bay Steps 2	SDU	Lake	Yam O TCT Reclamation	CKMR Road
Without Mitigation										
Material Handling (g/25t)	2.8E-07	3.9E-07	1.8E-07	5.3E-07	6.7E-07	2.41E-07	1.54E-07	5.7E-07	3.1E-07	
Wind Erosion (g/25t)	2.7E-06	2.7E-06	2.7E-06	2.7E-06	2.7E-06	2.7E-06	2.7E-06	2.7E-06	2.7E-06	
Concrete Batching Plant (g/25t)	1.3E-03	0.0E+00	4.6E-03	1.3E-02	3.7E-03	4.6E-03	8.5E-04	4.6E-03	1.0E-01	
Material Handling (g/25t)	1.4E-07	2.0E-07	8.1E-06	2.6E-07	3.3E-07	1.21E-07	9.7E-08	2.8E-07	1.8E-07	
Material Handling (g/25t)	2.0E-04	6.0E-04	1.1E-04	2.0E-03	5.5E-04	3.47E-04	1.3E-04	6.0E-04	1.0E-03	
Material Handling Rate (g/25t)	433	590	242	3371	3239	4550	56	59	240	
Material Handling Rate (g/25t)	24000	34000	14000	140000	100000	400000	40000	100000	12000	
Material Handling Rate (g/25t)	25	578	579	504	504	100	504	504	504	
Material Handling Rate (g/25t)	12	24	24	21	21	15	35	35	21	
Material Handling Rate (g/25t)	0.005	0.011	0.005	0.015	0.015	0.007	0.008	0.008	0.007	
Material Handling Rate (g/25t)	2.8E-02	1.8E-02	8.1E-03	1.2E-01	1.1E-01	1.33E-01	1.87E-01	6.9E-02	6.9E-02	
Material Handling Rate (g/25t)	7.5E-100	3	10	30	30	7.5E-100	7.5E-100	2	10	
Material Handling Rate (g/25t)	10000	51004	51004	22839	170000	55918	15000	120000	27000	

Remark: It is assumed that on average dump truck will travel half of the length of the road for each journey.

The dust emission from concrete batching plant is based on the SPH Rate of Cement Voids (Concrete Batching Plant)

(ii) Parameters used in Calculation of Dust Emission Factor

Parameters	Value	Unit
Particle size multiplier	24	
Particle size multiplier	0.74	
Mean no. of wheel	10	
Mean vehicle weight	12.5	kg
Mean road speed	5.1	km/h
Material S&C Content	1	
For Blasting	6.9	%
Material moisture Content	4.8	%
For Material Handling	7.9	%
For Blasting	10	%
S&C content of road surface	18	g/m2
Road surface at loading	18	g/m2
Density	1.6	Mg/m3
Loss	1.6	Mg/m3

(iii) Worksite Area

Construction work zone	Length	Total Area
Yam O Excavator (CKMR)	342.47	51004
Shiray Rail Link		230000
CKMR (TCT Excavation)		230000
CKMR (East of TCT up to R10 Toll Plaza)		200000
Theme Park Phase 2		200000
SDU		16000
Lake		12000
Yam O TCT Reclamation		27000

(iv) Calculation of Dust Emission Factors

Activities	Values	Units
Material Handling	1.8E-07	g/25t
Wind road	2.7E-06	g/25t
Paved road	8.5E-05	g/25t
Relay construction	3.2E-05	g/25t
Wind erosion of exposed area	2.8E-06	g/25t
Batching Plant	1.6E-02	g/25t
Drilling	5.0E-01	kg/m2
Material Handling	3.0E-01	kg/m2
Batching	0.0022	kg/m2

Cumulative Works From 1/2012 to 3/2022

Construction period :

16 hour/day
6 day/week
24 day/month

(i) Dust Emission Rate for Each Construction Works Area

Activities	Northshore	Road P1	Siu Ho Wan	Concrete Batching Plant	Road Construction
	Seawall Dredging Filling	Seawall Dredging Filling	Seawall Dredging Filling		
Without Mitigation					
Wart handling (gm/2s)	1.09E-07	4.51E-07	2.01E-06	1.97E-06	2.25E-06
Wind Erosion (gm/2s) (surcharge)	2.70E-06	2.70E-06	2.70E-06	2.70E-06	2.70E-06
Road Construction (gm/2s)	-	-	-	-	-
Concrete Batching Plant (AP-42) (g/s)	-	-	-	-	-
Haul Road with 10kph (gm/s)	0.00E+00	4.62E-03	0.00E+00	1.38E-03	1.03E-01
With Mitigation					
Wart Handling (gm/2s)	5.47E-08	2.25E-07	1.01E-06	8.86E-07	1.12E-06
Haul Road with 10kph + paved road (85% reduction) (gm/s)	6.94E-04	0.00E+00	0.00E+00	2.77E-04	2.08E-04
Road Construction (Assume 30% active) (gm/2s)	-	-	-	-	-
Concrete Batching Plant (g/s)	-	-	-	-	-
Material Handling Rate (m³/day)	424	2525	1389	1380	7562
Material handled by trucks (m³/day)	672000	4000000	400000	391800	2177650
Volume of Spoil (m³)	1584	1584	288	288	288
Construction Period (days)	66	66	12	12	12
Concrete Batch Capacity (m³/hr)	0.001	0.004	0.017	0.017	0.019
Material Handling Rate (m³/day/area)	1.33E-01	7.89E-01	4.34E-01	4.25E-01	2.38E+00
Wt. of Material handling per second (Mg/s)	-	-	-	-	-
Number of dump trucks (veh/day)	10	10	4	3	10
Capacity of trucks (m³)	7.50E+00	650000	80000	80000	390000
Wettable Area (m²)	460000	-	-	-	-

Remark: It is assumed that on average dump truck will travel half of the length of the haul road for each journey.
The dust emission from concrete batching plant is based on the BPM Rate of Cement Works (Concrete Batching Plant)

(ii) Parameters used in Calculation of Dust Emission Factor

Parameters:	Code	W/O Mitigation	W Mitigation	W Mitigation	Equations:
Particle size multiplier	k	10	10	10	
Particle size multiplier	k	24	0.74	0.74	
Particle size multiplier	w	10	10	10	
Mean no. of wheel	w	12.5	100	100	
Mean vehicle weight	p	1000	1000	1000	
No. of days with at least 0.254 mm ppt.	U	5.1	1	1	
Mean wind speed	S	6.9	6.9	6.9	
Material Silt Content	M	10	10	10	
For Bulkloading	M	7.9	7.9	7.9	
Material moisture Content w/o watering	a	10	10	10	
For Bulkloading	a	10	10	10	
For Haul Road	a	10	10	10	
Silt content of road surface	sl	18	18	18	
Road surface silt loading	sl	1.94	1.94	1.94	
Density	Loose	1.94	1.94	1.94	

Construction work zone	Total Filled Area
Northshore	650000
Road P1	80000
Siu Ho Wan	390000

(iv) Calculation of Dust Emission Factors

Activities	Values: W/O Mitigation	Values: W Mitigation	Units:	Equations:
Material Handling	3.711E-01	2.466E-02	g/Kg	
Haul road	1.664E-03	5.810E-02	g/Kg	
Paved road	5.810E-02	5.810E-02	g/Kg	
Heavy construction	3.243E-06	3.243E-06	g/m²/s	
Bulldozing	3.673E-01	3.673E-01	g/s	
Wind erosion of exposed area	1.680E-06	1.680E-06	g/m²/s	
Batching Plant	5.810E-02	5.810E-02	g/s	
Gravel	8.400E-01	8.400E-01	g/m²/s	
Wind Chilling	3.6150E-01	3.6150E-01	g/s	
Blasting	3.6150E-01	3.6150E-01	g/s	

Cumulative Works From 4/2022 to 9/2031

Construction period :

16 hour/day
6 day/week
24 day/month

(i) Dust Emission Rate for Each Construction Works Area

Activities	Fa Peng Seawall Dredging Filling	Fa Peng Excavation	Peng Reservoir	CKWLR (south of TCT to R10-HKLL) Seawall Dredging Filling	Theme Park Extension Seawall Dredging Filling	Concrete Batching Plant	Road Construction
Without Mitigation							
Material Handling (gm/2s)	7.99E-07	3.82E-06	2.48E-06	1.15E-05	1.48E-06	9.38E-06	
Wind Erosion (gm/2s) (surcharge)		2.70E-06	2.70E-06			2.70E-06	
Road Construction (gm/2s)							3.24E-05
Concrete Batching Plant (AP-42) (g/s)							
Haul Road with 10cm(g/m/s)	4.82E-03		6.94E-03	1.39E-03		1.85E-03	
With Mitigation							
Material Handling (gm/2s)	3.99E-07	1.91E-06	1.23E-06	5.74E-06	7.44E-07	4.68E-06	
Haul Road with 10cm + paved road (65% reduction) (gm/s)	8.94E-04		1.01E-03	2.08E-04	2.77E-04		
Road Construction (Assume 30% active)							
Concrete Batching Plant (g/s)							9.73E-06
Material Handling Rate (m³/day)	789	3770	915	8854	3871	23148	
Material handled by trucks (m³/day)	795000	3800000	480000	3925000	1586000	10000000	
Volume of Spoil (m³)	1008	1008	504	432	432	432	504
Construction Period (days)	42	42	21	16	16	16	21
Construction Period (months)							
Concrete Batch Capacity (m³/hr)	0.002	0.012	0.008	0.035	0.005	0.029	
Material Handling Rate (m³/day/area)	2.48E-01	1.18E+00	2.95E-01	2.77E+00	1.16E+00	7.23E+00	
Wt. of Material handling per second (Mg/s)							
Number of dump trucks (veh/day)		10	15				
Capacity of trucks (m³)	7.50E+00	320000	120000	250000	7.50E+00	800000	
Workable Area (m²)							

Remark: It is assumed that on average dump truck will travel half of the length of the haul road for each journey.
The dust emission from concrete batching plant is based on the BPM Note of Cement Works (Concrete Batching Plant)

(ii) Parameters used in Calculation of Dust Emission Factor

Parameters	Code	W/O Mitigation	W Mitigation	Equations
Particle size multiplier	k	10	10	
Particle size multiplier	k	24	0.74	
Particle size multiplier	k	10	10	
Mean no. of wheel	W	12.5	10	
Mean vehicle weight	W	100	100	
No. of days with at least 0.254 mm ppt	P	1	1	
Mean wind speed	U	5.1	5.1	
Material Silt Content	S	6.9	6.9	
For Batching				
Material moisture Content w/o watering	M	4.8	4.8	
For Material Handling				
For Batching				
For Haul Road				
Silt content of road surface	s	10	10	
Road surface silt loading	sL	18	18	
Density				
Loose		1.94	1.94	

Construction work zone	Total Fill Area
Fa Peng	320000
Peng Reservoir	120000
CKWLR (South to TCT to R10-HKLL)	250000
Theme Park (Phase III) Extension	800000

(iv) Calculation of Dust Emission Factors

Activities	Values: W/O Mitigation	Values: W Mitigation	Equations
Material Handling	1.038E+00	1.684E-03	$k1.0.016[(U/2.2)^{1.3}]/(M/2)^{1.4}$
Haul road	5.810E-02	2.667E-02	$k1.7/6.12[(S/48)/W/2.7]^{0.7}/(W/2)^{0.5}$
Paved road	5.810E-02	5.810E-02	$k1.2/2^{0.65}/(W/2)^{1.5}$
Heavy construction	3.243E-05	3.243E-05	$2.8/(S)^{1.2}/(M)^{1.3}$
Building	9.542E-01	9.542E-01	0.85
Wind erosion of exposed area	2.895E-06	2.895E-06	0.164
Batching Plant	1.640E-02	1.640E-02	0.59
Drilling	5.900E-01	5.900E-01	8.40E-05
Well Drilling	8.400E-02	8.400E-02	0.00022A^{1.5}
Blasting	3.6150E+01	3.6150E+01	

Penny's Bay Rail Link

- Two blast per day
- Blast Area: 35 m²
- Release height = 3m

$$\text{Emission Factor} = 0.00022A^{1.5}$$

$$\text{where } A = 35 \text{ m}^2$$

$$\therefore \text{Emission Factor} = 0.0456 \text{ kg/blast}$$

$$\begin{aligned} \text{Hourly Emission Rate} &= 0.0456 \times 2 / 3600 \times 1000 \\ &= 0.025 \text{ g/s} \end{aligned}$$

$$\begin{aligned} \text{Daily Emission Rate} &= 0.0456 \times 2 / 24 / 3600 \times 1000 \\ &= 0.001054 \text{ g/s} \end{aligned}$$

CKWLR (Yam O and Tsing Chau Tsai Section)

- One blast per day
- Blast Area: 500 m²
- Release height = 5m

$$\text{Emission Factor} = 0.00022A^{1.5}$$

$$\text{where } A = 500 \text{ m}^2$$

$$\therefore \text{Emission Factor} = 2.46 \text{ kg/blast}$$

$$\begin{aligned} \text{Hourly Emission Rate} &= 2.46 / 3600 \times 1000 \\ &= 0.68 \text{ g/s} \end{aligned}$$

$$\begin{aligned} \text{Daily Emission Rate} &= 2.46 / 24 / 3600 \times 1000 \\ &= 0.028 \text{ g/s} \end{aligned}$$

Road P1

- One blast per day
- Blast Area: 90 m²
- Release height = 3m

$$\text{Emission Factor} = 0.00022A^{1.5}$$

$$\text{where } A = 90 \text{ m}^2$$

$$\therefore \text{Emission Factor} = 0.188 \text{ kg/blast}$$

$$\begin{aligned} \text{Hourly Emission Rate} &= 0.188 / 3600 \times 1000 \\ &= 0.052 \text{ g/s} \end{aligned}$$

$$\begin{aligned} \text{Daily Emission Rate} &= 0.188 / 24 / 3600 \times 1000 \\ &= 0.00218 \text{ g/s} \end{aligned}$$

Annex B2 Sample FDM Output File for NLDFS

1 FDM - (DATED 91109)

IBM-PC VERSION (1.01)
(C) COPYRIGHT 1991, TRINITY CONSULTANTS, INC.
SERIAL NUMBER 9142 SOLD TO ERM HONG KONG
RUN BEGAN ON 2/26/00 AT 15:23:07

RUN TITLE:

Cumulative Dust Impact for NSLD (10kph)

INPUT FILE NAME: NSLD1_2.DAT

OUTPUT FILE NAME: NSLD1_2.LST

CONVERGENCE OPTION 1=OFF, 2=ON 1
MET OPTION SWITCH, 1=CARDS, 2=PREPROCESSED 1
PLOT FILE OUTPUT, 1=NO, 2=YES 1
MET DATA PRINT SWITCH, 1=NO, 2=YES 1
POST-PROCESSOR OUTPUT, 1=NO, 2=YES 1
DEP. VEL./GRAV. SETL. VEL., 1=DEFAULT, 2=USER 1
PRINT 1-HOUR AVERAGE CONCEN, 1=NO, 2=YES 3
PRINT 3-HOUR AVERAGE CONCEN, 1=NO, 2=YES 1
PRINT 8-HOUR AVERAGE CONCEN, 1=NO, 2=YES 1
PRINT 24-HOUR AVERAGE CONCEN, 1=NO, 2=YES 3
PRINT LONG-TERM AVERAGE CONCEN, 1=NO, 2=YES 1
BYPASS RAMMET CALMS RECOGNITION, 1=NO, 2=YES 1
NUMBER OF SOURCES PROCESSED 104
NUMBER OF RECEPTORS PROCESSED 20
NUMBER OF PARTICLE SIZE CLASSES 5
NUMBER OF HOURS OF MET DATA PROCESSED 8760
LENGTH IN MINUTES OF 1-HOUR OF MET DATA 60.
ROUGHNESS LENGTH IN CM 80.00
SCALING FACTOR FOR SOURCE AND RECEPTORS 1.0000
PARTICLE DENSITY IN G/CM**3 2.50
ANEMOMETER HEIGHT IN M 10.00

GENERAL PARTICLE SIZE CLASS INFORMATION

PARTICLE SIZE CLASS	GRAV. DIA. (UM)	CHAR. SETTLING VELOCITY (M/SEC)	FRACTION DEPOSITION IN EACH VELOCITY CLASS
1	30.0000000	**	.4900
2	10.0000000	**	.2100
3	5.0000000	**	.1900
4	2.0000000	**	.0700
5	1.0000000	**	.0400

** COMPUTED BY FDM

1

RECEPTOR COORDINATES (X,Y,Z)

(2306., 20179., 5.) (1493., 19396.,140.) (1436., 20164.,180.)
(1087., 20848.,120.) (544., 21462.,15.) (3740., 1804.,10.)
(0., 18200., 5.) (2500., 17000., 5.) (-1990., 19890., 5.)
(-3753., 18804., 5.) (2306., 20179., 15.) (1493., 19396.,150.)
(1434., 20164.,190.) (1087., 20848.,130.) (544., 21462.,25.)
(3740., 21804.,20.) (0., 18200., 15.) (2500., 17000., 15.)
(-1990., 19890., 15.) (-3753., 18804., 15.) (

1

SOURCE INFORMATION

ENTERED EMIS. RATE (G/SEC)	TOTAL EMISSION RATE (G/SEC OR G/SEC/M**2)	WIND SPEED (M/SEC)	X1 (M)	Y1 (M)	X2 (M)	Y2 (M)	HEIGHT (M)	WIDTH (M)
3	.000003400	.05352	.000	835.	21334.	186.	85.	5.00 44.55
3	.000003400	.03182	.000	949.	21470.	168.	56.	5.00 46.22
3	.000003400	.03852	.000	1078.	21598.	195.	58.	5.00 42.75
3	.000003400	.11918	.000	1295.	21790.	388.	90.	5.00 44.93
3	.000002700	.17103	.000	1452.	21092.	189.	335.	5.00 26.65
3	.000002700	.01921	.000	592.	20962.	160.	45.	5.00 43.25
3	.000002700	.01813	.000	698.	21069.	148.	45.	5.00 47.92
3	.000002700	.01554	.000	797.	21178.	147.	39.	5.00 49.04

3	.000002700	.01763	.000	902.	21287.	155.	42.	5.00	46.58
3	.000002700	.11171	.000	1080.	21474.	358.	116.	5.00	43.60
3	.000002700	.09116	.000	1329.	21665.	265.	127.	5.00	44.36
3	.000002700	.05469	.000	1243.	21453.	151.	134.	5.00	44.33
3	.000002700	.02916	.000	1355.	21532.	118.	91.	5.00	44.98
3	.000002700	.01753	.000	1680.	20968.	82.	79.	5.00	-89.10
3	.000002700	.03438	.000	1679.	20813.	222.	57.	5.00	88.81
3	.000002700	.02514	.000	1674.	20611.	182.	51.	5.00	85.84
3	.000002700	.05106	.000	1699.	20402.	82.	229.	5.00	19.91
3	.000002700	.04264	.000	1782.	20204.	80.	198.	5.00	21.87
3	.000002700	.03982	.000	1855.	20031.	83.	177.	5.00	24.68
3	.000002700	.10925	.000	1981.	19836.	163.	248.	5.00	75.52
3	.000002700	.10097	.000	2159.	19718.	170.	220.	5.00	43.72
3	.000002700	.20035	.000	2604.	19683.	181.	409.	5.00	-89.70
3	.000002700	.23937	.000	2535.	19702.	280.	316.	5.00	15.57
3	.000002800	.08892	.000	2558.	20451.	123.	257.	20.00	89.41
3	.000002800	.22216	.000	2941.	20382.	219.	362.	20.00	89.37
3	.000002800	.28272	.000	3353.	20464.	534.	189.	20.00	16.83
3	.000003000	.08751	.000	3693.	20565.	223.	131.	5.00	36.31
3	.000003000	.10483	.000	3799.	20777.	333.	105.	5.00	73.32
3	.000003000	.09541	.000	3845.	21062.	111.	287.	5.00	4.68
3	.000002700	.17751	.000	1631.	20614.	157.	419.	5.00	15.80
3	.000002700	.18124	.000	1754.	20227.	171.	394.	5.00	18.91
3	.000002700	.15088	.000	1966.	20617.	126.	443.	5.00	65.92
3	.000002700	.06017	.000	2211.	20393.	93.	240.	5.00	42.60
3	.000002700	.11694	.000	2097.	20296.	223.	194.	5.00	28.74
3	.000002700	.13165	.000	2133.	20080.	239.	204.	5.00	29.24
3	.000002700	.06805	.000	1753.	19973.	132.	191.	5.00	-4.50
3	.000002700	.67105	.000	2168.	19876.	690.	360.	5.00	-30
3	.000002700	.30736	.000	2043.	19601.	582.	196.	5.00	.20
3	.000002700	.34752	.000	2671.	19596.	681.	189.	5.00	.11
3	.000002700	.90420	.000	2298.	19346.	1095.	306.	5.00	-.08
3	.000002700	.09039	.000	1757.	19096.	176.	190.	5.00	-4.31
3	.000002700	.22709	.000	2083.	19096.	458.	184.	5.00	-.78
3	.000002700	.26161	.000	2581.	19098.	535.	181.	5.00	1.25
3	.000002700	.31773	.000	1729.	18892.	546.	215.	5.00	-.30
3	.000002700	.18178	.000	1813.	18691.	366.	184.	5.00	-1.28
3	.000002700	.57860	.000	2250.	18784.	494.	434.	5.00	-.48
3	.000002700	.32424	.000	2674.	18830.	343.	350.	5.00	.78
3	.000002700	.08789	.000	2866.	19752.	252.	129.	5.00	-1.17
3	.000002700	.04995	.000	2914.	19888.	135.	137.	5.00	-.13
3	.000002700	.23407	.000	3167.	19826.	335.	259.	5.00	.12
3	.000002900	.18533	.000	2930.	19305.	162.	394.	5.00	-.28
3	.000002900	.19680	.000	2931.	18897.	164.	413.	5.00	1.12
3	.000002900	.06687	.000	3128.	18777.	228.	101.	5.00	.86
3	.000002900	.11661	.000	3237.	18885.	445.	90.	5.00	1.31
3	.000002900	.18896	.000	3234.	19010.	438.	149.	5.00	2.09
3	.000002900	.12557	.000	3602.	19021.	295.	147.	5.00	4.68
3	.000002900	.88389	.000	3386.	19295.	742.	411.	5.00	1.22
3	.000002900	.41666	.000	3371.	19602.	711.	202.	5.00	-.16
3	.000002900	.19282	.000	3502.	19809.	329.	202.	5.00	2.20
3	.000002900	.11883	.000	3454.	19999.	244.	168.	5.00	-.92
3	.000002900	.38783	.000	1899.	20420.	235.	570.	5.00	63.78
3	.000002900	.15344	.000	1885.	20220.	128.	415.	5.00	59.83
3	.000002900	.10447	.000	1880.	20077.	122.	296.	5.00	66.42
1	1.030000000	1.03000	.000	1545.	20773.	0.	0.	5.00	.00
2	.000009700	.00351	.000	2015.	22202.	1702.	22021.	5.00	15.00
2	.000009700	.00295	.000	1702.	22021.	1398.	22026.	5.00	15.00
2	.000009700	.00195	.000	1398.	22026.	1385.	21826.	5.00	15.00
2	.000009700	.00313	.000	1422.	21682.	1335.	21372.	5.00	15.00
2	.000009700	.00627	.000	1335.	21372.	1643.	20804.	20.00	15.00
2	.000009700	.00176	.000	1643.	20804.	1807.	20727.	10.00	15.00
2	.000009700	.00284	.000	1807.	20727.	2100.	20722.	5.00	15.00
2	.000009700	.00111	.000	2100.	20722.	2186.	20646.	5.00	15.00
2	.000009700	.00355	.000	1321.	21644.	1304.	21278.	5.00	15.00
2	.000009700	.00266	.000	1031.	21304.	1304.	21278.	5.00	15.00
2	.000009700	.00514	.000	1304.	21278.	1569.	20819.	20.00	55.00
2	.000009700	.00395	.000	1569.	20819.	1866.	20541.	10.00	38.00
2	.000009700	.00338	.000	1866.	20541.	2209.	20480.	5.00	38.00
2	.000009700	.00163	.000	2186.	20646.	2209.	20480.	5.00	15.00
2	.000009700	.00856	.000	2209.	20480.	1842.	19677.	5.00	38.00
2	.000009700	.00551	.000	1842.	19677.	1955.	19120.	5.00	15.00
2	.000009700	.00172	.000	1955.	19120.	2045.	18968.	5.00	15.00
2	.000009700	.00237	.000	2045.	18968.	2267.	18866.	5.00	15.00
2	.000009700	.00365	.000	2267.	18866.	2641.	18910.	5.00	15.00
2	.000009700	.00745	.000	2209.	20480.	2972.	20390.	20.00	30.00
2	.000009700	.00776	.000	2972.	20390.	3756.	20551.	20.00	30.00
2	.000009700	.00639	.000	3756.	20551.	3850.	21203.	20.00	30.00
2	.000009700	.00680	.000	2693.	19863.	2030.	20091.	20.00	30.00
2	.000208000	.19388	.000	753.	21279.	1427.	21923.	5.00	5.00
2	.000116000	.02461	.000	1126.	21535.	1337.	21517.	5.00	5.00
2	.000116000	.06557	.000	1683.	21015.	1679.	20450.	5.00	5.00
2	.000116000	.07376	.000	1679.	20450.	1939.	19870.	5.00	5.00
2	.000116000	.04297	.000	1939.	19870.	2264.	19691.	5.00	5.00
2	.000694000	13.68593	.000	1365.	1230.	1527.	20950.	20.00	5.00

2	.000694000	.54591	.000	1579.	20816.	1968.	20132.	5.00	5.00
2	.002080000	.53128	.000	2434.	20471.	2689.	20448.	20.00	5.00
2	.000555000	.43964	.000	2971.	20385.	3747.	20543.	5.00	5.00
2	.000555000	.36834	.000	3747.	20543.	3858.	21198.	5.00	5.00
2	.000694000	.69461	.000	1574.	20785.	1882.	19832.	5.00	5.00
2	.000694000	.68968	.000	1882.	19832.	1888.	18839.	5.00	5.00
2	.000347000	.29103	.000	3397.	19998.	3530.	19170.	5.00	5.00
3	.000002800	.16924	.000	-67.	20261.	238.	254.	20.00	46.01
3	.000002800	.14532	.000	-2008.	20217.	436.	119.	5.00	38.72
2	.001040000	.34798	.000	-106.	20323.	50.	20619.	20.00	5.00
2	.000139000	.09374	.000	-2127.	19965.	-2554.	19443.	5.00	5.00

=====

TOTAL EMISSIONS 30.64887

1

TOP 50 TABLE FOR 1 HOUR AVERAGES

RANK	RECEPTOR	X-COORDINATE	Y-COORDINATE	ENDING HOUR	CONCENTRATION	DEPOSITION
------	----------	--------------	--------------	-------------	---------------	------------

1	5	544.0	21462.0	7083	115.1804	.7633
2	1	2306.0	20179.0	6053	113.4374	.8399
3	5	544.0	21462.0	7631	108.0072	.7223
4	15	544.0	21462.0	7083	101.0200	.6624
5	11	2306.0	20179.0	6053	96.5943	.6918
6	5	544.0	21462.0	7634	95.8806	.6751
7	1	2306.0	20179.0	2956	95.8047	.6934
8	1	2306.0	20179.0	6123	95.8036	.7004
9	1	2306.0	20179.0	4923	95.1707	.7855
10	15	544.0	21462.0	7631	94.7843	.6271
11	1	2306.0	20179.0	6069	91.8718	.7530
12	1	2306.0	20179.0	1759	91.3898	.5938
13	1	2306.0	20179.0	7804	90.9165	1.5831
14	5	544.0	21462.0	1412	90.8740	.6349
15	5	544.0	21462.0	4100	90.8258	.8740
16	1	2306.0	20179.0	8730	89.7629	.5968
17	1	2306.0	20179.0	3889	88.5822	.6797
18	5	544.0	21462.0	1589	88.4383	.5409
19	1	2306.0	20179.0	1169	88.2199	1.4552
20	5	544.0	21462.0	2997	87.0353	.8689
21	8	2500.0	17000.0	5450	86.4323	.5410
22	1	2306.0	20179.0	7338	85.0734	1.6558
23	15	544.0	21462.0	7634	84.2630	.5870
24	3	1436.0	20164.0	1589	84.2469	.5208
25	13	1434.0	20164.0	1589	84.0721	.5197
26	5	544.0	21462.0	8469	83.6611	.8556
27	5	544.0	21462.0	1781	83.6300	.8626
28	5	544.0	21462.0	7636	83.5836	.8732
29	11	2306.0	20179.0	1169	83.2580	1.2842
30	18	2500.0	17000.0	5450	83.0351	.5144
31	11	2306.0	20179.0	8730	82.7640	.5494
32	5	544.0	21462.0	1562	82.5216	.5198
33	1	2306.0	20179.0	8425	82.5151	1.6727
34	1	2306.0	20179.0	7364	82.4454	1.6850
35	1	2306.0	20179.0	7613	82.4087	.6525
36	1	2306.0	20179.0	2667	82.4084	.6548
37	5	544.0	21462.0	1753	82.3856	.5319
38	1	2306.0	20179.0	4999	82.2738	1.7155
39	11	2306.0	20179.0	1759	81.5675	.5248
40	11	2306.0	20179.0	4923	81.3764	.6520
41	8	2500.0	17000.0	186	80.5796	.4645
42	5	544.0	21462.0	1415	80.5394	.8583
43	1	2306.0	20179.0	2853	79.9164	.6679
44	15	544.0	21462.0	1412	79.8726	.5518
45	4	1087.0	20848.0	7083	79.8106	.5317
46	14	1087.0	20848.0	7083	79.8096	.5317
47	15	544.0	21462.0	4100	79.1038	.6995
48	3	1436.0	20164.0	1562	78.4518	.4989
49	3	1436.0	20164.0	1753	78.4510	.5113
50	13	1434.0	20164.0	1562	78.2886	.4978

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HIGHEST AND SECOND HIGHEST VALUES FOR 1 HOUR AVERAGES

RECEPTOR	X-COORDINATE	Y-COORDINATE	HIGHEST VALUE	ENDING HOUR	DEPOSITION	SECOND HIGH	ENDING HOUR	DEPOSITION
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1	2306.0	20179.0	113.4374	6053.	.8399	95.8047	2956.	.6934
2	1493.0	19396.0	68.1195	1750.	.4347	63.4357	5409.	.4309
3	1436.0	20164.0	84.2469	1589.	.5208	78.4518	1562.	.4989
4	1087.0	20848.0	79.8106	7083.	.5317	74.6696	7631.	.5011

5	544.0	21462.0	115.1804	7083.	.7633	108.0072	7631.	.7223
6	3740.0	1803.8	17.9918	5450.	.1018	17.1128	186.	.0896
7	.0	18200.0	66.5790	4483.	.4171	61.6902	412.	.3686
8	2500.0	17000.0	86.4323	5450.	.5410	80.5796	186.	.4645
9	-1990.0	19890.0	43.7473	1750.	.2723	41.0900	2207.	.2414
10	-3753.0	18804.0	37.5821	1750.	.2259	35.2772	5409.	.2268
11	2306.0	20179.0	96.5943	6053.	.6918	83.2580	1169.	1.2842
12	1493.0	19396.0	68.1194	1750.	.4347	63.4356	5409.	.4309
13	1434.0	20164.0	84.0721	1589.	.5197	78.2886	1562.	.4978
14	1087.0	20848.0	79.8096	7083.	.5317	74.6686	7631.	.5011
15	544.0	21462.0	101.0200	7083.	.6624	94.7843	7631.	.6271
16	3740.0	21803.8	56.4117	1759.	.3386	50.9269	8730.	.3178
17	.0	18200.0	63.8055	4483.	.3955	59.2186	412.	.3501
18	2500.0	17000.0	83.0351	5450.	.5144	77.4829	186.	.4419
19	-1990.0	19890.0	41.3399	1750.	.2532	39.9647	2207.	.2326
20	-3753.0	18804.0	36.2726	1750.	.2153	34.1002	5409.	.2168

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TOP 50 TABLE FOR 24 HOUR AVERAGES

RANK RECEPTOR X-COORDINATE Y-COORDINATE ENDING HOUR CONCENTRATION DEPOSITION

1	1	2306.0	20179.0	4944C	39.2220	1.0415
2	1	2306.0	20179.0	2880C	35.9991	.7827
3	11	2306.0	20179.0	4944C	35.1046	.9082
4	1	2306.0	20179.0	7632C	33.9377	.8726
5	1	2306.0	20179.0	2520C	33.7046	.9153
6	1	2306.0	20179.0	5016C	33.3567	1.1180
7	1	2306.0	20179.0	6144C	32.5459	1.0306
8	11	2306.0	20179.0	2880C	32.3932	.6893
9	1	2306.0	20179.0	3288C	32.1914	1.0063
10	1	2306.0	20179.0	2928C	32.0231	1.0953
11	11	2306.0	20179.0	7632C	31.4676	.7751
12	1	2306.0	20179.0	1776C	31.2873	.5941
13	3	1436.0	20164.0	1752C	31.0593	.6855
14	13	1434.0	20164.0	1752C	30.9823	.6829
15	11	2306.0	20179.0	3288C	30.8963	.9571
16	1	2306.0	20179.0	4992C	30.6245	1.2803
17	1	2306.0	20179.0	6120C	30.6197	1.0537
18	11	2306.0	20179.0	5016C	30.6022	1.0030
19	1	2306.0	20179.0	4920C	30.3144	1.0071
20	1	2306.0	20179.0	2856C	30.2676	.6277
21	1	2306.0	20179.0	7056C	30.0654	1.1666
22	11	2306.0	20179.0	1776C	29.5152	.5701
23	11	2306.0	20179.0	2928C	29.4144	1.0120
24	11	2306.0	20179.0	2520C	29.1893	.7905
25	1	2306.0	20179.0	7920C	28.9812	1.3053
26	1	2306.0	20179.0	3240C	28.6043	1.1094
27	11	2306.0	20179.0	4920C	28.1380	.9270
28	1	2306.0	20179.0	5928C	28.0635	1.1013
29	11	2306.0	20179.0	6144C	28.0189	.8773
30	11	2306.0	20179.0	7056C	27.7596	1.0366
31	11	2306.0	20179.0	3240C	27.7524	1.0675
32	2	1493.0	19396.0	1752C	27.7443	.4932
33	12	1493.0	19396.0	1752C	27.7344	.4928
34	1	2306.0	20179.0	4176C	27.6290	1.1522
35	1	2306.0	20179.0	6072C	27.6122	.7268
36	11	2306.0	20179.0	2856C	27.5971	.5352
37	1	2306.0	20179.0	2904C	27.4483	.9524
38	1	2306.0	20179.0	3912C	27.4308	.9000
39	3	1436.0	20164.0	2232C	27.2325	.8894
40	11	2306.0	20179.0	7920C	27.2270	1.2202
41	13	1434.0	20164.0	2232C	27.1721	.8866
42	11	2306.0	20179.0	4992C	26.9019	1.1077
43	1	2306.0	20179.0	4968C	26.8266	1.2100
44	11	2306.0	20179.0	4176C	26.2757	1.0812
45	11	2306.0	20179.0	5928C	26.2539	1.0089
46	1	2306.0	20179.0	4200C	26.1729	1.2569
47	11	2306.0	20179.0	2904C	25.9741	.8646
48	1	2306.0	20179.0	6048C	25.8949	.9830
49	1	2306.0	20179.0	3672C	25.8711	1.2730
50	1	2306.0	20179.0	4224C	25.7072	.9142

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HIGHEST AND SECOND HIGHEST VALUES FOR 24 HOUR AVERAGES

RECEPTOR X-COORDINATE Y-COORDINATE HIGHEST VALUE ENDING HOUR DEPOSITION SECOND HIGH ENDING HOUR DEPOSITION

1	2306.0	20179.0	39.2220	4944.C	1.0415	35.9991	2880.C	.7827
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2	1493.0	19396.0	27.7443	1752.C	.4932	20.9321	2232.C	.6277
3	1436.0	20164.0	31.0593	1752.C	.6855	27.2325	2232.C	.8894
4	1087.0	20848.0	18.0598	7656.C	.5155	17.4526	1728.C	.5558
5	544.0	21462.0	22.2030	7656.C	.6069	20.8956	1416.C	.3647
6	3740.0	1803.8	2.7553	5472.C	.0288	2.5164	7824.C	.0342
7	.0	18200.0	14.9250	432.C	.2093	10.8371	2424.C	.2044
8	2500.0	17000.0	14.3715	5472.C	.2189	14.1102	960.C	.4059
9	-1990.0	19890.0	8.5243	1752.C	.0945	7.0308	2184.C	.3951
10	-3753.0	18804.0	5.6436	1752.C	.0499	3.8899	384.C	.0922
11	2306.0	20179.0	35.1046	4944.C	.9082	32.3932	2880.C	.6893
12	1493.0	19396.0	27.7344	1752.C	.4928	20.9222	2232.C	.6274
13	1434.0	20164.0	30.9823	1752.C	.6829	27.1721	2232.C	.8866
14	1087.0	20848.0	17.9427	7656.C	.5099	17.2690	1728.C	.5480
15	544.0	21462.0	20.1342	7656.C	.5602	18.9933	1416.C	.3290
16	3740.0	21803.8	12.9557	3240.C	.4085	12.1491	7920.C	.4834
17	.0	18200.0	14.3183	432.C	.1914	10.3296	2424.C	.1915
18	2500.0	17000.0	13.9361	5472.C	.2118	13.9209	960.C	.4000
19	-1990.0	19890.0	8.1905	1752.C	.0896	6.9572	2184.C	.3891
20	-3753.0	18804.0	5.4383	1752.C	.0474	3.7999	384.C	.0891

RUN ENDED ON 2/26/00 AT 18:12:17

Annex B3

Sample CALINE4 Output File for NLDFS

1 CALINE4 - (DATED CALINE4x)

3.0.0 PC (32 BIT) VERSION

(C) COPYRIGHT 1999, TRINITY CONSULTANTS

Run Began on 3/08/2000 at 17:26:17

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: NO2

RUN: 10 m (WORST CASE ANGLE)

POLLUTANT: Inert Gases

I. SITE VARIABLES

U= 1.0 M/S Z0= 80. CM ALT= 0. (M)
BRG= WORST CASE VD= 0.0 CM/S
CLAS= 4 (D) VS= 0.0 CM/S
MIXH= 500. M AMB= 0.0 PPM
SIGTH= 12. DEGREES TEMP= 25.5 DEGREE (C)

II. LINK VARIABLES

LINK	* LINK COORDINATES (M) *	EF	H	W
DESCRIPTION	* X1 Y1 X2 Y2 * TYPE VPH (G/MI) (M) (M)			
1. Link 1	* ***** BG 9101 39.4 10.0 36.0			
2. Link 2	* ***** BG 9101 39.4 10.0 36.0			
3. Link 3	* ***** BG 9101 39.4 10.0 36.0			
4. Link 4	* ***** BG 9101 39.4 10.0 36.0			
5. Link 6	* ***** AG 9101 39.4 9.0 36.0			
6. Link 7	* ***** AG 9427 38.1 4.0 36.0			
7. Link 8	* ***** BG 9427 25.8 4.0 46.0			
8. Link 9	* ***** BG 8627 31.7 9.0 46.0			
9. Link 10	* ***** BG 8627 31.7 10.0 36.0			
10. Link 11	* ***** FL 8627 31.7 10.0 36.0			
11. Link 12	* ***** FL 8627 31.7 9.0 46.0			
12. Link 13	* ***** FL 8627 31.7 4.0 36.0			
13. Link 14	* ***** AG 8627 31.7 4.0 36.0			
14. Link 15	* ***** AG 8627 31.7 4.0 36.0			
15. Link 16	* ***** AG 6117 23.8 4.0 36.0			
16. Link 17	* ***** AG 6117 23.8 10.0 36.0			
17. Link 18	* ***** AG 6117 23.8 10.0 36.0			
18. Link 19	* ***** AG 6117 23.8 4.0 36.0			
19. Link 21	* ***** AG 6117 23.8 4.0 36.0			
20. Link 22	* ***** AG 6117 23.8 9.0 36.0			
21. Link 23	* ***** AG 2445 21.7 9.0 36.0			
22. Link 24	* ***** AG 2445 21.7 4.0 36.0			
23. Link 25	* ***** AG 2445 21.7 0.0 36.0			
24. Link 26	* ***** AG 6117 23.8 0.0 36.0			
25. Link 27	* ***** BG 5470 22.9 10.0 36.0			
26. Link 28	* ***** BG 5470 22.9 10.0 31.0			
27. Link 29	* ***** FL 5470 22.9 10.0 31.0			
28. Link 30	* ***** BG 5470 22.9 10.0 31.0			
29. Link 31	* ***** BG 5470 22.9 9.0 31.0			
30. Link 32	* ***** BG 4890 21.7 4.0 46.0			
31. Link 33	* ***** AG 4890 21.7 4.0 31.0			

32. Link 34	* ***** * AG	5470	22.9	4.0	31.0
33. Link 35	* ***** * AG	4890	21.7	4.0	31.0
34. Link 36	* ***** * AG	4890	21.7	4.0	31.0
35. Link 37	* ***** * AG	6462	21.7	0.0	31.0
36. Link 38	* ***** * BG	6462	21.7	10.0	36.0
37. Link 39	* ***** * BG	6462	21.7	10.0	36.0
38. Link 40	* ***** * BG	6462	21.7	10.0	36.0
39. Link 41	* ***** * BG	9026	28.5	10.0	36.0
40. Link 42	* ***** * FL	9026	28.5	10.0	41.0
41. Link 43	* ***** * BG	9026	28.5	10.0	41.0
42. Link 44	* ***** * FL	6462	21.7	10.0	41.0
43. Link 45	* ***** * BG	6462	21.7	9.0	66.0
44. Link 46	* ***** * BG	6462	21.7	9.0	66.0
45. Link 47	* ***** * BG	2445	21.7	9.0	66.0
46. Link 48	* ***** * AG	2445	21.7	2.0	31.0
47. Link 49	* ***** * AG	2445	21.7	0.0	31.0
48. Link 50	* ***** * AG	2445	21.7	0.0	31.0
49. Link 51	* ***** * AG	2445	21.7	0.0	31.0
50. Link 52	* ***** * AG	2445	21.7	0.0	31.0
51. Link 51	* ***** * AG	0	0.0	0.0	31.0

III. RECEPTOR LOCATIONS

* COORDINATES (M)

RECEPTOR	* X	Y	Z
1. REC1	* 822306	820179	10.0
2. REC2	* 821493	819396	135.0
3. REC3	* 821434	820164	175.0
4. REC4	* 821087	820848	115.0
5. REC5	* 820544	821462	10.0
6. REC7	* 818010	819890	10.0
7. REC8	* 816247	818804	10.0
8. REC9	* 822742	819534	10.0
9. REC10	* 822224	818782	10.0
10. REC11	* 822229	819837	10.0
11. REC12	* 822608	819792	10.0
12. REC13	* 823242	819765	10.0
13. REC14	* 823917	819897	10.0
14. REC15	* 821955	820036	10.0
15. REC16	* 820309	821067	15.0
16. REC17	* 816699	819309	10.0
17. REC18	* 816817	819087	10.0
18. REC19	* 820968	821684	10.0
19. REC20	* 821515	822141	10.0
20. REC21	* 822203	822380	10.0
21. REC22	* 823974	820792	10.0
22. REC23	* 820000	818200	10.0
23. REC24	* 822500	817000	10.0

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	* (DEG)	* PRED	CONC/LINK								
		* BRG	* CONC	(PPM)							
				1	2	3	4	5	6	7	8
1. REC1	* 316.	* 2.5	* 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2. REC2	* 360.	* 0.4	* 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3. REC3	* 80.	* 0.2	* 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4. REC4	* 262.	* 0.7	* 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5. REC5	* 112.	* 2.5	* 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
6. REC7	* 237.	* 3.0	* 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7. REC8	* 60.	* 1.6	* 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8. REC9	* 322.	* 1.5	* 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

9. REC10	*	345.	*	1.1	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10. REC11	*	333.	*	2.0	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11. REC12	*	319.	*	2.1	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12. REC13	*	25.	*	1.7	*	0.0	0.0	0.0	0.0	0.2	0.3	0.1	0.0		
13. REC14	*	355.	*	2.5	*	0.0	0.1	0.1	0.1	0.2	0.5	0.3	0.0		
14. REC15	*	93.	*	1.7	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1		
15. REC16	*	83.	*	2.8	*	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0		
16. REC17	*	66.	*	1.6	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
17. REC18	*	58.	*	2.5	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
18. REC19	*	139.	*	2.8	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
19. REC20	*	196.	*	2.6	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
20. REC21	*	228.	*	3.1	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
21. REC22	*	343.	*	2.9	*	0.0	0.1	0.2	0.1	0.8	0.7	0.0	0.0		
22. REC23	*	24.	*	0.6	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
23. REC24	*	350.	*	0.5	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		

* CONC/LINK
 * (PPM)
 RECEPTOR * 9 10 11 12 13 14 15 16

1. REC1	*	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2. REC2	*	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3. REC3	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4. REC4	*	0.0	0.0	0.0	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5. REC5	*	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6. REC7	*	0.0	0.0	0.0	0.0	0.0	2.0	0.1	0.0						
7. REC8	*	0.0	0.1	0.1	0.1	0.1	0.3	0.0	0.0						
8. REC9	*	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0						
9. REC10	*	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0						
10. REC11	*	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0						
11. REC12	*	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0						
12. REC13	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
13. REC14	*	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
14. REC15	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
15. REC16	*	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0						
16. REC17	*	0.0	0.1	0.1	0.1	0.2	0.3	0.0	0.0						
17. REC18	*	0.0	0.1	0.1	0.1	0.2	0.5	0.0	0.0						
18. REC19	*	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0						
19. REC20	*	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0						
20. REC21	*	0.0	0.3	0.8	0.1	0.0	0.0	0.0	0.0						
21. REC22	*	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0						
22. REC23	*	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0						
23. REC24	*	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0						

* CONC/LINK
 * (PPM)
 RECEPTOR * 17 18 19 20 21 22 23 24

1. REC1	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2. REC2	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3. REC3	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4. REC4	*	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5. REC5	*	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6. REC7	*	0.2	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7. REC8	*	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8. REC9	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9. REC10	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10. REC11	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11. REC12	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12. REC13	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13. REC14	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14. REC15	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15. REC16	*	0.0	0.0	0.0	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16. REC17	*	0.0	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

17. REC18	*	0.6	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0
18. REC19	*	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
19. REC20	*	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0
20. REC21	*	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.5	0.0
21. REC22	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22. REC23	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23. REC24	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

		CONC/LINK									
		(PPM)									
RECEPTOR	*	25	26	27	28	29	30	31	32		

1. REC1	*	0.1	0.0	0.2	0.2	0.0	0.3	0.0	0.0		
2. REC2	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
3. REC3	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
4. REC4	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
5. REC5	*	0.3	0.0	0.2	0.1	0.0	0.0	0.0	0.0		
6. REC7	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
7. REC8	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
8. REC9	*	0.1	0.0	0.1	0.1	0.0	0.1	0.3	0.0		
9. REC10	*	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0		
10. REC11	*	0.1	0.1	0.1	0.1	0.0	0.3	0.4	0.0		
11. REC12	*	0.1	0.0	0.1	0.1	0.0	0.2	0.6	0.0		
12. REC13	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4		
13. REC14	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
14. REC15	*	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.2		
15. REC16	*	0.3	0.0	0.1	0.0	0.0	0.0	0.0	0.0		
16. REC17	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
17. REC18	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
18. REC19	*	0.3	0.0	0.3	0.1	0.0	0.1	0.1	0.0		
19. REC20	*	0.3	0.5	0.0	0.0	0.0	0.0	0.0	0.0		
20. REC21	*	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0		
21. REC22	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
22. REC23	*	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
23. REC24	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		

		CONC/LINK									
		(PPM)									
RECEPTOR	*	33	34	35	36	37	38	39	40		

1. REC1	*	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.4		
2. REC2	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1		
3. REC3	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
4. REC4	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
5. REC5	*	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.3		
6. REC7	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
7. REC8	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
8. REC9	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1		
9. REC10	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1		
10. REC11	*	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.2		
11. REC12	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2		
12. REC13	*	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0		
13. REC14	*	0.3	0.1	0.3	0.0	0.0	0.0	0.0	0.0		
14. REC15	*	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
15. REC16	*	0.0	0.0	0.0	0.0	0.1	0.1	0.6	0.1		
16. REC17	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
17. REC18	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
18. REC19	*	0.0	0.0	0.0	0.0	0.3	0.2	0.0	0.4		
19. REC20	*	0.0	0.0	0.0	0.2	0.2	0.1	0.0	0.0		
20. REC21	*	0.0	0.0	0.0	0.3	0.0	0.0	0.1	0.0		
21. REC22	*	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0		
22. REC23	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1		
23. REC24	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		

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      *      CONC/LINK
      *      (PPM)
RECEPTOR * 41 42 43 44 45 46 47 48
-----*-----
1. REC1 * 0.8 0.0 0.0 0.0 0.0 0.0 0.0 0.0
2. REC2 * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
3. REC3 * 0.0 0.1 0.0 0.0 0.0 0.0 0.0 0.0
4. REC4 * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
5. REC5 * 0.0 0.1 0.0 0.0 0.0 0.0 0.0 0.0
6. REC7 * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
7. REC8 * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
8. REC9 * 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0
9. REC10 * 0.1 0.0 0.0 0.0 0.0 0.1 0.0 0.3
10. REC11 * 0.3 0.0 0.0 0.0 0.0 0.0 0.0 0.0
11. REC12 * 0.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0
12. REC13 * 0.0 0.1 0.3 0.1 0.0 0.0 0.0 0.0
13. REC14 * 0.0 0.0 0.2 0.3 0.0 0.0 0.0 0.0
14. REC15 * 0.0 0.0 0.0 0.0 0.0 0.3 0.0 0.0
15. REC16 * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
16. REC17 * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
17. REC18 * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
18. REC19 * 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0
19. REC20 * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
20. REC21 * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
21. REC22 * 0.0 0.0 0.2 0.0 0.0 0.0 0.0 0.0
22. REC23 * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
23. REC24 * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

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      *CONC/LINK
      *(PPM)
RECEPTOR * 49 50 51
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1. REC1 * 0.0 0.0 0.0
2. REC2 * 0.0 0.0 0.0
3. REC3 * 0.0 0.0 0.0
4. REC4 * 0.0 0.0 0.0
5. REC5 * 0.0 0.0 0.0
6. REC7 * 0.0 0.0 0.0
7. REC8 * 0.0 0.0 0.0
8. REC9 * 0.0 0.0 0.0
9. REC10 * 0.0 0.0 0.0
10. REC11 * 0.0 0.0 0.0
11. REC12 * 0.0 0.0 0.0
12. REC13 * 0.0 0.0 0.0
13. REC14 * 0.0 0.0 0.0
14. REC15 * 0.0 0.0 0.0
15. REC16 * 0.0 0.0 0.0
16. REC17 * 0.0 0.0 0.0
17. REC18 * 0.0 0.0 0.0
18. REC19 * 0.0 0.0 0.0
19. REC20 * 0.0 0.0 0.0
20. REC21 * 0.0 0.0 0.0
21. REC22 * 0.0 0.0 0.0
22. REC23 * 0.0 0.0 0.0
23. REC24 * 0.0 0.0 0.0

```

Run Ended on 3/08/2000 at 17:27:46

Annex B4
Industrial Emissions from Boilers in Theme Park

Boilers - heating

Natural Gas														
QUANTITY	HEIGHTAG (m)	TOPDIA (mm)	GTEMP_EXIT degree C	GTEMP_EXIT degree K	Total Fuel Cons. kWh/yr	#MAX_NG (m3/s)	PM		SO2		NO2		CO g/s	
							total	each	total	each	total	each		
Park #1														
Main Street	1	6.0	500	190	463	356,400	1.091E-03	7.857E-05	7.857E-05	1.048E-05	5.238E-05	5.238E-04	3.274E-04	
Fantasyland	2	6.0	500	190	463	712,800	2.183E-03	1.571E-04	7.857E-05	2.095E-05	1.048E-05	1.048E-03	5.238E-04	
Tomorrowland	2	6.0	500	190	463	712,800	2.183E-03	1.571E-04	7.857E-05	2.095E-05	1.048E-05	1.048E-03	5.238E-04	
Adventureland	1	6.0	500	190	463	356,400	1.091E-03	7.857E-05	7.857E-05	1.048E-05	5.238E-05	5.238E-04	3.274E-04	
Frontierland	2	6.0	500	190	463	712,800	2.183E-03	1.571E-04	7.857E-05	2.095E-05	1.048E-05	1.048E-03	5.238E-04	
Toon Town	2	6.0	500	190	463	712,800	2.183E-03	1.571E-04	7.857E-05	2.095E-05	1.048E-05	1.048E-03	5.238E-04	
Expansion	2	6.0	500	190	463	712,800	2.183E-03	1.571E-04	7.857E-05	2.095E-05	1.048E-05	1.048E-03	5.238E-04	
Back of House	3	6.0	500	190	463	1,069,200	3.274E-03	2.357E-04	7.857E-05	3.143E-05	1.048E-05	1.571E-03	5.238E-04	
Park #2														
Entrance	1	6.0	500	190	463	470,448	1.440E-03	1.037E-04	1.037E-04	1.383E-05	1.383E-05	6.914E-04	4.321E-04	
Land #1	2	6.0	500	190	463	940,896	2.881E-03	2.074E-04	1.037E-04	2.766E-05	1.383E-05	1.383E-03	6.914E-04	
Land #2	1	6.0	500	190	463	470,448	1.440E-03	1.037E-04	1.037E-04	1.383E-05	1.383E-05	6.914E-04	4.321E-04	
Land #3	2	6.0	500	190	463	940,896	2.881E-03	2.074E-04	1.037E-04	2.766E-05	1.383E-05	1.383E-03	6.914E-04	
Land #4	1	6.0	500	190	463	470,448	1.440E-03	1.037E-04	1.037E-04	1.383E-05	1.383E-05	6.914E-04	4.321E-04	
Land #5	2	6.0	500	190	463	940,896	2.881E-03	2.074E-04	1.037E-04	2.766E-05	1.383E-05	1.383E-03	6.914E-04	
Land #6	1	6.0	500	190	463	470,448	1.440E-03	1.037E-04	1.037E-04	1.383E-05	1.383E-05	6.914E-04	4.321E-04	
Back of House	1	6.0	500	190	463	470,448	1.440E-03	1.037E-04	1.037E-04	1.383E-05	1.383E-05	6.914E-04	4.321E-04	
RD&E	12	6.0	500	190	463	4,276,800	1.310E-02	9.428E-04	7.857E-05	1.257E-04	1.048E-05	6.286E-03	5.238E-04	
RD&E	7	6.0	500	190	463	3,293,136	1.008E-02	7.260E-04	1.037E-04	9.680E-05	1.383E-05	4.840E-03	6.914E-04	
Hotel #1	16	6.0	500	190	463	5,702,400	1.746E-02	1.257E-03	7.857E-05	1.676E-04	1.048E-05	8.381E-03	5.238E-04	
Hotel#2	24	6.0	500	190	463	8,553,600	2.619E-02	1.886E-03	7.857E-05	2.514E-04	1.048E-05	1.257E-02	5.238E-04	
Hotel #3	9	6.0	500	190	463	3,207,600	9.821E-03	7.071E-04	7.857E-05	9.428E-05	1.048E-05	4.714E-03	5.238E-04	
Hotel #4	21	6.0	500	190	463	9,879,408	3.025E-02	2.178E-03	1.037E-04	2.904E-04	1.383E-05	1.452E-02	6.914E-04	
Hotel #5	25	6.0	500	190	463	11,761,200	3.601E-02	2.593E-03	1.037E-04	3.457E-04	1.383E-05	1.729E-02	6.914E-04	

Boilers - domestic hot water

Park #1	QUANTITY	HEIGHTAG (m)	TOPDIA (mm)	GTEMP degree C	EXIT degree K	GTEMP_EXIT degree K	Total Fuel Cons. kWh/yr	#MAX_NG (m3/s)	Natural Gas					
									PM		SO2		NO2	
									total	each	total	each	total	each
Main Street	1	6.0	500	190	463	463	399,456	1.223E-03	8.806E-05	8.806E-05	1.174E-05	1.174E-05	5.871E-04	5.871E-04
Fantasyland	2	6.0	500	190	463	463	798,912	2.446E-03	1.761E-04	8.806E-05	2.348E-05	1.174E-05	5.871E-04	5.871E-04
Tomorrowland	2	6.0	500	190	463	463	798,912	2.446E-03	1.761E-04	8.806E-05	2.348E-05	1.174E-05	5.871E-04	5.871E-04
Adventureland	2	6.0	500	190	463	463	798,912	2.446E-03	1.761E-04	8.806E-05	2.348E-05	1.174E-05	5.871E-04	5.871E-04
Frontierland	2	6.0	500	190	463	463	832,200	2.548E-03	1.835E-04	9.173E-05	2.446E-05	1.223E-05	6.115E-04	6.115E-04
Toon Town	2	6.0	500	190	463	463	832,200	2.548E-03	1.835E-04	9.173E-05	2.446E-05	1.223E-05	6.115E-04	6.115E-04
Expansion	1	6.0	500	190	463	463	416,100	1.274E-03	9.173E-05	9.173E-05	1.223E-05	1.223E-05	6.115E-04	6.115E-04
Back of House	2	6.0	500	190	463	463	210,240	6.437E-04	4.635E-05	2.317E-05	6.180E-06	3.090E-06	1.545E-04	1.545E-04
Park #2														
Entrance	2	6.0	500	190	463	463	865,488	2.650E-03	1.908E-04	9.540E-05	2.544E-05	1.272E-05	1.272E-03	1.272E-03
Land #1	2	6.0	500	190	463	463	865,488	2.650E-03	1.908E-04	9.540E-05	2.544E-05	1.272E-05	1.272E-03	1.272E-03
Land #2	1	6.0	500	190	463	463	462,744	1.417E-03	1.020E-04	1.020E-04	1.360E-05	1.360E-05	6.801E-04	6.801E-04
Land #3	2	6.0	500	190	463	463	865,488	2.650E-03	1.908E-04	9.540E-05	2.544E-05	1.272E-05	1.272E-03	1.272E-03
Land #4	1	6.0	500	190	463	463	432,744	1.325E-03	9.540E-05	9.540E-05	1.272E-05	1.272E-05	6.360E-04	6.360E-04
Land #5	2	6.0	500	190	463	463	865,488	2.650E-03	1.908E-04	9.540E-05	2.544E-05	1.272E-05	1.272E-03	1.272E-03
Land #6	1	6.0	500	190	463	463	432,744	1.325E-03	9.540E-05	9.540E-05	1.272E-05	1.272E-05	6.360E-04	6.360E-04
Back of House	1	6.0	500	190	463	463	113,880	3.487E-04	2.511E-05	2.511E-05	3.347E-06	3.347E-06	1.674E-04	1.674E-04
RD&E	6	6.0	500	190	463	463	2,396,736	7.339E-03	5.284E-04	8.806E-05	7.045E-05	1.174E-05	3.522E-03	3.522E-03
RD&E	4	6.0	500	190	463	463	1,664,400	5.096E-03	3.669E-04	9.173E-05	4.892E-05	1.223E-05	2.446E-03	2.446E-03
RD&E	6	6.0	500	190	463	463	2,596,464	7.950E-03	5.724E-04	9.540E-05	7.632E-05	1.272E-05	3.816E-03	3.816E-03
Hotel #1	11	6.0	500	190	463	463	4,818,000	1.475E-02	1.062E-03	9.656E-05	1.416E-04	1.287E-05	7.081E-03	7.081E-03
Hotel #2	8	6.0	500	190	463	463	3,504,000	1.073E-02	7.725E-04	9.656E-05	1.030E-04	1.287E-05	5.150E-03	5.150E-03
Hotel #2	9	6.0	500	190	463	463	3,784,320	1.159E-02	8.343E-04	9.270E-05	1.112E-04	1.236E-05	5.562E-03	5.562E-03
Hotel #3	7	6.0	500	190	463	463	2,943,360	9.012E-03	6.489E-04	9.270E-05	8.652E-05	1.236E-05	4.326E-03	4.326E-03
Hotel #4	17	6.0	500	190	463	463	7,743,840	2.371E-02	1.707E-03	1.004E-04	2.276E-04	1.339E-05	1.138E-02	1.138E-02
Hotel #5	20	6.0	500	190	463	463	9,110,400	2.789E-02	2.008E-03	1.004E-04	2.678E-04	1.339E-05	1.339E-02	1.339E-02

Efflux Velocity 6 m/s

Density of Town Gas= 673 kg/m³ From AP42

Emission Factors (assume as natural gas)	PM	SO ₂	NO _x	CO	Unit
	72	9.6	1600	300	kg/10 ⁶ m ³

(uncontrolled - low NO burners)

Raw Information

1 kWh/yr = 3600 kJ/yr
1.0551 kJ/yr = 1 BTU/yr
1 ft³ of Natural Gas generate 1000 BTU
1 ft³ = 0.0283 m³

Operation time	24 hrs
	7 days/week
Stack Height	6 m
Stack Diameter	500 mm
Stack Temp	190 °C

Calculation

#Max_NG for each plant = fuel consumption*3600/1.0551/1000/365/24/3600*0.0283 m³/s
Emission = #max_NG/100000*1000 g/s

Annex B5

Sample FDM Output File for CKWLR

1 FDM - (DATED 91109)

IBM-PC VERSION (1.01)
(C) COPYRIGHT 1991, TRINITY CONSULTANTS, INC.
SERIAL NUMBER 9142 SOLD TO ERM HONG KONG
RUN BEGAN ON 2/28/00 AT 16:39:48

RUN TITLE:

Cumulative Dust Impact for NSLD (10kph)

INPUT FILE NAME: CKW1_2.DAT

OUTPUT FILE NAME: CKW1_2.LST

CONVERGENCE OPTION 1=OFF, 2=ON 1
MET OPTION SWITCH, 1=CARDS, 2=PREPROCESSED 1
PLOT FILE OUTPUT, 1=NO, 2=YES 1
MET DATA PRINT SWITCH, 1=NO, 2=YES 1
POST-PROCESSOR OUTPUT, 1=NO, 2=YES 1
DEP. VEL./GRAV. SETL. VEL., 1=DEFAULT, 2=USER 1
PRINT 1-HOUR AVERAGE CONCEN, 1=NO, 2=YES 3
PRINT 3-HOUR AVERAGE CONCEN, 1=NO, 2=YES 1
PRINT 8-HOUR AVERAGE CONCEN, 1=NO, 2=YES 1
PRINT 24-HOUR AVERAGE CONCEN, 1=NO, 2=YES 3
PRINT LONG-TERM AVERAGE CONCEN, 1=NO, 2=YES 1
BYPASS RAMMET CALMS RECOGNITION, 1=NO, 2=YES 1
NUMBER OF SOURCES PROCESSED 17
NUMBER OF RECEPTORS PROCESSED 20
NUMBER OF PARTICLE SIZE CLASSES 5
NUMBER OF HOURS OF MET DATA PROCESSED 8760
LENGTH IN MINUTES OF 1-HOUR OF MET DATA 60.
ROUGHNESS LENGTH IN CM 80.00
SCALING FACTOR FOR SOURCE AND RECEPTORS 1.0000
PARTICLE DENSITY IN G/CM**3 2.50
ANEMOMETER HEIGHT IN M 10.00

GENERAL PARTICLE SIZE CLASS INFORMATION

PARTICLE SIZE CLASS	GRAV. DIA. (UM)	FRACTION	CHAR. SETTLING VELOCITY (M/SEC)	DEPOSITION IN EACH CLASS
1	30.0000000	**	**	.4900
2	10.0000000	**	**	.2100
3	5.0000000	**	**	.1900
4	2.0000000	**	**	.0700
5	1.0000000	**	**	.0400

** COMPUTED BY FDM

1

RECEPTOR COORDINATES (X,Y,Z)

(2306., 20179., 5.) (1493., 19396.,140.) (1436., 20164.,180.)
(1087., 20848.,120.) (544., 21462., 15.) (3740., 1804., 10.)
(0., 18200., 5.) (2500., 17000., 5.) (-1990., 19890., 5.)
(-3753., 18804., 5.) (2306., 20179., 15.) (1493., 19396.,150.)
(1434., 20164.,190.) (1087., 20848.,130.) (544., 21462., 25.)
(3740., 21804., 20.) (0., 18200., 15.) (2500., 17000., 15.)
(-1990., 19890., 15.) (-3753., 18804., 15.) (

1

SOURCE INFORMATION

ENTERED EMIS. RATE (G/SEC)	TOTAL RATE (G/SEC)	EMISSION FAC.	WIND SPEED (M)	X1 (M)	Y1 (M)	X2 (M)	Y2 (M)	HEIGHT (M)	WIDTH (M)
3 .000002800	.08892	.000	2558.	20451.	123.	257.	20.00	89.41	
3 .000002800	.22216	.000	2941.	20382.	219.	362.	20.00	89.37	
3 .000002800	.28272	.000	3353.	20464.	534.	189.	20.00	16.83	

3	.000003000	.08751	.000	3693.	20565.	223.	131.	5.00	36.31
3	.000003000	.10483	.000	3799.	20777.	333.	105.	5.00	73.32
3	.000003000	.09541	.000	3845.	21062.	111.	287.	5.00	4.68
2	.000009700	.00355	.000	1321.	21644.	1304.	21278.	5.00	15.00
2	.000009700	.00266	.000	1031.	21304.	1304.	21278.	5.00	15.00
2	.000009700	.00514	.000	1304.	21278.	1569.	20819.	20.00	55.00
2	.000009700	.00395	.000	1569.	20819.	1866.	20541.	10.00	38.00
2	.000009700	.00338	.000	1866.	20541.	2209.	20480.	5.00	38.00
2	.000009700	.00745	.000	2209.	20480.	2972.	20390.	20.00	30.00
2	.000009700	.00776	.000	2972.	20390.	3756.	20551.	20.00	30.00
2	.000009700	.00639	.000	3756.	20551.	3850.	21203.	20.00	30.00
2	.002080000	.53128	.000	2434.	20471.	2689.	20448.	20.00	5.00
2	.000555000	.43964	.000	2971.	20385.	3747.	20543.	5.00	5.00
2	.000555000	.36834	.000	3747.	20543.	3858.	21198.	5.00	5.00

=====

TOTAL EMISSIONS 2.26110

1

TOP 50 TABLE FOR 1 HOUR AVERAGES

RANK	RECEPTOR	X-COORDINATE	Y-COORDINATE	ENDING HOUR	CONCENTRATION	DEPOSITION
------	----------	--------------	--------------	-------------	---------------	------------

1	1	2306.0	20179.0	1582	54.7695	2.5382
2	1	2306.0	20179.0	261	54.6243	2.2256
3	1	2306.0	20179.0	2803	54.6229	2.2357
4	11	2306.0	20179.0	1582	51.6519	1.6001
5	1	2306.0	20179.0	1917	50.5480	1.8904
6	1	2306.0	20179.0	1424	49.8184	2.4175
7	11	2306.0	20179.0	1424	47.5847	1.4908
8	11	2306.0	20179.0	261	47.5488	1.1183
9	11	2306.0	20179.0	2803	47.5468	1.1322
10	1	2306.0	20179.0	1735	44.1881	.4123
11	11	2306.0	20179.0	1543	43.9400	1.5512
12	11	2306.0	20179.0	2575	43.9395	1.5592
13	1	2306.0	20179.0	729	43.3657	1.6040
14	1	2306.0	20179.0	8481	43.3656	1.6673
15	11	2306.0	20179.0	2373	42.3131	1.5111
16	11	2306.0	20179.0	1534	41.5397	1.5722
17	11	2306.0	20179.0	7616	41.5391	1.5850
18	1	2306.0	20179.0	2575	41.4929	1.9460
19	1	2306.0	20179.0	1543	41.4926	1.9408
20	1	2306.0	20179.0	8407	41.3705	.4023
21	11	2306.0	20179.0	1917	41.2686	1.3480
22	1	2306.0	20179.0	1929	40.3897	1.5637
23	1	2306.0	20179.0	1592	39.9885	1.7461
24	1	2306.0	20179.0	2373	39.5727	1.9399
25	1	2306.0	20179.0	430	39.1415	.7900
26	11	2306.0	20179.0	1592	39.0340	1.2437
27	11	2306.0	20179.0	1735	38.5684	.3650
28	1	2306.0	20179.0	7616	38.0868	1.8355
29	1	2306.0	20179.0	1534	38.0862	1.8270
30	1	2306.0	20179.0	5421	37.8108	.8234
31	1	2306.0	20179.0	3954	37.7533	1.4899
32	1	2306.0	20179.0	2887	37.5198	1.6471
33	1	2306.0	20179.0	2407	37.5196	1.6417
34	11	2306.0	20179.0	2407	37.4586	1.2255
35	11	2306.0	20179.0	2887	37.4582	1.2330
36	1	2306.0	20179.0	2372	36.6916	.3990
37	11	2306.0	20179.0	8407	36.2160	.3589
38	11	2306.0	20179.0	729	36.1387	1.2423
39	11	2306.0	20179.0	8481	36.1386	1.2453
40	11	2306.0	20179.0	7808	35.6130	1.3368
41	11	2306.0	20179.0	7615	35.3300	1.3644
42	11	2306.0	20179.0	7639	35.3300	1.3644
43	1	2306.0	20179.0	7808	34.7235	1.6213
44	1	2306.0	20179.0	262	34.3383	.8075
45	11	2306.0	20179.0	8775	34.2785	1.3061
46	11	2306.0	20179.0	1929	33.9531	1.1886
47	11	2306.0	20179.0	430	33.9423	.6648
48	11	2306.0	20179.0	669	33.8958	1.3111
49	1	2306.0	20179.0	2336	33.3168	1.3270
50	1	2306.0	20179.0	8708	33.3154	.8235

1

HIGHEST AND SECOND HIGHEST VALUES FOR 1 HOUR AVERAGES

RECEPTOR X-COORDINATE Y-COORDINATE HIGHEST VALUE ENDING HOUR DEPOSITION SECOND HIGH ENDING HOUR DEPOSITION

1	2306.0	20179.0	54.7695	1582.	2.5382	54.6243	261.	2.2256
2	1493.0	19396.0	10.4734	4483.	.0878	7.4511	1222.	.1005
3	1436.0	20164.0	12.6966	1750.	.0847	11.7609	5409.	.0835
4	1087.0	20848.0	6.7044	5996.	.0482	6.2974	3955.	.1063
5	544.0	21462.0	11.7515	1736.	.0810	9.8611	2588.	.1219
6	3740.0	1803.8	1.5577	7664.	.0101	1.5008	618.	.0091
7	.0	18200.0	12.4836	261.	.0733	12.4833	2803.	.0783
8	2500.0	17000.0	8.7181	1399.	.0520	8.5664	718.	.0514
9	-1990.0	19890.0	9.7225	1750.	.0613	9.0639	5409.	.0608
10	-3753.0	18804.0	5.1751	1750.	.0320	4.8457	5409.	.0320
11	2306.0	20179.0	51.6519	1582.	1.6001	47.5847	1424.	1.4908
12	1493.0	19396.0	10.4716	4483.	.0678	7.4496	1222.	.1005
13	1434.0	20164.0	12.6850	1750.	.0846	11.7502	5409.	.0834
14	1087.0	20848.0	6.6941	5996.	.0481	6.2884	3955.	.1062
15	544.0	21462.0	10.5361	1736.	.0715	8.7544	2588.	.0999
16	3740.0	21803.8	18.0288	260.	.1105	18.0224	259.	.1181
17	.0	18200.0	11.5922	261.	.0667	11.5919	2803.	.0714
18	2500.0	17000.0	8.1605	1399.	.0478	7.9710	718.	.0469
19	-1990.0	19890.0	9.0945	1750.	.0562	8.5006	5409.	.0560
20	-3753.0	18804.0	4.8770	1750.	.0296	4.5769	5409.	.0297

1

TOP 50 TABLE FOR 24 HOUR AVERAGES

RANK RECEPTOR X-COORDINATE Y-COORDINATE ENDING HOUR CONCENTRATION DEPOSITION

1	1	2306.0	20179.0	1344C	8.6189	.4225
2	1	2306.0	20179.0	2808C	8.2189	.3637
3	11	2306.0	20179.0	1344C	8.0171	.3795
4	1	2306.0	20179.0	2592C	7.7729	.2925
5	11	2306.0	20179.0	2592C	7.6124	.2481
6	1	2306.0	20179.0	1920C	7.6027	.3231
7	11	2306.0	20179.0	2808C	7.5093	.2776
8	1	2306.0	20179.0	1032C	7.1259	.3603
9	1	2306.0	20179.0	2088C	6.7537	.2942
10	11	2306.0	20179.0	1920C	6.6662	.2674
11	11	2306.0	20179.0	1032C	6.6509	.3298
12	1	2306.0	20179.0	8160C	6.6428	.3210
13	1	2306.0	20179.0	792C	6.5890	.2840
14	1	2306.0	20179.0	1536C	6.3815	.2867
15	1	2306.0	20179.0	432C	6.3121	.2369
16	1	2306.0	20179.0	816C	6.1950	.3638
17	11	2306.0	20179.0	2088C	6.1883	.2609
18	11	2306.0	20179.0	1536C	6.1856	.2441
19	11	2306.0	20179.0	8160C	6.1132	.2851
20	11	2306.0	20179.0	792C	6.0956	.2544
21	1	2306.0	20179.0	1824C	6.0538	.3000
22	1	2306.0	20179.0	5424C	6.0358	.1643
23	1	2306.0	20179.0	336C	5.9882	.3320
24	11	2306.0	20179.0	672C	5.8743	.2287
25	1	2306.0	20179.0	1056C	5.8682	.3242
26	11	2306.0	20179.0	816C	5.8533	.3393
27	1	2306.0	20179.0	2304C	5.7992	.2635
28	11	2306.0	20179.0	432C	5.7539	.1986
29	1	2306.0	20179.0	264C	5.7190	.2027
30	1	2306.0	20179.0	672C	5.6602	.2448
31	11	2306.0	20179.0	1824C	5.6364	.2728
32	1	2306.0	20179.0	6552C	5.6313	.3328
33	1	2306.0	20179.0	168C	5.5891	.2880
34	1	2306.0	20179.0	8352C	5.5791	.2993
35	11	2306.0	20179.0	8352C	5.5814	.2844
36	11	2306.0	20179.0	1056C	5.5526	.3024
37	11	2306.0	20179.0	336C	5.4478	.2950
38	11	2306.0	20179.0	2304C	5.4173	.2403
39	1	2306.0	20179.0	8592C	5.3646	.2302
40	11	2306.0	20179.0	5424C	5.3552	.1419
41	1	2306.0	20179.0	2016C	5.3197	.2730
42	1	2306.0	20179.0	2424C	5.3049	.2264
43	1	2306.0	20179.0	384C	5.2921	.2124
44	1	2306.0	20179.0	3456C	5.2162	.3134
45	1	2306.0	20179.0	1368C	5.2091	.2597
46	1	2306.0	20179.0	8496C	5.2040	.1667
47	11	2306.0	20179.0	6552C	5.1841	.3001

48	11	2306.0	20179.0	7464C	5.1823	.2622
49	1	2306.0	20179.0	312C	5.1693	.2863
50	1	2306.0	20179.0	7464C	5.1338	.2772

1

HIGHEST AND SECOND HIGHEST VALUES FOR 24 HOUR AVERAGES

RECEPTOR	X-COORDINATE	Y-COORDINATE	HIGHEST VALUE	ENDING HOUR	DEPOSITION	SECOND HIGH	ENDING HOUR	DEPOSITION
----------	--------------	--------------	---------------	-------------	------------	-------------	-------------	------------

1	2306.0	20179.0	8.6189	1344.C	.4225	8.2189	2808.C	.3637
2	1493.0	19396.0	.8133	8160.C	.0315	.7911	672.C	.0177
3	1436.0	20164.0	1.1627	2640.C	.0633	1.1493	1752.C	.0134
4	1087.0	20848.0	1.4355	1656.C	.0518	1.2200	4824.C	.0742
5	544.0	21482.0	2.1645	1752.C	.0554	1.7676	7584.C	.0591
6	3740.0	1803.8	.1479	624.C	.0027	.1255	7824.C	.0020
7	.0	18200.0	.8422	2808.C	.0095	.7135	264.C	.0046
8	2500.0	17000.0	1.1674	960.C	.0299	1.1629	1128.C	.0578
9	-1990.0	19890.0	.6682	6216.C	.0054	.6610	1752.C	.0059
10	-3753.0	18804.0	.4907	1752.C	.0034	.4123	5424.C	.0032
11	2306.0	20179.0	8.0171	1344.C	.3795	7.6124	2592.C	.2481
12	1493.0	19396.0	.7888	8160.C	.0307	.7876	672.C	.0176
13	1434.0	20164.0	1.1483	2640.C	.0627	1.1453	1752.C	.0133
14	1087.0	20848.0	1.3993	1656.C	.0505	1.1460	4824.C	.0700
15	544.0	21462.0	2.0095	1752.C	.0508	1.6257	7584.C	.0536
16	3740.0	21803.8	3.7684	3216.C	.1100	3.4028	7920.C	.1649
17	.0	18200.0	.7876	2808.C	.0088	.6637	264.C	.0042
18	2500.0	17000.0	1.1407	1128.C	.0562	1.1317	960.C	.0289
19	-1990.0	19890.0	.6431	1080.C	.0368	.6355	2640.C	.0315
20	-3753.0	18804.0	.4629	1752.C	.0031	.3906	5424.C	.0030

RUN ENDED ON 2/26/00 AT 16:58:51

Annex B6**Sample CALINE4 Output File for CKWLR**

1 CALINE4 - (DATED CALINE4x)

3.0.0 PC (32 BIT) VERSION

(C) COPYRIGHT 1999, TRINITY CONSULTANTS

Run Began on 2/16/2000 at 18:00:08

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL

JUNE 1989 VERSION

PAGE 1

JOB: CO

RUN: Ground level (WORST CASE ANGLE)

POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= 1.0 M/S Z0= 80. CM ALT= 0. (M)
BRG= WORST CASE VD= 0.0 CM/S
CLAS= 4 (D) VS= 0.0 CM/S
MIXH= 500. M AMB= 0.0 PPM
SIGTH= 12. DEGREES TEMP= 25.5 DEGREE (C)

II. LINK VARIABLES

LINK	* LINK COORDINATES (M) *	EF	H	W
DESCRIPTION	* X1 Y1 X2 Y2 * TYPE VPH (G/M) (M) (M)			
1. Link 37	* ***** BG 6462 3.9 10.0 36.0			
2. Link 38	* ***** BG 6462 3.9 10.0 36.0			
3. Link 39	* ***** BG 6462 3.9 10.0 36.0			
4. Link 40	* ***** BG 6462 3.9 10.0 36.0			
5. Link 41	* ***** FL 9026 5.1 10.0 41.0			
6. Link 42	* ***** BG 9026 5.1 10.0 41.0			
7. Link 43	* ***** FL 9026 5.1 10.0 41.0			
8. Link 44	* ***** BG 6462 3.9 9.0 66.0			
9. Link 45	* ***** BG 6462 3.9 9.0 66.0			
10. Link 46	* ***** BG 6462 3.9 9.0 66.0			

III. RECEPTOR LOCATIONS

	* COORDINATES (M)
RECEPTOR	* X Y Z
1. REC1	* 822306 820179 0.0
2. REC2	* 821493 819396 135.0
3. REC3	* 821434 820164 175.0
4. REC4	* 821087 820848 115.0
5. REC5	* 820544 821462 10.0
6. REC6	* 823740 821803 0.0
7. REC7	* 818010 819890 0.0
8. REC8	* 816247 818804 0.0
9. REC9	* 822742 819534 0.0
10. REC10	* 822224 818782 0.0
11. REC11	* 822229 819837 0.0
12. REC12	* 822608 819792 0.0
13. REC13	* 823242 819765 0.0
14. REC14	* 823917 819897 0.0
15. REC15	* 821955 820036 0.0
16. REC16	* 820309 821067 15.0
17. REC17	* 816699 819309 0.0
18. REC18	* 816817 819087 0.0
19. REC19	* 820968 821684 0.0
20. REC20	* 821515 822141 0.0
21. REC21	* 822203 822380 0.0
22. REC22	* 823974 820792 0.0
23. REC23	* 820000 818200 0.0
24. REC24	* 822500 817000 0.0

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

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      * *PRED *      CONC/LINK
      * BRG * CONC *      (PPM)
RECEPTOR *(DEG)*(PPM)* 1 2 3 4 5 6 7 8
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1. REC1 * 315. * 0.4 * 0.0 0.0 0.0 0.0 0.1 0.2 0.0 0.0
2. REC2 * 56. * 0.0 * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
3. REC3 * 79. * 0.1 * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
4. REC4 * 106. * 0.1 * 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.0
5. REC5 * 112. * 0.3 * 0.0 0.0 0.1 0.1 0.1 0.0 0.1 0.0
6. REC6 * 178. * 0.2 * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.1
7. REC7 * 78. * 0.1 * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
8. REC8 * 72. * 0.0 * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
9. REC9 * 322. * 0.2 * 0.0 0.0 0.0 0.0 0.0 0.1 0.0 0.0
10. REC10 * 346. * 0.1 * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
11. REC11 * 330. * 0.2 * 0.0 0.0 0.0 0.0 0.1 0.1 0.0 0.0
12. REC12 * 320. * 0.2 * 0.0 0.0 0.0 0.0 0.1 0.1 0.0 0.0
13. REC13 * 307. * 0.2 * 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.0
14. REC14 * 344. * 0.2 * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.1
15. REC15 * 338. * 0.3 * 0.0 0.0 0.0 0.0 0.1 0.1 0.0 0.0
16. REC16 * 83. * 0.2 * 0.0 0.0 0.0 0.1 0.0 0.0 0.0 0.0
17. REC17 * 75. * 0.0 * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
18. REC18 * 73. * 0.0 * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
19. REC19 * 141. * 0.3 * 0.0 0.1 0.1 0.0 0.1 0.1 0.0 0.0
20. REC20 * 187. * 0.2 * 0.1 0.0 0.0 0.0 0.1 0.0 0.0 0.0
21. REC21 * 224. * 0.2 * 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0
22. REC22 * 246. * 0.4 * 0.0 0.0 0.0 0.0 0.0 0.0 0.2 0.1
23. REC23 * 49. * 0.1 * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
24. REC24 * 351. * 0.1 * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

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      *CONC/LINK
      *(PPM)
RECEPTOR * 9 10
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1. REC1 * 0.0 0.0
2. REC2 * 0.0 0.0
3. REC3 * 0.0 0.0
4. REC4 * 0.0 0.0
5. REC5 * 0.0 0.0
6. REC6 * 0.0 0.0
7. REC7 * 0.0 0.0
8. REC8 * 0.0 0.0
9. REC9 * 0.0 0.0
10. REC10 * 0.0 0.0
11. REC11 * 0.0 0.0
12. REC12 * 0.0 0.0
13. REC13 * 0.0 0.0
14. REC14 * 0.1 0.0
15. REC15 * 0.0 0.0
16. REC16 * 0.0 0.0
17. REC17 * 0.0 0.0
18. REC18 * 0.0 0.0
19. REC19 * 0.0 0.0
20. REC20 * 0.0 0.0
21. REC21 * 0.0 0.0
22. REC22 * 0.0 0.0
23. REC23 * 0.0 0.0
24. REC24 * 0.0 0.0

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1

Run Ended on 2/16/2000 at 18:00:30

Annex C

Noise Assessment - Supporting Information

Annex C1

Background Noise
Measurement Results at
Peng Chau & Discovery Bay

Measurement Location: Sea Crest Villa, Peng Chau (facing Penny's Bay)

Duration of measurement: 5 mins

Table C1.1a - Daytime Noise Measurement Results

		Day-time			
		Weekday		Weekend	
Date of Measurement:		25 Nov 1999 (Thursday)		4 Dec 1999 (Saturday)	
Record no.	Record time	L ₉₀	L _{eq}	L ₉₀	L _{eq}
1	09:00	44.5	49.3	44.5	46.7
2	09:30	46.0	50.3	44.6	51.0
3	10:00	45.5	48.3	44.5	50.1
4	10:30	45.5	51.8	43.0	47.1
5	11:00	46.5	49.5	43.5	48.1
6	11:30	45.0	46.9	43.5	47.1
7	12:00	43.5	46.2	45.0	50.5
8	12:30	44.0	47.9	45.0	48.6
9	13:00	44.5	49.8	43.0	46.0
10	13:30	43.0	47.3	44.0	48.4
11	14:00	46.5	52.0	44.4	50.5
12	14:30	46.5	50.0	44.0	45.7
13	15:00	42.5	45.1	42.0	44.3
14	15:30	41.5	53.1	46.0	48.9
15	16:00	48.5	54.4	43.5	50.6
16	16:30	45.0	51.9	45.0	51.8
17	17:00	45.0	50.0	44.8	49.9
18	17:30	47.5	50.7	44.4	49.7
19	18:00	45.0	51.1	45.0	51.5
20	18:30	43.0	52.3	44.5	50.0
Average		45.3	50.5	44.3	49.3

Table C1.1b - Night-time Noise Measurement Results

		Evening			
		Weekday		Weekend	
Date of Measurement:		25 Nov 1999 (Thursday)		20 Nov 1999 (Sunday)	
Record no.	Record time	L ₉₀	L _{eq}	L ₉₀	L _{eq}
1	19:00	45.0	47.5	45.0	49.8
2	19:10	44.0	52.0	45.0	49.1
3	19:20	44.0	52.7	45.5	48.7
4	19:30	44.5	48.6	44.5	52.0
5	19:40	43.5	47.7	44.0	50.6
6	19:50	45.0	48.7	43.0	46.7
7	20:00	46.0	49.9	43.5	48.9
8	20:10	44.5	50.2	43.0	51.9
9	20:20	46.5	50.1	44.5	51.4
10	20:30	43.5	49.0	44.5	49.0
11	20:40	43.0	45.4	46.0	50.4
12	20:50	43.0	46.3	45.0	51.6
13	21:00	44.0	50.1	44.0	51.1
14	21:10	44.5	51.0	45.5	47.9
15	21:20	43.0	47.4	43.0	45.1
16	21:30	43.5	48.7	44.0	52.3
17	21:40	43.0	48.4	46.0	53.0
18	21:50	45.0	49.6	43.5	49.3
19	22:00	45.0	47.3	42.0	44.4
20	22:10	44.5	47.1	44.5	51.0
21	22:20	44.5	46.8	41.5	44.0
22	22:30	44.0	47.6	45.0	48.9
23	22:40	45.0	47.8	45.5	48.9
24	22:50	43.5	45.9	43.0	47.7
Average		44.3	49.0	44.4	49.9

Measurement Location: Hai Kam Tsui, Discovery Bay (facing Penny's Bay)

Duration of measurement: 5 mins

Table C1.2a - Daytime Noise Measurement Results

		Day-time			
		Weekday		Weekend	
Date of Measurement:		8 Dec 1999 (Wednesday)		30 Jan 2000 (Sunday)	
Record no.	Record time	L ₉₀	L _{eq}	L ₉₀	L _{eq}
1	09:00	47.0	45.6	43.0	55.3
2	09:30	42.3	51.0	40.5	47.0
3	10:00	45.6	53.2	40.5	49.9
4	10:30	44.2	49.7	40.5	43.0
5	11:00	43.6	48.0	41.0	55.7
6	11:30	48.0	54.6	43.5	54.9
7	12:00	42.8	49.0	41.5	51.0
8	12:30	42.2	50.4	46.5	54.6
9	13:00	43.0	50.1	44.0	55.3
10	13:30	42.7	45.3	41.5	54.7
11	14:00	44.0	49.9	41.5	52.5
12	14:30	47.8	55.2	41.0	45.7
13	15:00	46.5	53.6	44.0	55.1
14	15:30	43.0	44.7	42.0	44.4
15	16:00	44.7	48.9	44.0	51.2
16	16:30	43.1	46.3	49.0	59.3
17	17:00	50.5	55.2	45.0	52.0
18	17:30	50.5	56.4	48.0	55.2
19	18:00	51.0	56.1	47.0	55.3
20	18:30	51.0	57.2	44.5	56.5
Average		46.8	52.6	44.2	54.0

Table C1.2b - Night-time Noise Measurement Results

		Evening			
		Weekday		Weekend	
Date of Measurement:		31 Jan 2000 (Monday)		30 Jan 2000 (Sunday)	
Record no.	Record time	L ₉₀	L _{eq}	L ₉₀	L _{eq}
1	19:00	48.0	53.8	44.0	51.9
2	19:10	47.0	56.7	44.5	51.9
3	19:20	47.5	52.6	44.5	54.0
4	19:30	48.0	52.9	44.5	50.9
5	19:40	48.0	53.5	44.5	50.0
6	19:50	47.5	53.0	43.5	50.8
7	20:00	48.5	54.0	43.0	50.8
8	20:10	48.5	53.7	42.0	50.0
9	20:20	48.0	56.3	43.5	51.4
10	20:30	48.0	52.1	42.0	46.1
11	20:40	48.5	53.4	43.0	49.5
12	20:50	46.3	51.6	42.5	55.5
13	21:00	47.5	52.4	43.5	49.8
14	21:10	48.5	52.9	41.0	49.1
15	21:20	48.5	52.6	43.0	51.1
16	21:30	49.0	53.0	40.5	43.5
17	21:40	49.0	52.9	42.0	50.7
18	21:50	49.5	53.7	43.5	52.7
19	22:00	48.5	54.6	42.5	51.9
20	22:10	47.0	52.8	41.5	52.2
21	22:20	47.5	53.2	43.5	53.3
22	22:30	46.5	51.8	43.5	48.2
23	22:40	46.5	52.4	41.5	44.0
24	22:50	46.0	52.2	43.0	46.8
Average		47.9	53.4	43.1	51.0

Annex C2

Construction Noise Impact
Assessment - Plant Inventory

Table C2.1 - Plant Inventory (Unmitigated)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
Phase 1								
A1	A1	Reclamation & Excavation Slope protection in Penny's Bay West	Compressor > 30m ³ /min	CNP003	104	3	5	109
			Handheld breaker >35kg	CNP026	114	6	8	122
			Concrete truck (mixer)	CNP044	109	3	5	114
			Dump truck	CNP067	117	3	5	122
			Backhoe	CNP081	112	3	5	117
			Sub-total					126
A2	A2	Dredging at Theme Park Phase 1	Grab dredger	CNP063	112	1	0	112
			TS Dredger	By SWHK	109	1	0	109
			Sub-total					114
A3	A3	Placement of sloping/vertical seawall at Theme Park Phase 1	Grab dredger	CNP063	112	2	3	115
			Derrick lighter	CNP061	104	6	8	112
			Tugboat	CNP221	110	10	10	120
			Hopper barge/ Pelican barge/ Barge	CNP061	104	4	6	110
			Sub-total					122
A4	A4	Filling at Theme Park Phase 1	Grab Dredger	CNP063	112	6	8	120
			TS Dredger	By SWHK	109	4	6	115
			CS Dredger	By SWHK	104	2	3	107
			Derrick lighter	CNP061	104	4	6	110
			Dozer	CNP030	115	8	9	124
			Dump truck	CNP067	117	20	13	130
			Tugboat	CNP221	110	12	11	121
			Loading shovel (excavator)	CNP081	112	12	11	123
			Hopper barge/ Pelican barge/ Barge	CNP061	104	24	14	118
			Crane/vibrocompaction	By SWHK	112	8	9	121
			Land drain rig (compressor)	CNP003	104	4	6	110
			Maine drain rig (compressor)	CNP003	104	4	6	110
			Sub-total					133
A5	A5	Surcharge at Theme Park Phase 1	Dozer	CNP030	115	4	6	121
			Dump truck	CNP067	117	10	10	127
			Loading shovel (excavator)	CNP081	112	5	7	119
			Sub-total					128
A6	A6	Demolition, part of Cheoy Lee	Dump truck	CNP067	117	1	0	117
			Excavator/Loader	CNP081	112	1	0	112
			Backhoe	CNP081	112	3	5	117
			Mobile crane	CNP048	112	2	3	115
			Sub-total					122
A7	A7	Ground treatment	Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	2	3	115
			Sub-total					119
A8	A8	Excavation to tie in at existing Yam O Interchange	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Handheld breaker >35kg	CNP026	114	5	7	121
			Dump truck	CNP067	117	10	10	127
			Excavator/Loader	CNP081	112	2	3	115
			Backhoe	CNP081	112	2	3	115
			Sub-total					128
A9	A9	Blasting	Drilling Rigs	Tab C11/2	112	6	8	120
			Sub-total					120
A10	A10	Slope protection in Yam O Section	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Handheld breaker >35kg	CNP026	114	2	3	117
			Concrete truck (mixer)	CNP044	109	1	0	109
			Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	1	0	112
			Sub-total					121
A11	A11	Slope protection in Penny's Bay North Adjac	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Handheld breaker >35kg	CNP026	114	4	6	120
			Concrete truck (mixer)	CNP044	109	2	3	112
			Dump truck	CNP067	117	2	3	120
			Backhoe	CNP081	112	2	3	115
			Sub-total					124
A12	A12	Dredging sloping seawall at Yam O PTI	Grab dredger	CNP063	112	1	0	112
			Tugboat	CNP221	110	1	0	110
			Sand barge	CNP061	104	1	0	104
			Sub-total					115
A13	A13	Placement of sloping seawall at Yam O PTI	Grab dredger	CNP063	112	1	0	112
			Derrick lighter	CNP061	104	1	0	104
			Tugboat	CNP221	110	1	0	110
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0	104
			Sand barge	CNP061	104	1	0	104
			Sub-total					115
A14	A14	Filling at Yam O PTI	Grab dredger	CNP063	112	1	0	112
			Dozer	CNP030	115	1	0	115
			Dump truck	CNP067	117	3	5	122

Table C2.1 - Plant Inventory (Unmitigated)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
			Tugboat	CNP221	110	2	3	113
			Loading shovel (excavator)	CNP081	112	1	0	112
			Hopper barge/ Pelican barge/ Barge	CNP061	104	2	3	107
			Land drain rig (compressor)	CNP003	104	1	0	104
			Maine drain rig (compressor)	CNP003	104	1	0	104
			Sand barge	CNP061	104	7	8	112
			Sub-total					124
A15	A15	Surcharge at Yam O PT1	Dozer	CNP030	115	2	3	118
			Dump truck	CNP067	117	3	5	122
			Loading shovel (excavator)	CNP081	112	1	0	112
			Sub-total					124
		Transport Infrastructure						
B16	B20	Temporary Road Surfacing/Construction at grade: Temporary Access Road	Compressor > 30m³/min	CNP003	104	1	0	104
			Dump truck	CNP067	117	2	3	120
			Backhoe	CNP081	112	2	3	115
			Grader	CNP104	113	1	0	113
			Tarmac paver	CNP004	109	1	0	109
			Tarmac truck	CNP067	117	2	3	120
			Roller	CNP185	108	2	3	111
			Sub-total					124
B17	B21	Road Structures including (Piling & Foundations plus superstructure) : CKWLR from Yam O to Penny's Bay Interchange	Compressor > 30m³/min	CNP003	104	2	3	107
			Handheld breaker>35kg	CNP026	114	4	6	120
			Concrete truck (mixer)	CNP044	109	2	3	112
			Backhoe	CNP081	112	2	3	115
			Mobile Crane	CNP048	112	2	3	115
			Generator	CNP101	108	2	3	111
			Bored piler, oscillator	CNP165	115	1	0	115
			Sub-total					124
B18	B22	Road Surfacing / Construction at grade : CKWLR from Yam O to Penny's Bay Interchange	Compressor > 30m³/min	CNP003	104	2	3	107
			Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	1	0	112
			Grader	CNP104	113	2	3	116
			Tarmac paver	CNP004	109	1	0	109
			Tarmac truck	CNP067	117	2	3	120
			Roller	CNP185	108	2	3	111
			Sub-total					124
B19	B23	Road Surfacing / Construction (elevated section including decking): CKWLR from Yam O to Penny's Bay Interchange	Compressor > 30m³/min	CNP003	104	2	3	107
			Mobile Crane	CNP048	112	2	3	115
			Poker vibrator	CNP170	113	4	6	119
			Tarmac paver	CNP004	109	1	0	109
			Tarmac truck	CNP067	117	2	3	120
			Roller	CNP185	108	2	3	111
			Launching girder (winch)	CNP263	102	1	0	102
			Sub-total					124
B20	B24	Road Structures including (Piling & Foundations plus superstructure) : Road P2 Northshore Development to Theme Park West	Compressor > 30m³/min	CNP003	104	2	3	107
			Handheld breaker>35kg	CNP026	114	4	6	120
			Concrete truck (mixer)	CNP044	109	4	6	115
			Backhoe	CNP081	112	2	3	115
			Mobile crane	CNP048	112	2	3	115
			Generator	CNP101	108	1	0	108
			Poker vibrator	CNP170	113	4	6	119
			Bored piler, oscillator	CNP165	115	1	0	115
			Sub-total					125
B21	B25	Road Surfacing / Construction at grade incl. roadside buffers : Road P2 Northshore Development to Theme Park West	Compressor > 30m³/min	CNP003	104	2	3	107
			Concrete truck (mixer)	CNP044	109	2	3	112
			Dump truck	CNP067	117	2	3	120
			Backhoe	CNP081	112	3	5	117
			Poker vibrator	CNP170	113	4	6	119
			Grader	CNP104	113	1	0	113
			Tarmac paver	CNP004	109	1	0	109
			Tarmac truck	CNP067	117	2	3	120
			Roller	CNP185	108	1	0	108
			Sub-total					125
B22	B26	Road Surfacing / Construction (elevated section including decking): Road P2 Northshore Development to Theme Park West	Concrete truck (mixer)	CNP044	109	4	6	115
			Mobile crane	CNP048	112	2	3	115
			Poker vibrator	CNP170	113	6	8	121
			Tarmac paver	CNP004	109	1	0	109
			Tarmac truck	CNP067	117	2	3	120
			Roller	CNP185	108	2	3	111

Table C2.1 - Plant Inventory (Unmitigated)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
Sub-total								125
B23	B27	Road Surfacing / Construction at grade incl. roadside buffers: Road D1 Theme Park West Roundabout to Theme Park	Compressor > 30m³/min	CNP003	104	2	3	107
			Concrete truck (mixer)	CNP044	109	2	3	112
			Dump truck	CNP067	117	2	3	120
			Backhoe	CNP081	112	3	5	117
			Poker vibrator	CNP170	113	4	6	119
			Grader	CNP104	113	1	0	113
			Tarmac paver	CNP004	109	1	0	109
			Tarmac truck	CNP067	117	2	3	120
			Roller	CNP185	108	2	3	111
Sub-total								126
B24	B28	Road Surfacing / Construction at grade : Acces Road at Yam O i.e from road P2, to Yam O Rail Station	Compressor > 30m³/min	CNP003	104	2	3	107
			Concrete truck (mixer)	CNP044	109	2	3	112
			Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	2	3	115
			Poker vibrator	CNP170	113	4	6	119
			Grader	CNP104	113	1	0	113
			Tarmac paver	CNP004	109	1	0	109
			Tarmac truck	CNP067	117	2	3	120
			Roller	CNP185	108	2	3	111
Sub-total								125
B25	B29	Central pedestrian walkway surfacing / construction: Approx. Middle of proposed park i.e boundary between Phase 1 and Phase 2 expansion	Compressor > 30m³/min	CNP003	104	2	3	107
			Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	2	3	115
			Grader	CNP104	113	1	0	113
			Tarmac paver	CNP004	109	1	0	109
			Tarmac truck	CNP067	117	2	3	120
			Compactor	CNP050	105	2	3	108
Sub-total								123
C26	C31	Services Infrastructure Installation of Utilities / Services i.e electricity, gas, telecom etc.	Compressor > 30m³/min	CNP003	104	2	3	107
			Concrete truck (mixer)	CNP044	109	1	0	109
			Dump truck	CNP067	117	2	3	120
			Backhoe	CNP081	112	2	3	115
			Poker vibrator	CNP170	113	2	3	116
Sub-total								123
C27	C32	Excavation of lake	Dump truck	CNP067	117	10	10	127
			Backhoe	CNP081	112	2	3	115
Sub-total								127
C28	C33	Placement of lake membrane plus associated waterworks to tie into (ability to tap from) adjacent drainage system	Compressor > 30m³/min	CNP003	104	1	0	104
			Concrete truck (mixer)	CNP044	109	1	0	109
			Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	2	3	115
			Mobile crane	CNP048	112	1	0	112
			Poker vibrator	CNP170	113	2	3	116
Sub-total								122
C29	C34	Lake de-silting and pumping facilities	Compressor > 30m³/min	CNP003	104	1	0	104
			Concrete truck (mixer)	CNP044	109	2	3	112
			Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	1	0	112
			Mobile crane	CNP048	112	1	0	112
			Poker vibrator	CNP170	113	2	3	116
Sub-total								121
C30	C35	Excavation of proposed resevoirs at Yam O Tuk both Salt and Fresh water including blasting (feasibility of siting both these at Yam O Tuk to be investigated) Note outside WD area limits	Compressor > 30m³/min	CNP003	104	2	3	107
			Handheld breaker>35kg	CNP026	114	5	7	121
			Dump truck	CNP067	117	15	12	129
			Excavator	CNP081	112	3	5	117
			Backhoe	CNP081	112	3	5	117
			Drilling rig	Tab C11/2	119	5	7	126
Sub-total								131
C31	C36	Constuction of resevoirs plus associated facilities	Compressor > 30m³/min	CNP003	104	4	6	110
			Concrete truck	CNP067	117	4	6	123
			Backhoe	CNP081	112	2	3	115
			Mobile crane	CNP048	112	2	3	115
			Generator	CNP101	108	2	3	111
			Poker vibrator	CNP170	113	6	8	121
Sub-total								126
C32	C37	Landscaping of resevoirs	Dump truck	CNP067	117	1	0	117

Table C2.1 - Plant Inventory (Unmitigated)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
			Backhoe	CNP081	112	1	0	112
			Sub-total					118
C33	C38	Installation of Water mains Fresh and Salt including irrigation	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Handheld breaker >35kg	CNP026	114	2	3	117
			Concrete truck (mixer)	CNP044	109	1	0	109
			Dump truck	CNP067	117	2	3	120
			Backhoe	CNP081	112	2	3	115
			Mobile crane	CNP048	112	1	0	112
			Poker vibrator	CNP170	113	2	3	116
			Lorry	CNP141	112	2	3	115
			Sub-total					125
C34	C39	Installation of sewerage mains both gravity and pumped including pumping stations, chambers and wells	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Concrete truck (mixer)	CNP044	109	1	0	109
			Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	1	0	112
			Mobile crane	CNP048	112	1	0	112
			Poker vibrator	CNP170	113	4	6	119
			Lorry	CNP141	112	1	0	112
			Sub-total					123
C35	C40	Installation of Stormwater drainage, open channels plus culverts	Compressor > 30m ³ /min	CNP003	104	4	6	110
			Concrete truck (mixer)	CNP044	109	6	8	117
			Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	2	3	115
			Mobile crane	CNP048	112	2	3	115
			Poker vibrator	CNP170	113	8	9	122
			Lorry	CNP141	112	2	3	115
			Sub-total					126
GIC Sites								
D36	D41	P.T.I at Yam O Station	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Concrete truck (mixer)	CNP044	109	2	3	112
			Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	2	3	115
			Mobile crane	CNP048	112	2	3	115
			Vibratory piling rig	CNP164	115	1	0	115
			Poker vibrator	CNP170	113	4	6	119
			Sub-total					124
D37	D42	P.T.I at Penny's Bay Station- Phase 1	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Concrete truck (mixer)	CNP044	109	2	3	112
			Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	2	3	115
			Mobile crane	CNP048	112	2	3	115
			Vibratory piling rig	CNP164	115	1	0	115
			Poker vibrator	CNP170	113	4	6	119
			Sub-total					124
D38	D43	Public Parking in Penny's Bay Station - Phase 1	Backhoe	CNP081	112	2	3	115
			Grader	CNP104	113	1	0	113
			Tarmac paver	CNP004	109	1	0	109
			Tarmac truck	CNP067	117	2	3	120
			Compactor	CNP050	105	2	3	108
			Sub-total					122
D39	D44	Police Station in Penny's Bay Station - Phase 1	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Concrete truck (mixer)	CNP044	109	2	3	112
			Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	1	0	112
			Mobile crane	CNP048	112	1	0	112
			Poker vibrator	CNP170	113	4	6	119
			Sub-total					123
D40	D45	Fire Station in Penny's Bay Station - Phase 1	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Concrete truck (mixer)	CNP044	109	2	3	112
			Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	1	0	112
			Mobile crane	CNP048	112	1	0	112
			Poker vibrator	CNP170	113	4	6	119
			Sub-total					123
D41	D46	Utility Yard	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Concrete truck (mixer)	CNP044	109	1	0	109
			Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	1	0	112
			Mobile crane	CNP048	112	1	0	112
			Vibratory piling rig	CNP164	115	1	0	115
			Poker vibrator	CNP170	113	2	3	116
			Sub-total					122
D42	D47	Special Duty Unit Base (including site formation i.e reclamation / seawall construction) located between Siu Ho Wan and Ta Pang Po	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Handheld breaker >35kg	CNP026	114	4	6	120

Table C2.1 - Plant Inventory (Unmitigated)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
		<i>NB. TS and CS dredger may be substituted for other types of marine based reclamation plant</i>	Concrete truck (mixer)	CNP044	109	2	3	112
			Grab dredger	CNP063	112	2	3	115
			TS dredger	BY SWHK	109	2	3	112
			Derrick lighter	CNP061	104	2	3	107
			Dozer	CNP030	115	1	0	115
			Dump truck	CNP067	117	2	3	120
			Tugboat	CNP221	110	1	0	110
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0	104
			Land drain rig (compressor)	CNP003	104	1	0	104
			Backhoe	CNP081	112	2	3	115
			Mobile crane	CNP048	112	2	3	115
			Generator	CNP101	108	2	3	111
			Vibratory piling rig	CNP164	115	1	0	115
			Poker vibrator	CNP170	113	4	6	119
			Lorry	CNP141	112	1	0	112
			Grader	CNP104	113	1	0	113
			Tarmac paver	CNP004	109	1	0	109
			Tarmac truck	CNP067	117	2	3	120
			Compactor	CNP050	105	1	0	105
			Water pump	CNP282	103	1	0	103
			Sub-total					128
		Phase 1 - Theme Park Development						
E43	E48	Theme Park Building/Attraction Foundations in Penny's Bay Station - Phase 1	Compressor > 30m³/min	CNP003	104	4	6	110
			Handheld breaker>35kg	CNP026	114	11	10	124
			Concrete truck (mixer)	CNP044	109	20	13	122
			Dozer	CNP030	115	4	6	121
			Dump truck	CNP067	117	2	3	120
			Excavator/ Loader	CNP081	112	8	9	121
			Backhoe	CNP081	112	4	6	118
			Mobile crane	CNP048	112	4	6	118
			Drilling rigs	Tab C11/2	112	8	9	121
			Generator	CNP101	108	4	6	114
			Lorry	CNP141	112	2	3	115
			Grader	CNP104	113	4	6	119
			Compactor	CNP050	105	3	5	110
			Water pump	CNP282	103	15	12	115
			Pan scrapers	CNP204	119	3	5	124
			Sub-total					132
E44	E49	Theme Park Building/Attraction Foundations in Penny's Bay Station - Phase 1	Compressor > 30m³/min	CNP003	104	10	10	114
			Handheld breaker>35kg	CNP026	114	15	12	126
			Concrete truck (mixer)	CNP044	109	30	15	124
			Dozer	CNP030	115	4	6	121
			Dump truck	CNP067	117	2	3	120
			Excavator/ Loader	CNP081	112	8	9	121
			Backhoe	CNP081	112	12	11	123
			Mobile crane	CNP048	112	12	11	123
			Generator	CNP101	108	4	6	114
			Lorry	CNP141	112	2	3	115
			Grader	CNP104	113	2	3	116
			Compactor	CNP050	105	2	3	108
			Water pump	CNP282	103	15	12	115
			Tower crane	CNP049	95	10	10	105
			Bobcats	By WDI	114	20	13	127
			Ditch Witch Trencher	By WDI	117	3	5	122
			Forklifts	By WDI	113	20	13	126
			Sub-total					134
E45	E50	Theme Park Surfacing, Landscaping and Berms in Penny's Bay Station - Phase 1	Compressor > 30m³/min	CNP003	104	4	6	110
			Handheld breaker>35kg	CNP026	114	3	5	119
			Concrete truck (mixer)	CNP044	109	8	9	118
			Dozer	CNP030	115	4	6	121
			Dump truck	CNP067	117	2	3	120
			Excavator/ Loader	CNP081	112	2	3	115
			Backhoe	CNP081	112	12	11	123
			Mobile crane	CNP048	112	4	6	118
			Generator	CNP101	108	4	6	114
			Lorry	CNP141	112	2	3	115
			Grader	CNP104	113	2	3	116
			Compactor	CNP050	105	1	0	105
			Bobcats	By WDI	114	6	8	122
			Ditch Witch Trencher	By WDI	117	3	5	122
			Forklifts	By WDI	113	4	6	119
			Sub-total					121
E46	E51	Ferry Pier Substructure, piling/foundations in Penny's Bay Station - Phase 1	Compressor > 30m³/min	CNP003	104	2	3	107
			Handheld breaker>35kg	CNP026	114	3	5	119
			Concrete truck (mixer)	CNP044	109	2	3	112
			Derrick lighter plus crane	CNP061	104	1	0	104
			Dozer	CNP030	115	2	3	118
			Dump truck	CNP067	117	2	3	120
			Tugboat	CNP221	110	2	3	113
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0	104
			Mobile crane	CNP048	112	1	0	112
			Generator	CNP101	108	2	3	111
			Poker vibrator	CNP170	113	4	6	119
			Water pump	CNP282	103	6	8	111
			Lorry	CNP141	112	2	3	115

Table C2.1 - Plant Inventory (Unmitigated)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
			Coring rig	CNP165	115	3	5	120
			Bobcats	By WDI	114	4	6	120
			Sub-total					128
E47	E52	Ferry Pier Superstructure: Precast decking and insitu infill in Penny's Bay Station - Phase 1	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Handheld breaker>35kg	CNP026	114	2	3	117
			Concrete truck (mixer)	CNP044	109	2	3	112
			Derrick Lighter plus crane	CNP061	104	1	0	104
			Tugboat	CNP221	110	1	0	110
			Hopper Barge/ Pelican Barge/ Barge	CNP061	104	1	0	104
			Mobile crane	CNP048	112	1	0	112
			Generator	CNP101	108	1	0	108
			Poker vibrator	CNP170	113	4	6	119
			Lorry	CNP141	112	2	3	115
			Bobcats	By WDI	114	4	6	120
			Forklifts	By WDI	113	3	5	118
			Sub-total					126
E48	E53	Ferry Pier Building Foundations in Penny's Bay Station - Phase 1	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Handheld breaker>35kg	CNP026	114	2	3	117
			Concrete truck (mixer)	CNP044	109	2	3	112
			Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	2	3	115
			Generator	CNP101	108	2	3	111
			Vibratory piling rig	CNP164	115	1	0	115
			Poker vibrator	CNP170	113	4	6	119
			Lorry	CNP141	112	2	3	115
			Bobcats	By WDI	114	2	3	117
			Sub-total					126
E49	E54	Ferry Pier Building Superstructure in Penny's Bay Station - Phase 1	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Handheld breaker>35kg	CNP026	114	2	3	117
			Concrete truck (mixer)	CNP044	109	2	3	112
			Backhoe	CNP081	112	2	3	115
			Mobile crane	CNP048	112	2	3	115
			Generator	CNP101	108	2	3	111
			Poker vibrator	CNP170	113	4	6	119
			Lorry	CNP141	112	2	3	115
			Bobcats	By WDI	114	2	3	117
			Ditch Witch Trencher	By WDI	117	4	6	123
			Sub-total					127
E50	E55	Hotels Foundations in Penny's Bay Station - Phase 1	Compressor > 30m ³ /min	CNP003	104	3	5	109
			Handheld breaker>35kg	CNP026	114	10	10	124
			Concrete truck (mixer)	CNP044	109	10	10	119
			Dozer	CNP030	115	2	3	118
			Dump truck	CNP067	117	4	6	123
			Excavator/ Loader	CNP081	112	3	5	117
			Backhoe	CNP081	112	3	5	117
			Generator	CNP101	108	4	6	114
			Lorry	CNP141	112	2	3	115
			Grader	CNP104	113	2	3	116
			Compactor	CNP050	105	2	3	108
			Water pump	CNP282	103	4	6	109
			Tower crane	CNP049	95	2	3	98
			Bobcats	By WDI	114	4	6	120
			Pan Scrapers	CNP204	119	2	3	122
			Sub-total					130
E51	E56	Hotels Superstructure in Penny's Bay Station - Phase 1	Compressor > 30m ³ /min	CNP003	104	3	5	109
			Handheld breaker>35kg	CNP026	114	10	10	124
			Concrete truck (mixer)	CNP044	109	20	13	122
			Dozer	CNP030	115	2	3	118
			Dump truck	CNP067	117	4	6	123
			Excavator/ Loader	CNP081	112	2	3	115
			Backhoe	CNP081	112	3	5	117
			Mobile crane	CNP048	112	2	3	115
			Generator	CNP101	108	4	6	114
			Lorry	CNP141	112	2	3	115
			Grader	CNP104	113	2	3	116
			Compactor	CNP050	105	2	3	108
			Tower crane	CNP049	95	3	5	100
			Bobcats	By WDI	114	20	13	127
			Ditch Witch Trencher	By WDI	117	3	5	122
			Forklifts	By WDI	113	20	13	126
			Sub-total					133
E52		Water Recreation Centre - Foundation	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Handheld breaker>35kg	CNP026	114	2	3	117
			Concrete truck (mixer)	CNP044	109	2	3	112
			Dump truck	CNP067	117	2	3	120
			Backhoe	CNP081	112	2	3	115
			Mobile crane	CNP048	112	2	3	115
			Vibratory piling rig	CNP164	115	1	0	115
			Generator	CNP101	108	2	3	111
			Poker vibrator	CNP170	113	4	6	119

Table C2.1 - Plant Inventory (Unmitigated)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
			Lorry	CNP141	112	2	3	115
			Water pump	CNP282	103	2	3	106
			Sub-total					126
E53		Water Recreation Centre - Superstructure	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Handheld breaker>35kg	CNP026	114	2	3	117
			Concrete truck (mixer)	CNP044	109	2	3	112
			Backhoe	CNP081	112	2	3	115
			Mobile crane	CNP048	112	2	3	115
			Generator	CNP101	108	2	3	111
			Poker vibrator	CNP170	113	4	6	119
			Lorry	CNP141	112	2	3	115
			Water pump	CNP282	103	2	3	106
			Sub-total					124
Phase 2								
F54	F57	Reclamation & Excavation Excavation through TCT	Concrete truck (mixer)	CNP044	109	10	10	119
			Dump truck	CNP067	117	30	15	132
			Excavator/ loader	CNP081	112	8	9	121
			Backhoe	CNP081	112	11	10	122
			Sub-total					133
F55	F58	Blasting through TCT	Drilling rig	Tab C11/2	112	10	10	122
			Sub-total					122
F56	F59	Slope protection and landscaping through TCT	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Concrete truck (mixer)	CNP044	109	2	3	112
			Dump truck	CNP067	117	2	3	120
			Backhoe	CNP081	112	2	3	115
			Sub-total					122
F57	F60	Dredging for sloping seawall for platform east of TCT to R10 toll plaza	Grab dredger	CNP063	112	3	5	117
			Sub-total					117
F58	F61	Placement of sloping seawall for platform east of TCT to R10 toll plaza	Derrick lighter	CNP061	104	3	5	109
			Sub-total					109
F59	F62	Filling reclamation for platform east of TCT to R10 toll plaza	Dump truck	CNP067	117	8	9	126
			Hopper barge/ Pelican barge/ Barge	CNP061	104	2	3	107
			Land band drain rig (compressor)	CNP003	104	4	6	110
			Marine band drain rig (compressor)	CNP003	104	2	3	107
			Sub-total					126
F60	F63	Surcharge placement for platform east of TCT upto R10 Toll Plaza	Dozer	CNP030	115	3	5	120
			Dump truck	CNP067	117	5	7	124
			Tugboat	CNP221	110	2	3	113
			Sub-total					126
F61	F64	Slope Protection along southern boundary of TCT	Compressor > 30m ³ /min	CNP003	104	3	5	109
			Handheld breaker>35kg	CNP026	114	6	8	122
			Concrete truck (mixer)	CNP044	109	3	5	114
			Dump truck	CNP067	117	3	5	122
			Backhoe	CNP081	112	3	5	117
			Sub-total					126
F62	F65	Dredging for Theme Park phase 2	Grab dredger	CNP063	112	11	0	112
			Sub-total					112
F63	F66	Placement of seawall for Theme Park phase 2	Grab dredger	CNP063	112	1	0	112
			Derrick lighter	CNP061	104	2	3	107
			Tugboat	CNP221	110	4	6	116
			Hopper barge/ Pelican barge/ Barge	CNP061	104	2	3	107
			Sub-total					118
F64	F67	Filling reclamation for Theme Park phase 2	Grab dredger	CNP063	112	2	3	115
			Dozer	CNP030	115	2	3	118
			Dump truck	CNP067	117	5	7	124
			Tugboat	CNP221	110	3	5	115
			Loading shovel (excavator)	CNP081	112	2	3	115
			Hopper barge/ Pelican barge/ Barge	CNP061	104	3	5	109
			Crane/vibrocompaction	By SWHK	112	2	3	115
			Land drain rig (compressor)	CNP003	104	1	0	104
			Marine drain rig (compressor)	CNP003	104	1	0	104
			Sub-total					127
F65	F68	Surcharge placement for Theme Park phase 2	Dozer	CNP030	115	2	3	118
			Dump truck	CNP067	117	8	9	126
			Loading shovel (excavator)	CNP081	112	2	3	115
			Sub-total					127
F66	F69	Slope Protection along eastern boundary of TCT	Compressor > 30m ³ /min	CNP003	104	3	5	109
			Handheld breaker>35kg	CNP026	114	6	8	122

Table C2.1 - Plant Inventory (Unmitigated)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
			Concrete truck (mixer)	CNP044	109	3	5	114
			Dump truck	CNP067	117	3	5	122
			Backhoe	CNP081	112	3	5	117
			Sub-total					126
F67	F70	Dredging for Fa Peng	Grab dredger	CNP063	112	3	5	117
			Tugboat	CNP221	110	1	0	110
			Sand barge	CNP061	104	3	5	109
			Sub-total					118
F68	F71	Placement of seawall for Fa Peng	Derrick lighter	CNP061	104	2	3	107
			Tugboat	CNP221	110	2	3	113
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0	104
			Sand barge	CNP061	104	3	5	109
			Sub-total					115
F69	F72	Filling reclamation for Fa Peng	Grab dredger	CNP063	112	4	6	118
			TS Dredger	By SWHK	109	4	6	115
		NB. TS and CS dredger may be substituted for other types of marine based reclamation plant	CS Dredger	By SWHK	104	2	3	107
			Derrick lighter	CNP061	104	2	3	107
			Dozer	CNP030	115	4	6	121
			Dump truck	CNP067	117	10	10	127
			Tugboat	CNP221	110	6	8	118
			Loading shovel (excavator)	CNP081	112	6	8	120
			Hopper barge/ Pelican barge/ Barge	CNP061	104	12	11	115
			Crane/vibrocompaction	By SWHK	112	4	6	118
			Land Drain Rig (compressor)	CNP003	104	2	3	107
			Marine Drain Rig (compressor)	CNP003	104	2	3	107
			Sand barge	CNP061	104	3	5	109
			Sub-total					130
F70	F73	Surcharge placement for Fa Peng	Dozer	CNP030	115	4	6	121
			Dump truck	CNP067	117	10	10	127
			Loading shovel (excavator)	CNP081	112	5	7	119
			Sub-total					128
F71	F74	Dredging for Northshore (Yam O Bay to To Kau Wan)	Grab dredger	CNP063	112	1	0	112
			Tugboat	CNP221	110	1	0	110
			Sand barge	CNP061	104	1	0	104
			Sub-total					115
F72	F75	Placement of seawall for Northshore (Yam O Bay to To Kau Wan)	Tugboat	CNP221	110	2	3	113
			Derrick lighter	CNP061	104	1	0	104
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0	104
			Sand barge	CNP061	104	1	0	104
			Sub-total					114
F73	F76	Filling reclamation for Northshore (Yam O Bay to To Kau Wan)	Grab dredger	CNP063	112	4	6	118
			TS Dredger	By SWHK	109	4	6	115
		NB. TS and CS dredger may be substituted for other types of marine based reclamation plant	CS Dredger	By SWHK	104	2	3	107
			Derrick lighter	CNP061	104	2	3	107
			Dozer	CNP030	115	4	6	121
			Dump truck	CNP067	117	10	10	127
			Tugboat	CNP221	110	6	8	118
			Loading shovel (excavator)	CNP081	112	6	8	120
			Hopper barge/ Pelican barge/ Barge	CNP061	104	12	11	115
			Crane/vibrocompaction	By SWHK	112	4	6	118
			Land Drain Rig (compressor)	CNP003	104	2	3	107
			Marine Drain Rig (compressor)	CNP003	104	2	3	107
			Sand barge	CNP061	104	4	6	110
			Sub-total					130
F74	F77	Surcharge placement for Northshore (Yam O Bay to To Kau Wan)	Dozer	CNP030	115	4	6	121
			Dump truck	CNP067	117	10	10	127
			Loading shovel (excavator)	CNP081	112	5	7	119
			Sub-total					128
F75	F78	Dredging for Northshore (Road P1- Siu Ho Wan to Ta Pang Po)	Grab dredger	CNP063	112	1	0	112
			Tugboat	CNP221	110	1	0	110
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0	104
			Sub-total					115
F76	F79	Placement of seawall for Northshore (Road P1- Siu Ho Wan to Ta Pang Po)	Derrick lighter	CNP061	104	1	0	104
			Tugboat	CNP221	110	2	3	113
			Sub-total					114
F77	F80	Filling reclamation for Northshore (Road P1- Siu Ho Wan to Ta Pang Po)	Grab dredger	CNP063	112	2	3	115
			Derrick lighter	CNP061	104	1	0	104
			Dozer	CNP030	115	2	3	118
			Dump truck	CNP067	117	4	6	123
			Tugboat	CNP221	110	1	0	110
			Loading shovel (excavator)	CNP081	112	2	3	115
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0	104
			Land Drain Rig (compressor)	CNP003	104	1	0	104
			Marine Drain Rig (compressor)	CNP003	104	1	0	104

Table C2.1 - Plant Inventory (Unmitigated)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
Sub-total								125
F78	F81	Surcharge placement for Northshore (Road P1- Siu Ho Wan to Ta Pang Po)	Dozer	CNP030	115	1	0	115
			Dump truck	CNP067	117	3	5	122
			Loading shovel (excavator)	CNP081	112	2	3	115
Sub-total								123
F79	F82	Excavation for tunnels through Yam Tsai headland including boring	Handheld breaker	CNP026	114	8	9	123
			Dumb truck	CNP067	117	8	9	126
			Backhoe	CNP081	112	4	6	118
			Mobile Crane	CNP048	112	2	3	115
			Drilling rig	Tab C11/2	112	4	6	118
			Generator	CNP101	108	4	6	114
Sub-total								129
F80	F83	Dredging for Siu Ho Wan	Grab dredger	CNP063	112	2	3	115
			Tugboat	CNP221	110	1	0	110
			Mobile Crane	CNP048	112	1	0	112
			Sand barge	CNP061	104	2	3	107
Sub-total								118
F81	F84	Placement of seawall for Siu Ho Wan	Grab dredger	CNP063	112	2	3	115
			Derrick lighter	CNP061	104	1	0	104
			Tugboat	CNP221	110	1	0	110
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0	104
			Mobile Crane	CNP048	112	1	0	112
			Sand barge	CNP061	104	2	3	107
Sub-total								118
F82	F85	Filling reclamation for Siu Ho Wan	Grab dredger	CNP063	112	1	0	112
			Dozer	CNP030	115	1	0	115
			Dump truck	CNP067	117	3	5	122
			Tugboat	CNP221	110	4	6	116
			Loading shovel (excavator)	CNP081	112	1	0	112
			Hopper barge/ Pelican barge/ Barge	CNP061	104	2	3	107
			Land drain rig (compressor)	CNP003	104	1	0	104
			Maine drain rig (compressor)	CNP003	104	1	0	104
			Mobile Crane	CNP048	112	7	8	120
			Sand barge	CNP061	104	10	10	114
Sub-total								126
F83	F86	Surcharge placement for Siu Ho Wan	Dozer	CNP030	115	2	3	118
			Dump truck	CNP067	117	3	5	122
			Loading shovel (excavator)	CNP081	112	1	0	112
Sub-total								124
Transport Infrastructure								
G84	G87	Road Structures including (Piling & Foundations plus superstructure) : CKWLR from Penny's Bay Interchange to R10 Toll Plaza	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Handheld breaker >35kg	CNP026	114	2	3	117
			Concrete truck (mixer)	CNP044	109	1	0	109
			Backhoe	CNP081	112	2	3	115
			Mobile crane	CNP048	112	2	3	115
			Generator	CNP101	108	2	3	111
			Poker vibrator	CNP170	113	4	6	119
			Bored piler oscillator	CNP165	115	2	3	118
Sub-total								125
G85	G88	Road Surfacing / Construction at grade : CKWLR from Penny's Bay Interchange to R10 Toll Plaza	Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	1	0	112
			Grader	CNP104	113	2	3	116
			Tarmac paver	CNP004	109	1	0	109
			Tarmac truck	CNP067	117	2	3	120
			Roller	CNP185	108	1	0	108
Sub-total								123
G86	G89	Road Surfacing / Construction (elevated section including decking) : CKWLR from Penny's Bay Interchange to R10 Toll Plaza	Mobile crane	CNP048	112	2	3	115
			Tarmac paver	CNP004	109	1	0	109
			Tarmac truck	CNP067	117	2	3	120
			Roller	CNP185	108	1	0	108
			Launching girder (winch)	CNP263	102	1	0	102
Sub-total								122
G87	G90	Road Surfacing /Construction at grade : Road P1 - Siu Ho Wan to Yam O	Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	1	0	112
			Grader	CNP104	113	2	3	116
			Tarmac paver	CNP004	109	1	0	109
			Tarmac truck	CNP067	117	2	3	120
			Roller	CNP185	108	1	0	108
Sub-total								123

Table C2.1 - Plant Inventory (Unmitigated)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
G88	G91	Road Structures including (Piling & Foundations plus superstructure) :Road P1 - Siu Ho Wan to Yam O	Compressor > 30m³/min	CNP003	104	2	3	107
			Handheld breaker >35kg	CNP026	114	2	3	117
			Concrete truck (mixer)	CNP044	109	1	0	109
			Backhoe	CNP081	112	2	3	115
			Mobile crane	CNP048	112	2	3	115
			Generator	CNP101	108	2	3	111
			Poker vibrator	CNP170	113	4	6	119
			Tower crane	CNP049	95	1	0	95
			Coring rig	CNP165	115	1	0	115
			Sub-total					124
G89	G92	Road Surfacing / Construction (elevated section including decking) :Road P1 - Siu Ho Wan to Yam O	Mobile crane	CNP048	112	2	3	115
			Tarmac paver	CNP004	109	1	0	109
			Tarmac truck	CNP067	117	2	3	120
			Roller	CNP185	108	1	0	108
			Sub-total					122
G90	G95	Yam Tsai headland Tunneling work i.e Concrete lining, etc.	Compressor > 30m³/min	CNP003	104	2	3	107
			Concrete truck (mixer)	CNP044	109	4	6	115
			Backhoe	CNP081	112	2	3	115
			Mobile crane	CNP048	112	1	0	112
			Concrete lining machine (concrete pump)	CNP047	109	1	0	109
			Lorry	CNP141	112	1	0	112
			Sub-total					120
G91	G96	Road Surfacing / Construction at grade for Northern Reclamation	Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	1	0	112
			Grader	CNP104	113	2	3	116
			Tarmac paver	CNP004	109	1	0	109
			Tarmac truck	CNP067	117	2	3	120
			Roller	CNP185	108	1	0	108
			Sub-total					123
G92	G97	Road Structures including (Piling & Foundations plus superstructure and submerged sections, where appropriate) : for Northern Reclamation	Compressor > 30m³/min	CNP003	104	2	3	107
			Handheld breaker >35kg	CNP026	114	2	3	117
			Concrete truck (mixer)	CNP044	109	1	0	109
			Backhoe	CNP081	112	2	3	115
			Mobile crane	CNP048	112	2	3	115
			Generator	CNP101	108	2	3	111
			Poker vibrator	CNP170	113	4	6	119
			Bored piler, oscillator	CNP165	115	2	3	118
			Sub-total					125
G93	G98	Road Surfacing / Construction (elevated section including decking) for Northern Reclamation	Mobile crane	CNP048	112	2	3	115
			Tarmac paver	CNP004	109	1	0	109
			Tarmac truck	CNP067	117	2	3	120
			Roller	CNP185	108	1	0	108
			Launching girder (winch)	CNP263	102	1	0	102
			Sub-total					122
G94	G101	Road Surfacing / Construction at grade incl. roadside buffers: Road P2 Theme Park East Roundabout	Compressor > 30m³/min	CNP003	104	2	3	107
			Dump truck	CNP067	117	2	3	120
			Backhoe	CNP081	112	3	5	117
			Grader	CNP104	113	1	0	113
			Tarmac paver	CNP004	109	1	0	109
			Tarmac truck	CNP067	117	2	3	120
			Roller	CNP185	108	2	3	111
			Sub-total					125
G95	G102	Road Surfacing / Construction at grade incl. roadside buffers: Road D2 Theme Park East Roundabout to Theme Park	Dump truck	CNP067	117	2	3	120
			Backhoe	CNP081	112	3	5	117
			Grader	CNP104	113	1	0	113
			Tarmac paver	CNP004	109	1	0	109
			Tarmac truck	CNP067	117	2	3	120
			Roller	CNP185	108	2	3	111
			Sub-total					125
G96	G103	Road Surfacing / Construction at grade incl. roadside buffers: Road P2 Theme Park East Roundabout to Pa Kwu Interchange	Compressor > 30m³/min	CNP003	104	2	3	107
			Dump truck	CNP067	117	2	3	120
			Backhoe	CNP081	112	3	5	117
			Grader	CNP104	113	1	0	113
			Tarmac paver	CNP004	109	1	0	109
			Tarmac truck	CNP067	117	2	3	120
			Roller	CNP185	108	2	3	111
			Sub-total					125

Table C2.1 - Plant Inventory (Unmitigated)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
G97	G104	Road Surfacing / Construction at grade for Eastern Reclamation	Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	1	0	112
			Grader	CNP104	113	2	3	116
			Tarmac paver	CNP004	109	1	0	109
			Tarmac truck	CNP067	117	2	3	120
			Roller	CNP185	108	1	0	108
			Sub-total					123
G98	G105	Road Structures including (Piling & Foundations plus superstructure and submerged sections, where appropriate) : for Eastern Reclamation	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Handheld breaker > 35kg	CNP026	114	2	3	117
			Concrete truck (mixer)	CNP044	109	1	0	109
			Backhoe	CNP081	112	2	3	115
			Mobile crane	CNP048	112	2	3	115
			Generator	CNP101	108	2	3	111
			Poker vibrator	CNP170	113	4	6	119
			Sub-total					123
G99	G106	Road Surfacing / Construction (elevated section including decking) for Eastern Reclamation	Mobile crane	CNP048	112	2	3	115
			Tarmac paver	CNP004	109	1	0	109
			Tarmac truck	CNP067	117	2	3	120
			Roller	CNP185	108	1	0	108
			Sub-total					122
G100	G107	Road Surfacing / Construction at grade for EVA for Tso Wan Village Expansion and maintenance/operation access to Fa Peng Reservoirs	Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	1	0	112
			Grader	CNP104	113	2	3	116
			Tarmac paver	CNP004	109	1	0	109
			Tarmac truck	CNP067	117	2	3	120
			Roller	CNP185	108	1	0	108
			Sub-total					123
G101	G108	Road Surfacing / Construction at grade for Siu Ho Wan Reclamation	Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	1	0	112
			Grader	CNP104	113	2	3	116
			Tarmac paver	CNP004	109	1	0	109
			Tarmac truck	CNP067	117	2	3	120
			Roller	CNP185	108	1	0	108
			Sub-total					123
G102	H109	Services Infrastructure Installation of Utilities / Services i.e electricity, gas, telecom etc.	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Concrete truck (mixer)	CNP044	109	1	0	109
			Dump truck	CNP067	117	2	3	120
			Backhoe	CNP081	112	2	3	115
			Sub-total					122
G103	H110	Installation of Water mains Fresh and Salt including irrigation	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Concrete truck (mixer)	CNP044	109	1	0	109
			Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	1	0	112
			Mobile crane	CNP048	112	1	0	112
			Poker vibrator	CNP170	113	2	3	116
			Lorry	CNP141	112	1	0	112
			Sub-total					122
G104	H111	Installation of sewerage mains both gravity and pumped including pumping stations, chambers and wells	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Concrete truck (mixer)	CNP044	109	2	3	112
			Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	1	0	112
			Mobile crane	CNP048	112	1	0	112
			Poker vibrator	CNP170	113	4	6	119
			Lorry	CNP141	112	1	0	112
			Sub-total					123
G105	H112	Installation of Stormwater drainage, open channels plus culverts	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Concrete truck (mixer)	CNP044	109	2	3	112
			Dump truck	CNP067	117	2	3	120
			Backhoe	CNP081	112	2	3	115
			Mobile crane	CNP048	112	1	0	112
			Poker vibrator	CNP170	113	4	6	119
			Lorry	CNP141	112	1	0	112
			Sub-total					124

Table C2.1 - Plant Inventory (Unmitigated)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
G106	H113	Excavation of proposed reservoirs at Fa Peng including maintenance and operation access road	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Handheld breaker >35kg	CNP026	114	5	7	121
			Dump truck	CNP067	117	15	12	129
			Excavator/loader	CNP081	112	3	5	117
			Backhoe	CNP081	112	3	5	117
			Drilling rig	Tab C 11/2	112	5	7	119
			Sub-total					130
G107	H114	Construction of reservoirs at Fa Peng plus associated facilities	Compressor > 30m ³ /min	CNP003	104	4	6	110
			Concrete truck (mixer)	CNP044	109	4	6	115
			Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	2	3	115
			Mobile crane	CNP048	112	2	3	115
			Generator	CNP101	108	2	3	111
			Poker vibrator	CNP170	113	8	9	122
			Sub-total					125
G108	H115	Landscaping of Fa Peng reservoirs	-	-	-	-	-	-
GIC Sites								
I109	I116	P.T.I in Penny's Bay Station- Phase 2	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Concrete truck (mixer)	CNP044	109	2	3	112
			Dump truck	CNP067	117	2	3	120
			Backhoe	CNP081	112	2	3	115
			Mobile crane	CNP048	112	2	3	115
			Vibratory piling rig	CNP164	115	1	0	115
			Poker vibrator	CNP170	113	4	6	119
			Sub-total					125
I110	I117	Public Parking in Penny's Bay -Phase 2	Backhoe	CNP081	112	2	3	115
			Grader	CNP104	113	1	0	113
			Tarmac paver	CNP004	109	1	0	109
			Tarmac truck	CNP067	117	2	3	120
			Compactor	CNP050	105	2	3	108
			Sub-total					122
I111	I118	2nd Fire Station in Penny's Bay	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Concrete truck (mixer)	CNP044	109	2	3	112
			Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	1	0	112
			Mobile crane	CNP048	112	1	0	112
			Vibratory piling rig	CNP164	115	1	0	115
			Poker vibrator	CNP170	113	4	6	119
			Sub-total					123
I112	I119	Utility Yard in Penny's Bay - Phase 2	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Concrete truck (mixer)	CNP044	109	1	0	109
			Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	1	0	112
			Mobile crane	CNP048	112	1	0	112
			Vibratory piling rig	CNP164	115	1	0	115
			Poker vibrator	CNP170	113	2	3	116
			Sub-total					122
I113	I120	Schools at Siu Ho Wan	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Concrete truck (mixer)	CNP044	109	1	0	109
			Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	1	0	112
			Mobile crane	CNP048	112	1	0	112
			Vibratory piling rig	CNP164	115	1	0	115
			Poker vibrator	CNP170	113	2	3	116
			Sub-total					122
I114	I121	Police Station in Northshore	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Concrete truck (mixer)	CNP044	109	2	3	120
			Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	1	0	112
			Mobile crane	CNP048	112	1	0	112
			Vibratory piling rig	CNP164	115	1	0	115
			Poker vibrator	CNP170	113	4	6	119
			Sub-total					125
I115	I122	Fire Station in Northshore	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Concrete truck (mixer)	CNP044	109	2	3	112
			Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	1	0	112
			Mobile crane	CNP048	112	1	0	112
			Vibratory piling rig	CNP164	115	1	0	115
			Poker vibrator	CNP170	113	4	6	119
			Sub-total					123
I116	I123	LPG/Petrol Station in Northshore	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Concrete truck (mixer)	CNP044	109	1	0	109
			Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	1	0	112
			Mobile crane	CNP048	112	1	0	112
			Vibratory piling rig	CNP164	115	1	0	115
			Poker vibrator	CNP170	113	2	3	116

Table C2.1 - Plant Inventory (Unmitigated)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
Sub-total								122
Theme Park Development								
J117	J124	Theme Park Building/Attraction Foundations	Compressor > 30m ³ /min	CNP003	104	4	6	110
			Handheld breaker >35kg	CNP026	114	11	10	124
			Concrete truck (mixer)	CNP044	109	20	13	122
			Dozer	CNP030	115	4	6	121
			Dump truck	CNP067	117	2	3	120
			Excavator/loader	CNP081	112	8	9	121
			Backhoe	CNP081	112	4	6	118
			Mobile crane	CNP048	112	4	6	118
			Drilling rig	Tab C11/2	112	8	9	121
			Generator	CNP101	108	4	6	114
			Lorry	CNP141	112	2	3	115
			Grader	CNP104	113	4	6	119
			Compactor	CNP050	105	3	5	110
			Water pump	CNP282	103	15	12	115
			Pan Scrapers	CNP204	119	3	5	124
Sub-total								132
J118	J125	Theme Park Building/Attraction Construction	Compressor > 30m ³ /min	CNP003	104	10	10	114
			Handheld breaker >35kg	CNP026	114	15	12	126
			Concrete truck (mixer)	CNP044	109	30	15	124
			Dozer	CNP030	115	4	6	121
			Dump truck	CNP067	117	2	3	120
			Excavator/loader	CNP081	112	8	9	121
			Backhoe	CNP081	112	12	11	123
			Mobile crane	CNP048	112	12	11	123
			Generator	CNP101	108	4	6	114
			Lorry	CNP141	112	2	3	115
			Grader	CNP104	113	2	3	116
			Compactor	CNP050	105	2	3	108
			Water pump	CNP282	103	15	12	115
			Tower crane	CNP049	95	10	10	105
			Bobcats	By WDI	114	20	13	127
			Ditch Witch Trencher	By WDI	117	3	5	122
			Forklifts	By WDI	113	20	13	126
Sub-total								134
J119	J126	Theme Park Surfacing, Landscaping and Berm	Compressor > 30m ³ /min	CNP003	104	4	6	110
			Handheld breaker >35kg	CNP026	114	3	5	119
			Concrete truck (mixer)	CNP044	109	8	9	118
			Dozer	CNP030	115	4	6	121
			Dump truck	CNP067	117	2	3	120
			Excavator/loader	CNP081	112	2	3	115
			Backhoe	CNP081	112	12	11	123
			Mobile crane	CNP048	112	4	6	118
			Generator	CNP101	108	4	6	114
			Lorry	CNP141	112	2	3	115
			Grader	CNP104	113	2	3	116
			Compactor	CNP050	105	1	0	105
			Bobcats	By WDI	114	6	8	122
			Ditch Witch Trencher	By WDI	117	3	5	122
			Forklifts	By WDI	113	4	5	119
Sub-total								131
J120	J131	Hotels Foundations	Compressor > 30m ³ /min	CNP003	104	4	6	110
			Handheld breaker >35kg	CNP026	114	12	11	125
			Concrete truck (mixer)	CNP044	109	12	11	120
			Dozer	CNP030	115	3	5	120
			Dump truck	CNP067	117	6	8	125
			Excavator/ Loader	CNP081	112	4	6	118
			Backhoe	CNP081	112	3	5	117
			Generator	CNP101	108	6	8	116
			Lorry	CNP141	112	3	5	117
			Grader	CNP104	113	3	5	118
			Compactor	CNP050	105	3	5	110
			Water pump	CNP282	103	6	8	111
			Tower crane	CNP049	95	3	5	100
			Bobcats	By WDI	114	6	8	122
			Pan scrapers	CNP204	114	2	3	117
Sub-total								131
J121	J132	Hotels Superstructure	Compressor > 30m ³ /min	CNP003	104	3	5	109
			Handheld breaker >35kg	CNP026	114	2	3	117
			Concrete truck (mixer)	CNP044	109	4	6	115
			Excavator/ Loader	CNP081	112	3	5	117
			Backhoe	CNP081	112	3	5	117
			Mobile crane	CNP048	112	2	3	115
			Generator	CNP101	108	6	8	116
			Lorry	CNP141	112	3	5	117
			Grader	CNP104	113	3	5	118
			Compactor	CNP050	105	3	5	110
			Tower crane	CNP049	95	3	5	100
Sub-total								126
Siu Ho Wan Development								
K122	K133	Housing foundations	Compressor > 30m ³ /min	CNP003	104	4	6	110
			Concrete truck (mixer)	CNP044	109	4	6	115
			Dump truck	CNP067	117	2	3	120
			Backhoe	CNP081	112	4	6	118
			Mobile crane	CNP048	112	2	3	115

Table C2.1 - Plant Inventory (Unmitigated)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
			Vibratory piling rig	CNP164	115	2	3	118
			Poker vibrator	CNP170	113	8	9	122
			Sub-total					127
K123	K134	Housing superstructure	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Concrete truck (mixer)	CNP044	109	2	3	112
			Backhoe	CNP081	112	2	3	115
			Mobile crane	CNP048	112	2	3	115
			Poker vibrator	CNP170	113	4	6	119
			Water pump	CNP282	103	4	6	109
			Tower crane	CNP049	95	1	0	95
			Sub-total					122
NorthShore Development								
L124	L135	Theme Park Gateway - Foundations	Compressor > 30m ³ /min	CNP003	104	4	6	110
			Concrete truck (mixer)	CNP044	109	4	6	115
			Dump truck	CNP067	117	2	3	120
			Backhoe	CNP081	112	4	6	118
			Mobile crane	CNP048	112	2	3	115
			Vibratory piling rig	CNP164	115	2	3	118
			Poker vibrator	CNP170	113	8	9	122
			Sub-total					127
L125	L136	Theme Park Gateway - Superstructure	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Concrete truck (mixer)	CNP044	109	2	3	112
			Backhoe	CNP081	112	2	3	115
			Mobile crane	CNP048	112	2	3	115
			Poker vibrator	CNP170	113	4	6	119
			Water pump	CNP282	103	4	6	109
			Tower crane	CNP049	95	1	0	95
			Sub-total					122
L126	L137	EcoPark Incl Tsing Chau Tsui Trailwalk - footpath and landscape works	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Concrete truck (mixer)	CNP044	109	1	0	109
			Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	1	0	112
			Sub-total					119
L127	L138	Cross Boundary Ferry Pier 1 Substructure: piling/foundations	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Concrete truck (mixer)	CNP044	109	2	3	112
			Derrick lighter	CNP061	104	1	0	104
			Tugboat	CNP221	110	1	0	110
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0	104
			Mobile crane	CNP048	112	1	0	112
			Generator	CNP101	108	1	0	108
			Poker vibrator	CNP170	113	4	6	119
			Coring rig	CNP165	115	3	5	120
			Sub-total					124
L128	L139	Cross Boundary Ferry Pier 1 Superstructure: Precast decking and insitu infill	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Concrete truck (mixer)	CNP044	109	2	3	112
			Derrick lighter	CNP061	104	1	0	104
			Tugboat	CNP221	110	1	0	110
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0	104
			Mobile crane	CNP048	112	1	0	112
			Generator	CNP101	108	1	0	108
			Poker vibrator	CNP170	113	4	6	119
			Sub-total					121
L129	L140	Cross Boundary Ferry Pier 1 Building Foundations	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Concrete truck (mixer)	CNP044	109	2	3	112
			Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	2	3	115
			Vibratory piling rig	CNP164	115	1	0	115
			Poker vibrator	CNP170	113	4	6	119
			Water pump	CNP282	103	2	3	106
			Sub-total					123
L130	L141	Cross Boundary Ferry Pier 1 Building Superstructure	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Concrete truck (mixer)	CNP044	109	2	3	112
			Backhoe	CNP081	112	2	3	115
			Mobile crane	CNP048	112	2	3	115
			Poker vibrator	CNP170	113	4	6	119
			Sub-total					122
L131	L142	Tourist & Convention Centre - Foundations	Compressor > 30m ³ /min	CNP003	104	4	6	110
			Concrete truck (mixer)	CNP044	109	4	6	115
			Dump truck	CNP067	117	2	3	120
			Backhoe	CNP081	112	4	6	118
			Mobile crane	CNP048	112	2	3	115
			Vibratory piling rig	CNP164	115	2	3	118
			Poker vibrator	CNP170	113	8	9	122
			Sub-total					127
L132	L143	Tourist & Convention Centre - Superstructure	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Concrete truck (mixer)	CNP044	109	2	3	112

Table C2.1 - Plant Inventory (Unmitigated)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
			Backhoe	CNP081	112	2	3	115
			Mobile crane	CNP048	112	2	3	115
			Poker vibrator	CNP170	113	4	6	119
			Water pump	CNP282	103	4	6	109
			Tower crane	CNP049	95	1	0	95
			Sub-total					122
L133	L144	Technodrome - Foundations	Compressor > 30m ³ /min	CNP003	104	4	6	110
			Concrete truck (mixer)	CNP044	109	4	6	115
			Dump truck	CNP067	117	2	3	120
			Backhoe	CNP081	112	4	6	118
			Mobile crane	CNP048	112	2	3	115
			Vibratory piling rig	CNP164	115	2	3	118
			Poker vibrator	CNP170	113	8	9	122
			Sub-total					127
L134	L145	Technodrome - Superstructure	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Concrete truck (mixer)	CNP044	109	2	3	112
			Backhoe	CNP081	112	2	3	115
			Mobile crane	CNP048	112	2	3	115
			Poker vibrator	CNP170	113	4	6	119
			Water pump	CNP282	103	4	6	109
			Tower crane	CNP049	95	1	0	95
			Sub-total					122
		Eastern Development						
M135		Recreational Tourism development - Foundations	Compressor > 30m ³ /min	CNP003	104	4	6	110
			Concrete truck (mixer)	CNP044	109	4	6	115
			Dump truck	CNP067	117	2	3	120
			Backhoe	CNP081	112	4	6	118
			Mobile crane	CNP048	112	2	3	115
			Vibratory piling rig	CNP164	115	2	3	118
			Poker vibrator	CNP170	113	8	9	122
			Sub-total					127
M136		Recreational Tourism development - Superstructure	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Concrete truck (mixer)	CNP044	109	2	3	112
			Backhoe	CNP081	112	2	3	115
			Mobile crane	CNP048	112	2	3	115
			Poker vibrator	CNP170	113	4	6	119
			Water pump	CNP282	103	4	6	109
			Tower crane	CNP049	95	1	0	95
			Sub-total					122
		Theme Park Development - Theme Park Extension (WDI Option)						
N137	N	Theme Park Extension - foundations	Compressor > 30m ³ /min	CNP003	104	4	6	110
			Handheld breaker > 35kg	CNP026	114	4	6	120
			Concrete truck (mixer)	CNP044	109	4	6	115
			Dozer	CNP030	115	2	3	118
			Dump truck	CNP067	117	2	3	120
			Excavator/ Loader	CNP081	112	2	3	115
			Backhoe	CNP081	112	2	3	115
			Mobile Crane	CNP048	112	2	3	115
			Generator	CNP101	108	2	3	111
			Lorry	CNP141	112	2	3	115
			Grader	CNP104	113	2	3	116
			Waterpump	CNP282	103	4	6	109
			Bobcats	By WDI	114	5	7	121
			Ditch Witch Trencher	By WDI	117	1	0	117
			Forklifts	By WDI	113	10	10	123
			Pan Scrapers	CNP204	119	1	0	119
			Sub-total					130
N138		Theme Park Extension - superstructure	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Handheld breaker > 35kg	CNP026	114	4	6	120
			Concrete truck (mixer)	CNP044	109	4	6	115
			Excavator/ Loader	CNP081	112	2	3	115
			Backhoe	CNP081	112	2	3	115
			Mobile Crane	CNP048	112	2	3	115
			Generator	CNP101	108	2	3	111
			Lorry	CNP141	112	2	3	115
			Waterpump	CNP282	103	4	6	109
			Tower crane	CNP049	95	1	0	95
			Sub-total					125
N139		RD&E Foundations	Compressor > 30m ³ /min	CNP003	104	4	6	110
			Handheld breaker > 35kg	CNP026	114	8	9	123
			Concrete truck (mixer)	CNP044	109	10	10	119
			Dozer	CNP030	115	2	3	118
			Dump truck	CNP067	117	2	3	120
			Excavator/ Loader	CNP081	112	3	5	117
			Backhoe	CNP081	112	2	3	115
			Mobile Crane	CNP048	112	2	3	115
			Generator	CNP101	108	2	3	111
			Lorry	CNP141	112	2	3	115
			Grader	CNP104	113	2	3	116
			Waterpump	CNP282	103	4	6	109
			Pan Scrapers	CNP204	119	1	0	119

Table C2.1 - Plant Inventory (Unmitigated)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
Sub-total								129
N140		RD&E Superstructure	Compressor >30m ³ /min	CNP003	104	2	3	107
			Handheld breaker >35kg	CNP026	114	8	9	123
			Concrete truck (mixer)	CNP044	109	10	10	119
			Excavator/ Loader	CNP081	112	2	3	115
			Backhoe	CNP081	112	2	3	115
			Mobile Crane	CNP048	112	2	3	115
			Generator	CNP101	108	2	3	111
			Lorry	CNP141	112	2	3	115
			Waterpump	CNP282	103	4	6	109
			Tower crane	CNP049	95	1	0	95
			Bobcats	By WDI	114	10	10	124
			Ditch Witch Trencher	By WDI	117	2	3	120
			Forklifts	By WDI	113	10	10	123
Sub-total								130
Phase 3								
Reclamation & Excavation								
O141	N154	Dredging for sloping seawall for platform south of TCT upto R10-HKLL	Grab dredger	CNP063	112	1	0	112
			Tugboat	CNP221	110	1	0	110
			Sand barge	CNP061	104	1	0	104
Sub-total								115
O142	N155	Placement of sloping seawall for platform south of TCT upto R10-HKLL	Grab dredger	CNP063	112	1	0	112
			Derrick lighter	CNP061	104	1	0	104
			Tugboat	CNP221	110	1	0	110
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0	104
			Sand barge	CNP061	104	1	0	104
Sub-total								115
O143	N156	Filling reclamation for platform south of TCT upto R10-HKLL	Grab dredger	CNP063	112	1	0	112
			Dozer	CNP030	115	1	0	115
			Dump truck	CNP067	117	3	5	122
			Tugboat	CNP221	110	2	3	113
			Loading shovel (excavator)	CNP081	112	1	0	112
			Hopper barge/ Pelican barge/ Barge	CNP061	104	2	3	107
			Land drain rig (compressor)	CNP003	104	1	0	104
			Marine drain rig (compressor)	CNP003	104	1	0	104
			Sand barge	CNP061	104	7	8	112
Sub-total								124
O144	N157	Surcharge placement for platform south of TCT upto R10-HKLL	Dozer	CNP030	115	2	3	118
			Dump truck	CNP067	117	3	5	122
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0	104
Sub-total								123
O145	N158	Dredging at Theme Park Extension	Grab dredger	CNP063	112	3	5	117
			Tugboat	CNP221	110	1	0	110
			Sand barge	CNP061	104	3	5	109
Sub-total								118
O146	N159	Placement of vertical seawall at Theme Park Extension	Grab dredger	CNP063	112	1	0	112
			Derrick lighter	CNP061	104	2	3	107
			Tugboat	CNP221	110	3	5	115
			Hopper barge/ Pelican barge/ Barge	CNP061	104	2	3	107
			Sand barge	CNP061	104	3	5	109
Sub-total								118
O147	N160	Filling at Theme Park Extension	Grab dredger	CNP063	112	1	0	112
			Dozer	CNP030	115	2	3	118
			Dump truck	CNP067	117	4	6	123
			Tugboat	CNP221	110	10	10	120
			Loading shovel (excavator)	CNP081	112	2	3	115
			Hopper barge/ Pelican barge/ Barge	CNP061	104	3	5	109
			Crane/vibrocompaction	By SWHK	112	2	3	115
			Land drain rig (compressor)	CNP003	104	1	0	104
			Marine drain rig (compressor)	CNP003	104	1	0	104
			Sand barge	CNP061	104	130	15	119
Sub-total								127
O148	N161	Surcharge at Theme Park Extension	Grab dredger	CNP063	112	2	3	115
			Dozer	CNP030	115	2	3	118
			Dump truck	CNP067	117	7	8	125
			Loading shovel (excavator)	CNP081	112	2	3	115
Sub-total								127
Transport infrastructure								
P149	O165	Road Structures including (Piling & Foundations plus superstructure) R10 Toll Plaza to R10-HKLL	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Handheld breaker >35kg	CNP026	114	2	3	117
			Concrete truck (mixer)	CNP044	109	2	3	112
			Backhoe	CNP081	112	2	3	115
			Mobile crane	CNP048	112	2	3	115
			Generator	CNP101	108	2	3	111

Table C2.1 - Plant Inventory (Unmitigated)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
			Poker vibrator	CNP170	113	4	6	119
			Bored piler, oscillator	CNP165	115	1	0	115
			Sub-total					124
P150	O166	Road Surfacing / Construction at grade : R10 Toll Plaza to R10-HKLL	Compressor > 30m³/min	CNP003	104	1	0	104
			Dump truck	CNP067	117	1	0	117
			Grader	CNP104	113	2	3	116
			Tarmac paver	CNP004	109	1	0	109
			Tarmac truck	CNP067	117	2	3	120
			Roller	CNP185	108	1	0	108
			Sub-total					123
P151	O167	Road Surfacing / Construction (elevated section including decking) : R10 Toll Plaza to R10-HKLL	Compressor > 30m³/min	CNP003	104	1	0	104
			Concrete truck (mixer)	CNP044	109	1	0	109
			Mobile crane	CNP048	112	2	3	115
			Generator	CNP101	108	1	0	108
			Poker vibrator	CNP170	113	2	3	116
			Tarmac paver	CNP004	109	1	0	109
			Tarmac truck	CNP067	117	2	3	120
			Roller	CNP185	108	1	0	108
			Launching girder (winch)	CNP263	102	1	0	102
			Sub-total					123
Services Infrastructure								
Q152	P169	Installation of Utilities / Services i.e electricity, gas, telecom etc.	Compressor > 30m³/min	CNP003	104	2	3	107
			Concrete truck (mixer)	CNP044	109	1	0	109
			Dump truck	CNP067	117	2	3	120
			Backhoe	CNP081	112	2	3	115
			Sub-total					122
Q153	P170	Installation of Water mains Fresh and Salt	Compressor > 30m³/min	CNP003	104	1	0	104
			Concrete truck (mixer)	CNP044	109	1	0	109
			Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	1	0	112
			Mobile crane	CNP048	112	1	0	112
			Poker vibrator	CNP170	113	2	3	116
			Lorry	CNP141	112	1	0	112
			Sub-total					122
Q154	P171	Installation of sewerage mains both gravity and pumped including pumping stations, chambers and wells	Compressor > 30m³/min	CNP003	104	1	0	104
			Concrete truck (mixer)	CNP044	109	2	3	112
			Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	1	0	112
			Mobile crane	CNP048	112	1	0	112
			Poker vibrator	CNP170	113	4	6	119
			Lorry	CNP141	112	1	0	112
			Sub-total					123
Q155	P172	Installation of Stormwater drainage, open channels plus culverts	Compressor > 30m³/min	CNP003	104	2	3	107
			Concrete truck (mixer)	CNP044	109	2	3	112
			Dump truck	CNP067	117	2	3	120
			Backhoe	CNP081	112	2	3	115
			Mobile crane	CNP048	112	1	0	112
			Poker vibrator	CNP170	113	4	6	119
			Lorry	CNP141	112	1	0	112
			Sub-total					124
Theme Park Development								
R156	R175	Theme Park Extension - Foundations	Compressor > 30m³/min	CNP003	104	4	6	110
			Concrete truck (mixer)	CNP044	109	4	6	115
			Dump truck	CNP067	117	2	3	120
			Backhoe	CNP081	112	4	6	118
			Mobile crane	CNP048	112	2	3	115
			Vibratory piling rig	CNP164	115	2	3	118
			Poker vibrator	CNP170	113	8	9	122
			Sub-total					127
R157	R176	Theme Park Extension - Superstructure	Compressor > 30m³/min	CNP003	104	2	3	107
			Concrete truck (mixer)	CNP044	109	2	3	112
			Backhoe	CNP081	112	2	3	115
			Mobile crane	CNP048	112	2	3	115
			Poker vibrator	CNP170	113	4	6	119
			Water pump	CNP282	103	4	6	109
			Tower crane	CNP049	95	1	0	95
			Sub-total					122
R158	R177	Technodrome - Foundations	Compressor > 30m³/min	CNP003	104	4	6	110
			Concrete truck (mixer)	CNP044	109	4	6	115
			Dump truck	CNP067	117	2	3	120
			Backhoe	CNP081	112	4	6	118
			Mobile crane	CNP048	112	2	3	115
			Vibratory piling rig	CNP164	115	2	3	118
			Poker vibrator	CNP170	113	8	9	122
			Sub-total					127

Table C2.1 - Plant Inventory (Unmitigated)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
R159	R178	Technodrome - Superstructure	Compressor > 30m³/min	CNP003	104	2	3	107
			Concrete truck (mixer)	CNP044	109	2	3	112
			Backhoe	CNP081	112	2	3	115
			Mobile crane	CNP048	112	2	3	115
			Poker vibrator	CNP170	113	4	6	119
			Water pump	CNP282	103	4	6	109
			Tower crane	CNP049	95	1	0	95
			Sub-total					122
Northshore Development								
S160	S179	Cross Boundary Ferry Pier 2 Substructure: piling/foundations	Compressor > 30m³/min	CNP003	104	1	0	104
			Concrete truck (mixer)	CNP044	109	2	3	112
			Derrick lighter	CNP061	104	1	0	104
			Tugboat	CNP221	110	1	0	110
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0	104
			Mobile crane	CNP048	112	1	0	112
			Generator	CNP101	108	1	0	108
			Poker vibrator	CNP170	113	4	6	119
			Coring rig	CNP165	115	3	5	120
			Sub-total					124
S161	S180	Cross Boundary Ferry Pier 2 Superstructure: Precast decking and insitu infill	Compressor > 30m³/min	CNP003	104	1	0	104
			Concrete truck (mixer)	CNP044	109	2	3	112
			Derrick lighter	CNP061	104	1	0	104
			Tugboat	CNP221	110	1	0	110
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0	104
			Mobile crane	CNP048	112	1	0	112
			Generator	CNP101	108	1	0	108
			Poker vibrator	CNP170	113	4	6	119
			Sub-total					121
S162	S181	Cross Boundary Ferry Pier 2 Building Foundations	Compressor > 30m³/min	CNP003	104	2	3	107
			Concrete truck (mixer)	CNP044	109	2	3	112
			Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	2	3	115
			Vibratory piling rig	CNP164	115	1	0	115
			Poker vibrator	CNP170	113	4	6	119
			Water pump	CNP282	103	2	3	106
			Sub-total					123
S163	S182	Cross Boundary Ferry Pier 2 Building Superstructure	Compressor > 30m³/min	CNP003	104	2	3	107
			Concrete truck (mixer)	CNP044	109	2	3	112
			Backhoe	CNP081	112	2	3	115
			Mobile crane	CNP048	112	2	3	115
			Poker vibrator	CNP170	113	4	6	119
			Sub-total					122
Phase 3								
Penny's Bay Rail Link								
Yam O Station & Adjacent Section								
T164	T183	Foundation (Concreting)	Concrete truck (mixer)	CNP044	109	2	3	112
			Concrete lining machine (concrete pump)	CNP047	109	1	0	109
			Poker vibrator	CNP170	113	6	8	121
			Sub-total					122
T165	T184	Foundation (Formwork & Reinforcement)	Compressor £ 10m³/min	CNP001	100	1	0	100
			Generator	CNP101	108	1	0	108
			Mobile crane	CNP048	112	1	0	112
			Bar bender	CNP021	90	1	0	90
			Sub-total					114
T166	T185	Excavation	Compressor £ 10m³/min	CNP001	100	4	6	106
			Breaker, excavator mounted (hydraulic)	CNP028	122	1	0	122
			Excavator/Loader	CNP081	112	2	3	115
			Lorry	CNP141	112	3	5	117
			Submersible pump	by MTRC	96	1	0	96
			Sub-total					124
T167	T186	Station Construction	Compressor £ 10m³/min	CNP001	100	2	3	103
			Handheld breaker 20kgEmass*35kg	CNP025	111	2	3	114
			Concrete truck (mixer)	CNP044	109	3	5	114
			Mobile crane	CNP048	112	1	0	112
			Poker vibrator	CNP170	113	6	8	121
			Concrete lining machine (concrete pump)	CNP047	109	1	0	109
			Lorry	CNP141	112	1	0	112
			Tower crane	CNP049	95	2	3	98
			Hoist, material (electric)	CNP122	95	1	0	95
			Saw, circular, wood	CNP201	108	1	0	108
			Sub-total					123
T168	T187	Sheet Piling for Protection on Existing Tracks/ Platforms	Sheet piling (hydraulic vibratory driver)	BS 5228 Part4:1992 Tab 1/53	118	1	0	118
			Sub-total					118
Tunnel Portal (Start-up Works)								
T169	T188	Excavation	Excavator/ Loader (for Trench)	CNP081	112	3	5	117

Table C2.1 - Plant Inventory (Unmitigated)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
			Lorry	CNP141	112	6	8	120
				Sub-total				122
T170	T189	Sheet Piling	Sheet piling (hydraulic vibratory driver)	BS 5228.Part4:1992 1/ 53	118	1	0	118
				Sub-total				118
T171	T190	Soil Nail Installation and Initial Tunnel Excavation	Compressor £ 10m³/min	CNP001	100	3	5	105
			Drilling Rigs	Tab C11/ 1	117	2	3	120
				Sub-total				120
T172	T191	Re-construction of Roads	Vibrating roller	CNP186	108	1	0	108
			Dozer	CNP030	115	1	0	115
				Sub-total				116
T173	T192	Mechanical Rock Excavation	Breaker, excavator mounted (hydraulic)	CNP028	122	2	3	125
				Sub-total				125
Tunnel Works								
T174	T193	Works at Tunnel Portal	Compressor > 30m³/min	CNP003	104	4	6	110
			Mobile crane	CNP048	112	1	0	112
			Lorry	CNP141	112	1	0	112
			Ventilation fan	CNP241	108	2	3	111
			Forklift	By WDI	113	1	0	113
			Batching Plant	CNP022	108	1	0	108
				Sub-total				119
T175	T194	Removal of Spoil at Tunnel Portal	Excavator/Loader	CNP081	112	1	0	112
			Lorry	CNP141	112	3	5	117
				Sub-total				118
T176	B19	Concrete Lining, Track Laying	Compressor > 30m³/min	CNP003	104	2	3	107
			Concrete truck (mixer)	CNP044	109	4	6	115
			Excavator/ Loader	CNP081	112	2	3	115
			Mobile crane	CNP048	112	1	0	112
			Concrete lining machine (concrete pump)	CNP047	109	1	0	109
			Lorry	CNP141	112	1	0	112
				Sub-total				120
At Grade Trackwork								
T177	T195	Surface Drainage Construction including pumps to control water influx	Compressor > 30m³/min	CNP003	104	2	3	107
			Concrete truck (mixer)	CNP044	109	1	0	109
			Dozer	CNP030	115	1	0	115
			Dump truck	CNP067	117	2	3	120
			Crane/vibrocompaction	By SWHK	112	1	0	112
			Excavator/ Loader	CNP081	112	2	3	115
			Mobile Crane	CNP048	112	2	3	115
			Poker vibrator	CNP170	113	1	0	113
			Concrete lining machine (pump)	CNP047	109	1	0	109
			Lorry	CNP141	112	1	0	112
			Water pump	CNP282	103	8	9	112
				Sub-total				125
T178	T196	Track Laying	Generator	CNP101	108	1	0	108
			Diesel locomotive	from West Rail	118	2	3	121
			Lorry	CNP141	112	1	0	112
				Sub-total				122
Disney Station								
T179	T197	Excavation	Generator	CNP101	108	2	3	111
			Excavator/ Loader	CNP081	112	3	5	117
			Lorry	CNP141	112	8	9	121
				Sub-total				123
T180	T198	Foundation (Concreting)	Concrete truck (mixer)	CNP044	109	2	3	112
			Poker vibrator	CNP170	113	6	8	121
			Concrete lining machine (concrete pump)	CNP047	109	1	0	109
				Sub-total				122
T181	T199	Foundation (Formwork & Reinforcement)	Compressor £ 10m³/min	CNP001	100	1	0	100
			Generator	CNP101	108	2	3	111
			Mobile crane	CNP048	112	1	0	112
			Bar bender	CNP021	90	1	0	90
				Sub-total				115
T182	T200	Station Construction	Compressor £ 10m³/min	CNP001	100	4	6	106
			Handheld breaker 20kgEmass*35kg	CNP025	111	4	6	117
			Concrete truck (mixer)	CNP044	109	3	5	114
			Mobile crane	CNP048	112	2	3	115
			Poker vibrator	CNP170	113	6	8	121
			Lorry	CNP141	112	1	0	112
			Tower crane	CNP049	95	1	0	95
				Sub-total				124
Ventilation Building								
T183	B17	Ventilation Building Foundations	Compressor > 30m³/min	CNP003	104	2	3	107

Table C2.1 - Plant Inventory (Unmitigated)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
			Handheld breaker >35kg	CNP026	114	3	5	119
			Concrete truck (mixer)	CNP044	109	4	6	115
			Dump truck	CNP067	117	2	3	120
			Backhoe	CNP081	112	2	3	115
			Generator	CNP101	108	1	0	108
			Vibratory piling rig	CNP164	115	1	0	115
			Poker vibrator	CNP170	113	1	0	113
			Sub-total					125
T184	B18	Ventilation Building Superstructure	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Concrete truck (mixer)	CNP044	109	4	6	115
			Backhoe	CNP081	112	2	3	115
			Mobile crane	CNP048	112	2	3	115
			Generator	CNP101	108	1	0	108
			Poker vibrator	CNP170	113	1	0	113
			Sub-total					121

Table C2.2 - Plant Inventory (Use of Quiet Plant)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
Phase 1								
A1	A1	Reclamation & Excavation Slope protection in Penny's Bay West	Compressor > 30m ³ /min	CNP003	104	3	5	109
			Handheld breaker >35kg	Tab C2/10	110	6	8	118
			Concrete truck (mixer)	Tab C6/35	100	3	5	105
			Dump truck	Tab C9/27	105	3	5	110
			Backhoe	Tab C3/97	105	3	5	110
			Sub-total					120
A2	A2	Dredging at Theme Park Phase 1	Grab dredger	CNP063	112	1	0	112
			TS Dredger	By SWHK	109	1	0	109
			Sub-total					114
A3	A3	Placement of sloping/vertical seawall at Theme Park Phase 1	Grab dredger	CNP063	112	2	3	115
			Derrick lighter	CNP061	104	6	8	112
			Tugboat	CNP221	110	10	10	120
			Hopper barge/ Pelican barge/ Barge	CNP061	104	4	6	110
			Sub-total					122
A4	A4	Filling at Theme Park Phase 1	Grab Dredger	CNP063	112	6	8	120
			TS Dredger	By SWHK	109	4	6	115
			CS Dredger	By SWHK	104	2	3	107
			Derrick lighter	CNP061	104	4	6	110
			Dozer	Tab C9/2	104	8	9	113
			Dump truck	Tab C9/27	105	20	13	118
			Tugboat	CNP221	110	12	11	121
			Loading shovel (excavator)	Tab C3/97	105	12	11	116
			Hopper barge/ Pelican barge/ Barge	CNP061	104	24	14	118
			Crane/vibrocompaction	By SWHK	112	8	9	121
			Land drain rig (compressor)	CNP003	104	4	6	110
			Maine drain rig (compressor)	CNP003	104	4	6	110
			Sub-total					128
A5	A5	Surcharge at Theme Park Phase 1	Dozer	Tab C9/2	104	4	6	110
			Dump truck	Tab C9/27	105	10	10	115
			Loading shovel (excavator)	Tab C3/97	105	5	7	112
			Sub-total					118
A6	A6	Demolition, part of Cheoy Lee	Dump truck	Tab C9/27	105	1	0	105
			Excavator/Loader	Tab C3/97	105	1	0	105
			Backhoe	Tab C3/97	105	3	5	110
			Mobile crane	Tab C7/114	101	2	3	104
			Sub-total					113
A7	A7	Ground treatment	Dump truck	Tab C9/27	105	1	0	105
			Backhoe	Tab C3/97	105	2	3	108
			Sub-total					110
A8	A8	Excavation to tie in at existing Yam O Interchange	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Handheld breaker >35kg	Tab C2/10	110	5	7	117
			Dump truck	Tab C9/27	105	10	10	115
			Excavator/Loader	Tab C3/97	105	2	3	108
			Backhoe	Tab C3/97	105	2	3	108
			Sub-total					120
A9	A9	Blasting	Drilling Rigs	Tab C11/2	112	6	8	120
			Sub-total					120
A10	A10	Slope protection in Yam O Section	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Handheld breaker >35kg	Tab C2/10	110	2	3	113
			Concrete truck (mixer)	Tab C6/35	100	1	0	100
			Dump truck	Tab C9/27	105	1	0	105
			Backhoe	Tab C3/97	105	1	0	105
			Sub-total					115
A11	A11	Slope protection in Penny's Bay North Adjacent	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Handheld breaker >35kg	Tab C2/10	110	4	6	116
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Dump truck	Tab C9/27	105	2	3	108
			Backhoe	Tab C3/97	105	2	3	108
			Sub-total					113
A12	A12	Dredging sloping seawall at Yam O PTI	Grab dredger	CNP063	112	1	0	112
			Tugboat	CNP221	110	1	0	110
			Sand barge	CNP061	104	1	0	104
			Sub-total					116
A13	A13	Placement of sloping seawall at Yam O PTI	Grab dredger	CNP063	112	1	0	112
			Derrick lighter	CNP061	104	1	0	104
			Tugboat	CNP221	110	1	0	110
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0	104
			Sand barge	CNP061	104	1	0	104
			Sub-total					115
A14	A14	Filling at Yam O PTI	Grab dredger	CNP063	112	1	0	112
			Dozer	Tab C9/2	104	1	0	104

Table C2.2 - Plant Inventory (Use of Quiet Plant)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
			Dump truck	Tab C9/27	105	3	5	110
			Tugboat	CNP221	110	2	3	113
			Loading shovel (excavator)	Tab C3/97	105	1	0	105
			Hopper barge/ Pelican barge/ Barge	CNP061	104	2	3	107
			Land drain rig (compressor)	CNP003	104	1	0	104
			Maine drain rig (compressor)	CNP003	104	1	0	104
			Sand barge	CNP061	104	7	8	112
			Sub-total					119
A15	A15	Surcharge at Yam O PT1	Dozer	Tab C9/2	104	2	3	107
			Dump truck	Tab C9/27	105	3	5	110
			Loading shovel (excavator)	Tab C3/97	105	1	0	105
			Sub-total					112
B16	B20	Transport Infrastructure Temporary Road Surfacing/Construction at grade:: Temporary Access Road	Compressor > 30m³/min	CNP003	104	1	0	104
			Dump truck	Tab C9/27	105	2	3	108
			Backhoe	Tab C3/97	105	2	3	108
			Grader	Tab C9/11	110	1	0	110
			Tarmac paver	Tab C8/24	101	1	0	101
			Tarmac truck	Tab C9/27	105	2	3	108
			Roller	Tab C8/27	104	2	3	107
			Sub-total					116
B17	B21	Road Structures including (Piling & Foundations plus superstructure) : CKWLR from Yam O to Penny's Bay Interchange	Compressor > 30m³/min	CNP003	104	2	3	107
			Handheld breaker >35kg	Tab C2/10	110	4	6	116
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Backhoe	Tab C3/97	105	2	3	108
			Mobile Crane	Tab C7/114	101	2	3	104
			Generator	Tab C7/62	100	2	3	103
			Bored piler,oscillator	CNP165	115	1	0	115
			Sub-total					120
B18	B22	Road Surfacing / Construction at grade : CKWLR from Yam O to Penny's Bay Interchange	Compressor > 30m³/min	CNP003	104	2	3	107
			Dump truck	Tab C9/27	105	1	0	105
			Backhoe	Tab C3/97	105	1	0	105
			Grader	Tab C9/11	110	2	3	113
			Tarmac paver	Tab C8/24	101	1	0	101
			Tarmac truck	Tab C9/27	105	2	3	108
			Roller	Tab C8/27	104	2	3	107
			Sub-total					118
B19	B23	Road Surfacing / Construction (elevated section including decking): CKWLR from Yam O to Penny's Bay Interchange	Compressor > 30m³/min	CNP003	104	2	3	107
			Mobile Crane	Tab C7/114	101	2	3	104
			Poker vibrator	Tab C6/32	100	4	6	106
			Tarmac paver	Tab C8/24	101	1	0	101
			Tarmac truck	Tab C9/27	105	2	3	108
			Roller	Tab C8/27	104	2	3	107
			Launching girder (winch)	CNP263	102	1	0	102
			Sub-total					114
B20	B24	Road Structures including (Piling & Foundations plus superstructure) : Road P2 Northshore Development to Theme Park West	Compressor > 30m³/min	CNP003	104	2	3	107
			Handheld breaker >35kg	Tab C2/10	110	4	6	116
			Concrete truck (mixer)	Tab C6/35	100	4	6	106
			Backhoe	Tab C3/97	105	2	3	108
			Mobile crane	Tab C7/114	101	2	3	104
			Generator	Tab C7/62	100	1	0	100
			Poker vibrator	Tab C6/32	100	4	6	106
			Bored piler,oscillator	CNP165	115	1	0	115
			Sub-total					120
B21	B25	Road Surfacing / Construction at grade incl. roadside buffers : Road P2 Northshore Development to Theme Park West	Compressor > 30m³/min	CNP003	104	2	3	107
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Dump truck	Tab C9/27	105	2	3	108
			Backhoe	Tab C3/97	105	3	5	110
			Poker vibrator	Tab C6/32	100	4	6	106
			Grader	Tab C9/11	110	1	0	110
			Tarmac paver	Tab C8/24	101	1	0	101
			Tarmac truck	Tab C9/27	105	2	3	108
			Roller	Tab C8/27	104	1	0	104
			Sub-total					117
B22	B26	Road Surfacing / Construction (elevated section including decking): Road P2 Northshore Development to Theme Park West	Concrete truck (mixer)	Tab C6/35	100	4	6	106
			Mobile crane	Tab C7/114	101	2	3	104
			Poker vibrator	Tab C6/32	100	6	8	108
			Tarmac paver	Tab C8/24	101	1	0	101
			Tarmac truck	Tab C9/27	105	2	3	108

Table C2.2 - Plant Inventory (Use of Quiet Plant)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
			Roller	Tab C8/27	104	2	3	107
			Sub-total					114
B23	B27	Road Surfacing / Construction at grade incl. roadside buffers: Road D1 Theme Park West Roundabout to Theme Park	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Dump truck	Tab C9/27	105	2	3	108
			Backhoe	Tab C3/97	105	3	5	110
			Poker vibrator	Tab C6/32	100	4	6	106
			Grader	Tab C9/11	110	1	0	110
			Tarmac paver	Tab C8/24	101	1	0	101
			Tarmac truck	Tab C9/27	105	2	3	108
			Roller	Tab C8/27	104	2	3	107
			Sub-total					117
B24	B28	Road Surfacing / Construction at grade : Access Road at Yam O i.e from road P2, to Yam O Rail Station	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Dump truck	Tab C9/27	105	1	0	105
			Backhoe	Tab C3/97	105	2	3	108
			Poker vibrator	Tab C6/32	100	4	6	106
			Grader	Tab C9/11	110	1	0	110
			Tarmac paver	Tab C8/24	101	1	0	101
			Tarmac truck	Tab C9/27	105	2	3	108
			Roller	Tab C8/27	104	2	3	107
			Sub-total					116
B25	B29	Central pedestrian walkway surfacing / construction: Approx. Middle of proposed park i.e boundary between Phase 1 and Phase 2 expansion	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Dump truck	Tab C9/27	105	1	0	105
			Backhoe	Tab C3/97	105	2	3	108
			Grader	Tab C9/11	110	1	0	110
			Tarmac paver	Tab C8/24	101	1	0	101
			Tarmac truck	Tab C9/27	105	2	3	108
			Compactor	CNP050	105	2	3	108
			Sub-total					116
C26	C31	Services Infrastructure Installation of Utilities / Services i.e electricity, gas, telecom etc.	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Concrete truck (mixer)	Tab C6/35	100	1	0	100
			Dump truck	Tab C9/27	105	2	3	108
			Backhoe	Tab C3/97	105	2	3	108
			Poker vibrator	Tab C6/32	100	2	3	103
			Sub-total					113
C27	C32	Excavation of lake	Dump truck	Tab C9/27	105	10	10	115
			Backhoe	Tab C3/97	105	2	3	108
			Sub-total					116
C28	C33	Placement of lake membrane plus associated waterworks to tie into (ability to tap from) adjacent drainage system	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Concrete truck (mixer)	Tab C6/35	100	1	0	100
			Dump truck	Tab C9/27	105	1	0	105
			Backhoe	Tab C3/97	105	2	3	108
			Mobile crane	Tab C7/114	101	1	0	101
			Poker vibrator	Tab C6/32	100	2	3	103
			Sub-total					112
C29	C34	Lake de-silting and pumping facilities	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Dump truck	Tab C9/27	105	1	0	105
			Backhoe	Tab C3/97	105	1	0	105
			Mobile crane	Tab C7/114	101	1	0	101
			Poker vibrator	Tab C6/32	100	2	3	103
			Sub-total					111
C30	C35	Excavation of proposed reservoirs at Yam O Tuk both Salt and Fresh water including blasting (feasibility of siting both these at Yam O Tuk to be investigated) Note outside WD area limits	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Handheld breaker >35kg	Tab C2/10	110	5	7	117
			Dump truck	Tab C9/27	105	15	12	117
			Excavator	Tab C3/97	105	3	5	110
			Backhoe	Tab C3/97	105	3	5	110
			Drilling rig	Tab C11/2	119	5	7	126
			Sub-total					127
C31	C36	Construction of reservoirs plus associated facilities	Compressor > 30m ³ /min	CNP003	104	4	6	110
			Concrete truck	Tab C6/35	100	4	6	106
			Backhoe	Tab C3/97	105	2	3	108
			Mobile crane	Tab C7/114	101	2	3	104
			Generator	Tab C7/62	100	2	3	103

Table C2.2 - Plant Inventory (Use of Quiet Plant)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
			Poker vibrator	Tab C6/32	100	6	8	108
			Sub-total					115
C32	C37	Landscaping of reservoirs	Dump truck	Tab C9/27	105	1	0	105
			Backhoe	Tab C3/97	105	1	0	105
			Sub-total					108
C33	C38	Installation of Water mains Fresh and Salt including irrigation	Compressor > 30m³/min	CNP003	104	2	3	107
			Handheld breaker >35kg	Tab C2/10	110	2	3	113
			Concrete truck (mixer)	Tab C6/35	100	1	0	100
			Dump truck	Tab C9/27	105	2	3	108
			Backhoe	Tab C3/97	105	2	3	108
			Mobile crane	Tab C7/114	101	1	0	101
			Poker vibrator	Tab C6/32	100	2	3	103
			Lorry	Tab C8/16	108	2	3	111
			Sub-total					117
C34	C39	Installation of sewerage mains both gravity and pumped including pumping stations, chambers and wells	Compressor > 30m³/min	CNP003	104	1	0	104
			Concrete truck (mixer)	Tab C6/35	100	1	0	100
			Dump truck	Tab C9/27	105	1	0	105
			Backhoe	Tab C3/97	105	1	0	105
			Mobile crane	Tab C7/114	101	1	0	101
			Poker vibrator	Tab C6/32	100	4	6	106
			Lorry	Tab C8/16	108	1	0	108
			Sub-total					113
C35	C40	Installation of Stormwater drainage, open channels plus culverts	Compressor > 30m³/min	CNP003	104	4	6	110
			Concrete truck (mixer)	Tab C6/35	100	6	8	108
			Dump truck	Tab C9/27	105	1	0	105
			Backhoe	Tab C3/97	105	2	3	108
			Mobile crane	Tab C7/114	101	2	3	104
			Poker vibrator	Tab C6/32	100	18	19	109
			Lorry	Tab C8/16	108	2	3	111
			Sub-total					117
D36	D41	<i>GIC Sites</i> P.T.I at Yam O Station	Compressor > 30m³/min	CNP003	104	2	3	107
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Dump truck	Tab C9/27	105	1	0	105
			Backhoe	Tab C3/97	105	2	3	108
			Mobile crane	Tab C7/114	101	2	3	104
			Vibratory piling rig	CNP164	115	1	0	115
			Poker vibrator	Tab C6/32	100	4	6	106
			Sub-total					117
D37	D42	P.T.I at Penny's Bay Station - Phase 1	Compressor > 30m³/min	CNP003	104	2	3	107
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Dump truck	Tab C9/27	105	1	0	105
			Backhoe	Tab C3/97	105	2	3	108
			Mobile crane	Tab C7/114	101	2	3	104
			Vibratory piling rig	CNP164	115	1	0	115
			Poker vibrator	Tab C6/32	100	4	6	106
			Sub-total					117
D38	D43	Public Parking in Penny's Bay Station - Phase 1	Backhoe	Tab C3/97	105	2	3	108
			Grader	Tab C9/11	110	1	0	110
			Tarmac paver	Tab C8/24	101	1	0	101
			Tarmac truck	Tab C9/27	105	2	3	108
			Compactor	CNP050	105	2	3	108
			Sub-total					115
D39	D44	Police Station in Penny's Bay Station - Phase 1	Compressor > 30m³/min	CNP003	104	1	0	104
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Dump truck	Tab C9/27	105	1	0	105
			Backhoe	Tab C3/97	105	1	0	105
			Mobile crane	Tab C7/114	101	1	0	101
			Poker vibrator	Tab C6/32	100	4	6	106
			Sub-total					112
D40	D45	Fire Station in Penny's Bay Station - Phase 1	Compressor > 30m³/min	CNP003	104	1	0	104
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Dump truck	Tab C9/27	105	1	0	105
			Backhoe	Tab C3/97	105	1	0	105
			Mobile crane	Tab C7/114	101	1	0	101
			Poker vibrator	Tab C6/32	100	4	6	106
			Sub-total					112
D41	D46	Utility Yard	Compressor > 30m³/min	CNP003	104	1	0	104
			Concrete truck (mixer)	Tab C6/35	100	1	0	100
			Dump truck	Tab C9/27	105	1	0	105
			Backhoe	Tab C3/97	105	1	0	105
			Mobile crane	Tab C7/114	101	1	0	101
			Vibratory piling rig	CNP164	115	1	0	115
			Poker vibrator	Tab C6/32	100	2	3	103

Table C2.2 - Plant Inventory (Use of Quiet Plant)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
Sub-total								117
D42	D47	Special Duty Unit Base (including site formation i.e reclamation / seawall construction) located between Siu Ho Wan and Ta Pang Po	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Handheld breaker >35kg	Tab C2/10	110	4	6	116
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Grab dredger	CNP063	112	2	3	115
			TS dredger	BY SWHK	109	2	3	112
			Derrick lighter	CNP061	104	2	3	107
			Dozer	Tab C9/2	104	1	0	104
			Dump truck	Tab C9/27	105	2	3	108
			Tugboat	CNP221	110	1	0	110
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0	104
			Land drain rig (compressor)	CNP003	104	1	0	104
			Backhoe	Tab C3/97	105	2	3	108
			Mobile crane	Tab C7/114	101	2	3	104
			Generator	Tab C7/62	100	2	3	103
			Vibratory piling rig	CNP164	115	1	0	115
			Poker vibrator	Tab C6/32	100	4	6	106
			Lorry	Tab C8/16	108	1	0	108
			Grader	Tab C9/11	110	1	0	110
			Tarmac paver	Tab C8/24	101	1	0	101
			Tarmac truck	Tab C9/27	105	2	3	108
			Compactor	CNP050	105	1	0	105
			Water pump	CNP282	103	1	0	103
			Sub-total					123
E43	E48	Phase 1 - Theme Park Development Theme Park Building/Attraction Foundations in Penny's Bay Station - Phase 1	Compressor > 30m ³ /min	CNP003	104	4	6	110
			Handheld breaker >35kg	Tab C2/10	110	11	10	120
			Concrete truck (mixer)	Tab C6/35	100	20	13	113
			Dozer	Tab C9/2	104	4	6	110
			Dump truck	Tab C9/27	105	2	3	108
			Excavator/ Loader	Tab C3/97	105	8	19	114
			Backhoe	Tab C3/97	105	4	6	111
			Mobile crane	Tab C7/114	101	4	6	107
			Drilling rigs	Tab C11/2	112	8	9	121
			Generator	Tab C7/62	100	4	6	106
			Lorry	Tab C8/16	108	2	3	111
			Grader	Tab C9/11	110	4	6	116
			Compactor	CNP050	105	3	5	110
			Water pump	CNP282	103	15	12	115
			Pan scrapers	CNP204	119	3	5	124
			Sub-total					128
E44	E49	Theme Park Building/Attraction Foundations in Penny's Bay Station - Phase 1	Compressor > 30m ³ /min	CNP003	104	10	10	114
			Handheld breaker >35kg	Tab C2/10	110	15	12	122
			Concrete truck (mixer)	Tab C6/35	100	30	15	115
			Dozer	Tab C9/2	104	4	6	110
			Dump truck	Tab C9/27	105	2	3	108
			Excavator/ Loader	Tab C3/97	105	8	9	114
			Backhoe	Tab C3/97	105	12	11	116
			Mobile crane	Tab C7/114	101	12	11	112
			Generator	Tab C7/62	100	4	6	106
			Lorry	Tab C8/16	108	2	3	111
			Grader	Tab C9/11	110	2	3	113
			Compactor	CNP050	105	2	3	108
			Water pump	CNP282	103	15	12	115
			Tower crane	CNP049	95	10	10	105
			Bobcats	By WDI	114	20	13	127
			Ditch Witch Trencher	By WDI	117	3	5	122
			Forklifts	By WDI	113	20	13	126
			Sub-total					132
E45	E50	Theme Park Surfacing, Landscaping and Berms in Penny's Bay Station - Phase 1	Compressor > 30m ³ /min	CNP003	104	4	6	110
			Handheld breaker >35kg	Tab C2/10	110	3	5	115
			Concrete truck (mixer)	Tab C6/35	100	8	9	109
			Dozer	Tab C9/2	104	4	6	110
			Dump truck	Tab C9/27	105	2	3	108
			Excavator/ Loader	Tab C3/97	105	2	3	108
			Backhoe	Tab C3/97	105	12	11	116
			Mobile crane	Tab C7/114	101	4	6	107
			Generator	Tab C7/62	100	4	6	106
			Lorry	Tab C8/16	108	2	3	111
			Grader	Tab C9/11	110	2	3	113
			Compactor	CNP050	105	1	0	105
			Bobcats	By WDI	114	6	8	122
			Ditch Witch Trencher	By WDI	117	3	5	122
			Forklifts	By WDI	113	4	6	119
			Sub-total					127
E46	E51	Ferry Pier Substructure: piling/foundations in Penny's Bay Station- Phase 1	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Handheld breaker >35kg	Tab C2/10	110	3	5	115
			Concrete truck (mixer)	Tab C6/35	100	2	3	103

Table C2.2 - Plant Inventory (Use of Quiet Plant)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No.	Corr.	Sum
			Derrick lighter plus crane	CNP061	104	1	0		104
			Dozer	Tab C9/2	104	2	3		107
			Dump truck	Tab C9/27	105	2	3		108
			Tugboat	CNP221	110	2	3		113
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0		104
			Mobile crane	Tab C7/114	101	1	0		101
			Generator	Tab C7/62	100	2	3		103
			Poker vibrator	Tab C6/32	100	4	6		106
			Water pump	CNP282	103	6	8		111
			Lorry	Tab C8/16	108	2	3		111
			Coring rig	CNP165	115	3	5		120
			Bobcats	By WDI	114	4	6		120
			Sub-total						125
E47	E52	Ferry Pier Superstructure: Precast decking and insitu infill in Penny's Bay Station - Phase 1	Compressor > 30m ³ /min	CNP003	104	1	0		104
			Handheld breaker >35kg	Tab C2/10	110	2	3		113
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Derrick Lighter plus crane	CNP061	104	1	0		104
			Tugboat	CNP221	110	1	0		110
			Hopper Barge/ Pelican Barge/ Barge	CNP061	104	1	0		104
			Mobile crane	Tab C7/114	101	1	0		101
			Generator	Tab C7/62	100	1	0		100
			Poker vibrator	Tab C6/32	100	4	6		106
			Lorry	Tab C8/16	108	2	3		111
			Bobcats	By WDI	114	4	6		120
			Forklifts	By WDI	113	3	5		118
			Sub-total						123
E48	E53	Ferry Pier Building Foundations in Penny's Bay Station - Phase 1	Compressor > 30m ³ /min	CNP003	104	1	0		104
			Handheld breaker >35kg	Tab C2/10	110	2	3		113
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	2	3		108
			Generator	Tab C7/62	100	2	3		103
			Vibratory piling rig	CNP164	115	1	0		115
			Poker vibrator	Tab C6/32	100	4	6		106
			Lorry	Tab C8/16	108	2	3		111
			Bobcats	By WDI	114	2	3		117
			Sub-total						121
E49	E54	Ferry Pier Building Superstructure in Penny's Bay Station - Phase 1	Compressor > 30m ³ /min	CNP003	104	2	3		107
			Handheld breaker >35kg	Tab C2/10	110	2	3		113
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Backhoe	Tab C3/97	105	2	3		108
			Mobile crane	Tab C7/114	101	2	3		104
			Generator	Tab C7/62	100	2	3		103
			Poker vibrator	Tab C6/32	100	4	6		106
			Lorry	Tab C8/16	108	2	3		111
			Bobcats	By WDI	114	2	3		117
			Ditch Witch Trencher	By WDI	117	4	6		123
			Sub-total						125
E50	E55	Hotels Foundations in Penny's Bay Station - Phase 1	Compressor > 30m ³ /min	CNP003	104	3	5		109
			Handheld breaker >35kg	Tab C2/10	110	10	10		120
			Concrete truck (mixer)	Tab C6/35	100	10	10		110
			Dozer	Tab C9/2	104	2	3		107
			Dump truck	Tab C9/27	105	4	6		111
			Excavator/ Loader	Tab C3/97	105	3	5		110
			Backhoe	Tab C3/97	105	3	5		110
			Generator	Tab C7/62	100	4	6		106
			Lorry	Tab C8/16	108	2	3		111
			Grader	Tab C9/11	110	2	3		113
			Compactor	CNP050	105	2	3		108
			Water pump	CNP282	103	4	6		109
			Tower crane	CNP049	95	2	3		98
			Bobcats	By WDI	114	4	6		120
			Pan Scrapers	CNP204	119	2	3		122
			Sub-total						127
E51	E56	Hotels Superstructure in Penny's Bay Station - Phase 1	Compressor > 30m ³ /min	CNP003	104	3	5		109
			Handheld breaker >35kg	Tab C2/10	110	10	10		120
			Concrete truck (mixer)	Tab C6/35	100	20	13		113
			Dozer	Tab C9/2	104	2	3		107
			Dump truck	Tab C9/27	105	4	6		111
			Excavator/ Loader	Tab C3/97	105	2	3		108
			Backhoe	Tab C3/97	105	3	5		110
			Mobile crane	Tab C7/114	101	2	3		104
			Generator	Tab C7/62	100	4	6		106
			Lorry	Tab C8/16	108	2	3		111
			Grader	Tab C9/11	110	2	3		113
			Compactor	CNP050	105	2	3		108
			Tower crane	CNP049	95	3	5		100
			Bobcats	By WDI	114	20	13		127
			Ditch Witch Trencher	By WDI	117	3	5		122
			Forklifts	By WDI	113	20	13		126

Table C2.2 - Plant Inventory (Use of Quiet Plant)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
Sub-total								131
E52		Water Recreation Centre - Foundation	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Handheld breaker >35kg	Tab C2/10	110	2	3	113
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Dump truck	Tab C9/27	105	2	3	108
			Backhoe	Tab C3/97	105	2	3	108
			Mobile crane	Tab C7/114	101	2	3	104
			Vibratory piling rig	CNP164	115	1	0	115
			Generator	Tab C7/62	100	2	3	103
			Poker vibrator	Tab C6/32	100	4	6	106
			Lorry	Tab C8/16	108	2	3	111
			Water pump	CNP282	103	2	3	106
Sub-total								120
E53		Water Recreation Centre - Superstructure	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Handheld breaker >35kg	Tab C2/10	110	2	3	113
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Backhoe	Tab C3/97	105	2	3	108
			Mobile crane	Tab C7/114	101	2	3	104
			Generator	Tab C7/62	100	2	3	103
			Poker vibrator	Tab C6/32	100	4	6	106
			Lorry	Tab C8/16	108	2	3	111
			Water pump	CNP282	103	2	3	106
Sub-total								118
Phase 2 Reclamation & Excavation								
F54	F57	Excavation through TCT	Concrete truck (mixer)	Tab C6/35	100	10	10	110
			Dump truck	Tab C9/27	105	30	15	120
			Excavator/ loader	Tab C3/97	105	8	9	114
			Backhoe	Tab C3/97	105	11	10	115
Sub-total								122
F55	F58	Blasting through TCT	Drilling rig	Tab C11/2	112	10	10	122
Sub-total								122
F56	F59	Slope protection and landscaping through TCT	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Dump truck	Tab C9/27	105	2	3	108
			Backhoe	Tab C3/97	105	2	3	108
Sub-total								113
F57	F60	Dredging for sloping seawall for platform east of Grab dredger TCT to R10 toll plaza	Grab dredger	CNP063	112	3	5	117
Sub-total								117
F58	F61	Placement of sloping seawall for platform east of TCT to R10 toll plaza	Derrick lighter	CNP061	104	3	5	109
Sub-total								109
F59	F62	Filling reclamation for platform east of TCT to R10 toll plaza	Dump truck	Tab C9/27	105	8	9	114
			Hopper barge/ Pelican barge/ Barge	CNP061	104	2	3	107
			Land band drain rig (compressor)	CNP003	104	4	6	110
			Marine band drain rig (compressor)	CNP003	104	2	3	107
Sub-total								117
F60	F63	Surcharge placement for platform east of TCT upto R10 Toll Plaza	Dozer	Tab C9/2	104	3	5	109
			Dump truck	Tab C9/27	105	5	7	112
			Tugboat	CNP221	110	2	3	113
Sub-total								116
F61	F64	Slope Protection along southern boundary of TCT	Compressor > 30m ³ /min	CNP003	104	3	5	109
			Handheld breaker >35kg	Tab C2/10	110	6	8	118
			Concrete truck (mixer)	Tab C6/35	100	3	5	105
			Dump truck	Tab C9/27	105	3	5	110
			Backhoe	Tab C3/97	105	3	5	110
Sub-total								120
F62	F65	Dredging for Theme Park phase 2	Grab dredger	CNP063	112	1	0	112
Sub-total								112
F63	F66	Placement of seawall for Theme Park phase 2	Grab dredger	CNP063	112	1	0	112
			Derrick lighter	CNP061	104	2	3	107
			Tugboat	CNP221	110	4	6	116
			Hopper barge/ Pelican barge/ Barge	CNP061	104	2	3	107
Sub-total								118
F64	F67	Filling reclamation for Theme Park phase 2	Grab dredger	CNP063	112	2	3	115
			Dozer	Tab C9/2	104	2	3	107
			Dump truck	Tab C9/27	105	5	7	112
			Tugboat	CNP221	110	3	5	115
			Loading shovel (excavator)	Tab C3/97	105	2	3	108
			Hopper barge/ Pelican barge/ Barge	CNP061	104	3	5	109

Table C2.2 - Plant Inventory (Use of Quiet Plant)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
			Crane/vibrocompaction	By SWHK	112	2	3	115
			Land drain rig (compressor)	CNP003	104	1	0	104
			Marine drain rig (compressor)	CNP003	104	1	0	104
			Sub-total					121
F65	F68	Surcharge placement for Theme Park phase 2	Dozer	Tab C9/2	104	2	3	107
			Dump truck	Tab C9/27	105	8	9	114
			Loading shovel (excavator)	Tab C3/97	105	2	3	108
			Sub-total					116
F66	F69	Slope Protection along western (eastern!) boundary of TCT	Compressor > 30m ³ /min	CNP003	104	3	5	109
			Handheld breaker >35kg	Tab C2/10	110	6	8	118
			Concrete truck (mixer)	Tab C6/35	100	3	5	105
			Dump truck	Tab C9/27	105	3	5	110
			Backhoe	Tab C3/97	105	3	5	110
			Sub-total					120
F67	F70	Dredging for Fa Peng	Grab dredger	CNP063	112	3	5	117
			Tugboat	CNP221	110	1	0	110
			Sand barge	CNP061	104	3	5	109
			Sub-total					118
F68	F71	Placement of seawall for Fa Peng	Derrick lighter	CNP061	104	2	3	107
			Tugboat	CNP221	110	2	3	113
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0	104
			Sand barge	CNP061	104	3	5	109
			Sub-total					115
F69	F72	Filling reclamation for Fa Peng	Grab dredger	CNP063	112	4	6	118
			TS Dredger	By SWHK	109	4	6	115
		<i>NB. TS and CS dredger may be substituted for other types of marine based reclamation plant</i>	CS Dredger	By SWHK	104	2	3	107
			Derrick lighter	CNP061	104	2	3	107
			Dozer	Tab C9/2	104	4	6	110
			Dump truck	Tab C9/27	105	10	10	115
			Tugboat	CNP221	110	6	8	118
			Loading shovel (excavator)	Tab C3/97	105	6	8	113
			Hopper barge/ Pelican barge/ Barge	CNP061	104	12	11	115
			Crane/vibrocompaction	By SWHK	112	4	6	118
			Land Drain Rig (compressor)	CNP003	104	2	3	107
			Marine Drain Rig (compressor)	CNP003	104	2	3	107
			Sand barge	CNP061	104	3	5	109
			Sub-total					125
F70	F73	Surcharge placement for Fa Peng	Dozer	Tab C9/2	104	4	6	110
			Dump truck	Tab C9/27	105	10	10	115
			Loading shovel (excavator)	Tab C3/97	105	5	7	112
			Sub-total					118
F71	F74	Dredging for Northshore (Yam O Bay to To Kau Wan)	Grab dredger	CNP063	112	1	0	112
			Tugboat	CNP221	110	1	0	110
			Sand barge	CNP061	104	1	0	104
			Sub-total					115
F72	F75	Placement of seawall for Northshore (Yam O Bay to To Kau Wan)	Tugboat	CNP221	110	2	3	113
			Derrick lighter	CNP061	104	1	0	104
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0	104
			Sand barge	CNP061	104	1	0	104
			Sub-total					114
F73	F76	Filling reclamation for Northshore (Yam O Bay to To Kau Wan)	Grab dredger	CNP063	112	4	6	118
			TS Dredger	By SWHK	109	4	6	115
		<i>NB. TS and CS dredger may be substituted for other types of marine based reclamation plant</i>	CS Dredger	By SWHK	104	2	3	107
			Derrick lighter	CNP061	104	2	3	107
			Dozer	Tab C9/2	104	4	6	110
			Dump truck	Tab C9/27	105	10	10	115
			Tugboat	CNP221	110	6	8	118
			Loading shovel (excavator)	Tab C3/97	105	6	8	113
			Hopper barge/ Pelican barge/ Barge	CNP061	104	12	11	115
			Crane/vibrocompaction	By SWHK	112	4	6	118
			Land Drain Rig (compressor)	CNP003	104	2	3	107
			Marine Drain Rig (compressor)	CNP003	104	2	3	107
			Sand barge	CNP061	104	4	6	110
			Sub-total					125
F74	F77	Surcharge placement for Northshore (Yam O Bay to To Kau Wan)	Dozer	Tab C9/2	104	4	6	110
			Dump truck	Tab C9/27	105	10	10	115
			Loading shovel (excavator)	Tab C3/97	105	5	7	112
			Sub-total					118
F75	F78	Dredging for Northshore (Road P1- Siu Ho Wan to Ta Pang Po)	Grab dredger	CNP063	112	1	0	112
			Tugboat	CNP221	110	1	0	110
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0	104
			Sub-total					115

Table C2.2 - Plant Inventory (Use of Quiet Plant)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
F76	F79	Placement of seawall for Northshore (Road P1- Siu Ho Wan to Ta Pang Po)	Derrick lighter	CNP061	104	1	0	104
			Tugboat	CNP221	110	2	3	113
			Sub-total					114
F77	F80	Filling reclamation for Northshore (Road P1- Siu Ho Wan to Ta Pang Po)	Grab dredger	CNP063	112	2	3	115
			Derrick lighter	CNP061	104	1	0	104
			Dozer	Tab C9/2	104	2	3	107
			Dump truck	Tab C9/27	105	4	6	111
			Tugboat	CNP221	110	1	0	110
			Loading shovel (excavator)	Tab C3/97	105	2	3	108
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0	104
			Land Drain Rig (compressor)	CNP003	104	1	0	104
			Maine Drain Rig (compressor)	CNP003	104	1	0	104
			Sub-total					119
F78	F81	Surcharge placement for Northshore (Road P1- Siu Ho Wan to Ta Pang Po)	Dozer	Tab C9/2	104	1	0	104
			Dump truck	Tab C9/27	105	3	5	110
			Loading shovel (excavator)	Tab C3/97	105	2	3	108
			Sub-total					113
F79	F82	Excavation for tunnels through Yam Tsai headland including boring	Handheld breaker >35kg	Tab C2/10	110	8	9	119
			Dumb truck	CNP067	117	8	9	126
			Backhoe	Tab C3/97	105	4	6	111
			Mobile crane	Tab C7/114	101	2	3	104
			Drilling rig	Tab C11/2	112	4	6	118
			Generator	Tab C7/62	100	4	6	106
			Sub-total					128
F80	F83	Dredging for Siu Ho Wan	Grab dredger	CNP063	112	2	3	115
			Tugboat	CNP221	110	1	0	110
			Mobile crane	Tab C7/114	101	1	0	101
			Sand barge	CNP061	104	2	3	107
			Sub-total					117
F81	F84	Placement of seawall for Siu Ho Wan	Grab dredger	CNP063	112	2	3	115
			Derrick lighter	CNP061	104	1	0	104
			Tugboat	CNP221	110	1	0	110
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0	104
			Mobile crane	Tab C7/114	101	1	0	101
			Sand barge	CNP061	104	2	3	107
			Sub-total					117
F82	F85	Filling reclamation for Siu Ho Wan	Grab dredger	CNP063	112	1	0	112
			Dozer	Tab C9/2	104	1	0	104
			Dump truck	Tab C9/27	105	3	5	110
			Tugboat	CNP221	110	4	6	116
			Loading shovel (excavator)	Tab C3/97	105	1	0	105
			Hopper barge/ Pelican barge/ Barge	CNP061	104	2	3	107
			Land drain rig (compressor)	CNP003	104	1	0	104
			Maine drain rig (compressor)	CNP003	104	1	0	104
			Mobile Crane	Tab C7/114	101	7	8	109
			Sand barge	CNP061	104	10	10	114
			Sub-total					121
F83	F86	Surcharge placement for Siu Ho Wan	Dozer	Tab C9/2	104	2	3	107
			Dump truck	Tab C9/27	105	3	5	110
			Loading shovel (excavator)	Tab C3/97	105	1	0	105
			Sub-total					112
G84	G87	Transport Infrastructure Road Structures including (Piling & Foundations plus superstructure) : CKWLR from Penny's Bay Interchange to R10 Toll Plaza	Compressor > 30m³/min	CNP003	104	2	3	107
			Handheld breaker >35kg	Tab C2/10	110	2	3	113
			Concrete truck (mixer)	Tab C6/35	100	1	0	100
			Backhoe	Tab C3/97	105	2	3	108
			Mobile crane	Tab C7/114	101	2	3	104
			Generator	Tab C7/62	100	2	3	103
			Poker vibrator	Tab C6/32	100	4	6	106
			Bored piler oscillator	CNP165	115	2	3	118
			Sub-total					120
G85	G88	Road Surfacing / Construction at grade : CKWLR from Penny's Bay Interchange to R10 Toll Plaza	Dump truck	Tab C9/27	105	1	0	105
			Backhoe	Tab C3/97	105	1	0	105
			Grader	Tab C9/11	110	2	3	113
			Tarmac paver	Tab C8/24	101	1	0	101
			Tarmac truck	Tab C9/27	105	2	3	108
			Roller	Tab C8/27	104	1	0	104
			Sub-total					116

Table C2.2 - Plant Inventory (Use of Quiet Plant)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
G86	G89	Road Surfacing / Construction (elevated section including decking) : CKWLR from Penny's Bay Interchange to R10 Toll Plaza	Mobile crane	Tab C7/114	101	2	3	104
			Tarmac paver	Tab C8/24	101	1	0	101
			Tarmac truck	Tab C9/27	105	2	3	108
			Roller	Tab C8/27	104	1	0	104
			Launching girder (winch)	CNP263	102	1	0	102
			Sub-total					112
G87	G90	Road Surfacing / Construction at grade : Road P1 - Siu Ho Wan to Yam O	Dump truck	Tab C9/27	105	1	0	105
			Backhoe	Tab C3/97	105	1	0	105
			Grader	Tab C9/11	110	2	3	113
			Tarmac paver	Tab C8/24	101	1	0	101
			Tarmac truck	Tab C9/27	105	2	3	108
			Roller	Tab C8/27	104	1	0	104
G88	G91	Road Structures including (Piling & Foundations plus superstructure) : Road P1 - Siu Ho Wan to Yam O	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Handheld breaker >35kg	Tab C2/10	110	2	3	113
			Concrete truck (mixer)	Tab C6/35	100	1	0	100
			Backhoe	Tab C3/97	105	2	3	108
			Mobile crane	Tab C7/114	101	2	3	104
			Generator	Tab C7/62	100	2	3	103
			Poker vibrator	Tab C6/32	100	4	6	106
			Tower crane	CNP049	95	1	0	95
			Coring rig	CNP165	115	1	0	115
			Sub-total					119
G89	G92	Road Surfacing / Construction (elevated section including decking) : Road P1 - Siu Ho Wan to Yam O	Mobile crane	Tab C7/114	101	2	3	104
			Tarmac paver	Tab C8/24	101	1	0	101
			Tarmac truck	Tab C9/27	105	2	3	108
			Roller	Tab C8/27	104	1	0	104
G90	G95	Yam Tsai headland Tunneling work i.e Concrete lining, etc.	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Concrete truck (mixer)	Tab C6/35	100	4	6	106
			Backhoe	Tab C3/97	105	2	3	108
			Mobile crane	Tab C7/114	101	1	0	101
			Concrete lining machine (concrete pump)	Tab C6/22	106	1	0	106
			Lorry	Tab C8/16	108	1	0	108
G91	G96	Road Surfacing / Construction at grade for Northern Reclamation	Dump truck	Tab C9/27	105	1	0	105
			Backhoe	Tab C3/97	105	1	0	105
			Grader	Tab C9/11	110	2	3	113
			Tarmac paver	Tab C8/24	101	1	0	101
			Tarmac truck	Tab C9/27	105	2	3	108
			Roller	Tab C8/27	104	1	0	104
G92	G97	Road Structures including (Piling & Foundations plus superstructure and submerged sections, where appropriate) : for Northern Reclamation	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Handheld breaker >35kg	Tab C2/10	110	2	3	113
			Concrete truck (mixer)	Tab C6/35	100	1	0	100
			Backhoe	Tab C3/97	105	2	3	108
			Mobile crane	Tab C7/114	101	2	3	104
			Generator	Tab C7/62	100	2	3	103
			Poker vibrator	Tab C6/32	100	4	6	106
			Bored piler, oscillator	CNP165	115	2	3	118
			Sub-total					120
G93	G98	Road Surfacing / Construction (elevated section including decking) : for Northern Reclamation	Mobile crane	Tab C7/114	101	2	3	104
			Tarmac paver	Tab C8/24	101	1	0	101
			Tarmac truck	Tab C9/27	105	2	3	108
			Roller	Tab C8/27	104	1	0	104
			Launching girder (winch)	CNP263	102	1	0	102
G94	G101	Road Surfacing / Construction at grade incl. roadside buffers: Road P2 Theme Park East Roundabout	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Dump truck	Tab C9/27	105	2	3	108
			Backhoe	Tab C3/97	105	3	5	110
			Grader	Tab C9/11	110	1	0	110
			Tarmac paver	Tab C8/24	101	1	0	101
			Tarmac truck	Tab C9/27	105	2	3	108
			Roller	Tab C8/27	104	2	3	107
			Sub-total					116

Table C2.2 - Plant Inventory (Use of Quiet Plant)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
G95	G102	Road Surfacing / Construction at grade incl. roadside buffers: Road D2 Theme Park East Roundabout to Theme Park	Dump truck	Tab C9/27	105	2	3	108
			Backhoe	Tab C3/97	105	3	5	110
			Grader	Tab C9/11	110	1	0	110
			Tarmac paver	Tab C8/24	101	1	0	101
			Tarmac truck	Tab C9/27	105	2	3	108
			Roller	Tab C8/27	104	2	3	107
			Sub-total					116
G96	G103	Road Surfacing / Construction at grade incl. roadside buffers: Road P2 Theme Park East Roundabout to Pa Kwu Interchange	Compressor > 30m³/min	CNP003	104	2	3	107
			Dump truck	Tab C9/27	105	2	3	108
			Backhoe	Tab C3/97	105	3	5	110
			Grader	Tab C9/11	110	1	0	110
			Tarmac paver	Tab C8/24	101	1	0	101
			Tarmac truck	Tab C9/27	105	2	3	108
			Roller	Tab C8/27	104	2	3	107
G97	G104	Road Surfacing / Construction at grade for Eastern Reclamation	Compressor > 30m³/min	CNP003	104	2	3	107
			Dump truck	Tab C9/27	105	1	0	105
			Backhoe	Tab C3/97	105	1	0	105
			Grader	Tab C9/11	110	2	3	113
			Tarmac paver	Tab C8/24	101	1	0	101
			Tarmac truck	Tab C9/27	105	2	3	108
			Roller	Tab C8/27	104	1	0	104
G98	G105	Road Structures including (Piling & Foundations plus superstructure and submerged sections, where appropriate) : for Eastern Reclamation	Sub-total					116
			Compressor > 30m³/min	CNP003	104	2	3	107
			Handheld breaker >35kg	Tab C2/10	110	2	3	113
			Concrete truck (mixer)	Tab C6/35	100	1	0	100
			Backhoe	Tab C3/97	105	2	3	108
			Mobile crane	Tab C7/114	101	2	3	104
			Generator	Tab C7/62	100	2	3	103
G99	G106	Road Surfacing / Construction (elevated section including decking): for Eastern Reclamation	Poker vibrator	Tab C6/32	100	4	6	106
			Sub-total					116
			Mobile crane	Tab C7/114	101	2	3	104
			Tarmac paver	Tab C8/24	101	1	0	101
			Tarmac truck	Tab C9/27	105	2	3	108
			Roller	Tab C8/27	104	1	0	104
			Sub-total					111
G100	G107	Road Surfacing / Construction at grade for EVA for Tso Wan Village Expansion and maintenance/operation access to Fa Peng Reservoirs	Dump truck	Tab C9/27	105	1	0	105
			Backhoe	Tab C3/97	105	1	0	105
			Grader	Tab C3/75	112	2	3	115
			Tarmac paver	Tab C8/24	101	1	0	101
			Tarmac truck	Tab C9/27	105	2	3	108
			Roller	Tab C8/27	104	1	0	104
			Sub-total					117
G101	G108	Road Surfacing / Construction at grade for Siu Ho Wan Reclamation	Dump truck	Tab C9/27	105	1	0	105
			Backhoe	Tab C3/97	105	1	0	105
			Grader	Tab C3/75	112	2	3	115
			Tarmac paver	Tab C8/24	101	1	0	101
			Tarmac truck	Tab C9/27	105	2	3	108
			Roller	Tab C8/27	104	1	0	104
			Sub-total					117
G102	H109	Services Infrastructure Installation of Utilities / Services i.e electricity, gas, telecom etc.	Compressor > 30m³/min	CNP003	104	2	3	107
			Concrete truck (mixer)	Tab C6/35	100	1	0	100
			Dump truck	Tab C9/27	105	2	3	108
			Backhoe	Tab C3/97	105	2	3	108
			Sub-total					113
G103	H110	Installation of Water mains Fresh and Salt including irrigation	Compressor > 30m³/min	CNP003	104	1	0	104
			Concrete truck (mixer)	Tab C6/35	100	1	0	100
			Dump truck	Tab C9/27	105	1	0	105
			Backhoe	Tab C3/97	105	1	0	105
			Mobile crane	Tab C7/114	101	1	0	101
			Poker vibrator	Tab C6/32	100	2	3	103
			Lorry	Tab C8/16	108	1	0	108
G103	H110	Installation of Water mains Fresh and Salt including irrigation	Sub-total					113

Table C2.2 - Plant Inventory (Use of Quiet Plant)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
G104	H111	Installation of sewerage mains both gravity and pumped including pumping stations, chambers and wells	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Dump truck	Tab C9/27	105	1	0	105
			Backhoe	Tab C3/97	105	1	0	105
			Mobile crane	Tab C7/114	101	1	0	101
			Poker vibrator	Tab C6/32	100	4	6	106
			Lorry	Tab C8/16	108	1	0	108
			Sub-total					114
G105	H112	Installation of Stormwater drainage, open channels plus culverts	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Dump truck	Tab C9/27	105	2	3	108
			Backhoe	Tab C3/97	105	2	3	108
			Mobile crane	Tab C7/114	101	1	0	101
			Poker vibrator	Tab C6/32	100	4	6	106
			Lorry	Tab C8/16	108	1	0	108
			Sub-total					115
G106	H113	Excavation of proposed reservoirs at Fa Peng including maintenance and operation access road	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Handheld breaker >35kg	Tab C2/10	110	5	7	117
			Dump truck	Tab C9/27	105	15	12	117
			Excavator/loader	Tab C3/97	105	3	5	110
			Backhoe	Tab C3/97	105	3	5	110
			Drilling rig	Tab C 11/2	112	5	7	119
			Sub-total					123
G107	H114	Construction of reservoirs at Fa Peng plus associated facilities	Compressor > 30m ³ /min	CNP003	104	4	6	110
			Concrete truck (mixer)	Tab C6/35	100	4	6	106
			Dump truck	Tab C9/27	105	1	0	105
			Backhoe	Tab C3/97	105	2	3	108
			Mobile crane	Tab C7/114	101	2	3	104
			Generator	Tab C7/62	100	2	3	103
			Poker vibrator	Tab C6/32	100	8	9	109
			Sub-total					118
G108	H115	Landscaping of Fa Peng reservoirs	-	-	-	-	-	-
H109	H116	GIC Sites P.T.I in Penny's Bay Station- Phase 2	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Dump truck	Tab C9/27	105	2	3	108
			Backhoe	Tab C3/97	105	2	3	108
			Mobile crane	Tab C7/114	101	2	3	104
			Vibratory piling rig	CNP164	115	1	0	115
			Poker vibrator	Tab C6/32	100	4	6	106
			Sub-total					118
H110	H117	Public Parking in Penny's Bay -Phase 2	Backhoe	Tab C3/97	105	2	3	108
			Grader	Tab C9/11	110	1	0	110
			Tarmac paver	Tab C8/24	101	1	0	101
			Tarmac truck	Tab C9/27	105	2	3	108
			Compactor	CNP050	105	2	3	108
			Sub-total					115
H111	H118	2nd Fire Station in Penny's Bay	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Dump truck	Tab C9/27	105	1	0	105
			Backhoe	Tab C3/97	105	1	0	105
			Mobile crane	Tab C7/114	101	1	0	101
			Vibratory piling rig	CNP164	115	1	0	115
			Poker vibrator	Tab C6/32	100	4	6	106
			Sub-total					117
H112	H119	Utility Yard in Penny's Bay - Phase 2	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Concrete truck (mixer)	Tab C6/35	100	1	0	100
			Dump truck	Tab C9/27	105	1	0	105
			Backhoe	Tab C3/97	105	1	0	105
			Mobile crane	Tab C7/114	101	1	0	101
			Vibratory piling rig	CNP164	115	1	0	115
			Poker vibrator	Tab C6/32	100	2	3	103
			Sub-total					117
H113	H120	Schools at Siu Ho Wan	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Concrete truck (mixer)	Tab C6/35	100	1	0	100
			Dump truck	Tab C9/27	105	1	0	105
			Backhoe	Tab C3/97	105	1	0	105
			Mobile crane	Tab C7/114	101	1	0	101
			Vibratory piling rig	CNP164	115	1	0	115
			Poker vibrator	Tab C6/32	100	2	3	103
			Sub-total					117
H114	H121	Police Station in Northshore	Compressor > 30m ³ /min	CNP003	104	1	0	104

Table C2.2 - Plant Inventory (Use of Quiet Plant)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Dump truck	Tab C9/27	105	1	0	105
			Backhoe	Tab C3/97	105	1	0	105
			Mobile crane	Tab C7/114	101	1	0	101
			Vibratory piling rig	CNP164	115	1	0	115
			Poker vibrator	Tab C6/32	100	4	6	106
			Sub-total					117
I115	I122	Fire Station in Northshore	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Dump truck	Tab C9/27	105	1	0	105
			Backhoe	Tab C3/97	105	1	0	105
			Mobile crane	Tab C7/114	101	1	0	101
			Vibratory piling rig	CNP164	115	1	0	115
			Poker vibrator	Tab C6/32	100	4	6	106
			Sub-total					117
I116	I123	LPG/Petrol Station in Northshore	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Concrete truck (mixer)	Tab C6/35	100	1	0	100
			Dump truck	Tab C9/27	105	1	0	105
			Backhoe	Tab C3/97	105	1	0	105
			Mobile crane	Tab C7/114	101	1	0	101
			Vibratory piling rig	CNP164	115	1	0	115
			Poker vibrator	Tab C6/32	100	2	3	103
			Sub-total					117
		Theme Park Development						
J117	J124	Theme Park Building/Attraction Foundations	Compressor > 30m ³ /min	CNP003	104	4	6	110
			Handheld breaker >35kg	Tab C2/10	110	11	10	120
			Concrete truck (mixer)	Tab C6/35	100	20	13	113
			Dozer	Tab C9/2	104	4	6	110
			Dump truck	Tab C9/27	105	2	3	108
			Excavator/loader	Tab C3/97	105	8	9	114
			Backhoe	Tab C3/97	105	4	6	111
			Mobile crane	Tab C7/114	101	4	6	107
			Drilling rig	Tab C11/2	112	8	9	121
			Generator	Tab C7/62	100	4	6	106
			Lorry	Tab C8/16	108	2	3	111
			Grader	Tab C9/11	110	4	6	116
			Compactor	CNP050	105	3	5	110
			Water pump	CNP282	103	15	12	115
			Pan Scrapers	CNP204	119	3	5	124
			Sub-total					128
J118	J125	Theme Park Building/Attraction Construction	Compressor > 30m ³ /min	CNP003	104	10	10	114
			Handheld breaker >35kg	Tab C2/10	110	15	12	122
			Concrete truck (mixer)	Tab C6/35	100	30	15	115
			Dozer	Tab C9/2	104	4	6	110
			Dump truck	Tab C9/27	105	2	3	108
			Excavator/loader	Tab C3/97	105	8	9	114
			Backhoe	Tab C3/97	105	12	11	116
			Mobile crane	Tab C7/114	101	12	11	112
			Generator	Tab C7/62	100	4	6	106
			Lorry	Tab C8/16	108	2	3	111
			Grader	Tab C9/11	110	2	3	113
			Compactor	CNP050	105	2	3	108
			Water pump	CNP282	103	15	12	115
			Tower crane	CNP049	95	10	10	105
			Bobcats	By WDI	114	20	13	127
			Ditch Witch Trencher	By WDI	117	3	5	122
			Forklifts	By WDI	113	20	13	126
			Sub-total					132
J119	J126	Theme Park Surfacing, Landscaping and Berms	Compressor > 30m ³ /min	CNP003	104	4	6	110
			Handheld breaker >35kg	Tab C2/10	110	3	5	115
			Concrete truck (mixer)	Tab C6/35	100	8	9	109
			Dozer	Tab C9/2	104	4	6	110
			Dump truck	Tab C9/27	105	2	3	108
			Excavator/loader	Tab C3/97	105	2	3	108
			Backhoe	Tab C3/97	105	12	11	116
			Mobile crane	Tab C7/114	101	4	6	107
			Generator	Tab C7/62	100	4	6	106
			Lorry	Tab C8/16	108	2	3	111
			Grader	Tab C9/11	110	2	3	113
			Compactor	CNP050	105	1	0	105
			Bobcats	By WDI	114	6	8	122
			Ditch Witch Trencher	By WDI	117	3	5	122
			Forklifts	By WDI	113	4	6	119
			Sub-total					127
J120	J131	Hotels Foundations	Compressor > 30m ³ /min	CNP003	104	4	16	110
			Handheld breaker >35kg	Tab C2/10	110	12	11	121
			Concrete truck (mixer)	Tab C6/35	100	12	11	111
			Dozer	Tab C9/2	104	3	5	109
			Dump truck	Tab C9/27	105	6	8	113
			Excavator/ Loader	Tab C3/97	105	4	6	111
			Backhoe	Tab C3/97	105	3	5	110
			Generator	Tab C7/62	100	6	8	108
			Lorry	Tab C8/16	108	3	5	113

Table C2.2 - Plant Inventory (Use of Quiet Plant)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
			Grader	Tab C9/11	110	3	5	115
			Compactor	CNP050	105	3	5	110
			Water pump	CNP282	103	6	8	111
			Tower crane	CNP049	95	3	5	100
			Bobcats	By WDI	114	6	8	122
			Pan scrapers	CNP204	114	2	3	117
			Sub-total					127
J121	J132	Hotels Superstructure	Compressor > 30m ³ /min	CNP003	104	3	5	109
			Handheld breaker >35kg	Tab C2/10	110	2	3	113
			Concrete truck (mixer)	Tab C6/35	100	4	6	106
			Excavator/ Loader	Tab C3/97	105	3	5	110
			Backhoe	Tab C3/97	105	3	5	110
			Mobile crane	Tab C7/114	101	2	3	104
			Generator	Tab C7/62	100	6	8	108
			Lorry	Tab C8/16	108	3	5	113
			Grader	Tab C9/11	110	3	5	115
			Compactor	CNP050	105	3	5	110
			Tower crane	CNP049	95	3	5	100
			Sub-total					121
Siu Ho Wan Development								
K122	K133	Housing foundations	Compressor > 30m ³ /min	CNP003	104	4	6	110
			Concrete truck (mixer)	Tab C6/35	100	4	6	106
			Dump truck	Tab C9/27	105	2	3	108
			Backhoe	Tab C3/97	105	4	6	111
			Mobile crane	Tab C7/114	101	2	3	104
			Vibratory piling rig	CNP164	115	2	3	118
			Poker vibrator	Tab C6/32	100	8	9	109
			Sub-total					120
K123	K134	Housing superstructure	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Backhoe	Tab C3/97	105	2	3	108
			Mobile crane	Tab C7/114	101	2	3	104
			Poker vibrator	Tab C6/32	100	4	6	106
			Water pump	CNP282	103	4	6	109
			Tower crane	CNP049	95	1	0	95
			Sub-total					114
NorthShore Development								
L124	L135	Theme Park Gateway - Foundations	Compressor > 30m ³ /min	CNP003	104	4	6	110
			Concrete truck (mixer)	Tab C6/35	100	4	6	106
			Dump truck	Tab C9/27	105	2	3	108
			Backhoe	Tab C3/97	105	4	6	111
			Mobile crane	Tab C7/114	101	2	3	104
			Vibratory piling rig	CNP164	115	2	3	118
			Poker vibrator	Tab C6/32	100	8	9	109
			Sub-total					120
L125	L136	Theme Park Gateway - Superstructure	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Backhoe	Tab C3/97	105	2	3	108
			Mobile crane	Tab C7/114	101	2	3	104
			Poker vibrator	Tab C6/32	100	4	6	106
			Water pump	CNP282	103	4	6	109
			Tower crane	CNP049	95	1	0	95
			Sub-total					114
L126	L137	EcoPark Incl Tsing Chau Tsui Trailwalk - footpath and landscape works	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Concrete truck (mixer)	Tab C6/35	100	1	0	100
			Dump truck	Tab C9/27	105	1	0	105
			Backhoe	Tab C3/97	105	1	0	105
			Sub-total					110
L127	L138	Cross Boundary Ferry Pier 1 Substructure: piling/foundations	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Derrick lighter	CNP061	104	1	0	104
			Tugboat	CNP221	110	1	0	110
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0	104
			Mobile crane	Tab C7/114	101	1	0	101
			Generator	Tab C7/62	100	1	0	100
			Poker vibrator	Tab C6/32	100	4	6	106
			Coring rig	CNP165	115	3	5	120
			Sub-total					121
L128	L139	Cross Boundary Ferry Pier 1 Superstructure: Precast decking and insitu infill	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Derrick lighter	CNP061	104	1	0	104
			Tugboat	CNP221	110	1	0	110
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0	104
			Mobile crane	Tab C7/114	101	1	0	101
			Generator	Tab C7/62	100	1	0	100
			Poker vibrator	Tab C6/32	100	4	6	106
			Sub-total					114

Table C2.2 - Plant Inventory (Use of Quiet Plant)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
L129	L140	Cross Boundary Ferry Pier 1 Building Foundations	Compressor > 30m³/min	CNP003	104	2	3	107
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Dump truck	Tab C9/27	105	1	0	105
			Backhoe	Tab C3/97	105	2	3	108
			Vibratory piling rig	CNP164	115	1	0	115
			Poker vibrator	Tab C6/32	100	4	6	106
			Water pump	CNP282	103	2	3	106
			Sub-total					117
L130	L141	Cross Boundary Ferry Pier 1 Building Superstructure	Compressor > 30m³/min	CNP003	104	2	3	107
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Backhoe	Tab C3/97	105	2	3	108
			Mobile crane	Tab C7/114	101	2	3	104
			Poker vibrator	Tab C6/32	100	4	6	106
			Sub-total					113
L131	L142	Tourist & Convention Centre - Foundations	Compressor > 30m³/min	CNP003	104	4	6	110
			Concrete truck (mixer)	Tab C6/35	100	4	6	106
			Dump truck	Tab C9/27	105	2	3	108
			Backhoe	Tab C3/97	105	4	6	111
			Mobile crane	Tab C7/114	101	2	3	104
			Vibratory piling rig	CNP164	115	2	3	118
			Poker vibrator	Tab C6/32	100	8	9	109
			Sub-total					120
L132	L143	Tourist & Convention Centre - Superstructure	Compressor > 30m³/min	CNP003	104	2	3	107
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Backhoe	Tab C3/97	105	2	3	108
			Mobile crane	Tab C7/114	101	2	3	104
			Poker vibrator	Tab C6/32	100	4	6	106
			Water pump	CNP282	103	4	6	109
			Tower crane	CNP049	95	1	0	95
			Sub-total					114
L133	L144	Technodrome - Foundations	Compressor > 30m³/min	CNP003	104	4	6	110
			Concrete truck (mixer)	Tab C6/35	100	4	6	106
			Dump truck	Tab C9/27	105	2	3	108
			Backhoe	Tab C3/97	105	4	6	111
			Mobile crane	Tab C7/114	101	2	3	104
			Vibratory piling rig	CNP164	115	2	3	118
			Poker vibrator	Tab C6/32	100	8	9	109
			Sub-total					120
L134	L145	Technodrome - Superstructure	Compressor > 30m³/min	CNP003	104	2	3	107
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Backhoe	Tab C3/97	105	2	3	108
			Mobile crane	Tab C7/114	101	2	3	104
			Poker vibrator	Tab C6/32	100	4	6	106
			Water pump	CNP282	103	4	6	109
			Tower crane	CNP049	95	1	0	95
			Sub-total					114
Eastern Development								
M135		Recreational Tourism development - Foundations	Compressor > 30m³/min	CNP003	104	4	6	110
			Concrete truck (mixer)	Tab C6/35	100	4	6	106
			Dump truck	Tab C9/27	105	2	3	108
			Backhoe	Tab C3/97	105	4	6	111
			Mobile crane	Tab C7/114	101	2	3	104
			Vibratory piling rig	CNP164	115	2	3	118
			Poker vibrator	Tab C6/32	100	8	9	109
			Sub-total					120
M136		Recreational Tourism development - Superstructure	Compressor > 30m³/min	CNP003	104	2	3	107
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Backhoe	Tab C3/97	105	2	3	108
			Mobile crane	Tab C7/114	101	2	3	104
			Poker vibrator	Tab C6/32	100	4	6	106
			Water pump	CNP282	103	4	6	109
			Tower crane	CNP049	95	1	0	95
			Sub-total					114
N								
N137		Theme Park Development - Theme Park Extension (WDI Option)						
		Theme Park Extension - foundations	Compressor > 30m³/min	CNP003	104	4	6	110
			Handheld breaker > 35kg	Tab C2/10	110	4	6	116
			Concrete truck (mixer)	Tab C6/35	100	4	6	106
			Dozer	Tab C9/2	104	2	3	107
			Dump truck	Tab C9/27	105	2	3	108
			Excavator/ Loader	Tab C3/97	105	2	3	108
			Backhoe	Tab C3/97	105	2	3	108
			Mobile Crane	Tab C7/114	101	2	3	104
			Generator	Tab C7/62	100	2	3	103
			Lorry	Tab C8/16	108	2	3	111
			Grader	Tab C9/11	110	2	3	113
			Waterpump	CNP282	103	4	6	109

Table C2.2 - Plant Inventory (Use of Quiet Plant)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
			Bobcats	By WDI	114	5	7	121
			Ditch Witch Trencher	By WDI	117	1	0	117
			Forklifts	By WDI	113	10	10	123
			Pan Scrapers	CNP204	119	1	0	119
			Sub-total					128
N138		Theme Park Extension - superstructure	Compressor >30m ³ /min	CNP003	104	2	3	107
			Handheld breaker >35kg	Tab C2/10	110	4	6	116
			Concrete truck (mixer)	Tab C6/35	100	4	6	106
			Excavator/ Loader	Tab C3/97	105	2	3	108
			Backhoe	Tab C3/97	105	2	3	108
			Mobile Crane	Tab C7/114	101	2	3	104
			Generator	Tab C7/62	100	2	3	103
			Lorry	Tab C8/16	108	2	3	111
			Waterpump	CNP282	103	4	6	109
			Tower crane	CNP049	95	1	0	95
			Sub-total					119
N139		RD&E Foundations	Compressor >30m ³ /min	CNP003	104	4	6	110
			Handheld breaker >35kg	Tab C2/10	110	8	9	119
			Concrete truck (mixer)	Tab C6/35	100	10	10	110
			Dozer	Tab C9/2	104	2	3	107
			Dump truck	Tab C9/27	105	2	3	108
			Excavator/ Loader	Tab C3/97	105	3	5	110
			Backhoe	Tab C3/97	105	2	3	108
			Mobile Crane	Tab C7/114	101	2	3	104
			Generator	Tab C7/62	100	2	3	103
			Lorry	Tab C8/16	108	2	3	111
			Grader	Tab C9/11	110	2	3	113
			Waterpump	CNP282	103	4	6	109
			Pan Scrapers	CNP204	119	1	0	119
			Sub-total					124
N140		RD&E Superstructure	Compressor >30m ³ /min	CNP003	104	2	3	107
			Handheld breaker >35kg	Tab C2/10	110	8	9	119
			Concrete truck (mixer)	Tab C6/35	100	10	10	110
			Excavator/ Loader	Tab C3/97	105	2	3	108
			Backhoe	Tab C3/97	85	2	3	88
			Mobile Crane	Tab C7/114	101	2	3	104
			Generator	Tab C7/62	100	2	3	103
			Lorry	Tab C8/16	108	2	3	111
			Waterpump	CNP282	103	4	6	109
			Tower crane	CNP049	95	1	0	95
			Bobcats	By WDI	114	10	10	124
			Ditch Witch Trencher	By WDI	117	2	3	120
			Forklifts	By WDI	113	10	10	123
			Sub-total					128
Phase 3 Reclamation & Excavation								
O141	N154	Dredging for sloping seawall for platform south of TCT upto R10-HKLL	Grab dredger	CNP063	112	1	0	112
			Tugboat	CNP221	110	1	0	110
			Sand barge	CNP061	104	1	0	104
			Sub-total					115
O142	N155	Placement of sloping seawall for platform south of TCT upto R10-HKLL	Grab dredger	CNP063	112	1	0	112
			Derrick lighter	CNP061	104	1	0	104
			Tugboat	CNP221	110	1	0	110
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0	104
			Sand barge	CNP061	104	1	0	104
			Sub-total					115
O143	N156	Filling reclamation for platform south of TCT upto R10-HKLL	Grab dredger	CNP063	112	1	0	112
			Dozer	Tab C9/2	104	1	0	104
			Dump truck	Tab C9/27	105	3	5	110
			Tugboat	CNP221	110	2	3	113
			Loading shovel (excavator)	Tab C3/97	105	1	0	105
			Hopper barge/ Pelican barge/ Barge	CNP061	104	2	3	107
			Land drain rig (compressor)	CNP003	104	1	0	104
			Marine drain rig (compressor)	CNP003	104	1	0	104
			Sand barge	CNP061	104	7	8	112
			Sub-total					119
O144	N157	Surcharge placement for platform south of TCT upto R10-HKLL	Dozer	Tab C9/2	104	2	3	107
			Dump truck	Tab C9/27	105	3	5	110
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0	104
			Sub-total					112
O145	N158	Dredging at Theme Park Extension	Grab dredger	CNP063	112	1	0	112
			Tugboat	CNP221	110	1	0	110
			Sand barge	CNP061	104	3	5	109
			Sub-total					115

Table C2.2 - Plant Inventory (Use of Quiet Plant)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
Q146	N159	Placement of vertical seawall at Theme Park Extension	Grab dredger	CNP063	112	1	0	112
			Derrick lighter	CNP061	104	2	3	107
			Tugboat	CNP221	110	3	5	115
			Hopper barge/ Pelican barge/ Barge	CNP061	104	2	3	107
			Sand barge	CNP061	104	3	5	109
			Sub-total					118
Q147	N160	Filling at Theme Park Extension	Grab dredger	CNP063	112	1	0	112
			Dozer	Tab C9/2	104	2	3	107
			Dump truck	Tab C9/27	105	4	6	111
			Tugboat	CNP221	110	10	10	120
			Loading shovel (excavator)	Tab C3/97	105	2	3	108
			Hopper barge/ Pelican barge/ Barge	CNP061	104	3	5	109
			Crane/vibrocompaction	By SWHK	112	2	3	115
			Land drain rig (compressor)	CNP003	104	1	0	104
			Marine drain rig (compressor)	CNP003	104	1	0	104
			Sand barge	CNP061	104	30	15	119
			Sub-total					124
Q148	N161	Surcharge at Theme Park Extension	Grab dredger	CNP063	112	2	3	115
			Dozer	Tab C9/2	104	2	3	107
			Dump truck	Tab C9/27	105	7	8	113
			Loading shovel (excavator)	Tab C3/97	105	2	3	108
			Sub-total					115
P149	O165	Transport infrastructure Road Structures including (Piling & Foundations plus superstructure) : R10 Toll Plaza to R10-HKLL	Compressor > 30m³/min	CNP003	104	2	3	107
			Handheld breaker >35kg	Tab C2/10	110	2	3	113
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Backhoe	Tab C3/97	105	2	3	108
			Mobile crane	Tab C7/114	101	2	3	104
			Generator	Tab C7/62	100	2	3	103
			Poker vibrator	Tab C6/32	100	4	6	106
			Bored piler, oscillator	CNP165	115	1	0	115
			Sub-total					119
P150	O166	Road Surfacing / Construction at grade : R10 Toll Plaza to R10-HKLL	Compressor > 30m³/min	CNP003	104	1	0	104
			Dump truck	Tab C9/27	105	1	0	105
			Grader	Tab C9/11	110	2	3	113
			Tarmac paver	Tab C8/24	101	1	0	101
			Tarmac truck	Tab C9/27	105	2	3	108
			Roller	Tab C8/27	104	1	0	104
P151	O167	Road Surfacing / Construction (elevated section including decking) : R10 Toll Plaza to R10-HKLL	Compressor > 30m³/min	CNP003	104	1	0	104
			Concrete truck (mixer)	Tab C6/35	100	1	0	100
			Mobile crane	Tab C7/114	101	2	3	104
			Generator	Tab C7/62	100	1	0	100
			Poker vibrator	Tab C6/32	100	2	3	103
			Tarmac paver	Tab C8/24	101	1	0	101
			Tarmac truck	Tab C9/27	105	2	3	108
			Roller	Tab C8/27	104	1	0	104
			Launching girder (winch)	CNP263	102	1	0	102
			Sub-total					113
Q152	P169	Services Infrastructure Installation of Utilities / Services i.e electricity, gas, telecom etc.	Compressor > 30m³/min	CNP003	104	2	3	107
			Concrete truck (mixer)	Tab C6/35	100	1	0	100
			Dump truck	Tab C9/27	105	2	3	108
			Backhoe	Tab C3/97	105	2	3	108
			Sub-total					113
Q153	P170	Installation of Water mains Fresh and Salt	Compressor > 30m³/min	CNP003	104	1	0	104
			Concrete truck (mixer)	Tab C6/35	100	1	0	100
			Dump truck	Tab C9/27	105	1	0	105
			Backhoe	Tab C3/97	105	1	0	105
			Mobile crane	Tab C7/114	101	1	0	101
			Poker vibrator	Tab C6/32	100	2	3	103
			Lorry	Tab C8/16	108	1	0	108
			Sub-total					113
Q154	P171	Installation of sewerage mains both gravity and pumped including pumping stations, chambers and wells	Compressor > 30m³/min	CNP003	104	1	0	104
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Dump truck	Tab C9/27	105	1	0	105
			Backhoe	Tab C3/97	105	1	0	105
			Mobile crane	Tab C7/114	101	1	0	101
			Poker vibrator	Tab C6/32	100	4	6	106
			Lorry	Tab C8/16	108	1	0	108
			Sub-total					114

Table C2.2 - Plant Inventory (Use of Quiet Plant)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
Q155	P172	Installation of Stormwater drainage, open channels plus culverts	Compressor > 30m³/min	CNP003	104	2	3	107
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Dump truck	Tab C9/27	105	2	3	108
			Backhoe	Tab C3/97	105	2	3	108
			Mobile crane	Tab C7/114	101	1	0	101
			Poker vibrator	Tab C6/32	100	4	6	106
			Lorry	Tab C8/16	108	1	0	108
			Sub-total					
Theme Park Development								
R156	R175	Theme Park Extension - Foundations	Compressor > 30m³/min	CNP003	104	4	6	110
			Concrete truck (mixer)	Tab C6/35	100	4	6	106
			Dump truck	Tab C9/27	105	2	3	108
			Backhoe	Tab C3/97	105	4	6	111
			Mobile crane	Tab C7/114	101	2	3	104
			Vibratory piling rig	CNP164	115	2	3	118
			Poker vibrator	Tab C6/32	100	8	9	109
			Sub-total					
R157	R176	Theme Park Extension - Superstructure	Compressor > 30m³/min	CNP003	104	2	3	107
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Backhoe	Tab C3/97	105	2	3	108
			Mobile crane	Tab C7/114	101	2	3	104
			Poker vibrator	Tab C6/32	100	4	6	106
			Water pump	CNP282	103	4	6	109
			Tower crane	CNP049	95	1	0	95
			Sub-total					
R158	R177	Technodrome - Foundations	Compressor > 30m³/min	CNP003	104	4	6	110
			Concrete truck (mixer)	Tab C6/35	100	4	6	106
			Dump truck	Tab C9/27	105	2	3	108
			Backhoe	Tab C3/97	105	4	6	111
			Mobile crane	Tab C7/114	101	2	3	104
			Vibratory piling rig	CNP164	115	2	3	118
			Poker vibrator	Tab C6/32	100	8	9	109
			Sub-total					
R159	R178	Technodrome - Superstructure	Compressor > 30m³/min	CNP003	104	2	3	107
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Backhoe	Tab C3/97	105	2	3	108
			Mobile crane	Tab C7/114	101	2	3	104
			Poker vibrator	Tab C6/32	100	4	6	106
			Water pump	CNP282	103	4	6	109
			Tower crane	CNP049	95	1	0	95
			Sub-total					
Northshore Development								
S160	S179	Cross Boundary Ferry Pier 2 Substructure: piling/foundations	Compressor > 30m³/min	CNP003	104	1	0	104
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Derrick lighter	CNP061	104	1	0	104
			Tugboat	CNP221	110	1	0	110
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0	104
			Mobile crane	Tab C7/114	101	1	0	101
			Generator	Tab C7/62	100	1	0	100
			Poker vibrator	Tab C6/32	100	4	6	106
			Coring rig	CNP165	115	3	5	120
			Sub-total					
S161	S180	Cross Boundary Ferry Pier 2 Superstructure: Precast decking and insitu infill	Compressor > 30m³/min	CNP003	104	1	0	104
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Derrick lighter	CNP061	104	1	0	104
			Tugboat	CNP221	110	1	0	110
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0	104
			Mobile crane	Tab C7/114	101	1	0	101
			Generator	Tab C7/62	100	1	0	100
			Poker vibrator	Tab C6/32	100	4	6	106
Sub-total						114		
S162	S181	Cross Boundary Ferry Pier 2 Building Foundations	Compressor > 30m³/min	CNP003	104	2	3	107
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Dump truck	Tab C9/27	105	1	0	105
			Backhoe	Tab C3/97	105	2	3	108
			Vibratory piling rig	CNP164	115	1	0	115
			Poker vibrator	Tab C6/32	100	4	6	106
			Water pump	CNP282	103	2	3	106
			Sub-total					
S163	S182	Cross Boundary Ferry Pier 2 Building Superstructure	Compressor > 30m³/min	CNP003	104	2	3	107
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Backhoe	Tab C3/97	105	2	3	108
			Mobile crane	Tab C7/114	101	2	3	104
			Poker vibrator	Tab C6/32	100	4	6	106
			Sub-total					

Table C2.2 - Plant Inventory (Use of Quiet Plant)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
Phase 3								
Penny's Bay Rail Link								
Yam O Station & Adjacent Section								
T164	T183	Foundation (Concreting)	Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Concrete lining machine (concrete pump)	Tab C6/22	106	1	0	106
			Poker vibrator	Tab C6/32	100	6	8	108
			Sub-total					111
T165	T184	Foundation (Formwork & Reinforcement)	Compressor $\leq 10\text{m}^3/\text{min}$	CNP001	100	1	0	100
			Generator	Tab C7/62	100	1	0	100
			Mobile crane	Tab C7/114	101	1	0	101
			Bar bender	CNP021	90	1	0	90
			Sub-total					105
T166	T185	Excavation	Compressor $\leq 10\text{m}^3/\text{min}$	CNP001	100	4	6	106
			Breaker, excavator mounted (hydraulic)	Tab C3/97	105	1	0	105
			Excavator/ Loader	Tab C3/97	105	2	3	108
			Lorry	Tab C8/16	108	3	5	113
			Submersible pump	by MTRC	96	1	0	96
			Sub-total					115
T167	T186	Station Construction	Compressor $\leq 10\text{m}^3/\text{min}$	CNP001	100	2	3	103
			Handheld breaker $20\text{kg} \leq \text{mass} \leq 35\text{kg}$	CNP025	111	2	3	114
			Concrete truck (mixer)	Tab C6/35	100	3	5	105
			Mobile crane	Tab C7/114	101	1	0	101
			Poker vibrator	Tab C6/32	100	6	8	108
			Concrete lining machine (concrete pump)	Tab C6/22	106	1	0	106
			Lorry	Tab C8/16	108	1	0	108
			Tower crane	CNP049	95	2	3	98
			Hoist, material (electric)	CNP122	95	1	0	95
			Saw, circular, wood	CNP201	108	1	0	108
			Sub-total					117
T168	T187	Sheet Piling for Protection on Existing Tracks/ Platforms	Sheet piling (hydraulic vibratory driver)	BS 5228: Part4:1992 Tab 1/53	118	1	0	118
			Sub-total					118
T169	T188	Tunnel Portal (Start-up Works) Excavation	Excavator/ Loader (for Trench)	Tab C3/97	105	3	5	110
			Lorry	Tab C8/16	108	6	8	116
			Sub-total					117
T170	T189	Sheet Piling	Sheet piling (hydraulic vibratory driver)	BS 5228: Part4:1992 1/53	118	1	0	118
			Sub-total					118
T171	T190	Soil Nail Installation and Initial Tunnel Excavation	Compressor $\leq 10\text{m}^3/\text{min}$	CNP001	100	3	5	105
			Drilling Rigs	Tab C11/1	117	2	3	120
			Sub-total					120
T172	T191	Re-construction of Roads	Vibrating roller	Tab C8/27	104	1	0	104
			Dozer	Tab C9/2	104	1	0	104
			Sub-total					107
T173	T192	Mechanical Rock Excavation	Breaker, excavator mounted (hydraulic)	Tab C3/97	105	2	3	108
			Sub-total					108
T174	T193	Tunnel Works Works at Tunnel Portal	Compressor $> 30\text{m}^3/\text{min}$	CNP003	104	4	6	110
			Mobile crane	Tab C7/114	101	1	0	101
			Lorry	Tab C8/16	108	1	0	108
			Ventilation fan	CNP241	108	2	3	111
			Forklift	By WDI	113	1	0	113
			Batching Plant	CNP022	108	1	0	108
			Sub-total					118
T175	T194	Removal of Spoil at Tunnel Portal	Excavator/Loader	Tab C3/97	105	1	0	105
			Lorry	Tab C8/16	108	3	5	113
			Sub-total					113
T176	B19	Concrete Lining, Track Laying	Compressor $> 30\text{m}^3/\text{min}$	CNP003	104	2	3	107
			Concrete truck (mixer)	Tab C6/35	100	4	6	106
			Excavator/ Loader	Tab C3/97	105	2	3	108
			Mobile crane	Tab C7/114	101	1	0	101
			Concrete lining machine (concrete pump)	Tab C6/22	106	1	0	106
			Lorry	Tab C8/16	108	1	0	108
			Sub-total					114
At Grade Trackwork								
T177	T195	Surface Drainage Construction including pumps to control water influx	Compressor $> 30\text{m}^3/\text{min}$	CNP003	104	2	3	107
			Concrete truck (mixer)	Tab C6/35	100	1	0	100
			Dozer	Tab C9/2	104	1	0	104
			Dump truck	Tab C9/27	105	2	3	108

Table C2.2 - Plant Inventory (Use of Quiet Plant)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
			Crane/Vibrocompaction	By SWHK	112	1	0	112
			Excavator/ Loader	Tab C3/97	105	2	3	108
			Mobile Crane	Tab C7/114	101	2	3	104
			Poker vibrator	Tab C6/32	100	1	0	100
			Concrete lining machine (pump)	Tab C6/22	106	1	0	106
			Lorry	Tab C8/16	108	1	0	108
			Water pump	CNP282	103	8	9	112
			Sub-total					118
T178	T196	Track Laying	Generator	Tab C7/62	100	1	0	100
			Diesel locomotive	from West Rail	118	2	3	121
			Lorry	Tab C8/16	108	1	0	108
			Sub-total					121
T179	T197	Disney Station Excavation	Generator	Tab C7/62	100	2	3	103
			Excavator/ Loader	Tab C3/97	105	3	5	110
			Lorry	Tab C8/16	108	8	9	117
			Sub-total					118
T180	T198	Foundation (Concreting)	Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Poker vibrator	Tab C6/32	100	6	8	108
			Concrete lining machine (concrete pump)	Tab C6/22	106	1	0	106
			Sub-total					111
T181	T199	Foundation (Formwork & Reinforcement)	Compressor $\leq 10\text{m}^3/\text{min}$	CNP001	100	1	0	100
			Generator	Tab C7/62	100	2	3	103
			Mobile crane	Tab C7/114	101	1	0	101
			Bar bender	CNP021	90	1	0	90
			Sub-total					106
T182	T200	Station Construction	Compressor $\leq 10\text{m}^3/\text{min}$	CNP001	100	4	6	106
			Handheld breaker 20kg $\leq$ mass $\leq$ 35kg	CNP025	111	4	6	117
			Concrete truck (mixer)	Tab C6/35	100	3	5	105
			Mobile crane	Tab C7/114	101	12	3	104
			Poker vibrator	Tab C6/32	100	6	8	108
			Lorry	Tab C8/16	108	1	0	108
			Tower crane	CNP049	95	1	0	95
			Sub-total					119
T183	B17	Ventilation Building Foundations	Compressor $> 30\text{m}^3/\text{min}$	CNP003	104	2	3	107
			Handheld breaker $> 35\text{kg}$	Tab C2/10	110	3	5	115
			Concrete truck (mixer)	Tab C6/35	100	4	6	106
			Dump truck	Tab C9/27	105	2	3	108
			Backhoe	Tab C3/97	105	2	3	108
			Generator	Tab C7/62	100	1	0	100
			Vibratory piling rig	CNP164	115	1	0	115
			Poker vibrator	Tab C6/32	100	1	0	100
			Sub-total					119
T184	B18	Ventilation Building Superstructure	Compressor $> 30\text{m}^3/\text{min}$	CNP003	104	1	0	104
			Concrete truck (mixer)	Tab C6/35	100	4	6	106
			Backhoe	Tab C3/97	105	2	3	108
			Mobile crane	Tab C7/114	101	2	3	104
			Generator	Tab C7/62	100	1	0	100
			Poker vibrator	Tab C6/32	100	1	0	100
			Sub-total					112

Table C2.3 - Plant Inventory (Use of Quiet Plant, Barrier)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Barr. Corr.	Sum
(No. has been reduced if cell is in grey)									
Phase 1									
Reclamation & Excavation									
A1	A1	Slope protection in Penny's Bay West	Compressor > 30m ³ /min	CNP003	104	3	5		109
			Handheld breaker > 35kg	Tab C2/10	110	6	8		118
			Concrete truck (mixer)	Tab C6/35	100	3	5		105
			Dump truck	Tab C9/27	105	3	5		110
			Backhoe	Tab C3/97	105	3	5		110
			Sub-total						120
A2	A2	Dredging at Theme Park Phase 1	Grab dredger	CNP063	112	1	0		112
			TS Dredger	By SWHK	109	1	0		109
			Sub-total						114
A3	A3	Placement of sloping/vertical seawall at Theme Park Phase 1	Grab dredger	CNP063	112	2	3		115
			Derrick lighter	CNP061	104	6	8		112
			Tugboat	CNP221	110	10	10		120
			Hopper barge/ Pelican barge/ Barge	CNP061	104	4	6		110
			Sub-total						122
A4	A4	Filling at Theme Park Phase 1	Grab Dredger	CNP063	112	6	8		120
			TS Dredger	By SWHK	109	4	6		115
			CS Dredger	By SWHK	104	2	3		107
			Derrick lighter	CNP061	104	4	6		110
			Dozer	Tab C9/2	104	8	9		113
			Dump truck	Tab C9/27	105	20	13		118
			Tugboat	CNP221	110	12	11		121
			Loading shovel (excavator)	Tab C3/97	105	12	11		116
			Hopper barge/ Pelican barge/ Barge	CNP061	104	24	14		118
			Crane/vibrocompaction	By SWHK	112	8	9		121
			Land drain rig (compressor)	CNP003	104	4	6		110
			Maine drain rig (compressor)	CNP003	104	4	6		110
			Sub-total						128
A5	A5	Surcharge at Theme Park Phase 1	Dozer	Tab C9/2	104	4	6		110
			Dump truck	Tab C9/27	105	10	10		115
			Loading shovel (excavator)	Tab C3/97	105	5	7		112
			Sub-total						118
A6	A6	Demolition, part of Cheoy Lee	Dump truck	Tab C9/27	105	1	0		105
			Excavator/Loader	Tab C3/97	105	1	0		105
			Backhoe	Tab C3/97	105	3	5		110
			Mobile crane	Tab C7/114	101	2	3		104
			Sub-total						113
A7	A7	Ground treatment	Dump truck	Tab C9/27	105	11	0		105
			Backhoe	Tab C3/97	105	2	3		108
			Sub-total						110
A8	A8	Excavation to tie in at existing Yam O Interchange	Compressor > 30m ³ /min	CNP003	104	2	3		107
			Handheld breaker > 35kg	Tab C2/10	110	5	7		117
			Dump truck	Tab C9/27	105	10	10		115
			Excavator/Loader	Tab C3/97	105	2	3		108
			Backhoe	Tab C3/97	105	2	3		108
			Sub-total						120
A9	A9	Blasting	Drilling Rigs	Tab C11/2	112	6	8		120
			Sub-total						120
A10	A10	Slope protection in Yam O Section	Compressor > 30m ³ /min	CNP003	104	1	0		104
			Handheld breaker > 35kg	Tab C2/10	110	2	3		113
			Concrete truck (mixer)	Tab C6/35	100	1	0		100
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0		105
			Sub-total						115
A11	A11	Slope protection in Penny's Bay North Adjacent	Compressor > 30m ³ /min	CNP003	104	2	3		107
			Handheld breaker > 35kg	Tab C2/10	110	4	6		116
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Dump truck	Tab C9/27	105	2	3		108
			Backhoe	Tab C3/97	105	2	3		108
			Sub-total						118
A12	A12	Dredging sloping seawall at Yam O PTI	Grab dredger	CNP063	112	1	0		112
			Tugboat	CNP221	110	1	0		110
			Sand barge	CNP061	104	1	0		104
			Sub-total						115
A13	A13	Placement of sloping seawall at Yam O PTI	Grab dredger	CNP063	112	1	0		112
			Derrick lighter	CNP061	104	1	0		104
			Tugboat	CNP221	110	1	0		110
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0		104
			Sand barge	CNP061	104	1	0		104
			Sub-total						115
A14	A14	Filling at Yam O PTI	Grab dredger	CNP063	112	1	0		112
			Dozer	Tab C9/2	104	1	0		104
			Dump truck	Tab C9/27	105	3	5		110
			Tugboat	CNP221	110	2	3		113
			Loading shovel (excavator)	Tab C3/97	105	1	0		105
			Hopper barge/ Pelican barge/ Barge	CNP061	104	2	3		107
			Land drain rig (compressor)	CNP003	104	1	0		104
			Maine drain rig (compressor)	CNP003	104	1	0		104

Table C2.3 - Plant Inventory (Use of Quiet Plant, Barrier)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Barr. Corr.	Sum
(No. has been reduced if cell is in grey)									
			Sand barge	CNP061	104	7	8		112
			Sub-total						118.96
A15	A15	Surcharge at Yam O PT1	Dozer	Tab C9/2	104	2	3		107
			Dump truck	Tab C9/27	105	3	5		110
			Loading shovel (excavator)	Tab C3/97	105	1	0		105
			Sub-total						112.5
B16	B20	Transport Infrastructure Temporary Road Surfacing/Construction at grade: Temporary Access Road	Compressor > 30m³/min	CNP003	104	1	0		104
			Dump truck	Tab C9/27	105	2	3		108
			Backhoe	Tab C3/97	105	2	3		108
			Grader	Tab C9/11	110	1	0		110
			Tarmac paver	Tab C8/24	101	1	0		101
			Tarmac truck	Tab C9/27	105	2	3		108
			Roller	Tab C8/27	104	2	3		107
			Sub-total						116
B17	B21	Road Structures including (Piling & Foundations plus superstructure): CKWLR from Yam O to Penny's Bay Interchange	Compressor > 30m³/min	CNP003	104	2	3	-10	97
			Handheld breaker >35kg	Tab C2/10	110	4	6	-10	106
			Concrete truck (mixer)	Tab C8/35	100	2	3	-10	93
			Backhoe	Tab C3/97	105	2	3	-5	103
			Mobile Crane	Tab C7/114	101	2	3	-5	99
			Generator	Tab C7/62	100	2	3	-10	93
			Bored piler oscillator	CNP165	115	1	0	-10	105
			Sub-total						110
B18	B22	Road Surfacing / Construction at grade: CKWLR from Yam O to Penny's Bay Interchange	Compressor > 30m³/min	CNP003	104	2	3	-10	97
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0	-5	100
			Grader	Tab C9/11	110	2	3	-5	108
			Tarmac paver	Tab C8/24	101	1	0	-5	96
			Tarmac truck	Tab C9/27	105	2	3		108
			Roller	Tab C8/27	104	2	3	-5	102
			Sub-total						113
B19	B23	Road Surfacing / Construction (elevated section including decking): CKWLR from Yam O to Penny's Bay Interchange	Compressor > 30m³/min	CNP003	104	2	3		107
			Mobile Crane	Tab C7/114	101	2	3		104
			Poker vibrator	Tab C6/32	100	4	6		106
			Tarmac paver	Tab C8/24	101	1	0		101
			Tarmac truck	Tab C9/27	105	2	3		108
			Roller	Tab C8/27	104	2	3		107
			Launching girder (winch)	CNP263	102	1	0		102
			Sub-total						114
B20	B24	Road Structures including (Piling & Foundations plus superstructure): Road P2 Northshore Development to Theme Park West	Compressor > 30m³/min	CNP003	104	2	3		107
			Handheld breaker >35kg	Tab C2/10	110	4	6	-10	106
			Concrete truck (mixer)	Tab C8/35	100	4	6	-10	96
			Backhoe	Tab C3/97	105	2	3	-5	103
			Mobile crane	Tab C7/114	101	2	3	-5	99
			Generator	Tab C7/62	100	1	0	-10	90
			Poker vibrator	Tab C6/32	100	4	6	-10	96
			Bored piler oscillator	CNP165	115	1	0	-10	105
			Sub-total						112
B21	B25	Road Surfacing / Construction at grade incl. roadside buffers: Road P2 Northshore Development to Theme Park West	Compressor > 30m³/min	CNP003	104	2	3	-10	97
			Concrete truck (mixer)	Tab C8/35	100	2	3	-10	93
			Dump truck	Tab C9/27	105	2	3		108
			Backhoe	Tab C3/97	105	3	5	-5	105
			Poker vibrator	Tab C8/32	100	4	6	-10	96
			Grader	Tab C9/11	110	1	0	-5	105
			Tarmac paver	Tab C8/24	101	1	0	-5	96
			Tarmac truck	Tab C9/27	105	2	3		108
			Roller	Tab C8/27	104	1	0	-5	99
			Sub-total						113
B22	B26	Road Surfacing / Construction (elevated section including decking): Road P2 Northshore Development to Theme Park West	Concrete truck (mixer)	Tab C8/35	100	4	6	-10	96
			Mobile crane	Tab C7/114	101	2	3	-5	99
			Poker vibrator	Tab C8/32	100	6	8	-10	98
			Tarmac paver	Tab C8/24	101	1	0	-5	96
			Tarmac truck	Tab C9/27	105	2	3		108
			Roller	Tab C8/27	104	2	3	-5	102
			Sub-total						110
B23	B27	Road Surfacing / Construction at grade incl. roadside buffers: Road D1 Theme Park West Roundabout to Theme Park	Compressor > 30m³/min	CNP003	104	2	3		107
			Concrete truck (mixer)	Tab C8/35	100	2	3		103
			Dump truck	Tab C9/27	105	2	3		108
			Backhoe	Tab C3/97	105	3	5		110
			Poker vibrator	Tab C6/32	100	4	6		106
			Grader	Tab C9/11	110	1	0		110
			Tarmac paver	Tab C8/24	101	1	0		101
			Tarmac truck	Tab C9/27	105	2	3		108

Table C2.3 - Plant Inventory (Use of Quiet Plant, Barrier)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants (No. has been reduced / cell is in grey)	Plant No. Corr.	Barr. Corr.	Sum
B24	B28	Road Surfacing / Construction at grade : Access Road at Yam O i.e from road P2, to Yam O Rail Station	Roller	Tab C8/27	104	2	3		107
			Sub-total						117
			Compressor > 30m³/min	CNP003	104	2	3	-10	97
			Concrete truck (mixer)	Tab C6/35	100	2	3	-10	93
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	2	3	-5	103
			Poker vibrator	Tab C6/32	100	4	6	-10	96
			Grader	Tab C9/11	110	1	0	-5	105
			Tarmac paver	Tab C8/24	101	1	0	-5	96
			Tarmac truck	Tab C9/27	105	2	3		108
B25	B29	Central pedestrian walkway surfacing / construction: Approx. Middle of proposed park i.e boundary between Phase 1 and Phase 2 expansion	Roller	Tab C8/27	104	2	3	-5	102
			Sub-total						112
			Compressor > 30m³/min	CNP003	104	2	3		107
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	2	3		108
			Grader	Tab C9/11	110	1	0		110
			Tarmac paver	Tab C8/24	101	1	0		101
			Tarmac truck	Tab C9/27	105	2	3		108
			Compactor	CNP050	105	2	3		108
			Sub-total						118
C26	C31	Services Infrastructure Installation of Utilities / Services i.e electricity, gas, telecom etc.	Compressor > 30m³/min	CNP003	104	2	3	-10	97
			Concrete truck (mixer)	Tab C6/35	100	1	0	-10	90
			Dump truck	Tab C9/27	105	2	3		108
			Backhoe	Tab C3/97	105	2	3	-5	103
			Poker vibrator	Tab C6/32	100	2	3	-10	93
			Sub-total						110
C27	C32	Excavation of lake	Dump truck	Tab C9/27	105	10	10		115
			Backhoe	Tab C3/97	105	2	3		108
			Sub-total						118
C28	C33	Placement of lake membrane plus associated waterworks to tie into (ability to lap from) adjacent drainage system	Compressor > 30m³/min	CNP003	104	1	0		104
			Concrete truck (mixer)	Tab C6/35	100	1	0		100
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	2	3		108
			Mobile crane	Tab C7/114	101	1	0		101
			Poker vibrator	Tab C6/32	100	2	3		103
			Sub-total						112
C29	C34	Lake de-silting and pumping facilities	Compressor > 30m³/min	CNP003	104	1	0		104
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0		105
			Mobile crane	Tab C7/114	101	1	0		101
			Poker vibrator	Tab C6/32	100	2	3		103
			Sub-total						111
C30	C35	Excavation of proposed reservoirs at Yam O Tuk both Salt and Fresh water including blasting (feasibility of siting both these at Yam O Tuk to be investigated) Note outside WD area limits	Compressor > 30m³/min	CNP003	104	2	3		107
			Handheld breaker >35kg	Tab C2/10	110	5	7		117
			Dump truck	Tab C9/27	105	15	12		117
			Excavator	Tab C3/97	105	3	5		110
			Backhoe	Tab C3/97	105	3	5		110
			Drilling rig	Tab C11/2	119	5	7		126
			Sub-total						127
C31	C36	Construction of reservoirs plus associated facilities	Compressor > 30m³/min	CNP003	104	4	16		110
			Concrete truck	Tab C6/35	100	4	16		106
			Backhoe	Tab C3/97	105	2	13		108
			Mobile crane	Tab C7/114	101	2	13		104
			Generator	Tab C7/82	100	2	3		103
			Poker vibrator	Tab C6/32	100	6	8		108
			Sub-total						115
C32	C37	Landscaping of reservoirs	Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0		105
			Sub-total						106
C33	C38	Installation of Water mains Fresh and Salt including irrigation	Compressor > 30m³/min	CNP003	104	2	13	-10	97
			Handheld breaker >35kg	Tab C2/10	110	2	3	-10	103
			Concrete truck (mixer)	Tab C6/35	100	1	0	-10	90
			Dump truck	Tab C9/27	105	2	3		108
			Backhoe	Tab C3/97	105	2	13	-5	103
			Mobile crane	Tab C7/114	101	1	0	-5	96
			Poker vibrator	Tab C6/32	100	2	3	-10	93
			Lorry	Tab C8/16	108	2	3		111
			Sub-total						114
C34	C39	Installation of sewerage mains both gravity and pumped including pumping stations, chambers and wells	Compressor > 30m³/min	CNP003	104	1	0	-10	94
			Concrete truck (mixer)	Tab C6/35	100	1	0	-10	90

Table C2.3 - Plant Inventory (Use of Quiet Plant, Barrier)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Barr. Corr.	Sum
						(No has been reduced if cell is in grey)			
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0	-5	100
			Mobile crane	Tab C7/114	101	1	0	-5	96
			Poker vibrator	Tab C6/32	100	4	8	-10	96
			Lorry	Tab C8/16	108	1	0		108
			Sub-total						111
C35	C40	Installation of Stormwater drainage, open channels plus culverts	Compressor > 30m ³ /min	CNP003	104	4	6	-10	100
			Concrete truck (mixer)	Tab C6/35	100	6	8	-10	98
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	2	3	-5	103
			Mobile crane	Tab C7/114	101	2	3	-5	99
			Poker vibrator	Tab C6/32	100	8	9	-5	104
			Lorry	Tab C8/16	108	2	3		111
			Sub-total						114
GIC Sites									
D38	D41	P.T.I at Yam O Station	Compressor > 30m ³ /min	CNP003	104	2	3	-10	97
			Concrete truck (mixer)	Tab C6/35	100	2	3	-10	93
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	2	3	-5	103
			Mobile crane	Tab C7/114	101	2	3	-5	99
			Vibratory piling rig	CNP164	115	1	0	-10	105
			Poker vibrator	Tab C6/32	100	4	6	-10	96
			Sub-total						110
D37	D42	P.T.I at Penny's Bay Station - Phase 1	Compressor > 30m ³ /min	CNP003	104	2	3		107
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	2	3		108
			Mobile crane	Tab C7/114	101	2	3		104
			Vibratory piling rig	CNP164	115	1	0		115
			Poker vibrator	Tab C6/32	100	4	6		106
			Sub-total						117
D38	D43	Public Parking in Penny's Bay Station - Phase 1	Backhoe	Tab C3/97	105	2	3		108
			Grader	Tab C9/11	110	1	0		110
			Tarmac paver	Tab C8/24	101	1	0		101
			Tarmac truck	Tab C9/27	105	2	3		108
			Compactor	CNP050	105	2	3		108
			Sub-total						115
D39	D44	Police Station in Penny's Bay Station - Phase 1	Compressor > 30m ³ /min	CNP003	104	1	0		104
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0		105
			Mobile crane	Tab C7/114	101	1	0		101
			Poker vibrator	Tab C6/32	100	4	6		106
			Sub-total						112
D40	D45	Fire Station in Penny's Bay Station - Phase 1	Compressor > 30m ³ /min	CNP003	104	1	0		104
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0		105
			Mobile crane	Tab C7/114	101	1	0		101
			Poker vibrator	Tab C6/32	100	4	6		106
			Sub-total						112
D41	D46	Utility Yard	Compressor > 30m ³ /min	CNP003	104	1	0		104
			Concrete truck (mixer)	Tab C6/35	100	1	0		100
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0		105
			Mobile crane	Tab C7/114	101	1	0		101
			Vibratory piling rig	CNP164	115	1	0		115
			Poker vibrator	Tab C6/32	100	2	3		103
			Sub-total						117
D42	D47	Special Duty Unit Base (including site formation i.e. reclamation / seawall construction) located between Siu Ho Wan and Ta Pang Po	Compressor > 30m ³ /min	CNP003	104	2	3		107
			Handheld breaker >35kg	Tab C2/10	110	4	6		116
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
		NB. TS and CS dredger may be substituted for other types of marine based reclamation plant	Grab dredger	CNP063	112	2	3		115
			TS dredger	BY SWHK	109	2	3		112
			Demick lighter	CNP061	104	2	3		107
			Dozer	Tab C9/2	104	1	0		104
			Dump truck	Tab C9/27	105	2	3		108
			Tugboat	CNP221	110	1	0		110
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0		104
			Land drain rig (compressor)	CNP003	104	1	0		104
			Backhoe	Tab C3/97	105	2	3		108
			Mobile crane	Tab C7/114	101	2	3		104
			Generator	Tab C7/62	100	2	3		103
			Vibratory piling rig	CNP164	115	1	0		115
			Poker vibrator	Tab C6/32	100	4	6		106
			Lorry	Tab C8/16	108	1	0		108
			Grader	Tab C9/11	110	1	0		110
			Tarmac paver	Tab C8/24	101	1	0		101
			Tarmac truck	Tab C9/27	105	2	3		108
			Compactor	CNP050	105	1	0		105
			Water pump	CNP282	103	1	0		103
			Sub-total						123

Table C2.3 - Plant Inventory (Use of Quiet Plant, Barrier)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Barr. Corr.	Sum
(No. has been reduced if cell is in grey)									
E43	E48	Phase 1 - Theme Park Development Theme Park Building/Attraction Foundations in Penny's Bay Station - Phase 1	Compressor > 30m³/min	CNP003	104	4	6		110
			Handheld breaker >35kg	Tab C2/10	110	11	10		120
			Concrete truck (mixer)	Tab C6/35	100	20	13		113
			Dozer	Tab C9/2	104	4	6		110
			Dump truck	Tab C9/27	105	2	3		108
			Excavator/ Loader	Tab C3/97	105	8	9		114
			Backhoe	Tab C3/97	105	4	6		111
			Mobile crane	Tab C7/114	101	4	6		107
			Drilling rigs	Tab C11/2	112	8	9		121
			Generator	Tab C7/62	100	4	6		106
			Lorry	Tab C8/16	108	2	3		111
			Grader	Tab C9/11	110	4	6		116
			Compactor	CNP050	105	3	5		110
			Water pump	CNP282	103	15	12		115
			Pan scrapers	CNP204	119	3	5		124
			Sub-total						128
E44	E49	Theme Park Building/Attraction Foundations in Penny's Bay Station - Phase 1	Compressor > 30m³/min	CNP003	104	10	10		114
			Handheld breaker >35kg	Tab C2/10	110	15	12		122
			Concrete truck (mixer)	Tab C6/35	100	30	15		115
			Dozer	Tab C9/2	104	4	6		110
			Dump truck	Tab C9/27	105	2	3		108
			Excavator/ Loader	Tab C3/97	105	8	9		114
			Backhoe	Tab C3/97	105	12	11		116
			Mobile crane	Tab C7/114	101	12	11		112
			Generator	Tab C7/62	100	4	6		106
			Lorry	Tab C8/16	108	2	3		111
			Grader	Tab C9/11	110	2	3		113
			Compactor	CNP050	105	2	3		108
			Water pump	CNP282	103	15	12		115
			Tower crane	CNP049	85	10	10		105
			Bobcats	By WDI	114	20	13		127
			Ditch Witch Trencher	By WDI	117	3	5		122
			Forklifts	By WDI	113	20	13		128
			Sub-total						132
E45	E50	Theme Park Surfacing, Landscaping and Berms in Penny's Bay Station - Phase 1	Compressor > 30m³/min	CNP003	104	4	6		110
			Handheld breaker >35kg	Tab C2/10	110	13	5		115
			Concrete truck (mixer)	Tab C6/35	100	8	9		109
			Dozer	Tab C9/2	104	4	6		110
			Dump truck	Tab C9/27	105	2	3		108
			Excavator/ Loader	Tab C3/97	105	2	3		108
			Backhoe	Tab C3/97	105	12	11		116
			Mobile crane	Tab C7/114	101	4	6		107
			Generator	Tab C7/62	100	4	6		106
			Lorry	Tab C8/16	108	2	3		111
			Grader	Tab C9/11	110	2	3		113
			Compactor	CNP050	105	1	0		105
			Bobcats	By WDI	114	6	6		122
			Ditch Witch Trencher	By WDI	117	3	5		122
			Forklifts	By WDI	113	4	6		119
			Sub-total						127
E46	E51	Ferry Pier Substructure: piling/foundations in Penny's Bay Station - Phase 1	Compressor > 30m³/min	CNP003	104	2	3		107
			Handheld breaker >35kg	Tab C2/10	110	3	5		115
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Derrick lighter plus crane	CNP061	104	1	0		104
			Dozer	Tab C9/2	104	2	3		107
			Dump truck	Tab C9/27	105	2	3		108
			Tugboat	CNP221	110	2	3		113
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0		104
			Mobile crane	Tab C7/114	101	1	0		101
			Generator	Tab C7/62	100	2	3		103
			Poker vibrator	Tab C6/32	100	4	6		106
			Water pump	CNP282	103	6	6		111
			Lorry	Tab C8/16	108	2	3		111
			Coring rig	CNP165	115	3	5		120
			Bobcats	By WDI	114	4	6		120
			Sub-total						125
E47	E52	Ferry Pier Superstructure: Precast decking and insitu infill in Penny's Bay Station - Phase 1	Compressor > 30m³/min	CNP003	104	1	0		104
			Handheld breaker >35kg	Tab C2/10	110	2	3		113
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Derrick Lighter plus crane	CNP061	104	1	0		104
			Tugboat	CNP221	110	1	0		110
			Hopper Barge/ Pelican Barge/ Barge	CNP061	104	1	0		104
			Mobile crane	Tab C7/114	101	1	0		101
			Generator	Tab C7/62	100	1	0		100
			Poker vibrator	Tab C6/32	100	4	6		106
			Lorry	Tab C8/16	108	2	3		111
			Bobcats	By WDI	114	4	6		120
			Forklifts	By WDI	113	3	5		118
			Sub-total						123
E48	E53	Ferry Pier Building Foundations in Penny's Bay Station - Phase 1	Compressor > 30m³/min	CNP003	104	1	0		104
			Handheld breaker >35kg	Tab C2/10	110	2	3		113
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	2	3		108

Table C2.3 - Plant Inventory (Use of Quiet Plant, Barrier)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Barr. Corr.	Sum
						(No. has been reduced if cell is in grey)			
			Generator	Tab C7/62	100	2	3		103
			Vibratory piling rig	CNP184	115	1	0		115
			Poker vibrator	Tab C6/32	100	4	6		106
			Lorry	Tab C8/16	108	2	3		111
			Bobcats	By WDI	114	2	3		117
			Sub-total						121
			Compressor > 30m ³ /min	CNP003	104	2	3		107
			Handheld breaker >35kg	Tab C2/10	110	2	3		113
			Concrete truck (mixer)	Tab C8/35	100	2	3		103
			Backhoe	Tab C3/97	105	2	3		108
E49	E54	Ferry Pier Building Superstructure in Penny's Bay Station - Phase 1	Mobile crane	Tab C7/114	101	2	3		104
			Generator	Tab C7/62	100	2	3		103
			Poker vibrator	Tab C6/32	100	4	6		106
			Lorry	Tab C8/16	108	2	3		111
			Bobcats	By WDI	114	2	3		117
			Ditch Witch Trencher	By WDI	117	4	6		123
			Sub-total						125
			Compressor > 30m ³ /min	CNP003	104	3	5		109
			Handheld breaker >35kg	Tab C2/10	110	10	10		120
			Concrete truck (mixer)	Tab C8/35	100	10	10		110
E50	E55	Hotels Foundations in Penny's Bay Station - Phase 1	Dozer	Tab C9/2	104	2	3		107
			Dump truck	Tab C9/27	105	4	6		111
			Excavator/ Loader	Tab C3/97	105	3	5		110
			Backhoe	Tab C3/97	105	3	5		110
			Generator	Tab C7/62	100	4	6		106
			Lorry	Tab C8/16	108	2	3		111
			Grader	Tab C9/11	110	2	3		113
			Compactor	CNP050	105	2	3		108
			Water pump	CNP282	103	4	6		109
			Tower crane	CNP049	95	2	3		98
E51	E56	Hotels Superstructure in Penny's Bay Station - Phase 1	Bobcats	By WDI	114	4	6		120
			Pan Scrapers	CNP204	119	2	3		122
			Sub-total						127
			Compressor > 30m ³ /min	CNP003	104	3	5		109
			Handheld breaker >35kg	Tab C2/10	110	10	10		120
			Concrete truck (mixer)	Tab C8/35	100	20	13		113
			Dozer	Tab C9/2	104	2	3		107
			Dump truck	Tab C9/27	105	4	6		111
			Excavator/ Loader	Tab C3/97	105	2	3		108
			Backhoe	Tab C3/97	105	3	5		110
E52		Water Recreation Centre - Foundation	Mobile crane	Tab C7/114	101	2	3		104
			Generator	Tab C7/62	100	4	6		106
			Lorry	Tab C8/16	108	2	3		111
			Grader	Tab C9/11	110	2	3		113
			Compactor	CNP050	105	2	3		108
			Tower crane	CNP049	95	3	5		100
			Bobcats	By WDI	114	20	13		127
			Ditch Witch Trencher	By WDI	117	3	5		122
			Forklifts	By WDI	113	20	13		126
			Sub-total						131
E53		Water Recreation Centre - Superstructure	Compressor > 30m ³ /min	CNP003	104	2	3		107
			Handheld breaker >35kg	Tab C2/10	110	2	3		113
			Concrete truck (mixer)	Tab C8/35	100	2	3		103
			Dump truck	Tab C9/27	105	2	3		108
			Backhoe	Tab C3/97	105	2	3		108
			Mobile crane	Tab C7/114	101	2	3		104
			Vibratory piling rig	CNP184	115	1	0		115
			Generator	Tab C7/62	100	2	3		103
			Poker vibrator	Tab C6/32	100	4	6		106
			Lorry	Tab C8/16	108	2	3		111
E54		Water Recreation Centre - Superstructure	Water pump	CNP282	103	2	3		106
			Sub-total						120
			Compressor > 30m ³ /min	CNP003	104	2	3		107
			Handheld breaker >35kg	Tab C2/10	110	2	3		113
			Concrete truck (mixer)	Tab C8/35	100	2	3		103
			Backhoe	Tab C3/97	105	2	3		108
			Mobile crane	Tab C7/114	101	2	3		104
			Generator	Tab C7/62	100	2	3		103
			Poker vibrator	Tab C6/32	100	4	6		106
			Lorry	Tab C8/16	108	2	3		111
E55		Water Recreation Centre - Superstructure	Water pump	CNP282	103	2	3		106
			Sub-total						118
Phase 2	F57	Reclamation & Excavation	Compressor > 30m ³ /min	CNP003	104	2	3		107
			Handheld breaker >35kg	Tab C2/10	110	2	3		113
			Concrete truck (mixer)	Tab C8/35	100	2	3		103
			Backhoe	Tab C3/97	105	2	3		108
			Mobile crane	Tab C7/114	101	2	3		104
			Generator	Tab C7/62	100	2	3		103
			Poker vibrator	Tab C6/32	100	4	6		106
			Lorry	Tab C8/16	108	2	3		111
			Water pump	CNP282	103	2	3		106
			Sub-total						118
F54	F57	Excavation through TCT	Compressor > 30m ³ /min	CNP003	104	2	3		107
			Handheld breaker >35kg	Tab C2/10	110	2	3		113
			Concrete truck (mixer)	Tab C8/35	100	2	3		103
			Backhoe	Tab C3/97	105	2	3		108
			Mobile crane	Tab C7/114	101	2	3		104
			Generator	Tab C7/62	100	2	3		103
			Poker vibrator	Tab C6/32	100	4	6		106
			Lorry	Tab C8/16	108	2	3		111
			Water pump	CNP282	103	2	3		106
			Sub-total						118
F55	F58	Blasting through TCT	Compressor > 30m ³ /min	CNP003	104	2	3		107
			Handheld breaker >35kg	Tab C2/10	110	2	3		113
			Concrete truck (mixer)	Tab C8/35	100	2	3		103
			Backhoe	Tab C3/97	105	2	3		108
			Mobile crane	Tab C7/114	101	2	3		104
			Generator	Tab C7/62	100	2	3		103
			Poker vibrator	Tab C6/32	100	4	6		106
			Lorry	Tab C8/16	108	2	3		111
			Water pump	CNP282	103	2	3		106
			Sub-total						118
F56	F59	Slope protection and landscaping through TCT	Compressor > 30m ³ /min	CNP003	104	2	3		107
			Handheld breaker >35kg	Tab C2/10	110	2	3		113
			Concrete truck (mixer)	Tab C8/35	100	2	3		103
			Backhoe	Tab C3/97	105	2	3		108
			Mobile crane	Tab C7/114	101	2	3		104
			Generator	Tab C7/62	100	2	3		103
			Poker vibrator	Tab C6/32	100	4	6		106
			Lorry	Tab C8/16	108	2	3		111
			Water pump	CNP282	103	2	3		106
			Sub-total						118

Table C2.3 - Plant Inventory (Use of Quiet Plant, Barrier)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Barr. Corr.	Sum
(No. has been reduced if cell is in grey)									
			Sub-total						113
F57	F60	Dredging for sloping seawall for platform east of TCT to R10 toll plaza	Grab dredger	CNP063	112	3	5		117
			Sub-total						117
F58	F61	Placement of sloping seawall for platform east of TCT to R10 toll plaza	Derrick lighter	CNP061	104	3	5		109
			Sub-total						109
F59	F62	Filling reclamation for platform east of TCT to R10 toll plaza	Dump truck	Tab C9/27	105	8	9		114
			Hopper barge/ Pelican barge/ Barge	CNP061	104	2	3		107
			Land band drain rig (compressor)	CNP003	104	4	6		110
			Marine band drain rig (compressor)	CNP003	104	2	3		107
			Sub-total						117
F60	F63	Surcharge placement for platform east of TCT upto R10 Toll Plaza	Dozer	Tab C9/2	104	3	5		109
			Dump truck	Tab C9/27	105	5	7		112
			Tugboat	CNP221	110	2	3		113
			Sub-total						116
F61	F64	Slope Protection along southern boundary of TCT	Compressor > 30m ³ /min	CNP003	104	3	5		109
			Handheld breaker >35kg	Tab C2/10	110	6	8		118
			Concrete truck (mixer)	Tab C8/35	100	3	5		105
			Dump truck	Tab C9/27	105	3	5		110
			Backhoe	Tab C3/97	105	3	5		110
			Sub-total						120
F62	F65	Dredging for Theme Park phase 2	Grab dredger	CNP063	112	1	0		112
			Sub-total						112
F63	F66	Placement of seawall for Theme Park phase 2	Grab dredger	CNP063	112	1	0		112
			Derrick lighter	CNP061	104	2	3		107
			Tugboat	CNP221	110	4	6		116
			Hopper barge/ Pelican barge/ Barge	CNP061	104	2	3		107
			Sub-total						118
F64	F67	Filling reclamation for Theme Park phase 2	Grab dredger	CNP063	112	2	3		115
			Dozer	Tab C9/2	104	2	3		107
			Dump truck	Tab C9/27	105	5	7		112
			Tugboat	CNP221	110	3	5		115
			Loading shovel (excavator)	Tab C3/97	105	2	3		108
			Hopper barge/ Pelican barge/ Barge	CNP061	104	3	5		109
			Crane/vibrocompaction	By SWHK	112	2	3		115
			Land drain rig (compressor)	CNP003	104	1	0		104
			Marine drain rig (compressor)	CNP003	104	1	0		104
			Sub-total						121
F65	F68	Surcharge placement for Theme Park phase 2	Dozer	Tab C9/2	104	2	3		107
			Dump truck	Tab C9/27	105	8	9		114
			Loading shovel (excavator)	Tab C3/97	105	2	3		108
			Sub-total						116
F66	F69	Slope Protection along eastern boundary of TCT	Compressor > 30m ³ /min	CNP003	104	3	5	-10	99
			Handheld breaker >35kg	Tab C2/10	110	6	8	-10	108
			Concrete truck (mixer)	Tab C8/35	100	3	5	-10	95
			Dump truck	Tab C9/27	105	3	5		110
			Backhoe	Tab C3/97	105	3	5	-5	105
			Sub-total						113
F67	F70	Dredging for Fa Peng	Grab dredger	CNP063	112	3	5		117
			Tugboat	CNP221	110	1	0		110
			Sand barge	CNP061	104	3	5		109
			Sub-total						118
F68	F71	Placement of seawall for Fa Peng	Derrick lighter	CNP061	104	2	3		107
			Tugboat	CNP221	110	2	3		113
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0		104
			Sand barge	CNP061	104	3	5		109
			Sub-total						115
F69	F72	Filling reclamation for Fa Peng	Grab dredger	CNP063	112	14	16		118
			TS Dredger	By SWHK	109	14	6		115
			CS Dredger	By SWHK	104	2	3		107
			Derrick lighter	CNP061	104	2	3		107
			Dozer	Tab C9/2	104	4	6		110
			Dump truck	Tab C9/27	105	10	110		115
			Tugboat	CNP221	110	6	18		118
			Loading shovel (excavator)	Tab C3/97	105	6	18		113
			Hopper barge/ Pelican barge/ Barge	CNP061	104	12	11		115
			Crane/vibrocompaction	By SWHK	112	4	6		118
			Land Drain Rig (compressor)	CNP003	104	2	3		107
			Marine Drain Rig (compressor)	CNP003	104	2	3		107
			Sand barge	CNP061	104	3	5		109
			Sub-total						125
F70	F73	Surcharge placement for Fa Peng	Dozer	Tab C9/2	104	4	6		110
			Dump truck	Tab C9/27	105	10	10		115
			Loading shovel (excavator)	Tab C3/97	105	5	17		112
			Sub-total						118

Table C2.3 - Plant Inventory (Use of Quiet Plant, Barrier)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Barr. Corr.	Sum
						(No. has been reduced if cell is in grey)			
F71	F74	Dredging for Northshore (Yam O Bay to Kau Wan)	Grab dredger	CNP063	112	1	0		112
			Tugboat	CNP221	110	1	0		110
			Sand barge	CNP061	104	1	0		104
			Sub-total						115
F72	F75	Placement of seawall for Northshore (Yam O Bay to Kau Wan)	Tugboat	CNP221	110	2	3		113
			Demick lighter	CNP061	104	1	0		104
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0		104
			Sand barge	CNP061	104	1	0		104
			Sub-total						114
F73	F76	Filling reclamation for Northshore (Yam O Bay to Kau Wan) NB. TS and CS dredger may be substituted for other types of marine based reclamation plant	Grab dredger	CNP063	112	1	0		112
			TS Dredger	By SWHK	109	4	6		115
			CS Dredger	By SWHK	104	2	3		107
			Demick lighter	CNP061	104	2	3		107
			Dozer	Tab C9/2	104	1	0		104
			Dump truck	Tab C9/27	105	3	5		110
			Tugboat	CNP221	110	2	3		113
			Loading shovel (excavator)	Tab C3/97	105	2	3	-5	103
			Hopper barge/ Pelican barge/ Barge	CNP061	104	3	5		109
			Crane/vibrocompaction	By SWHK	112	1	0	-5	107
			Land Drain Rig (compressor)	CNP003	104	2	3	-10	97
			Marine Drain Rig (compressor)	CNP003	104	2	3	-10	97
			Sand barge	CNP061	104	1	0		104
			Sub-total						120
F74	F77	Surcharge placement for Northshore (Yam O Bay to Kau Wan)	Dozer	Tab C9/2	104	4	6		110
			Dump truck	Tab C9/27	105	10	10		115
			Loading shovel (excavator)	Tab C3/97	105	5	7	-5	107
			Sub-total						117
F75	F78	Dredging for Northshore (Road P1- Siu Ho Wan to Ta Pang Po)	Grab dredger	CNP063	112	1	0		112
			Tugboat	CNP221	110	1	0		110
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0		104
			Sub-total						115
F76	F79	Placement of seawall for Northshore (Road P1- Siu Ho Wan to Ta Pang Po)	Derrick lighter	CNP061	104	1	0		104
			Tugboat	CNP221	110	2	3		113
			Sub-total						114
F77	F80	Filling reclamation for Northshore (Road P1- Siu Ho Wan to Ta Pang Po)	Grab dredger	CNP063	112	2	3		115
			Demick lighter	CNP061	104	1	0		104
			Dozer	Tab C9/2	104	2	3		107
			Dump truck	Tab C9/27	105	4	6		111
			Tugboat	CNP221	110	1	0		110
			Loading shovel (excavator)	Tab C3/97	105	2	3		108
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0		104
			Land Drain Rig (compressor)	CNP003	104	1	0		104
			Marine Drain Rig (compressor)	CNP003	104	1	0		104
			Sub-total						119
F78	F81	Surcharge placement for Northshore (Road P1- Siu Ho Wan to Ta Pang Po)	Dozer	Tab C9/2	104	1	0		104
			Dump truck	Tab C9/27	105	3	5		110
			Loading shovel (excavator)	Tab C3/97	105	2	3		108
			Sub-total						113
F79	F82	Excavation for tunnels through Yam Tsai headland including boring	Handheld breaker >35kg	Tab C2/10	110	6	9		119
			Dump truck	CNP067	117	8	9		126
			Backhoe	Tab C3/97	105	4	6		111
			Mobile crane	Tab C7/114	101	2	3		104
			Drilling rig	Tab C11/2	112	4	6		118
			Generator	Tab C7/82	100	4	6		106
			Sub-total						125
F80	F83	Dredging for Siu Ho Wan	Grab dredger	CNP063	112	1	0		112
			Tugboat	CNP221	110	1	0		110
			Mobile crane	Tab C7/114	101	1	0		101
			Sand barge	CNP061	104	1	0		104
			Sub-total						115
F81	F84	Placement of seawall for Siu Ho Wan	Grab dredger	CNP063	112	2	3		115
			Demick lighter	CNP061	104	1	0		104
			Tugboat	CNP221	110	1	0		110
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0		104
			Mobile crane	Tab C7/114	101	1	0		101
			Sand barge	CNP061	104	2	3		107
			Sub-total						117
F82	F85	Filling reclamation for Siu Ho Wan	Grab dredger	CNP063	112	1	0		112
			Dozer	Tab C9/2	104	1	0		104
			Dump truck	Tab C9/27	105	1	0		105
			Tugboat	CNP221	110	1	0		110
			Loading shovel (excavator)	Tab C3/97	105	1	0	-5	100
			Hopper barge/ Pelican barge/ Barge	CNP061	104	2	3		107
			Land drain rig (compressor)	CNP003	104	1	0	-10	94
			Maine drain rig (compressor)	CNP003	104	1	0	-10	94
			Mobile Crane	Tab C7/114	101	7	8	-5	104
			Sand barge	CNP061	104	2	3		107
			Sub-total						117

Table C2.3 - Plant Inventory (Use of Quiet Plant, Barrier)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Barr. Corr.	Sum
(No has been reduced if cell is in grey)									
F83	F86	Surcharge placement for Siu Ho Wan	Dozer	Tab C9/2	104	1	0		104
			Dump truck	Tab C9/27	105	1	0		105
			Loading shovel (excavator)	Tab C3/97	105	1	0	-5	100
			Sub-total						108
Transport Infrastructure									
G84	G87	Road Structures including (Piling & Foundations plus superstructure) : CKWLR from Penny's Bay Interchange to R10 Toll Plaza	Compressor > 30m³/min	CNP003	104	2	3		107
			Handheld breaker >35kg	Tab C2/10	110	2	3		113
			Concrete truck (mixer)	Tab C8/35	100	1	0		100
			Backhoe	Tab C3/97	105	2	3		108
			Mobile crane	Tab C7/114	101	2	3		104
			Generator	Tab C7/62	100	2	3		103
			Poker vibrator	Tab C8/32	100	4	6		106
			Bored piler,oscillator	CNP165	115	2	3		118
			Sub-total						120
G85	G88	Road Surfacing / Construction at grade : CKWLR from Penny's Bay Interchange to R10 Toll Plaza	Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0		105
			Grader	Tab C9/11	110	2	3		113
			Tarmac paver	Tab C8/24	101	1	0		101
			Tarmac truck	Tab C9/27	105	2	3		108
			Roller	Tab C8/27	104	1	0		104
			Sub-total						116
G86	G89	Road Surfacing / Construction (elevated section including decking) : CKWLR from Penny's Bay Interchange to R10 Toll Plaza	Mobile crane	Tab C7/114	101	2	3		104
			Tarmac paver	Tab C8/24	101	1	0		101
			Tarmac truck	Tab C9/27	105	2	3		108
			Roller	Tab C8/27	104	1	0		104
			Launching girder (winch)	CNP263	102	1	0		102
			Sub-total						112
G87	G90	Road Surfacing /Construction at grade : Road P1 - Siu Ho Wan to Yam O	Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0	-5	100
			Grader	Tab C9/11	110	2	3	-5	108
			Tarmac paver	Tab C8/24	101	1	0	-5	96
			Tarmac truck	Tab C9/27	105	2	3		108
			Roller	Tab C8/27	104	1	0	-5	99
			Sub-total						113
G88	G91	Road Structures including (Piling & Foundations plus superstructure) : Road P1 - Siu Ho Wan to Yam O	Compressor > 30m³/min	CNP003	104	2	3	-10	97
			Handheld breaker >35kg	Tab C2/10	110	2	3	-10	103
			Concrete truck (mixer)	Tab C8/35	100	1	0	-10	90
			Backhoe	Tab C3/97	105	2	3	-5	103
			Mobile crane	Tab C7/114	101	2	3	-5	99
			Generator	Tab C7/62	100	2	3	-10	93
			Poker vibrator	Tab C8/32	100	4	6	-10	96
			Tower crane	CNP049	95	1	0		95
			Coring rig	CNP165	115	1	0	-10	105
			Sub-total						110
G89	G92	Road Surfacing / Construction (elevated section including decking) : Road P1 - Siu Ho Wan to Yam O	Mobile crane	Tab C7/114	101	2	3	-5	99
			Tarmac paver	Tab C8/24	101	1	0	-5	96
			Tarmac truck	Tab C9/27	105	2	3		108
			Roller	Tab C8/27	104	1	0	-5	99
			Sub-total						106
G90	G95	Yam Tsai headland Tunneling work i.e. Concrete lining, etc.	Compressor > 30m³/min	CNP003	104	2	3		107
			Concrete truck (mixer)	Tab C8/35	100	4	6		106
			Backhoe	Tab C3/97	105	2	3		108
			Mobile crane	Tab C7/114	101	1	0		101
			Concrete lining machine (concrete pump)	Tab C8/22	106	1	0		106
			Lorry	Tab C8/16	108	1	0		108
			Sub-total						114
G91	G96	Road Surfacing / Construction at grade for Northern Reclamation	Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0	-5	100
			Grader	Tab C9/11	110	2	3	-5	108
			Tarmac paver	Tab C8/24	101	1	0	-5	96
			Tarmac truck	Tab C9/27	105	2	3		108
			Roller	Tab C8/27	104	1	0	-5	99
			Sub-total						113
G92	G97	Road Structures including (Piling & Foundations plus superstructure and submerged sections, where appropriate) : (for Northern Reclamation)	Compressor > 30m³/min	CNP003	104	2	3	-10	97
			Handheld breaker >35kg	Tab C2/10	110	2	3	-10	103
			Concrete truck (mixer)	Tab C8/35	100	1	0	-10	90
			Backhoe	Tab C3/97	105	2	3	-5	103
			Mobile crane	Tab C7/114	101	2	3	-5	99
			Generator	Tab C7/62	100	2	3	-10	93
			Poker vibrator	Tab C8/32	100	4	6	-5	101
			Bored piler,oscillator	CNP165	115	2	3		118
			Sub-total						116

Table C2.3 - Plant Inventory (Use of Quiet Plant, Barrier)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Barr. Corr.	Sum
(No. has been reduced if cell is in grey)									
G93	G98	Road Surfacing / Construction (elevated section including decking) for Northern Reclamation	Mobile crane	Tab C7/114	101	2	3	-5	99
			Tarmac paver	Tab C8/24	101	1	0	-5	96
			Tarmac truck	Tab C9/27	105	2	3		108
			Roller	Tab C8/27	104	1	0	-5	99
			Launching girder (winch)	CNP263	102	1	0	-10	92
			Sub-total						109
G94	G101	Road Surfacing / Construction at grade incl. roadside buffers: Road P2 Theme Park East Roundabout	Compressor > 30m³/min	CNP003	104	2	3		107
			Dump truck	Tab C9/27	105	2	3		108
			Backhoe	Tab C3/97	105	3	5		110
			Grader	Tab C9/11	110	1	0		110
			Tarmac paver	Tab C8/24	101	1	0		101
			Tarmac truck	Tab C9/27	105	2	3		108
			Roller	Tab C8/27	104	2	3		107
			Sub-total						116
G95	G102	Road Surfacing / Construction at grade incl. roadside buffers: Road D2 Theme Park East Roundabout to Theme Park	Dump truck	Tab C9/27	105	2	3		108
			Backhoe	Tab C3/97	105	3	5		110
			Grader	Tab C9/11	110	1	0		110
			Tarmac paver	Tab C8/24	101	1	0		101
			Tarmac truck	Tab C9/27	105	2	3		108
			Roller	Tab C8/27	104	2	3		107
			Sub-total						116
G96	G103	Road Surfacing / Construction at grade incl. roadside buffers: Road P2 Theme Park East Roundabout to Pa Kwu Interchange	Compressor > 30m³/min	CNP003	104	2	3		107
			Dump truck	Tab C9/27	105	2	3		108
			Backhoe	Tab C3/97	105	3	5		110
			Grader	Tab C9/11	110	1	0		110
			Tarmac paver	Tab C8/24	101	1	0		101
			Tarmac truck	Tab C9/27	105	2	3		108
			Roller	Tab C8/27	104	2	3		107
G97	G104	Road Surfacing / Construction at grade for Eastern Reclamation	Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0	-5	100
			Grader	Tab C9/11	110	2	3	-5	108
			Tarmac paver	Tab C8/24	101	1	0	-5	96
			Tarmac truck	Tab C9/27	105	2	3		108
			Roller	Tab C8/27	104	1	0	-5	99
			Sub-total						113
G98	G105	Road Structures including (Piling & Foundations plus superstructure and submerged sections, where appropriate) for Eastern Reclamation	Compressor > 30m³/min	CNP003	104	2	3	-10	97
			Handheld breaker >35kg	Tab C2/10	110	2	3	-10	103
			Concrete truck (mixer)	Tab C6/35	100	1	0	-10	90
			Backhoe	Tab C3/97	105	2	3	-5	103
			Mobile crane	Tab C7/114	101	2	3	-5	99
			Generator	Tab C7/62	100	2	3	-10	93
			Poker vibrator	Tab C6/32	100	4	6	-5	101
			Sub-total						108
G99	G106	Road Surfacing / Construction (elevated section including decking) for Eastern Reclamation	Mobile crane	Tab C7/114	101	2	3	-5	99
			Tarmac paver	Tab C8/24	101	1	0	-5	96
			Tarmac truck	Tab C9/27	105	2	3		108
			Roller	Tab C8/27	104	1	0	-5	99
G100	G107	Road Surfacing / Construction at grade for EVA for Tso Wan Village Expansion and maintenance/operation access to Fa Peng Reservoirs	Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0		105
			Grader	Tab C3/75	112	2	3		115
			Tarmac paver	Tab C8/24	101	1	0		101
			Tarmac truck	Tab C9/27	105	2	3		108
			Roller	Tab C8/27	104	1	0		104
G101	G108	Road Surfacing / Construction at grade for Siu Ho Wan Reclamation	Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0	-5	100
			Grader	Tab C3/75	112	2	3	-5	110
			Tarmac paver	Tab C8/24	101	1	0	-5	96
			Tarmac truck	Tab C9/27	105	2	3		108
			Roller	Tab C8/27	104	1	0	-5	99
G102	H109	Services Infrastructure Installation of Utilities / Services i.e. electricity, gas, telecom etc.	Compressor > 30m³/min	CNP003	104	2	3	-10	97
			Concrete truck (mixer)	Tab C6/35	100	1	0	-10	90
			Dump truck	Tab C9/27	105	2	3		108
			Backhoe	Tab C3/97	105	2	3	-5	103
			Sub-total						110

Table C2.3 - Plant Inventory (Use of Quiet Plant, Barrier)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Barr. Corr.	Sum
						(No. has been reduced if cell is in grey)			
G103	H110	Installation of Water mains Fresh and Salt including irrigation	Compressor > 30m³/min	CNP003	104	1	0	-10	94
			Concrete truck (mixer)	Tab C6/35	100	1	0	-10	90
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0	-5	100
			Mobile crane	Tab C7/114	101	1	0	-5	96
			Poker vibrator	Tab C6/32	100	2	3	-10	93
			Lorry	Tab C8/16	108	1	0		108
			Sub-total						111
G104	H111	Installation of sewerage mains both gravity and pumped including pumping stations, chambers and wells	Compressor > 30m³/min	CNP003	104	1	0	-10	94
			Concrete truck (mixer)	Tab C6/35	100	2	3	-10	93
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0	-5	100
			Mobile crane	Tab C7/114	101	1	0	-5	96
			Poker vibrator	Tab C6/32	100	4	6	-10	96
			Lorry	Tab C8/16	108	1	0		108
			Sub-total						111
G105	H112	Installation of Stormwater drainage, open channels plus culverts	Compressor > 30m³/min	CNP003	104	2	3	-10	97
			Concrete truck (mixer)	Tab C6/35	100	2	3	-10	93
			Dump truck	Tab C9/27	105	2	3		108
			Backhoe	Tab C3/97	105	2	3	-5	103
			Mobile crane	Tab C7/114	101	1	0	-5	96
			Poker vibrator	Tab C6/32	100	4	6	-10	96
			Lorry	Tab C8/16	108	1	0		108
			Sub-total						112
G106	H113	Excavation of proposed reservoirs at Fa Peng including maintenance and operation access road	Compressor > 30m³/min	CNP003	104	2	3		107
			Handheld breaker >35kg	Tab C2/10	110	5	7		117
			Dump truck	Tab C9/27	105	15	12		117
			Excavator/loader	Tab C3/97	105	3	5		110
			Backhoe	Tab C3/97	105	3	5		110
			Drilling rig	Tab C 11/2	112	5	7		119
			Sub-total						123
G107	H114	Construction of reservoirs at Fa Peng plus associated facilities	Compressor > 30m³/min	CNP003	104	4	6		110
			Concrete truck (mixer)	Tab C6/35	100	4	6		106
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	2	3		108
			Mobile crane	Tab C7/114	101	2	3		104
			Generator	Tab C7/62	100	2	3		103
			Poker vibrator	Tab C6/32	100	8	9		109
			Sub-total						116
G108	H115	Landscaping of Fa Peng reservoirs							
GIC Sites									
I109	I116	P.T.I in Penny's Bay Station- Phase 2	Compressor > 30m³/min	CNP003	104	2	3		107
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Dump truck	Tab C9/27	105	2	3		108
			Backhoe	Tab C3/97	105	2	3		108
			Mobile crane	Tab C7/114	101	2	3		104
			Vibratory piling rig	CNP164	115	1	0		115
			Poker vibrator	Tab C6/32	100	4	6		108
			Sub-total						112
I110	I117	Public Parking in Penny's Bay -Phase 2	Backhoe	Tab C3/97	105	2	3		108
			Grader	Tab C9/11	110	1	0		110
			Tarmac paver	Tab C8/24	101	1	0		101
			Tarmac truck	Tab C9/27	105	2	3		108
			Compactor	CNP050	105	2	3		108
			Sub-total						115
I111	I118	2nd Fire Station in Penny's Bay	Compressor > 30m³/min	CNP003	104	1	0		104
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0		105
			Mobile crane	Tab C7/114	101	1	0		101
			Vibratory piling rig	CNP164	115	1	0		115
			Poker vibrator	Tab C6/32	100	4	6		108
			Sub-total						117
I112	I119	Utility Yard in Penny's Bay - Phase 2	Compressor > 30m³/min	CNP003	104	1	0		104
			Concrete truck (mixer)	Tab C6/35	100	1	0		100
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0		105
			Mobile crane	Tab C7/114	101	1	0		101
			Vibratory piling rig	CNP164	115	1	0		115
			Poker vibrator	Tab C6/32	100	2	3		103
			Sub-total						117
I113	I120	Schools at Siu Ho Wan	Compressor > 30m³/min	CNP003	104	1	0		104
			Concrete truck (mixer)	Tab C6/35	100	1	0		100
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0		105
			Mobile crane	Tab C7/114	101	1	0		101
			Vibratory piling rig	CNP164	115	1	0		115
			Poker vibrator	Tab C6/32	100	2	3		103
			Sub-total						117

Table C2.3 - Plant Inventory (Use of Quiet Plant, Barrier)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Barr. Corr.	Sum
(No. has been reduced if cell is in grey)									
J114	J121	Police Station in Northshore	Compressor > 30m ³ /min	CNP003	104	1	0		104
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0		105
			Mobile crane	Tab C7/114	101	1	0		101
			Vibratory piling rig	CNP164	115	1	0		115
			Poker vibrator	Tab C6/32	100	4	6		106
			Sub-total						117
J115	J122	Fire Station in Northshore	Compressor > 30m ³ /min	CNP003	104	1	0		104
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0		105
			Mobile crane	Tab C7/114	101	1	0		101
			Vibratory piling rig	CNP164	115	1	0		115
			Poker vibrator	Tab C6/32	100	4	6		106
			Sub-total						117
J116	J123	LPG/Petrol Station in Northshore	Compressor > 30m ³ /min	CNP003	104	1	0		104
			Concrete truck (mixer)	Tab C6/35	100	1	0		100
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0		105
			Mobile crane	Tab C7/114	101	1	0		101
			Vibratory piling rig	CNP164	115	1	0		115
			Poker vibrator	Tab C6/32	100	2	3		103
			Sub-total						117
Theme Park Development									
J117	J124	Theme Park Building/Attraction Foundations	Compressor > 30m ³ /min	CNP003	104	4	6		110
			Handheld breaker >35kg	Tab C2/10	110	11	10		120
			Concrete truck (mixer)	Tab C6/35	100	20	13		113
			Dozer	Tab C9/2	104	4	6		110
			Dump truck	Tab C9/27	105	2	3		108
			Excavator/loader	Tab C3/97	105	8	9		114
			Backhoe	Tab C3/97	105	4	6		111
			Mobile crane	Tab C7/114	101	4	6		107
			Drilling rig	Tab C11/2	112	8	9		121
			Generator	Tab C7/62	100	4	6		106
			Lorry	Tab C8/16	108	2	3		111
			Grader	Tab C9/11	110	4	6		116
			Compactor	CNP050	105	3	15		110
			Water pump	CNP282	103	15	12		115
			Pan Scrapers	CNP204	119	3	15		124
			Sub-total						128
J118	J125	Theme Park Building/Attraction Construction	Compressor > 30m ³ /min	CNP003	104	10	10		114
			Handheld breaker >35kg	Tab C2/10	110	15	12		122
			Concrete truck (mixer)	Tab C6/35	100	30	15		115
			Dozer	Tab C9/2	104	4	6		110
			Dump truck	Tab C9/27	105	2	3		108
			Excavator/loader	Tab C3/97	105	8	9		114
			Backhoe	Tab C3/97	105	12	11		116
			Mobile crane	Tab C7/114	101	12	11		112
			Generator	Tab C7/62	100	4	6		106
			Lorry	Tab C8/16	108	2	3		111
			Grader	Tab C9/11	110	2	3		113
			Compactor	CNP050	105	2	3		108
			Water pump	CNP282	103	15	12		115
			Tower crane	CNP049	95	10	10		105
			Bobcats	By WDI	114	20	13		127
			Ditch Witch Trencher	By WDI	117	3	5		122
			Forklifts	By WDI	113	20	13		126
			Sub-total						132
J119	J126	Theme Park Surfacing, Landscaping and Ber	Compressor > 30m ³ /min	CNP003	104	4	6		110
			Handheld breaker >35kg	Tab C2/10	110	3	15		115
			Concrete truck (mixer)	Tab C6/35	100	18	9		109
			Dozer	Tab C9/2	104	4	6		110
			Dump truck	Tab C9/27	105	2	3		108
			Excavator/loader	Tab C3/97	105	2	3		108
			Backhoe	Tab C3/97	105	12	11		116
			Mobile crane	Tab C7/114	101	4	6		107
			Generator	Tab C7/62	100	4	6		106
			Lorry	Tab C8/16	108	2	3		111
			Grader	Tab C9/11	110	2	3		113
			Compactor	CNP050	105	1	10		105
			Bobcats	By WDI	114	6	8		122
			Ditch Witch Trencher	By WDI	117	3	15		122
			Forklifts	By WDI	113	4	6		119
			Sub-total						127
J120	J131	Hotels Foundations	Compressor > 30m ³ /min	CNP003	104	4	6		110
			Handheld breaker >35kg	Tab C2/10	110	12	11		121
			Concrete truck (mixer)	Tab C6/35	100	12	11		111
			Dozer	Tab C8/2	104	3	5		109
			Dump truck	Tab C8/27	105	6	8		113
			Excavator/Loader	Tab C3/97	105	4	6		111
			Backhoe	Tab C3/97	105	3	5		110
			Generator	Tab C7/62	100	6	8		108
			Lorry	Tab C8/16	108	3	5		113
			Grader	Tab C9/11	110	3	5		115
			Compactor	CNP050	105	3	5		110
			Water pump	CNP282	103	6	8		111

Table C2.3 - Plant Inventory (Use of Quiet Plant, Barrier)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Barr. Corr.	Sum
(No. has been reduced if cell is in grey)									
			Tower crane	CNP049	95	3	5		100
			Bobcats	By WDI	114	6	8		122
			Pan scrapers	CNP204	114	2	3		117
			Sub-total						127
J121	J132	Hotels Superstructure	Compressor > 30m³/min	CNP003	104	3	5		109
			Handheld breaker >35kg	Tab C2/10	110	2	3		113
			Concrete truck (mixer)	Tab C6/35	100	4	6		106
			Excavator/ Loader	Tab C3/97	105	3	5		110
			Backhoe	Tab C3/97	105	3	5		110
			Mobile crane	Tab C7/114	101	2	3		104
			Generator	Tab C7/62	100	6	8		108
			Lorry	Tab C8/16	108	3	5		113
			Grader	Tab C9/11	110	3	5		115
			Compactor	CNP050	105	3	5		110
			Tower crane	CNP049	95	3	5		100
			Sub-total						121
Siu Ho Wan Development									
K122	K133	Housing foundations	Compressor > 30m³/min	CNP003	104	4	6		110
			Concrete truck (mixer)	Tab C6/35	100	4	6		106
			Dump truck	Tab C9/27	105	2	3		108
			Backhoe	Tab C3/97	105	4	6		111
			Mobile crane	Tab C7/114	101	2	3		104
			Vibratory piling rig	CNP164	115	2	3		118
			Poker vibrator	Tab C8/32	100	8	9		109
			Sub-total						120
K123	K134	Housing superstructure	Compressor > 30m³/min	CNP003	104	2	3		107
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Backhoe	Tab C3/97	105	2	3		108
			Mobile crane	Tab C7/114	101	2	3		104
			Poker vibrator	Tab C8/32	100	4	6		106
			Water pump	CNP282	103	4	6		109
			Tower crane	CNP049	95	1	0		95
			Sub-total						114
NorthShore Development									
L124	L135	Theme Park Gateway - Foundations	Compressor > 30m³/min	CNP003	104	4	6		110
			Concrete truck (mixer)	Tab C6/35	100	4	6		106
			Dump truck	Tab C9/27	105	2	3		108
			Backhoe	Tab C3/97	105	4	6		111
			Mobile crane	Tab C7/114	101	2	3		104
			Vibratory piling rig	CNP164	115	2	3		118
			Poker vibrator	Tab C8/32	100	8	9		109
			Sub-total						120
L125	L136	Theme Park Gateway - Superstructure	Compressor > 30m³/min	CNP003	104	2	3		107
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Backhoe	Tab C3/97	105	2	3		108
			Mobile crane	Tab C7/114	101	2	3		104
			Poker vibrator	Tab C8/32	100	4	6		106
			Water pump	CNP282	103	4	6		109
			Tower crane	CNP049	95	1	0		95
			Sub-total						114
L126	L137	EcoPark Incl Tsing Chau Tsui Trailwalk - footpath and landscape works	Compressor > 30m³/min	CNP003	104	1	0		104
			Concrete truck (mixer)	Tab C6/35	100	1	0		100
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0		105
			Sub-total						110
L127	L138	Cross Boundary Ferry Pier 1 Substructure: piling/foundations	Compressor > 30m³/min	CNP003	104	1	0		104
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Derrick lighter	CNP061	104	1	0		104
			Tugboat	CNP221	110	1	0		110
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0		104
			Mobile crane	Tab C7/114	101	1	0		101
			Generator	Tab C7/62	100	1	0		100
			Poker vibrator	Tab C8/32	100	4	6		106
			Coring rig	CNP165	115	13	5		120
			Sub-total						121
L128	L139	Cross Boundary Ferry Pier 1 Superstructure: Precast decking and insitu	Compressor > 30m³/min	CNP003	104	1	0		104
			Concrete truck (mixer)	Tab C6/35	100	12	3		103
			Derrick lighter	CNP061	104	1	0		104
			Tugboat	CNP221	110	1	0		110
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0		104
			Mobile crane	Tab C7/114	101	1	0		101
			Generator	Tab C7/62	100	1	0		100
			Poker vibrator	Tab C8/32	100	4	6		106
			Sub-total						114
L129	L140	Cross Boundary Ferry Pier 1 Building Foundations	Compressor > 30m³/min	CNP003	104	2	3		107
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	2	3		108
			Vibratory piling rig	CNP164	115	1	0		115
			Poker vibrator	Tab C8/32	100	4	6		106
			Water pump	CNP282	103	2	3		106
			Sub-total						117

Table C2.3 - Plant Inventory (Use of Quiet Plant, Barrier)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Barr. Corr.	Sum
(No. has been reduced if cell is in grey)									
L130	L141	Cross Boundary Ferry Pier 1 Building Superstructure	Compressor > 30m ³ /min	CNP003	104	2	3		107
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Backhoe	Tab C3/97	105	2	3		108
			Mobile crane	Tab C7/114	101	2	3		104
			Poker vibrator	Tab C6/32	100	4	6		106
			Sub-total						113
L131	L142	Tourist & Convention Centre - Foundations	Compressor > 30m ³ /min	CNP003	104	4	6		110
			Concrete truck (mixer)	Tab C6/35	100	4	6		106
			Dump truck	Tab C9/27	105	2	3		108
			Backhoe	Tab C3/97	105	4	6		111
			Mobile crane	Tab C7/114	101	2	3		104
			Vibratory piling rig	CNP164	115	2	3		118
			Poker vibrator	Tab C6/32	100	8	9		109
			Sub-total						120
L132	L143	Tourist & Convention Centre - Superstructure	Compressor > 30m ³ /min	CNP003	104	2	3		107
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Backhoe	Tab C3/97	105	2	3		108
			Mobile crane	Tab C7/114	101	2	3		104
			Poker vibrator	Tab C6/32	100	4	6		106
			Water pump	CNP282	103	4	6		109
			Tower crane	CNP049	95	1	0		95
			Sub-total						114
L133	L144	Technodrome - Foundations	Compressor > 30m ³ /min	CNP003	104	4	6		110
			Concrete truck (mixer)	Tab C6/35	100	4	6		106
			Dump truck	Tab C9/27	105	2	3		108
			Backhoe	Tab C3/97	105	4	6		111
			Mobile crane	Tab C7/114	101	2	3		104
			Vibratory piling rig	CNP164	115	2	3		118
			Poker vibrator	Tab C6/32	100	8	9		109
			Sub-total						120
L134	L145	Technodrome - Superstructure	Compressor > 30m ³ /min	CNP003	104	2	3		107
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Backhoe	Tab C3/97	105	2	3		108
			Mobile crane	Tab C7/114	101	2	3		104
			Poker vibrator	Tab C6/32	100	4	6		106
			Water pump	CNP282	103	4	6		109
			Tower crane	CNP049	95	1	0		95
			Sub-total						114
Eastern Development									
M135		Recreational Tourism development - Foundations	Compressor > 30m ³ /min	CNP003	104	4	6		110
			Concrete truck (mixer)	Tab C6/35	100	4	6		106
			Dump truck	Tab C9/27	105	2	3		108
			Backhoe	Tab C3/97	105	4	6		111
			Mobile crane	Tab C7/114	101	2	3		104
			Vibratory piling rig	CNP164	115	2	3		118
			Poker vibrator	Tab C6/32	100	8	9		109
			Sub-total						120
M136		Recreational Tourism development - Superstructure	Compressor > 30m ³ /min	CNP003	104	2	3		107
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Backhoe	Tab C3/97	105	2	3		108
			Mobile crane	Tab C7/114	101	2	3		104
			Poker vibrator	Tab C6/32	100	4	6		106
			Water pump	CNP282	103	4	6		109
			Tower crane	CNP049	95	1	0		95
			Sub-total						114
N137		Theme Park Development - Theme Park Extension (WDI Option) Theme Park Extension - foundations	Compressor > 30m ³ /min	CNP003	104	4	6	-10	100
			Handheld breaker > 35kg	Tab C2/10	110	4	6	-10	106
			Concrete truck (mixer)	Tab C6/35	100	4	6	-10	96
			Dozer	Tab C9/2	104	2	3		107
			Dump truck	Tab C9/27	105	2	3		108
			Excavator/ Loader	Tab C3/97	105	2	3	-5	103
			Backhoe	Tab C3/97	105	2	3	-5	103
			Mobile Crane	Tab C7/114	101	2	3	-5	99
			Generator	Tab C7/62	100	2	3	-10	93
			Lorry	Tab C8/16	108	2	3		111
			Grader	Tab C9/11	110	2	3	-5	108
			Waterpump	CNP282	103	4	6	-10	99
			Bobcats	By WDI	114	5	7		121
			Ditch Witch Trencher	By WDI	117	1	0		117
			Forklifts	By WDI	113	10	10		123
			Pan Scrapers	CNP204	119	1	0		119
			Sub-total						127
N138		Theme Park Extension - superstructure	Compressor > 30m ³ /min	CNP003	104	2	3		107
			Handheld breaker > 35kg	Tab C2/10	110	4	6		116
			Concrete truck (mixer)	Tab C6/35	100	4	6		108
			Excavator/ Loader	Tab C3/97	105	2	3		108
			Backhoe	Tab C3/97	105	2	3		108
			Mobile Crane	Tab C7/114	101	2	3		104
			Generator	Tab C7/62	100	2	3		103
			Lorry	Tab C8/16	108	2	3		111
			Waterpump	CNP282	103	4	6		109
			Tower crane	CNP049	95	1	0		95
			Sub-total						119

Table C2.3 - Plant Inventory (Use of Quiet Plant, Barrier)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Barr. Corr.	Sum
(No. has been reduced if cell is in grey)									
N139	RD&E Foundations	Compressor >30m³/min		CNP003	104	4	6		110
		Handheld breaker >35kg		Tab C2/10	110	8	9		119
		Concrete truck (mixer)		Tab C6/35	100	10	10		110
		Dozer		Tab C9/2	104	2	3		107
		Dump truck		Tab C9/27	105	2	3		108
		Excavator/ Loader		Tab C3/97	105	3	5		110
		Backhoe		Tab C3/97	105	2	3		108
		Mobile Crane		Tab C7/114	101	2	3		104
		Generator		Tab C7/82	100	2	3		103
		Lorry		Tab C8/16	108	2	3		111
		Grader		Tab C9/11	110	2	3		113
		Waterpump		CNP282	103	4	6		109
		Pan Scrapers		CNP204	119	1	0		119
				Sub-total					
N140	RD&E Superstructure	Compressor >30m³/min		CNP003	104	2	3		107
		Handheld breaker >35kg		Tab C2/10	110	8	9		119
		Concrete truck (mixer)		Tab C6/35	100	10	10		110
		Excavator/ Loader		Tab C3/97	105	2	3		108
		Backhoe		Tab C3/97	85	2	3		88
		Mobile Crane		Tab C7/114	101	2	3		104
		Generator		Tab C7/82	100	2	3		103
		Lorry		Tab C8/16	108	2	3		111
		Waterpump		CNP282	103	4	6		109
		Tower crane		CNP049	95	1	0		95
		Bobcats		By WDI	114	10	10		124
		Ditch Witch Trencher		By WDI	117	2	3		120
		Forklifts		By WDI	113	10	10		123
				Sub-total					128
		Phase 3 Reclamation & Excavation							
O141	N154	Dredging for sloping seawall for platform south of TCT upto R10-HKLL	Grab dredger	CNP063	112	1	0		112
			Tugboat	CNP221	110	1	0		110
			Sand barge	CNP061	104	1	0		104
				Sub-total					115
O142	N155	Placement of sloping seawall for platform south of TCT upto R10-HKLL	Grab dredger	CNP063	112	1	0		112
			Derrick lighter	CNP061	104	1	0		104
			Tugboat	CNP221	110	1	0		110
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0		104
			Sand barge	CNP061	104	1	0		104
				Sub-total					115
O143	N156	Filling reclamation for platform south of TCT upto R10-HKLL	Grab dredger	CNP063	112	1	0		112
			Dozer	Tab C9/2	104	1	0		104
			Dump truck	Tab C9/27	105	3	5		110
			Tugboat	CNP221	110	2	3		113
			Loading shovel (excavator)	Tab C3/97	105	1	0		105
			Hopper barge/ Pelican barge/ Barge	CNP061	104	2	3		107
			Land drain rig (compressor)	CNP003	104	1	0		104
			Marine drain rig (compressor)	CNP003	104	1	0		104
			Sand barge	CNP061	104	7	8		112
				Sub-total					119
O144	N157	Surcharge placement for platform south of TCT upto R10-HKLL	Dozer	Tab C9/2	104	2	3		107
			Dump truck	Tab C9/27	105	3	5		110
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0		104
				Sub-total					112
O145	N158	Dredging at Theme Park Extension	Grab dredger	CNP063	112	1	0		112
			Tugboat	CNP221	110	1	0		110
			Sand barge	CNP061	104	3	5		109
				Sub-total					115
O146	N159	Placement of vertical seawall at Theme Park Extension	Grab dredger	CNP063	112	1	0		112
			Derrick lighter	CNP061	104	2	3		107
			Tugboat	CNP221	110	3	5		115
			Hopper barge/ Pelican barge/ Barge	CNP061	104	2	3		107
			Sand barge	CNP061	104	3	5		109
				Sub-total					118
O147	N160	Filling at Theme Park Extension	Grab dredger	CNP063	112	1	0		112
			Dozer	Tab C9/2	104	2	3		107
			Dump truck	Tab C9/27	105	4	6		111
			Tugboat	CNP221	110	10	10		120
			Loading shovel (excavator)	Tab C3/97	105	2	3		108
			Hopper barge/ Pelican barge/ Barge	CNP061	104	3	5		109
			Crane/vibrocompaction	By SWH-K	112	2	3		115
			Land drain rig (compressor)	CNP003	104	1	0		104
			Marine drain rig (compressor)	CNP003	104	1	0		104
			Sand barge	CNP061	104	30	15		118
				Sub-total					124
O148	N161	Surcharge at Theme Park Extension	Grab dredger	CNP063	112	2	3		115
			Dozer	Tab C9/2	104	2	3		107
			Dump truck	Tab C9/27	105	7	8		113
			Loading shovel (excavator)	Tab C3/97	105	2	3		108
				Sub-total					115

Table C2.3 - Plant Inventory (Use of Quiet Plant, Barrier)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Barr. Corr.	Sum
						(No. has been reduced if cell is in gray)			
Transport infrastructure									
P149	O165	Road Structures including (Piling & Foundations plus superstructure) :R10 Toll Plaza to R10-HKLL	Compressor > 30m³/min	CNP003	104	2	3		107
			Handheld breaker >35kg	Tab C2/10	110	2	3		113
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Backhoe	Tab C3/97	105	2	3		108
			Mobile crane	Tab C7/114	101	2	3		104
			Generator	Tab C7/62	100	2	3		103
			Poker vibrator	Tab C6/32	100	4	6		106
			Bored piler,oscillator	CNP165	115	1	0		115
			Sub-total						119
P150	O166	Road Surfacing / Construction at grade : R10 Toll Plaza to R10-HKLL	Compressor > 30m³/min	CNP003	104	1	0		104
			Dump truck	Tab C9/27	105	1	0		105
			Grader	Tab C9/11	110	2	3		113
			Tarmac paver	Tab C8/24	101	1	0		101
			Tarmac truck	Tab C9/27	105	2	3		108
			Roller	Tab C8/27	104	1	0		104
			Sub-total						116
P151	O167	Road Surfacing / Construction (elevated section including decking) : R10 Toll Plaza to R10-HKLL	Compressor > 30m³/min	CNP003	104	1	0		104
			Concrete truck (mixer)	Tab C6/35	100	1	0		100
			Mobile crane	Tab C7/114	101	2	3		104
			Generator	Tab C7/62	100	1	0		100
			Poker vibrator	Tab C6/32	100	2	3		103
			Tarmac paver	Tab C8/24	101	1	0		101
			Tarmac truck	Tab C9/27	105	2	3		108
			Roller	Tab C8/27	104	1	0		104
			Launching girder (winch)	CNP263	102	1	0		102
			Sub-total						113
Services infrastructure									
Q152	P169	Installation of Utilities / Services i.e electricity, gas, telecom etc.	Compressor > 30m³/min	CNP003	104	2	3		107
			Concrete truck (mixer)	Tab C6/35	100	1	0		100
			Dump truck	Tab C9/27	105	2	3		108
			Backhoe	Tab C3/97	105	2	3		108
			Sub-total						113
Q153	P170	Installation of Water mains Fresh and Salt	Compressor > 30m³/min	CNP003	104	1	0		104
			Concrete truck (mixer)	Tab C6/35	100	1	0		100
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0		105
			Mobile crane	Tab C7/114	101	1	0		101
			Poker vibrator	Tab C6/32	100	2	3		103
			Lorry	Tab C8/16	108	1	0		108
			Sub-total						113
Q154	P171	Installation of sewerage mains both gravity and pumped including pumping stations, chambers and wells	Compressor > 30m³/min	CNP003	104	1	0		104
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0		105
			Mobile crane	Tab C7/114	101	1	0		101
			Poker vibrator	Tab C6/32	100	4	6		106
			Lorry	Tab C8/16	108	1	0		108
			Sub-total						114
Q155	P172	Installation of Stormwater drainage, open channels plus culverts	Compressor > 30m³/min	CNP003	104	2	3		107
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Dump truck	Tab C9/27	105	2	3		108
			Backhoe	Tab C3/97	105	2	3		108
			Mobile crane	Tab C7/114	101	1	0		101
			Poker vibrator	Tab C6/32	100	4	6		106
			Lorry	Tab C8/16	108	1	0		108
			Sub-total						115
Theme Park Development									
R156	R175	Theme Park Extension - Foundations	Compressor > 30m³/min	CNP003	104	4	6		110
			Concrete truck (mixer)	Tab C6/35	100	4	6		106
			Dump truck	Tab C9/27	105	2	3		108
			Backhoe	Tab C3/97	105	4	6		111
			Mobile crane	Tab C7/114	101	2	3		104
			Vibratory piling rig	CNP164	115	2	3		118
			Poker vibrator	Tab C6/32	100	8	9		109
			Sub-total						120
R157	R176	Theme Park Extension - Superstructure	Compressor > 30m³/min	CNP003	104	2	3		107
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Backhoe	Tab C3/97	105	2	3		108
			Mobile crane	Tab C7/114	101	2	3		104
			Poker vibrator	Tab C6/32	100	4	6		106
			Water pump	CNP282	103	4	6		109
			Tower crane	CNP049	95	1	0		95
			Sub-total						114
R158	R177	Technodrome - Foundations	Compressor > 30m³/min	CNP003	104	4	6		110
			Concrete truck (mixer)	Tab C6/35	100	4	6		106
			Dump truck	Tab C9/27	105	2	3		108
			Backhoe	Tab C3/97	105	4	6		111
			Mobile crane	Tab C7/114	101	2	3		104

Table C2.3 - Plant Inventory (Use of Quiet Plant, Barrier)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Barr. Corr.	Sum
						(No. has been reduced if cell is in grey)			
			Vibratory piling rig	CNP164	115	2	3		118
			Poker vibrator	Tab C6/32	100	8	9		109
			Sub-total						120
R159	R178	Technodrome - Superstructure	Compressor > 30m³/min	CNP003	104	2	3		107
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Backhoe	Tab C3/97	105	2	3		108
			Mobile crane	Tab C7/114	101	2	3		104
			Poker vibrator	Tab C6/32	100	4	6		106
			Water pump	CNP282	103	4	6		109
			Tower crane	CNP049	95	1	0		95
			Sub-total						114
Northshore Development									
S160	S179	Cross Boundary Ferry Pier 2 Substructure: piling/foundations	Compressor > 30m³/min	CNP003	104	1	0		104
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Derrick lighter	CNP061	104	1	0		104
			Tugboat	CNP221	110	1	0		110
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0		104
			Mobile crane	Tab C7/114	101	1	0		101
			Generator	Tab C7/62	100	1	0		100
			Poker vibrator	Tab C6/32	100	4	6		106
			Coring rig	CNP185	115	3	5		120
			Sub-total						121
S161	S180	Cross Boundary Ferry Pier 2 Superstructure: Precast decking and insitu	Compressor > 30m³/min	CNP003	104	1	0		104
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Derrick lighter	CNP061	104	1	0		104
			Tugboat	CNP221	110	1	0		110
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0		104
			Mobile crane	Tab C7/114	101	1	0		101
			Generator	Tab C7/62	100	1	0		100
			Poker vibrator	Tab C6/32	100	4	6		106
			Sub-total						114
S162	S181	Cross Boundary Ferry Pier 2 Building Foundations	Compressor > 30m³/min	CNP003	104	2	3		107
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Dump truck	Tab C6/27	105	1	0		105
			Backhoe	Tab C3/97	105	2	3		108
			Vibratory piling rig	CNP164	115	1	0		115
			Poker vibrator	Tab C6/32	100	4	6		106
			Water pump	CNP282	103	2	3		106
			Sub-total						117
S163	S182	Cross Boundary Ferry Pier 2 Building Superstructure	Compressor > 30m³/min	CNP003	104	2	3		107
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Backhoe	Tab C3/97	105	2	3		108
			Mobile crane	Tab C7/114	101	2	3		104
			Poker vibrator	Tab C6/32	100	4	6		106
			Sub-total						113
Phase 3									
Penny's Bay Rail Link									
T164	T183	Yam O Station & Adjacent Section Foundation (Concreting)	Concrete truck (mixer)	Tab C6/35	100	2	3	-10	93
			Concrete lining machine (concrete pump)	Tab C6/22	106	1	0	-10	96
			Poker vibrator	Tab C6/32	100	6	8	-10	98
			Sub-total						101
T165	T184	Foundation (Formwork & Reinforcement)	Compressor < 10m³/min	CNP001	100	1	0	-10	90
			Generator	Tab C7/62	100	1	0	-10	90
			Mobile crane	Tab C7/114	101	1	0	-5	96
			Bar bender	CNP021	90	1	0	-10	80
			Sub-total						96
T166	T185	Excavation	Compressor < 10m³/min	CNP001	100	4	6	-10	96
			Breaker, excavator mounted (hydraulic)	Tab C3/97	105	1	0	-10	95
			Excavator/ Loader	Tab C3/97	105	2	3	-5	103
			Lorry	Tab C8/16	108	3	5		113
			Submersible pump	by MTRC	96	1	0	-10	86
			Sub-total						113
T167	T186	Station Construction	Compressor < 10m³/min	CNP001	100	2	3	-10	93
			Handheld breaker 20kgsmass>35kg	CNP025	111	2	3	-10	104
			Concrete truck (mixer)	Tab C6/35	100	3	5	-10	95
			Mobile crane	Tab C7/114	101	1	0	-5	96
			Poker vibrator	Tab C6/32	100	6	8	-10	98
			Concrete lining machine (concrete pump)	Tab C6/22	106	1	0	-10	96
			Lorry	Tab C8/16	108	1	0		108
			Tower crane	CNP049	95	2	3		98
			Hoist, material (electric)	CNP122	95	1	0		95
			Saw, circular, wood	CNP201	108	1	0	-10	98
			Sub-total						111
T168	T187	Sheet Piling for Protection on Existing Tracks/ Platforms	Sheet piling (hydraulic vibratory driver)	BS 5228: Part 4: 1992 Tab 1/53	118	1	0	-10	108
			Sub-total						108
Tunnel Portal (Start-up Works)									
T169	T188	Excavation	Excavator/ Loader (for Trench)	Tab C3/97	105	3	5	-5	105
			Lorry	Tab C8/16	108	6	8		116
			Sub-total						116

Table C2.3 - Plant Inventory (Use of Quiet Plant, Barrier)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Barr. Corr.	Sum
(No. has been reduced if cell is in grey)									
T170	T189	Sheet Piling	Sheet piling (hydraulic vibratory driver)	BS 5228 Part 4, 1992 1/53	118	1	0		118
				Sub-total					118
T171	T190	Soil Nail Installation and Initial Tunnel Excavation	Compressor $\leq 10\text{m}^3/\text{min}$	CNP001	100	3	5	-10	95
			Drilling Rigs	Tab C11/1	117	2	3	-10	110
				Sub-total					110
T172	T191	Re-construction of Roads	Vibrating roller	Tab C8/27	104	1	0		104
			Dozer	Tab C9/2	104	1	0		104
				Sub-total					107
T173	T192	Mechanical Rock Excavation	Breaker, excavator mounted (hydraulic)	Tab C3/97	105	2	3		108
				Sub-total					108
Tunnel Works									
T174	T193	Works at Tunnel Portal	Compressor $> 30\text{m}^3/\text{min}$	CNP003	104	4	6	-10	100
			Mobile crane	Tab C7/114	101	1	0	-5	96
			Lorry	Tab C8/16	108	1	0		108
			Ventilation fan	CNP241	108	2	3	-10	101
			Forklift	By WDI	113	1	0		113
			Batching Plant	CNP022	108	1	0		108
				Sub-total					115
T175	T194	Removal of Spoil at Tunnel Portal	Excavator/Loader	Tab C3/97	105	1	0	-5	100
			Lorry	Tab C8/16	108	3	5		113
				Sub-total					113
T176	B19	Concrete Lining, Track Laying	Compressor $> 30\text{m}^3/\text{min}$	CNP003	104	2	3		107
			Concrete truck (mixer)	Tab C6/35	100	4	6		106
			Excavator/ Loader	Tab C3/97	105	2	3		108
			Mobile crane	Tab C7/114	101	1	0		101
			Concrete lining machine (concrete pump)	Tab C6/22	106	1	0		106
			Lorry	Tab C8/16	108	1	0		108
				Sub-total					114
At Grade Trackwork									
T177	T195	Surface Drainage Construction including pumps to control water influx	Compressor $> 30\text{m}^3/\text{min}$	CNP003	104	2	3	-10	97
			Concrete truck (mixer)	Tab C6/35	100	1	0	-10	90
			Dozer	Tab C9/2	104	1	0		104
			Dump truck	Tab C9/27	105	2	3		108
			Crane/vibrocompaction	By SWHK	112	1	0	-10	102
			Excavator/ Loader	Tab C3/97	105	2	3	-5	103
			Mobile Crane	Tab C7/114	101	2	3	-5	99
			Poker vibrator	Tab C6/32	100	1	0	-10	90
			Concrete lining machine (pump)	Tab C6/22	106	1	0	-10	96
			Lorry	Tab C8/16	108	1	0		108
			Water pump	CNP282	103	8	9	-10	102
				Sub-total					113
T178	T196	Track Laying	Generator	Tab C7/62	100	1	0		100
			Diesel locomotive	from West Rail	118	2	3		121
			Lorry	Tab C8/16	108	1	0		108
				Sub-total					121
Disney Station									
T179	T197	Excavation	Generator	Tab C7/62	100	2	3		103
			Excavator/ Loader	Tab C3/97	105	3	5		110
			Lorry	Tab C8/16	108	8	9		117
				Sub-total					118
T180	T198	Foundation (Concreting)	Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Poker vibrator	Tab C6/32	100	6	8		108
			Concrete lining machine (concrete pump)	Tab C6/22	106	1	0		106
				Sub-total					111
T181	T199	Foundation (Formwork & Reinforcement)	Compressor $\leq 10\text{m}^3/\text{min}$	CNP001	100	1	0		100
			Generator	Tab C7/62	100	2	3		103
			Mobile crane	Tab C7/114	101	1	0		101
			Bar bender	CNP021	90	1	0		90
				Sub-total					106
T182	T200	Station Construction	Compressor $\leq 10\text{m}^3/\text{min}$	CNP001	100	4	6		108
			Handheld breaker 20kg mass $\geq 35\text{kg}$	CNP025	111	4	6		117
			Concrete truck (mixer)	Tab C6/35	100	3	5		105
			Mobile crane	Tab C7/114	101	2	3		104
			Poker vibrator	Tab C6/32	100	6	8		108
			Lorry	Tab C8/16	108	1	0		108
			Tower crane	CNP049	95	1	0		95
				Sub-total					119
Ventilation Building									
T183	B17	Ventilation Building Foundations	Compressor $> 30\text{m}^3/\text{min}$	CNP003	104	2	3		107
			Handheld breaker $> 35\text{kg}$	Tab C2/10	110	3	5		115
			Concrete truck (mixer)	Tab C6/35	100	4	6		106
			Dump truck	Tab C9/27	105	2	3		108
			Backhoe	Tab C3/97	105	2	3		108
			Generator	Tab C7/62	100	1	0		100
			Vibratory piling rig	CNP164	115	1	0		115
			Poker vibrator	Tab C6/32	100	1	0		100
				Sub-total					119

Table C2.3 - Plant Inventory (Use of Quiet Plant, Barrier)

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Barr. Corr.	Sum
(No. has been reduced if cell is in grey)									
T184	818	Ventilation Building Superstructure	Compressor > 30m ³ /min	CNP003	104	1	0		104
			Concrete truck (mixer)	Tab C6/35	100	4	6		106
			Backhoe	Tab C3/97	105	2	3		108
			Mobile crane	Tab C7/114	101	2	3		104
			Generator	Tab C7/62	100	1	0		100
			Poker vibrator	Tab C6/32	100	1	0		100
			Sub-total						112

Annex C3 (*see Volume 5*)

Construction Noise Impact Assessment - Predicted Noise Levels

Annex C3a:	Unmitigated Noise Levels
Annex C3b:	Predicted Noise Levels with Quiet Plant
Annex C3c:	Predicted Noise Levels at Luk Keng Tsuen with Quiet Plant & Barriers

For Annex C3

See Volume 5

Annex C4

Night-time Construction Noise Impact Assessment

Table C4.1 - Night-time Construction Plant Inventory

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
A2	A2	Dredging at Theme Park Phase 1	Grab dredger	By SWHK	112	1	0	112
			TS dredger	By SWHK	109	1	0	109
				Sub-total				114
A4	A4	Filling at Theme Park Phase 1	Grab dredger	By SWHK	112	2	3	115
			TS dredger	By SWHK	109	4	6	115
			CS dredger	By SWHK	104	2	3	107
				Sub-total				118

Table C4.2 - Predicted Night-time Construction Noise Levels

ERM No	SWHK Item No.	Activity	NSR:	Peng Chau											
			00												03
			01/	04/	07/	10/	01/	04/	07/	10/	01/	04/	07/	10/	01/
Phase 1															
A	A	Reclamation & Excavation													
A2	A2	Dredging at Theme Park Phase 1													
A4	A4	Filling at Theme Park Phase 1		37	37	37									
			Sum	37	37	43	42	42	42	42	42	0	0	0	0
Discovery Bay															
ID	SWHK Item	Activity	NSR:												03
			00												02
Phase 1															
A	A	Reclamation & Excavation													
A2	A2	Dredging at Theme Park Phase 1		39	39	39									
A4	A4	Filling at Theme Park Phase 1					44	44	44	44	44	44	44	44	
			Sum	39	39	45	44	44	44	44	44	0	0	0	0

Annex C5

Noise Measurements at Anaheim,
California Disneyland

#1. Data on noise levels at the berm was measured at three locations at the Disneyland Park. These locations are shown on the following map as Figure 1 and the data for the Leq and Maximum levels are also shown in Figures 2 and 3.

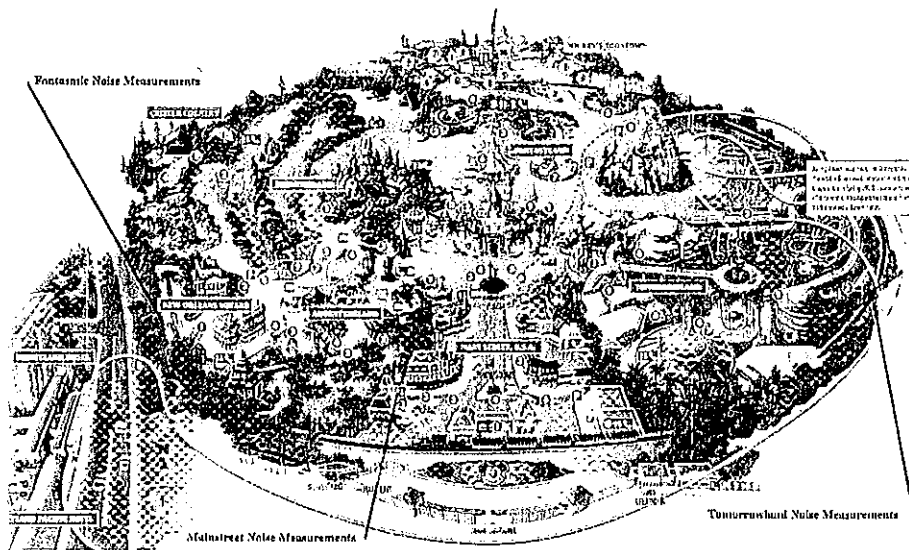


Figure 1. Locations of berm noise level measurements at Disneyland

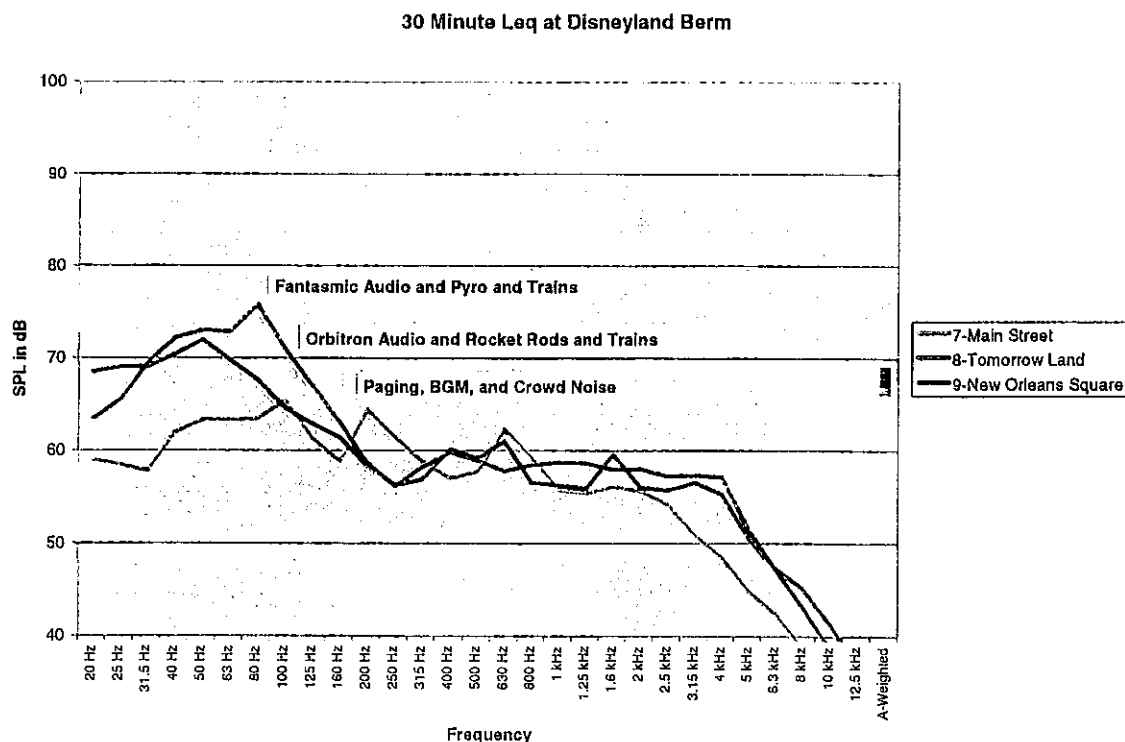


Figure 2. Average noise levels at Berm around Disneyland

The position on Main Street was above the Town Hall building, and simulates the berm at the entrance of the park. This location was chosen to avoid the noise of train operations, which will not be a feature of the new park. The location in Tomorrowland was on the top of the berm adjacent to the Tomorrowland train station. The Fantasmic location was across the tracks from the train station directly in front of the berm at New Orleans Square. The Fantasmic show, approximately 100 meters away, was playing to guests directly in the line of sight from this location.

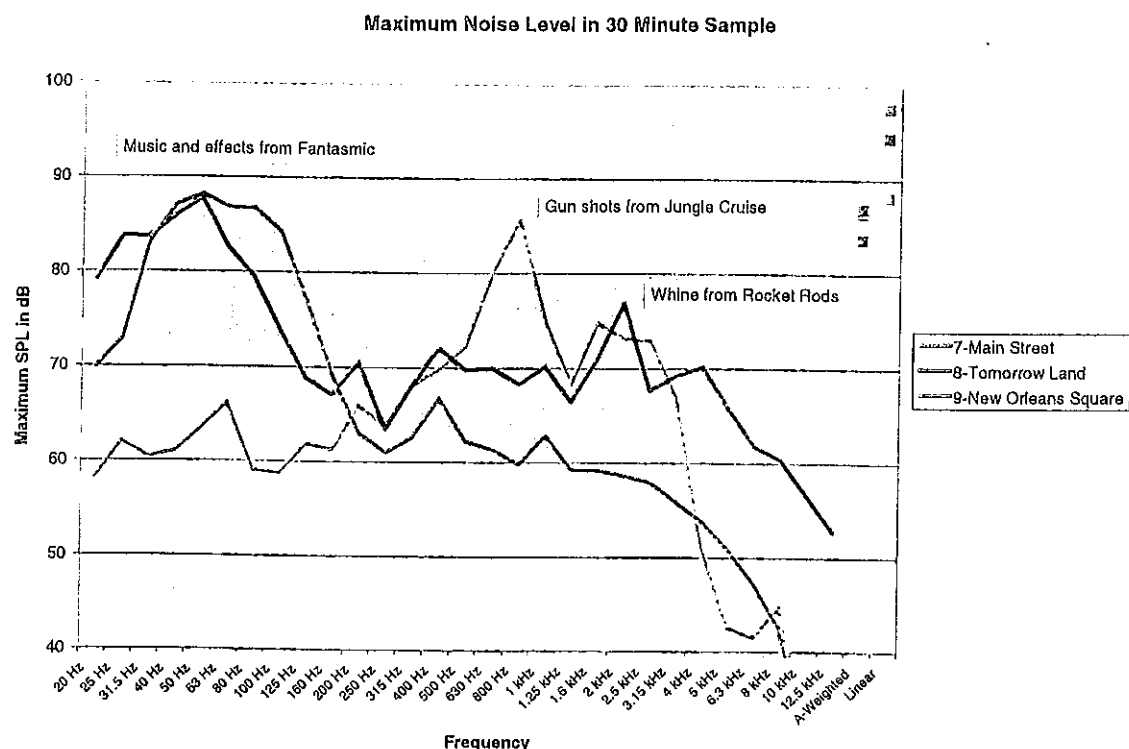


Figure 3. Maximum noise levels at Berm around Disneyland

#2. Typical noise levels inside Disneyland are shown in the following table. These measured levels are predominately Leq_{8sec} samples and represent both noisy and quiet areas of the park. Screaming from thrill rides is specifically addressed. This data is based on measured screams from the installed Space Shot attraction at Disney's California Adventure (DCA) in Anaheim and show that there are situations where the noise level at the berm can approach 75 dBA.

Location	Measured Noise Level in dBA	Sources
Tomorrowland	76.5, 79.1, 83.6	Rocket Rods ride at 50 meters, background music, and crowd noise
Main Street USA	68.5, 68.9, 69.4	Crowd noise and background music
Main Street USA	96.6	Parade Music in crowd
New Orleans Square	74.9, 77.8	Crowd noise and background music
Fantasy Land	75	Crowd noise and Carousel music
DCA Space Shot, predicted	71 dBA max, 65.2 dBA Leq_{30}	4 screamers measured at 170 meters
DCA Roller Coaster	78.8 dBA max, 73 dBA Leq_{30}	24 screamers measured at 170 meters

Annex C6

Theme Park Operational Noise Assessment

The noise assessment process includes the following key steps:

- (a) Computation of Theme Park Sound Power Level (SWL);
- (b) Establishment of the noise transmission from Theme Park to NSR due to distance attenuation but without accounting for shielding effects as offered by boundary berms and hotel strip;
- (c) Calculation of applicable shielding effects; and
- (d) Combination of (b) and (c) above to predict resultant noise levels at NSR.

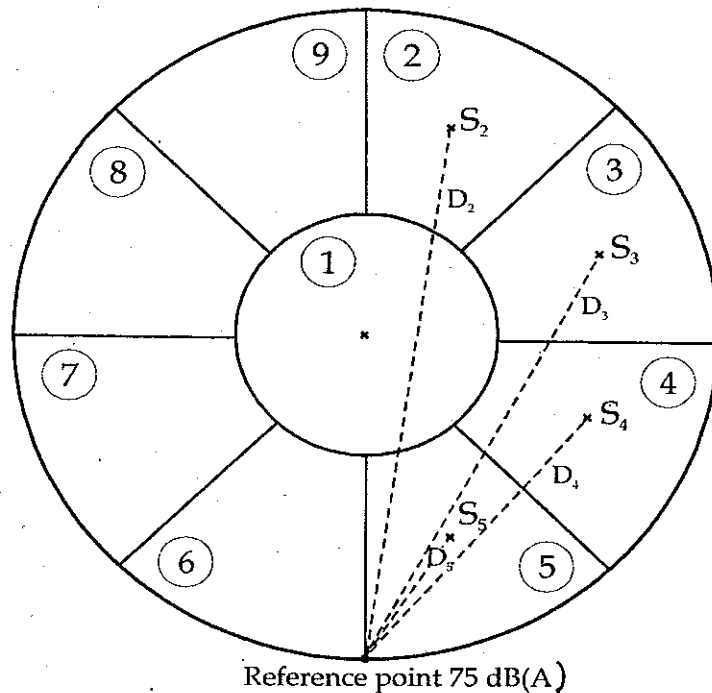
(a) *Computation of Theme Park SWL*

Given 75 dB(A) Sound Pressure Level (SPL) at boundary. Assuming there are nine sources of same strength.

Assuming nine sources - six "lands" (Fantasy, Frontier, Adventure, Tomorrow, Toon and area reserved for Expansion) and three other attraction locations (Main Street, Castle and Hub) in each phase of the Theme Park.

Each of these "lands" and attractions have the same SWL (a conservative approach) but would contribute a resultant SPL of 75 dB(A) at boundary.

Diameter of each phase of Theme Park = 700m ($r = 350\text{m}$; total circle area = $384,845 \text{ m}^2$. If divided into 9 equal sectors, each sector has an area = $42,761 \text{ m}^2$)



Centre sector has radius of $r_c = 116.7 \text{ m}$

$D1 = 350\text{m}$

$D5 = D6 = 150\text{m}$

$D4 = D7 = 342\text{m}$

$D3 = D8 = 500\text{m}$

$D2 = D9 = 585\text{m}$

$$\text{SPL} = \text{SWL} - 10\log(2\pi D^2)$$

Sector Number	SWL	"D"	$10\log(2\pi D^2)$	SPL
5+6	124.9	150	-51.5	73.4
4+7	124.9	342	-58.7	66.2
3+8	124.9	500	-62.0	62.9
2+9	124.9	585	-63.3	61.6
1	121.9	350	-58.9	63.0
Total				75.0

Therefore, SWL of each source is 121.9 dB(A).

(b) Transmission from Theme Park to NSR (without shielding effect)

The conservative method to establish the resultant noise transmission from multiple sources located close to one another is:

- Taking the Theme Park as 18 sources (9 sources in each phase), work out the individual contributions to the NSR and then combine them.

It has been established in (a) above that each sector of the 700m diameter circle has a SWL of 121.9 dB(A). There are a total of 9 sectors in each phase.

Take Discovery Bay (Tai Pak Tsui) as the NSR for computing the final resultant SPL from individual contributions.

Sector	SWL	"d" (m)	-10log(2 π d ²)	SPL at NSR
Phase 1: 1	121.9	2400	-75.6	46.3
2 + 9	124.9	2625	-76.4	48.5
3 + 8	124.9	2510	-76.0	48.9
4 + 7	124.9	2330	-75.3	49.6
5 + 6	124.9	2200	-74.8	50.1
Phase 2: 1	121.9	3180	-78.0	43.9
2 + 9	124.9	3400	-78.6	46.3
3 + 8	124.9	3285	-78.3	46.6
4 + 7	124.9	3100	-77.8	47.1
5 + 6	124.9	2950	-77.4	47.5
Total SPL at NSR:				57.8 dB(A)

The comprehensive computations (after accounting for shielding effects, atmospheric absorption, etc.) are shown in (d) below.

(C) Calculation of Shielding Effects

Shielding by berm (9m high approximately)

From ISO 9613-2, barrier attenuation

$$D_z = 10 \log \left[3 + \left(\frac{C_2}{\lambda} \right) C_3 z K_{\text{met}} \right] \text{ dB}$$

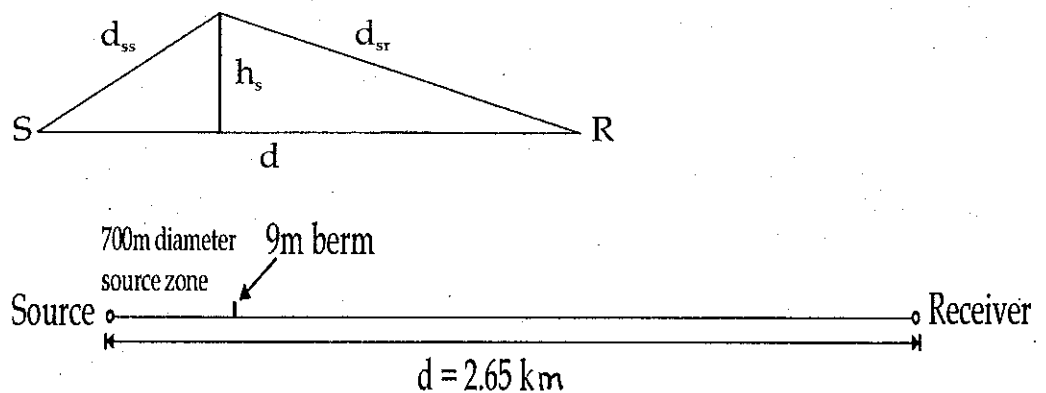
Where $C_2 = 20$, includes effects of ground reflection (here water)

$C_3 = 1$, for single diffraction

λ = wavelength, $\lambda_{500\text{Hz}} = 0.69\text{m}$

z = path length difference = $d_{ss} + d_{sr} - d$

Case 1: Source located at centre of 700m diameter circle



$$\begin{aligned} d_{ss} &= (350^2 + 8^2)^{1/2} = 350.091\text{m} \\ d_{sr} &= (2300^2 + 8^2)^{1/2} = 2300.014\text{m} \\ d &= 2650\text{m} \\ z &= 350.091 + 2300.014 - 2650 = 0.105\text{m} \end{aligned}$$

$$\begin{aligned} K_{\text{met}} &= \exp \left[-(1/2000) \sqrt{(d_{ss} d_{sr} d / 2z)} \right] \\ &= \exp \left[-(1/2000) \sqrt{(2.1335 \times 10^9 / 0.21)} \right] \\ &= 1.29 \times 10^{-22} \\ &= 0 \text{ approximately} \end{aligned}$$

Barrier attenuation of berm:

$$\begin{aligned} D_z &= 10 \log \left[3 + \frac{20}{0.69} K_{\text{met}} \right] \text{ dB} \\ &= 4.8 \text{ dB or } 5 \text{ dB approximately} \end{aligned}$$

Case 2: Source located close to far side of 700m diameter circle (at 585m)

$$\begin{aligned} d_{ss} &= (585 + 8^2)^{1/2} = 585.055\text{m} \\ d_{sr} &= (2300 + 8^2)^{1/2} = 2300.014\text{m, unchanged} \\ d &= 2885\text{m} \\ z &= 585.055 + 2300.014 - 2885 = 0.069\text{m} \end{aligned}$$

$$\begin{aligned}
 K_{\text{met}} &= \exp [-(1/2000) \sqrt{(d_{\text{ss}}d_{\text{sr}}d/2z)}] \\
 &= \exp [-(1/2000) \sqrt{(3.8822 \times 10^9/(2 \times 0.069))}] \\
 &= 3.794 \times 10^{-37} \\
 &= 0 \text{ approximately}
 \end{aligned}$$

Barrier attenuation of berm:

$$\begin{aligned}
 D_z &= 10 \log \left[3 + \frac{20}{0.69} K_{\text{met}} \right] \text{ dB} \\
 &= 5 \text{ dB approximately}
 \end{aligned}$$

Case 3: Source located close to near side of 700m diameter circle (at 150m)

$$\begin{aligned}
 d_{\text{ss}} &= (150 + 8^2)^{1/2} = 150.213\text{m} \\
 d_{\text{sr}} &= (2300 + 8^2)^{1/2} = 2300.014\text{m, unchanged} \\
 d &= 2450\text{m} \\
 z &= 150.213 + 2300.014 - 2450 = 0.227\text{m}
 \end{aligned}$$

$$\begin{aligned}
 K_{\text{met}} &= \exp [-(1/2000) \sqrt{(d_{\text{ss}}d_{\text{sr}}d/2z)}] \\
 &= \exp [-(1/2000) \sqrt{(8.4645 \times 10^8/(2 \times 0.227))}] \\
 &= 4.205 \times 10^{-10} \\
 &= 0 \text{ approximately}
 \end{aligned}$$

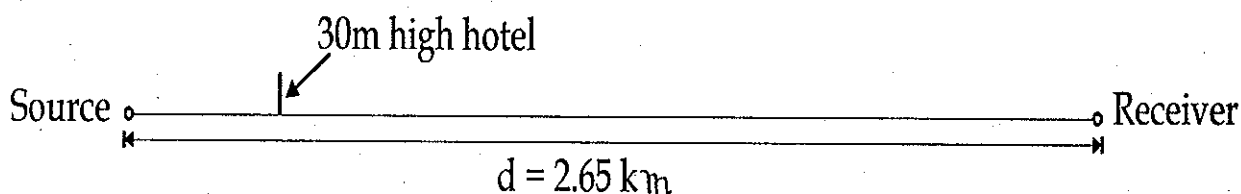
Barrier attenuation of berm

$$\begin{aligned}
 D_z &= 10 \log \left[3 + \frac{20}{0.69} K_{\text{met}} \right] \text{ dB} \\
 &= 5 \text{ dB approximately}
 \end{aligned}$$

Conclusion:

Barrier attenuation value is not sensitive to relatively small changes to the separation between source and berm when receiver is located at large distances from the berm.

Shielding by hotel strip



$$\begin{aligned}
 d_{\text{ss}} &= (550^2 + 29^2)^{1/2} = 550.764\text{m} \\
 d_{\text{sr}} &= (2100^2 + 29^2)^{1/2} = 2100.2\text{m} \\
 d &= 2650\text{m}
 \end{aligned}$$

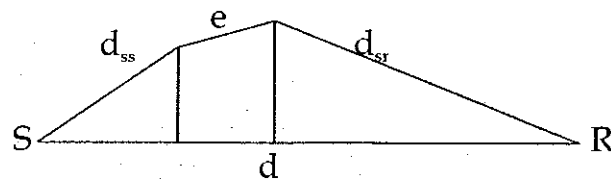
$$z = 550.764 + 2100.2 - 2650 = 0.964\text{m}$$

$$\begin{aligned} K_{\text{met}} &= \exp [-(1/2000) \sqrt{(d_{\text{ss}}d_{\text{sr}}d/2z)}] \\ &= 2 \times 10^{-9} \\ &= 0 \text{ approximately} \end{aligned}$$

Barrier attenuation of berm:

$$\begin{aligned} D_z &= 10 \log \left[3 + \frac{20}{0.69} K_{\text{met}} \right] \text{ dB} \\ &= 5 \text{ dB approximately} \end{aligned}$$

Combining shielding effects of berm and hotel strip



double diffraction case, $C_3 = 2$,

$$z = [(d_{\text{ss}} + d_{\text{sr}} + e)^2 + a^2]^{1/2} - d$$

$$\text{where } d_{\text{ss}} = (350^2 + 8^2)^{1/2} = 350.091\text{m}$$

$$d_{\text{sr}} = (2100^2 + 29^2)^{1/2} = 2100.2\text{m}$$

$$e = (200^2 + 21^2)^{1/2} = 201.099\text{m}$$

$$z = 48.12\text{m}$$

$$\begin{aligned} K_{\text{met}} &= \exp [-(1/2000) \sqrt{(d_{\text{ss}}d_{\text{sr}}d/2z)}] \\ &= \exp [-(1/2000) \sqrt{(1.9484 \times 10^9 / (2 \times 48.12))}] \\ &= 0.105 \end{aligned}$$

Combined barrier attenuation (berm and hotel strip):

$$\begin{aligned} D_z &= 10 \log \left[3 + \frac{40}{0.69} K_{\text{met}} \right] \text{ dB} \\ &= 9.6 \text{ dB or } 10 \text{ dB approximately} \end{aligned}$$

(d) Prediction of Theme Park SPL at NSRs (Peng Chau and Discovery Bay)

It may be concluded in (a) above that the SWL from each sector of each Theme Park Phase, required to produce L_{eq} 75 dB(A) at perimeter is = 121.9 dB(A).
(see above)

Table C6.1 and Table C6.2 illustrate the prediction of the Theme Park SPL at both Peng Chau and Discovery Bay.

Table C6.2 Predicted Noise Levels at Discovery Bay

Discovery Bay (Tai Pak Tsui)																			
Theme Park		Phase I									Phase II								
Phase		1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9
Sector		1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9
Line 1		121.9 each									121.9 each								
Line 2		2400	2625	2510	2330	2200	2200	2330	2510	2625	3180	3400	3285	3100	2950	2950	3100	3285	3400
Line 3.		-75.6	-76.4	-76.0	-75.3	-74.8	-74.8	-75.3	-76.0	-76.4	-78.0	-78.6	-78.3	-77.8	-77.4	-77.4	-77.8	-78.3	-78.6
Line 4.		-6.7	-7.4	-7.0	-6.5	-6.2	-6.2	-6.5	-7.0	-7.4	-8.9	-9.5	-9.2	-8.7	-8.3	-8.3	-8.7	-9.2	-9.5
Line 5		-10									-10								
Line 6		+3									+3								
Line 7.		32.6	31.1	31.9	33.1	33.9	33.9	33.1	31.9	31.1	28.0	26.8	27.4	28.4	29.2	29.2	28.4	27.4	26.8
Totals		43.5 dB(A)																	

Note:

Line 1 SWL

Line 2 Distance to NSR (m) "r"

Line 3 Conversion of SPL (spherical spreading)

Line 4 Atmospheric Absorption at 2.8 dB/ km

Line 5 Net Screening (shielding) from berms and hotel strips, etc

Line 6 Facade reflection

Line 7 SPL at NSR

Annex C7

Fireworks Noise Assessment

ANNEX C7

Tested Fireworks Items Considered Suitable for Hong Kong Theme Park Use

Item Number	Size (mm)	Description
1	12	Repeater color comets
3	30	Repeater color crossettes
5	30	Repeater colour & noise effects
6	30	Repeater colour & noise effect
8	30	Colour crossette single shot
11	30	Bombette Candle 8 shot
12	30	Bombette Candle 8 shot
13	45	Color Candle 8 shot
17	30	Candle Crossette 8 shot
18	30	Candle Crossette 8 shot
20	75	Color Mine
23	75	Color Shell Domestic
24	75	Color Shell Domestic
25	75	Color Shell Foreign
26	75	Color Shell Foreign
28	100	Color Mine
29	100	Whistle Mine
30	100	Whistle Mine
32	100	Artillery Mine
33	100	Crossette Mine
34	100	Crossette Mine
35	100	Color Shell
36	100	Color Shell
37	100	Effect Shell Canister
38	100	Effect Shell Canister
39	100	Color & Whistle Shell
40	100	Color & Whistle Shell
53	75	Color Shell string of 10
54	75	Color Shell string of 10
57	100	Color Mine Foreign
59	60	Artillery Candle
60	60	Artillery Candle

Theme Park - Fireworks Noise

Design of a "hypothetical" fireworks show (5 minutes long) so as not to exceed $L_{eq, 15 \text{ minute}}$ 55 dBA at nearest NSR.

Minimum setback distance will be from Phase 1 launch area to Discovery Bay (Tai Pak Tsui) 2.4 km

(Atmospheric absorption rate at 500 Hz, average conditions of 20°C, 70% relative humidity = 2.8 dB/km)

Additional distance attenuation available (compared to SPL measured by ERM at 500 m and 800 m) is:

a) For fireworks measured at 500 m

$$\begin{aligned} &\text{Extra distance attenuation} \\ &= 20 \log (500/2400) + (2400 - 500 \text{ m}) (-2.8 \text{ dB}/1000 \text{ m}) \\ &= -13.6 - 5.3 = -19 \text{ dBA} \end{aligned}$$

b) For fireworks measured at 800 m

$$\begin{aligned} &\text{Extra distance attenuation} \\ &= 20 \log (800/2400) + (2400 - 800 \text{ m}) (-2.8 \text{ dB}/1000 \text{ m}) \\ &= -9.5 \text{ dB} - 4.5 = -14 \text{ dBA} \end{aligned}$$

If we are to obtain $L_{eq, 15 \text{ minute}}$ 55 dBA at 2.4 km, from a 5 minutes show, then objective for the actual 5 minutes of fireworks should be:

$$\begin{aligned} L_{eq, 5 \text{ minute}} &= L_{eq, 15 \text{ minute}} 55 + 10 \log (15 \text{ minutes}/5 \text{ minutes}) \\ &= 55 + 4.8 \text{ dBA} \\ &= 59.8 \text{ dBA} \end{aligned}$$

The total maximum SEL from all fireworks in 5 minutes show:

$$\begin{aligned} SEL_{\text{Total}} &= 59.8 + 10 \log (300 \text{ seconds}/1 \text{ second}) \\ &= 59.8 + 24.8 \text{ dBA} \\ &= 85 \text{ dBA at the nearest NSR} \end{aligned}$$

Fireworks SELs - Based on November 1999 measurement

Fireworks Item	Measurement Distance, m/ Attenuation, dB	Measured SEL	Distance Corrected SEL	Distance Corrected SEL with 3 dB facade correction	Noise Category	Hypothetical Fireworks Programs, Number of Items (SEL)	
						Program 1	Program 2
32	500/-19	94	75	78	A	2 (81)	1 (78)
59/60	800/-14	86	72	75	B	1 (75)	2 (78)
53/54	800/-14	83	69	72		1 (72)	2 (75)
5/6	500/-19	85	66	69	C	1 (69)	1 (69)
17/18	500/-19	82	63	66		2 (69)	4 (72)
33/34	500/-19	80	61	64	D	32 (79)	16 (76)
25/26	500/-19	79	60	63			
11/12	500/-19	78	59	62			
35/36	500/-19	78	59	62			
57	800/-14	73	59	62			
39/40	500/-19	77	58	61			
8	500/-19	76	57	60	E	64 (78)	128 (81)
28	500/-19	69	50	53			
3	500/-19	69	50	53			
37/38	500/-19	68	49	52			
13	500/-19	65	46	49			
29/30	500/-19	68	49	52			
23/24	500/-19	69	50	53			
1	500/-19	61	42	45			
20	500/-19	66	47	50			
Total SEL (dBA)						103 (85)	154 (85)

Both hypothetical programs would meet the $L_{eq,15min}$ 55 dBA criterion of nearest NSR.

Possible Fireworks Program

Noise Category	SEL Range (dBA)	SEL (dBA) For Computation Purposes	Items	SEL (dBA)
A	76 or above	80	1	80
B	71 - 75	75	2	78
C	66 - 70	70	8	79
D	61 - 65	65	16	77
E	60 or below	50	128	71
Total:			155	85

Note:

- This possible program is based on actual existing fireworks items that may be considered for Hong Kong use.
- This possible program is designed to meet the L_{eq} 55 dBA limit at NSRs.
- In the absence of preliminary designs of the fireworks displays, this possible program is to demonstrate and illustrate one possible scenario.
- Subject to actual detailed program design, the number of items in different categories could change or swap while maintaining the same overall noise output.

Annex C8

Breakdown of Road Traffic Noise Levels

Table C8a Breakdown of Predicted Road Traffic Noise Levels

Assessment Point	Assessment Level	Unmitigated			Mitigated			Approximate no. of dwellings represented	Approximate no. of classrooms/sensitive uses represented	Unmitigated criterion exceedance		Mitigated criterion exceedance	
		Unaltered	New	Total	Unaltered	New	Total			Dwellings	Classrooms	Dwellings	Classrooms
N3-b	Low	67	69	71	66	67	70	1	n/a	1	n/a	0	n/a
	Mid	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	High	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
N3-c	Low	67	68	71	66	68	69	1	n/a	1	n/a	0	n/a
	Mid	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	High	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
N3-d	Low	67	68	71	66	67	69	1	n/a	1	n/a	0	n/a
	Mid	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	High	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
N6-a	Low	n/a	54	54	n/a	n/a	n/a	2	n/a	0	0	n/a	n/a
	Mid	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	High	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
N6-b	Low	n/a	54	54	n/a	n/a	n/a	2	n/a	0	0	n/a	n/a
	Mid	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	High	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
N6-c	Low	n/a	54	54	n/a	n/a	n/a	2	n/a	0	0	n/a	n/a
	Mid	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	High	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
N7-1	Low	-	64	64	-	64	64	3	n/a	0	n/a	0	n/a
	Mid	-	65	65	-	64	64	3	n/a	0	n/a	0	n/a
	High	-	65	65	-	64	64	3	n/a	0	n/a	0	n/a
N7-2	Low	-	65	65	-	65	65	8	n/a	0	n/a	0	n/a
	Mid	-	65	65	-	65	65	9	n/a	0	n/a	0	n/a
	High	-	65	65	-	65	65	8	n/a	0	n/a	0	n/a
N7-3	Low	-	71	71	-	69	69	8	n/a	8	n/a	0	n/a
	Mid	-	71	71	-	69	69	9	n/a	9	n/a	0	n/a
	High	-	71	71	-	69	69	8	n/a	8	n/a	0	n/a
N7-4	Low	-	74	74	-	69	69	8	n/a	8	n/a	0	n/a
	Mid	-	74	74	-	70	70	9	n/a	9	n/a	0	n/a
	High	-	73	73	-	69	69	8	n/a	8	n/a	0	n/a
N7-5	Low	-	76	76	-	70	70	16	n/a	16	n/a	0	n/a
	Mid	-	75	75	-	70	70	18	n/a	18	n/a	0	n/a
	High	-	75	75	-	69	69	16	n/a	16	n/a	0	n/a
N7-6	Low	-	75	75	-	64	64	16	n/a	16	n/a	0	n/a
	Mid	-	74	74	-	65	65	18	n/a	18	n/a	0	n/a
	High	-	74	74	-	65	65	16	n/a	16	n/a	0	n/a
N7-7	Low	-	76	76	-	68	68	16	n/a	16	n/a	0	n/a
	Mid	-	76	76	-	69	69	18	n/a	18	n/a	0	n/a
	High	-	75	75	-	68	68	16	n/a	16	n/a	0	n/a
N7-8	Low	-	74	74	-	61	61	16	n/a	16	n/a	0	n/a
	Mid	-	74	74	-	64	64	18	n/a	18	n/a	0	n/a
	High	-	73	73	-	65	65	16	n/a	16	n/a	0	n/a
N7-9	Low	-	76	76	-	67	67	16	n/a	16	n/a	0	n/a
	Mid	-	76	76	-	69	69	18	n/a	18	n/a	0	n/a
	High	-	75	75	-	68	68	16	n/a	16	n/a	0	n/a

Table C8a Breakdown of Predicted Road Traffic Noise Levels

Assessment Point	Assessment Level	Unmitigated			Mitigated			Approximate no. of dwellings represented	Approximate no. of classrooms/sensitive uses represented	Unmitigated criterion exceedance		Mitigated criterion exceedance	
		Unaltered	New	Total	Unaltered	New	Total			Dwellings	Classrooms	Dwellings	Classrooms
N7-10	Low	-	75	75	-	60	60	16	n/a	16	n/a	0	n/a
	Mid	-	75	75	-	64	64	18	n/a	18	n/a	0	n/a
	High	-	74	74	-	66	66	16	n/a	16	n/a	0	n/a
N7-11	Low	-	76	76	-	66	66	16	n/a	16	n/a	0	n/a
	Mid	-	76	76	-	68	68	18	n/a	18	n/a	0	n/a
	High	-	75	75	-	69	69	16	n/a	16	n/a	0	n/a
N7-12	Low	-	74	74	-	54	54	16	n/a	16	n/a	0	n/a
	Mid	-	74	74	-	65	65	18	n/a	18	n/a	0	n/a
	High	-	73	73	-	67	67	16	n/a	16	n/a	0	n/a
N7-13	Low	-	76	76	-	65	65	16	n/a	16	n/a	0	n/a
	Mid	-	76	76	-	69	69	18	n/a	18	n/a	0	n/a
	High	-	75	75	-	70	70	16	n/a	16	n/a	0	n/a
N7-14	Low	-	74	74	-	56	56	8	n/a	8	n/a	0	n/a
	Mid	-	74	74	-	67	67	9	n/a	9	n/a	0	n/a
	High	-	73	73	-	69	69	8	n/a	8	n/a	0	n/a
N7-15	Low	-	70	70	-	54	54	8	n/a	8	n/a	0	n/a
	Mid	-	72	72	-	65	65	9	n/a	9	n/a	0	n/a
	High	-	71	71	-	68	68	8	n/a	8	n/a	0	n/a
N7-16	Low	-	67	67	-	51	51	8	n/a	8	n/a	0	n/a
	Mid	-	69	69	-	59	59	9	n/a	9	n/a	0	n/a
	High	-	69	69	-	65	65	8	n/a	8	n/a	0	n/a
N7-17	Low	-	69	69	-	52	52	16	n/a	16	n/a	0	n/a
	Mid	-	72	72	-	62	62	18	n/a	18	n/a	0	n/a
	High	-	72	72	-	68	68	16	n/a	16	n/a	0	n/a
N7-18	Low	-	67	67	-	48	48	8	n/a	8	n/a	0	n/a
	Mid	-	72	72	-	60	60	9	n/a	9	n/a	0	n/a
	High	-	73	73	-	68	68	8	n/a	8	n/a	0	n/a
N7-19	Low	-	58	58	-	46	46	8	n/a	8	n/a	0	n/a
	Mid	-	64	64	-	57	57	9	n/a	9	n/a	0	n/a
	High	-	69	69	-	65	65	8	n/a	8	n/a	0	n/a
N7-20	Low	-	65	65	-	58	58	16	n/a	16	n/a	0	n/a
	Mid	-	69	69	-	62	62	18	n/a	18	n/a	0	n/a
	High	-	72	72	-	66	66	16	n/a	16	n/a	0	n/a
N7-21	Low	-	65	65	-	61	61	8	n/a	8	n/a	0	n/a
	Mid	-	68	68	-	64	64	9	n/a	9	n/a	0	n/a
	High	-	71	71	-	66	66	8	n/a	8	n/a	0	n/a
N7-22	Low	-	61	61	-	59	59	16	n/a	16	n/a	0	n/a
	Mid	-	65	65	-	61	61	18	n/a	18	n/a	0	n/a
	High	-	67	67	-	62	62	16	n/a	16	n/a	0	n/a
N7-23	Low	-	61	61	-	58	58	16	n/a	16	n/a	0	n/a
	Mid	-	64	64	-	61	61	18	n/a	18	n/a	0	n/a
	High	-	67	67	-	62	62	16	n/a	16	n/a	0	n/a
N7-24	Low	-	64	64	-	60	60	8	n/a	8	n/a	0	n/a
	Mid	-	68	68	-	63	63	9	n/a	9	n/a	0	n/a
	High	-	71	71	-	66	66	8	n/a	8	n/a	0	n/a

Table C8a Breakdown of Predicted Road Traffic Noise Levels

Assessment Point	Assessment Level	Unmitigated			Mitigated			Approximate no. of dwellings represented	Approximate no. of classrooms/sensitive uses represented	Unmitigated criterion exceedance		Mitigated criterion exceedance	
		Unaltered	New	Total	Unaltered	New	Total			Dwellings	Classrooms	Dwellings	Classrooms
N7-25	Low	-	63	63	-	48	50	16	n/a	0	n/a	0	n/a
	Mid	-	69	69	-	62	62	18	n/a	0	n/a	0	n/a
	High	-	72	72	-	66	66	16	n/a	16	n/a	0	n/a
N7-26	Low	-	60	60	-	47	48	8	n/a	0	n/a	0	n/a
	Mid	-	66	66	-	57	57	9	n/a	0	n/a	0	n/a
	High	-	70	70	-	65	65	8	n/a	0	n/a	0	n/a
N7-27	Low	-	66	66	-	48	50	8	n/a	0	n/a	0	n/a
	Mid	-	70	70	-	60	60	9	n/a	0	n/a	0	n/a
	High	-	72	72	-	66	66	8	n/a	8	n/a	0	n/a
N7-28	Low	-	68	68	-	49	50	16	n/a	0	n/a	0	n/a
	Mid	-	71	71	-	61	61	18	n/a	18	n/a	0	n/a
	High	-	72	72	-	66	66	16	n/a	16	n/a	0	n/a
N7-29	Low	-	66	66	-	52	52	8	n/a	0	n/a	0	n/a
	Mid	-	68	68	-	59	59	9	n/a	0	n/a	0	n/a
	High	-	69	69	-	64	64	8	n/a	0	n/a	0	n/a
N7-30	Low	-	69	69	-	56	56	8	n/a	0	n/a	0	n/a
	Mid	-	71	71	-	65	65	9	n/a	9	n/a	0	n/a
	High	-	71	71	-	66	66	8	n/a	8	n/a	0	n/a
N7-31	Low	-	74	74	-	58	59	8	n/a	8	n/a	0	n/a
	Mid	-	71	71	-	66	66	9	n/a	9	n/a	0	n/a
	High	-	74	74	-	67	67	8	n/a	8	n/a	0	n/a
N7-32	Low	62	76	76	58	61	63	16	n/a	16	n/a	0	n/a
	Mid	63	76	76	63	67	68	18	n/a	18	n/a	0	n/a
	High	64	75	75	64	67	69	16	n/a	16	n/a	0	n/a
N7-33	Low	63	76	76	60	63	64	16	n/a	16	n/a	0	n/a
	Mid	64	76	76	64	65	68	18	n/a	18	n/a	0	n/a
	High	65	75	75	65	66	69	16	n/a	16	n/a	0	n/a
N7-34	Low	64	74	74	60	53	61	48	n/a	48	n/a	0	n/a
	Mid	65	74	74	65	56	65	54	n/a	54	n/a	0	n/a
	High	66	73	74	66	60	67	48	n/a	48	n/a	0	n/a
N7-35	Low	65	76	76	61	64	66	16	n/a	16	n/a	0	n/a
	Mid	66	76	76	66	65	68	18	n/a	18	n/a	0	n/a
	High	66	75	76	66	66	69	16	n/a	16	n/a	0	n/a
N7-36	Low	67	76	77	63	63	66	16	n/a	16	n/a	0	n/a
	Mid	67	76	76	67	64	69	18	n/a	18	n/a	0	n/a
	High	67	75	76	67	65	70	16	n/a	16	n/a	0	n/a
N7-37	Low	67	75	75	63	53	64	8	n/a	8	n/a	0	n/a
	Mid	68	75	75	68	57	68	9	n/a	9	n/a	0	n/a
	High	68	74	75	68	61	69	8	n/a	8	n/a	0	n/a
N7-38	Low	67	72	73	63	50	63	8	n/a	8	n/a	0	n/a
	Mid	67	72	73	67	54	68	9	n/a	9	n/a	0	n/a
	High	67	71	73	67	57	68	8	n/a	8	n/a	0	n/a
N7-39	Low	65	68	70	61	47	61	3	n/a	0	n/a	0	n/a
	Mid	66	68	70	65	47	65	3	n/a	0	n/a	0	n/a
	High	66	68	70	66	48	66	3	n/a	0	n/a	0	n/a

Table C8a Breakdown of Predicted Road Traffic Noise Levels

Assessment Point	Assessment Level	Unmitigated			Mitigated			Approximate no. of dwellings represented	Approximate no. of classrooms/sensitive uses represented	Unmitigated criterion exceedance		Mitigated criterion exceedance	
		Unaltered	New	Total	Unaltered	New	Total			Dwellings	Classrooms	Dwellings	Classrooms
N7-50	Low	-	70	70	-	62	62	n/a	2	n/a	2	n/a	0
	Mid	-	72	72	-	62	62	n/a	3	n/a	3	n/a	0
	High	-	72	72	-	63	63	n/a	1	n/a	1	n/a	0
N7-51	Low	-	70	70	-	57	57	n/a	10	n/a	10	n/a	0
	Mid	-	74	74	-	59	59	n/a	15	n/a	15	n/a	0
	High	-	74	74	-	61	61	n/a	6	n/a	6	n/a	0
N7-52	Low	-	72	72	-	62	62	n/a	3	n/a	3	n/a	0
	Mid	-	74	74	-	63	63	n/a	2	n/a	2	n/a	0
	High	-	74	74	-	64	64	n/a	0	n/a	0	n/a	0
N7-53	Low	-	72	72	-	68	68	n/a	3	n/a	3	n/a	3
	Mid	-	73	73	-	70	70	n/a	2	n/a	2	n/a	2
	High	-	73	73	-	70	70	n/a	0	n/a	0	n/a	0
N7-54	Low	-	67	67	-	64	64	n/a	2	n/a	2	n/a	0
	Mid	-	70	70	-	67	67	n/a	3	n/a	3	n/a	3
	High	-	71	71	-	68	68	n/a	1	n/a	1	n/a	1
N7-55	Low	57	77	77	53	66	66	n/a	1	n/a	1	n/a	1
	Mid	58	77	77	58	69	69	n/a	0	n/a	0	n/a	0
	High	59	77	77	59	71	72	n/a	0	n/a	0	n/a	0
N7-56	Low	58	74	75	54	60	61	n/a	4	n/a	4	n/a	0
	Mid	60	76	76	59	63	64	n/a	6	n/a	6	n/a	0
	High	60	76	76	60	67	68	n/a	3	n/a	3	n/a	3
		Total			Total			1552	67	1128	67	0	13

Note:

- (1) EIAO-TM criteria exceedances are indicated in bold type face. The criteria adopted are: 70 dB(A) for residential dwellings and 65 dB(A) for schools.
- (2) "-" denotes negligible noise levels. This may be due to substantial screening of North Lantau Highway by Planned Siu Ho Wan Depot Development and long separation distances between noise source and NSRs.
- (3) The proposed noise mitigation measures in Agreement No. CE 82/97 Route 10 - North Lantau to Yuen Long Highway EIA Final Assessment Report 1999 have been assumed in calculating unmitigated road traffic noise levels at Tso Wan Village Expansion Area (N6-a to N6-c).

Annex C9

Sample Calculations

- C9a: Railway Noise
- C9b: PTI Noise
- C9c: Road Traffic Noise
- C9d: Helicopter Noise

**SAMPLE CALCULATION - VERIFICATION RAILWAY NOISE
PREDICTIONS USING ERM RAIL NOISE MODEL, PENNY'S BAY RAIL
LINK (PBRL) EIA**

Source Data and Operational Details

In the operational phase of PBRL, MTRC's Urban Line Trains would be used. It is expected that the source noise level would be 2 to 3 dB(A) higher than the rolling stock of Airport Express Line and Tung Chung Line. A reference source level of L_{Amax} at 25 m of 89 dB at 130 kph on ballasted track supporting continuously welded rail has been used in the noise modelling. The corresponding Sound Exposure Level (SEL) is 96.1 dB for an eight-car train operating at 130 kph at a distance of 25 m.

A maximum of fifteen return services per hour has been used in the calculation assuming that the travel time between stations would be 3.5 minutes and a thirty second dwelling time at each station (Yam O and Disney). Two Electric Multiple Unit (EMU) trains will operate simultaneously utilising a passing loop in Penny's Bay. This results in 30 train movements per hour at each point on the track.

Other features of the railway which have been incorporated in the assessment are detailed below:

- train length of 184 metres (eight cars, each of 23 m long);
- maximum operating speed on the link is 80 kph;
- design acceleration profiles of 1 and -1 m/s²;
- the reference L_{Amax} noise level for a train air-conditioning unit will be 68 dB at 7.5 m; and
- two air-conditioning units per car.

Noise Sensitive Receivers

Noise sensitive receivers (NSRs) used in this sample calculation include:

- Luk Keng Tsuen (NSR A in EIA Report), about 500 m from the alignment with an angle of view of approximately 24°;
- Country Park (NSR C in EIA Report), about 285 m from the alignment with an angle of view of approximately 88°; and
- Theme Park (NSR E in EIA Report), about 55 m from the alignment with an angle of view of approximately 143°.

Calculation Algorithm

The following outlines the simplified algorithm used in this sample calculation. Reference to *Lantau and Airport Railway, Environmental Impact Study: Final Report* (prepared by ERM-Hong Kong) (Ref. 1), *Calculation of Railway Noise 1995* (developed by the Department of Transport, UK) (Ref. 2), *A Guide to Measurement and Prediction of the Equivalent Continuous Sound Level L_{eq}* (published by Noise Advisory Council of UK) (Ref. 3) and *Acoustic and Noise Control* (B J Smith, R J Peters and S Owen) (Ref. 4) have been made in the calculation. Noise from air-conditioning units of the train has been ignored in the calculation as rolling noise will be the dominant element.

- Correction for distance:

$$\Delta_d = 10 \times \log_{10}(25/d) \text{ dB} \quad (\text{Ref. 1 and Ref. 2})$$

where d = distance between source and NSR in m

- Correction for speed:

$$\Delta_v = 20 \times \log_{10}(v/130) \text{ dB} \quad (\text{Ref. 1})$$

where v = train operating speed in kph

- Correction for train frequency:

$$\Delta_n = 10 \times \log_{10}(n/1800) \text{ dB} \quad (\text{Ref. 3})$$

where n = total no. of train pass-by within 30-minute period

- Correction for angle of view:

$$\Delta_\theta = 10 \times \log_{10}(\theta/180^\circ) \text{ dB}$$

where θ = angle of view for line source

- Correction for screening:

$$\Delta_b = 10 \times \log_{10}(3 + 40 \cdot \delta / \lambda) \text{ dB} \quad (\text{Ref. 4})$$

where δ = path difference in m

λ = wavelength in m

- Correction for facade reflection:

$$\Delta_f = +2.5 \text{ dB} \quad (\text{Ref. 2})$$

- Correction for molecular absorption:

$$\Delta_{mol} = 0.2 - 0.008 \times d \text{ dB} \quad (\text{Ref. 2})$$

where d = distance between source and NSR in m

- Calculation of $L_{Aeq, 30 \text{ mins.}}$:

$$L_{Aeq, 30 \text{ mins.}} = SEL + \Delta_d + \Delta_v + \Delta_n + \Delta_\theta + \Delta_b + \Delta_f + \Delta_{mol}$$

Results

The results are detailed in *Table 1* below. The calculation results indicated that the modelled noise levels using *ERM Rail Noise Model* are relatively higher than the calculated values, in the range of 0.2 to 1.1 dB and considered acceptable.

Table 1 Results of Verification Check for Railway Noise Predictions

NSR	Δ_d (dB)	$\Delta_v^{(1)}$ (dB)	Δ_n (dB)	Δ_g (dB)	Δ_b (dB)	$\Delta_f^{(3)}$ (dB)	Δ_{mol} (dB)	Calculated L_{Aeq} (dB)	Modelled L_{Aeq} (dB)
A	-13.0	-8.3	-20.8	-8.8	0	+2.5	-3.8	43.9	45.0
C	-10.6	-4.2	-20.8	-3.1	0	0	-2.1	55.3	55.7
E	-3.4	-4.2	-20.8	-1.0	-20.9 ⁽²⁾	0	-0.2	45.6	45.4

Note:

(1) Mean operating speed has been used, the mean speed for Luk Keng Tsuen was around 50 kph and the mean speed for Country Park and Theme Park was assumed to be 80 kph.

(2) Noise screened by the 9 m earth berm. The path difference was about 2 m and the correction has been made by assuming that 500 Hz is the dominant frequency band of rolling noise.

(3) No facade correction for Country Park and Theme Park.

A larger difference between the calculated levels was found for NSR A (Luk Keng Tsuen). The reasons for the discrepancy are:

- (i) only the mean speed was considered in the verification check while the full velocity profile (train accelerates from 20 kph at Yam O Station to 75 kph before entering into the tunnel) has been taken account of in the model; and,
- (ii) a simplified approach for the angle of exposure was used in the verification check.

ERM RAIL NOISE MODEL OUTPUT

Model output data for railway noise assessment results presented in *Section 3.5* are given in the following table.

PBRL EIA									
ERM Rail Noise Model - Output Table Results									
NSR	Description	Leq Hard Ground	Leq Soft Ground	Leq with Barriers	Lmax Hard Ground	Lmax Soft Ground	Lmax with Barriers	Distance	
A	Luk Keng Tsuen	44.96604706	39.19808538	44.96604706	55.21937659	59.6314859	55.21937659	498.4361143	
B	Country Park	50.31051352	41.6170857	50.31051352	59.9641544	52.94752978	59.9641544	464.2746351	
C	Country Park	55.67456918	48.01539748	55.67456918	65.02787124	59.42130617	65.02787124	281.8962894	
D	Country Park	49.06748603	40.32594978	48.05792522	56.65303422	49.47600443	56.65303422	665.6259911	
E	Theme Park	66.32756096	62.50951744	45.42756096	78.3326013	76.52083634	57.4326013	54.7693832	
F	Theme Park	66.70865664	63.08943349	45.80865664	78.93714828	77.36774646	58.03714828	48.65086062	
G	Theme Park	63.95281122	58.66160278	43.05281122	74.3940091	71.11909607	53.4940091	51.71012191	

Annex C9b

Sample Calculations for projected noise level at Peng Chau from the Penny's Bay PTI Operation

Time Period	SWL at PTI (dB(A))	Separation Distance (m)	SPL at NSR (dB(A))
AM peak	110	5635	30
PM peak	109	5635	29
Evening	105	5635	25

Based on basic acoustic principles assuming point source radiation, the following equation is applied:

$$\text{SPL} = \text{SWL} - 10\log(2\pi r^2) + \text{dB(A)}$$

where SPL = Sound Pressure Level in dB(A)
 SWL = Sound Power Level in dB(A)
 r = distance from NSR to source in metres
 +3 dB(A) = facade correction

Annex C9c

HFANOISE v1.10 RESULTS FILE : FULL OUTPUT

File : UNMIT.DAT

Time : 11:41:58

Date : Tuesday, 15 February 2000

Receiver no 1:

X=820407.0 Y=821284.0 Z= 6.0 Height= 1.5

[illegible]

Road Segment	Sub Segment	Flow	Speed	%Heavy	Gradient	Basic Noise Level	Corrections							
							Speed	Gradient	Surface Distance	Angle of View	Barrier Cover	Ground Facade	Refle ction	Segment Total
AAA														
2002 2003	1	8627.0	110.0	36.50	0.2	81.60	7.7	0.1	-3.5	-14.7	-15.5	-3.4	0.0	54.8
2002 2003	2	8627.0	110.0	36.50	0.2	81.60	7.7	0.1	-3.5	-14.7	-16.9	-3.5	0.0	53.3
2002 2003	3	8627.0	110.0	36.50	0.2	81.60	7.7	0.1	-3.5	-14.7	-10.7	-3.9	0.0	59.1
2002 2003	Category: U		Noise Level:	61.2										
2004 2005	1	8627.0	110.0	36.50	0.8	81.60	7.7	0.2	-3.5	-14.7	-15.7	-4.2	0.0	53.9
2004 2005	2	8627.0	110.0	36.50	0.8	81.60	7.7	0.2	-3.5	-14.7	-13.2	-3.9	0.0	56.7
2004 2005	3	8627.0	110.0	36.50	0.8	81.60	7.7	0.2	-3.5	-14.7	-15.7	-3.7	0.0	54.4
2004 2005	Category: U		Noise Level:	60.0										
2003 2004	1	8627.0	110.0	36.50	0.3	81.60	7.7	0.1	-3.5	-14.7	-17.8	-4.0	0.0	51.9
2003 2004	2	8627.0	110.0	36.50	0.3	81.60	7.7	0.1	-3.5	-14.7	-19.3	-3.9	0.0	50.0
2003 2004	3	8627.0	110.0	36.50	0.3	81.60	7.7	0.1	-3.5	-14.7	-17.5	-3.8	0.0	52.4
2003 2004	4	8627.0	110.0	36.50	0.3	81.60	7.7	0.1	-3.5	-14.7	-17.0	-3.8	0.0	52.9
2003 2004	5	8627.0	110.0	36.50	0.3	81.60	7.7	0.1	-3.5	-14.7	-15.8	-3.8	0.0	54.1
2003 2004	Category: U		Noise Level:	59.5										
2005 2006	1	8627.0	110.0	36.50	0.7	81.60	7.7	0.2	-3.5	-14.7	-17.0	-3.8	0.0	53.0
2005 2006	2	8627.0	110.0	36.50	0.7	81.60	7.7	0.2	-3.5	-14.7	-19.1	-3.5	0.0	51.2
2005 2006	3	8627.0	110.0	36.50	0.7	81.60	7.7	0.2	-3.5	-14.7	-14.9	-3.3	0.0	55.6
2005 2006	4	8627.0	110.0	36.50	0.7	81.60	7.7	0.2	-3.5	-14.7	-16.8	-3.2	0.0	53.8
2005 2006	Category: U		Noise Level:	59.7										
2001 2002	1	8627.0	110.0	36.50	0.5	81.60	7.7	0.2	-3.5	-15.0	-13.5	-4.6	0.0	55.4
2001 2002	2	8627.0	110.0	36.50	0.5	81.60	7.7	0.2	-3.5	-15.0	-13.6	-4.7	0.0	55.2
2001 2002	Category: U		Noise Level:	58.3										
1005 1006	1	6117.0	70.0	21.40	0.4	80.10	3.5	0.1	-3.5	-13.2	-14.3	0.0	0.0	55.2
1005 1006	2	6117.0	70.0	21.40	0.4	80.10	3.5	0.1	-3.5	-13.2	-12.9	0.0	0.0	56.6
1005 1006	3	6117.0	70.0	21.40	0.4	80.10	3.5	0.1	-3.5	-13.2	-13.6	0.0	0.0	55.9
1005 1006	4	6117.0	70.0	21.40	0.4	80.10	3.5	0.1	-3.5	-13.2	-13.6	0.0	0.0	55.9
1005 1006	5	6117.0	70.0	21.40	0.4	80.10	3.5	0.1	-3.5	-13.2	-15.2	0.0	0.0	54.3
1005 1006	Category: N		Noise Level:	62.6										
2000 2001	1	8627.0	110.0	36.50	0.5	81.60	7.7	0.1	-3.5	-15.3	-18.6	0.0	0.0	54.5
2000 2001	2	8627.0	110.0	36.50	0.5	81.60	7.7	0.1	-3.5	-15.3	-18.4	-5.0	0.0	49.7
2000 2001	3	8627.0	110.0	36.50</										

1208 1209	1	3231.0	70.0	15.30	0.2	77.30	2.7	0.0	-3.5	-10.7	-15.2	0.0	0.0	2.5	0.0	53.1	
1208 1209	Category: N		Noise Level:		53.1												
1204 1205	1	3231.0	70.0	15.30	0.0	77.30	2.7	0.0	-3.5	-12.5	-13.5	-7.3	0.0	2.5	0.0	45.7	
1204 1205	Category: N		Noise Level:		45.7												
1202 1203	1	3231.0	70.0	15.30	1.2	77.30	2.7	0.3	-3.5	-12.8	-13.7	-7.2	0.0	2.5	0.0	45.6	
1202 1203	Category: N		Noise Level:		45.6												
1205 1206	1	3231.0	70.0	15.30	0.1	77.30	2.7	0.0	-3.5	-12.7	-13.5	0.0	0.0	2.5	0.0	52.8	
1205 1206	Category: N		Noise Level:		52.8												
1406 1407	1	3231.0	70.0	15.30	1.4	77.30	2.7	0.0	-3.5	-13.9	-12.4	-7.1	0.0	2.5	0.0	45.6	
1406 1407	Category: N		Noise Level:		45.6												
1203 1204	1	3231.0	70.0	15.30	0.0	77.30	2.7	0.0	-3.5	-12.2	-14.4	-7.3	0.0	2.5	0.0	45.1	
1203 1204	Category: N		Noise Level:		45.1												
1407 1408	1	3231.0	70.0	15.30	0.0	77.30	2.7	0.0	-3.5	-13.8	-14.4	-7.1	0.0	2.5	0.0	43.7	
1407 1408	2	3231.0	70.0	15.30	0.0	77.30	2.7	0.0	-3.5	-13.8	-19.2	-7.1	0.0	2.5	0.0	38.9	
1407 1408	Category: N		Noise Level:		44.9												
1207 1208	1	3231.0	70.0	15.30	0.1	77.30	2.7	0.0	-3.5	-11.7	-15.4	0.0	0.0	2.5	0.0	51.9	
1207 1208	Category: N		Noise Level:		51.9												
1408 1409	1	3231.0	70.0	15.30	0.0	77.30	2.7	0.0	-3.5	-13.6	-17.2	-7.1	0.0	2.5	0.0	41.1	
1408 1409	2	3231.0	70.0	15.30	0.0	77.30	2.7	0.0	-3.5	-13.6	-17.0	-7.1	0.0	2.5	0.0	41.3	
1408 1409	Category: N		Noise Level:		44.2												
1402 1403	1	3231.0	70.0	15.30	1.5	77.30	2.7	0.0	-3.5	-12.8	-16.4	0.0	0.0	2.5	0.0	49.8	
1402 1403	Category: N		Noise Level:		49.8												
1210 1211	1	3231.0	70.0	15.30	0.2	77.30	2.7	0.0	-3.5	-10.3	-19.3	-7.6	0.0	2.5	0.0	41.8	
1210 1211	Category: N		Noise Level:		41.8												
1404 1405	1	3231.0	70.0	15.30	1.4	77.30	2.7	0.0	-3.5	-13.7	-16.6	-7.3	0.0	2.5	0.0	41.4	
1404 1405	Category: N		Noise Level:		41.4												
1403 1404	1	3231.0	70.0	15.30	1.5	77.30	2.7	0.0	-3.5	-13.7	-16.7	0.0	0.0	2.5	0.0	48.6	
1403 1404	Category: N		Noise Level:		48.6												
1401 1402	1	3231.0	70.0	15.30	1.4	77.30	2.7	0.0	-3.5	-11.0	-19.8	0.0	0.0	2.5	0.0	48.2	
1401 1402	Category: N		Noise Level:		48.2	Warning: Segment angle less than 20.											
1400 1401	1	3231.0	70.0	15.30	1.4	77.30	2.7	0.0	-3.5	-8.9	-23.0	0.0	0.0	2.5	0.0	47.1	
1400 1401	Category: N		Noise Level:		47.1	Warning: Segment angle less than 20.											

Total contribution from :

Unaltered 67.4

Altered 0.0

New 69.0

OVERALL 71.2

AA

Annex C9d

Sample Calculation for projected noise level at Planning Area 4B in Siu Ho Wan from the helicopter flight path

As assumed in Section 4.4.5, worst case levels of 86 dB(A) directly beneath the flight path and 85 dB(A) at 152 m to the side of the flight path (total distance of 215m from helicopter to ground receiver position) have been adopted for S70s helicopter.

Taking the residential building at Siu Ho Wan (9 storeys) as the affected NSRs. Assuming 8m as the height of G/F and 3m for each floor,

Receiver at top floor = 8 m + 9 × 3 = 35m

Slant Distance calculated = $\sqrt{(152\text{m} - 35\text{m})^2 + 240^2\text{m}}$
= 267m

Applying the equation,

$$L_{\max} P = L_{\max} M - 20\log[(d(\text{NSR to source})/d(\text{monitoring station to source}))] + 3$$

where $L_{\max} P$ is the Predicted Maximum Noise Level in dB(A);

$L_{\max} M$ is the Predicted Maximum Noise Level monitored; and
 d is the distance in metres.

$$L_{\max} P = 85 - 20\log(267/215) + 3 \\ = 86 \text{ dB(A)}$$

Annex D

Water Quality Assessment - Supporting Information

Annex D1

Water Quality Objectives

Table D1a **Water Quality Objectives for the Western Buffer WCZ**

	Water Quality Objective	Part or parts of Zone
A.	AESTHETIC APPEARANCE	
	a) There should be no objectionable odours or discolouration of the water	Whole zone
	b) Tarry residues, floating wood, articles made of glass, plastic, rubber or of any other substances should be absent.	Whole zone
	c) Mineral oil should not be visible on the surface. Surfactants should not give rise to a lasting foam.	Whole zone
	d) There should be no recognisable sewage-derived debris.	Whole zone
	e) Floating, submerged and semi-submerged objects of a size likely to interfere with the free movement of vessels, or cause damage to vessels, should be absent.	Whole zone
	f) The water should not contain substances which settle to form objectionable deposits.	Whole zone
B.	BACTERIA	
	a) The level of Escherichia coli should not exceed 610 per 100 ml, calculated as the geometric mean of all samples collected in a calendar year.	Secondary contact Recreation Subzones Fish culture Subzones
	b) The level of Escherichia coli should not exceed 180 per 100 ml, calculated as the geometric mean of all samples collected from March to October inclusive in 1 calendar year. Samples should be taken at least 3 times in 1 calendar month at intervals of between 3 and 14 days.	Bathing Beach Subzones
	c) The level of Escherichia coli should be less than 1 per 100 ml, calculated as the geometric mean of the most recent 5 consecutive samples taken at intervals of between 7 and 21 days.	Water Gathering Ground Subzones
	d) The level of Escherichia coli should not exceed 1,000 per 100 ml, calculated as the geometric mean of the most recent 5 consecutive samples taken at intervals of between 7 and 21 days.	Other inland waters
C.	COLOUR	
	a) Human activity should not cause the colour of water to exceed 30 Hazen units.	Water Gathering Ground Subzones
	b) Human activity should not cause the colour of water to exceed 50 Hazen units.	Other inland waters
D.	DISSOLVED OXYGEN	
	a) The level of dissolved oxygen should not fall below 4 mg per litre for 90% of the sampling occasions during the whole year; values should be calculated as water column average (arithmetic mean of at least 3 measurements at 1 m below surface, mid-depth and 1 m above seabed). In addition, the concentration of dissolved oxygen should not be less than 2 mg per litre within 2 m of	Marine waters excepting Fish Culture Subzones

	Water Quality Objective	Part or parts of Zone
	the seabed for 90% of the sampling occasions during the whole year.	
	b) The level of dissolved oxygen should not be less than 5 mg per litre for 90% of the sampling occasions during the year; values should be calculated as water column average (arithmetic mean of at least 3 measurements at 1 m below surface, mid-depth and 1 m above seabed). In addition, the concentration of dissolved oxygen should not be less than 2 mg per litre within 2 m of the seabed for 90% of the sampling occasions during the whole year.	Fish Culture Subzones.
	c) The level of dissolved oxygen should not be less than 4 mg per litre.	Water Gathering Ground Subzones and other inland waters
E.	pH	
	a) The pH of the water should be within the range of 6.5 - 8.5 units. In addition, human activity should not cause the natural pH range to be extended by more than 0.2 unit.	Marine waters
	b) Human activity should not cause the pH of the water exceed the range of 6.5 - 8.5 units.	Water Gathering Ground Subzones.
	c) Human activity should not cause the pH of the water to exceed the range of 6.0 - 9.0 units.	Other inland waters.
F.	TEMPERATURE	
	Human activity should not cause the natural daily temperature range to change by more than 2.0°C.	Whole zone
G.	SALINITY	
	Human activity should not cause the natural ambient salinity level to change by more than 10%.	Whole zone
H.	SUSPENDED SOLIDS	
	a) Human activity should neither cause the natural ambient level to be raised by more than 30% nor give rise to accumulation of suspended solids which may adversely affect aquatic communities.	Marine waters
	b) Human activity should not cause the annual median of suspended solids to exceed 20 mg per litre.	Water Gathering Ground Subzones
	c) Human activity should not cause the annual median of suspended solids to exceed 25 mg per litre.	Other inland waters
I.	AMMONIA	
	The un-ionized ammoniacal nitrogen level should not be more than 0.021 mg per litre, calculated as the annual average (arithmetic mean).	Whole zone
J.	NUTRIENTS	
	a) Nutrients should not be present in quantities sufficient to cause excessive or nuisance growth of algae or other aquatic plants.	Marine waters

	Water Quality Objective	Part or parts of Zone
	b) Without limiting the generality of objective (a) above, the level of inorganic nitrogen should not exceed 0.4 mg per litre, expressed as annual water column average (arithmetic mean of at least 3 measurements at 1 m below surface, mid-depth and 1 m above seabed).	Marine waters
K.	5-DAY BIOCHEMICAL OXYGEN DEMAND	
	a) The 5-day biochemical oxygen demand should not exceed 3 mg per litre.	Water Gathering Ground Subzones
	b) The 5-day biochemical oxygen demand should not exceed 5 mg per litre.	Other inland waters
L.	CHEMICAL OXYGEN DEMAND	
	a) The chemical oxygen demand should not exceed 15 mg per litre.	Water Gathering Ground Subzones
	b) The chemical oxygen demand should not exceed 30 mg per litre.	Other inland waters
M.	TOXIC SUBSTANCES	
	a) Toxic substances in the water should not attain such levels as to produce significant toxic, carcinogenic, mutagenic or teratogenic effects in humans, fish or any other aquatic organisms, with due regard to biologically cumulative effects in food chains and to interactions of toxic substances with each other.	Whole zone
	b) Human activity should not cause a risk to any beneficial use of the aquatic environment.	Whole zone
N.	TURBIDITY	
	Waste discharges should not reduce light transmission substantially from the normal level.	Bathing Beach Subzones

Table D1b Water Quality Objectives for the Southern WCZ

	Water Quality Objective	Part or parts of Zone
A.	AESTHETIC APPEARANCE	
	a) There should be no objectionable odours or discolouration of the water	Whole zone
	b) Tarry residues, floating wood, articles made of glass, plastic, rubber or of any other substances should be absent.	Whole zone
	c) Mineral oil should not be visible on the surface. Surfactants should not give rise to a lasting foam.	Whole zone
	d) There should be no recognisable sewage-derived debris.	Whole zone
	e) Floating, submerged and semi-submerged objects of a size likely to interfere with the free movement of vessels, or cause damage to vessels, should be absent.	Whole zone
	f) The water should not contain substances which settle to form objectionable deposits.	Whole zone
B.	BACTERIA	
	a) The level of Escherichia coli should be less than 1 per 100 ml, calculated as the geometric mean of the most recent 5 consecutive samples taken at intervals of between 7 and 21 days.	Water Gathering Ground Subzones
	b) The level of Escherichia coli should not exceed 1,000 per 100 ml, calculated as the geometric mean of the most recent 5 consecutive samples taken at intervals of between 7 and 21 days.	Other inland waters
	c) The level of Escherichia coli should not exceed 610 per 100 ml.	Secondary contact Recreation Subzones Fish culture Subzones
	d) The level of Escherichia coli should not exceed 180 per 100 ml.	Bathing Beach Subzones
C.	COLOUR	
	Human activity should not cause the colour of water to exceed 30 Hazen units.	Whole zone
D.	DISSOLVED OXYGEN	
	a) The level of dissolved oxygen should not fall below 4 mg per litre for 90% of the sampling occasions during the whole year; values should be calculated as water column average (arithmetic mean of at least 3 measurements at 1 m below surface, mid-depth and 1 m above seabed). In addition, the concentration of dissolved oxygen should not be less than 2 mg per litre within 2 m of the seabed for 90% of the sampling occasions during the whole year.	Marine waters excepting Fish Culture Subzones
	b) The level of dissolved oxygen should not be less than 5 mg per litre for 90% of the sampling occasions during the year; values should be calculated as water column average (arithmetic	Fish Culture Subzones

	Water Quality Objective	Part or parts of Zone
	mean of at least 3 measurements at 1 m below surface, mid-depth and 1 m above seabed). In addition, the concentration of dissolved oxygen should not be less than 2 mg per litre within 2 m of the seabed for 90% of the sampling occasions during the whole year.	
	c) The level of dissolved oxygen should not be less than 4 mg per litre.	Inland waters
E.	pH	
	a) The pH of the water should be within the range of 6.5 - 8.5 units. In addition, human activity should not cause the natural pH range to be extended by more than 0.2 unit.	Marine waters
	b) Human activity should not cause the pH of the water to exceed the range of 6.5 - 8.5 units.	Water Gathering Ground subzones
	c) Human activity should not cause the pH of the water to exceed the range of 6.0 - 9.0 units.	Other Inland Waters
	d) The pH of the water should be within the range of 6.0 - 9.0 units for 95% of samples collected during the whole year. In addition, waste discharges shall not cause the natural pH to be extended by more than 0.5 unit.	Bathing Beach Subzones
F.	TEMPERATURE	
	Human activity should not cause the natural daily temperature range to change by more than 2.0 °C.	Whole zone
G.	SALINITY	
	Human activity should not cause the natural ambient salinity level to change by more than 10%.	Whole zone
H.	SUSPENDED SOLIDS	
	a) Human activity should neither cause the natural ambient level to be raised by more than 30% nor give rise to accumulation of suspended solids which may adversely affect aquatic communities.	Marine waters
	b) Human activity should not cause the annual median of suspended solids to exceed 20 mg per litre.	Water gathering Ground Subzones
	c) Human activity should not cause the annual median of suspended solids to exceed 25 mg per litre.	Other Inland Waters
I.	AMMONIA	
	The un-ionized ammoniacal nitrogen level should not be more than 0.021 mg per litre, calculated as the annual average (arithmetic mean).	Whole zone
J.	NUTRIENTS	
	a) Nutrients should not be present in quantities sufficient to cause excessive or nuisance growth of algae or other aquatic plants.	Whole zone
	b) Without limiting the generality of objective (a)	Marine waters

	Water Quality Objective	Part or parts of Zone
	above, the level of inorganic nitrogen should not exceed 0.1 mg per litre, expressed as annual water column average (arithmetic mean of at least 3 measurements at 1 m below surface, mid-depth and 1 m above seabed).	
K.	5-DAY BIOCHEMICAL OXYGEN DEMAND	
	a) The 5-day biochemical oxygen demand should not exceed 3 mg per litre.	Water gathering Ground Subzones
	b) The 5-day biochemical oxygen demand should not exceed 5 mg per litre.	Other inland waters
L.	CHEMICAL OXYGEN DEMAND	
	a) The chemical oxygen demand should not exceed 30 mg per litre.	Water gathering Ground Subzones
	b) The chemical oxygen demand should not exceed 30 mg per litre.	Other inland waters
M.	TOXIC SUBSTANCES	
	a) Toxic substances in the water should not attain such levels as to produce significant toxic, carcinogenic, mutagenic or teratogenic effects in humans, fish or any other aquatic organisms, with due regard to biologically cumulative effects in food chains and to interactions of toxic substances with each other.	Whole zone
	b) Human activity should not cause a risk to any beneficial use of the aquatic environment.	Whole zone

Table D1c **Water Quality Objectives for the North Western WCZ**

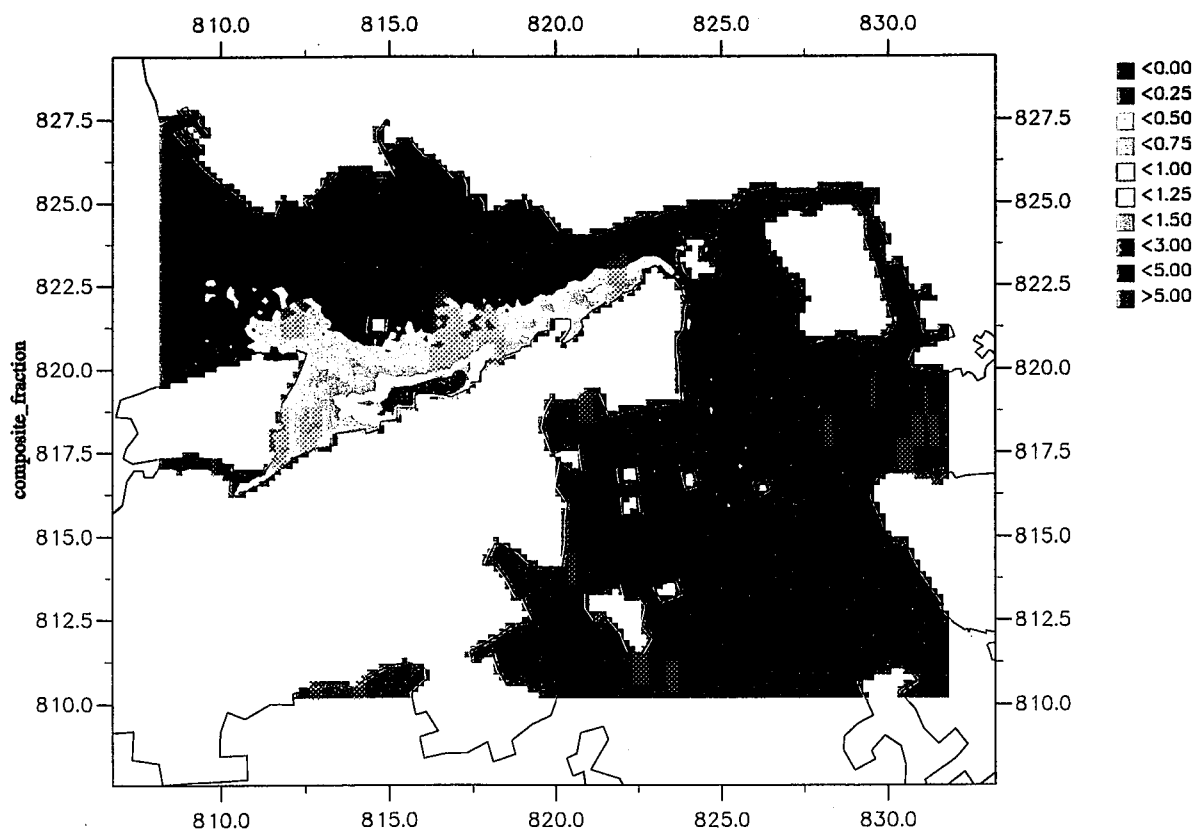
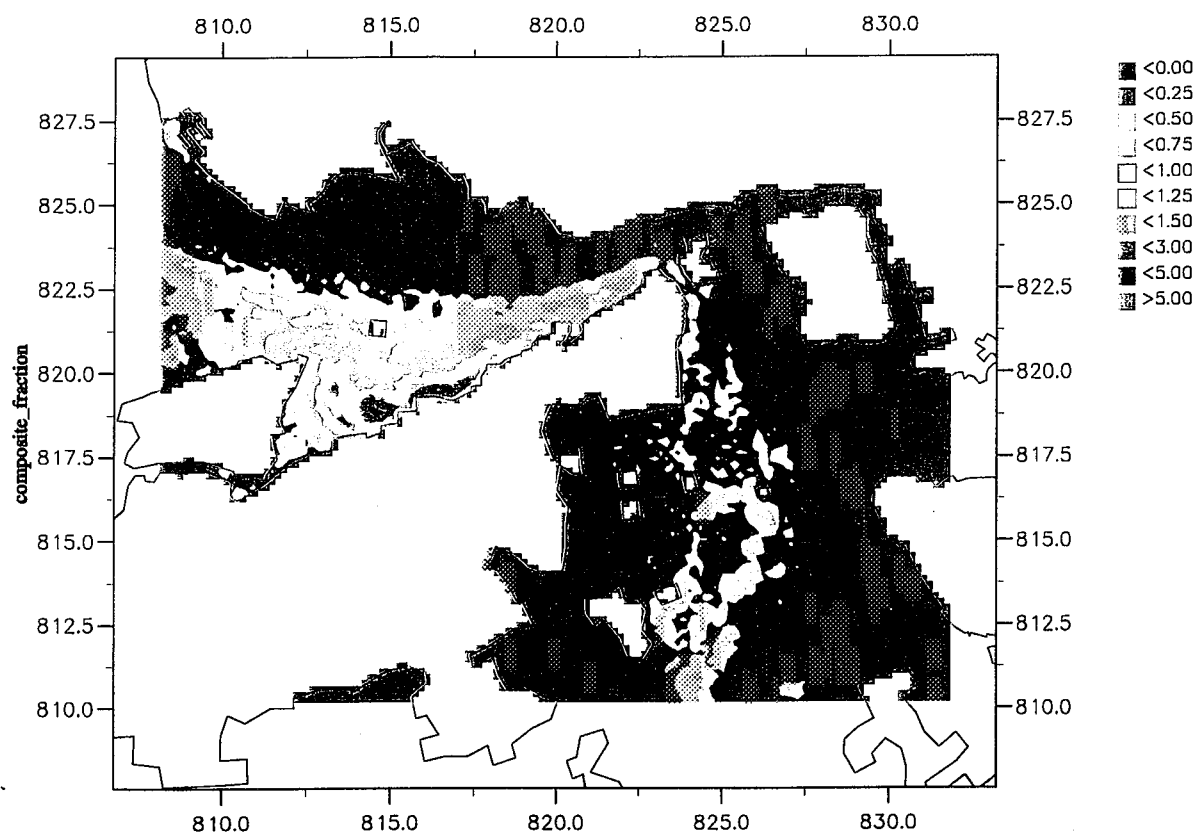
	Water Quality Objective	Part or Parts of Zone
A.	AESTHETIC APPEARANCE	
	a) Waste discharges shall cause no objectionable odours or discolouration of the water.	Whole zone
	b) Tarry residues, floating wood, articles made of glass, plastic, rubber or of any other substances should be absent.	Whole zone
	c) Mineral oil should not be visible on the surface. Surfactants should not give rise to a lasting foam.	Whole zone
	d) There should be no recognisable sewage-derived debris.	Whole zone
	e) Floating, submerged and semi-submerged objects of a size likely to interfere with the free movement of vessels, or cause damage to vessels, should be absent.	Whole zone
	f) Waste discharges shall not cause the water to contain substances which settle to form objectionable deposits.	Whole zone
B.	BACTERIA	
	a) The level of <i>Escherichia coli</i> should not exceed 610 per 100 ml, calculated as the geometric mean of all samples collected in a calendar year.	Secondary contact Recreation Subzones
	b) The level of <i>Escherichia coli</i> should be less than 1 per 100 mL, calculated as the running median of the most recent 5 consecutive samples taken at intervals of between 7 and 21 days.	Tuen Mun (A) and Tuen Mun (B) Subzones and Water Gathering Ground Subzones
	c) The level of <i>Escherichia coli</i> should be less than 1000 per 100 ml, calculated as the geometric mean of the most recent 5 consecutive samples taken at intervals of between 7 and 21 days.	Tuen Mun (C) Subzone and other inland waters
	d) The level of <i>Escherichia coli</i> should not exceed 180 per 100 ml, calculated as the geometric mean of all samples collected from March to October inclusive. Samples should be taken at least 3 times in one calendar month at intervals of between 3 and 14 days.	Bathing Beach Subzones
C.	COLOUR	
	a) Waste discharges shall not cause the colour of water to exceed 30 Hazen units.	Tuen Mun (A) and Tuen Mun (B) Subzones and Water Gathering Ground Subzones
	b) Waste discharges shall not cause the colour of water to exceed 50 Hazen units.	Tuen Mun (C) Subzone and other inland waters
D.	DISSOLVED OXYGEN	
	a) Waste discharges shall not cause the level of dissolved oxygen to fall below 4 mg per litre for 90% of the sampling occasions during the whole year; values should be calculated as water column average (arithmetic mean of at least 3 measurements at 1 m below surface, mid-depth and 1 m above seabed). In addition, the concentration of dissolved oxygen should not be less than 2 mg per litre within 2 m of the seabed for 90% of the sampling occasions during	Marine waters

	Water Quality Objective	Part or Parts of Zone
	the whole year.	
	b) Waste discharges shall not cause the level of dissolved oxygen to be less than 4 mg per litre.	Tuen Mun (A), Tuen Mun (B) and Tuen Mun (C) Subzones, Water gathering Ground Subzones and other inland waters
E.	pH	
	a) The pH of the water should be within the range of 6.5 - 8.5 units. In addition, human activity should not cause the natural pH range to be extended by more than 0.2 unit.	Marine waters excepting Bathing Beach Subzones
	b) Waste discharges shall not cause the pH of the water to exceed the range of 6.5-8.5 units.	Tuen Mun (A), Tuen Mun (B) and Tuen Mun (C) Subzones and Water Gathering Ground Subzones
	c) The pH of the water should be within the range of 6.0-9.0 units.	Other inland waters
	d) The pH of the water should be within the range of 6.0-9.0 units for 95% of samples collected during the whole year. In addition, waste discharges shall not cause the natural pH range to be extended by more than 0.5 units.	Bathing Beach Subzones
F.	TEMPERATURE	
	Waste discharges shall not cause the natural daily temperature range to change by more than 2.0°C.	Whole zone
G.	SALINITY	
	Waste discharges shall not cause the natural ambient salinity level to change by more than 10%.	Whole zone
H.	SUSPENDED SOLIDS	
	a) Waste discharges shall neither cause the natural ambient level to be raised by more than 30% nor give rise to accumulation of suspended solids which may adversely affect aquatic communities.	Marine waters
	b) Waste discharges shall not cause the annual median of suspended solids to exceed 20 mg per litre.	Tuen Mun (A), Tuen Mun (B) and Tuen Mun (C) Subzones and Water Gathering Ground Subzones
	c) Waste discharges shall not cause the annual median of suspended solids to exceed 25 mg per litre.	Other inland waters
I.	AMMONIA	
	The un-ionized ammoniacal nitrogen level should not be more than 0.021 mg per litre, calculated as the annual average (arithmetic mean).	Whole zone
J.	NUTRIENTS	
	a) Nutrients shall not be present in quantities sufficient to cause excessive or nuisance growth of algae or other aquatic plants.	Marine waters
	b) Without limiting the generality of objective (a) above,	Castle Peak Bay Subzone

	Water Quality Objective	Part or Parts of Zone
	the level of inorganic nitrogen should not exceed 0.3 mg per litre, expressed as annual water column average (arithmetic mean of at least 3 measurements at 1 m below surface, mid-depth and 1 m above seabed).	
	c) Without limiting the generality of objective (a) above, the level of inorganic nitrogen should not exceed 0.5 mg per litre, expressed as annual water column average (arithmetic mean of at least 3 measurements at 1 m below surface, mid-depth and 1 m above seabed)	Marine waters excepting Castle Peak Bay Subzone
K.	5-DAY BIOCHEMICAL OXYGEN DEMAND	
	a) Waste discharges shall not cause the 5-day biochemical oxygen demand to exceed 3 mg per litre.	Tuen Mun (A), Tuen Mun (B) and Tuen Mun (C) Subzones and Water Gathering Ground Subzones
	b) Waste discharges shall not cause the 5-day biochemical oxygen demand to exceed 5 mg per litre.	Other inland waters
L.	CHEMICAL OXYGEN DEMAND	
	a) Waste discharges shall not cause the chemical oxygen demand to exceed 15 mg per litre	Tuen Mun (A), Tuen Mun (B) and Tuen Mun (C) Subzones and Water Gathering Ground Subzones
	b) Waste discharges shall not cause the chemical oxygen demand to exceed 30 mg per litre.	Other inland waters
M.	TOXINS	
	Waste discharges shall not cause the toxins in water to attain such levels as to produce significant toxic, carcinogenic, mutagenic or teratogenic effects in humans, fish or any other aquatic organisms, with due regard to biologically cumulative effects in food chains and to toxicant interactions with each other.	Whole zone
	Waste discharges shall not cause a risk to any beneficial use of the aquatic environment.	Whole zone
N.	PHENOL	
	Phenols shall not present in such quantities as to produce a specific odour, or in concentration greater than 0.05 mg per litre as C_6H_5OH .	Bathing Beach Subzones
O.	TURBIDITY	
	Waste discharges shall not reduce light transmission substantially from the normal level.	Bathing Beach Subzones

Annex D2

Sediment Plume Modelling Results



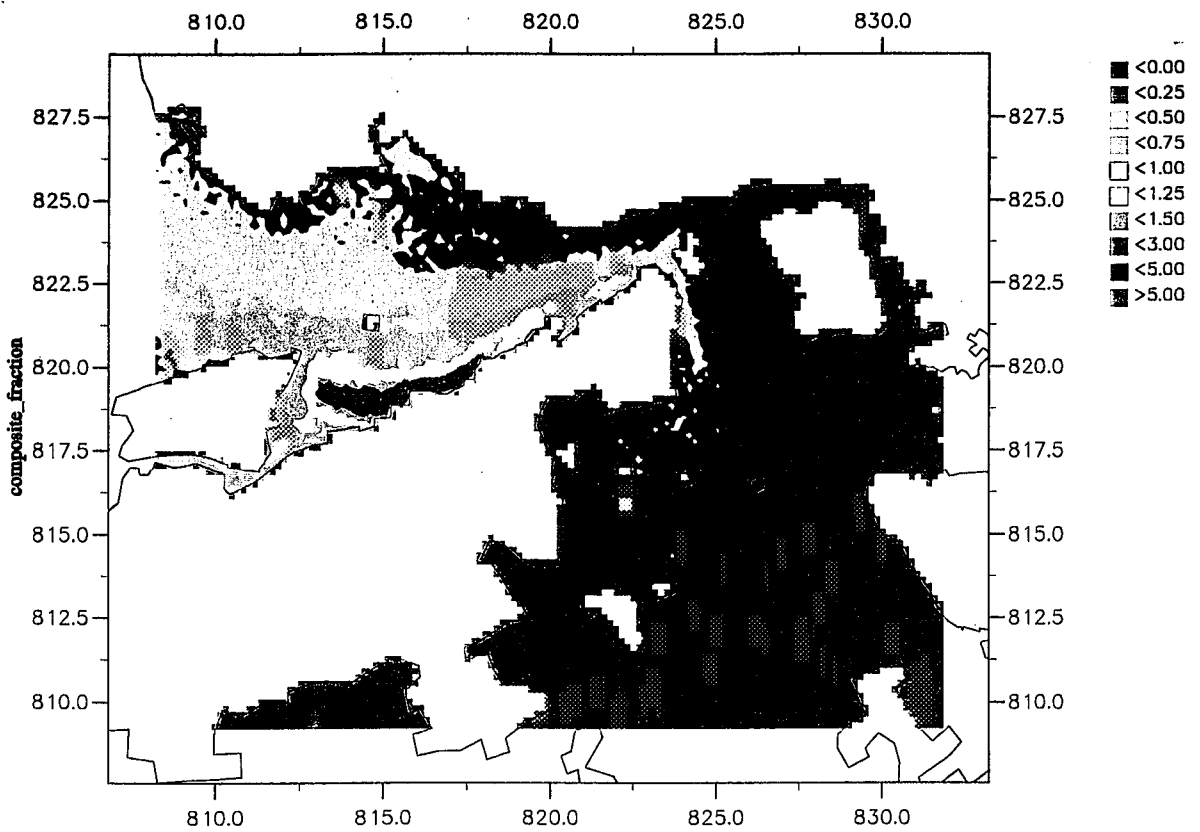
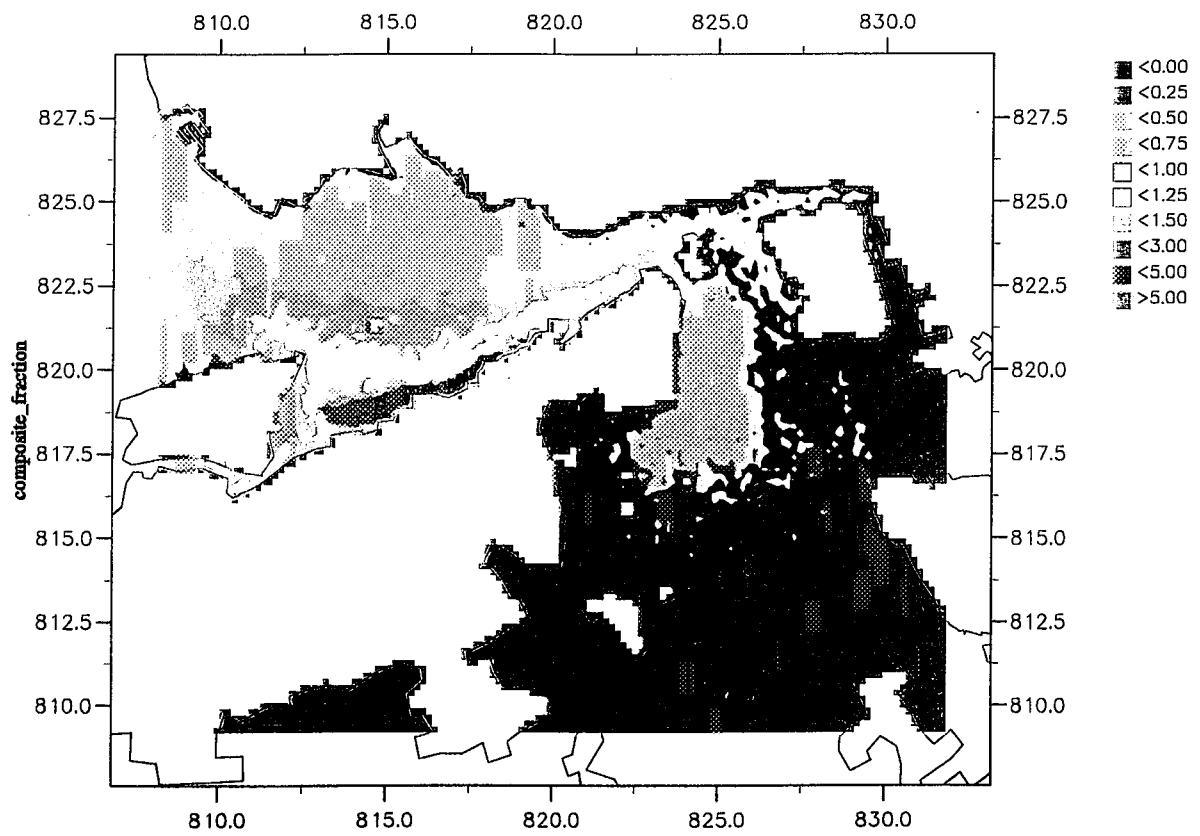
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NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY
Maximum Suspended Sediment Concentrations (mg L⁻¹)
Scenario 1 - Wet Season
Upper - Spring Tide Lower - Neap Tide



FIG. D2a



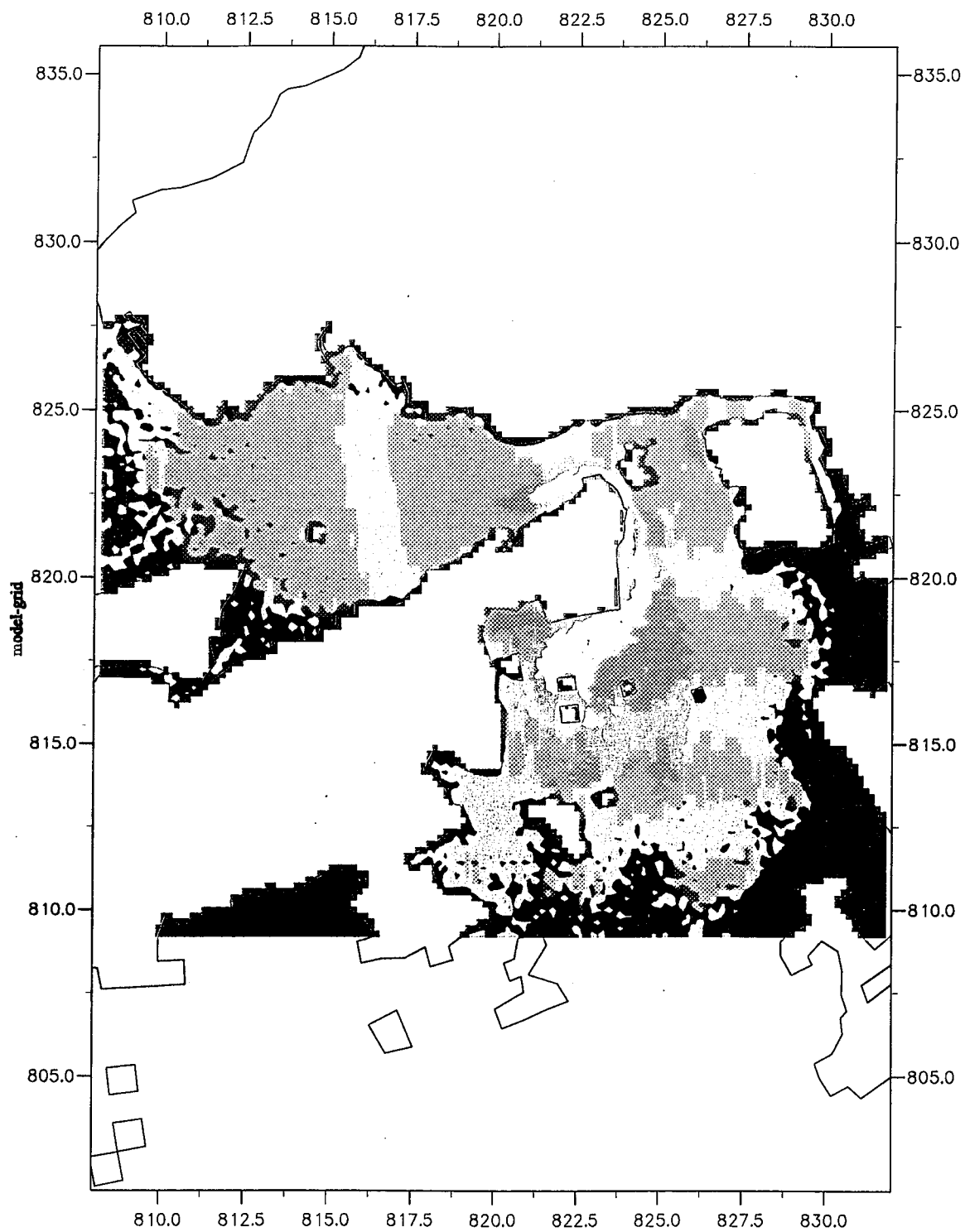
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NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY
Maximum Suspended Sediment Concentrations (mg L⁻¹)
Scenario 1 - Dry Season
Upper - Spring Tide Lower - Neap Tide



FIG. D2b



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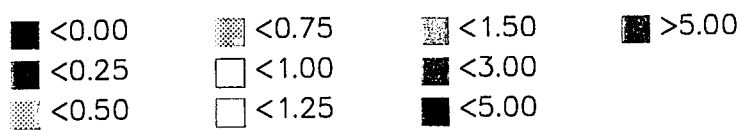
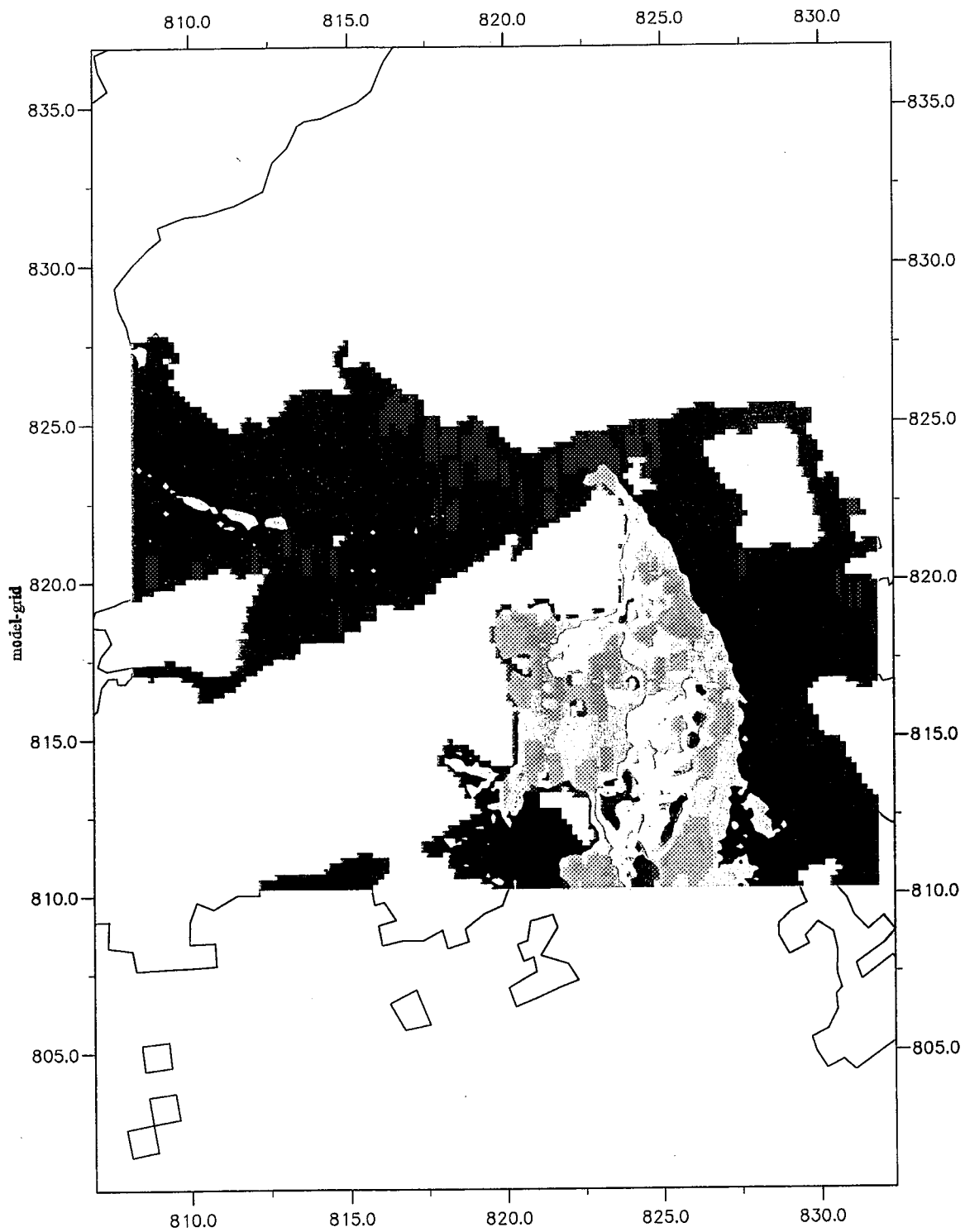
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Maximum Suspended Sediment Concentrations (mg L^{-1})
Scenario 2 - Dry Season Spring Tide



FIG. D2d



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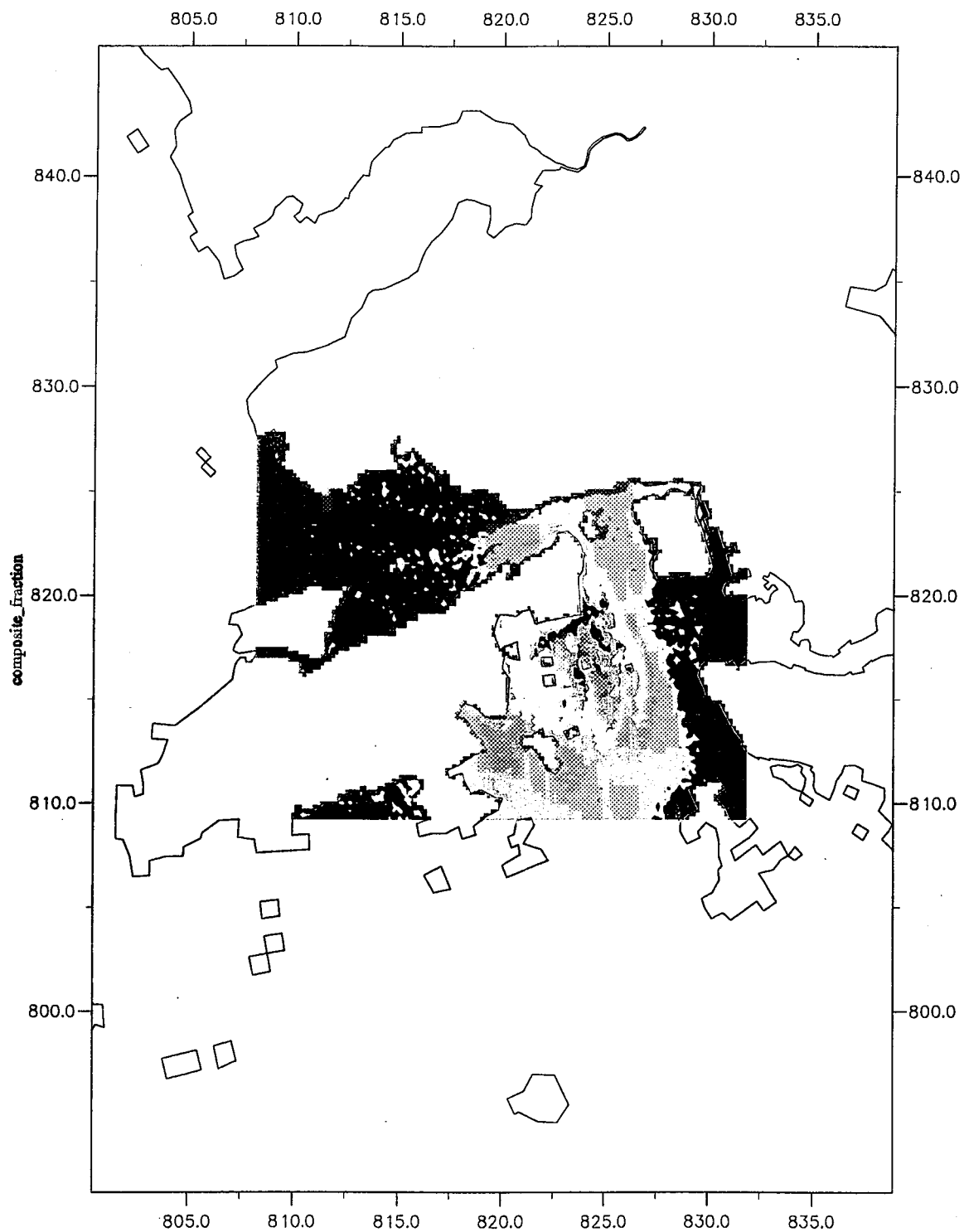
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NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY

Maximum Suspended Sediment Concentrations (mg L^{-1})
Scenario 3 - Wet Season Spring Tide



FIG. D2e



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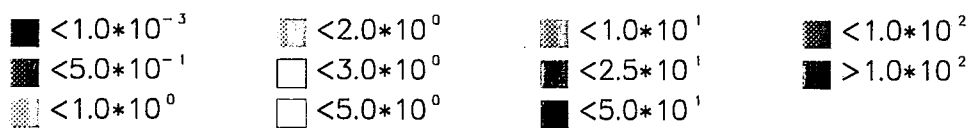
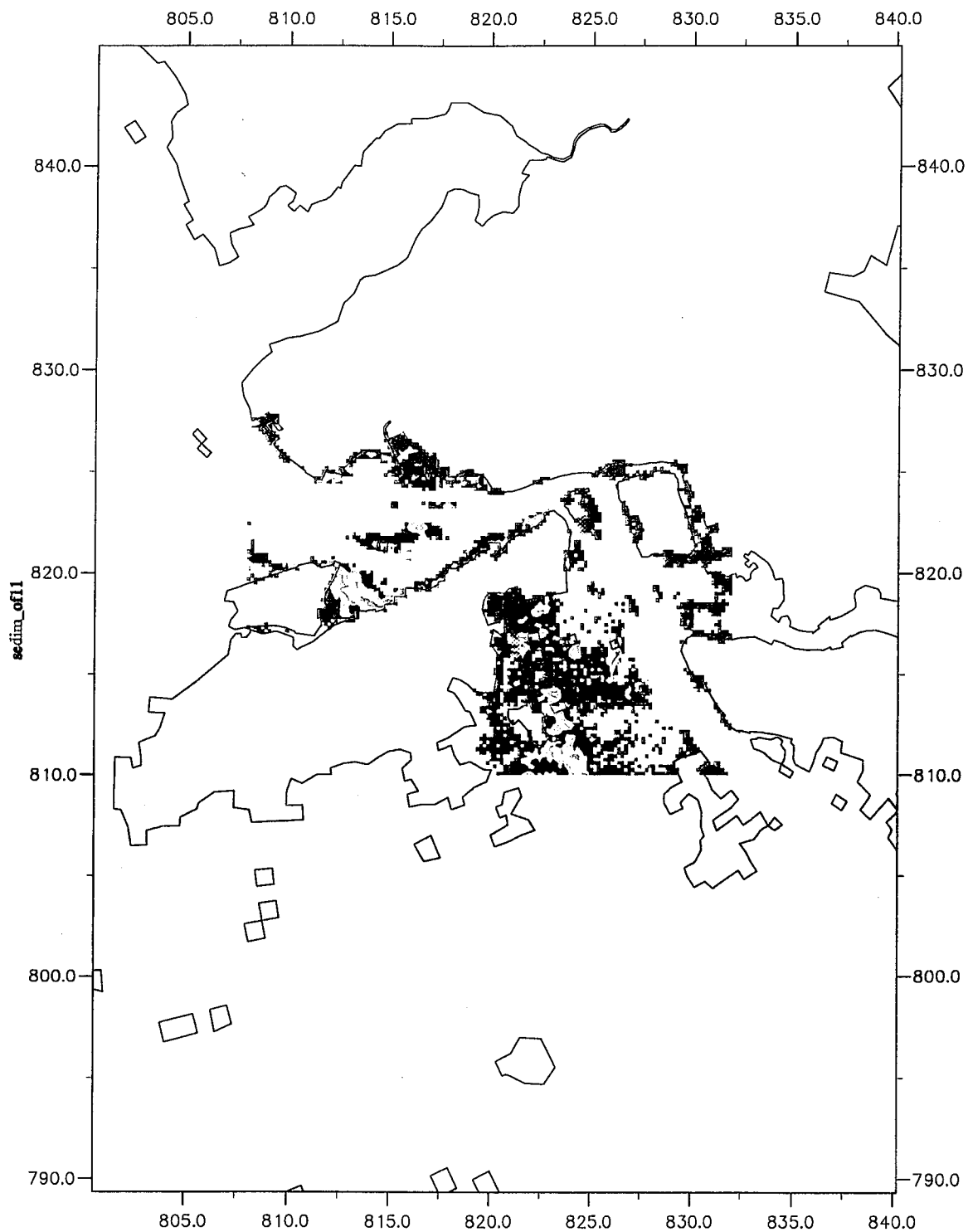
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NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY

Maximum Suspended Sediment Concentrations (mg L^{-1})
Scenario 3 - Dry Season Spring Tide



FIG. D2f



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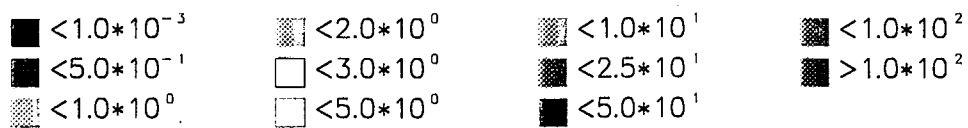
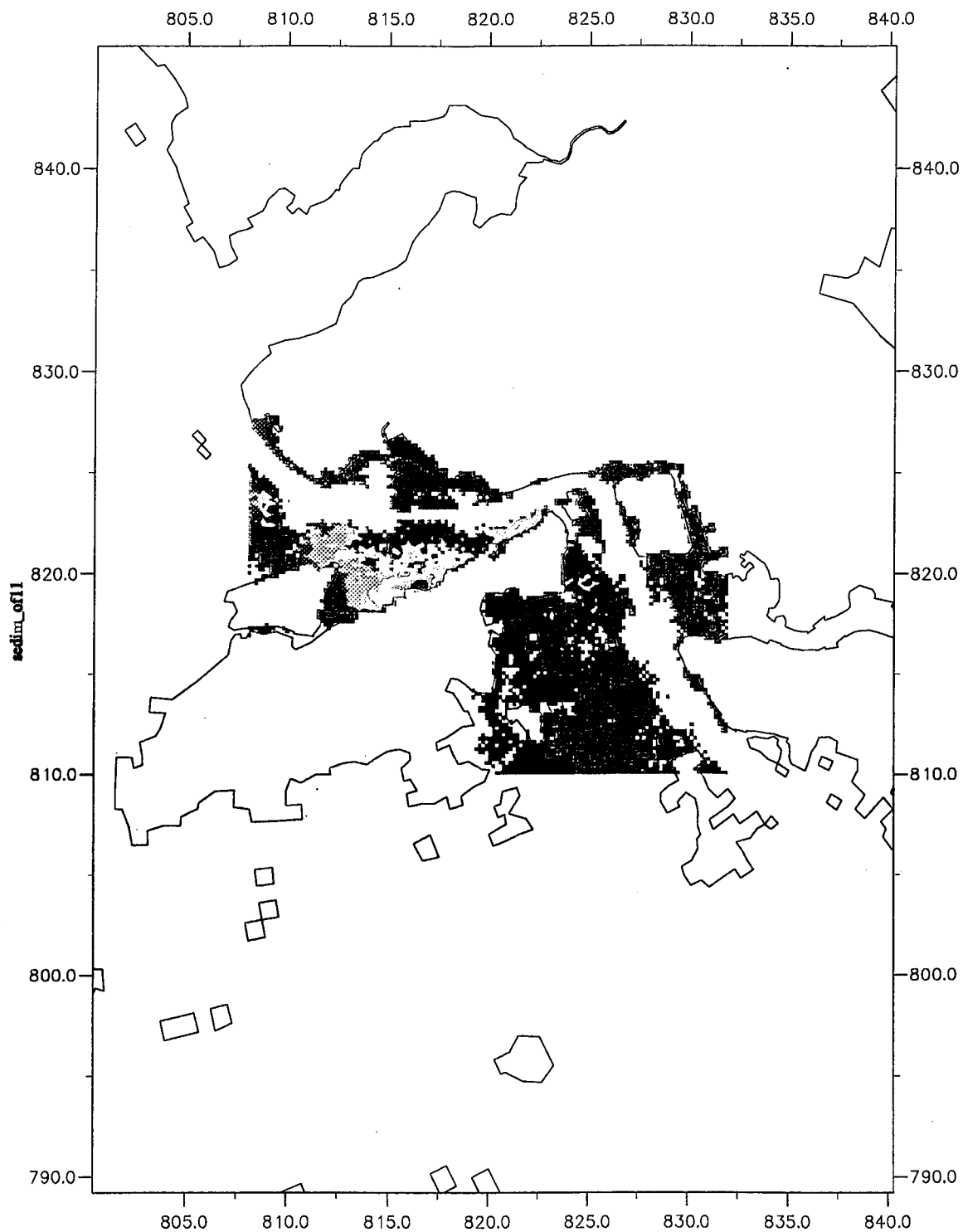
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NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY

Net Sediment Deposition ($\text{g m}^{-2} \text{ day}^{-1}$)
Scenario 1 - Wet Season Spring Tide



FIG. D2g



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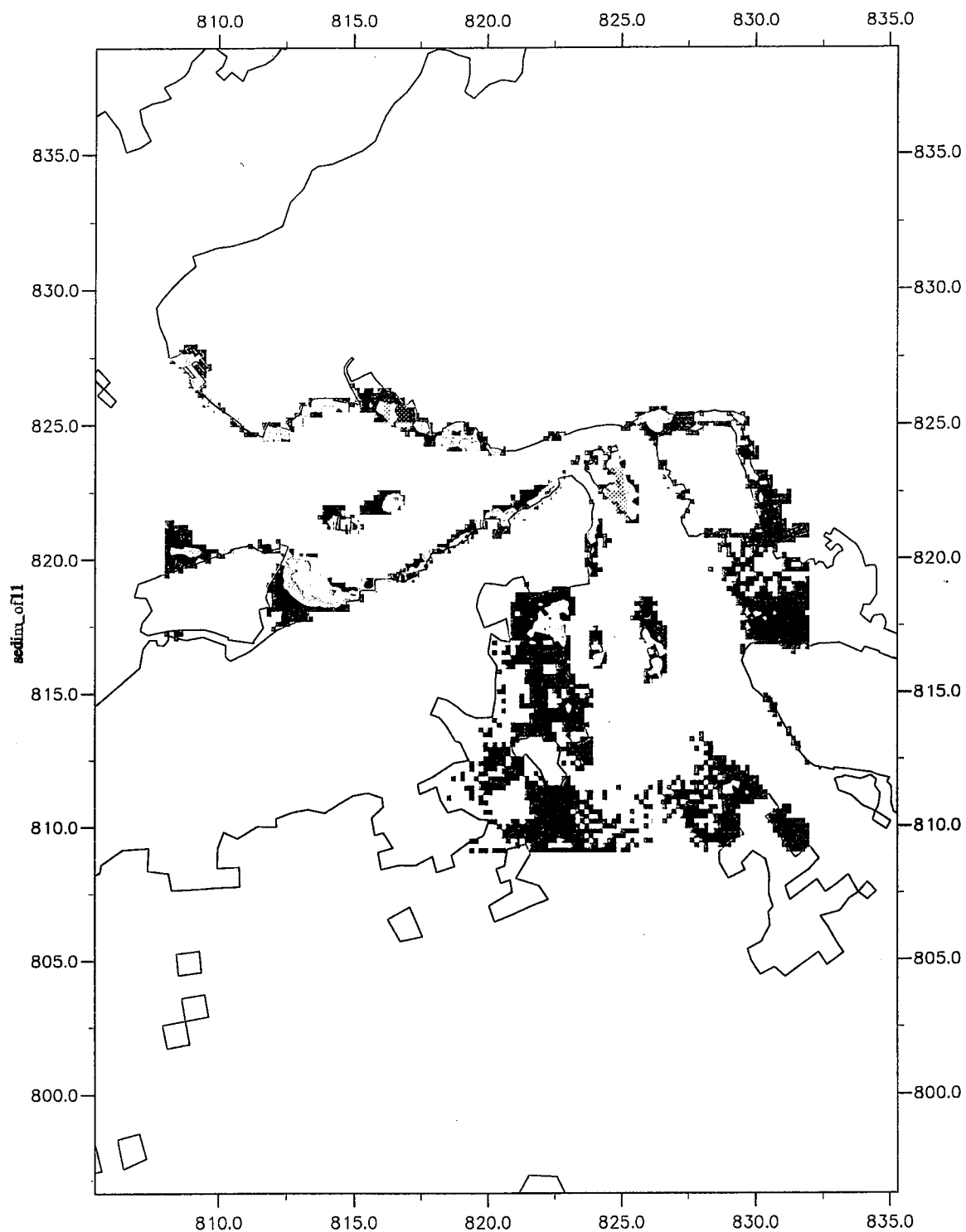
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NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY

Net Sediment Deposition (g m⁻² day⁻¹)
Scenario 1 - Wet Season Neap Tide



FIG. D2h



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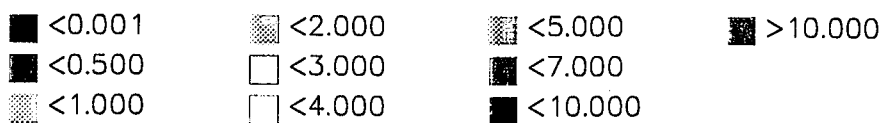
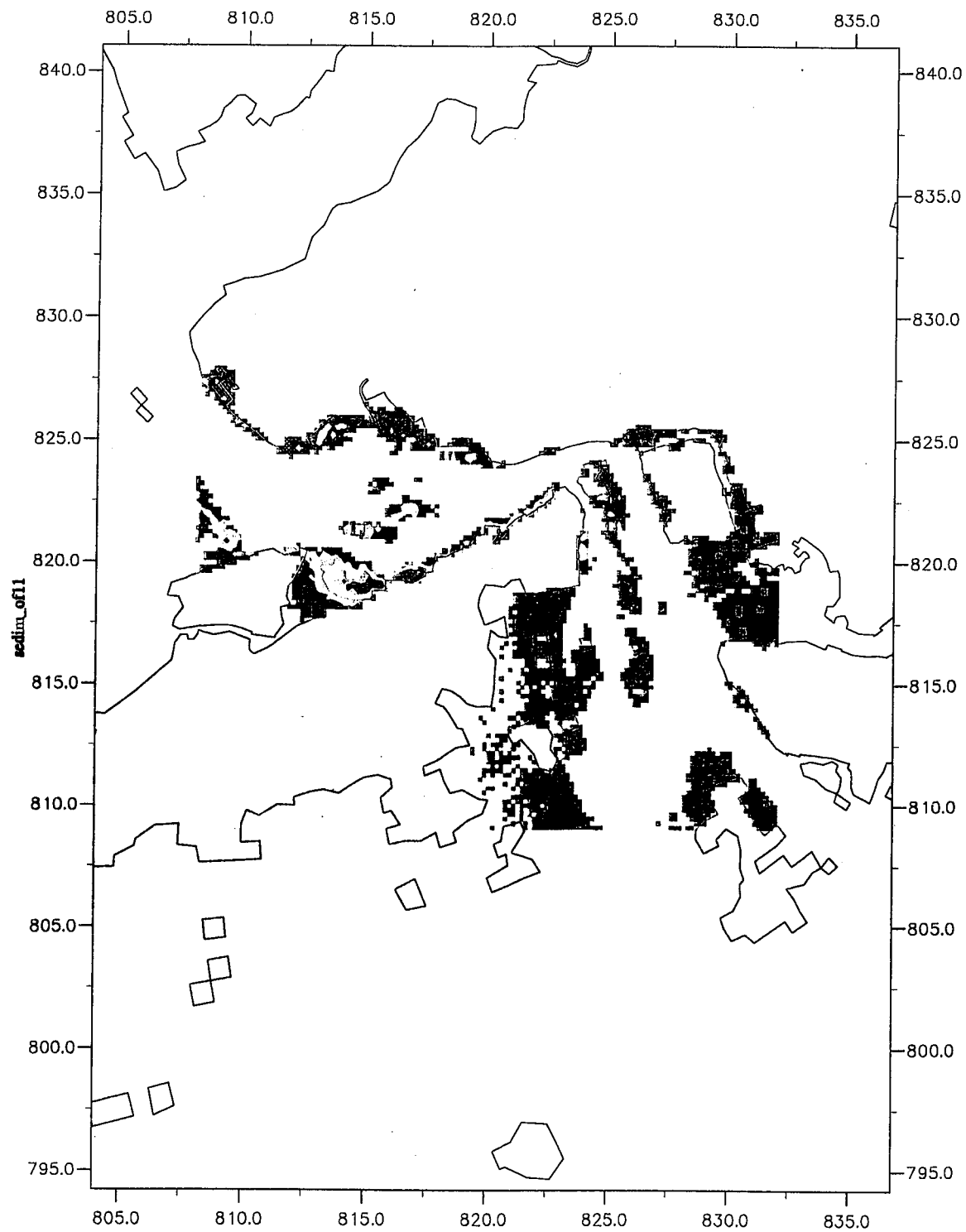
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NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY

Net Sediment Deposition ($\text{g m}^{-2} \text{ day}^{-1}$)
Scenario 1 - Dry Season Spring Tide



FIG. D2i



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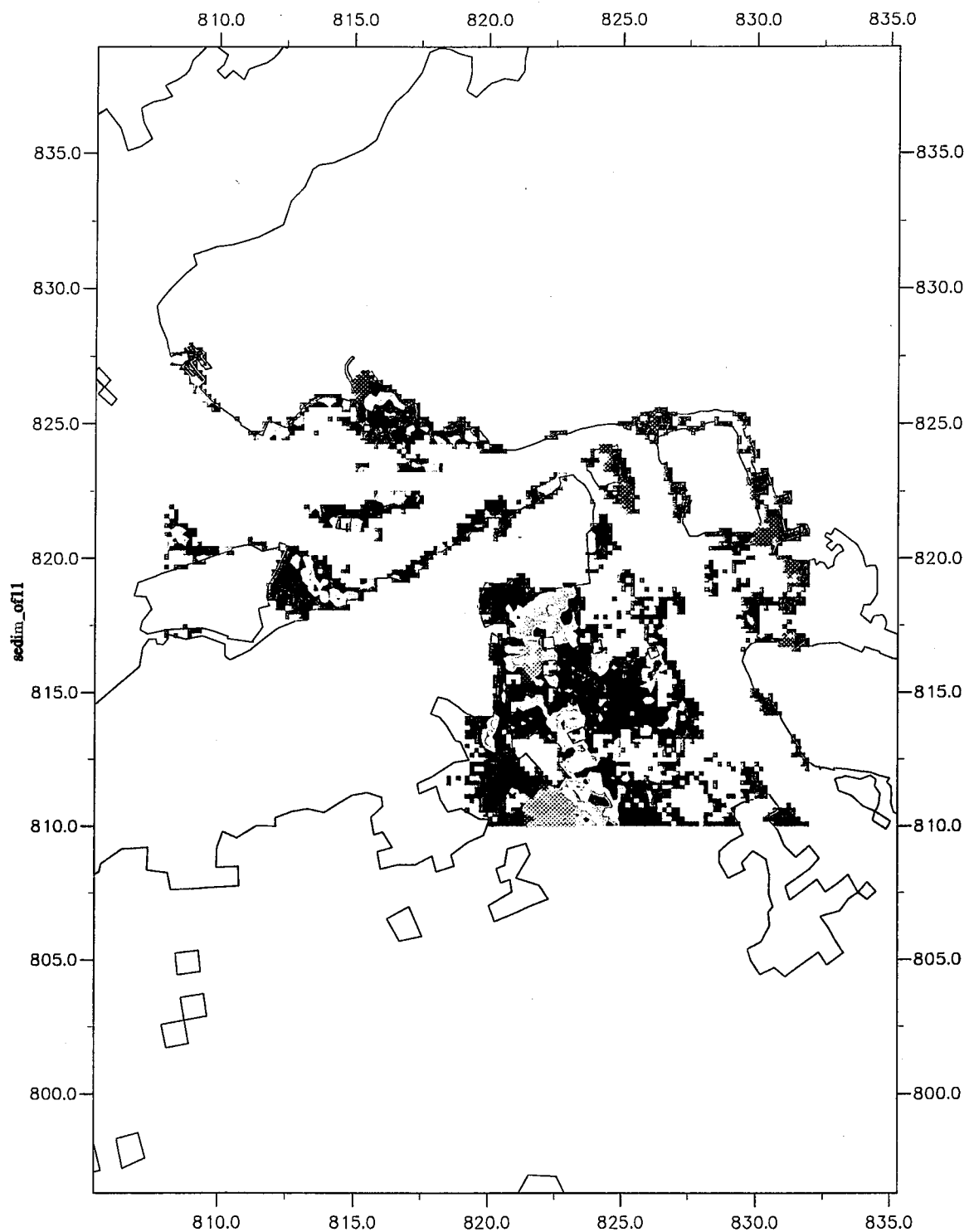
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NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY

Net Sediment Deposition ($\text{g m}^{-2} \text{ day}^{-1}$)
Scenario 1 - Dry Season Neap Tide



FIG. D2j



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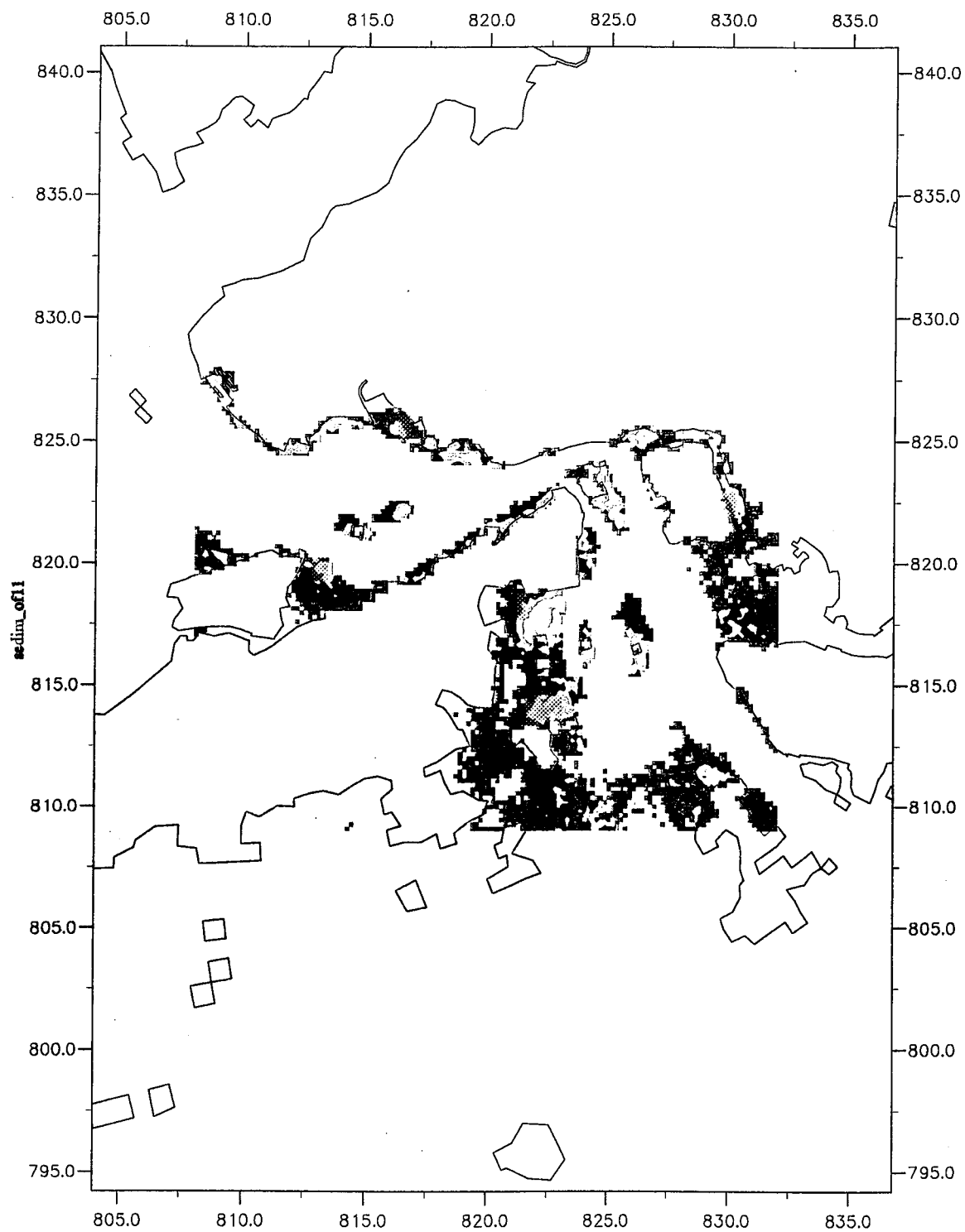
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NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY

Net Sediment Deposition ($\text{g m}^{-2} \text{ day}^{-1}$)
Scenario 2 - Wet Season Spring Tide



FIG. D2k



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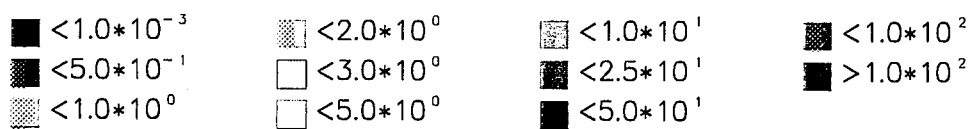
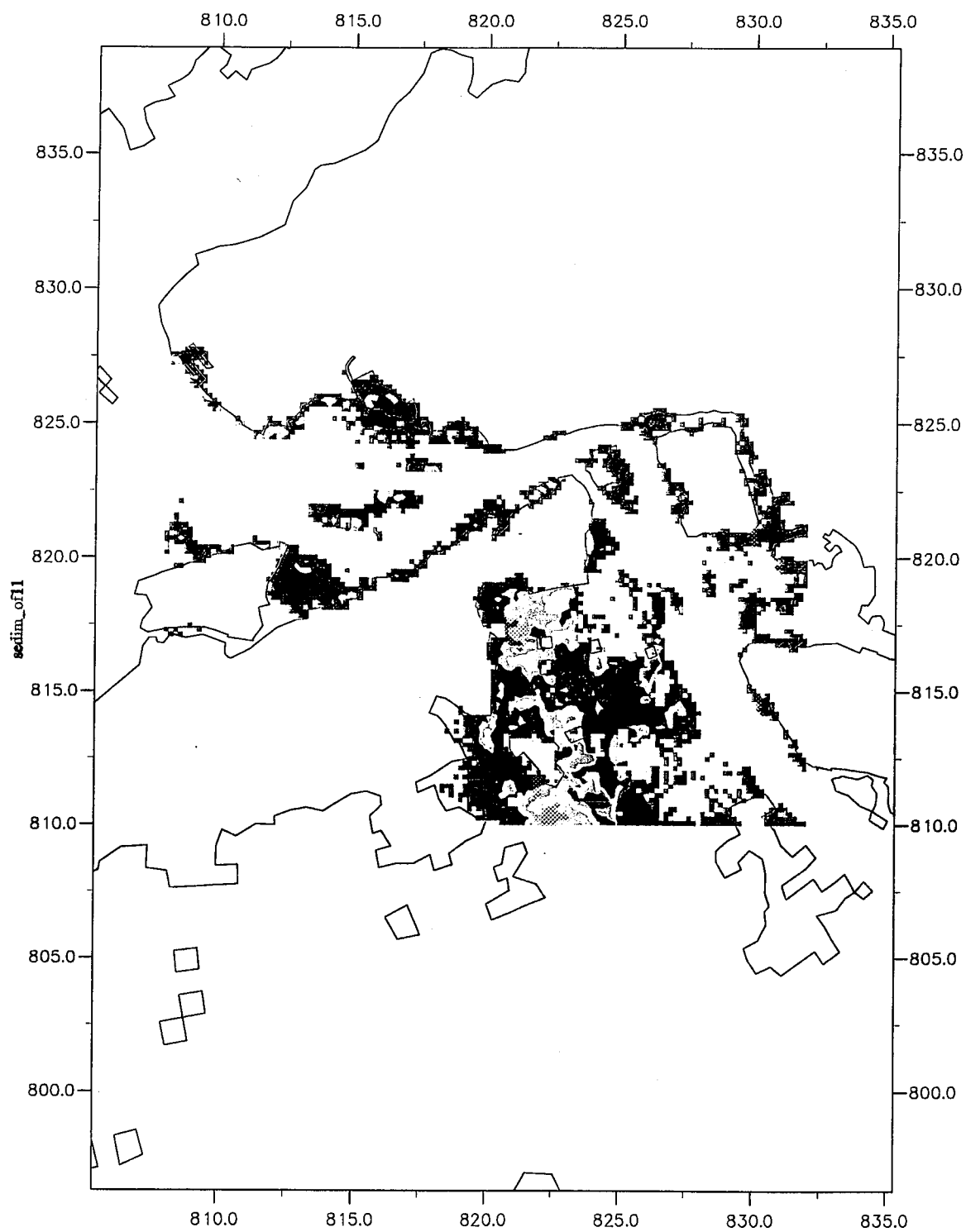
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NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY

Net Sediment Deposition ($\text{g m}^{-2} \text{ day}^{-1}$)
Scenario 2 - Dry Season Spring Tide



FIG. D2I



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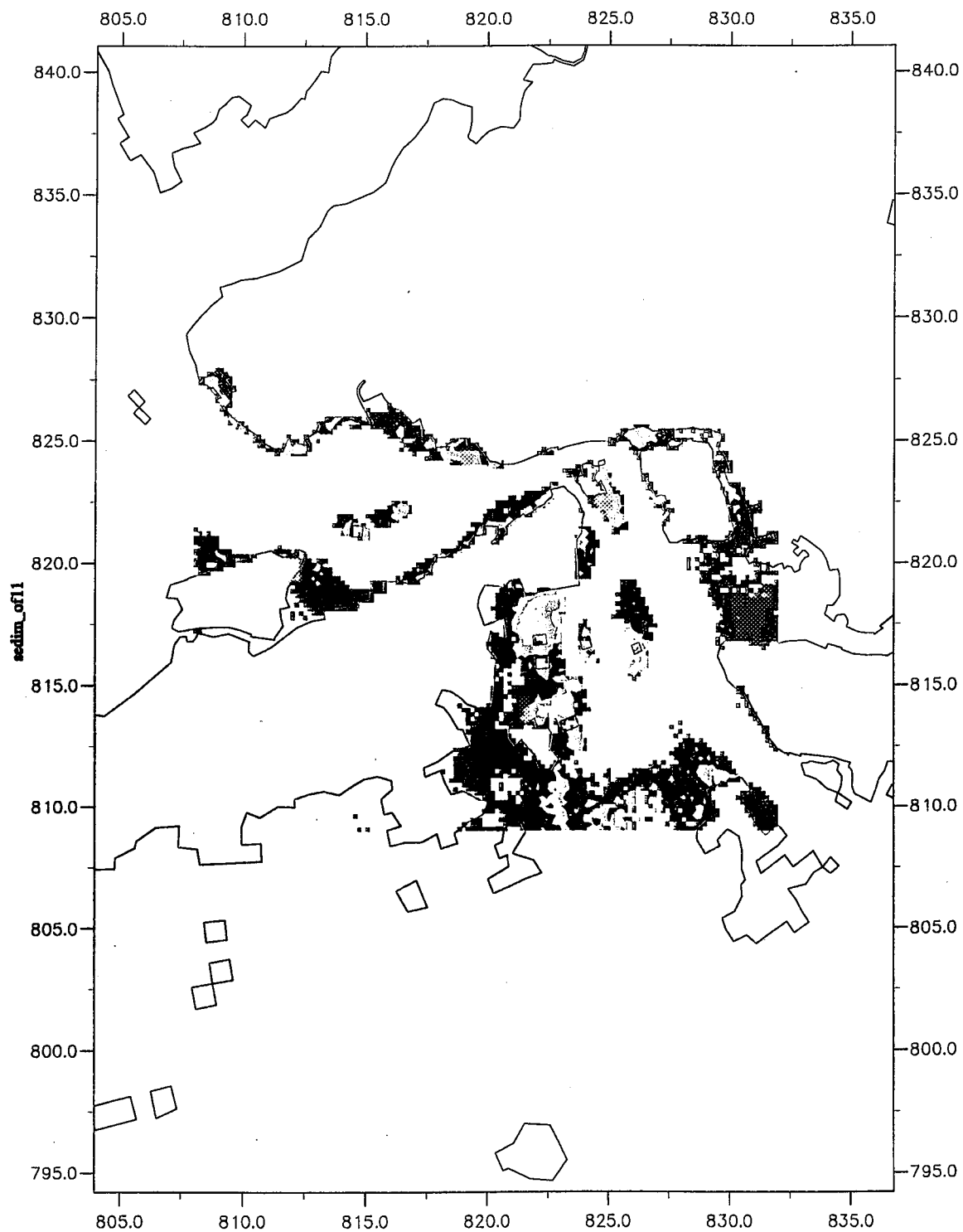
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NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY

Net Sediment Deposition ($\text{g m}^{-2} \text{ day}^{-1}$)
Scenario 3 - Wet Season Spring Tide



FIG. D2m



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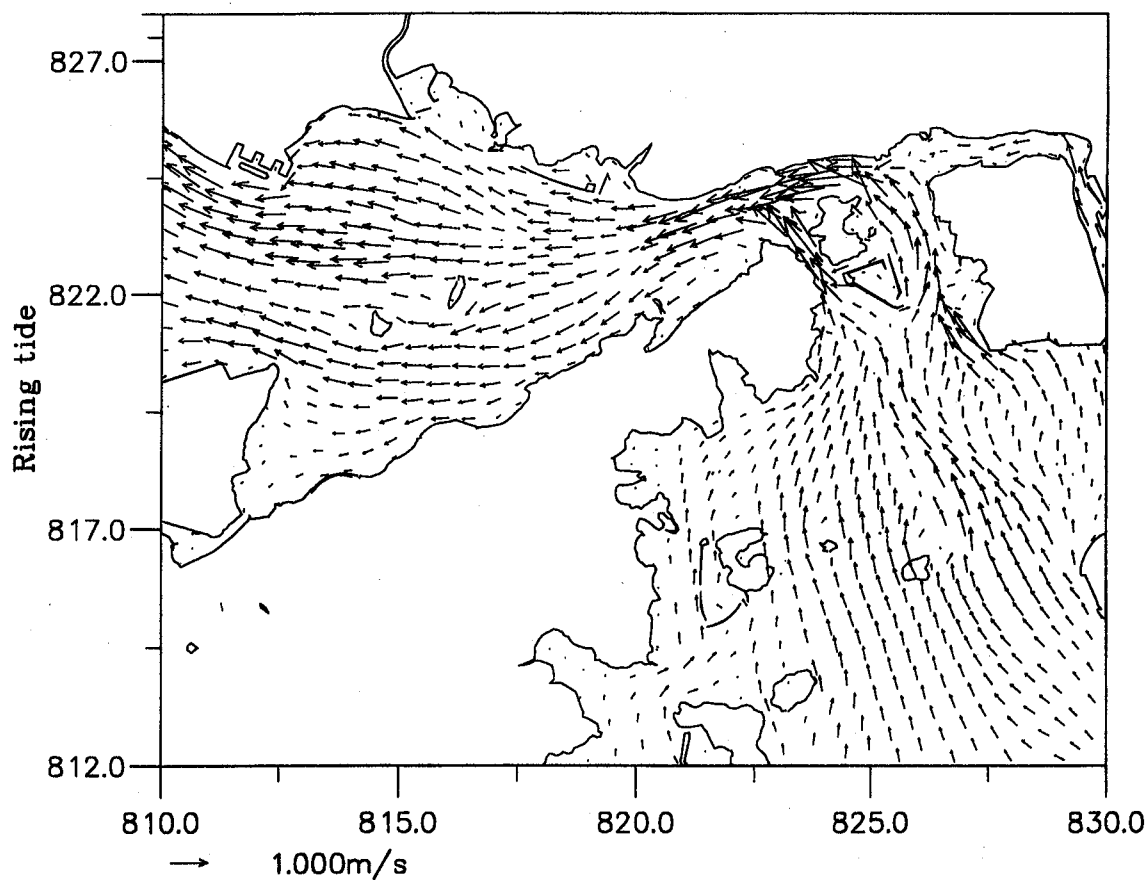
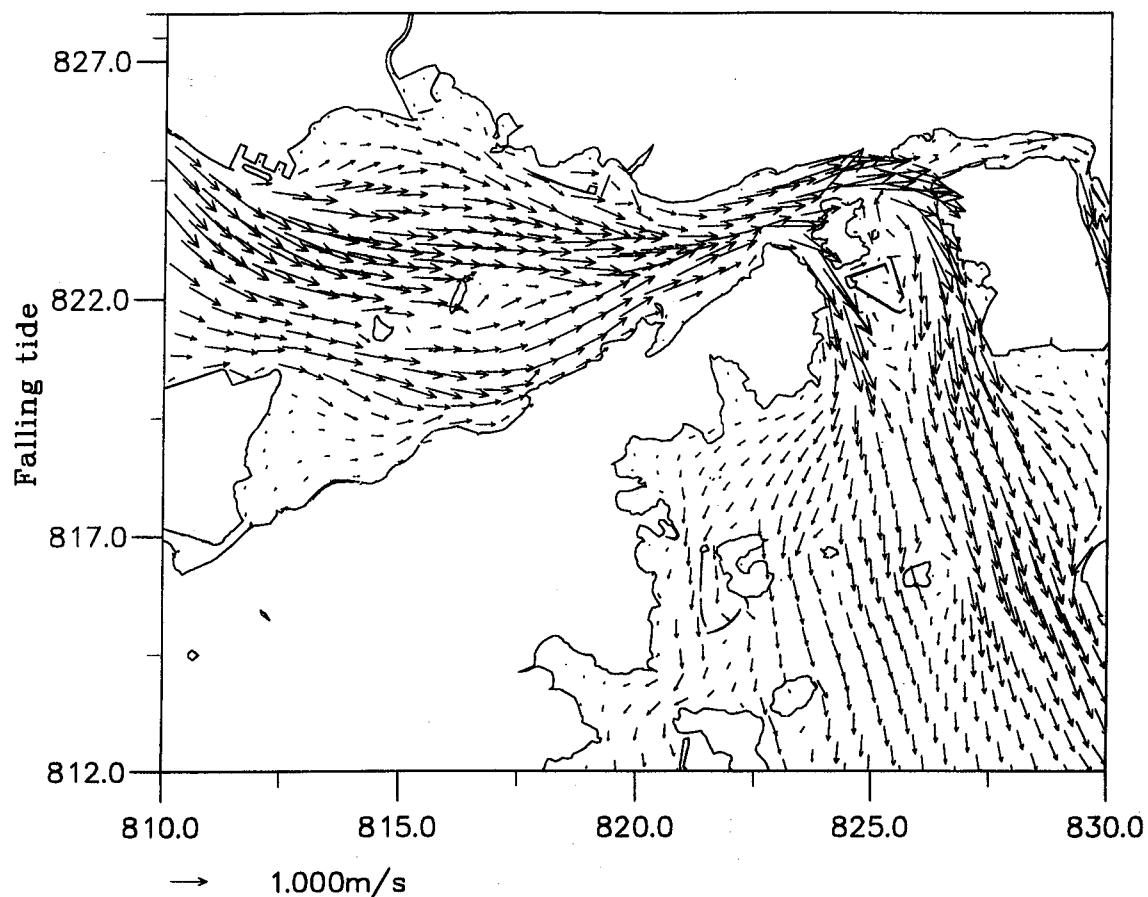
Net Sediment Deposition ($\text{g m}^{-2} \text{ day}^{-1}$)
Scenario 3 - Dry Season Spring Tide



FIG. D2n

Annex D3

Hydrodynamic Modelling Results



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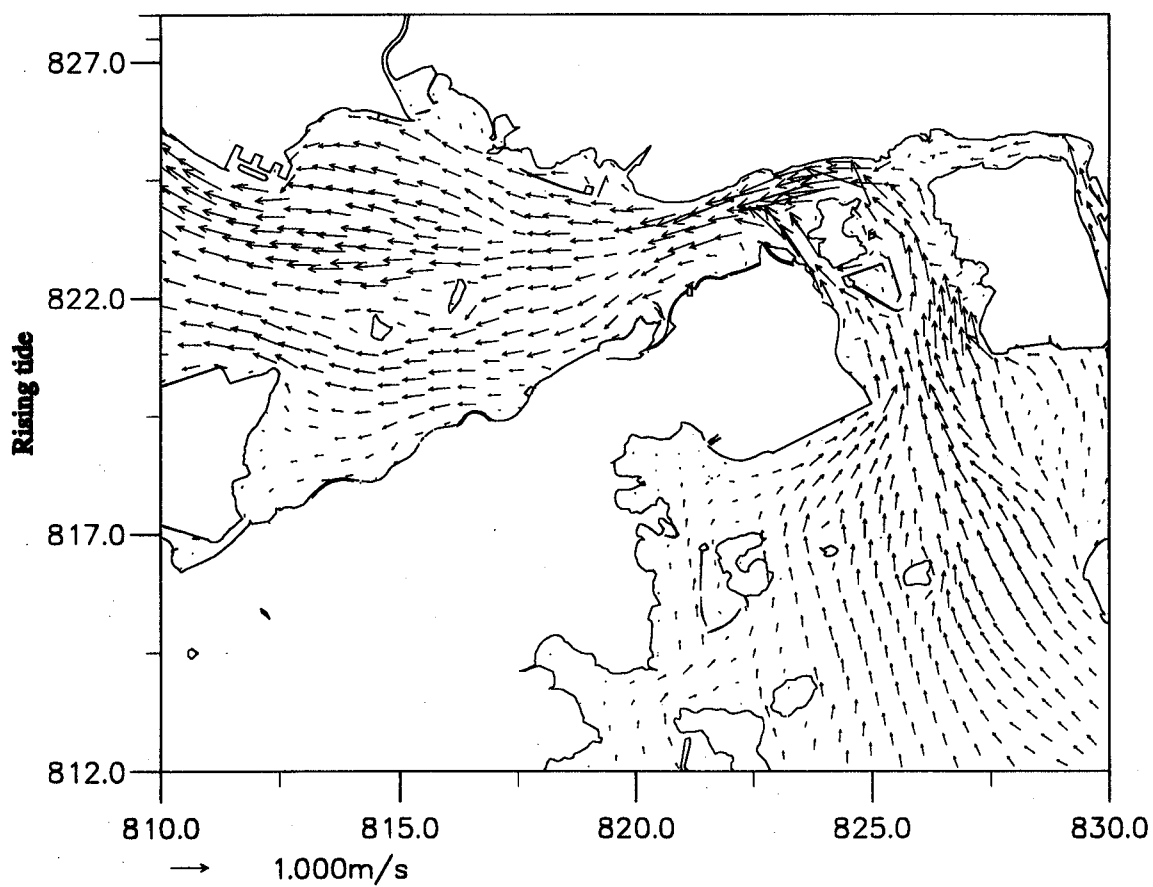
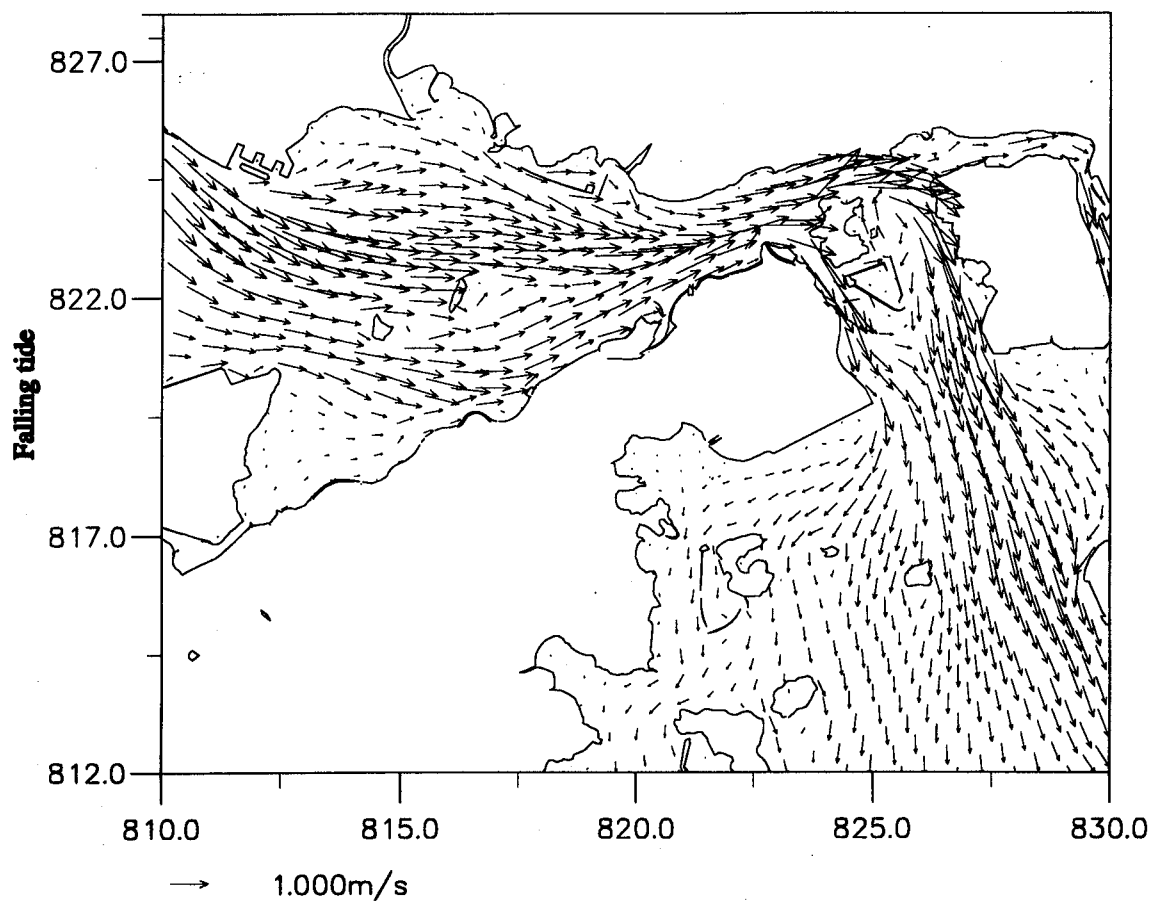
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NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY

Velocity Vectors
Baseline - Surface - Dry Season Spring Tide



FIG. D3u



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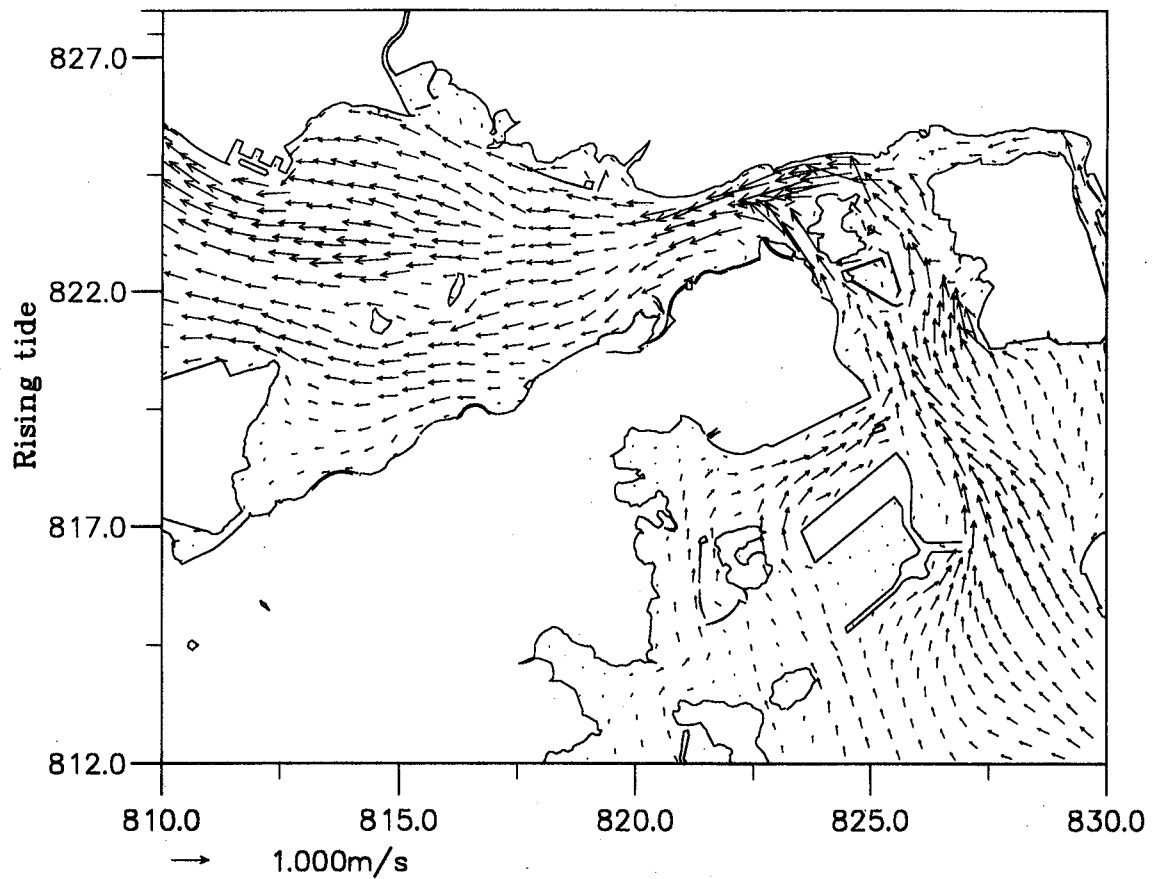
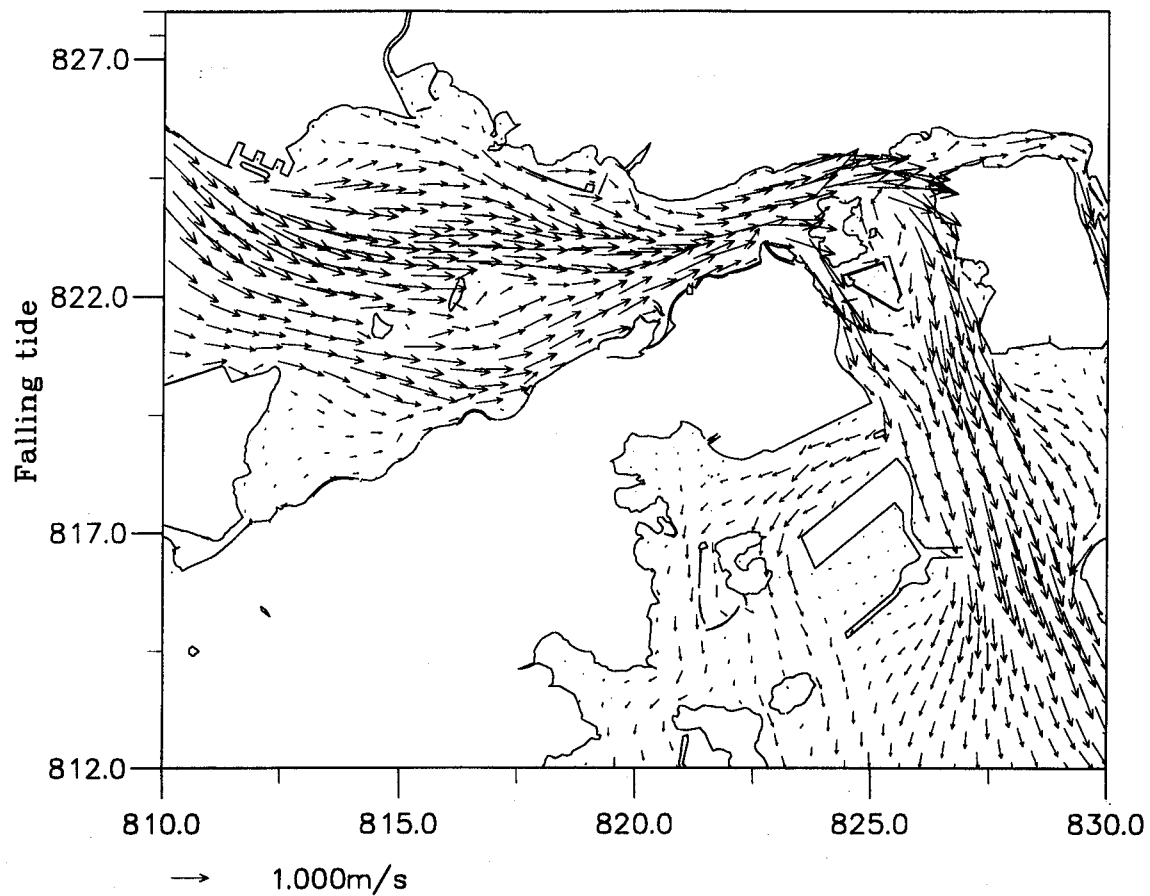
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NORTHSORE LANTAU DEVELOPMENT FEASIBILITY STUDY

Velocity Vectors
Completed NSLD - Surface - Dry Season Spring Tide



FIG. D3v



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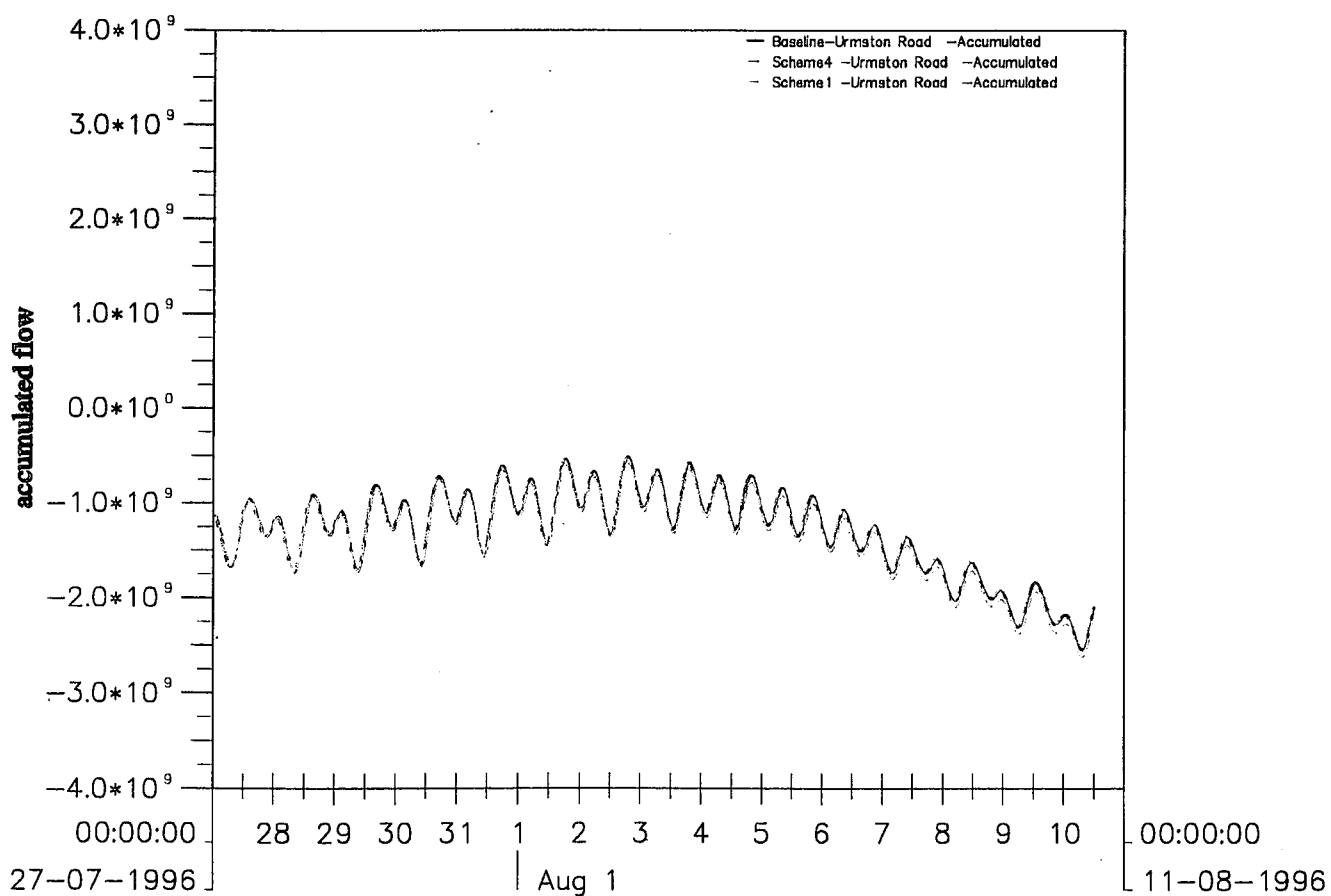
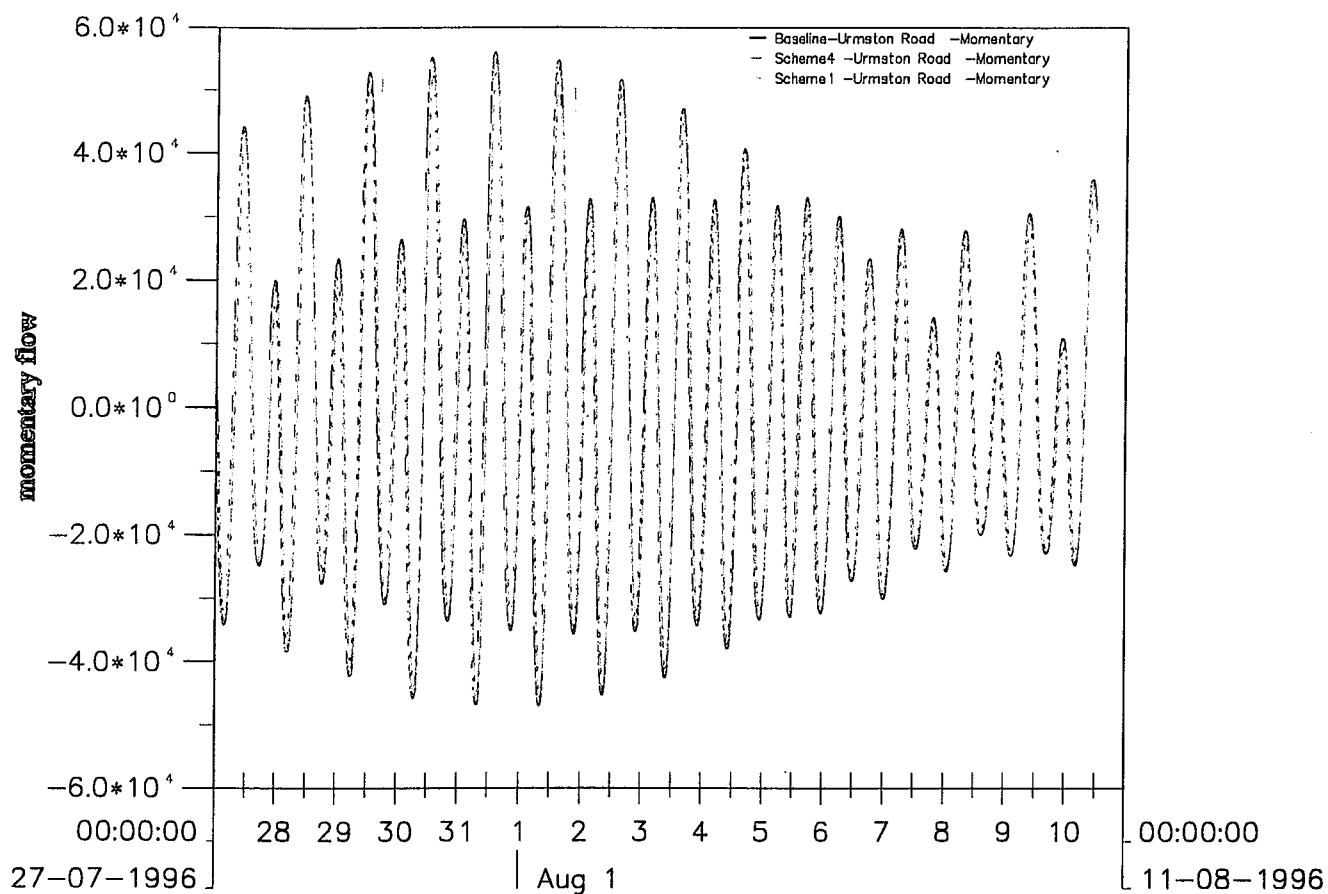
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NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY

Velocity Vectors
Completed NSLD + CT - Surface - Dry Season Spring Tide



FIG. D3w



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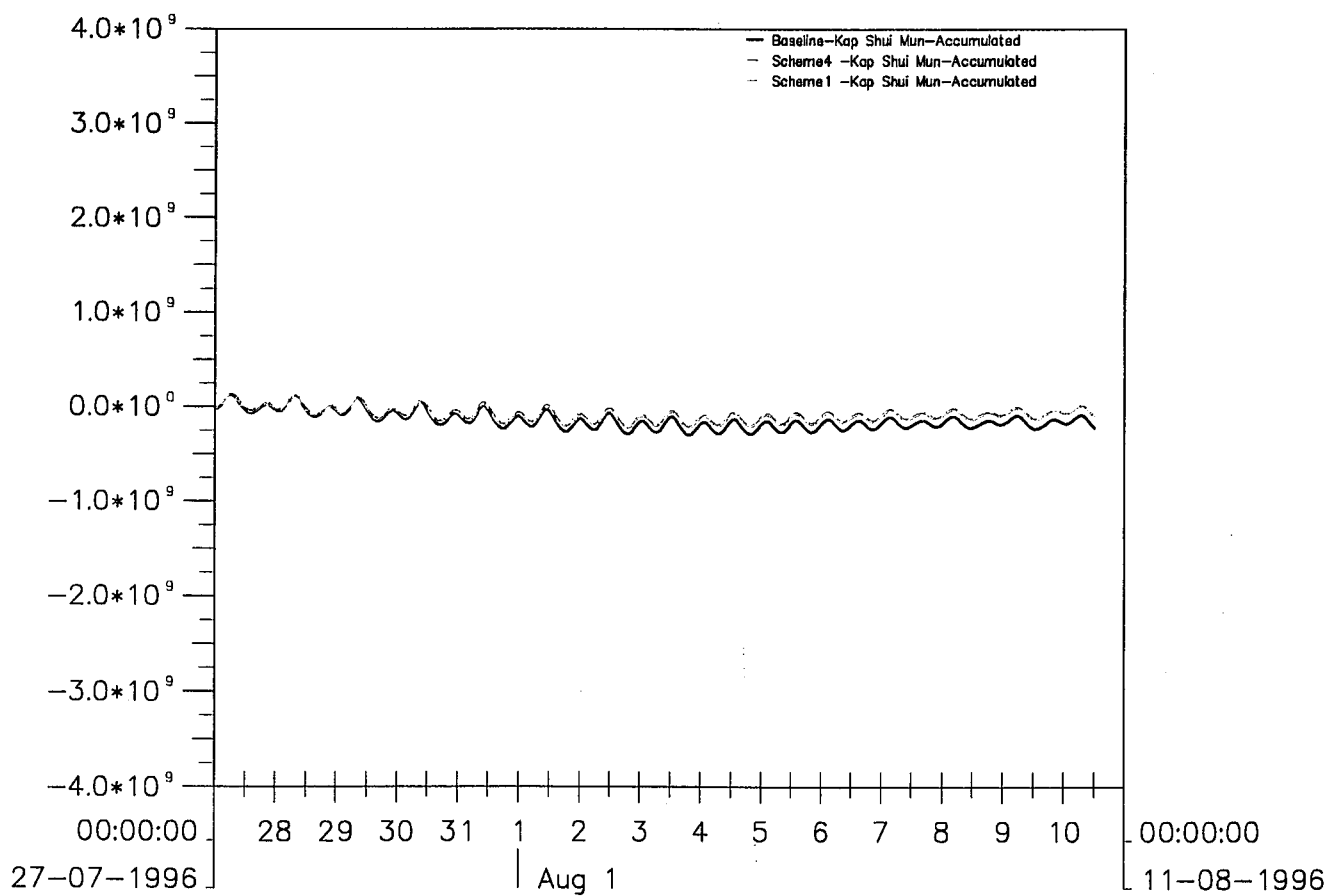
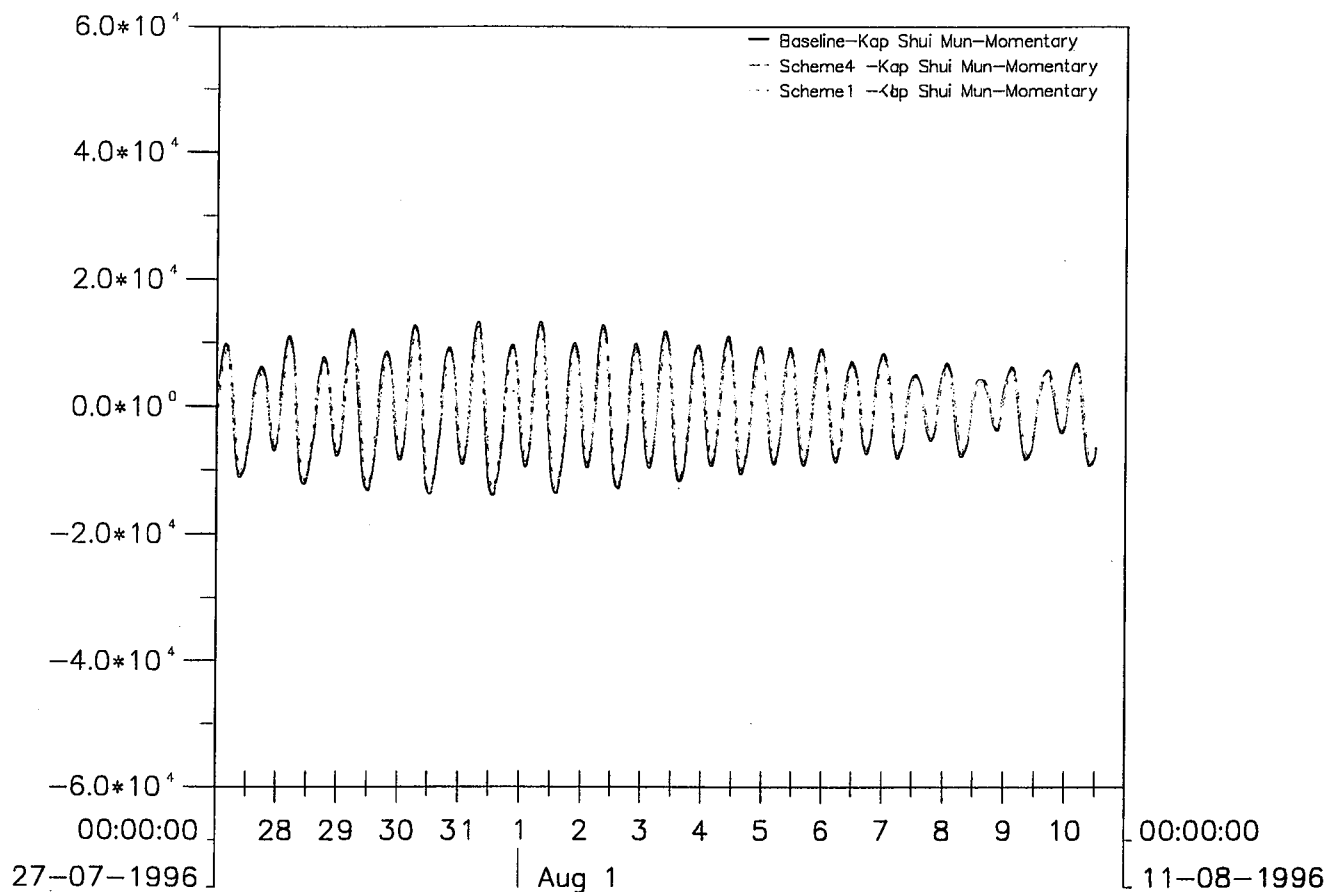
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NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY

Momentary and Accumulated Discharges
through Urmston Road - Wet Season



FIG. D3a



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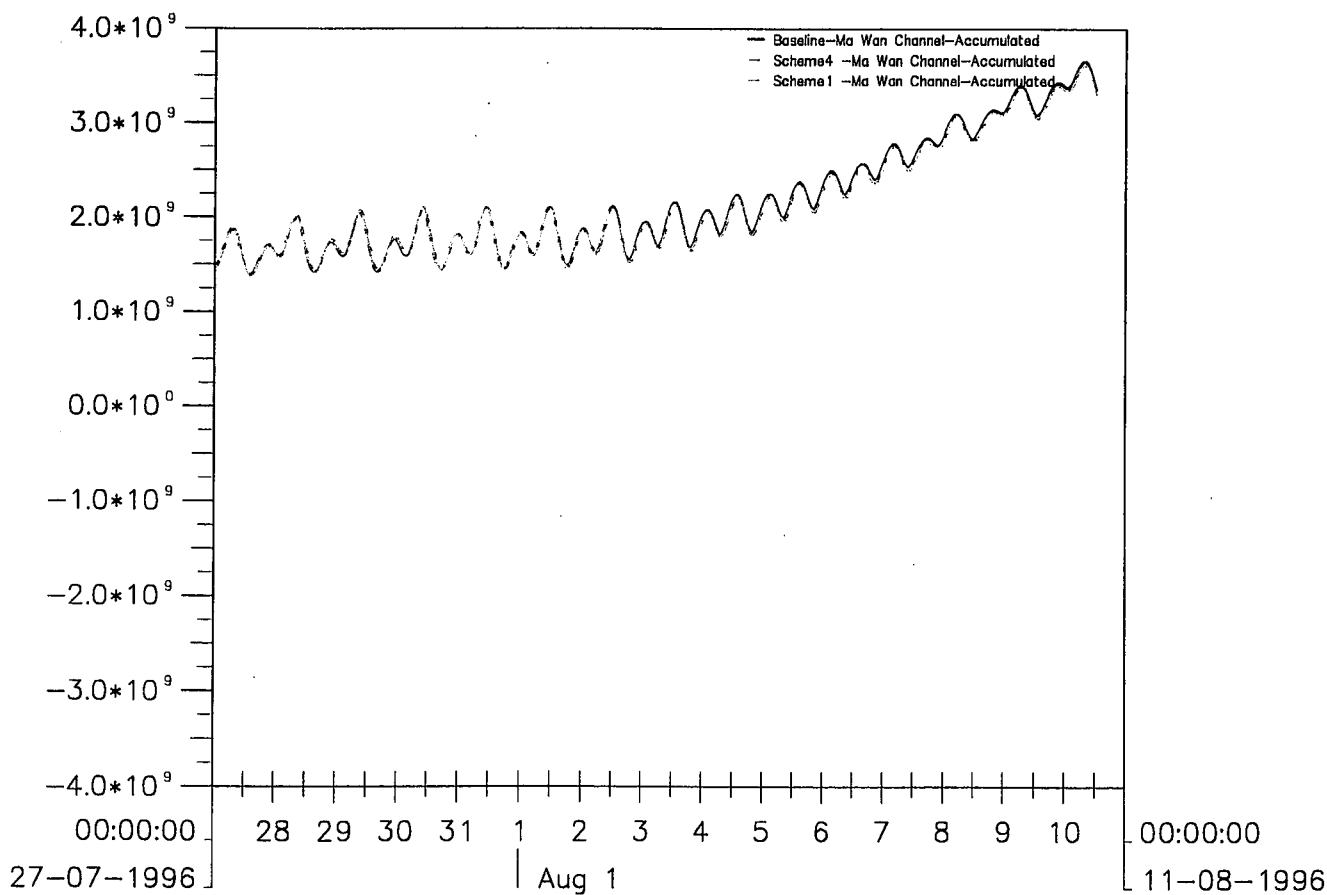
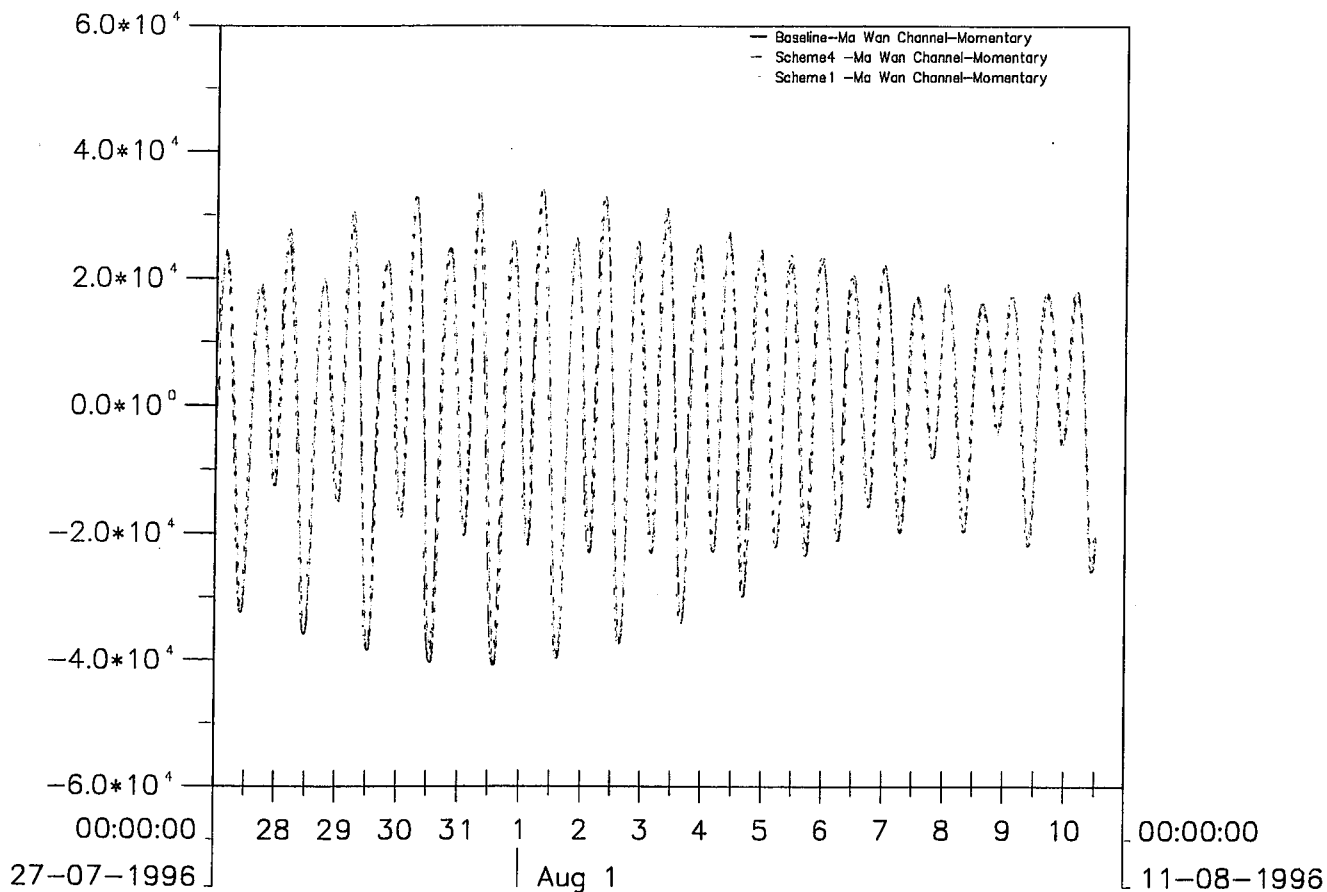
NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY

Momentary and Accumulated Discharges through
Kap Shui Mun - Wet Season

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FIG. D3b



CIVIL ENGINEERING
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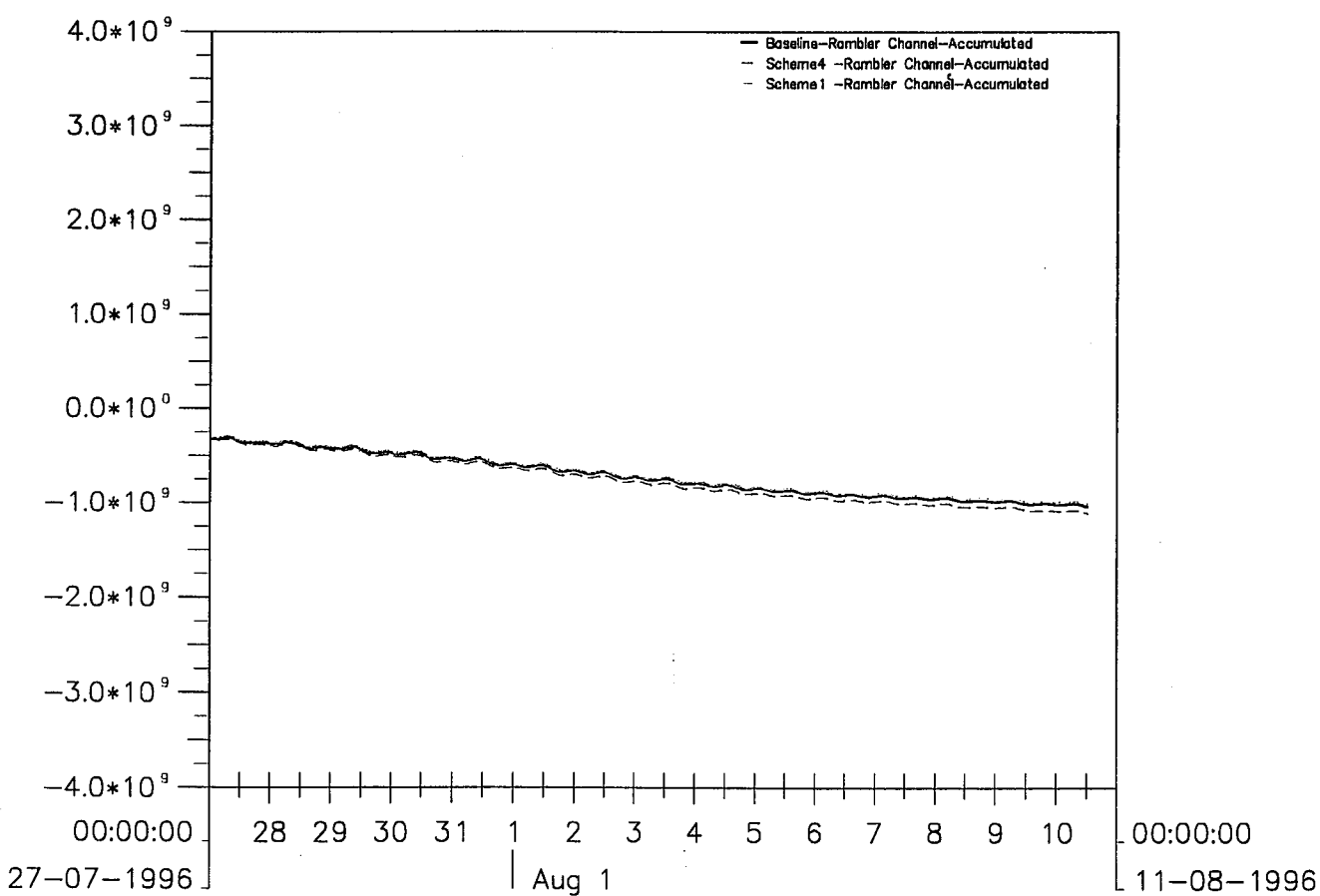
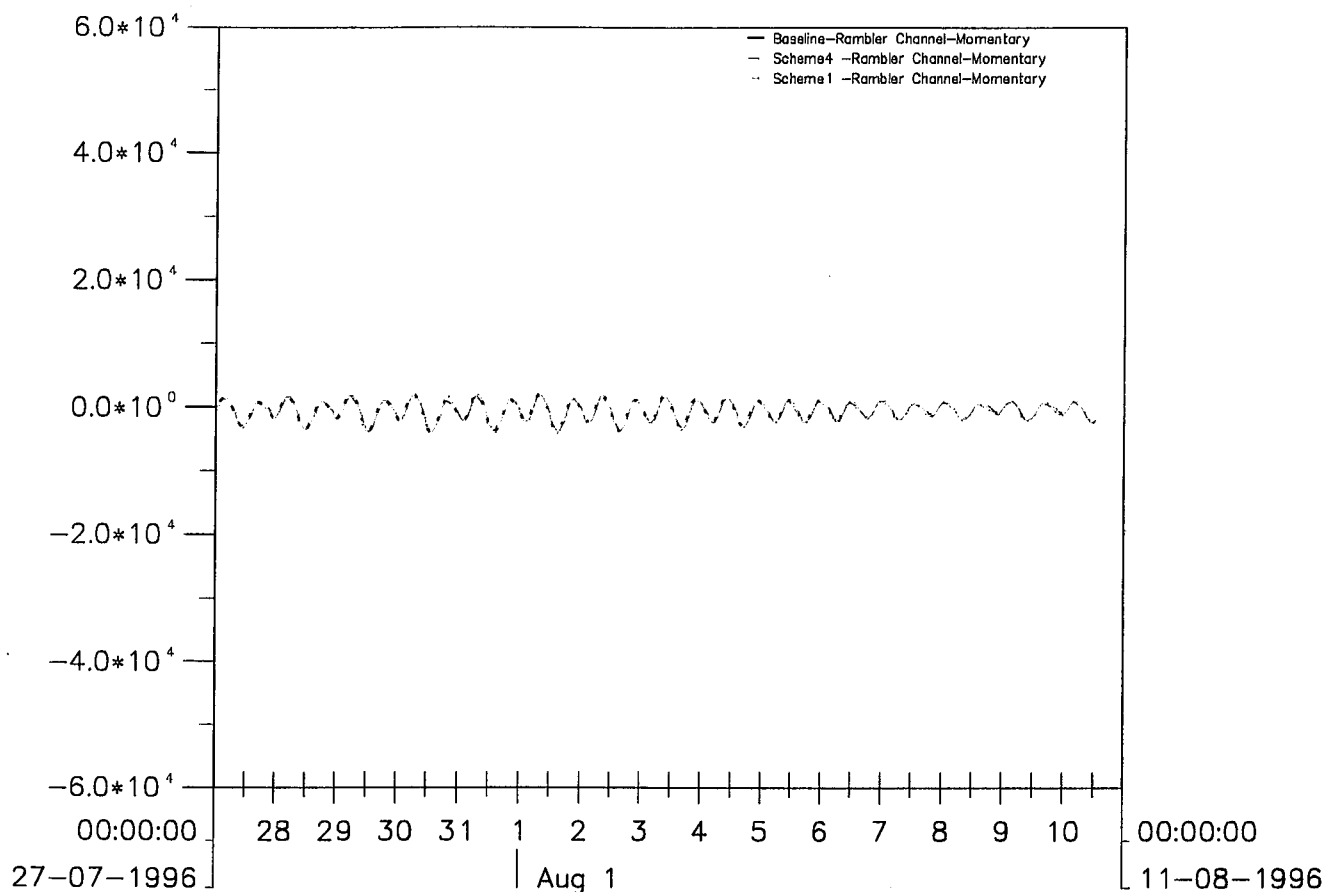
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NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY

Momentary and Accumulated Discharges through
Ma Wan Channel - Wet Season



FIG. D3c



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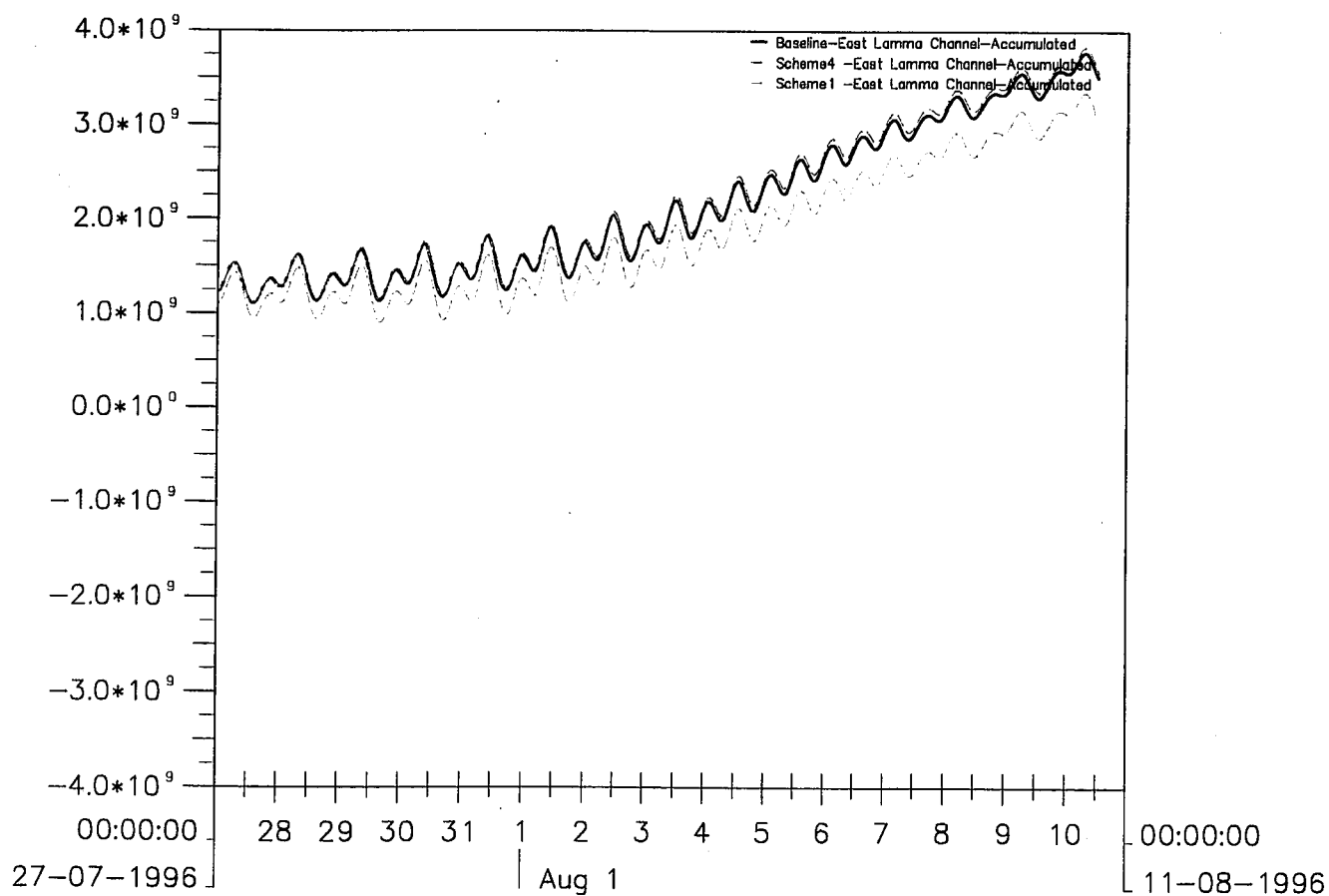
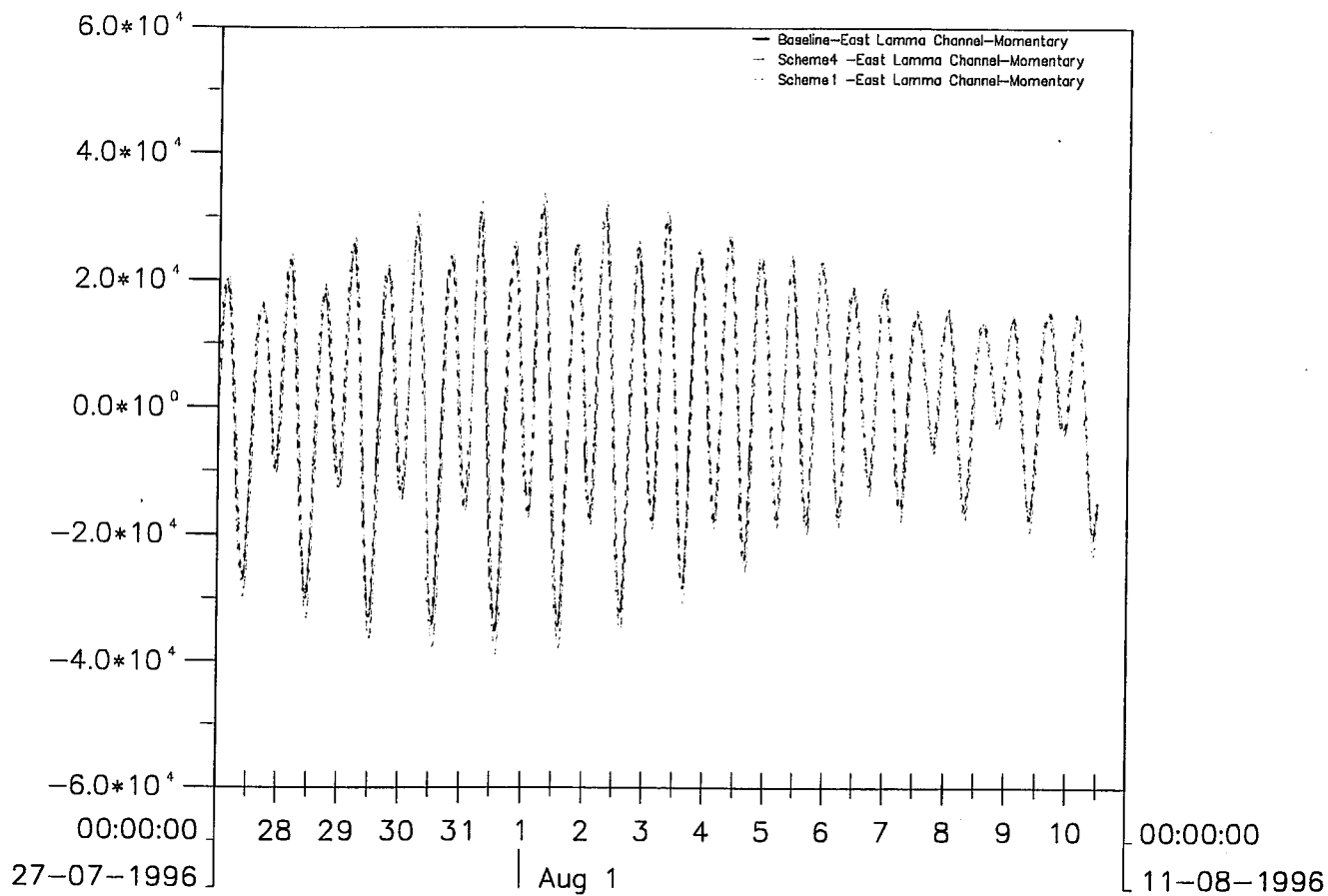
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NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY

Momentary and Accumulated Discharges through
Rambler Road - Wet Season



FIG. D3d



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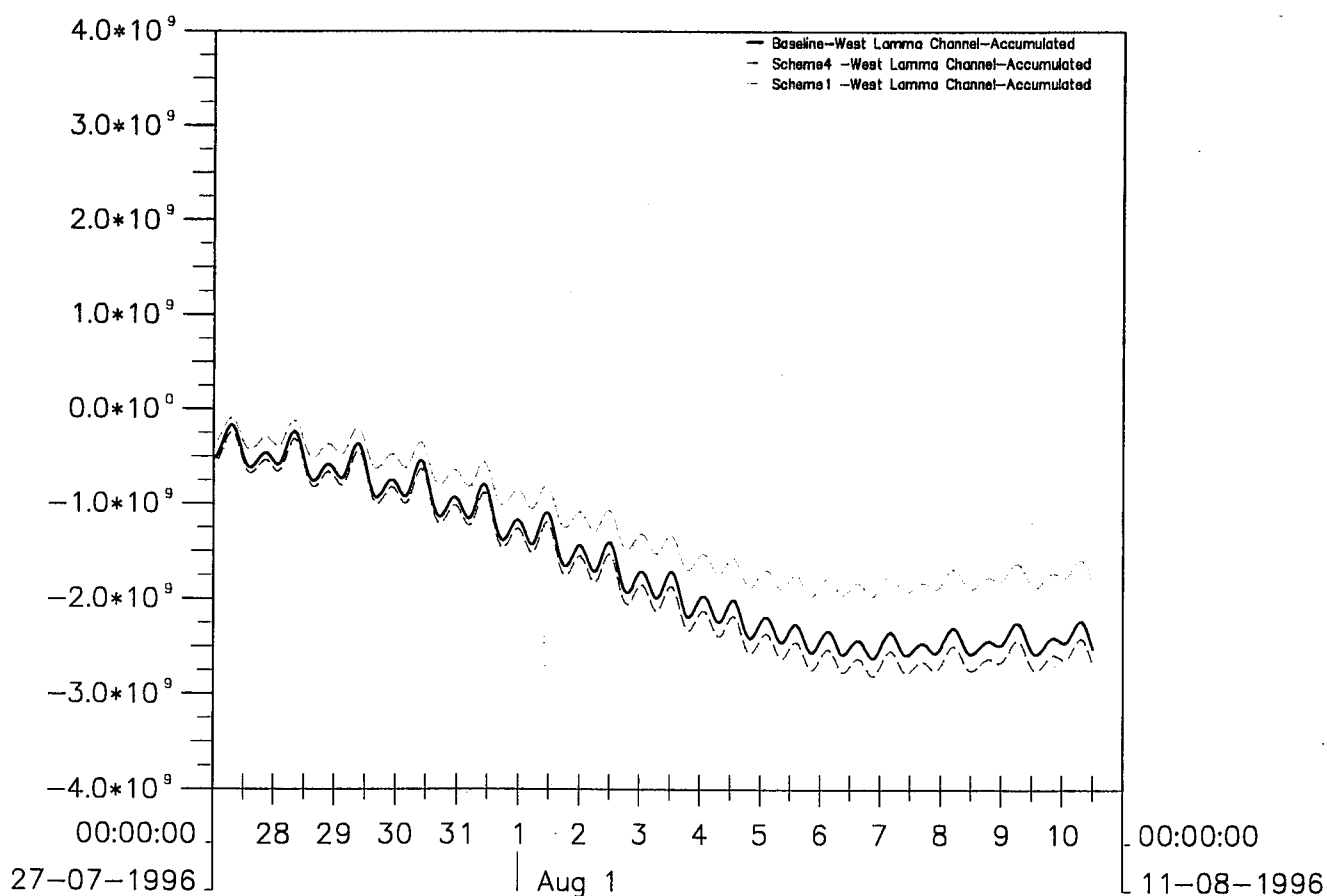
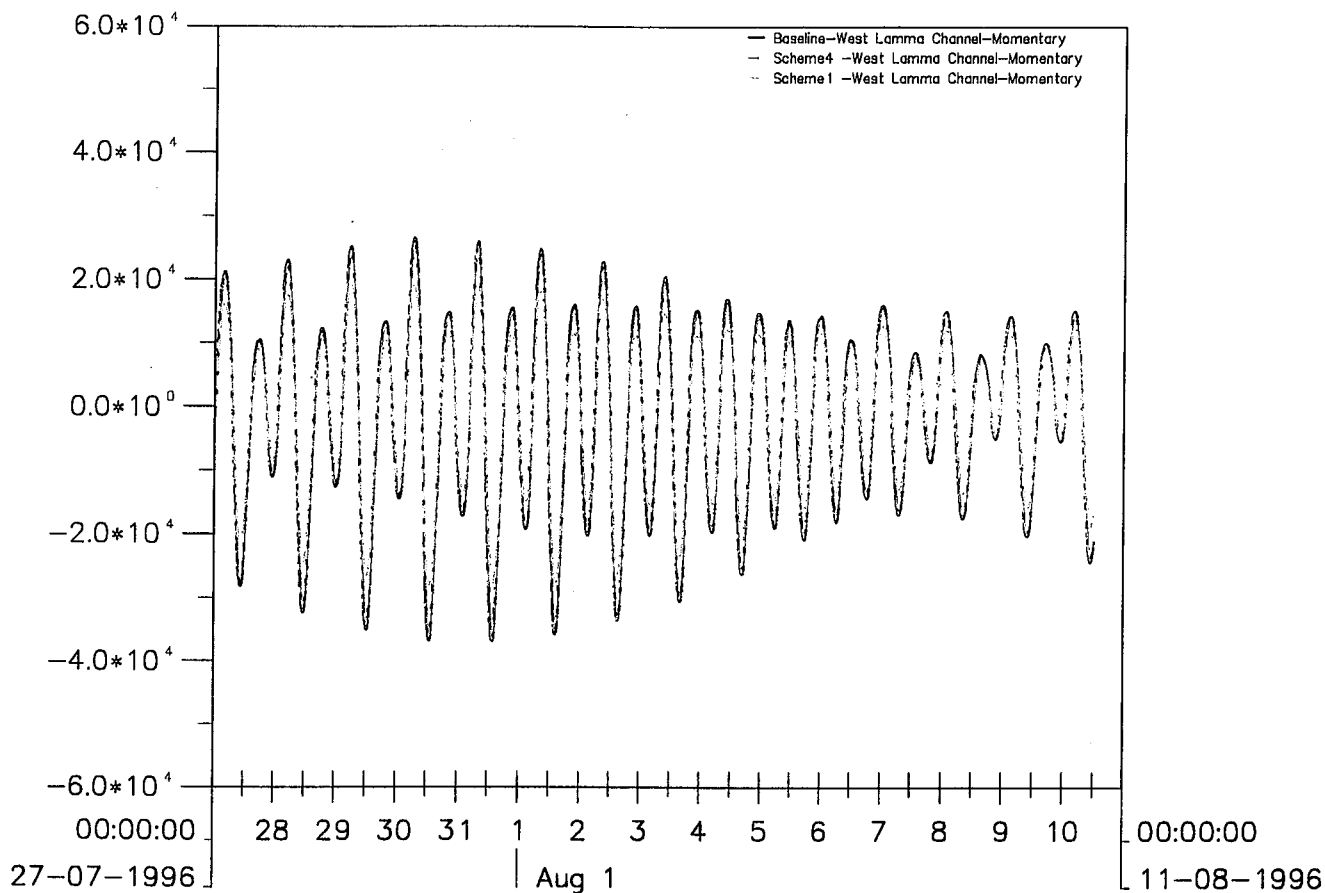
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NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY

Momentary and Accumulated Discharges through
East Lamma Channel - Wet Season



FIG. D3e



CIVIL ENGINEERING
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土木工程署

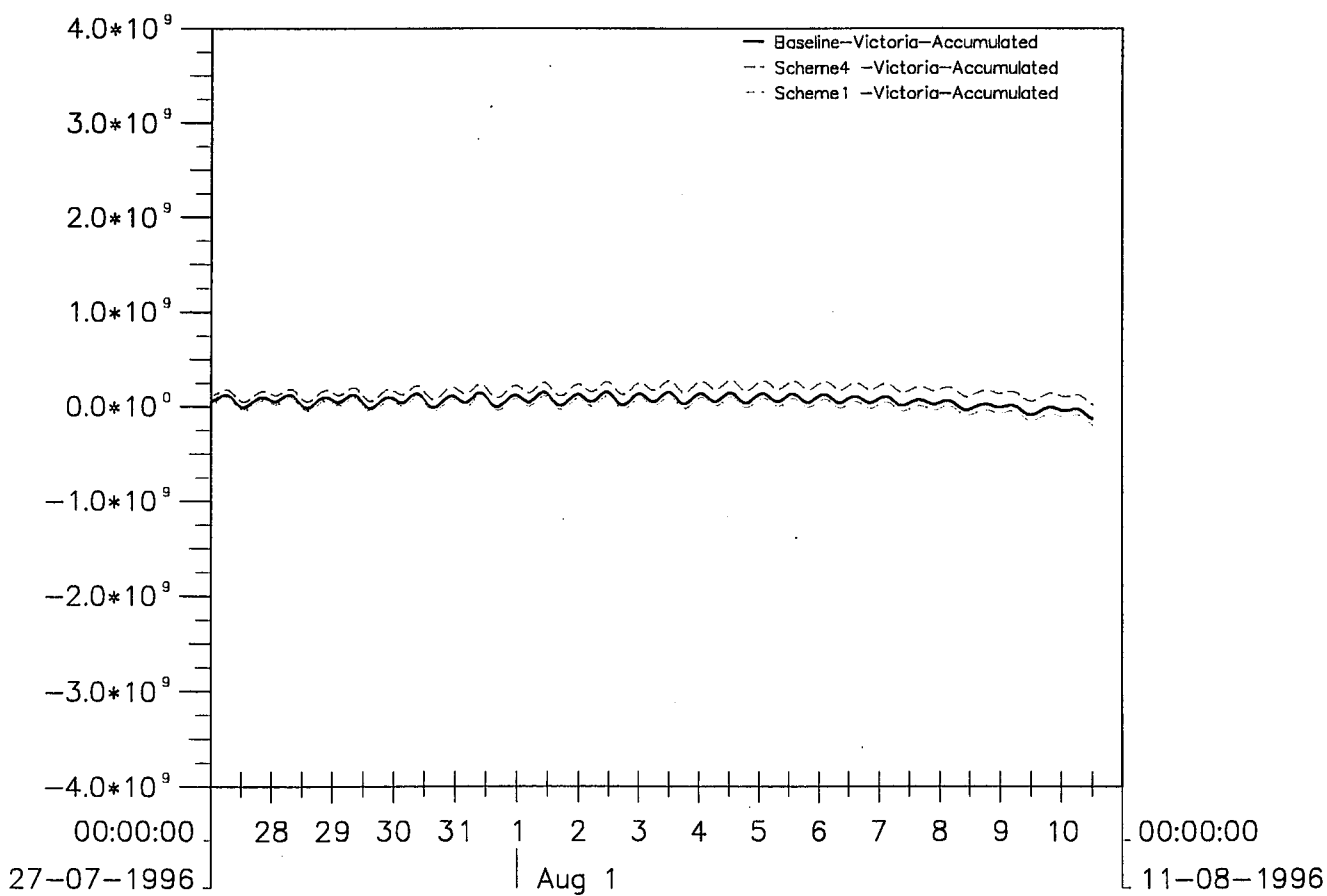
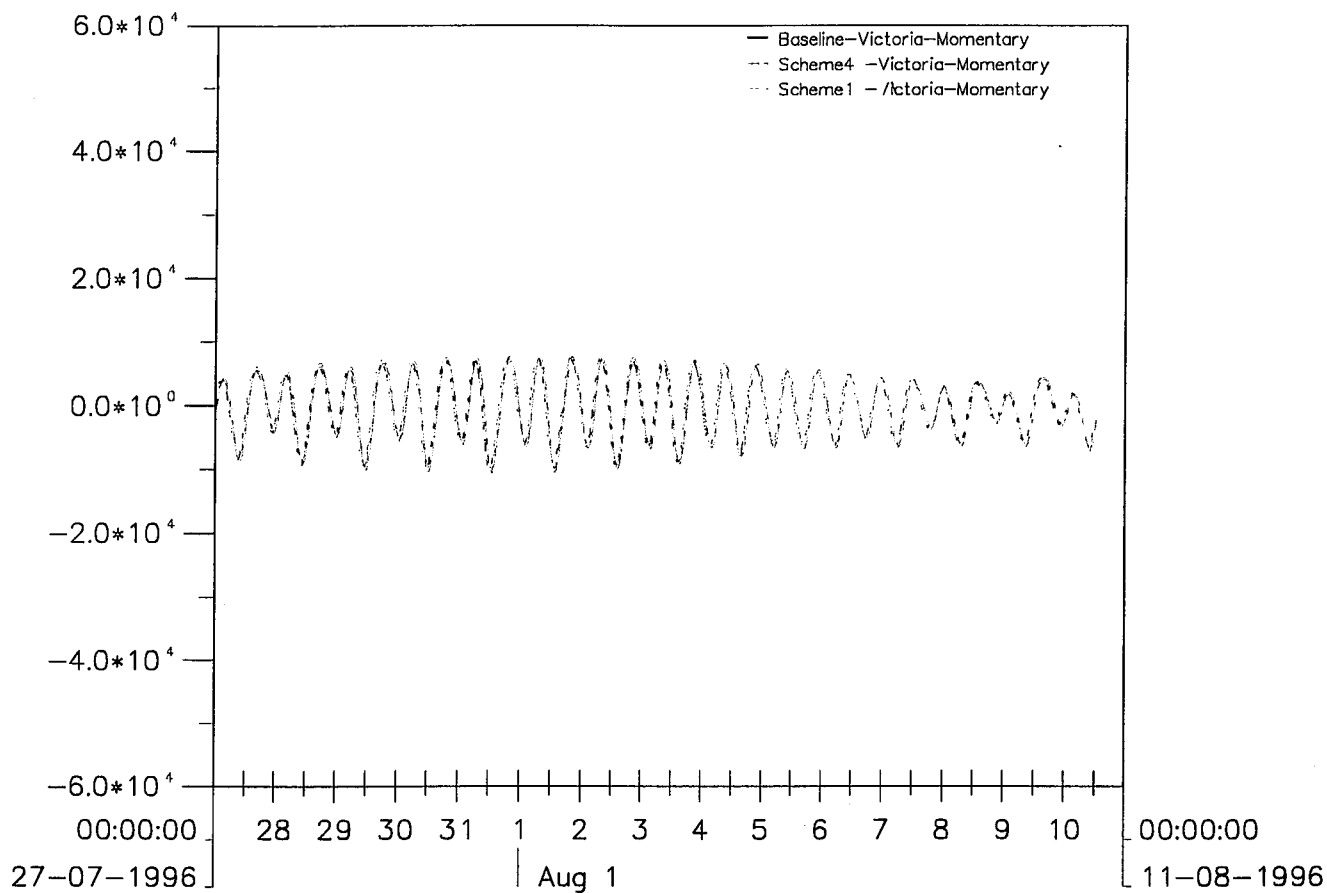
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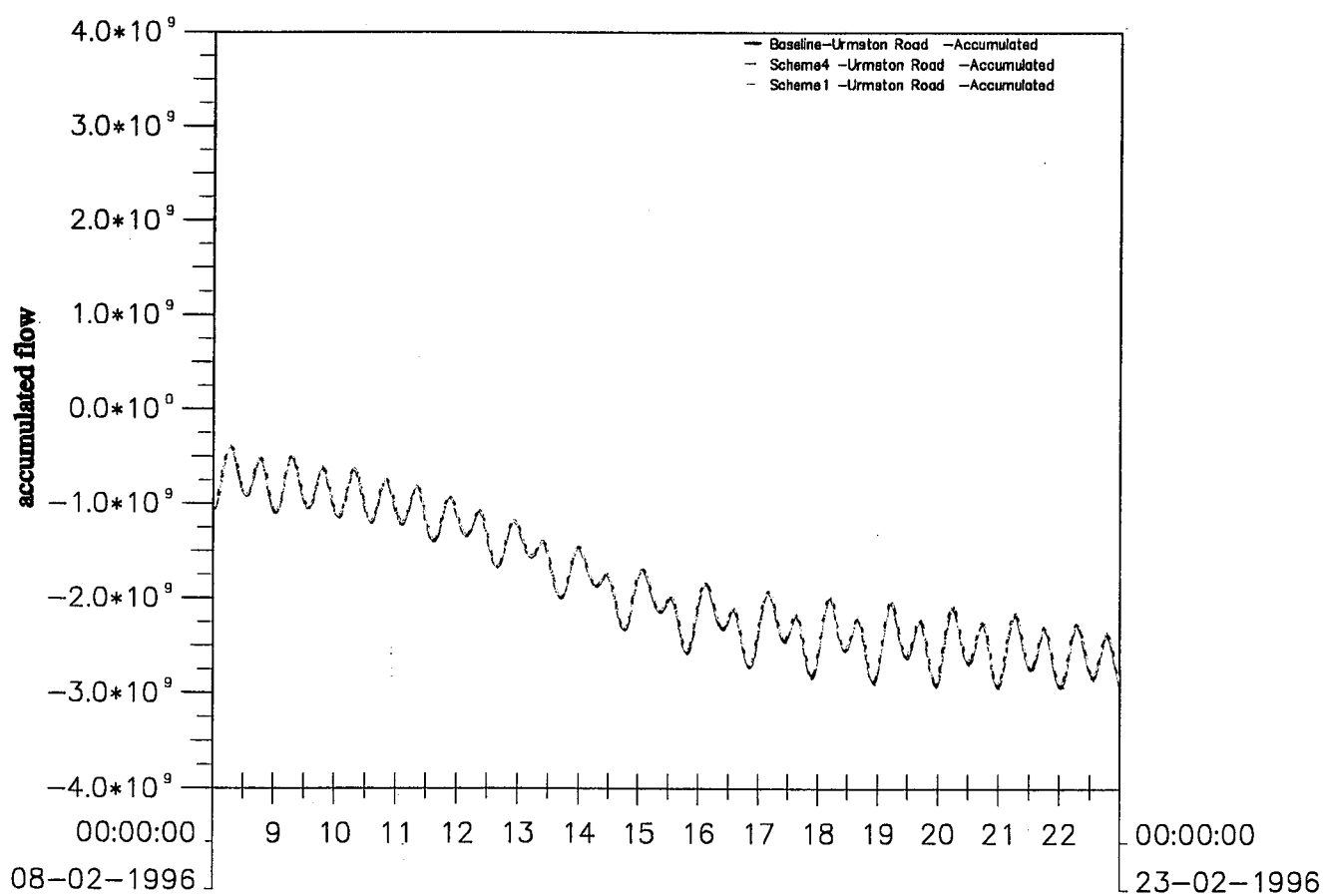
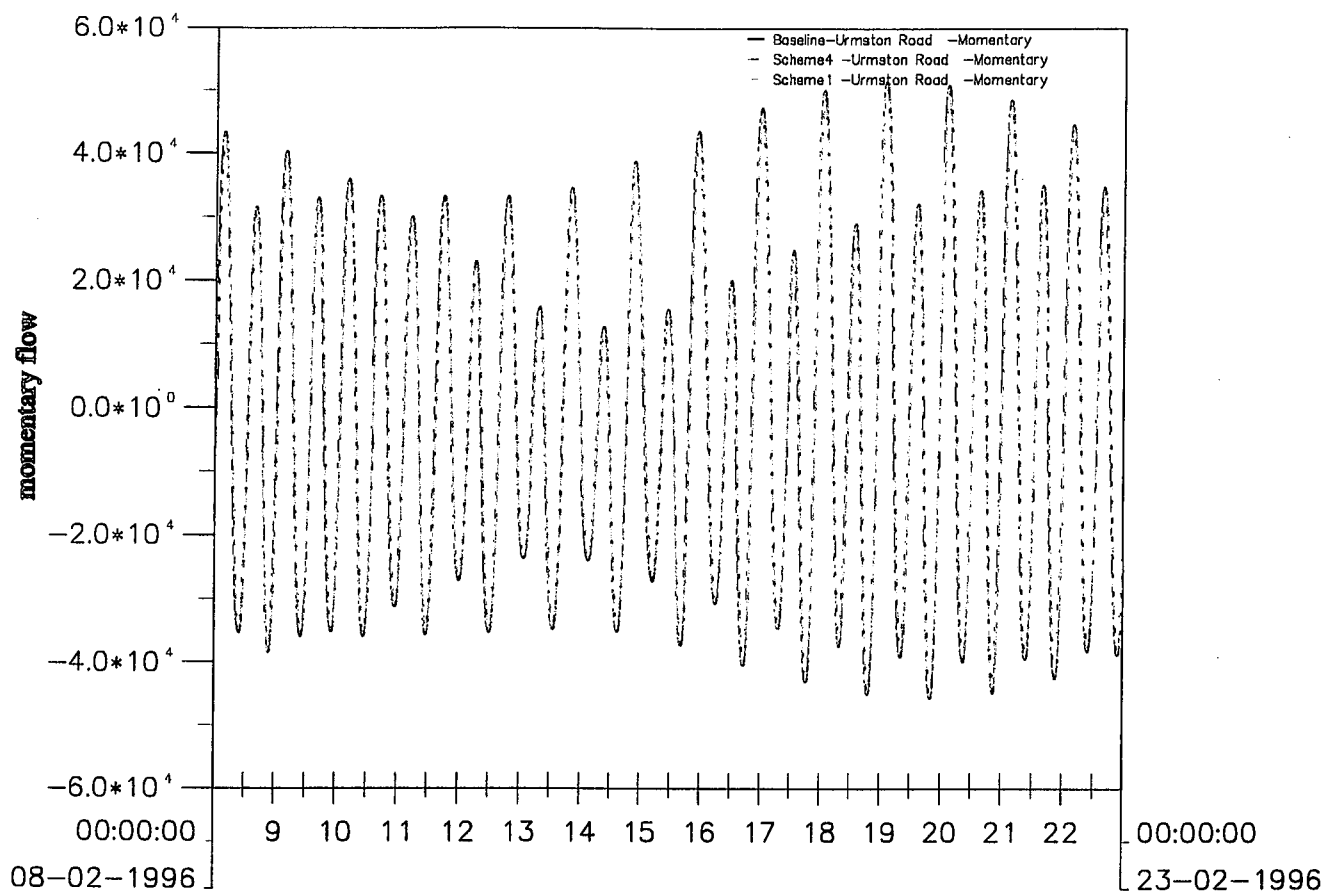
NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY

Momentary and Accumulated Discharges through
West Lamma Channel - Wet Season



FIG. D3f





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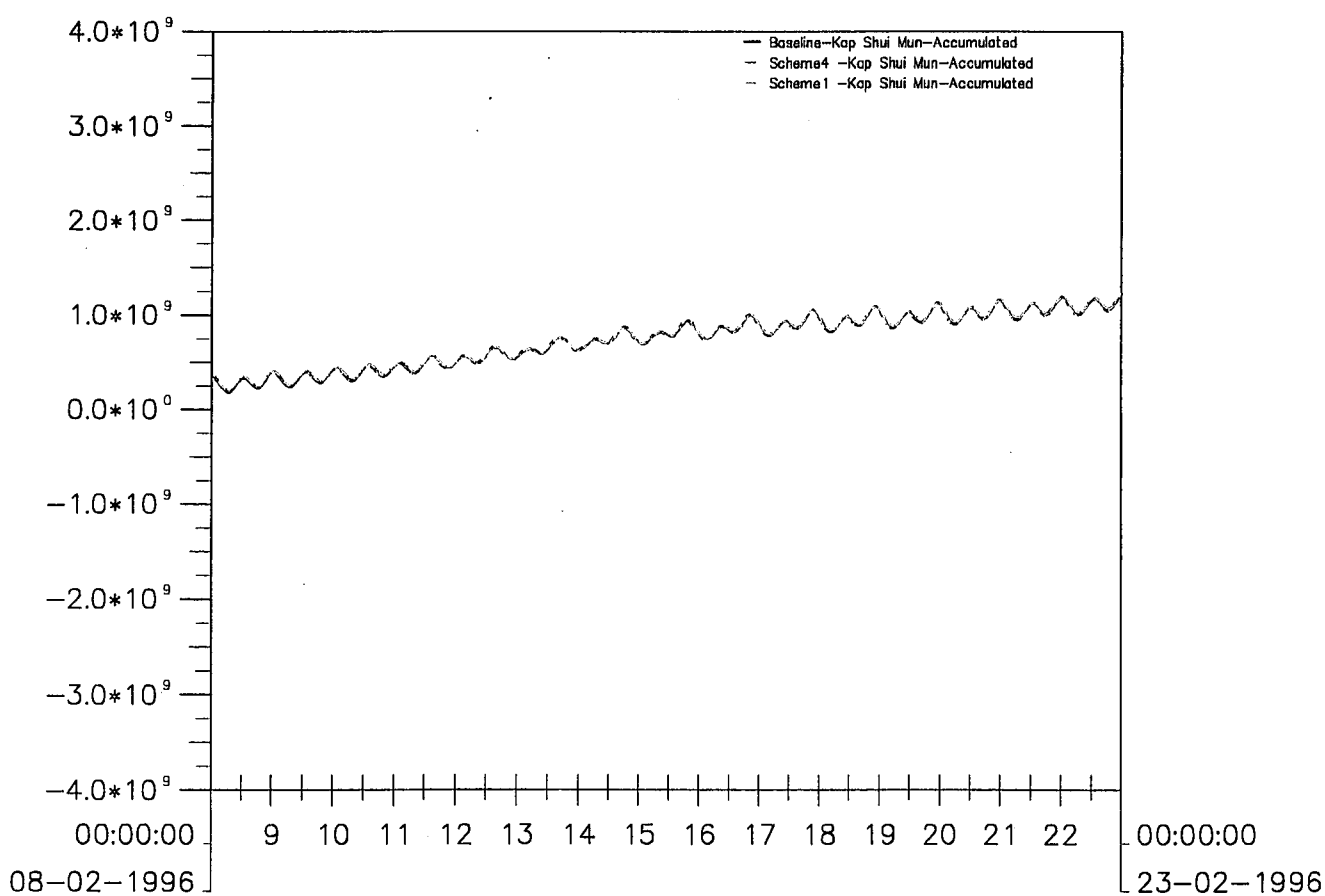
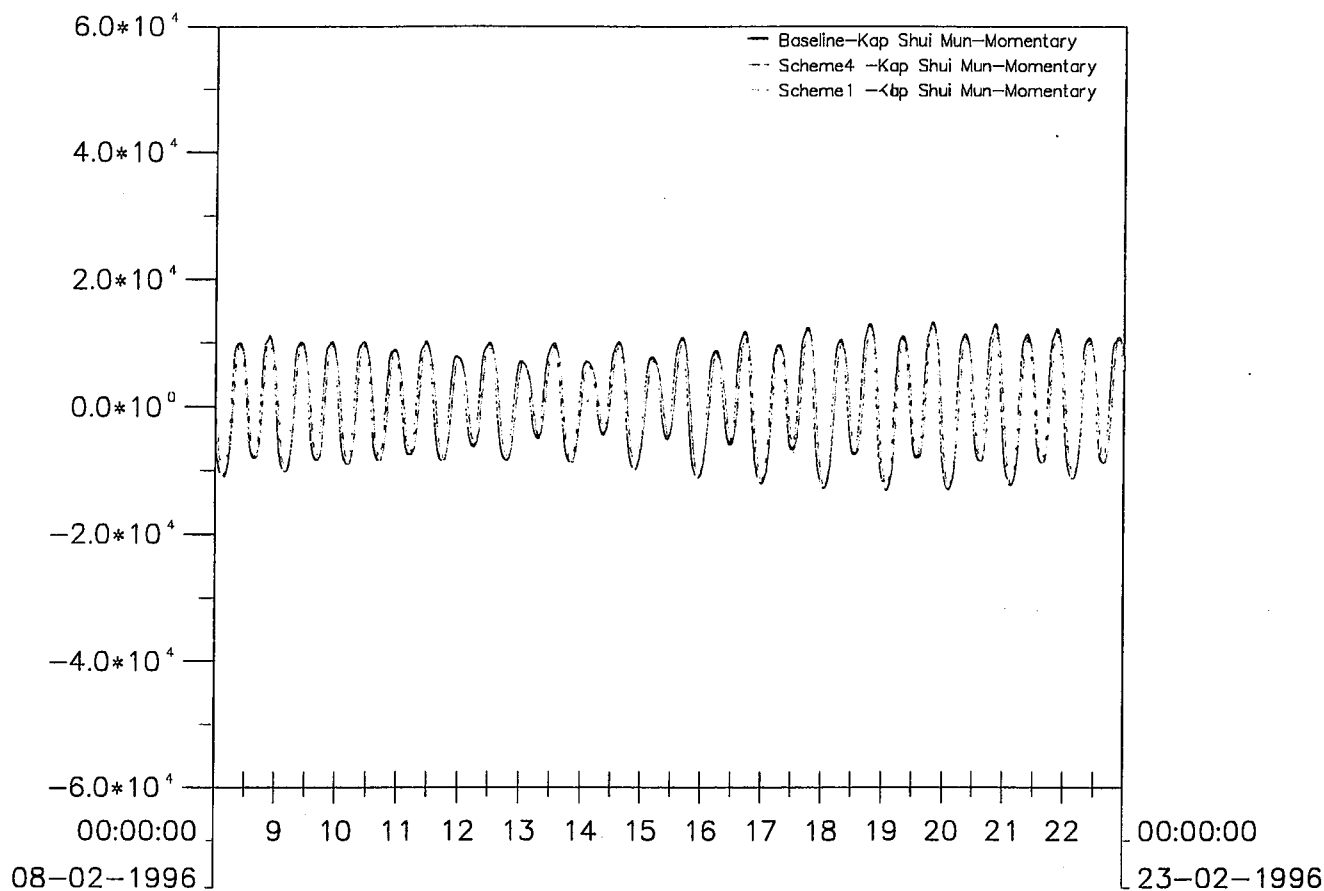
NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY

Momentary and Accumulated Discharges through
Urmston Road - Dry Season



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FIG. D3h



CIVIL ENGINEERING
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土木工程署

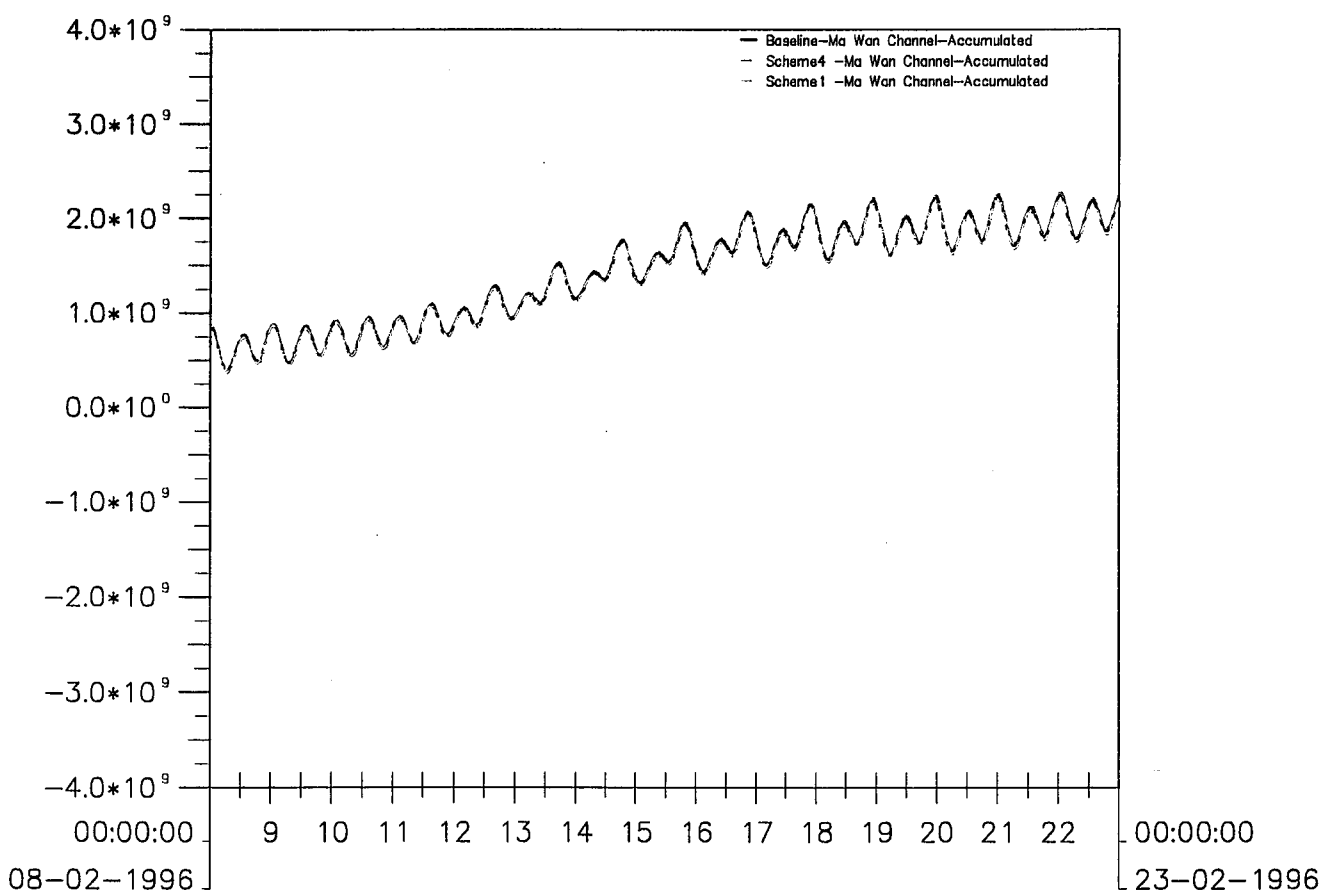
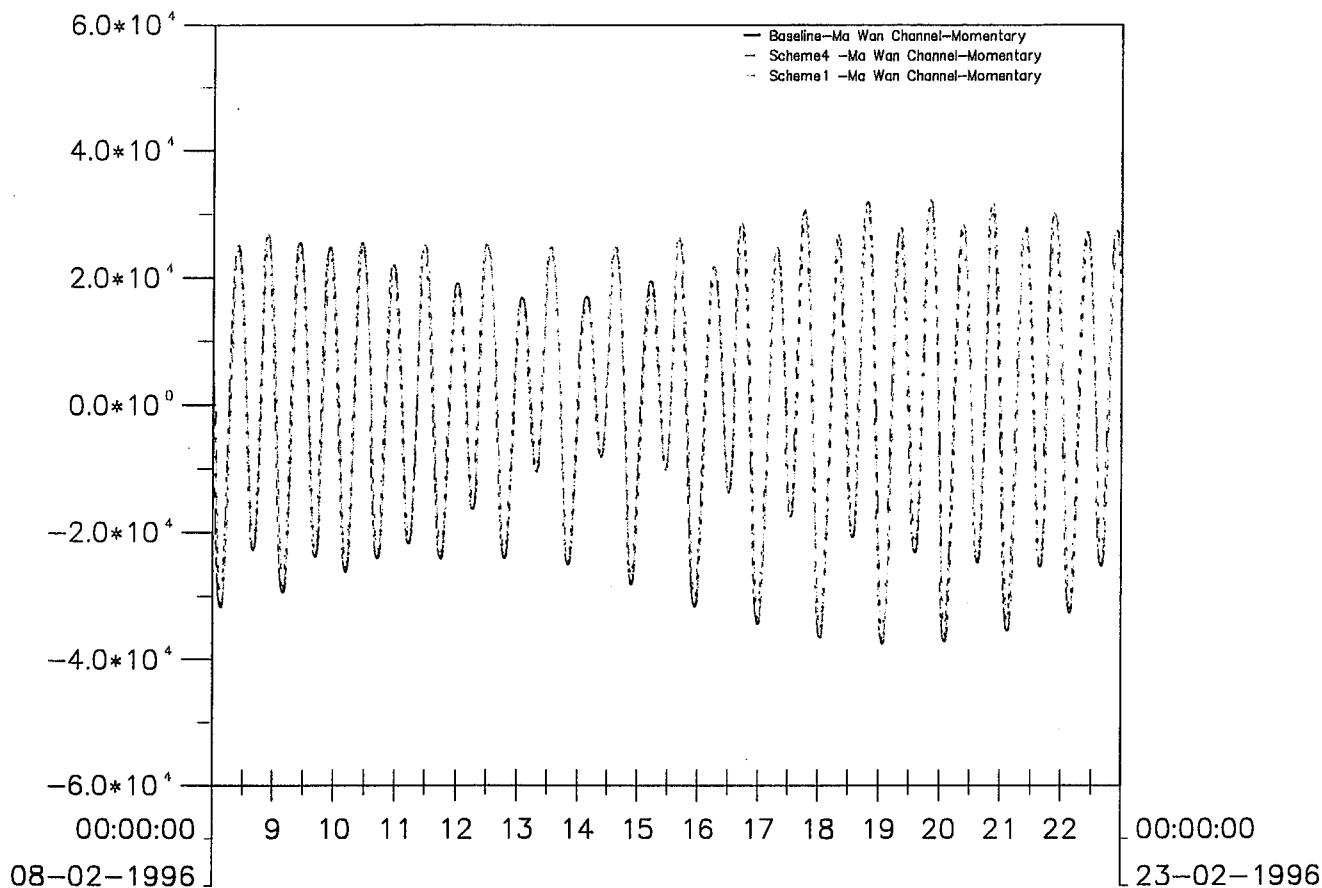
NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY

Momentary and Accumulated Discharges through
Kap Shui Mun - Dry Season



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FIG. D3i



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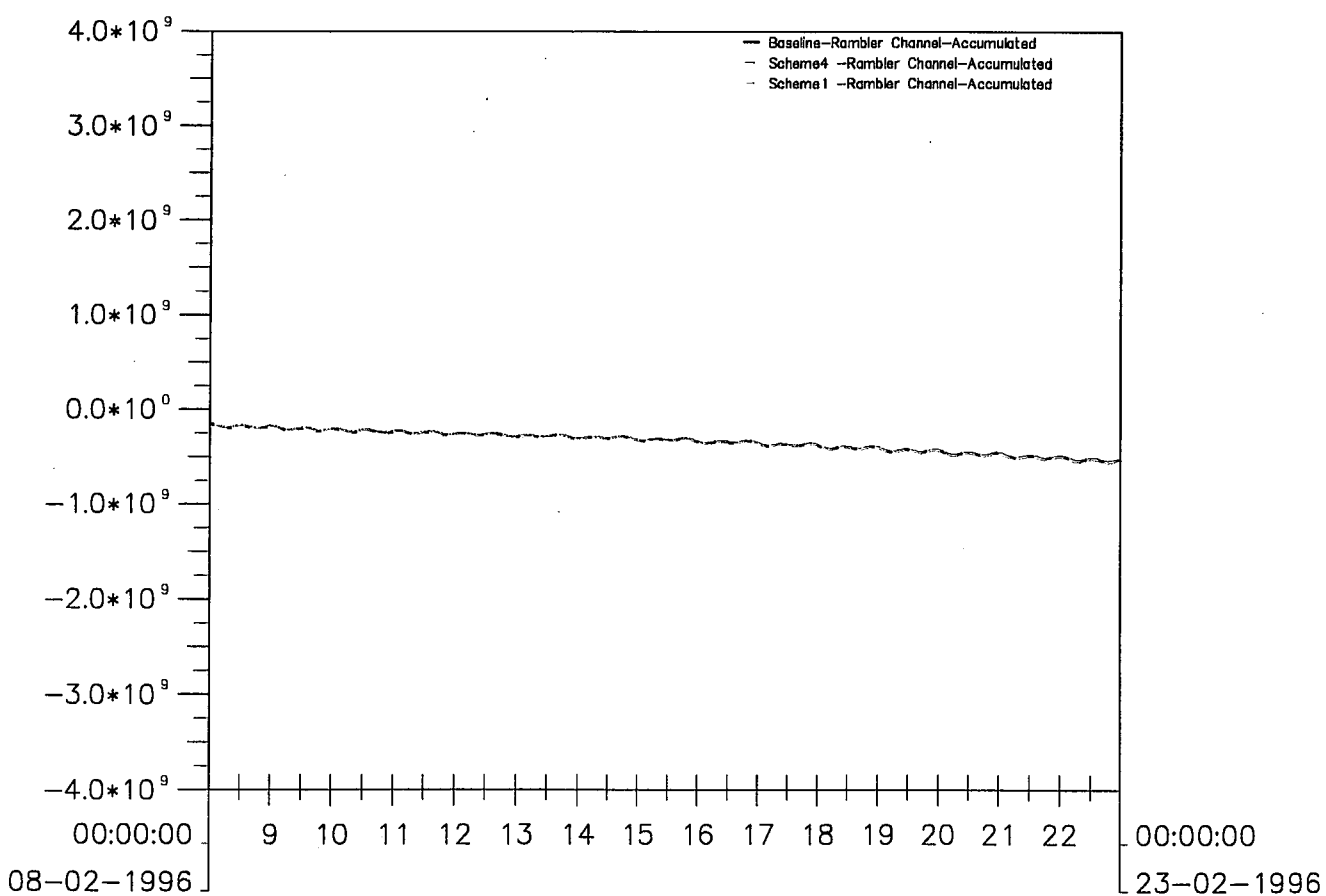
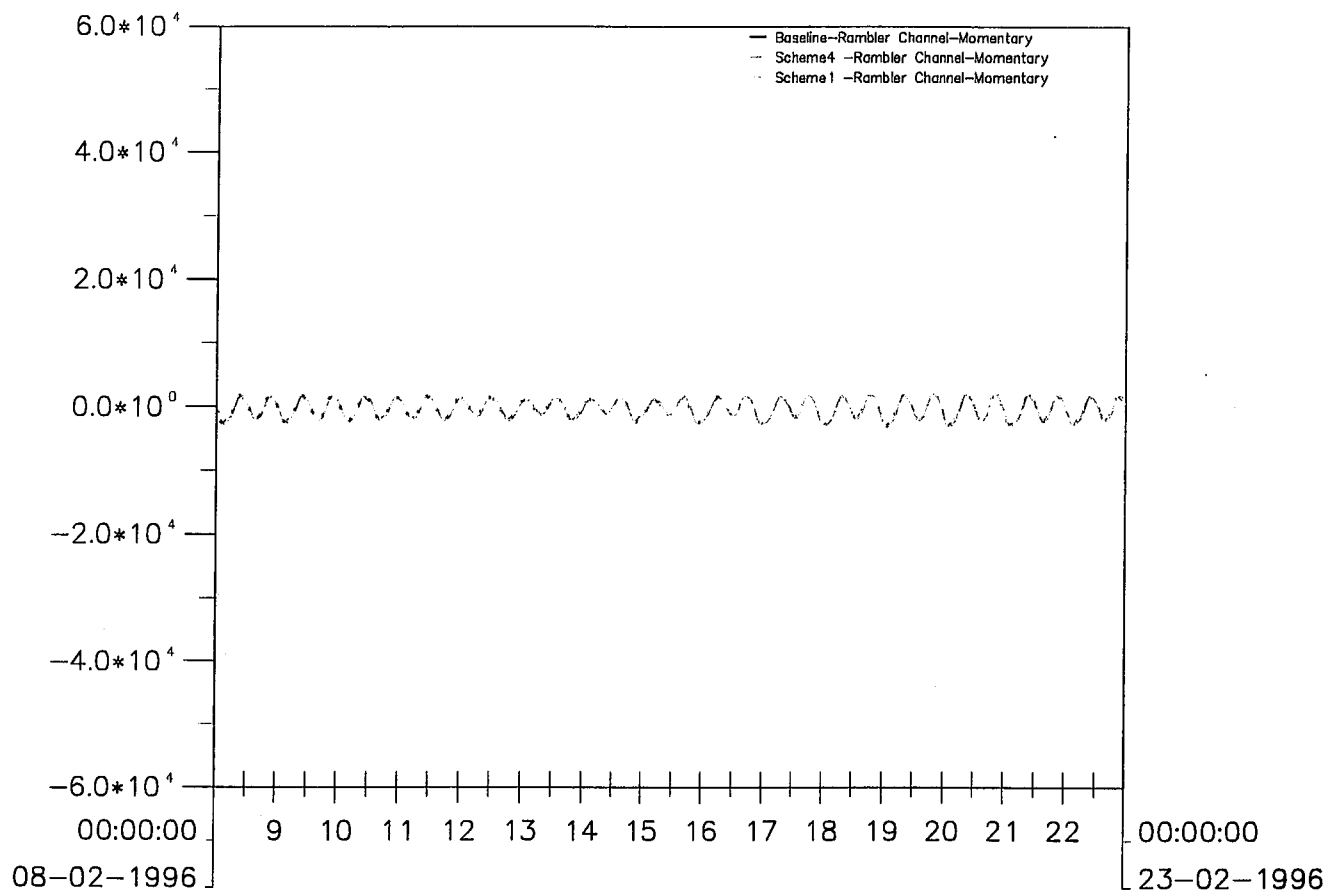
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NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY

Momentary and Accumulated Discharges through
Ma Wan Channel - Dry Season



FIG. D3j



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土木工程署

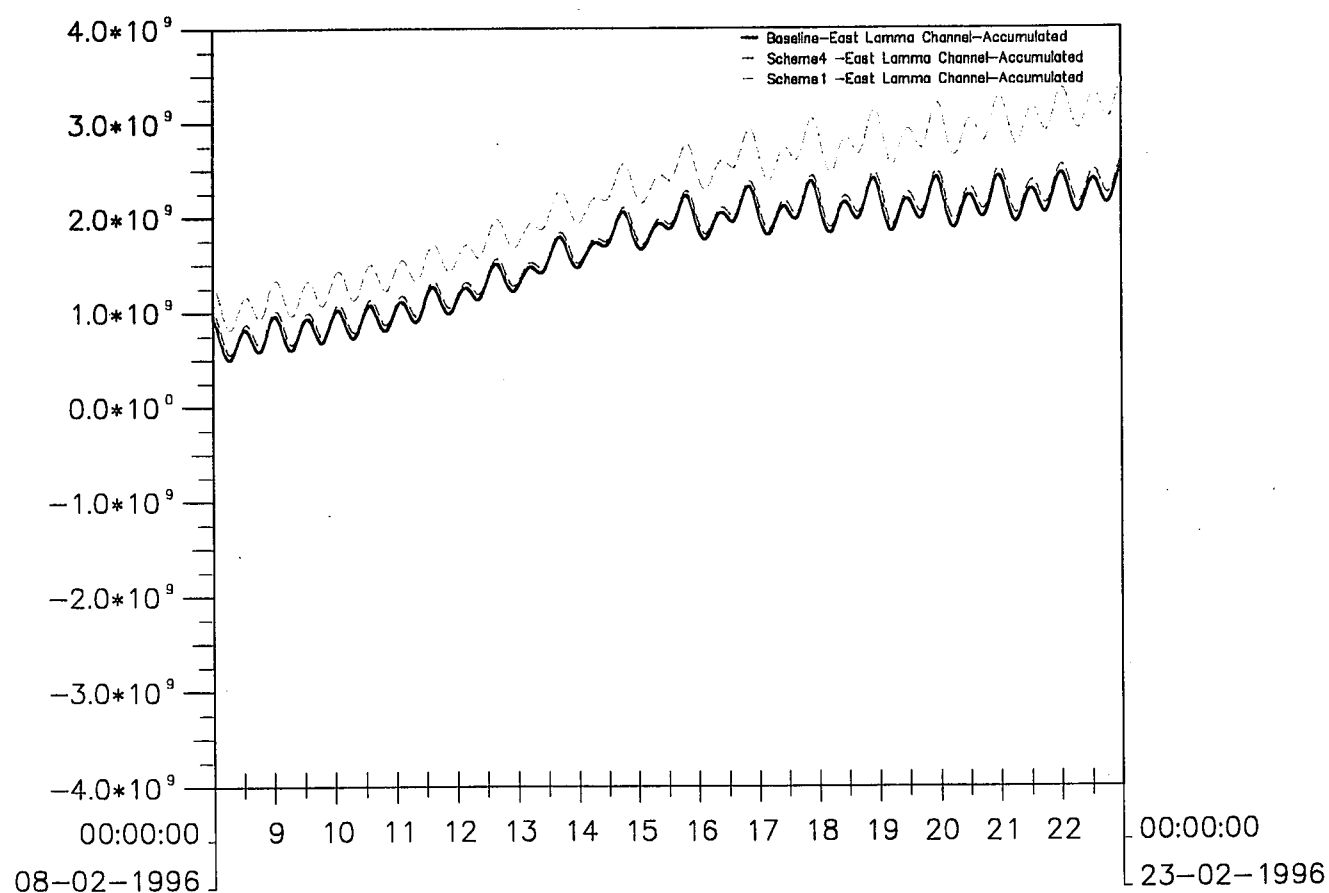
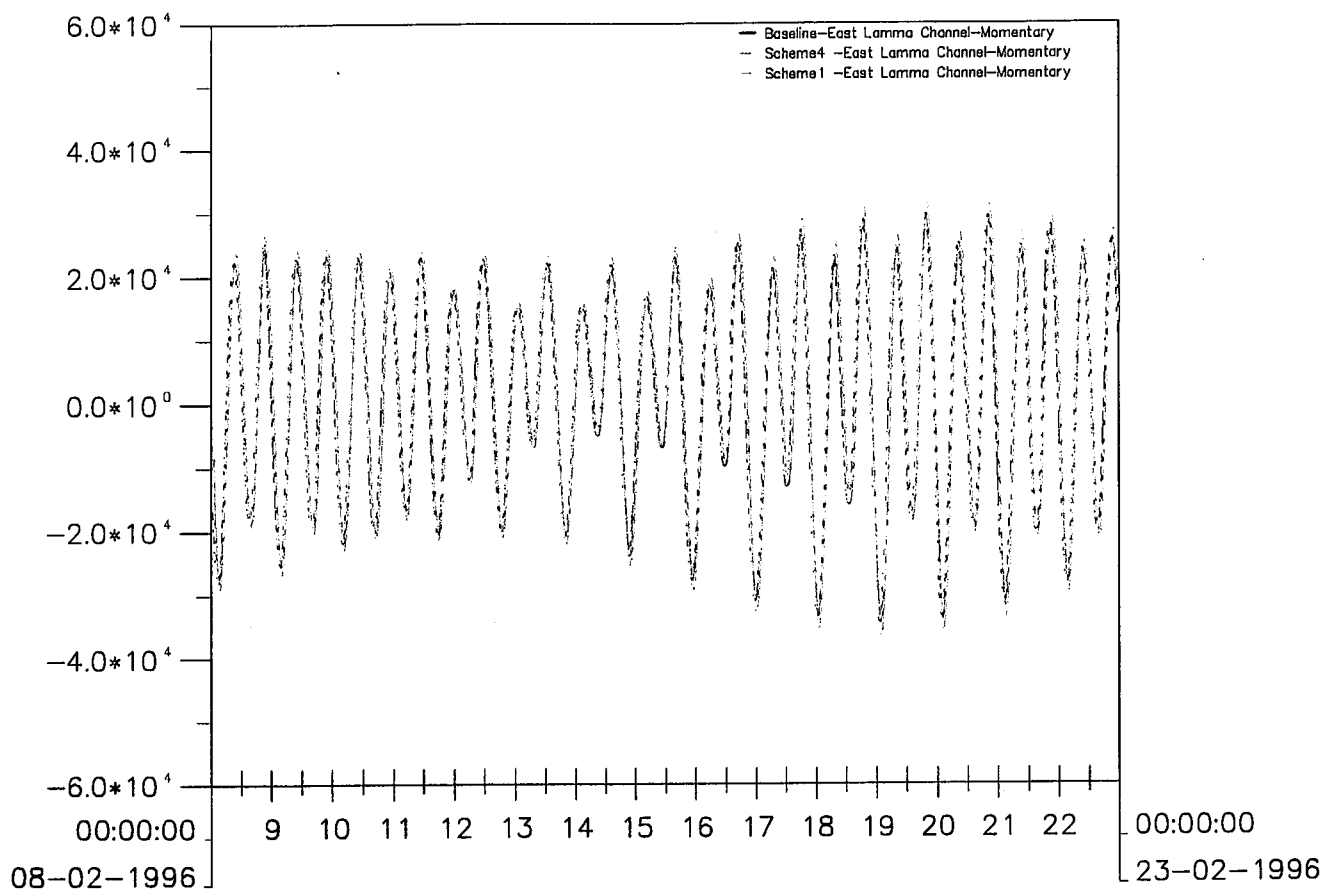
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NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY

Momentary and Accumulated Discharges through
Rambler Channel - Dry Season



FIG. D3k



CIVIL ENGINEERING
DEPARTMENT
土木工程署

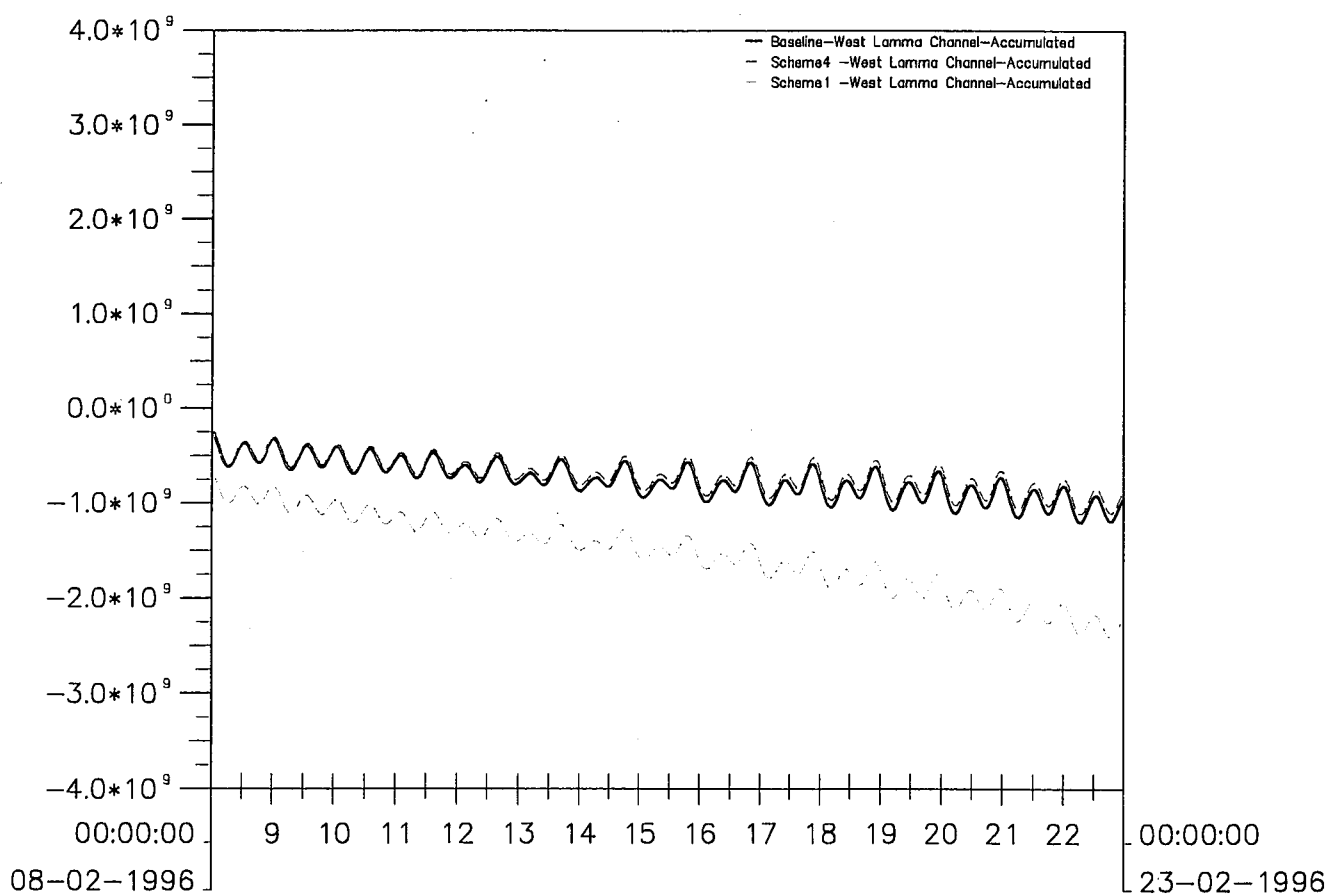
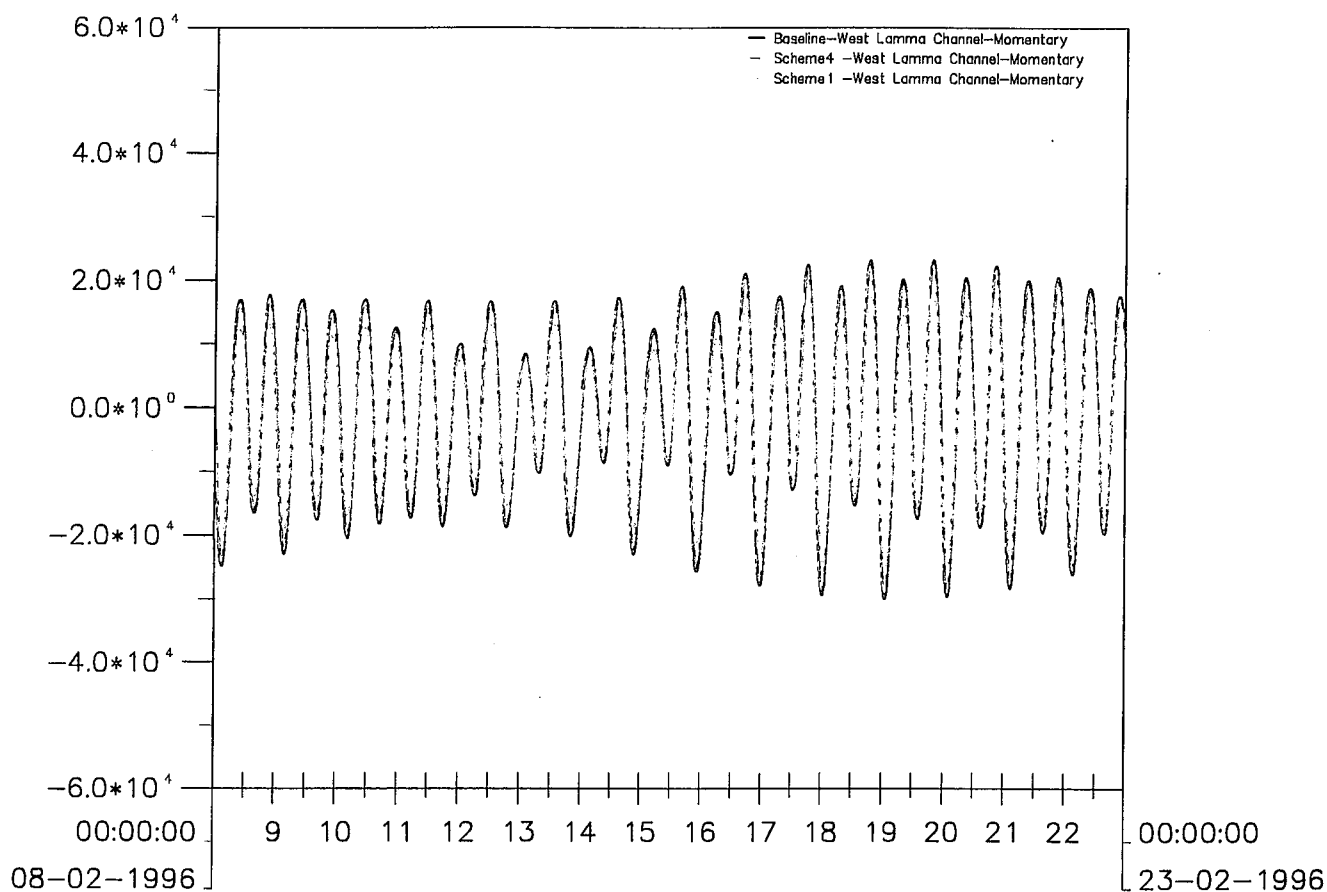
NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY

Momentary and Accumulated Discharges through
East Lamma Channel - Dry Season



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FIG. D3I



CIVIL ENGINEERING
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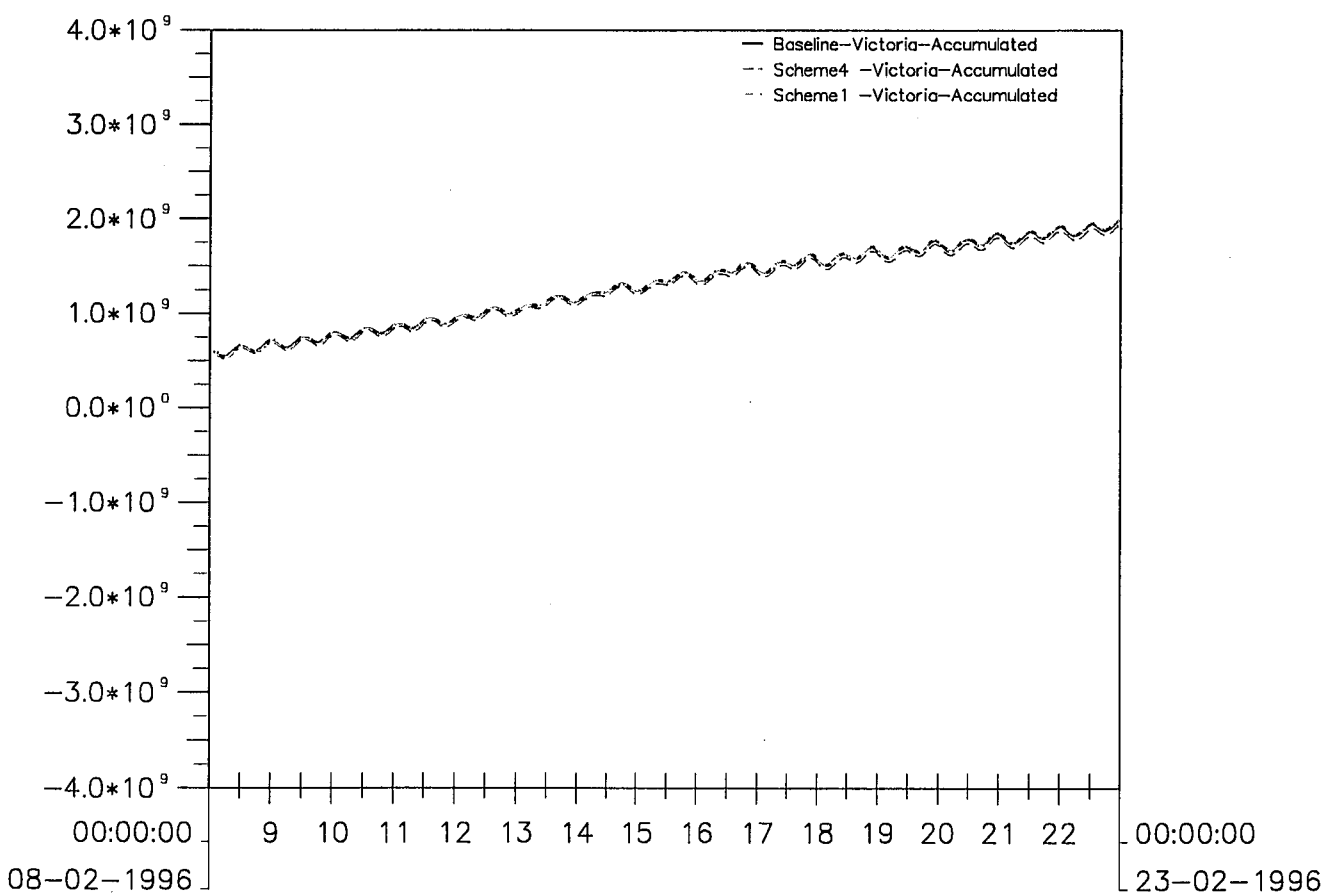
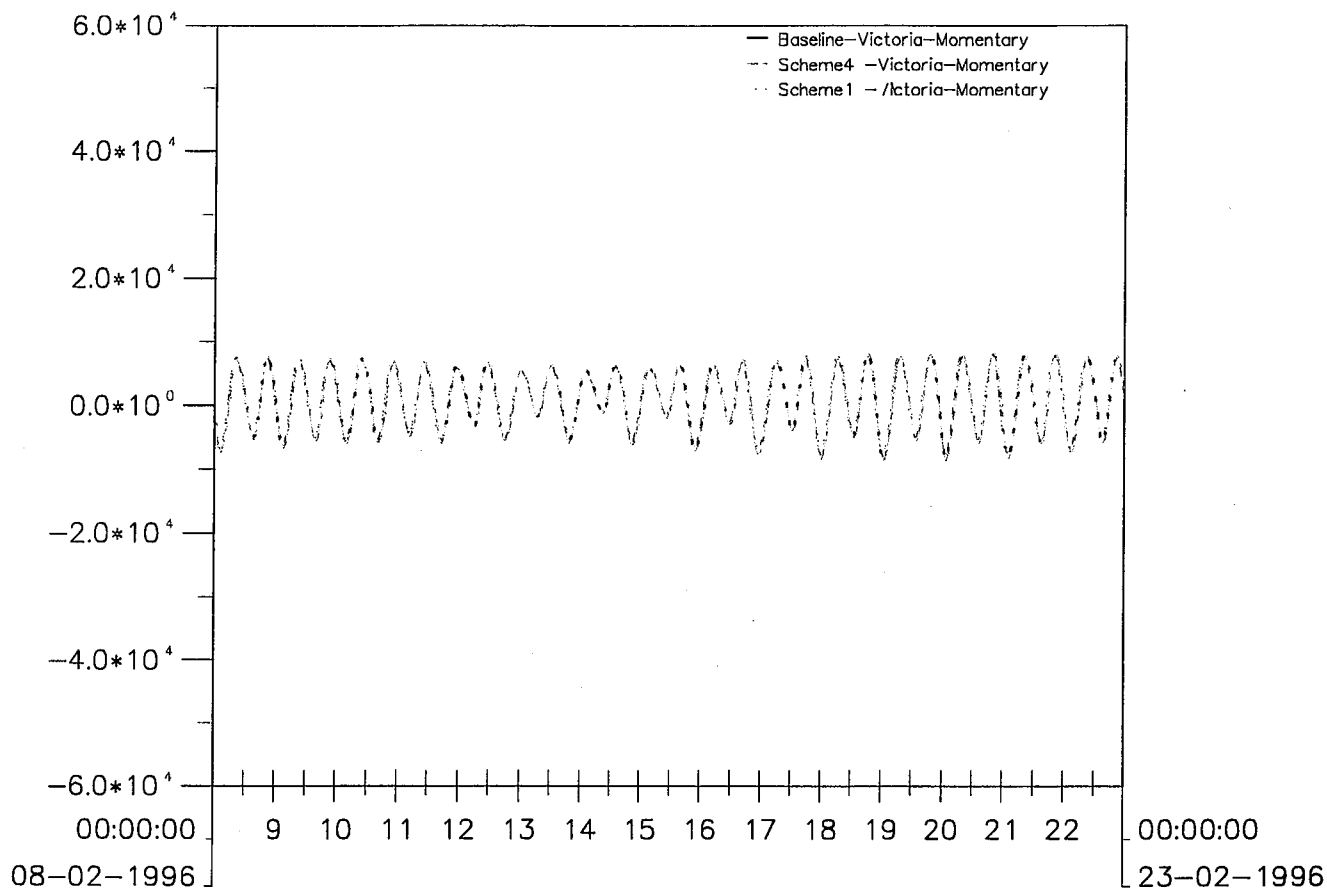
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NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY

Momentary and Accumulated Discharges through
West Lamma Channel - Dry Season



FIG. D3m



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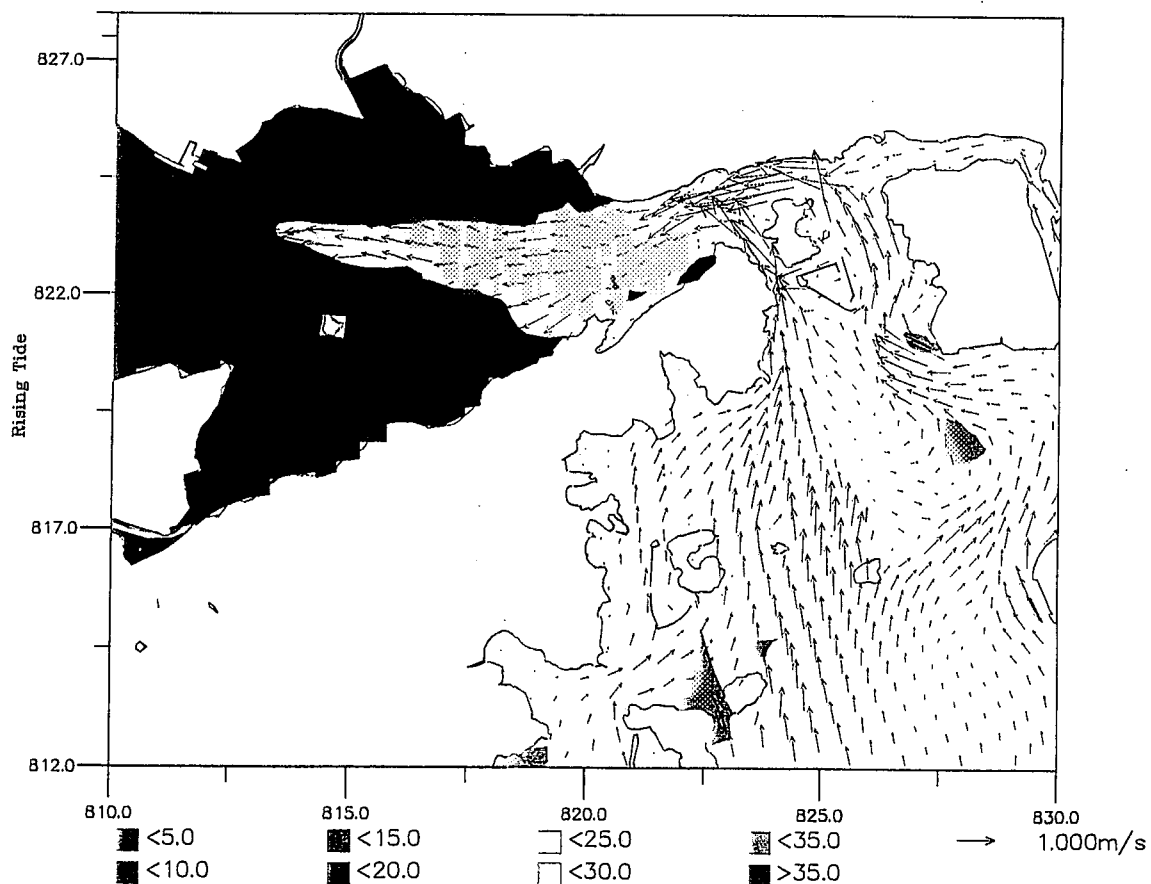
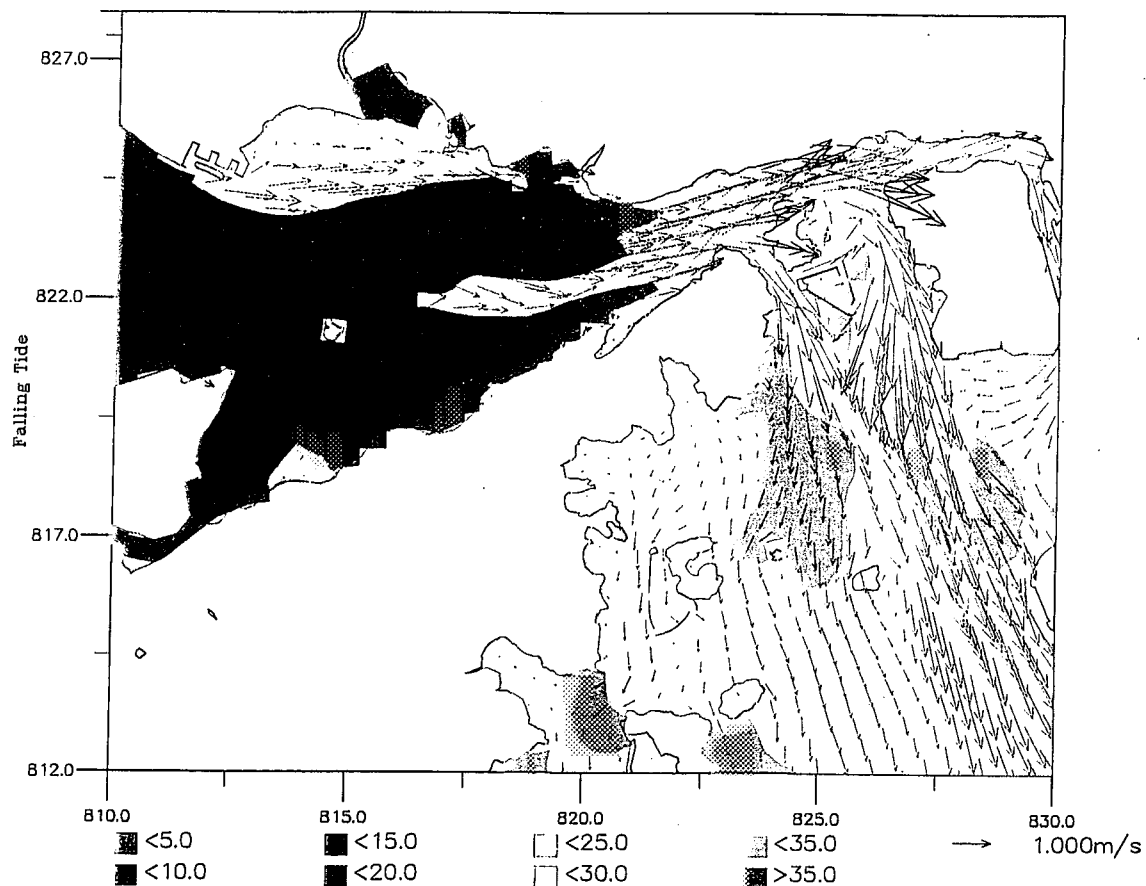
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NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY

Momentary and Accumulated Discharges through
Victoria Harbour - Dry Season



FIG. D3n



CIVIL ENGINEERING
DEPARTMENT
土木工程署

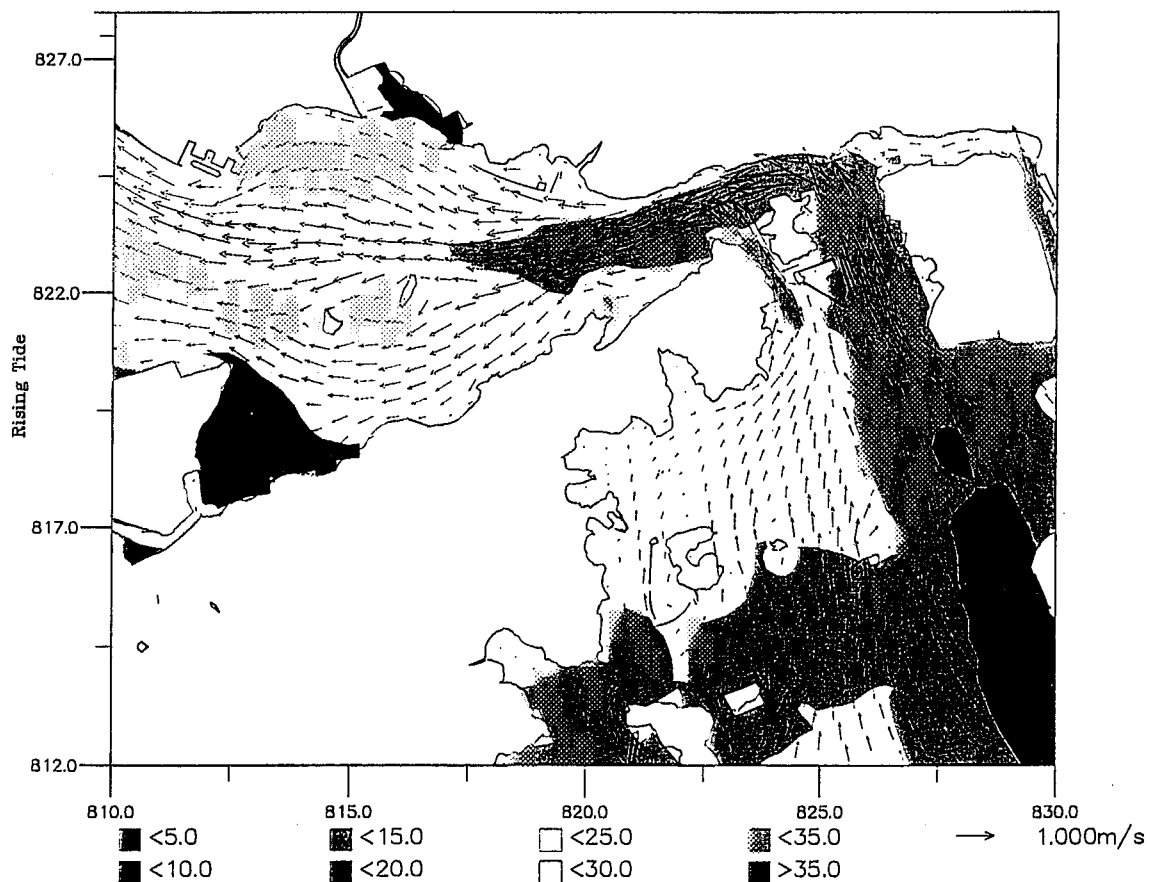
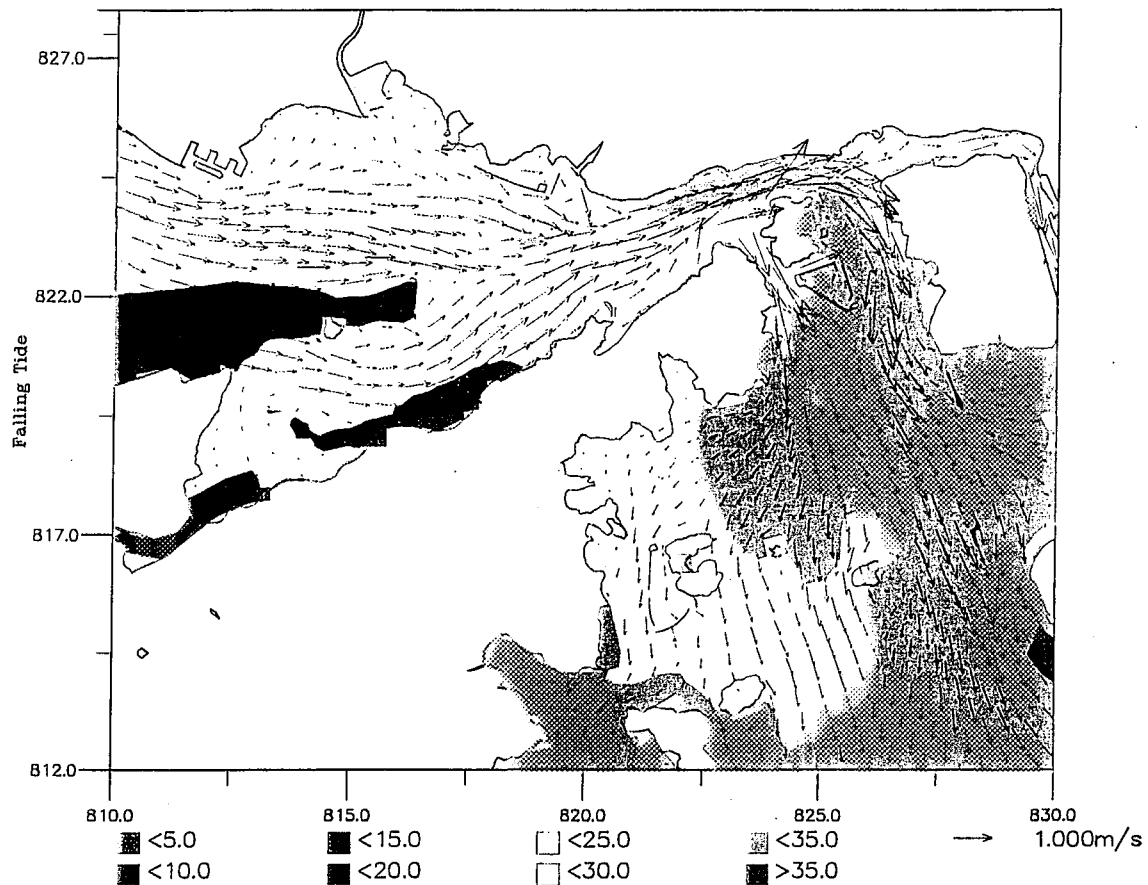
NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY

Velocity Vectors and Contours of Salinity
Baseline - Surface - Wet Season Spring Tide

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FIG. D3o



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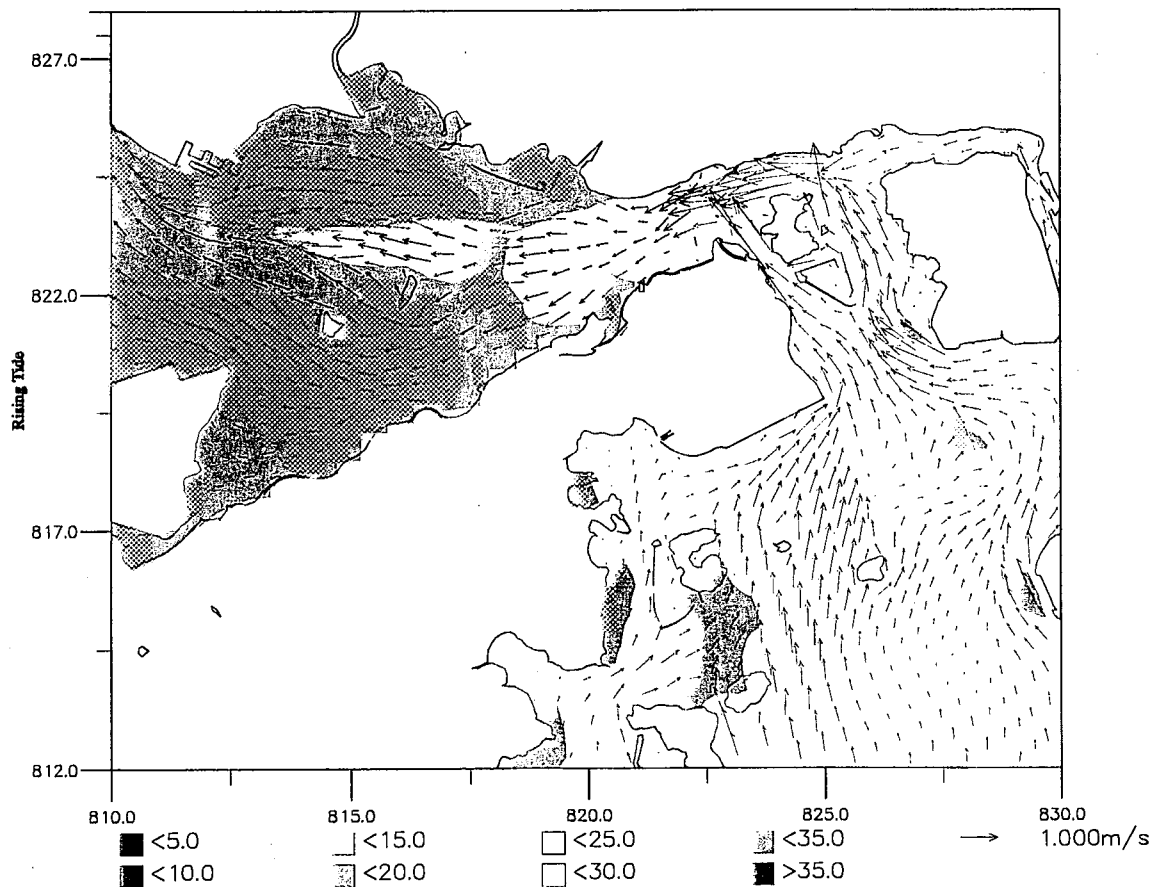
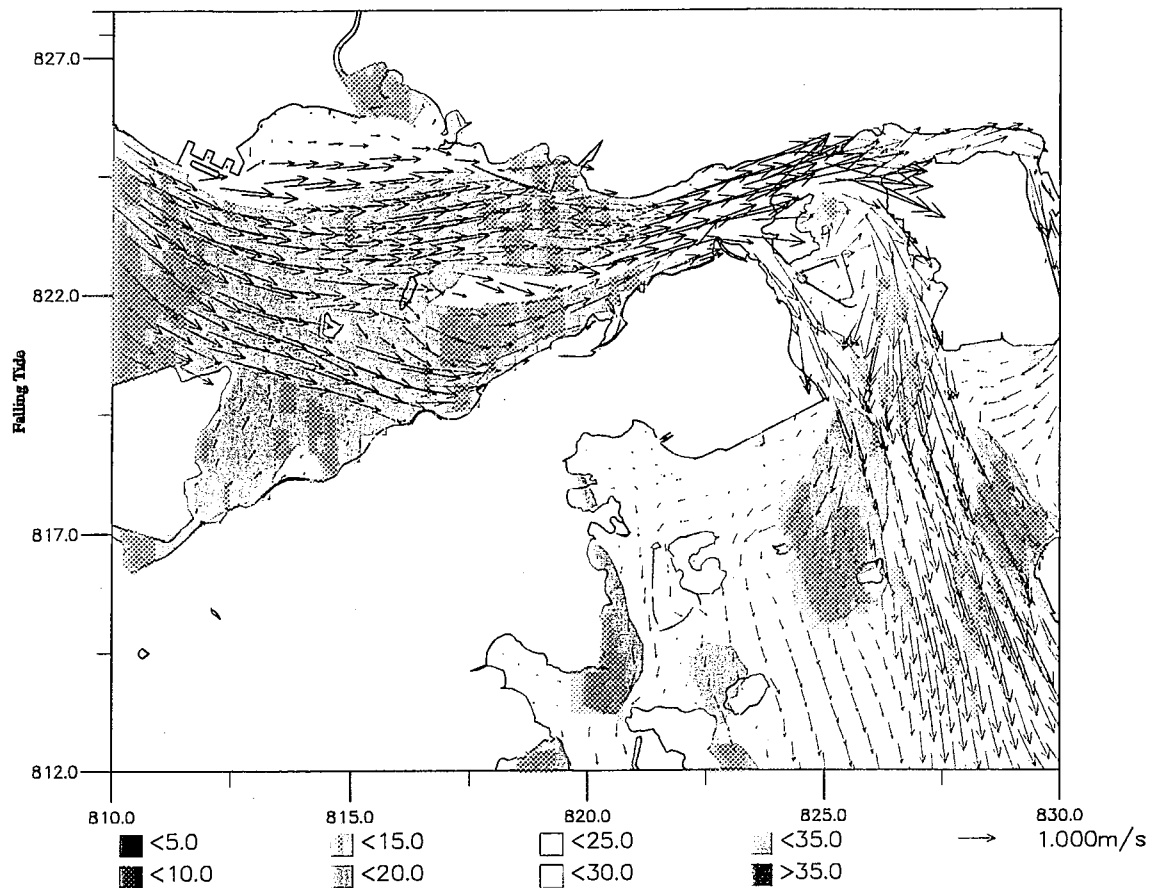
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NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY

Velocity Vectors and Contours of Salinity
Baseline - Bed - Wet Season Spring Tide



FIG. D3p



CIVIL ENGINEERING
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土木工程署

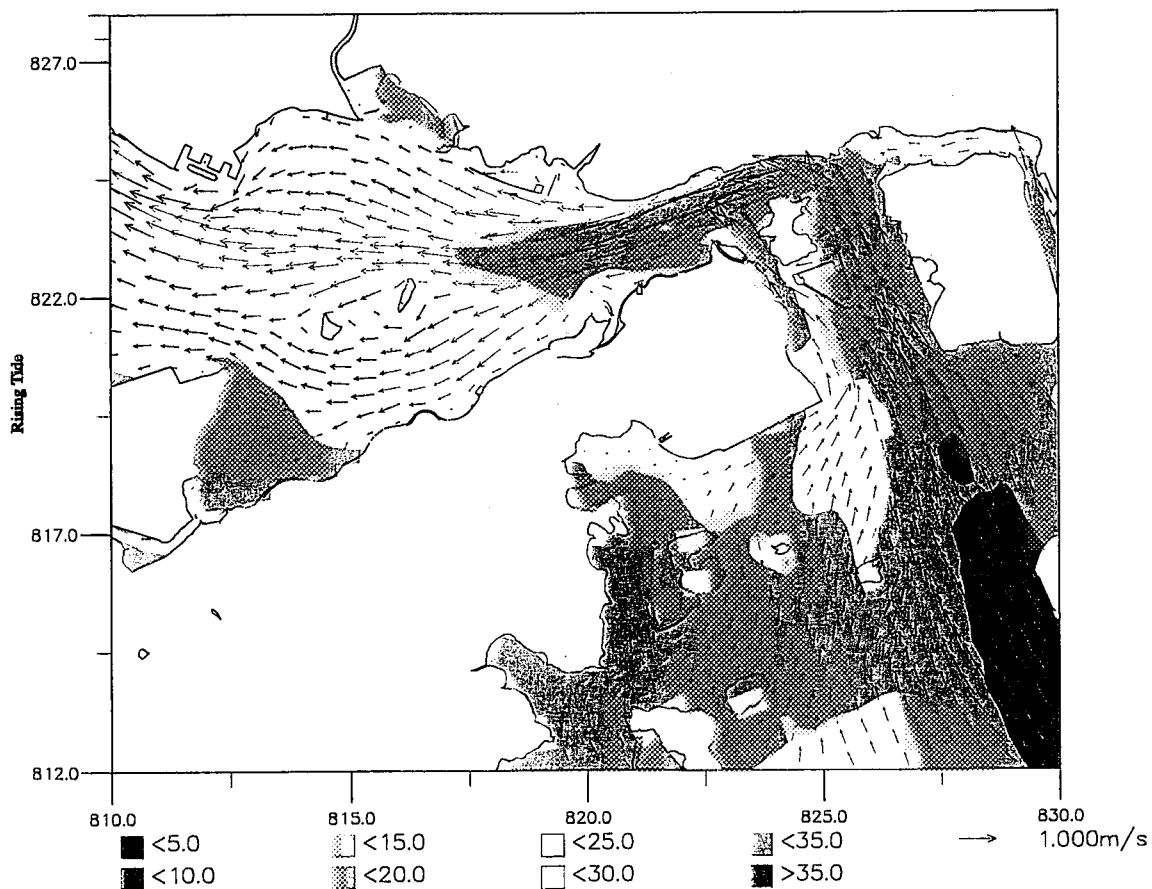
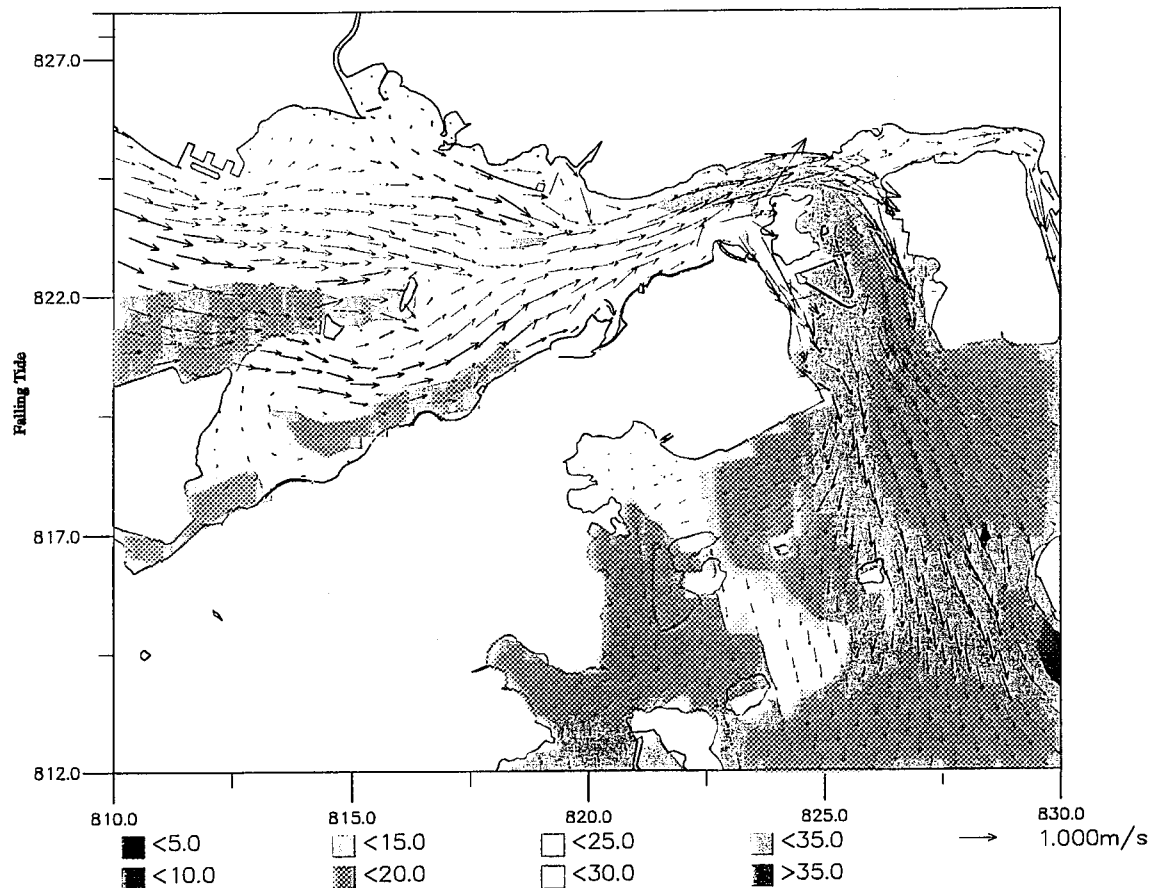
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NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY

Velocity Vectors and Contours of Salinity
Completed NSLD - Surface - Wet Season Spring Tide



FIG. D3q



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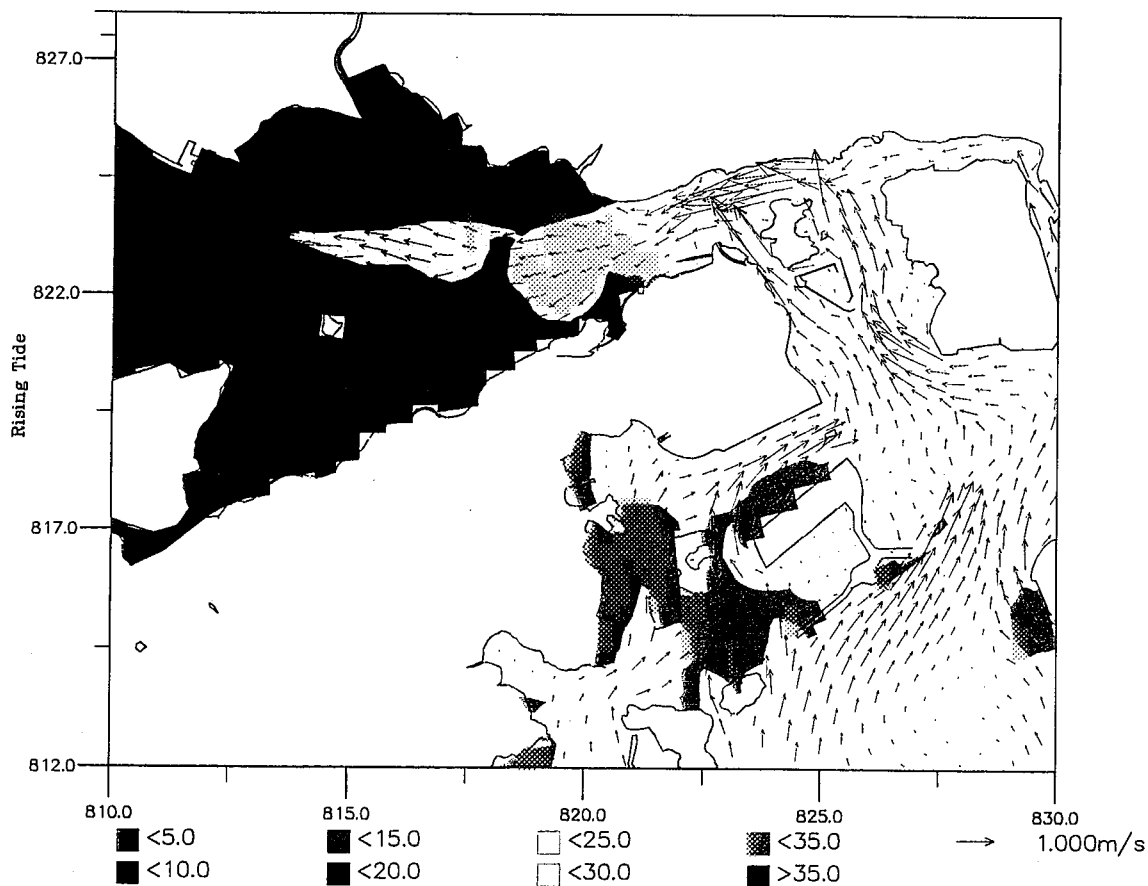
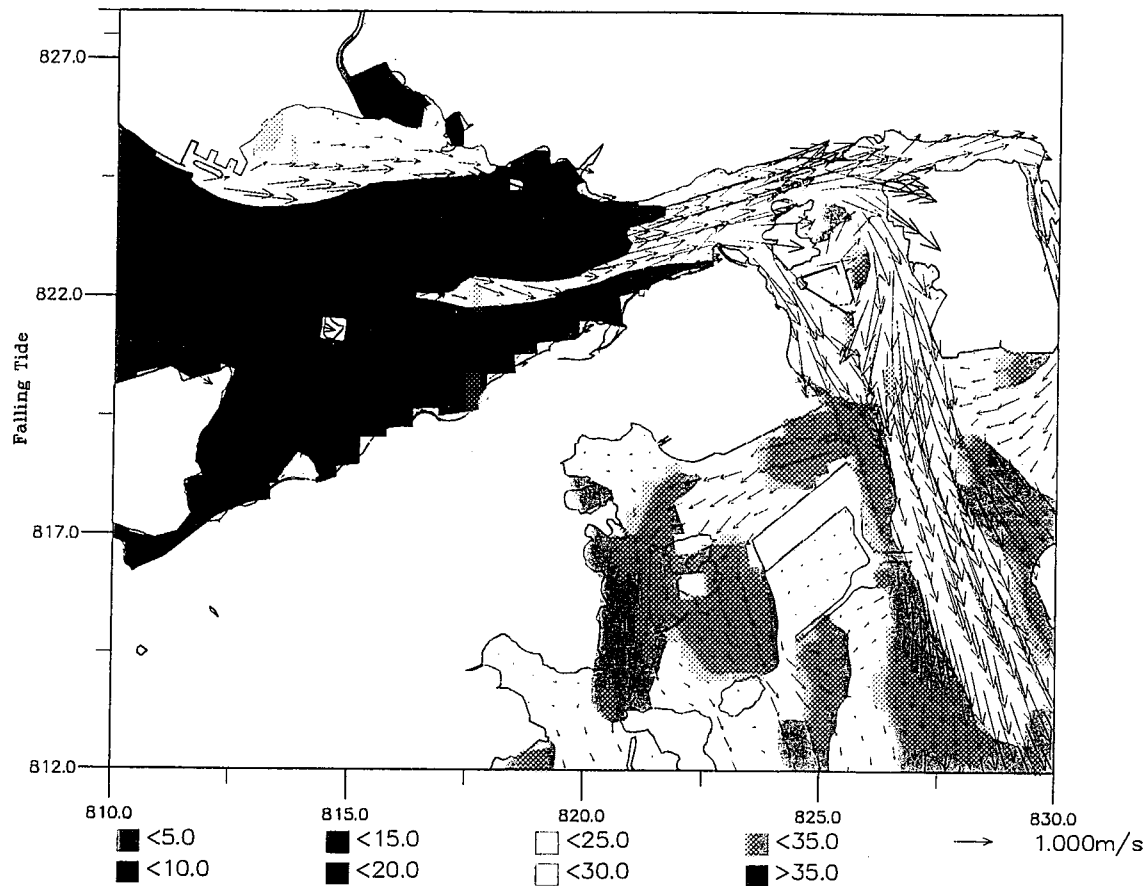
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NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY

Velocity Vectors and Contours of Salinity
Completed NSLD - Bed - Wet Season Spring Tide



FIG. D3r



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土木工程署

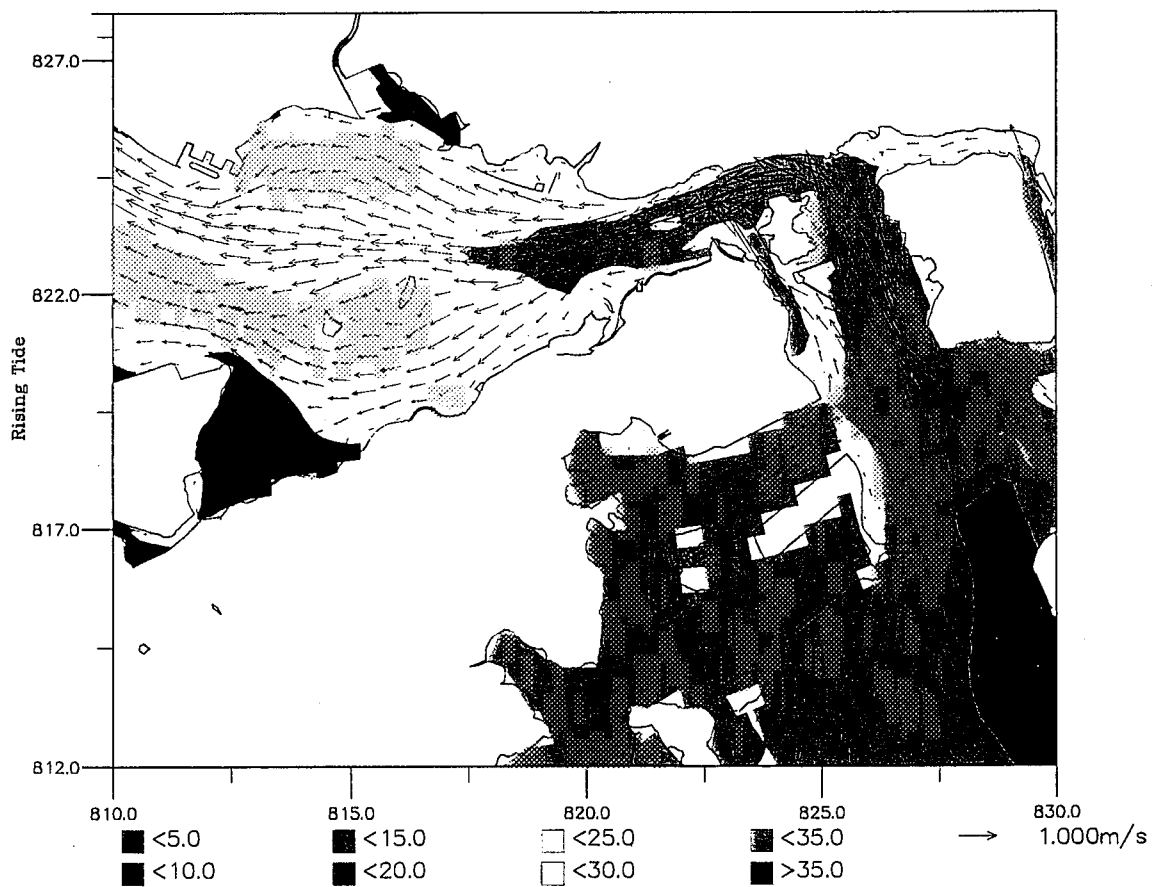
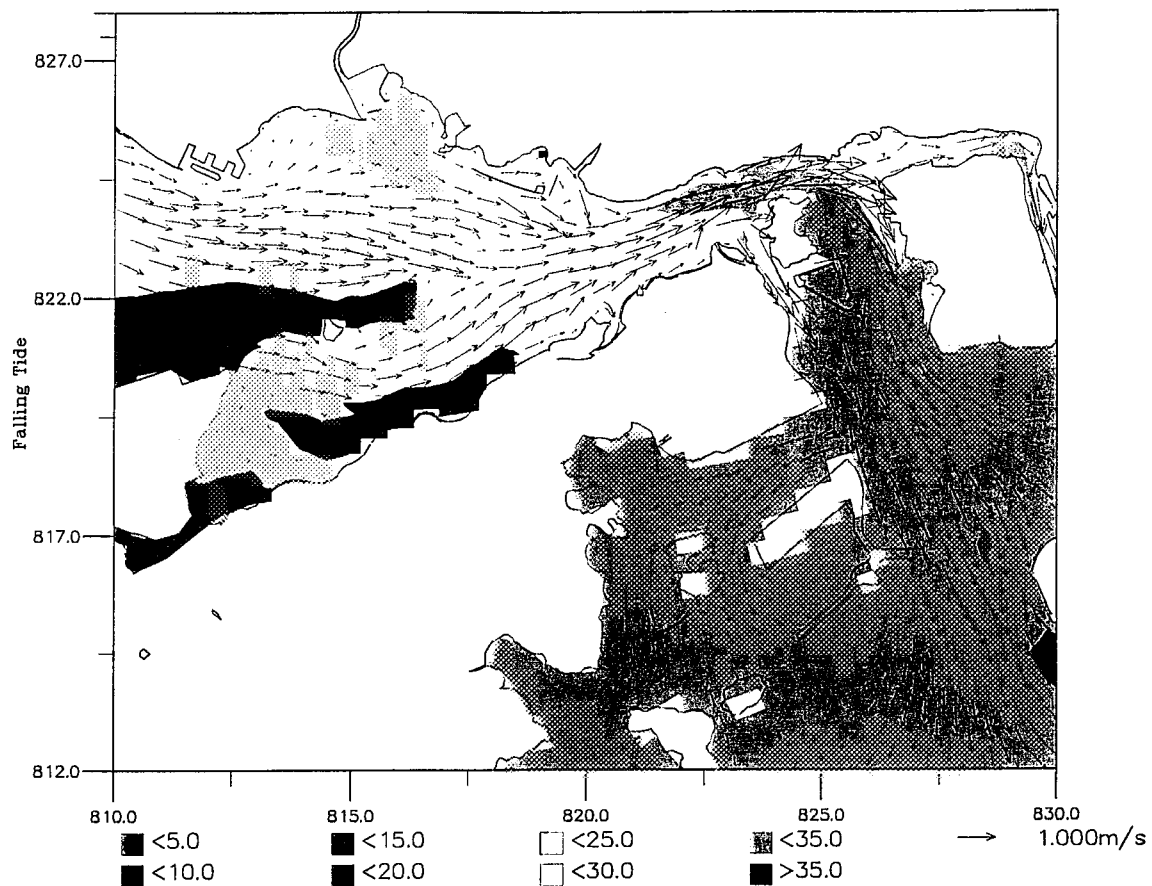
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NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY

Velocity Vectors and Contours of Salinity
Completed NSLD + CT - Surface - Wet Season Spring Tide



FIG. D3s



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NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY

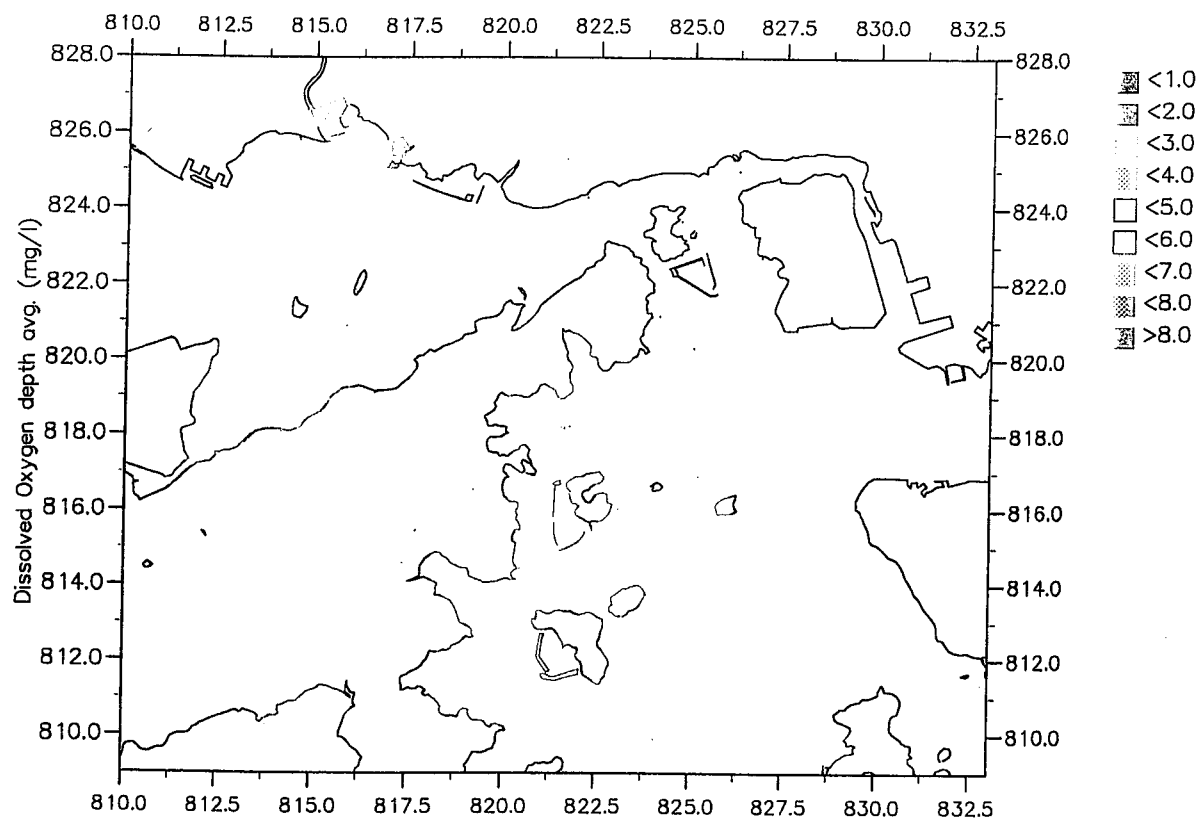
Velocity Vectors and Contours of Salinity
Completed NSLD + CT - Bed - Wet Season Spring Tide



FIG. D3t

Annex D4

Water Quality Modelling Results



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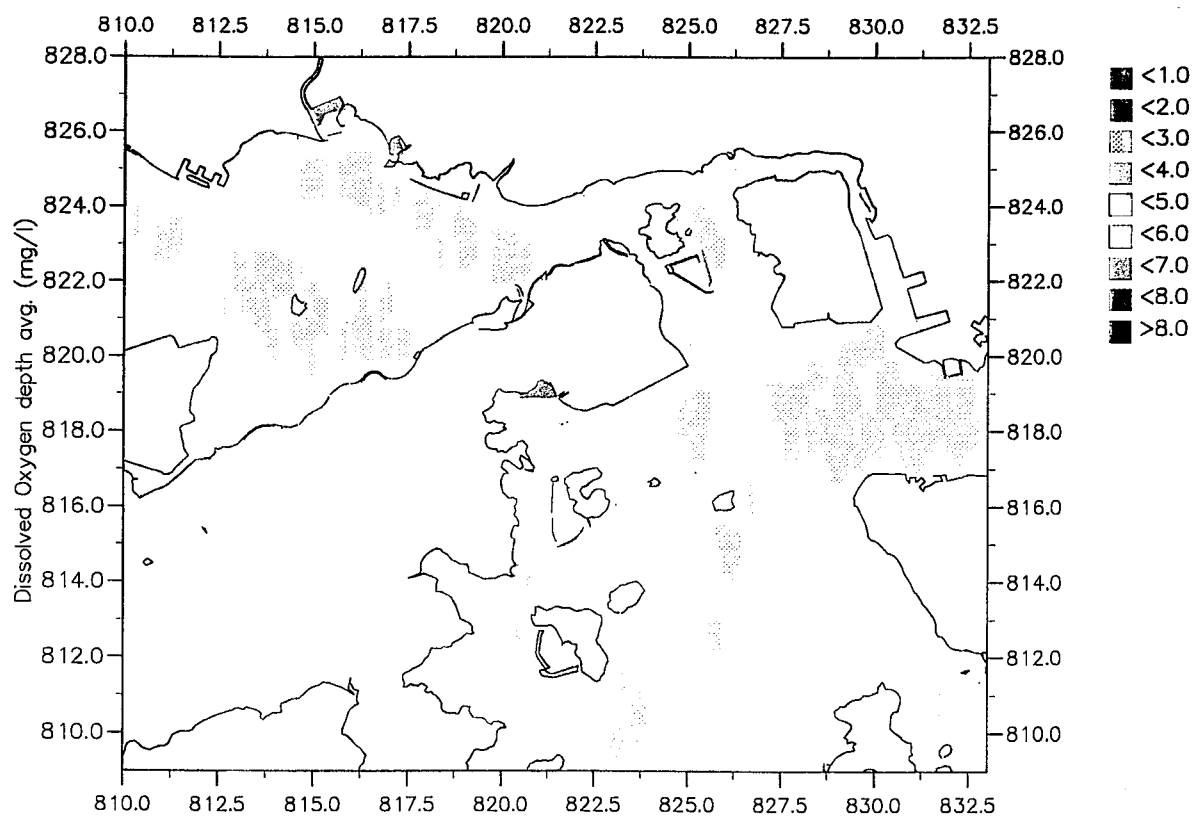
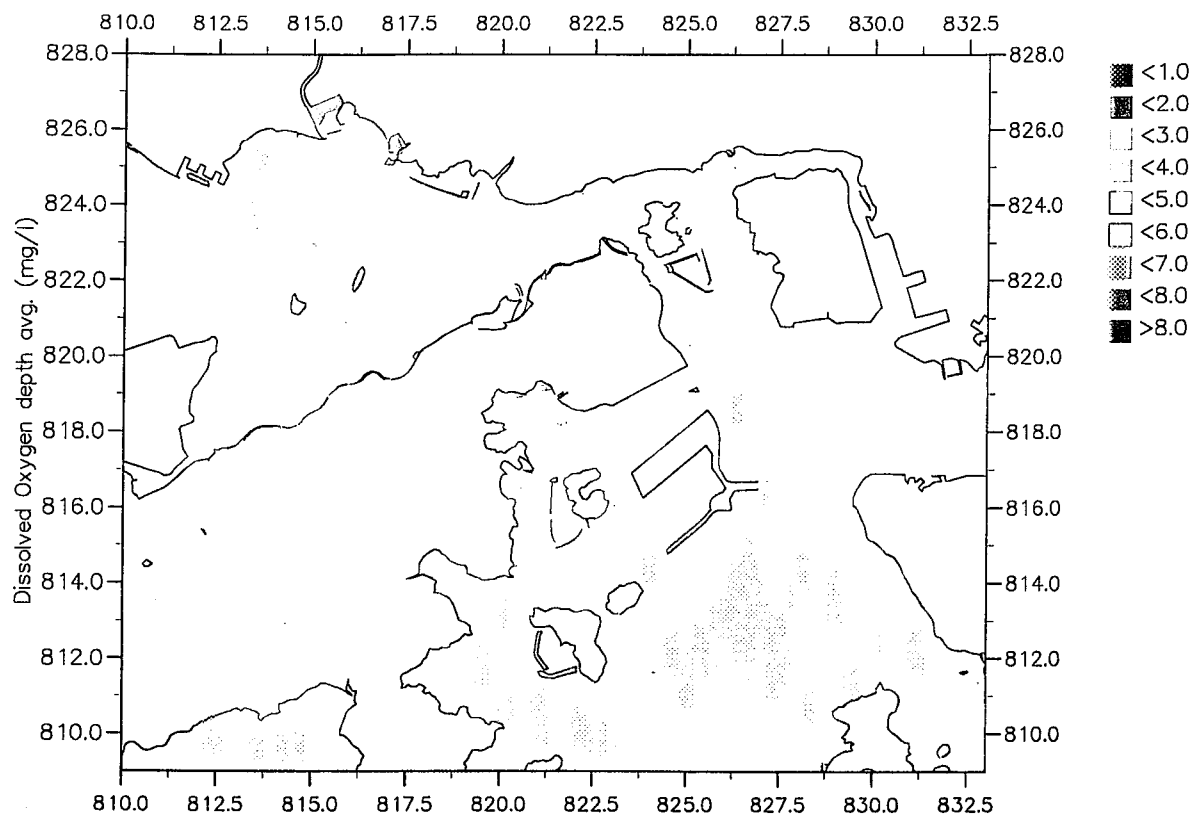
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NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY

10th Percentile Depth Averaged Dissolved Oxygen Concentrations
Wet Season - Baseline



FIG. D4a



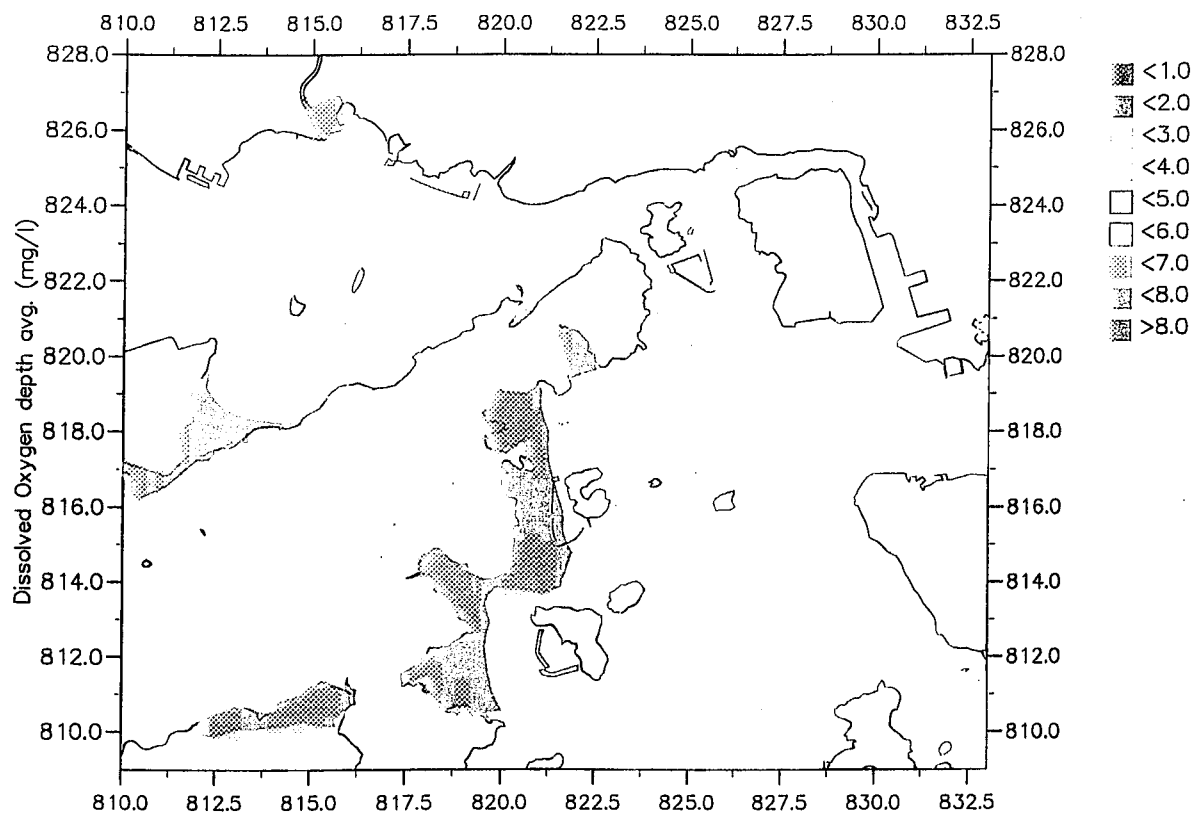
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DEPARTMENT
土木工程署

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NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY
10th Percentile Depth Averaged Dissolved Oxygen Concentrations
Wet Season
Upper : NSLD Lower : NSLD + CT



FIG. D4b



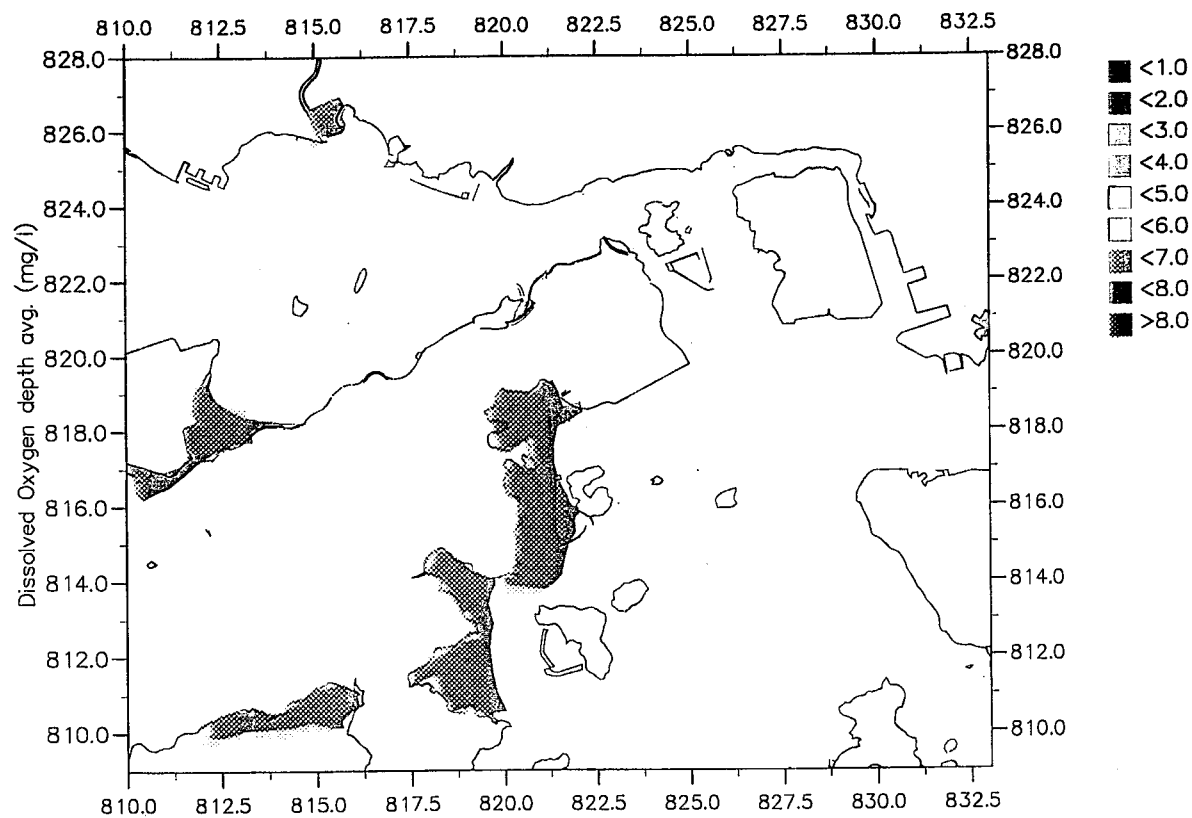
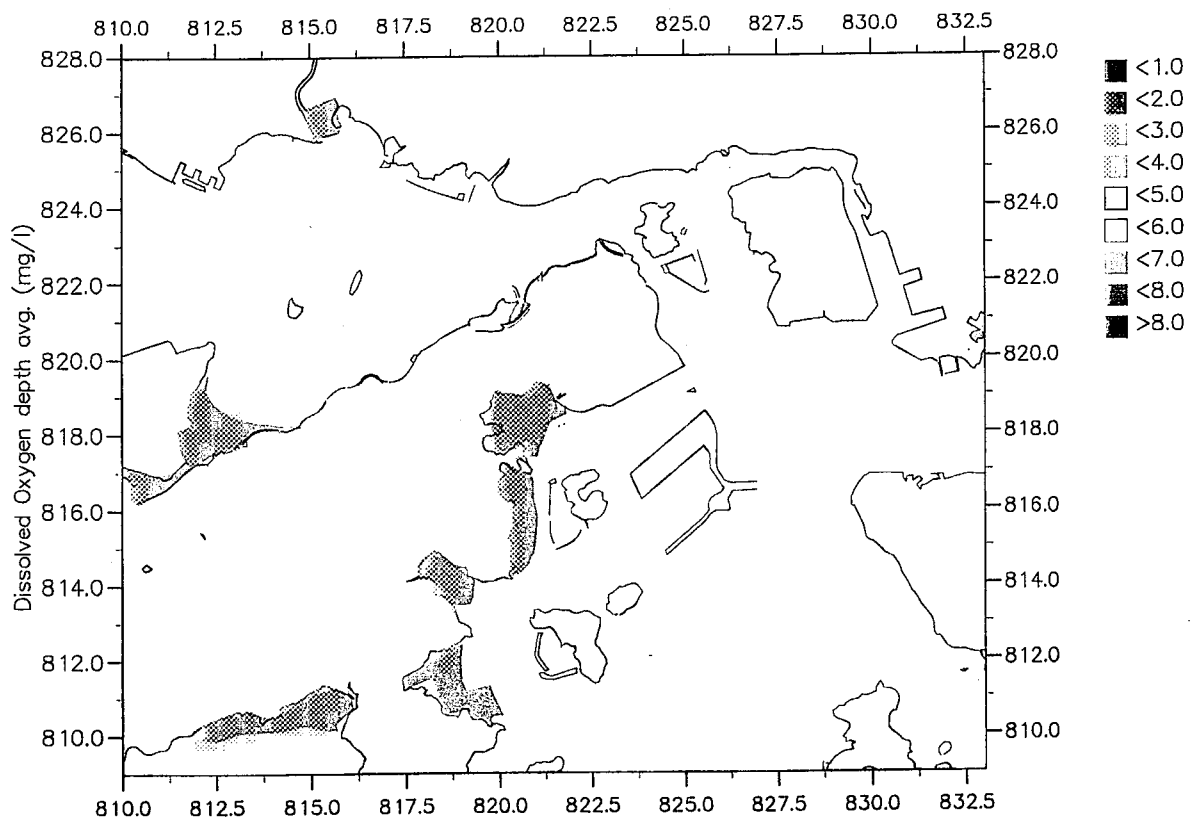
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NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY
10th Percentile Depth Averaged Dissolved Oxygen Concentrations
Dry Season - Baseline



FIG. D4c



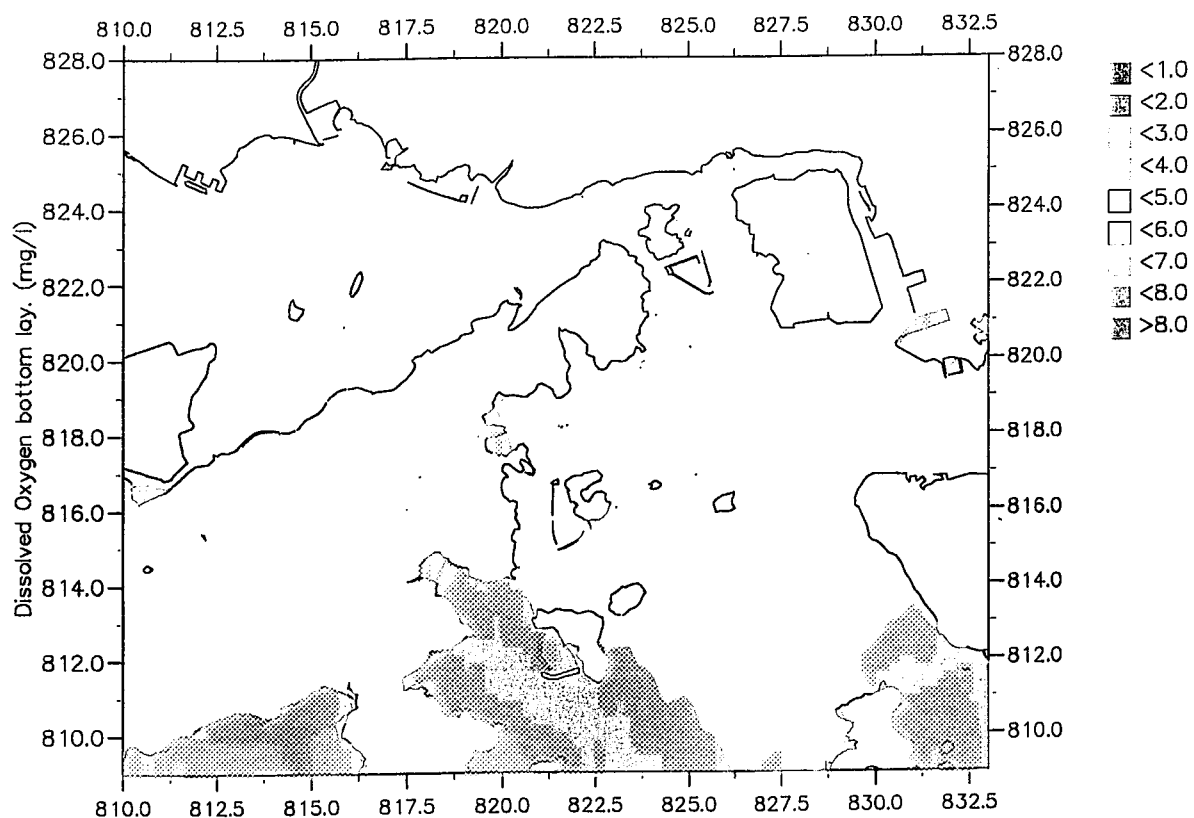
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NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY
10th Percentile Depth Averaged Dissolved Oxygen Concentrations
Dry Season
Upper : NSLD Lower : NSLD + CT



FIG. D4d



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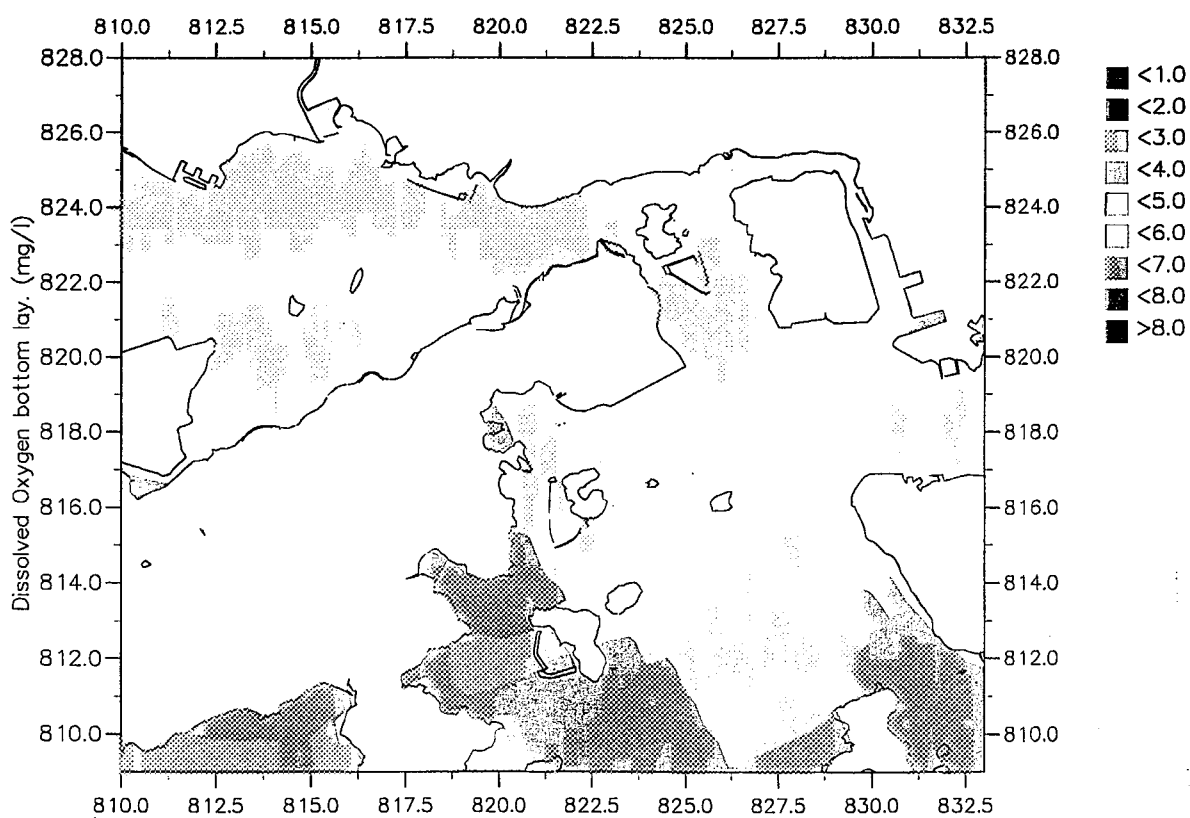
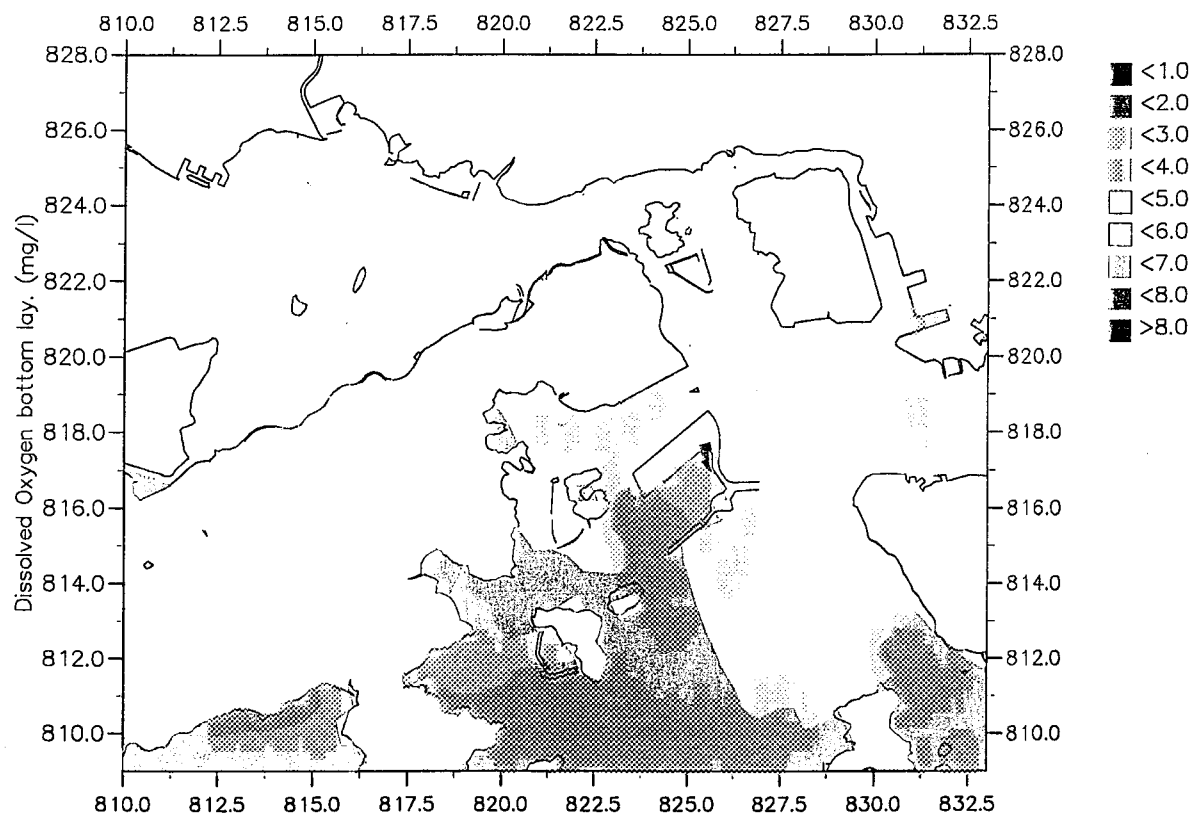
NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY

10th Percentile Bottom Dissolved Oxygen Concentrations
Wet Season - Baseline



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FIG. D4e



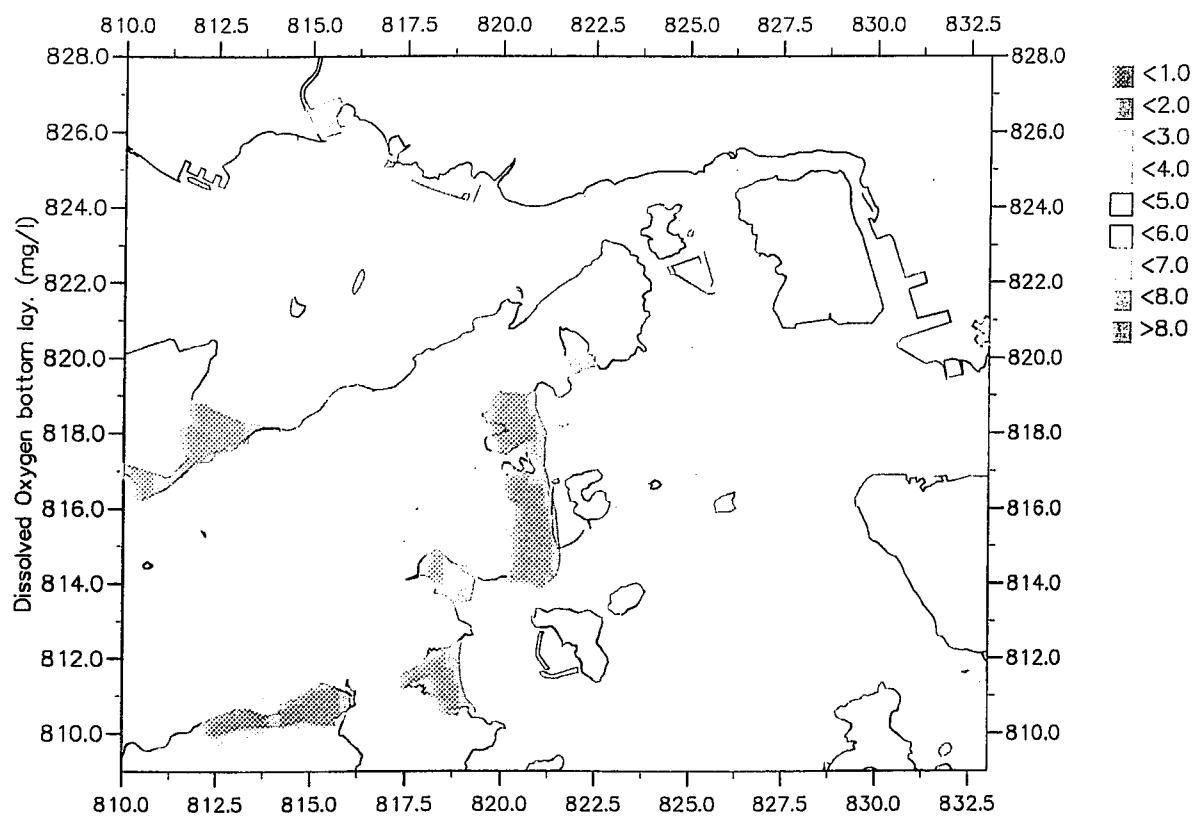
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10th Percentile Bottom Dissolved Oxygen Concentrations
Wet Season
Upper : NSLD Lower : NSLD + CT



FIG. D4f



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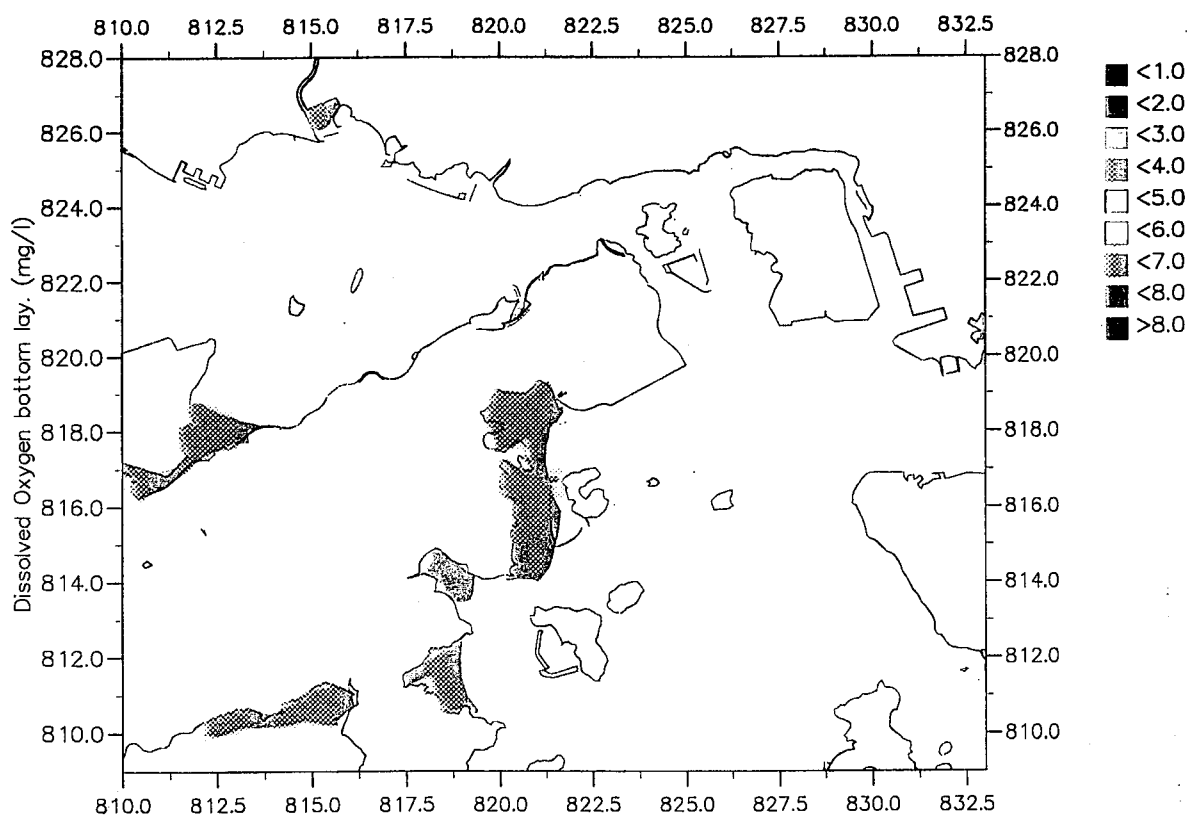
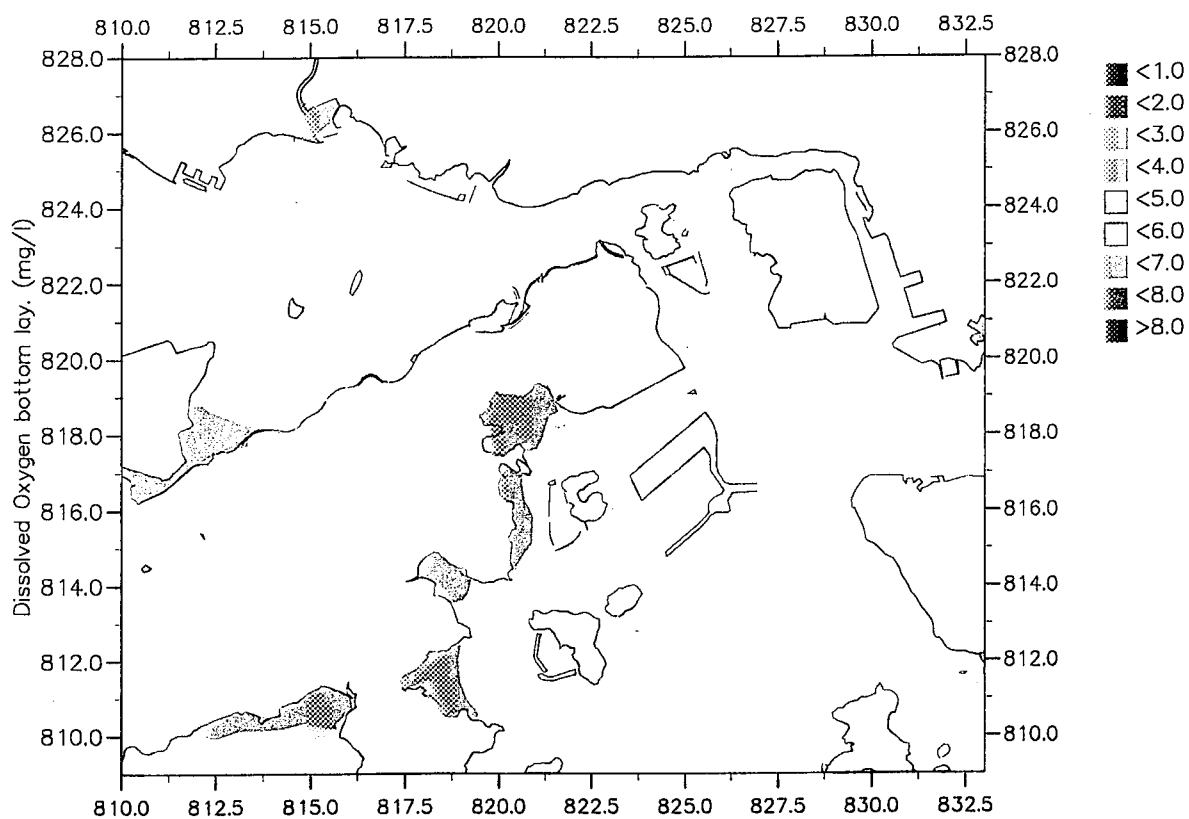
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10th Percentile Bottom Dissolved Oxygen Concentrations
Dry Season - Baseline



FIG. D4g



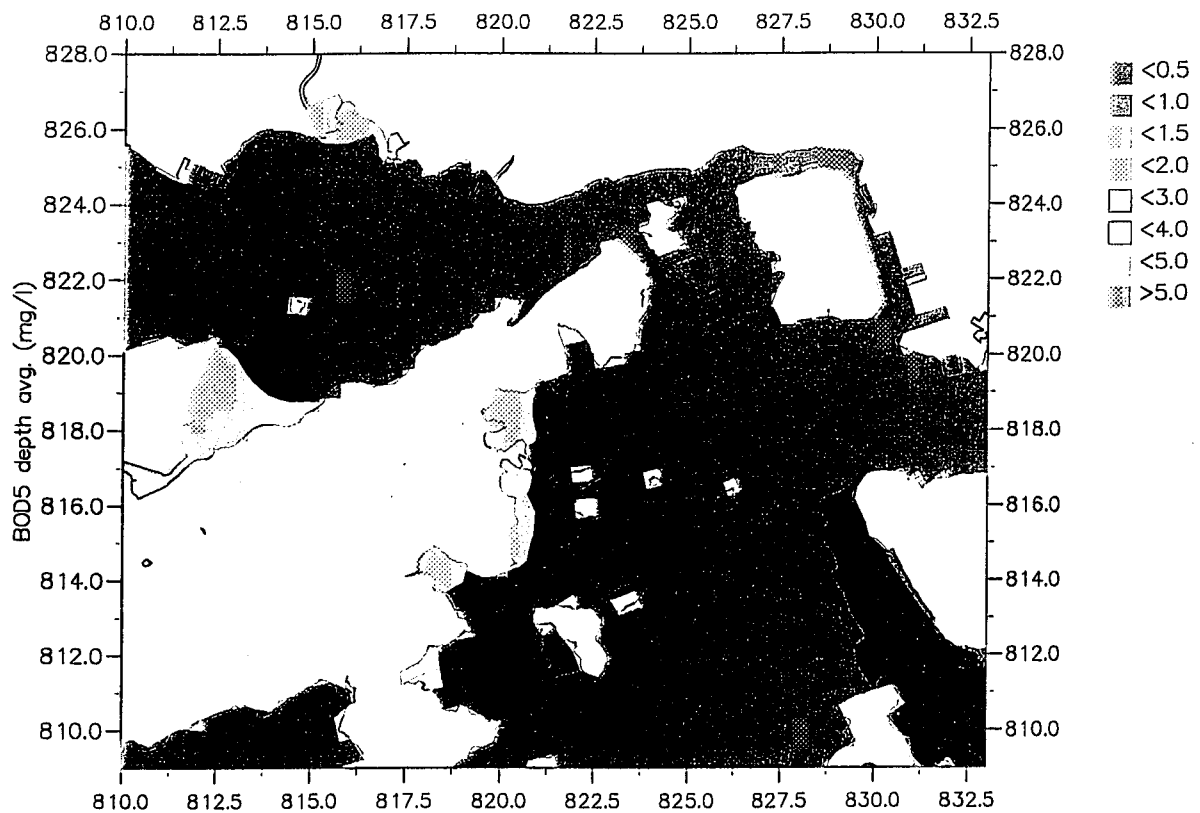
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10th Percentile Bottom Dissolved Oxygen Concentrations
Dry Season
Upper : NSLD Lower : NSLD + CT



FIG. D4h



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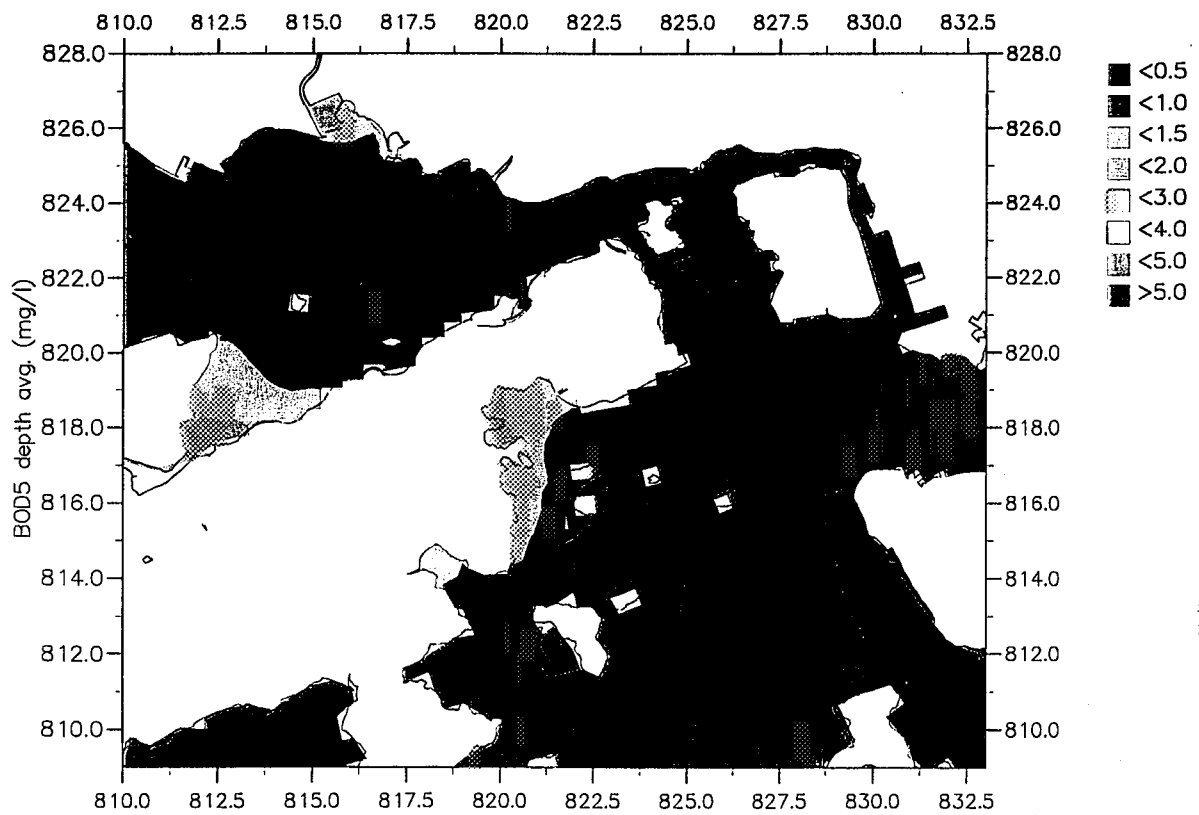
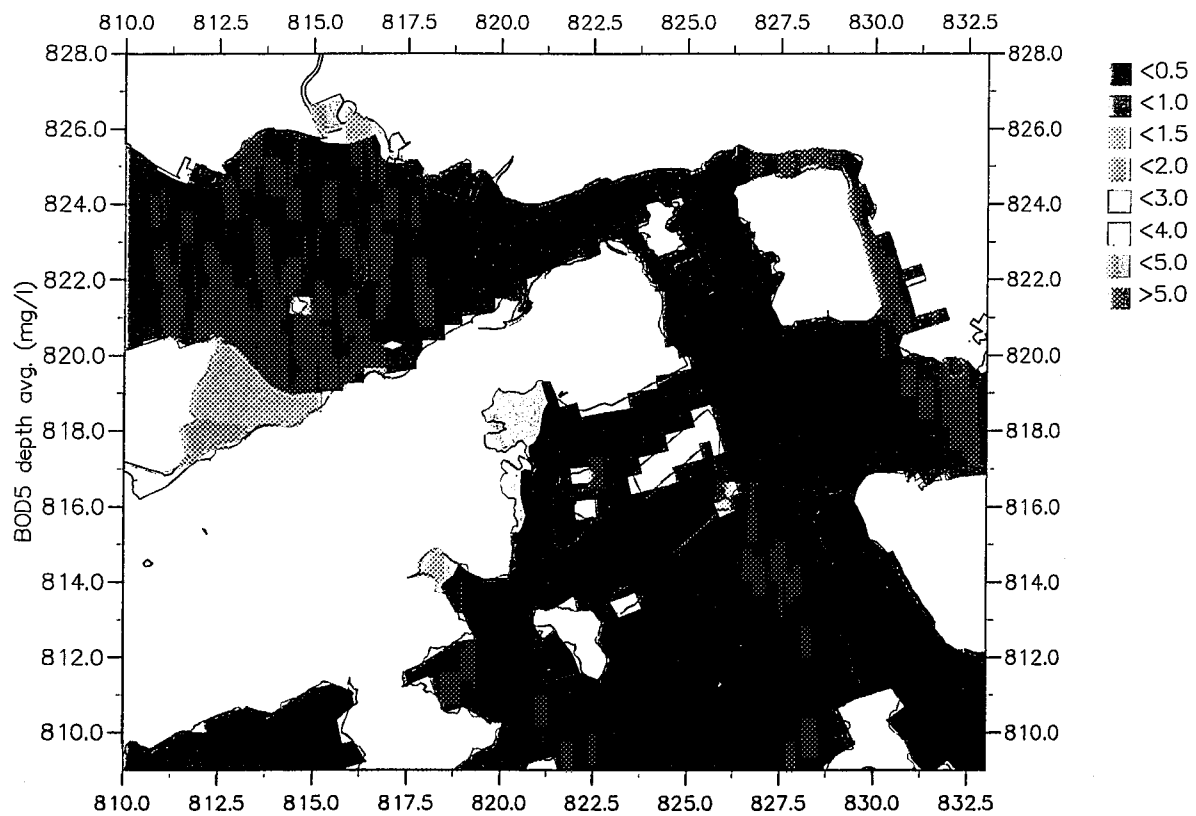
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Mean Depth Averaged BOD₅ Concentrations
Wet Season - Baseline



FIG. D4i



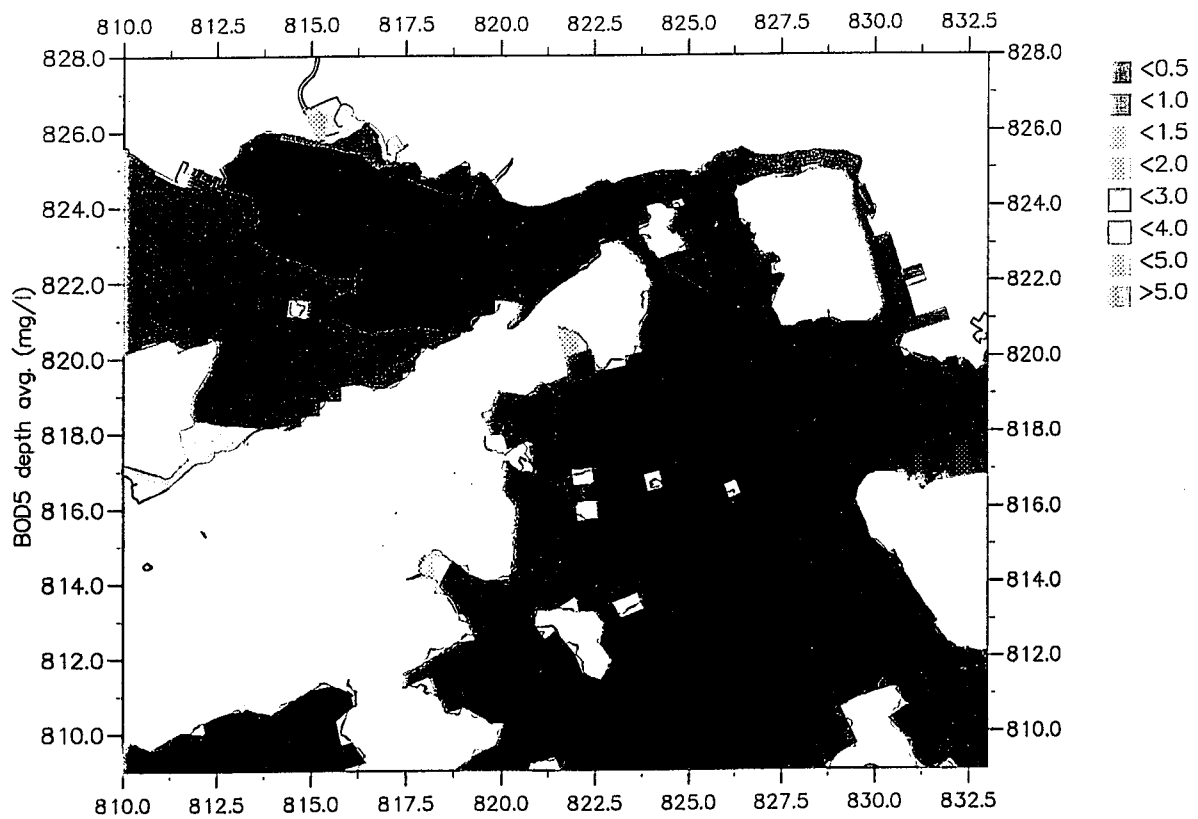
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Mean Depth Averaged BOD₅ Concentrations
Wet Season
Upper : NSLD Lower : NSLD + CT



FIG. D4j



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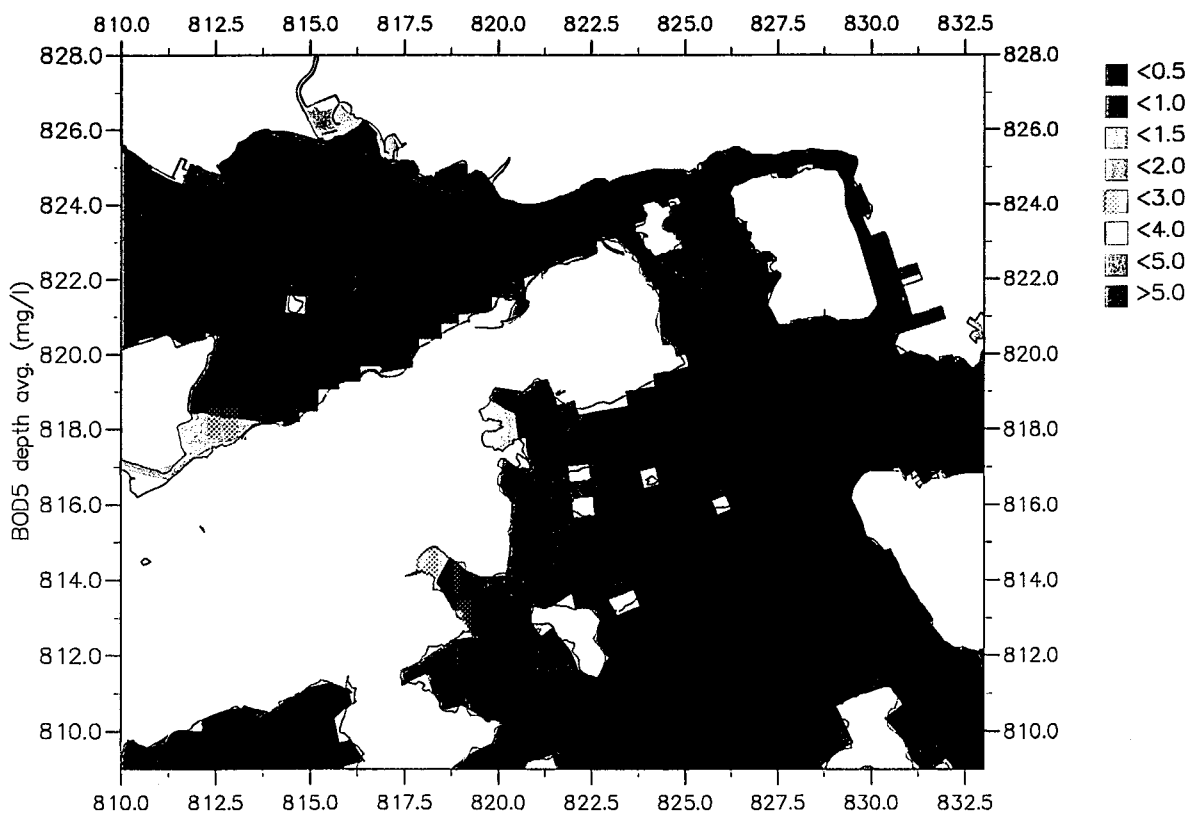
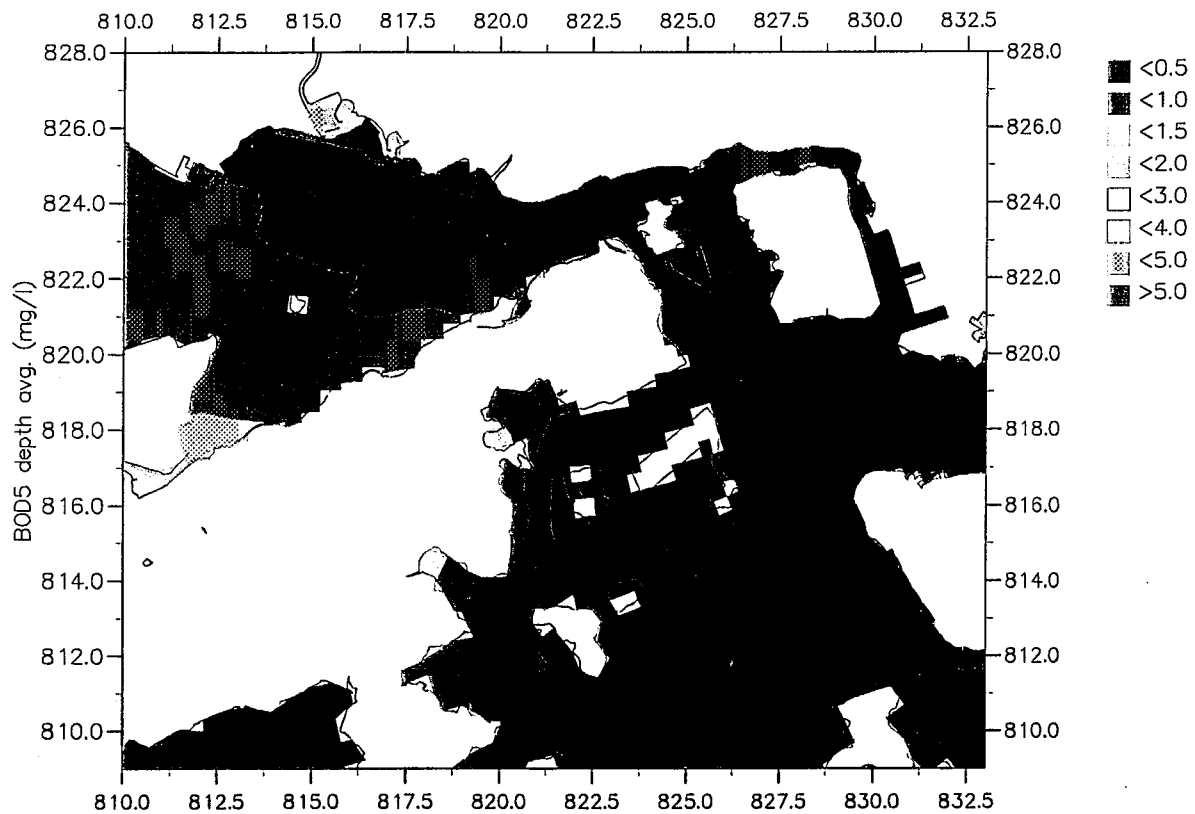
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Mean Depth Averaged BOD₅ Concentrations
Dry Season - Baseline



FIG. D4k



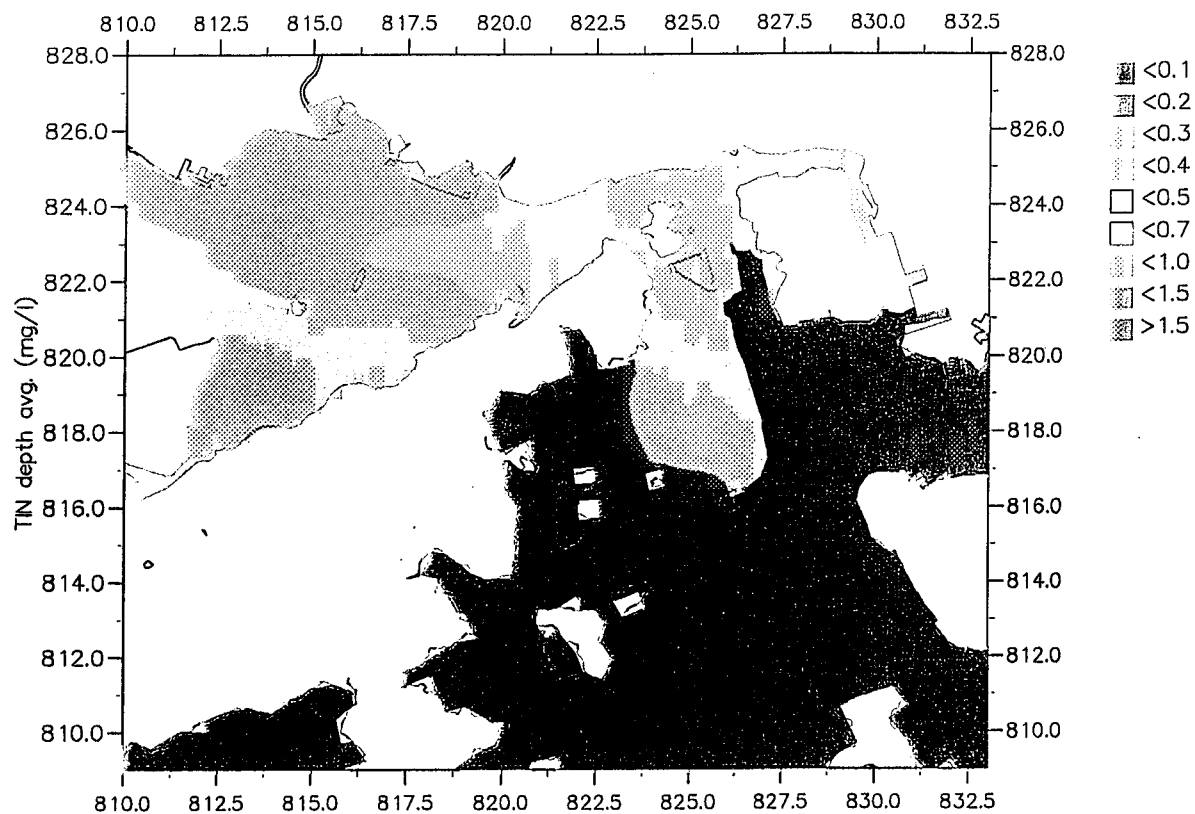
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Mean Depth Averaged BOD₅ Concentrations
Dry Season
Upper : NSLD Lower : NSLD + CT



FIG. D4I



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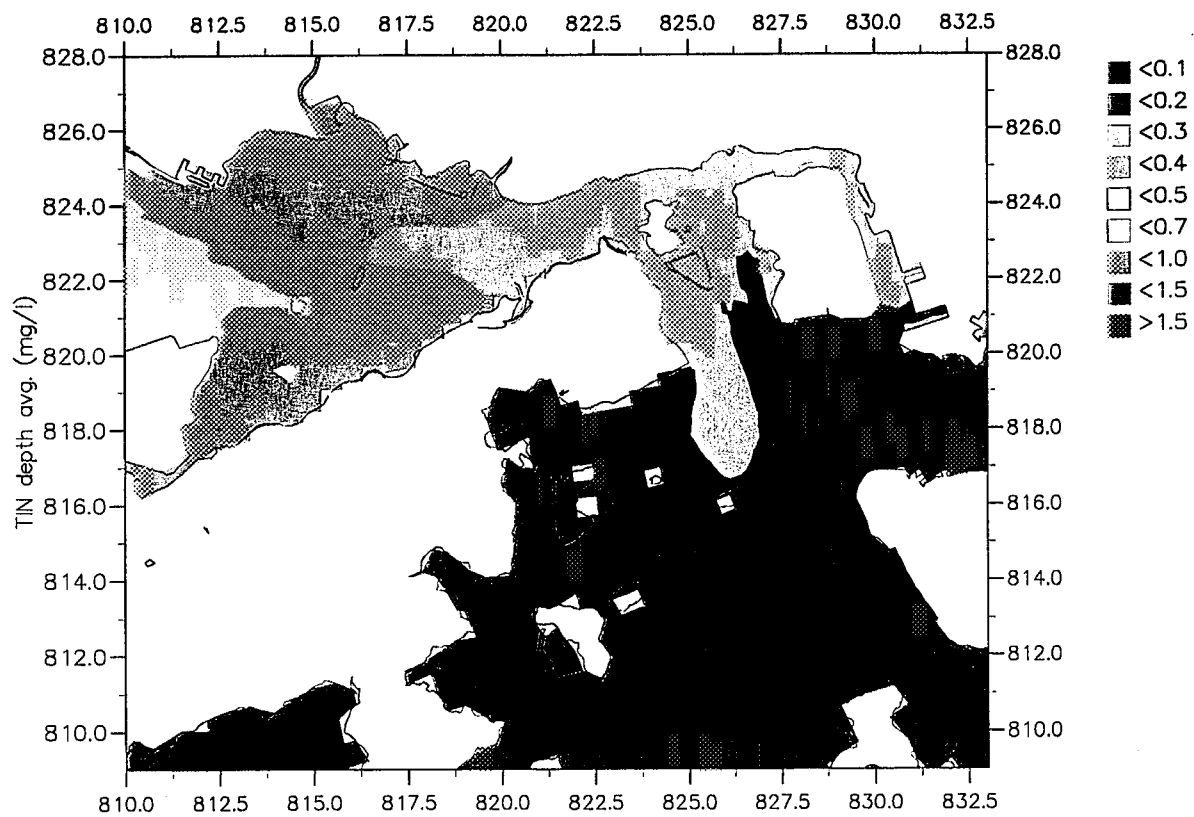
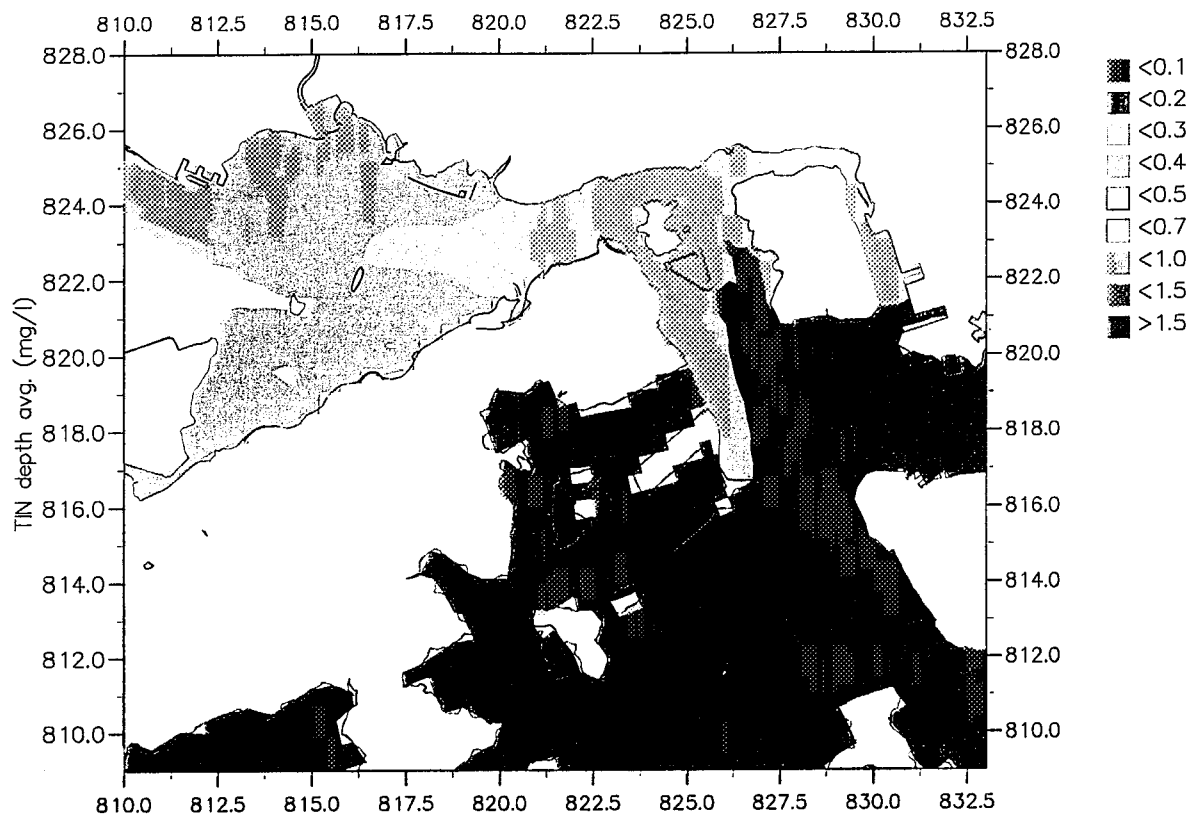
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Mean Depth Averaged Total Inorganic Nitrogen Concentrations
Wet Season - Baseline



FIG. D4gm



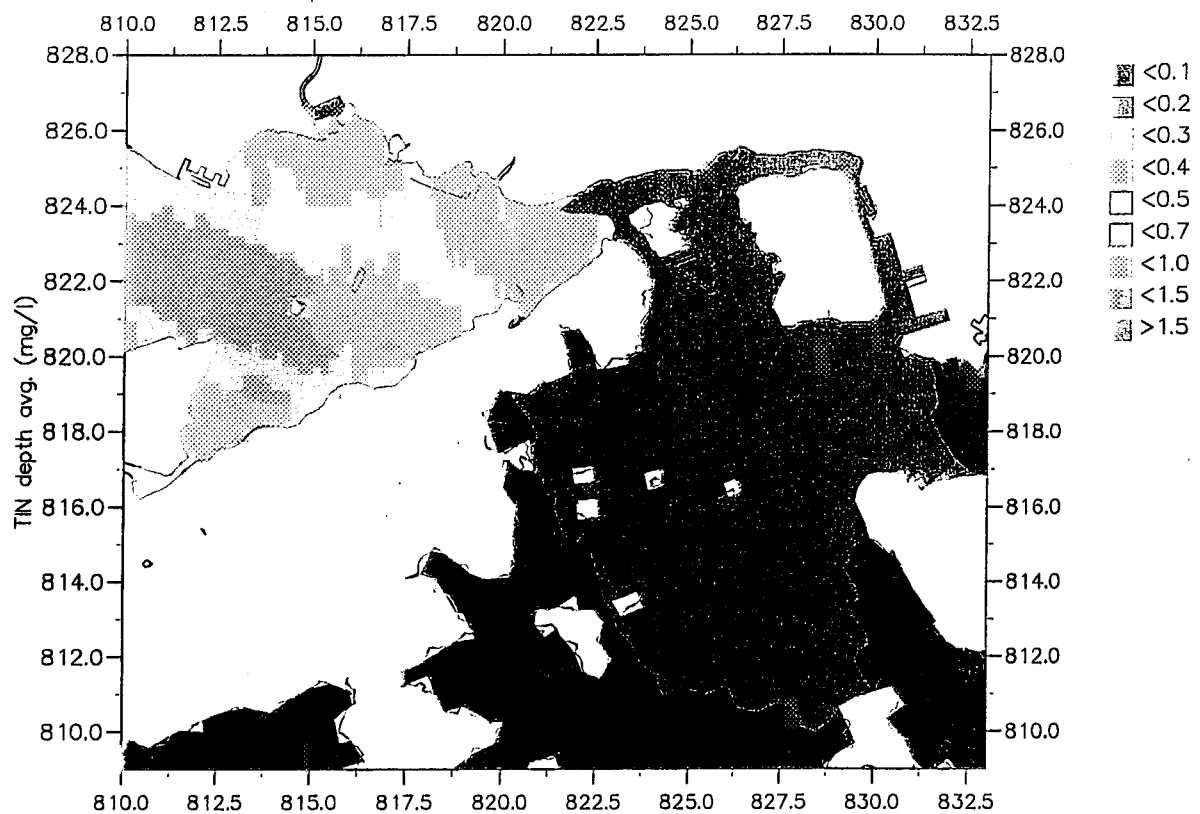
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Mean Depth Averaged Total Inorganic Nitrogen Concentrations
Wet Season
Upper : NSLD Lower : NSLD + CT



FIG. D4n



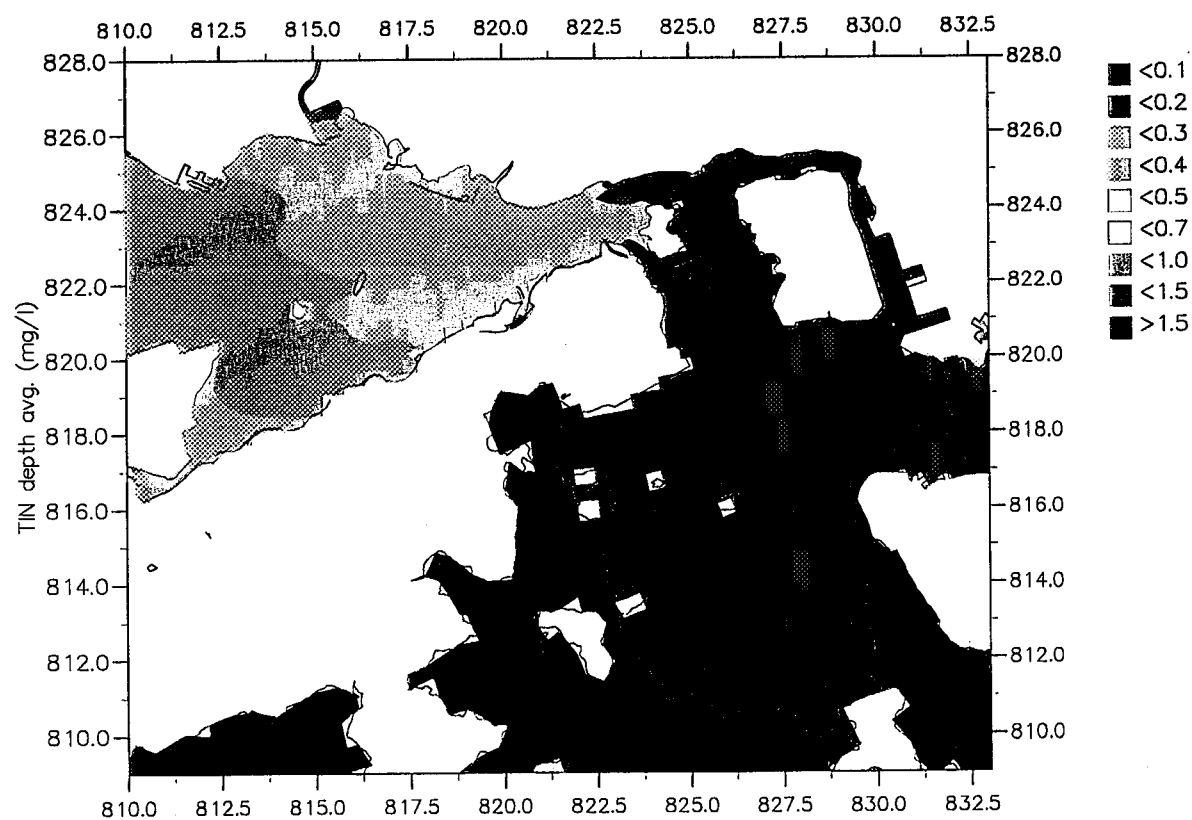
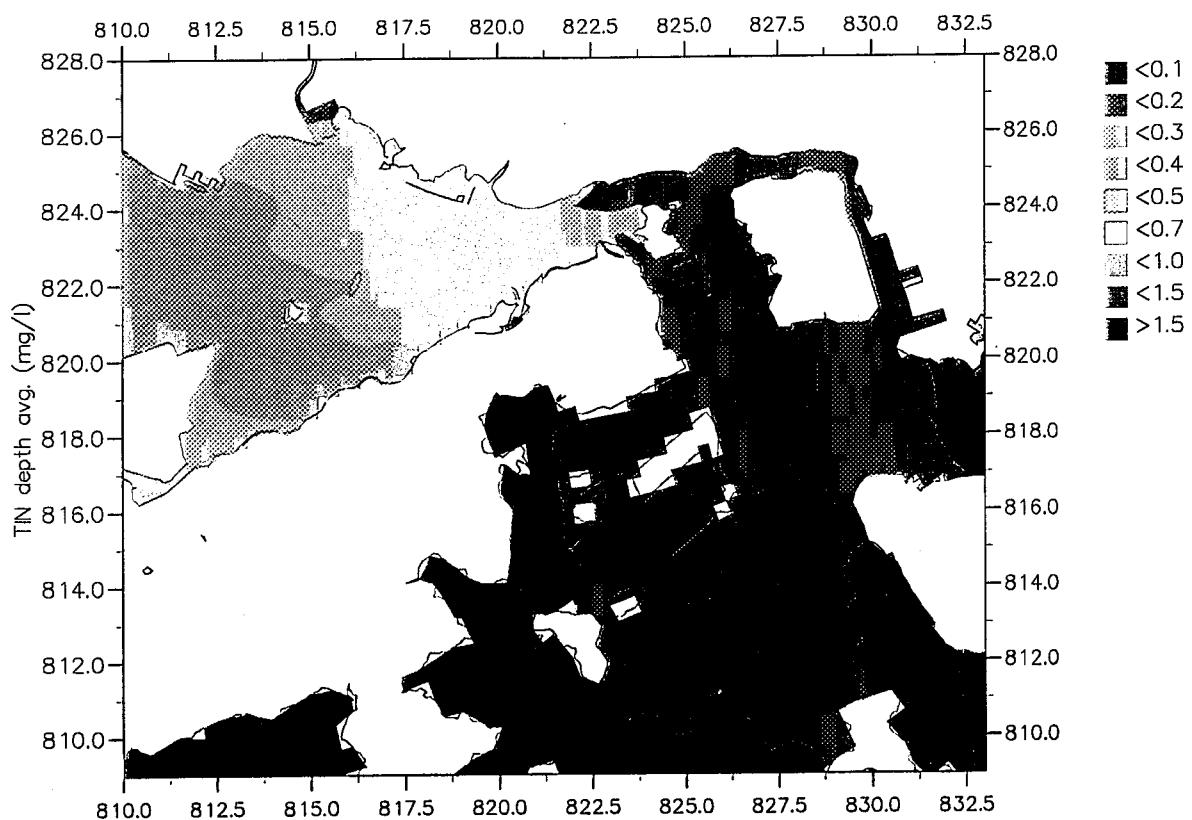
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Mean Depth Averaged Total Inorganic Nitrogen Concentrations
Dry Season - Baseline



FIG. D4go



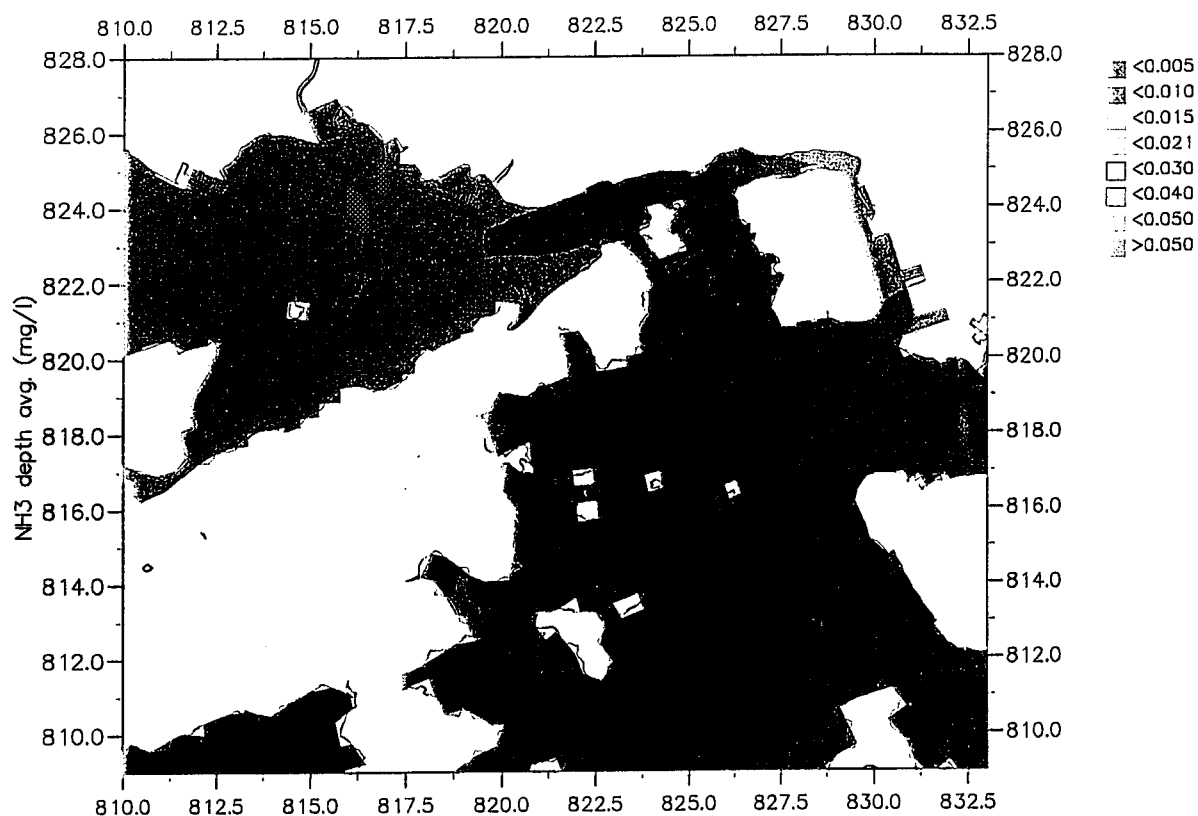
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Mean Depth Averaged Total Inorganic Nitrogen Concentrations
Dry Season
Upper : NSLD Lower : NSLD + CT



FIG. D4p



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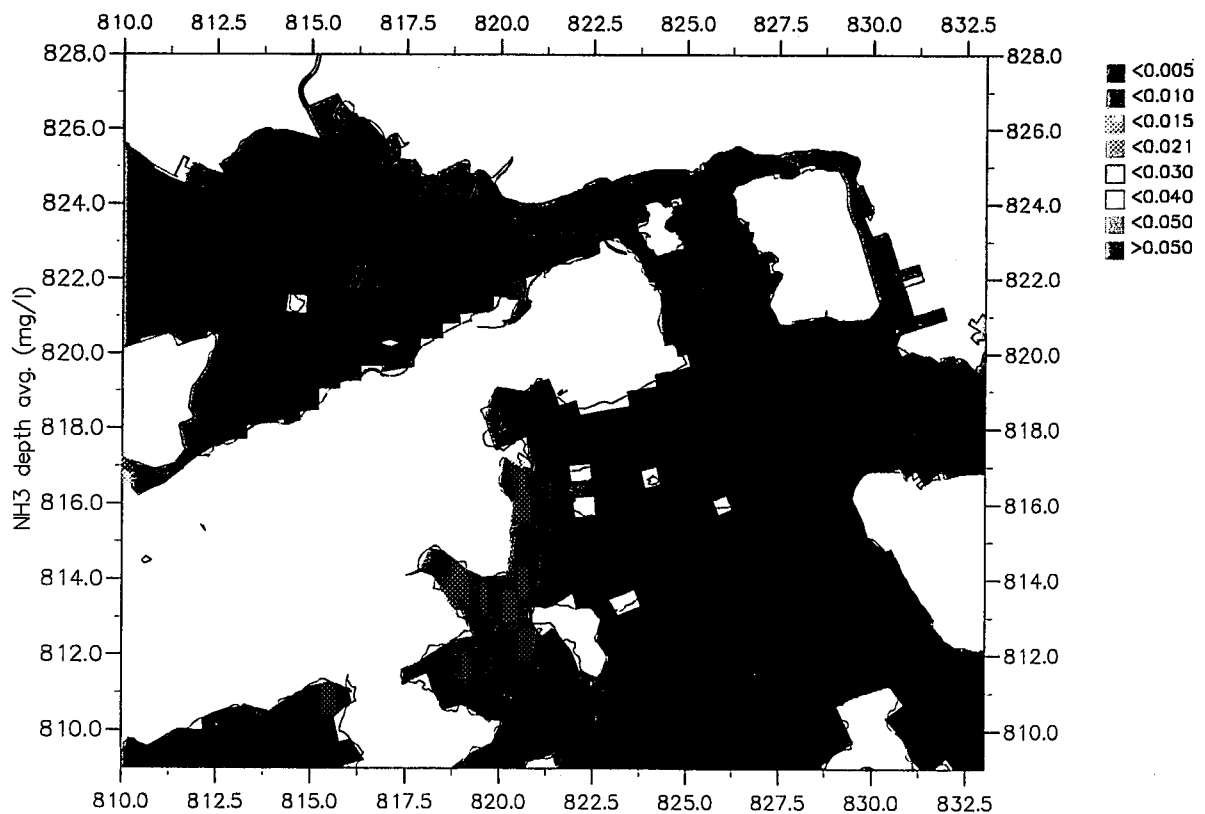
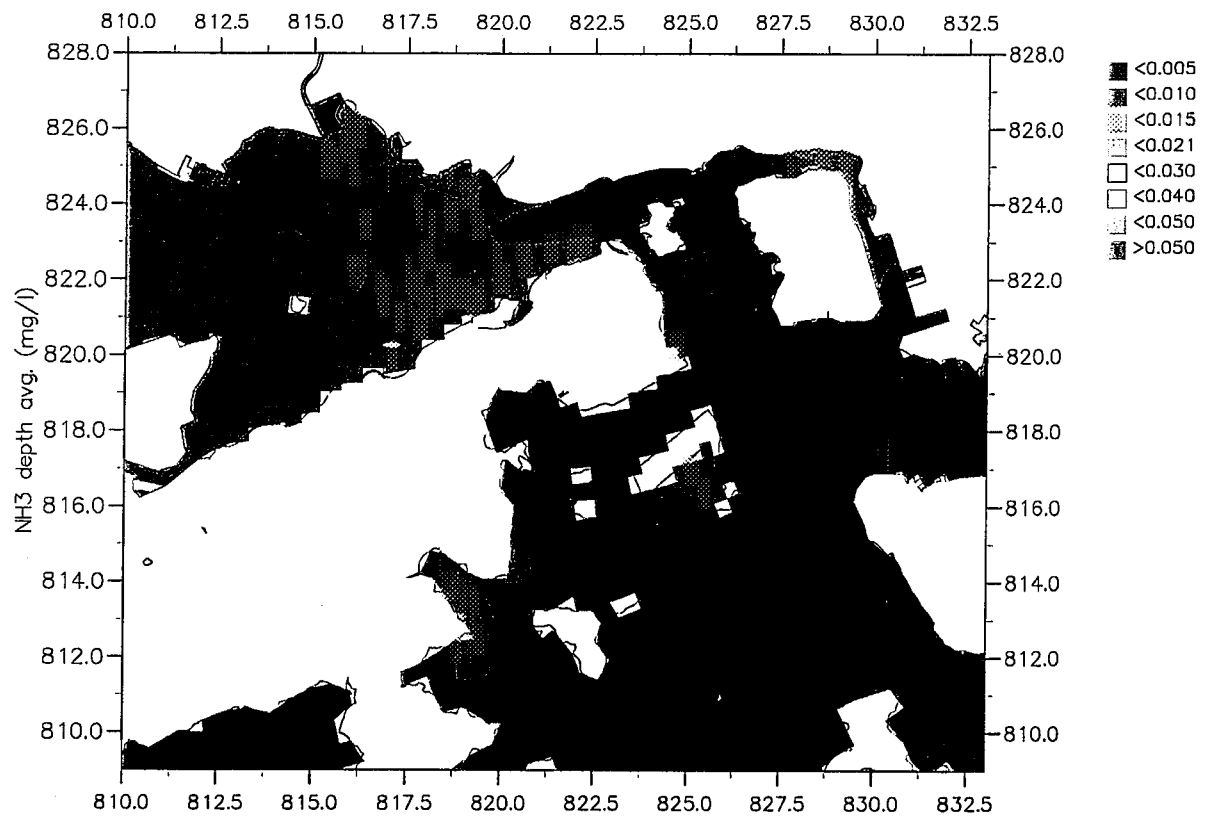
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NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY

Mean Depth Averaged Unionised Ammonia Concentrations
Wet Season - Baseline



FIG. D4q



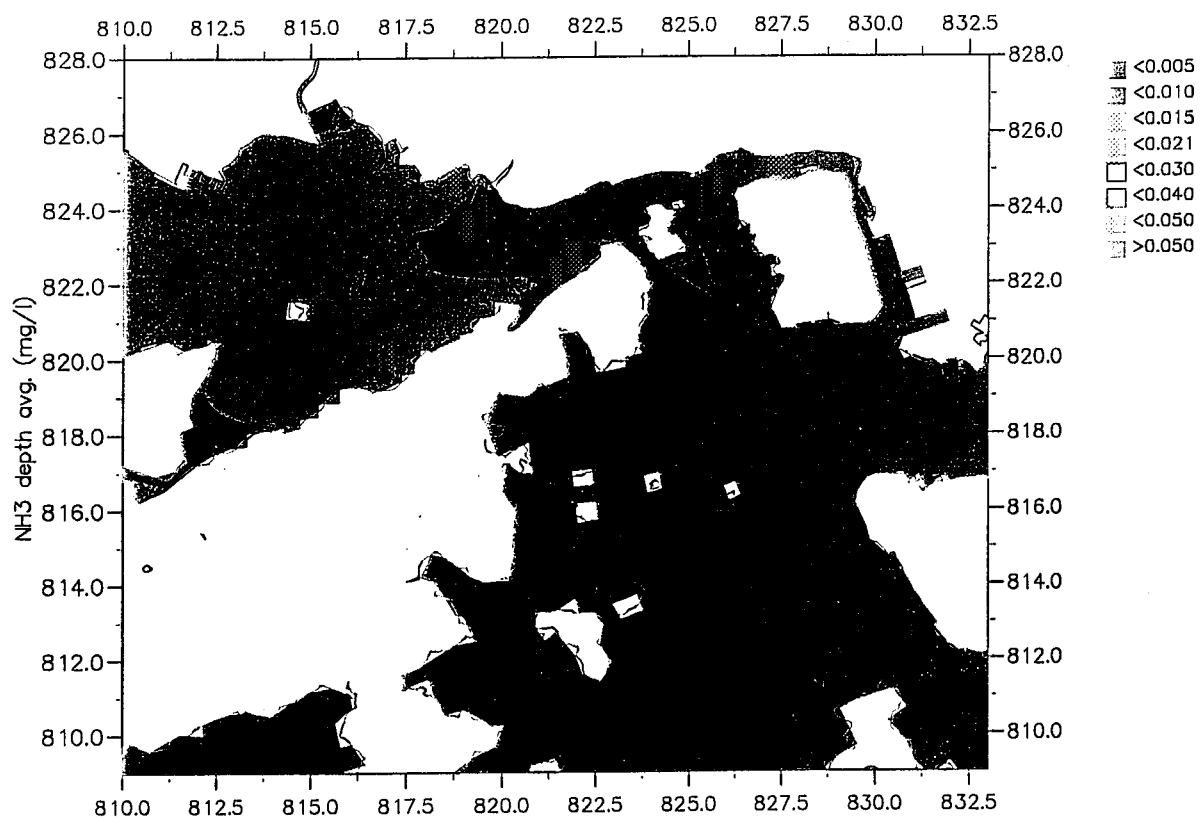
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Mean Depth Averaged Unionised Ammonia Concentrations
Wet Season
Upper : NSLD Lower : NSLD + CT



FIG. D4r



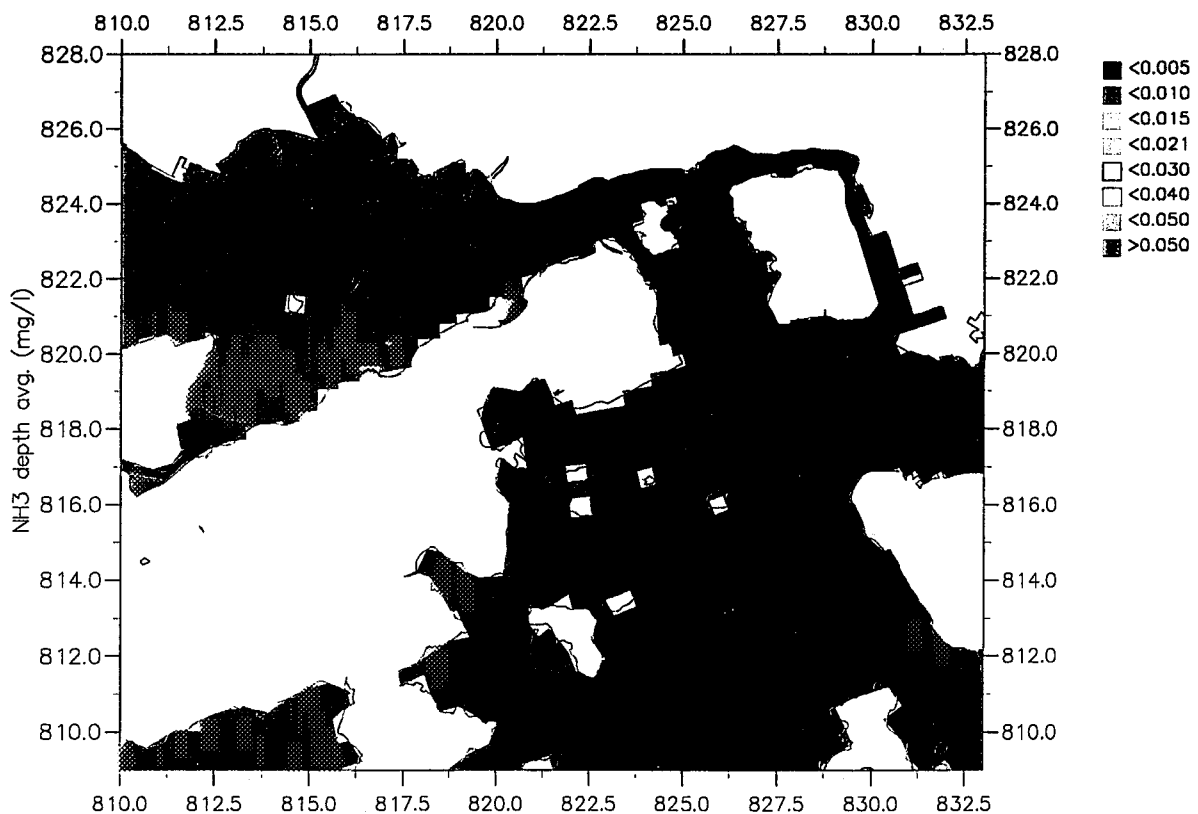
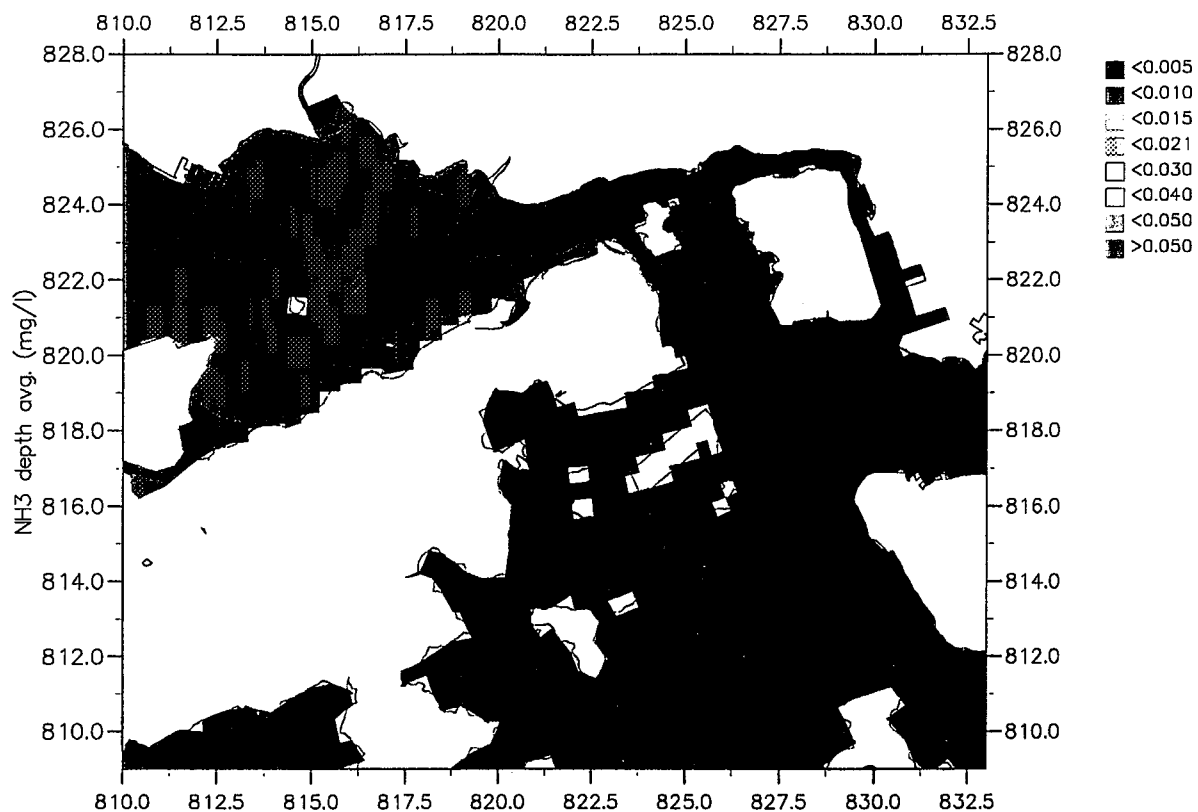
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Mean Depth Averaged Unionised Ammonia Concentrations
Wet Season
Upper : NSLD Lower : NSLD + CT



FIG. D4s



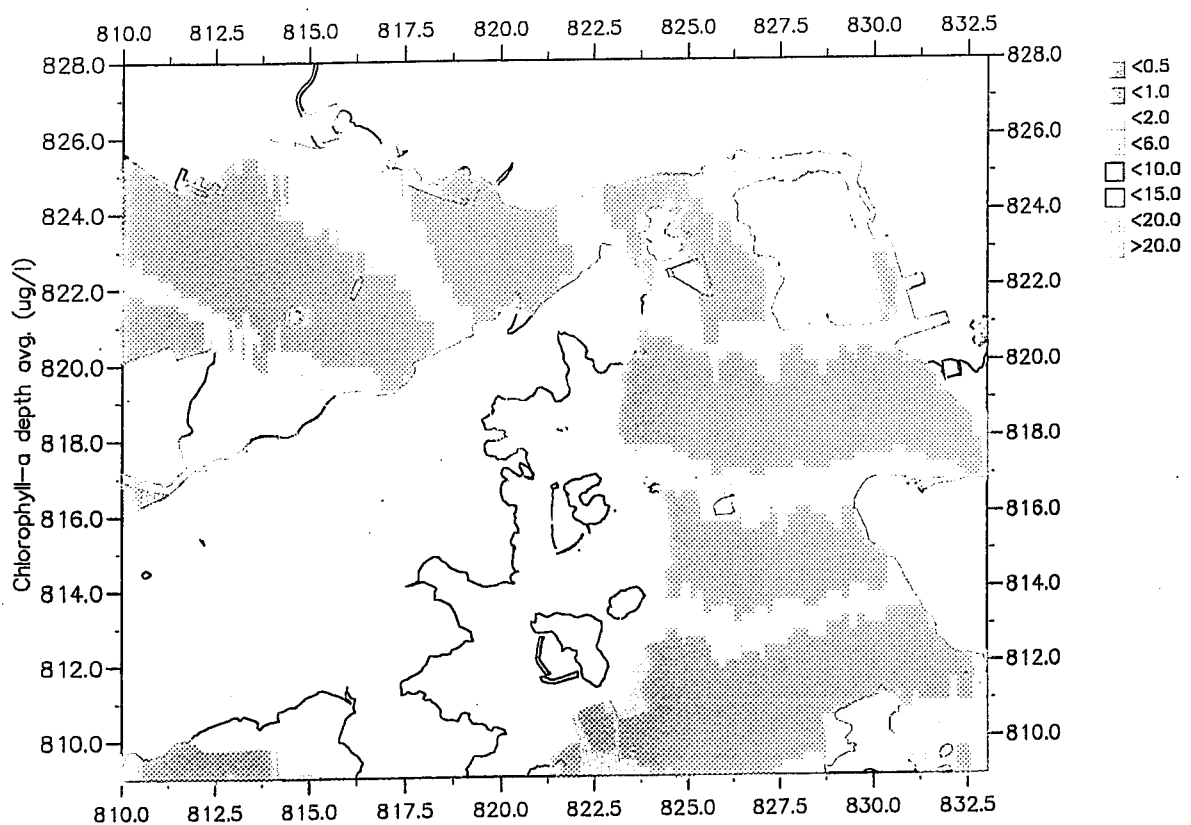
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Mean Depth Averaged Unionised Ammonia Concentrations
Dry Season
Upper : NSLD Lower : NSLD + CT



FIG. D4t



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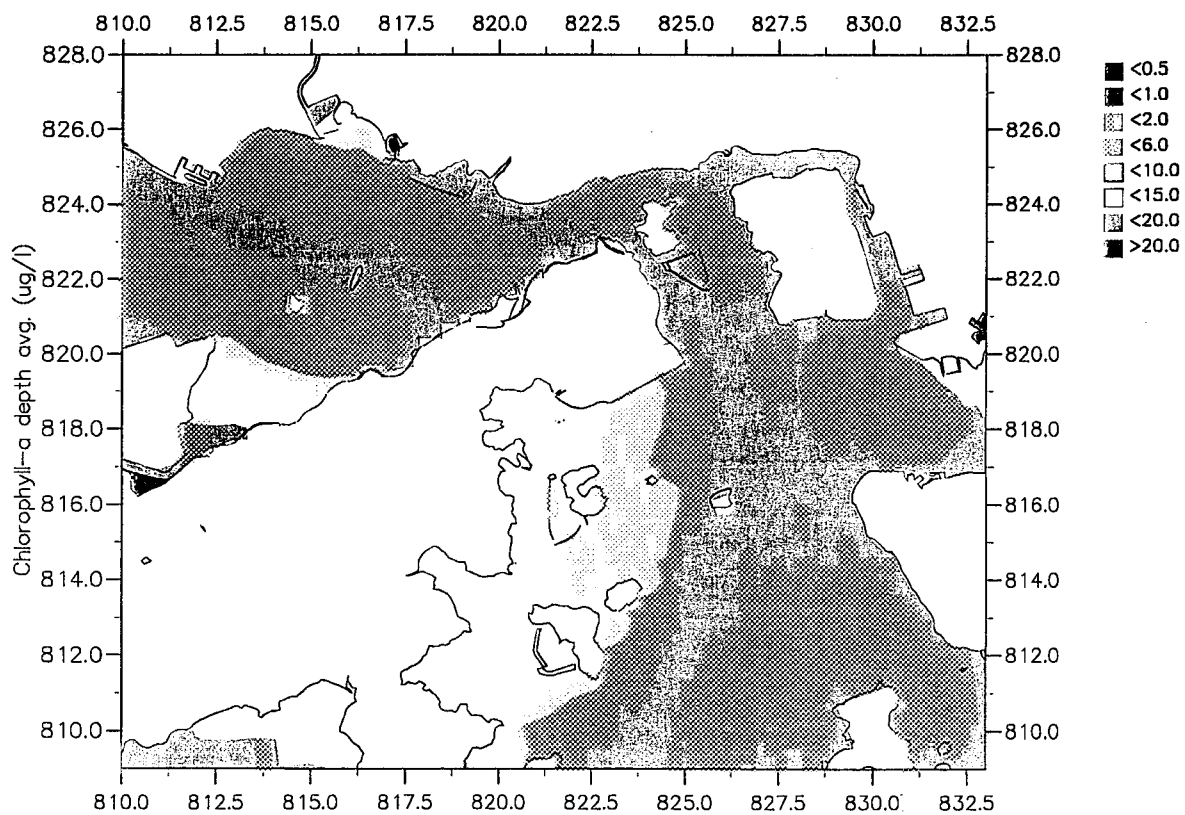
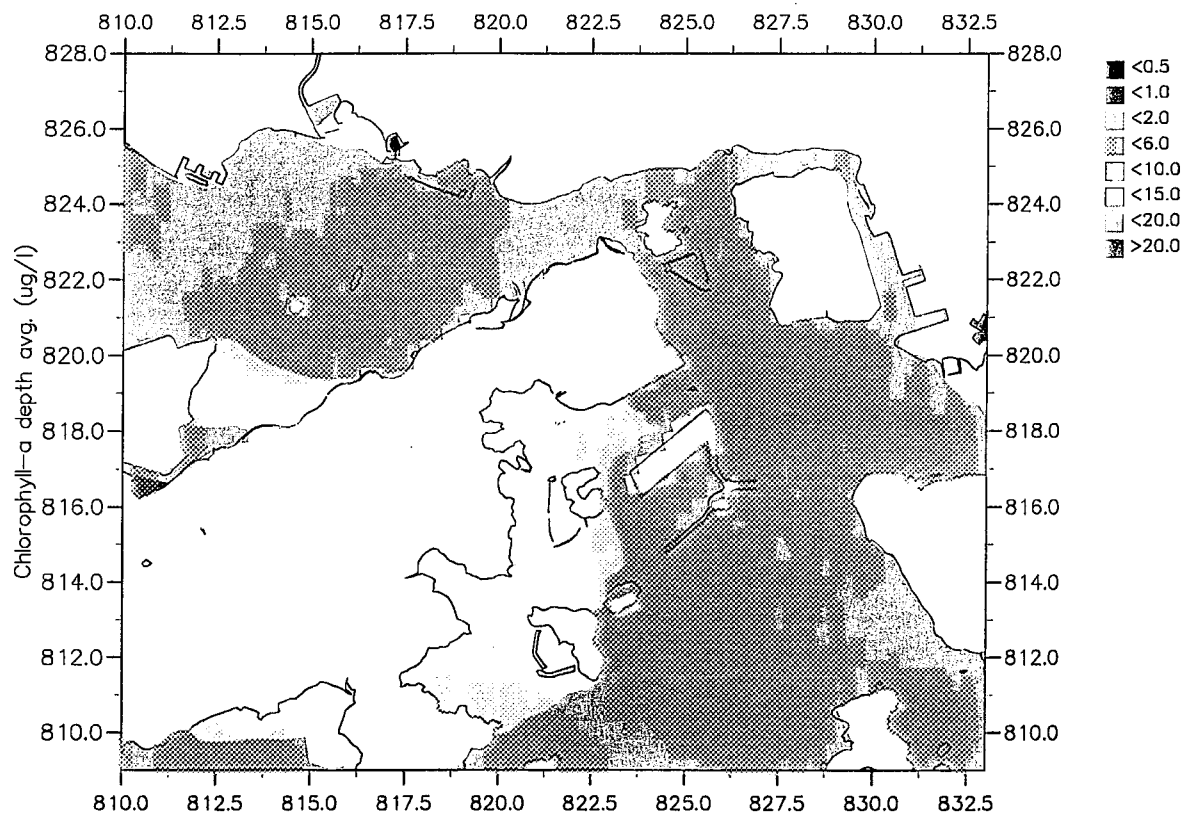
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NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY

Mean Depth Averaged Chlorophyll-a Concentrations
Wet Season - Baseline



FIG. D4u



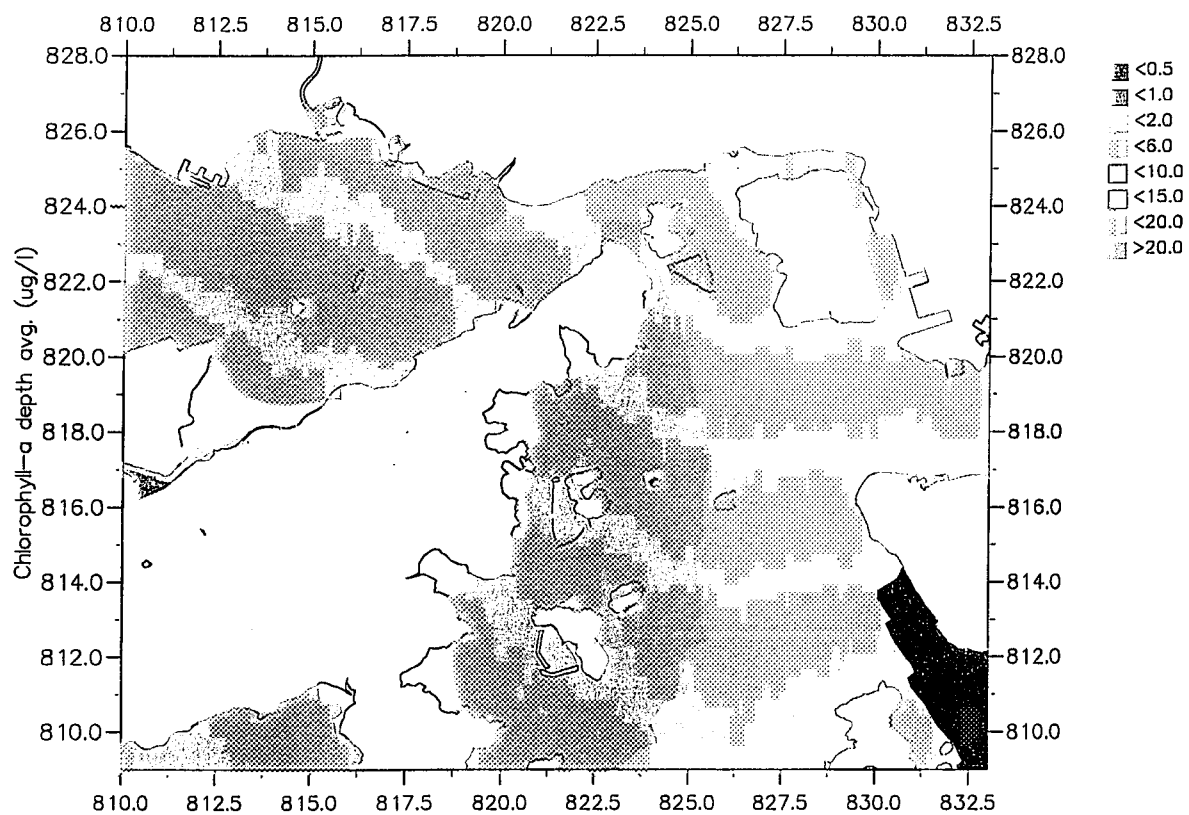
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Mean Depth Averaged Chlorophyll-a Concentrations
Wet Season
Upper : NSLD Lower : NSLD + CT



FIG. D4v



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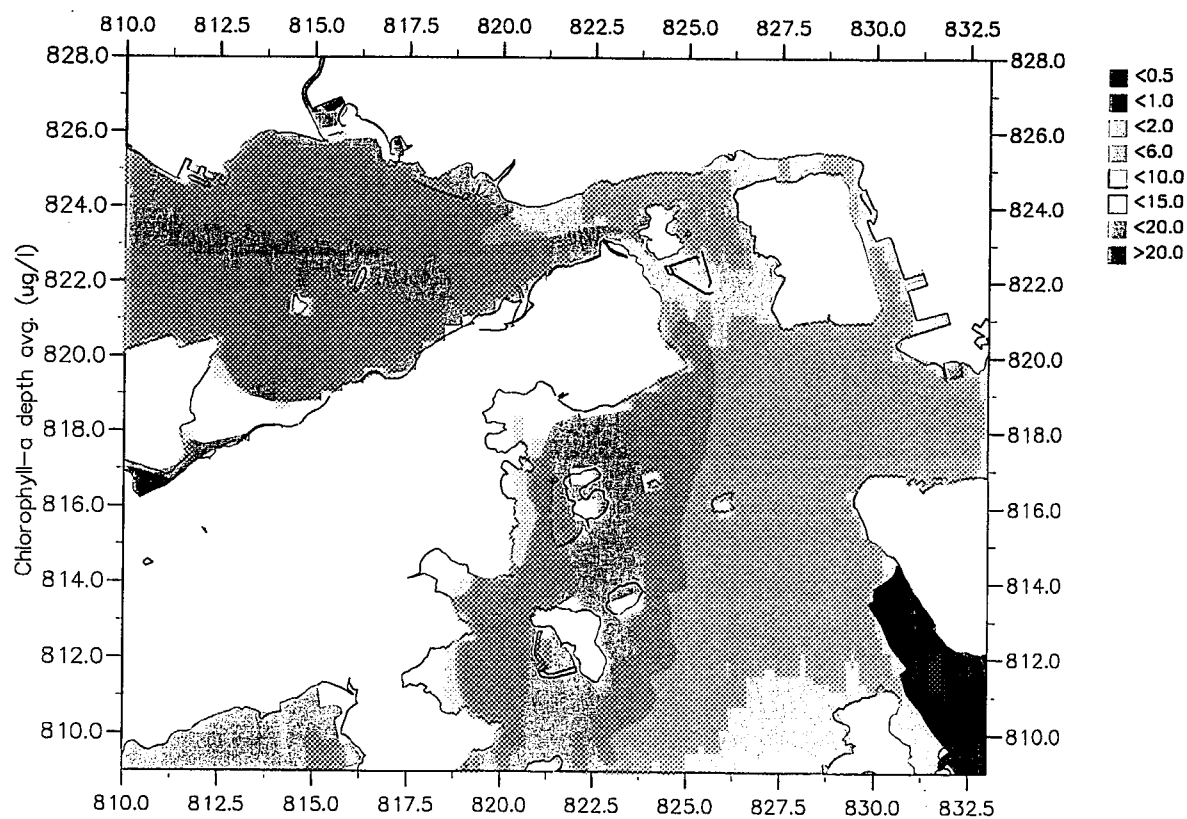
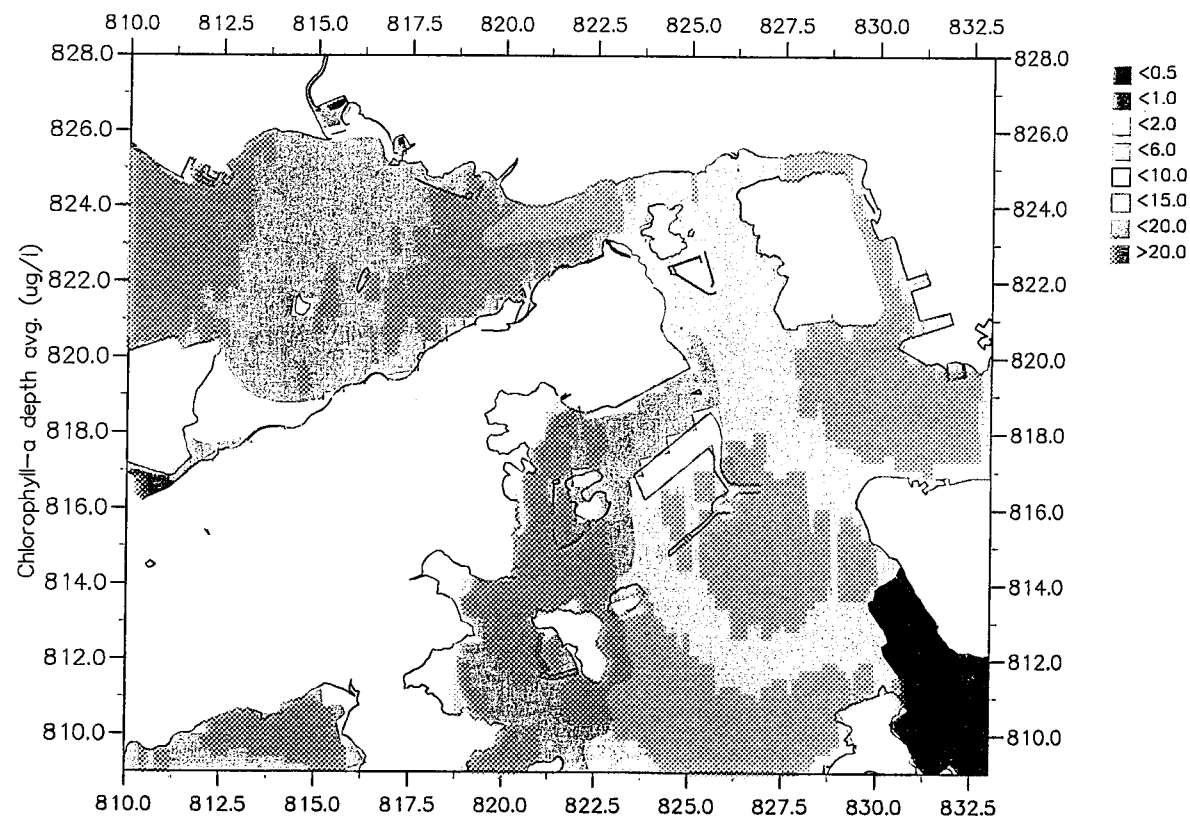
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NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY

Mean Depth Averaged Chlorophyll-a Concentrations
Dry Season - Baseline



FIG. D4w



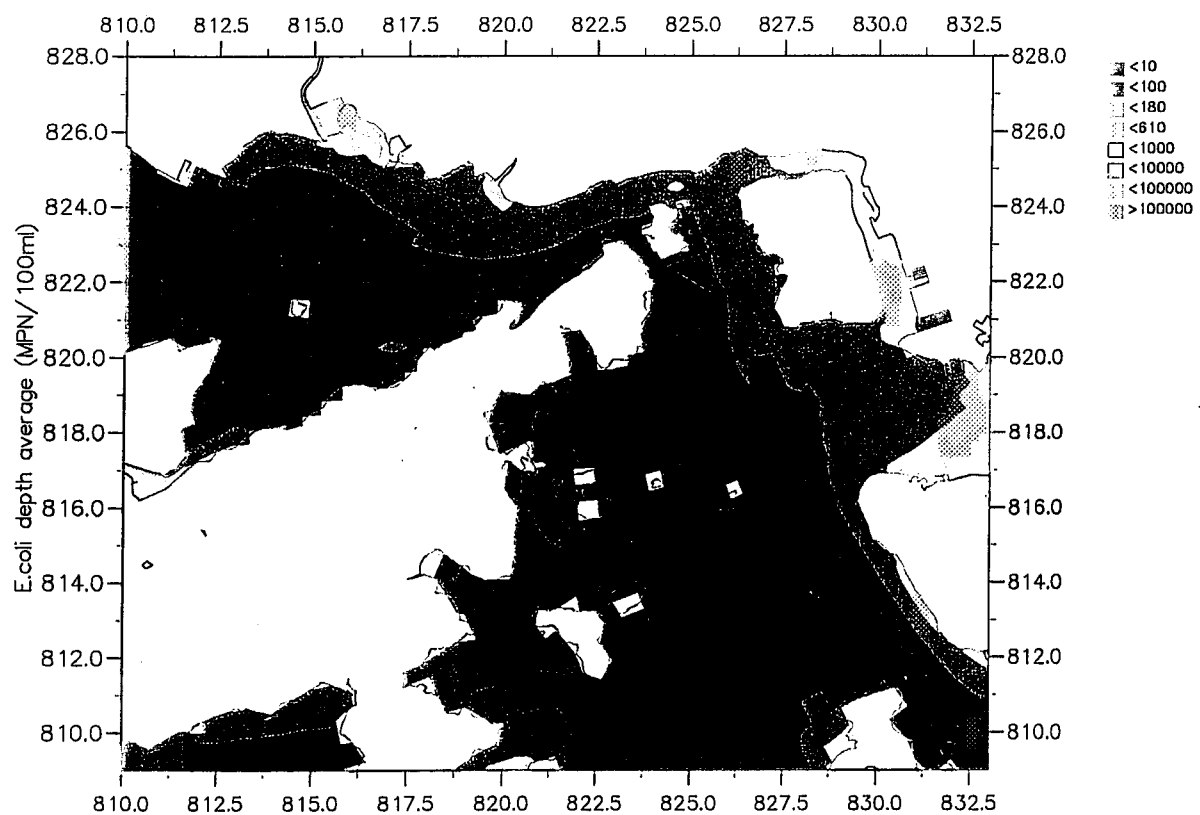
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NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY
Mean Depth Averaged Chlorophyll-a Concentrations
Dry Season
Upper : NSLD Lower : NSLD + CT



FIG. D4x



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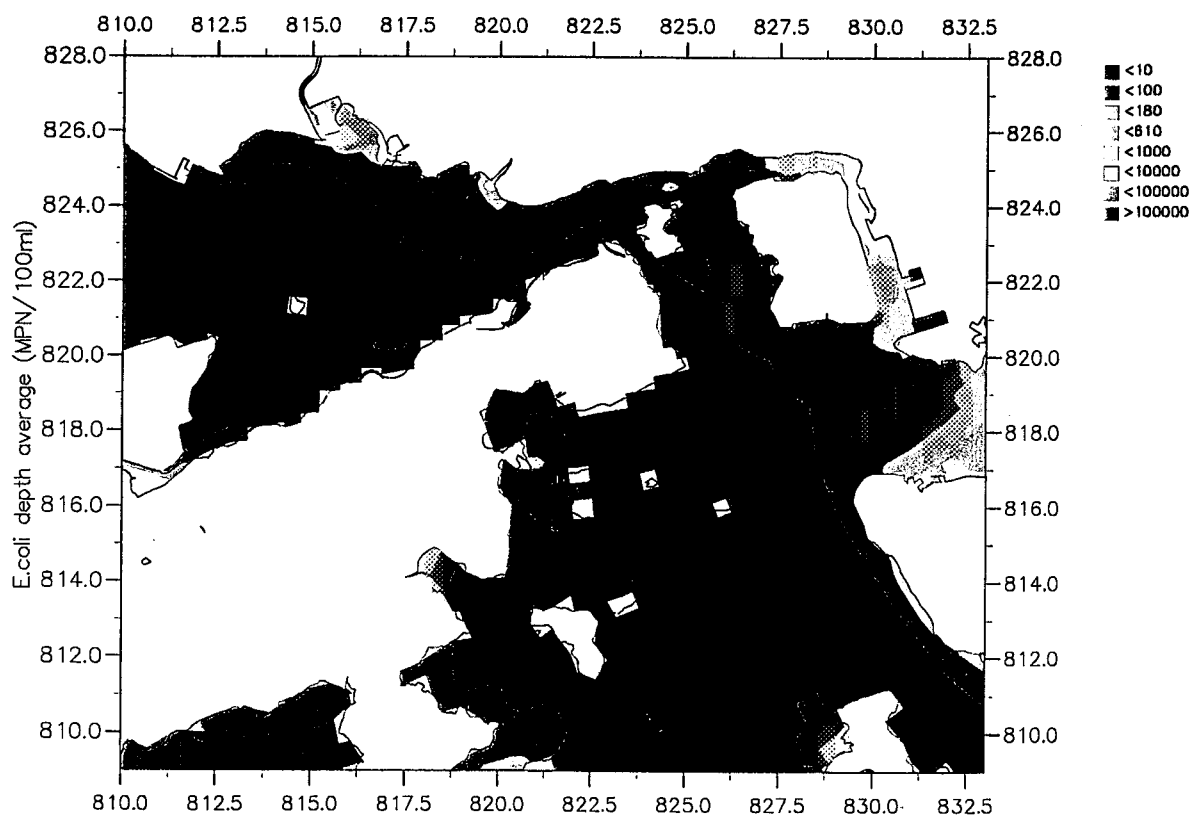
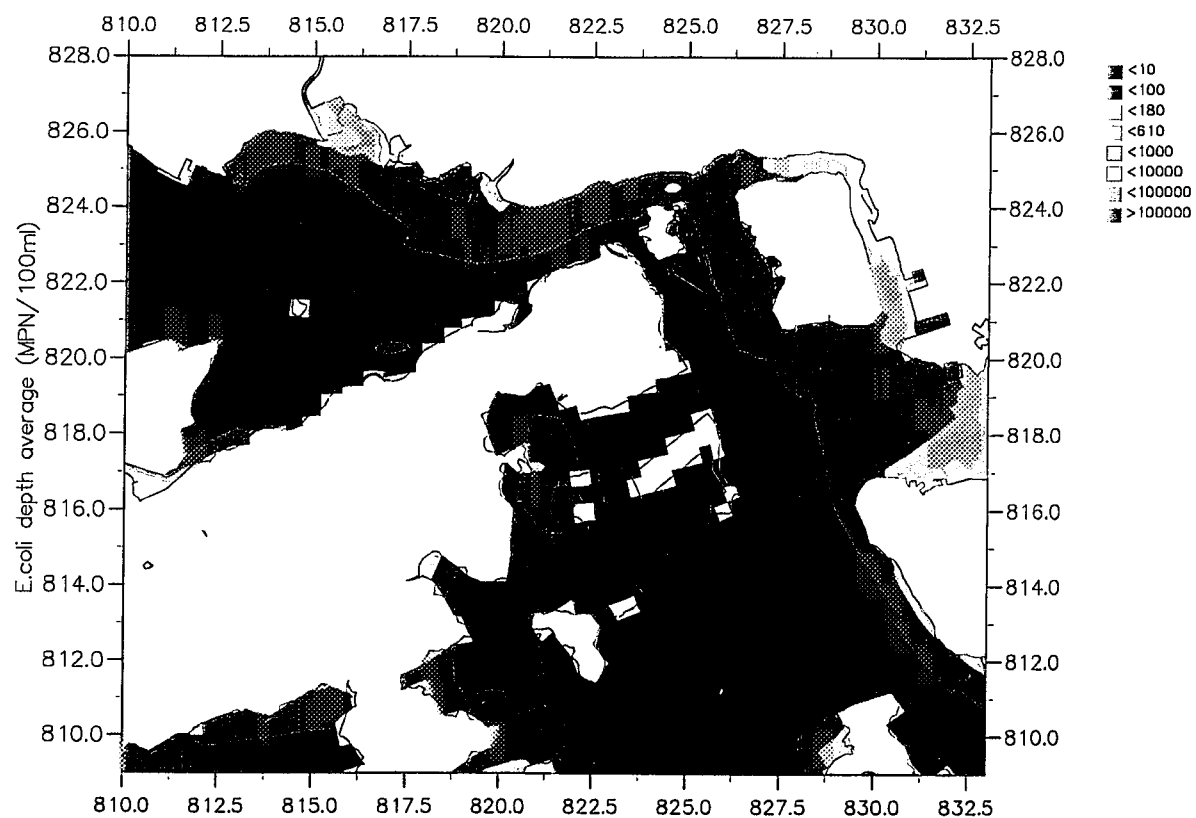
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NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY

Geometric Mean Depth Averaged *E. coli* Concentrations
Wet Season - Baseline



FIG. D4y



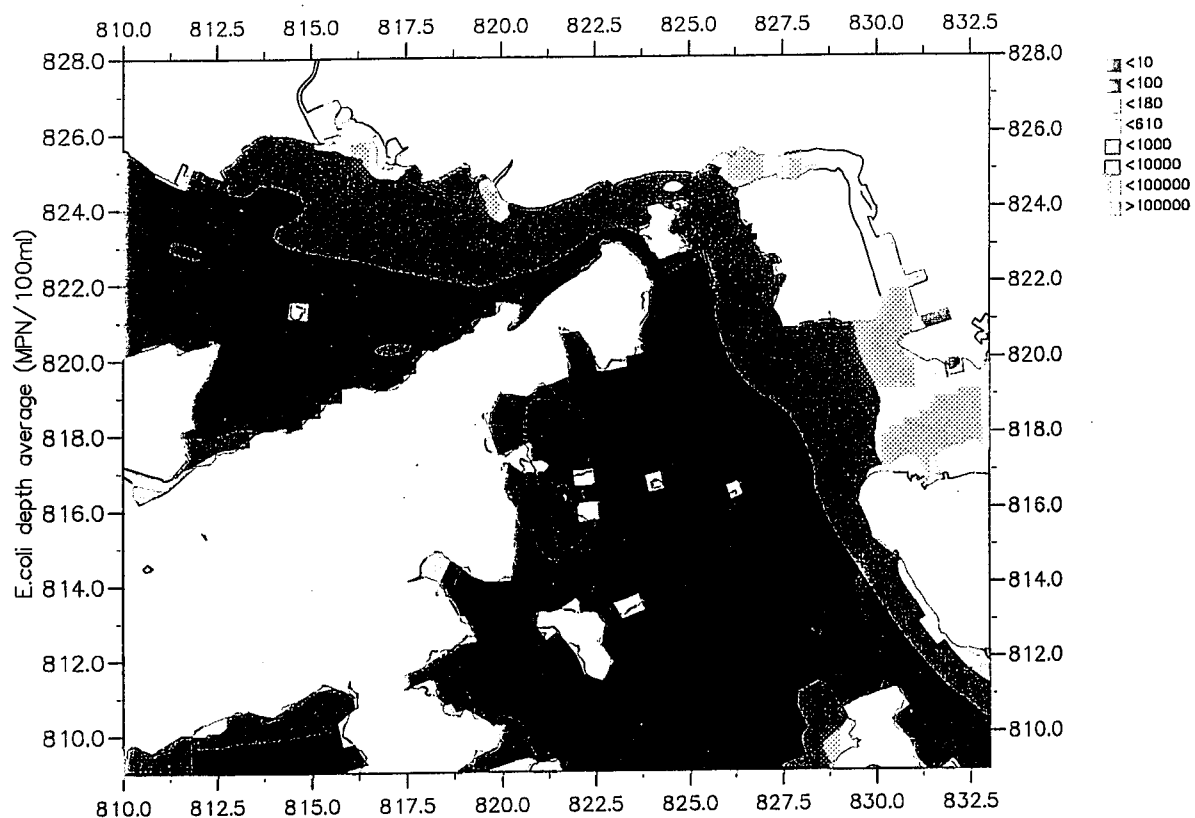
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Geometric Mean Depth Averaged *E. coli* Concentrations
Wet Season
Upper : NSLD Lower : NSLD + CT



FIG. D4z



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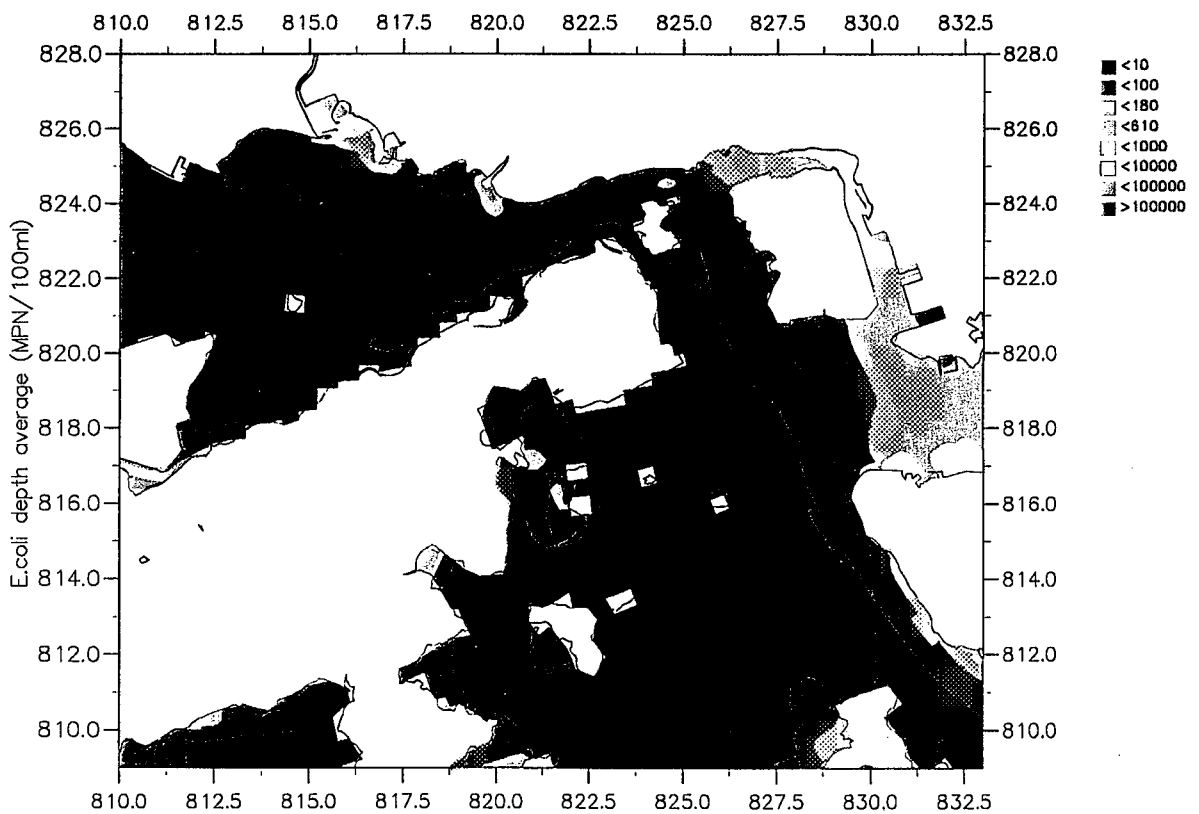
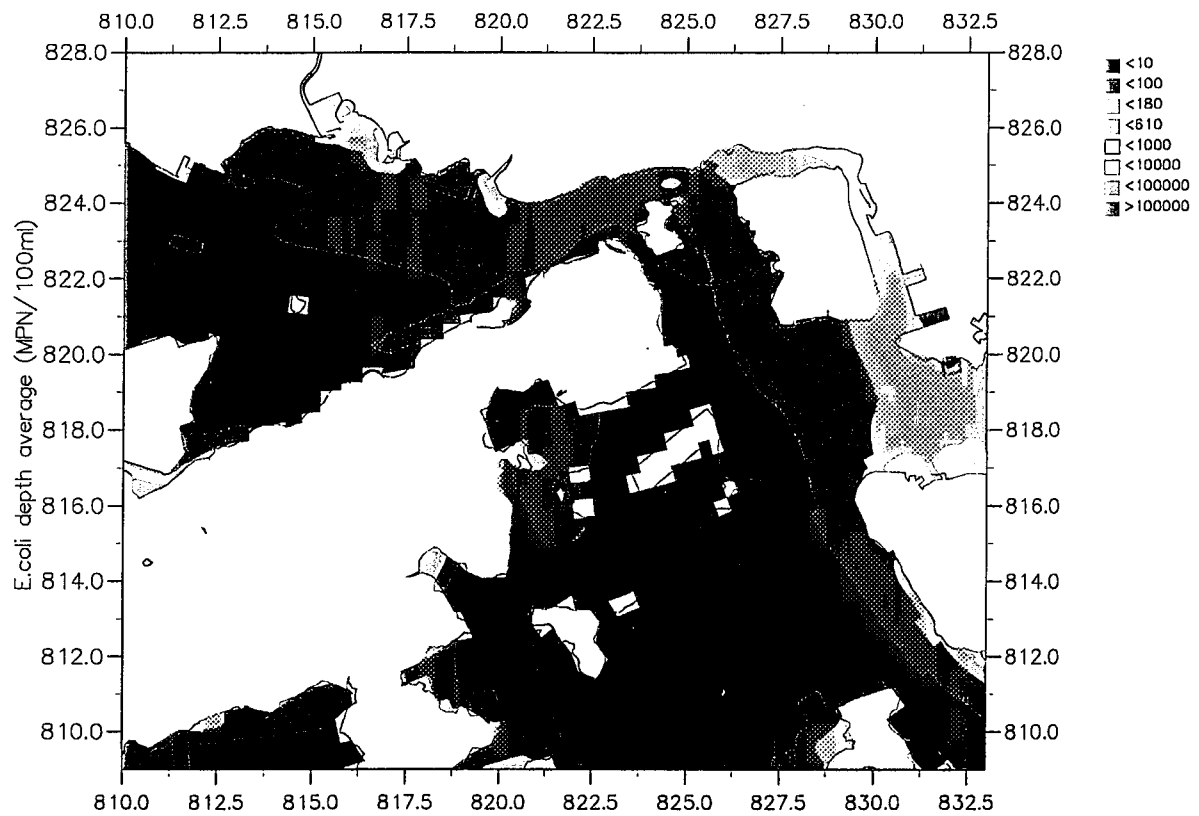
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Geometric Mean Depth Averaged *E. coli* Concentrations
Dry Season - Baseline



FIG. D4aa



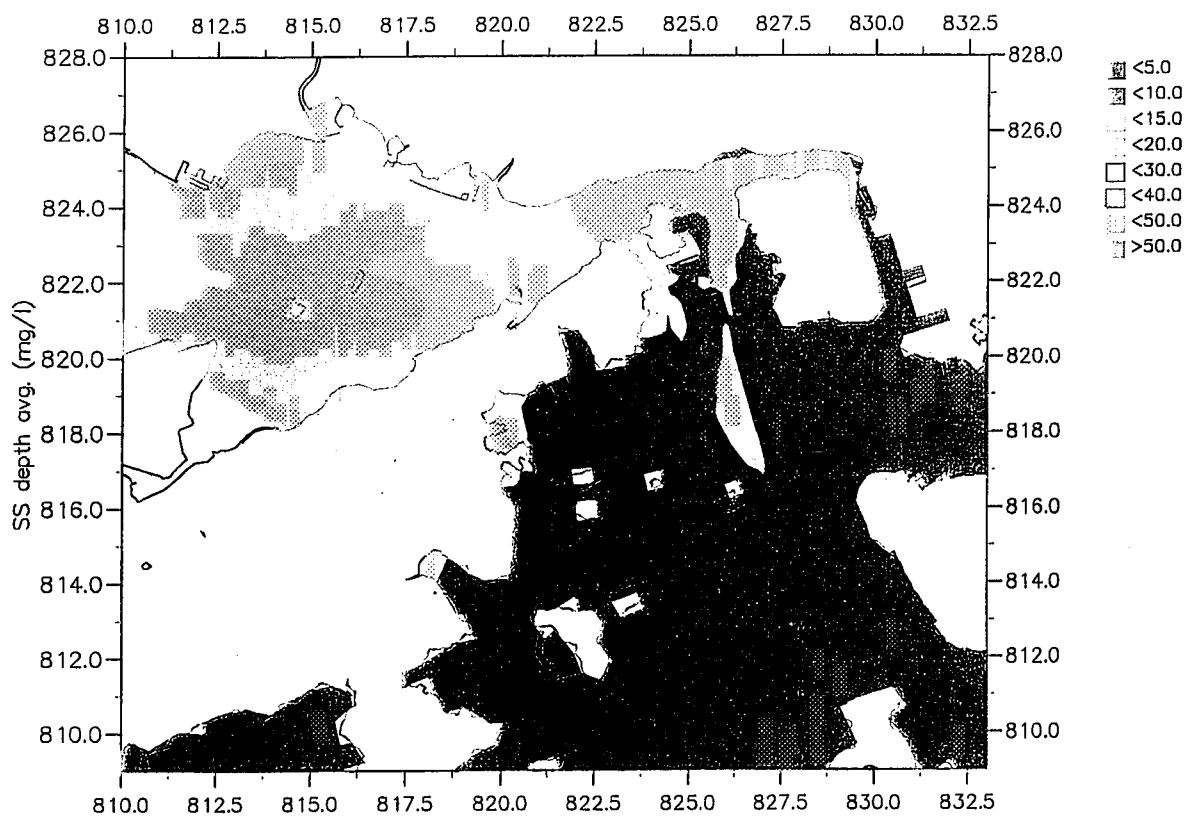
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Geometric Mean Depth Averaged *E. coli* Concentrations
Dry Season
Upper : NSLD Lower : NSLD + CT



FIG. D4ab



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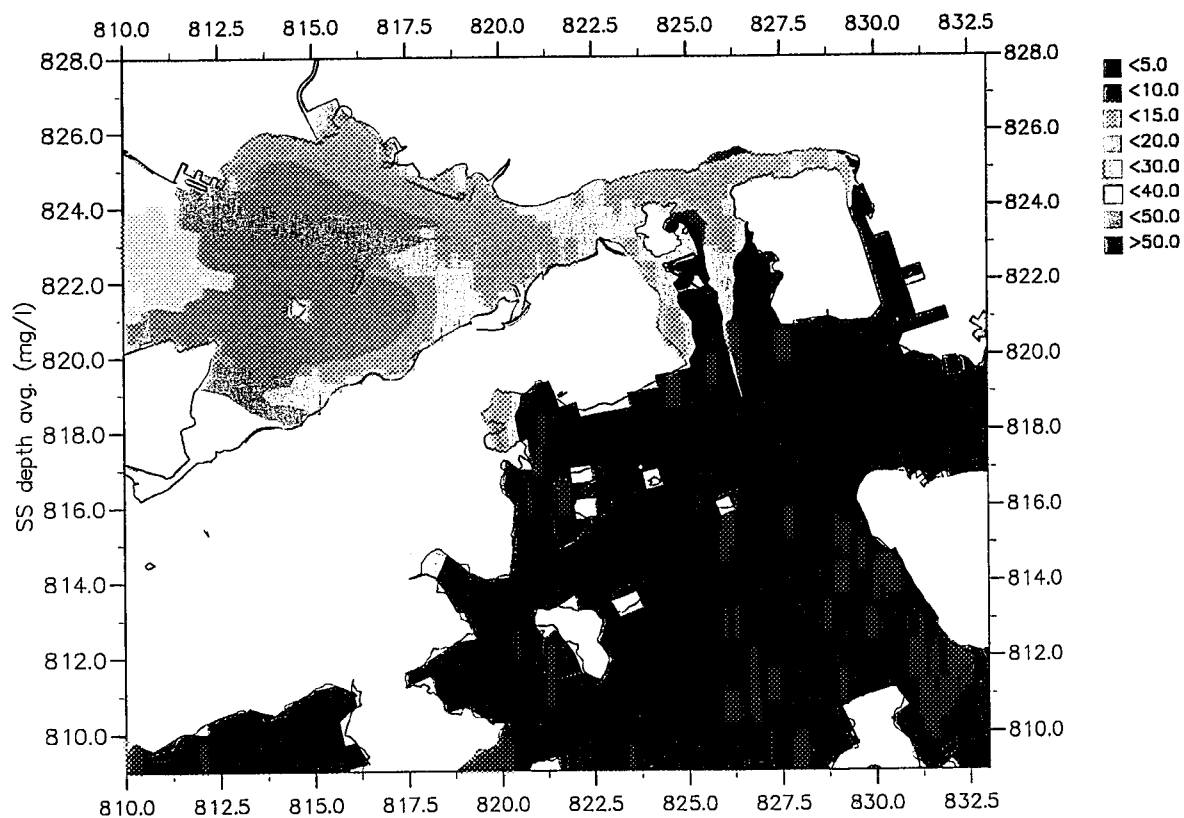
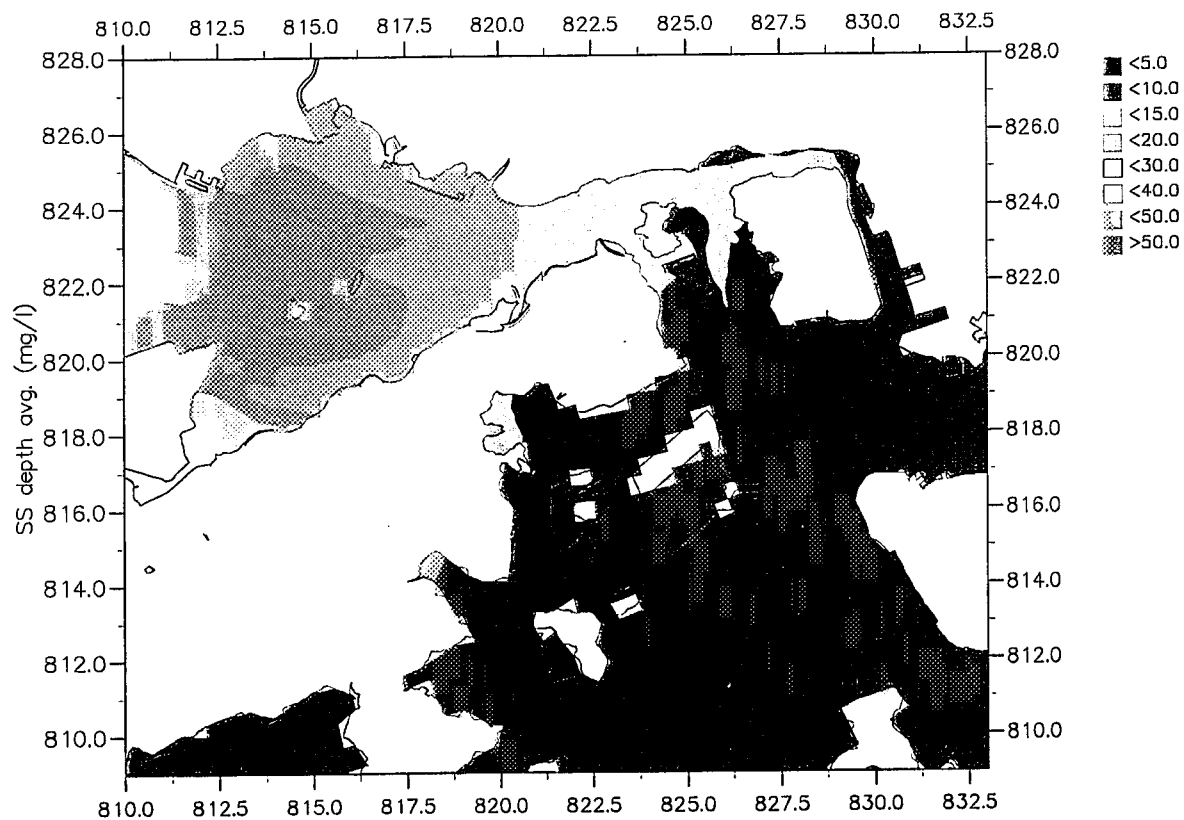
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NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY

Maximum Depth Averaged Suspended Solids Concentrations
Wet Season - Baseline



FIG. D4ac



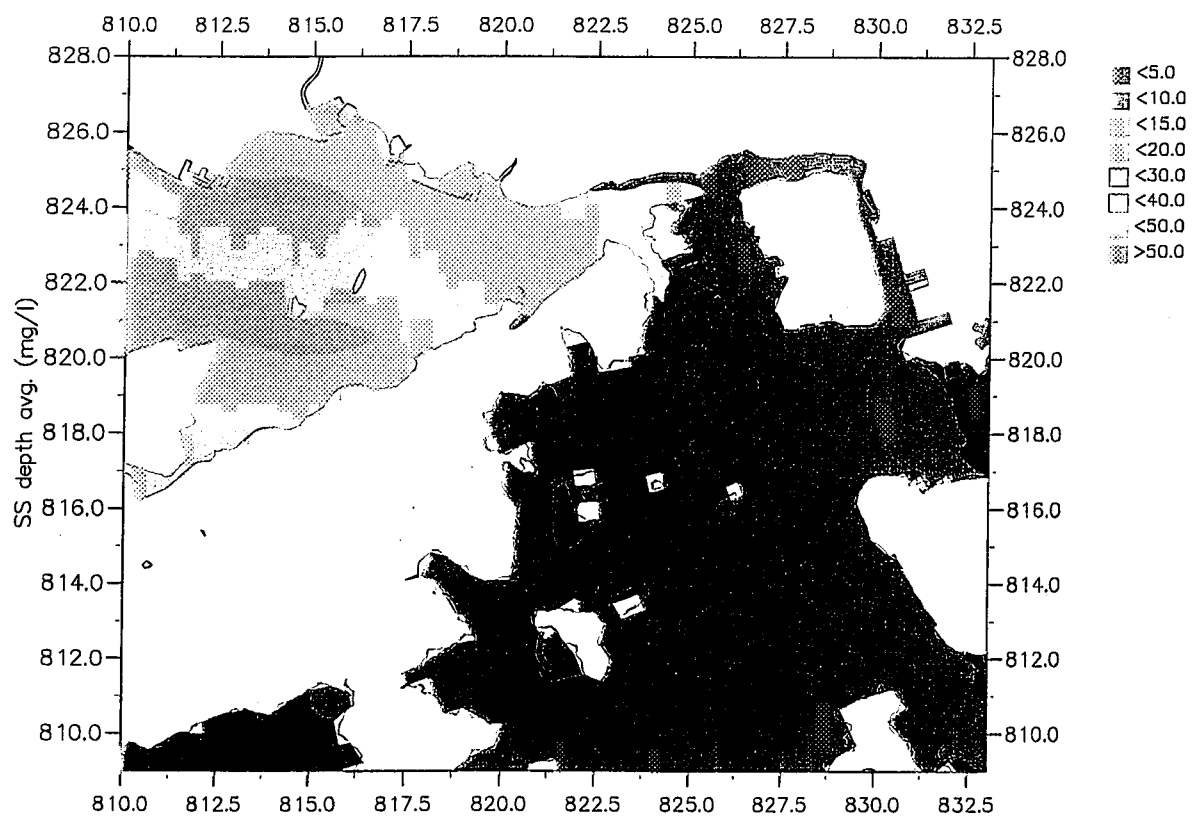
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NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY
Maximum Mean Depth Averaged Suspended Solids Concentrations
Wet Season
Upper : NSLD Lower : NSLD + CT



FIG. D4ad



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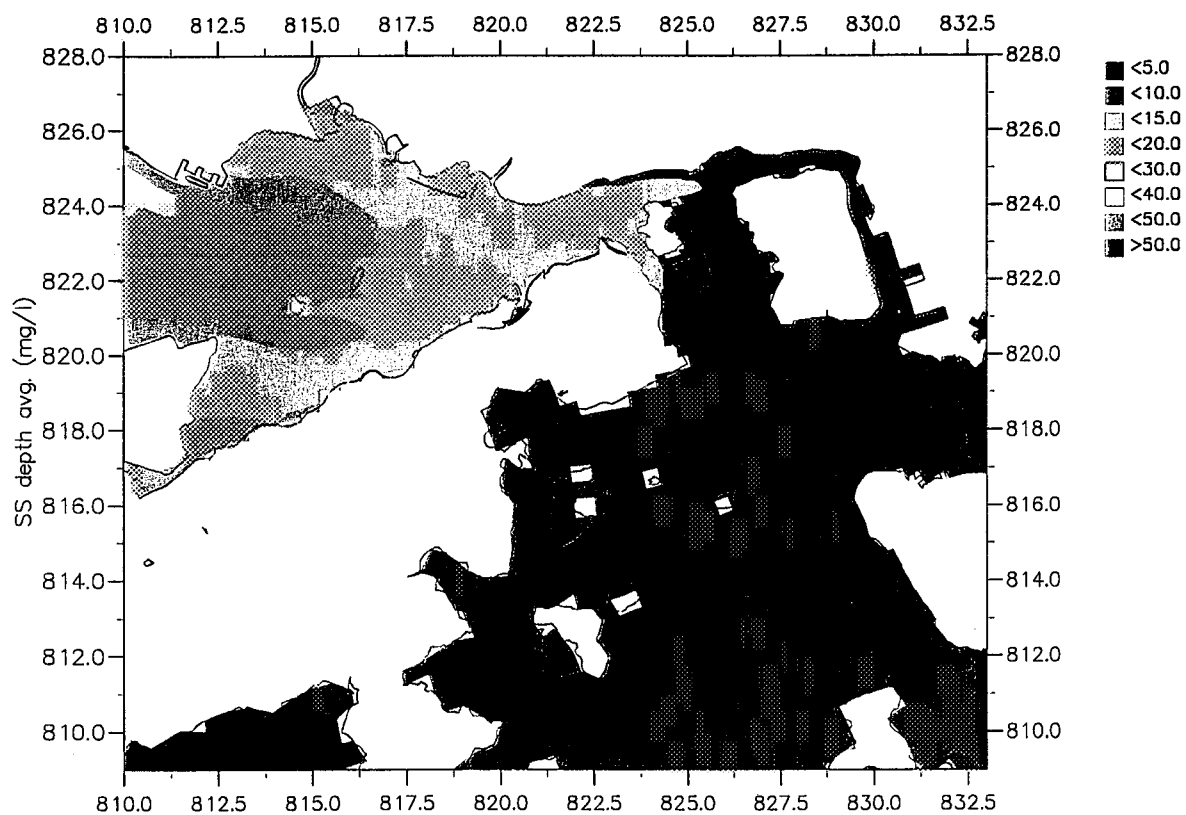
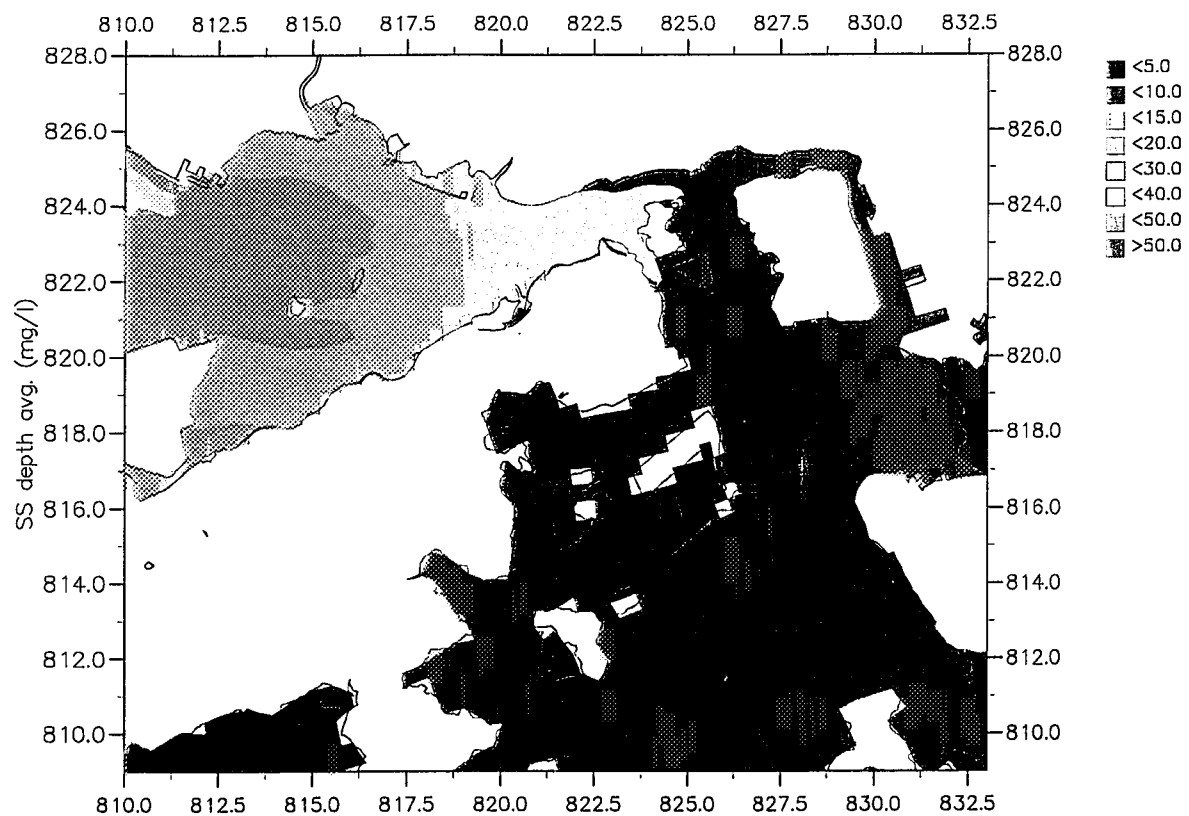
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NORTHSHORE LANTAU DEVELOPMENT FEASIBILITY STUDY

Maximum Depth Averaged Suspended Solids Concentrations
Dry Season - Baseline



FIG. D4ae



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Maximum Mean Depth Averaged Suspended Solids Concentrations
Dry Season
Upper : NSLD Lower : NSLD + CT



FIG. D4af

Annex E

Terrestrial Ecological Impact Assessment - Supporting Information

ANNEX E-1

FIELD SURVEY SCHEDULE

Field Surveys Schedule

Date	Vegetation/ Habitat	Wildlife	Stream	Avifauna	Invertebrate	Night survey
11/1/99				✓		
12/1/99	✓					
13/1/99	✓					
1/2/99				✓		
15/2/99		✓	✓			
23/2/99		✓	✓			
24/2/99		✓	✓			
25/2/99		✓	✓			
28/5/99		✓	✓			
29/5/99		✓	✓			
5/6/99					✓	
6/6/99					✓	
5/7/99				✓		
14/7/99				✓		
19/10/99			✓			
24/11/99	✓			✓		
26/11/99		✓	✓			
9/12/99				✓		✓
10/12/99		✓	✓	✓		

ANNEX E-2

LIST OF RECORDED FLORAL SPECIES

List of Plant Species for Secondary Woodland. (Code for Abundance: D= Dominant in place; A = Abundant; F = Frequent; O = Occasional; S = Scarce; E = Emergent Species; Code for Growth Form: C = Climber; H = Herb; S = Shrub; T = Tree)

Scientific Name	Abundance	Growth form	Conservation status in HK
<i>Adina pilulifera</i>	S	S	Common
<i>Alangium chinense</i>	O	S	Common
<i>Albizia lebbek</i>	O	T	Common
<i>Amorphophallus variabilis</i>	S	H	Rare
<i>Antidesma ghaesembilla</i>	O	T	Common
<i>Aporosa dioica</i>	F	T	Common
<i>Aralia armata</i> (A. chinensis in HK checklist)	F	S	Common
<i>Archidendron lucidum</i>	O	T	Common
<i>Ardisia crenata</i>	O	H	Common
<i>Bauhinia glauca</i>	O	C	Common
<i>Bridelia tomentosa</i>	F	T	Common
<i>Callicarpa nudiflora</i>	O	S	Common
<i>Cansjera rheedii</i>	F	C	Common
<i>Cassytha filiformis</i>	F	C	Common
<i>Celastrus hindsii</i>	F	C	Common
<i>Celtis tetrandra</i> (C. sinensis)	O	T	Common
<i>Cleistocalyx operculata</i>	O	T	Common
<i>Cocculus orbiculatus</i>	S	C	Common
<i>Cratoxylum cochinchinense</i>	F	T	Common
<i>Dalbergia benthamii</i>	F	C	Common
<i>Dalbergia hancei</i>	F	C	Common
<i>Delonix regia</i>	S	T	Common and introduced
<i>Dimocarpus longan</i>	F (near village)	T	Common, introduced and naturalized
<i>Euonymus chinensis</i>	O	S	Common
<i>Ficus variegata</i> var. <i>chlorocarpa</i>	O	T	Common
<i>Glochidion eriocarpum</i>	S	S	Common
<i>Glochidion hirsutum</i>	F	T	Common
<i>Glochidion wrightii</i>	O	T	Common
<i>Heterosmilax japonica</i> var. <i>gaudichaudiana</i> (H. <i>gaudichaudiana</i>)	O	C	Common
<i>Ilex asprella</i>	O	S	Common
<i>Ilex rotunda</i>	O	T	Common
<i>Leucaena leucocephala</i>	F	T	Common, introduced and naturalized
<i>Liriope spicata</i>	F	H	Common
<i>Litsea glutinosa</i>	F	T	Common
<i>Lonicera confusa</i>	O	C	Common
<i>Macaranga tanarius</i>	F (near village)	T	Common
<i>Maesa perlaris</i>	O	S	Common
<i>Mallotus paniculatus</i>	F	T	Common
<i>Microcos paniculata</i>	F	T	Common
<i>Mikania micrantha</i>	O	C	Common, exotic and naturalized
<i>Millettia dielsiana</i>	O	C	Common
<i>Millettia speciosa</i>	O	C	Common
<i>Paederia scandens</i>	O	C	Common
<i>Phyllanthus reticulatus</i>	O	C	Common
<i>Psychotria rubra</i>	F	S	Common

Scientific Name	Abundance	Growth form	Conservation status in HK
<i>Pteris ensiformis</i>	O	H	Common
<i>Pteris multifida</i>	O	H	Common
<i>Pteris semipinata</i>	F	H	Common
<i>Rhus succedanea</i>	F	T	Common
<i>Sapium discolor</i>	F	T	Common
<i>Sapium sebiferum</i>	F	T	Common
<i>Schefflera octophylla</i>	F	T	Common
<i>Symplocos cochinchinensis</i> (<i>S. laurina</i>)	O	T	Common
<i>Trema orientalis</i>	O	S	Common
<i>Vitis balanceana</i>	O	C	Restricted, new record to HK
<i>Zanthoxylum avicennae</i>	O	T	Common
<i>Zanthoxylum nitidum</i>	O	C	Common

List of Plant Species for Tall Shrubland. (Code for Abundance: D= Dominant in place; A = Abundant; F = Frequent; O = Occasional; S = Scarce; E = Emergent Species; Code for Growth Form: C = Climber; H = Herb; S = Shrub; T = Tree)

Species	Abundance	Growth form	Conservation status in HK
<i>Acacia confusa</i>	O	T	Common, introduced
<i>Acronychia pedunculata</i>	O	T	Common
<i>Alchornea trewioides</i>	S	S	Common
<i>Alocasia macrorrhiza</i>	S	H	Common
<i>Alpinia katsumadai</i>	S	H	Common
<i>Alyxia sinensis</i>	O	C	Common
<i>Ampelopsis cantoniensis</i>	O	C	Common
<i>Antidesma ghaesembilla</i>	O	S	Common
<i>Aralia armata</i> (A. chinensis in HK checklist)	F	S	Common
<i>Blechnum orientale</i>	F	H	Common
<i>Breynia fruticosa</i>	O	S	Common
<i>Bridelia tomentosa</i>	O	S	Common
<i>Brucea javanica</i>	O	S	Common
<i>Caesalpinia crista</i> (C. nuga)	O	C	Common
<i>Callicarpa macrophylla</i>	S	S	Common
<i>Callicarpa nudiflora</i>	O	S	Common
<i>Cansjera rheedii</i>	F	C	Common
<i>Cassytha filiformis</i>	F	C	Common
<i>Celastrus hindsii</i>	O	C	Common
<i>Cerbera manghas</i>	O	T	Common
<i>Cleistocalyx operculata</i>	O	T	Common
<i>Cratogeomys cochinchinense</i>	D	S	Common
<i>Dalbergia benthamii</i>	F	C	Common
<i>Dalbergia hancei</i>	F	C	Common
<i>Daphniphyllum calycinum</i>	O	S	Common
<i>Diospyros vaccinioides</i>	O	S	Very common
<i>Diploclisia glaucescens</i>	O	C	Common
<i>Embelia ribes</i>	F	C	Common
<i>Eriocaulon merrilli</i>	S	H	Restricted
<i>Eriocaulon sexangulare</i>	S	H	Common
<i>Euonymus chinensis</i>	O	S	Common
<i>Ficus hispida</i>	F	T	Common
<i>Ficus microcarpa</i>	O	T	Common
<i>Ficus variolosa</i>	O	S	Common
<i>Ficus virens</i> var. <i>sublanceolata</i> (F. <i>superba</i> in HK Checklist)	O	T	Common
<i>Glochidion hirsutum</i>	F	S	Common
<i>Glochidion lanceolarium</i> (G. <i>macrophyllum</i>)	O	S	Common
<i>Gnetum montanum</i>	O	C	Common
<i>Hedyotis hedyotidae</i>	S	C	Common
<i>Hibiscus tiliaceus</i>	F (near shore)	T	Common
<i>Hiptage benghalensis</i>	S	S	Restricted
<i>Homalium cochinchinense</i>	F	S	Common
<i>Hyserpa nitida</i>	F	C	Common
<i>Ilex asprella</i>	O	S	Common
<i>Lantana camara</i>	O	S	Common, exotic & naturalised
<i>Litchi chinensis</i>	O	T	Common

Species	Abundance	Growth form	Conservation status in HK
<i>Litsea glutinosa</i>	D	T	Common
<i>Litsea rotundifolia</i>	F	S	Very common
<i>Lygodium japonicum</i>	F	C	Common
<i>Lygodium microphyllum</i>	O	C	Common
<i>Macaranga tanarius</i>	F (near shore)	T	Common
<i>Mallotus paniculatus</i>	D	T	Common
<i>Microcos paniculata</i>	F	T	Common
<i>Mikania micrantha</i>	O	C	Common, exotic & naturalized
<i>Milletia speciosa</i>	F	C	Common
<i>Miscanthus sinensis</i>	F	H	Common
<i>Neyraudia reyaudiana</i>	O	H	Common
<i>Ormosia emarginata</i>	O	T	Common
<i>Osmunda vachelii</i>	S	H	Common
<i>Paederia scandens</i>	F	C	Common
<i>Phoenix hanceana</i>	O	S	Common
<i>Phyllanthus emblica</i>	F	S	Common
<i>Pseudosasa hindsii</i> (<i>Arundinaria hindsii</i>)	F	S	Common
<i>Psychotria rubra</i>	F	S	Common
<i>Pueraria lobata</i>	O	C	Common
<i>Rhamnus crenata</i>	S	S	Common
<i>Rhaphiolepis indica</i>	O	S	Common
<i>Rhapis excelsa</i>	O	S	Restricted
<i>Rhodomyrtus tomentosa</i>	O	S	Very common
<i>Rhus chinensis</i>	O	S	Common
<i>Rhus succedanea</i>	D	T	Common
<i>Rubus reflexus</i>	O	C	Common
<i>Saccharum spontaneum</i>	O	H	Common
<i>Sageretia thea</i> (<i>S. theezans</i>)	O	C	Common
<i>Sapium discolor</i>	F	T	Common
<i>Sapium sebiferum</i>	F (near shore)	T	Common
<i>Schefflera octophylla</i>	D	T	Common
<i>Schoenus falcatus</i>	O	H	Rare, New record to HK
<i>Scleria ciliaris</i>	O	H	Common
<i>Scolopia chinensis</i>	F (near shore)	S	Common
<i>Scolopia saeva</i>	O	T	Common
<i>Sterculia lanceolata</i>	F	T	Common
<i>Strophanthus divaricatus</i>	F	S	Common
<i>Tarenna attenuata</i>	O	S	Common
<i>Tetracera asiatica</i>	F	C	Common
<i>Tetradium glabrifolium</i> (<i>Euodia meliaefolia</i>)	O	T	Common
<i>Trema orientalis</i>	S	S	Common
<i>Tricalysia dubia</i>	O	S	Common
<i>Uvaria microcarpa</i>	O	C	Common
<i>Vitis balanceana</i>	O	C	Restricted, new record to HK
<i>Wikstroemia indica</i>	O	S	Common
<i>Xyris pauciflora</i>	S	H	Restricted
<i>Zanthoxylum nitidum</i>	F	C	Common

List of Plant Species for Grassland/Shrubland Moasic. (Code for Abundance: D= Dominant in place; A = Abundant; F = Frequent; O = Occasional; S = Scarce; E = Emergent Species; Code for Growth Form: C = Climber; H = Herb; S = Shrub; T = Tree)

Species	Abundance	Growth form	Conservation status in HK
<i>Adenosma glutinosa</i>	O	H	Very common
<i>Adiantum flabellulatum</i>	F	H	Common
<i>Alpinia zerumbet</i>	O	H	Common
<i>Alyxia sinensis</i>	O	C	Common
<i>Antidesma ghaesembilla</i>	O	S	Common
<i>Aporosa dioica</i>	O	T	Very common
<i>Archidendron lucidum</i>	O	T	Common
<i>Artocarpus hypargyreus</i>	S	T	Common
<i>Arundinella setosa</i>	D	H	Common
<i>Asparagus cochinchinensis</i>	O	H	Common
<i>Aster baccharoides</i>	F	H	Common
<i>Baeckea frutescens</i>	D	S	Very common
<i>Blechnum orientale</i>	O	H	Common
<i>Bothriochloa bladhii</i> (B. <i>intermedia</i>)	F	H	Common
<i>Bothriochloa glabra</i>	F	H	Common, Not in HK checklist
<i>Breynia fruticosa</i>	F	S	Very common
<i>Bridelia tomentosa</i>	F	S	Common
<i>Brucea javanica</i>	O	S	Common
<i>Cansjera rheedii</i>	O	S	Common
<i>Caryopteris incana</i>	O	H	Common
<i>Cassytha filiformis</i>	F	C	Common
<i>Cratogeomys cochinchinense</i>	O	T	Very common
<i>Cymbopogon caesioides</i> (C. <i>goeringii</i> in HK Checklist)	D	H	Very common
<i>Cymbopogon goeringii</i>	D	H	Common
<i>Dianella ensifolia</i>	F	H	Very common
<i>Dicranopteris linearis</i>	D	H	Common
<i>Dicranopteris pedata</i> (D. <i>linearis</i> in HK checklist)	D	H	Very common
<i>Diospyros vaccinoides</i>	F	S	Common
<i>Diplospora dubia</i> (<i>Tricalysia dubia</i>)	O	C	Common
<i>Embelia laeta</i>	F	C	Common
<i>Eriachne pallescens</i>	F	H	Very common
<i>Eulalia quadrinervis</i>	D	H	Common
<i>Eurya chinensis</i>	O	S	Very common
<i>Eurya nitida</i> (E. <i>japonica</i> in HK Checklist)	F	S	Common
<i>Fimbristylis dichotoma</i>	F	H	Very common
<i>Fimbristylis spathacea</i>	F	H	Very common
<i>Gardenia jasminoides</i>	F	S	Common
<i>Glochidion lanceolarium</i> (G. <i>macrophyllum</i>)	O	S	Common
<i>Glochidion wrightii</i>	O	S	Common
<i>Hedyotis acutangula</i>	O	H	Very common
<i>Heteropogon contortus</i>	O	H	Common
<i>Heterosmilax japonica</i> var. <i>gaudichaudiana</i> (S. <i>gaudichaudiana</i>)	O	C	Common

Species	Abundance	Growth form	Conservation status in HK
<i>Homalium cochinchinense</i>	O	S	Common
<i>Ilex asprella</i>	O	S	Common
<i>Imperata cylindrica</i>	O	H	Common
<i>Inula cappa</i>	F	H	Common
<i>Isachaeum barbartum</i>	D	H	Very common
<i>Lespedeza formosana</i>	O	H	Common
<i>Lilium brownii</i>	O	H	Common, protected in Hong Kong
<i>Lindsaea heterophylla</i> (<i>Schizoloma heterophyllum</i>)	F	H	Very common
<i>Liriope spicata</i>	F	H	Common
<i>Litsea glutinosa</i>	O	T	Very common
<i>Litsea rotundifolia</i>	F	S	Common
<i>Lonicera confusa</i>	O	C	Common
<i>Loropetalum chinense</i>	O	S	Restricted
<i>Lygodium flexuosum</i>	F	C	Very common
<i>Lygodium microphyllum</i>	F	C	Common
<i>Melastoma candidum</i>	O	S	Common
<i>Melastoma sanguineum</i>	F	S	Common
<i>Millettia nitida</i>	O	C	Very common
<i>Millettia nitidum</i>	O	C	Common
<i>Millettia speciosa</i>	F	C	Common
<i>Miscanthus floridulus</i>	O	H	Common
<i>Miscanthus sinensis</i>	F	H	Common
<i>Morinda parviflora</i>	F	C	Common
<i>Morinda umbellata</i>	O	C	Common
<i>Mussaenda pubescens</i>	S	C	Common
<i>Neyraudia arundinacea</i> (N. <i>reyaudiana</i>)	F	H	Very common
<i>Neyraudia reyaudiana</i>	F	H	Common
<i>Phoenix hanceana</i>	O	S	Common
<i>Phyllanthus cochinchinensis</i>	O	S	Very common
<i>Pogonatherum crinitum</i>	O	H	Common
<i>Pseudosasa hindsii</i> (<i>Arundinaria hindsii</i>)	F	S	Common
<i>Psychotria serpens</i>	O	S	Very common
<i>Pteridium aquilinum</i>	O	H	Common
<i>Rhaphiolepis indica</i>	O	S	Common
<i>Rhodomyrtus tomentosa</i>	O	S	Very common
<i>Rhus hypoleuca</i>	O	S	Common
<i>Rhynchospora rubra</i>	D	H	Common
<i>Saccharum spontaneum</i>	O	H	Common
<i>Sageretia theezans</i>	O	C	Common
<i>Schefflera octophylla</i>	O	T	Very common
<i>Scolopia chinensis</i>	O	S	Common
<i>Smilax china</i>	F	C	Common
<i>Sorghum nitidum</i>	O	H	Restricted
<i>Strychnos umbellata</i>	O	C	Common
<i>Symplocos paniculata</i>	O	S	Common
<i>Themeda japonica</i> (<i>Themeda triandra</i> var. <i>japonica</i> in HK Checklist)	O	H	Restricted
<i>Wikstroemia indica</i>	F	S	Common
<i>Zanthoxylum nitidum</i>	O	C	Very common

List of Plant Species for Abandoned Farmland. (Code for Abundance: D= Dominant in place; A = Abundant; F = Frequent; O = Occasional; S = Scarce; E = Emergent Species; Code for Growth Form: C = Climber; H = Herb; S = Shrub; T = Tree)

Species	Abundnace	Growth Form	Conservation status in HK
<i>Apluda mutica</i>	F	H	Common
<i>Branchiaria mutica</i>	D	H	Common, exotic & naturalised
<i>Canavalia rosea</i> (C. <i>maritima</i>)	O	C	Common
<i>Clerodendrum inerme</i>	O	S	Common
<i>Cyclosorus interruptus</i>	F	H	Common
<i>Cyperus esculentus</i>	O	H	Common
<i>Cyperus haspan</i>	O	H	Common
<i>Derris trifolia</i>	O	C	Common
<i>Eichhornia crassipes</i>	O	H	Common, exotic & naturalised
<i>Eriocaulon sexangulare</i>	O	H	Common
<i>Ficus hispida</i>	O	T	Common
<i>Fuirena umbellata</i>	O	H	Common
<i>Glochidion hirsutum</i>	O	S	Common
<i>Glochidion lanceolarium</i> (G. <i>macrophyllum</i>)	O	S	Common
<i>Hedychium coronarium</i>	F	H	Common, introduced & naturalised
<i>Isachne globosa</i>	D	H	Common
<i>Litsea glutinosa</i>	O	T	Very common
<i>Lygodium scandens</i> (L. <i>microphyllum</i>)	F	C	Common
<i>Melastoma candidum</i>	O	S	Common
<i>Mikania micrantha</i>	F	C	Common, exotic & naturalized
<i>Miscanthus floridulus</i>	O	H	Common
<i>Neyraudia arundinacea</i> (N. <i>reyaudiana</i>)	F	H	Very common
<i>Pandanus tectorius</i>	O	T	Common
<i>Panicum repens</i>	D	H	Common
<i>Philydrum lanuginosum</i>	O	H	Common
<i>Phoenix hanceana</i>	O	S	Common
<i>Pycneus flavidus</i> (Cyperus f.)	O	H	Common
<i>Pycneus polystachyos</i> (Cyperus p.)	F	H	Common
<i>Setaria glauca</i>	D	H	Common
<i>Urochloa mutica</i> (Brachiaria <i>mutica</i>)	O	H	Common, exotic & naturalized
<i>Wedelia triloba</i>	O	H	Common, exotic & naturalized

List of Plant Species for Wetland. (Code for Abundance: D= Dominant in place; A = Abundant; F = Frequent; O = Occasional; S = Scarce; E = Emergent Species; Code for Growth Form: C = Climber; H = Herb; S = Shrub; T = Tree)

Scientific Name	Abundance	Growth form	Conservation status in HK
<i>Cyclosorus interruptus</i>	O	H	Common
<i>Cyperus malaccensis</i> (C. malccensis var. <i>brevifolius</i>)	D	H	Common
<i>Eleocharis dulcis</i>	S	H	Common, cultivated & naturalized
<i>Eragrostic</i> sp.	F	H	Common
<i>Eriocaulon merrillii</i> (E. <i>truncatum</i>)	O	H	Common
<i>Fimbristylis acuminata</i>	F	H	Rare
<i>Fimbristylis complanata</i>	F	H	Rare
<i>Fimbristylis schoenoides</i>	O	H	Restricted
<i>Fuirena ciliata</i>	F	H	Common
<i>Fuirena umbellata</i>	O	H	Common
<i>Hedychium coronarium</i>	F	H	Common, introduced & naturalised
<i>Hypericum japonicum</i>	O	H	Common
<i>Isachne albens</i>	O	H	Common
<i>Kandelia candel</i>	O	S	Common
<i>Lipocarpa chinensis</i>	O	H	Common
<i>Melinis repens</i> (<i>Rhynchelytrum repens</i>)	F	H	Very common, exotic & naturalized
<i>Mikania micrantha</i>	D	C	Common, exotic & naturalized
<i>Murdannia nudiflora</i>	F	H	Common
<i>Nepenthes mirabilis</i>	S	H	Restricted and protected in Hong Kong
<i>Panicum repens</i>	D	H	Common
<i>Phragmites</i> sp.	F	H	Common
<i>Zoysia</i> sp.	D	H	Common

List of Plant Species for Plantation. (Code for Abundance: D= Dominant in place; A = Abundant; F = Frequent; O = Occasional; S = Scarce; E = Emergent Species; Code for Growth Form: C = Climber; H = Herb; S = Shrub; T = Tree)

Species	Abundance	Growth Form	Conservation status in HK
<i>Acacia confusa</i>	D	T	Common, introduced
<i>Callistemon rigidus</i>	O	T	Common, introduced
<i>Casuarina equisetifolia</i>	O	T	Common, introduced & semi-naturalised
<i>Eucalyptus citriodora</i>	F	T	Common & Introduced
<i>Leucaena leucocephala</i>	D	T	Common, introduced & naturalized

List of Plant Species for Orchard/Village. (Code for Abundance: D= Dominant in place; A = Abundant; F = Frequent; O = Occasional; S = Scarce; E = Emergent Species; Code for Growth Form: C = Climber; H = Herb; S = Shrub; T = Tree)

Species	Abundance	Growth Form	Conservation status in HK
<i>Acacia confusa</i>	D	T	Common, introduced
<i>Acanthopanax trifoliatum</i>	F	C	Common
<i>Albizia lebbek</i>	F	T	Common
<i>Annona squamosa</i>	O	S	Common & introduced
Bamboo of unknown species	F	T	
<i>Bridelia tomentosa</i>	F	T	Common
<i>Blechnum orientalis</i>	O	H	Common
<i>Carex cryptostachys</i>	O	H	Common
<i>Carica papaya</i>	O	T	Common, introduced
<i>Celtis tetrandra</i> (C. sinensis)	F	T	Common
<i>Citrus grandis</i> (C. maxima)	F	S	Common, introduced
<i>Citrus madurensis</i>	O	S	Common, introduced
<i>Clausena lansium</i>	F	T	Common & introduced
<i>Coix lachryma-jobi</i>	O	H	Common
<i>Dimocarpus longan</i>	F	T	Common, introduced & naturalized
<i>Ficus elastica</i>	S	T	Common & introduced
<i>Ficus hispida</i>	F	T	Common
<i>Ficus microcarpa</i>	O	T	Common
<i>Ficus pumila</i>	O	C	Common
<i>Gossampinus malabarica</i> (<i>Bombax malabarica</i>)	S	T	Common & Introduced
<i>Hedychium coronarium</i>	O	H	Common, introduced and naturalised
<i>Ilex rotunda</i>	O	T	Common
<i>Ipomea cairica</i>	F	C	Common, exotic and naturalized
<i>Lantana camara</i>	F	S	Common, exotic and naturalised
<i>Leucaena leucocephala</i>	F	T	Common, introduced & naturalized
<i>Litchi chinensis</i>	O	T	Common
<i>Litsea glutinosa</i>	F	T	Common
<i>Macaranga tanarius</i>	F	T	Common
<i>Memorialis hirta</i>	O	H	Common
<i>Microcos paniculata</i>	O	T	Common
<i>Mikania micrantha</i>	D	C	Common, exotic and naturalized
<i>Paederia scandens</i>	O	C	Common
<i>Polygonum chinensis</i>	O	H	Common
<i>Pteris multifida</i>	F	H	Common
<i>Pteris semipinata</i>	O	H	Common
<i>Pueraria lobata</i>	F	C	Common
<i>Rubus parvifolius</i>	O	H	Common
<i>Sapium sebiferum</i>	O	T	Common
<i>Schefflera octophylla</i>	O	T	Common
<i>Synedrella nodiflora</i>	O	H	Common
<i>Tristania conferta</i>	S	T	Common & Introduced
<i>Zanthoxylum avicennae</i>	O	T	Common

List of Plant Species for Wasteland. (Code for Abundance: D= Dominant in place; A = Abundant; F = Frequent; O = Occasional; S = Scarce; E = Emergent Species; Code for Growth Form: C = Climber; H = Herb; S = Shrub; T = Tree)

Species	Abundance	Growth Form	Conservation status in HK
<i>Acacia confusa</i>	S	T	Common, introduced
<i>Alysicarpus vaginalis</i>	O	H	Very common
<i>Apluda mutica</i>	O	H	Common
<i>Aquilaria sinensis</i>	F	Sa	Common
<i>Bothriochloa bladhii</i> (B. <i>intermedia</i>)	F	H	Common
<i>Cassia bicuspidata</i>	S	T	Common, introduced
<i>Casuarina equisetifolia</i>	O	T	Common, introduced and semi-naturalised
<i>Chloris barbata</i>	O	H	Very common
<i>Cynodon dactylon</i>	D	H	Common
<i>Equisetum debile</i>	O	H	Restricted
<i>Eragrostis</i> sp.	F	H	Common
<i>Fimbristylis dichotoma</i>	O	H	Common
<i>Fimbristylis spathacea</i>	O	H	Very common
<i>Ischaemum barbatum</i>	O	H	Very common
<i>Lactuca chinensis</i>	O	S	Common
<i>Lantana camara</i>	F	S	Very common, exotic and naturalized
<i>Lespedeza formosana</i>	O	H	Common
<i>Leucaena leucocephala</i>	O	T	Common, introduced and naturalized
<i>Melinis repens</i> (<i>Rhynchelytrum repens</i>)	F	H	Very common, exotic and naturalized
<i>Mikania micrantha</i>	F	C	Common, exotic and naturalised
<i>Mimosa pudica</i>	F	C	Common, exotic and naturalized
<i>Miscanthus sinensis</i>	F	H	Very common
<i>Neyraudia arundinacea</i> (N. <i>reyaudiana</i>)	F	H	Very common
<i>Neyraudia reyaudiana</i>	D	H	Common
<i>Phyllodium elegans</i>	O	H	Common
<i>Pteroloma triquetrum</i>	O	H	Common
<i>Pueraria lobata</i>	F	H	Very common
<i>Saccharum arundinaceum</i>	O	H	Common
<i>Saccharum spontaneum</i>	O	H	Common
<i>Schefflera octophylla</i>	F	Sa	Common
<i>Setaria glauca</i>	O	H	Common
<i>Setaria parviflora</i>	F	H	Common
<i>Sida rhombifolia</i>	O	S	Common
<i>Stachytarpheta jamaicensis</i>	O	H	Common, introduced and naturalized
<i>Urena procumbens</i>	O	S	Common

Scientific Name	Abundance	Growth form	Conservation status in HK
<i>Maricus javanicus</i> (<i>M. albescens</i>)	O	H	Common
<i>Melastoma candidum</i>	O	S	Common
<i>Melinis repens</i> (<i>Rhynchelytrum repens</i>)	O	H	Very common, exotic & naturalized
<i>Miscanthus floridulus</i>	O	H	Common
<i>Miscanthus sinensis</i>	O	H	Common
<i>Morinda parviflora</i>	O	C	Common
<i>Nephrolepis hirsutula</i>	O	H	Common
<i>Neyraudia arundinacea</i> (<i>N. reyaudiana</i>)	F	H	Very common
<i>Paliurus ramosissimus</i>	O	S	Common
<i>Pandanus tectorius</i>	F	S	Common
<i>Paspalum distichum</i>	F	H	Common
<i>Paspalum vaginatum</i>	F	H	Common
<i>Phoenix hanceana</i>	S	S	Common
<i>Pityrogramme calomelanos</i>	O	H	Common
<i>Pongamia pinnata</i>	O	T	Common
<i>Premna obtusifolia</i> (<i>P. integrifolia</i> var. <i>obtusifolia</i>)	O	S	Common
<i>Prenna serratifolia</i> (<i>P. integrifolia</i>)	O	S	Common
<i>Psidium guajava</i>	S	S	Common
<i>Psychotria serpens</i>	O	S	Very common
<i>Pteris vitata</i>	S	H	Very common
<i>Pycnus flavidus</i>	S	H	Common
<i>Pycnus polystachyos</i>	O	H	Very common
<i>Pyrrosia adnascens</i>	O	H	Common
<i>Pyrrosia lanceolata</i> (<i>P. adnascens</i>)	O	E	Common
<i>Rhynchelytrum repens</i>	O	H	Common, exotic & naturalized
<i>Saccharum spontaneum</i>	O	H	Common
<i>Sageretia thea</i> (<i>S. theezans</i>)	O	C	Common
<i>Scaevola sericea</i>	F	S	Common
<i>Schoenus falcatus</i>	O	H	Rare, New record to HK
<i>Scleria ciliaris</i>	O	H	Common
<i>Scleria rugosa</i>	S	H	Very rare
<i>Scolopia chinensis</i>	F	S	Common
<i>Senecio scandens</i>	O	C	Common
<i>Severinia buxifolia</i> (<i>Atalantia buxifolia</i>)	O	S	Common
<i>Sphenomeris biflora</i>	O	H	Restricted
<i>Stenoloma biflorum</i> (<i>Sphenomeris biflora</i>)	O	H	Restricted
<i>Thespesia populnea</i>	O	T	Restricted
<i>Uticularia bifida</i>	O	H	Common
<i>Uticularia caerulea</i>	S	H	Restricted
<i>Vitex rotundifolia</i>	F	S	Common
<i>Wedelia biflora</i>	O	H	Common, introduced & naturalised
<i>Wedelia trilobata</i>	O	H	Common, introduced & naturalised
<i>Wikstroemia indica</i>	O	S	Common
<i>Xyris pauciflora</i>	O	H	Restricted
<i>Zoysia sp.</i>	O	H	Common

ANNEX E-3

LIST OF RECORDED FAUNAL SPECIES

Avifauna Recorded within the Study Area. (R = Resident; W = Winter visitor; SV = Summer visitor)

Common name	Scientific name	Winter visitor/ resident	Status in HK
Japanese Sparrowhawk	<i>Accipiter gularis</i>	W	Rare
Woodcock	<i>Scolopax rusticola</i>	W	Rare
White-bellied Sea Eagle	<i>Haliaeetus leucogaster</i>	R	Rare
Black-eared Kite	<i>Milvus lineatus</i>	R	Common
Black Kite	<i>Milvus milvans</i>	R	Common
Spotted Dove	<i>Streptopelia chinensis</i>	R	Common
Oriental Turtle Dove	<i>Streptopelia orientalis</i>	W	Common
Chestnut Bulbul	<i>Hypsipites castanotus</i>	R	Uncommon
Chinese Bulbul	<i>Pycnonotus sinensis</i>	R	Common
Red-whiskered Bulbul	<i>Pycnonotus jocosus</i>	R	Common
Common Kingfisher	<i>Alcedo atthis</i>	R	Common
White-throated Kingfisher	<i>Halcyon smyrnensis</i>	R	Common
Black-capped Kingfisher	<i>Halcyon pileata</i>	R	Common
Common Sandpiper	<i>Actitis hypoleucos</i>	W	Common
Common Buzzard	<i>Buteo buteo</i>	W	Uncommon
Striated Heron	<i>Butorides striatus</i>	R	Common
Chinese Pond Heron	<i>Ardeola bacchus</i>	R	Common
Little Egret	<i>Egretta garzetta</i>	R	Common
Pacific Reef Egret	<i>Egretta sacra</i>	R	Uncommon
Night Heron	<i>Nycticorax nycticorax</i>	R	Common
Great Cormorant	<i>Phalacrocorax carbo</i>	W	Common
Oriental Magpie Robin	<i>Copsychus saularis</i>	R	Common
Rufous-tailed Robin	<i>Erithacus sibilans</i>	W	Uncommon
Blue Whistling Thrush	<i>Myiophonus caeruleus</i>	R	Common
Pale Thrush	<i>Turdus pallidus</i>	W	Uncommon
Grey-backed Thrush	<i>Turdus hortulorum</i>	W	Common
Blue Rock Thrush	<i>Monticola solitarius</i>	R	Common
Masked Laughing Thrush	<i>Garrulax perpicillatus</i>	R	Common
Yellow-browed Warbler	<i>Phylloscopus inornatus</i>	W	Common
Asian Stubtail Warbler	<i>Urosphena squamiceps</i>	W	Uncommon
Pallas's Warbler	<i>Phylloscopus proregulus</i>	W	Common
Fantail Warbler	<i>Cisticola juncidis</i>	W	Common
Dusky Warbler	<i>Phylloscopus fuscatus</i>	W	Common
Chinese Bush Warbler	<i>Cettia canturians</i>	W	Common
Crested Myna	<i>Acridotheres grandis</i>	R	Common
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	R	Common
Olive-backed Pipit	<i>Anthus hodgsoni</i>	W	Common
Greater Coucal	<i>Centropus sinensis</i>	R	Common
Large-billed Crow	<i>Corvus macrorhynchos</i>	R	Common
Black Drongo	<i>Dicrurus macrocercus</i>	R	Common
Black-faced Bunting	<i>Emberiza spodocephala</i>	W	Common
Common Koel	<i>Eudynamis scolopacea</i>	R	Common
Barn Swallow	<i>Hirundo rustica</i>	SV	Common
Long-tailed Shrike	<i>Lanius schach</i>	R	Common
Siberian Rubythroat	<i>Luscinia calliope</i>	W	Common
White Wagtail	<i>Motacilla alba</i>	W	Common
Common Tailorbird	<i>Orthotomus sutorius</i>	R	Common
Great Tit	<i>Parus major</i>	R	Common

Common name	Scientific name	Winter visitor/ resident	Status in HK
Daurian Redstart	<i>Pheonicurus aureus</i>	W	Common
Common Magpie	<i>Pica pica</i>	R	Common
Blue Magpie	<i>Urocissa erythrorhyncha</i>	R	Common
Yellow-bellied Prinia	<i>Prinia flaviventris</i>	R	Common
Plain Prinia	<i>Prinia inornate</i>	R	Common
Black-collared Starling	<i>Sturnus nigricollis</i>	R	Common
Red-flanked Bluetail	<i>Tarsiger cyanurus</i>	W	Common
Kestrel	<i>Falco tinnunculus</i>	W	Common
Chinese Francolin	<i>Francolinus pintadeanus</i>	R	Common
Eurasian Tree Sparrow	<i>Passer montanus</i>	R	Common
Japanese White-eye	<i>Zosterops japonicus</i>	R	Common

Odonates Recorded within the Study Area

Species	Status in HK
Zygoptera	
<i>Ceriagrion auranticum</i>	Common
<i>Euphaea decorata</i>	Common
<i>Ischnura senegalensis</i>	Abundant
<i>Onychargia atrocyana</i>	Fairly common
<i>Prodasineura autumnalis</i>	Abundant
<i>Pseudagrion rubriceps</i>	Fairly common
<i>Pseudagrion rubriceps</i>	Fairly common
<i>Rhinocypha perforata</i>	Common
Anisoptera	
<i>Acisoma panorpoides</i>	Fairly common
<i>Crocothemis servilia</i>	Common
<i>Orthetrum chrysis</i>	Common
<i>Orthetrum chrysis</i>	Common
<i>Orthetrum luzonicum</i>	Common
<i>Orthetrum luzonicum</i>	Common
<i>Orthetrum sabina</i>	Abundant
<i>Palpopleura sexmaculata</i>	Common
<i>Pantala flavescens</i>	Abundant
<i>Pantala flavescens</i>	Abundant
<i>Pantala flavescens</i>	Abundant
<i>Pantala flavescens</i>	Abundant
<i>Pantala flavescens</i>	Abundant
<i>Pseudothemis zonata</i>	Common
<i>Trithemis aurora</i>	Abundant
<i>Zyxomma petiolatum</i>	Fairly common

Butterfly Species Recorded within the Study Area

Species	Status in HK
Papilionidae	
<i>Chilasa clytia</i>	Common
<i>Graphium agamemnon</i>	Very common
<i>Graphium doson</i>	Uncommon
<i>Graphium sarpedon</i>	Very common
<i>Papilio bianor</i>	Common
<i>Papilio demoleus</i>	Common
<i>Papilio helenus</i>	Very common
<i>Papilio memnon</i>	Very common
<i>Papilio paris</i>	Very common
<i>Papilio polytes</i>	Very common
<i>Parides alcinous</i>	Common
<i>Pathysa antiphates</i>	Common
Pieridae	
<i>Catopsilia pomona</i>	Common
<i>Delias pasithoe</i>	Common
<i>Eurema blanda</i>	Common
<i>Eurema hecabe</i>	Very common
<i>Hebomoia glaucippe</i>	Common
<i>Pieris canidia</i>	Common
Hesperiidae	
<i>Ampittia dioscorides</i>	Uncommon
<i>Astictopterus jama</i>	Common
<i>Erionota torus</i>	Uncommon
<i>Graphium sarpedon</i>	Very common
<i>Hasora vitta</i>	Common
<i>Matapa aria</i>	Uncommon
<i>Odontoptilum angulatum</i>	Common
<i>Papilio bianor</i>	Common
<i>Papilio helenus</i>	Very common
<i>Parnara guttatus</i>	Common
<i>Suastus gremius</i>	Common
<i>Telicota ancilla</i>	Common
Lycaenidae	
<i>Abisara echerius</i>	Very common
<i>Acytolepis puspa</i>	Common
<i>Chilades lajus</i>	Very common
<i>Deudorix epijarbus</i>	Common
<i>Everes lacturnus</i>	Common
<i>Heliophorus epicles</i>	Very common
<i>Jamides bochus</i>	Common
<i>Lampides boeticus</i>	Common
<i>Rapala manea</i>	Common
<i>Remelana jangala</i>	Uncommon
<i>Spindasis lohita</i>	Uncommon
<i>Zizeeria maha</i>	Common
Nymphalidae	

Species	Status in HK
<i>Athyma nefte</i>	Common
<i>Cethosia biblis</i>	Uncommon
<i>Charaxes bernardus</i>	Common
<i>Cupha erymanthis</i>	Very common
<i>Cyrestis thyodamas</i>	Very common
<i>Discophora sondaica</i>	Uncommon
<i>Elymnias hypermnestra</i>	Common
<i>Euploea core</i>	Very common
<i>Euploea midamus</i>	Very common
<i>Euthalia phemius</i>	Uncommon
<i>Faunis eumeus</i>	Common
<i>Hestina assimilis</i>	Common
<i>Ideopsis similis</i>	Very common
<i>Junonia almana</i>	Common
<i>Junonia hierta</i>	Common
<i>Lethe confusa</i>	Common
<i>Lethe europa</i>	Uncommon
<i>Limenitis sulphita</i>	Common
<i>Melanitis leda</i>	Common
<i>Mycalesis mineus</i>	Very common
<i>Mycalesis zonata</i>	Common
<i>Neptis hylas</i>	Very common
<i>Parantica aglea</i>	Common
<i>Phaedyma columella</i>	Common
<i>Polyura athamas</i>	Common
<i>Polyura nepenthes</i>	Common
<i>Ypthima lisandra</i>	Very common

Stream Invertebrates Recorded in the Study Areas

Ostracoda		
Oligochaete		
Gastropoda	Ancylidae	<i>Ferrisia baconi</i>
Decapoda	Atyidae	<i>Caridina lanceifrons</i>
Ephemeroptera	Baetidae	<i>Baetis sp.</i>
		<i>Cloeon sp.</i>
	Heptageniidae	<i>Cinygmina T₁</i>
		<i>Paegniodes cupulatus</i>
	Leptophlebiidae	<i>Habrophlebiodes gilliesi</i>
		<i>Isca purpurea</i>
Odonata	Libellulidae	<i>Zygonyx iris</i>
	Euphaeidae	<i>Euphaea decorata</i>
Plecoptera	Perlidae	<i>Neoperla sp.</i>
	Nemouridae	<i>Amphinemura chiu</i>
Trichoptera	Glossosomatidae	<i>Agapetus sp.</i>
	Helicopsychidae	<i>Helicopsyche sp.</i>
	Psychomyiidae	<i>Psychomyia sp.</i>
	Philopotamidae	<i>Chimarra sp.</i>
	Hydropsychidae	<i>Cheumatopsyche spinosa</i>
		<i>Diplectrona sp.</i>
	Odontoceridae	<i>Psilotetra kwantungensis</i>
Coleoptera (Larvae)	Hydrophilidae	<i>Enochrus sp.</i>
	Helodidae	<i>Hydrocyphon so.</i>
	Elmidae	<i>Stenelmis sp.</i>
		<i>Limnius sp.</i>
	Psephenidae	<i>Eubrianax sp.</i>
	Ptylodactilidae	<i>Eulichas sp.</i>
Diptera	Ceratopogonidae	<i>Forcipomyia sp.</i>
	Tipulidae	<i>Antocha sp.</i>
	Tanypodinae	
	Orthocladinae	
	Chironominae	

Fish Species Recorded in the Study Areas

Species	Common Name	Preferred Habitat	Status in HK
<i>Oryzias latipes</i>	Rice Fish	Rocky stream in good condition	Rare
<i>Gambusia affinis</i>	Mosquito Fish	Overgrown seepage pools feeding artificial ditch	Common
<i>Mugil cephalus</i>	Grey Mullet	Estuary with patchy mangrove and salt-marsh	Common
<i>Periophthalmus cantonensis</i>	Mudskipper	Stream tidal reach	Common
<i>Fugu niphobles</i>	Puffer Fish	Stream tidal reach	Common
<i>Therapon jarbua</i>		Estuary with patchy mangrove and salt-marsh	Common

List of Amphibian Recorded in the Study Areas

Species	Common Name	Preferred Habitat	Status in HK
<i>Rana limnocharis</i>	Paddy Frog	Abandoned pool with marginal plants, earthen ditch with overgrown shallow pools	Common
<i>Polypedates megacephalus</i>	Brown Tree Frog	Abandoned pools with marginal plants, man-made pools with marginal plants	Common
<i>Microhyla ornata</i>	Ornate Pigmy	Abandoned pool with marginal plants	Common
<i>Bufo melanostictus</i>	Asian Common Toad	Vegetable plot's irrigation pool	Common
<i>Rana guentheri</i>	Gunther's Frog	Dried-up reservoir	Common

List of Reptile Recorded in the Study Areas

Species	Common Name	Status in HK
<i>Ptyas mucosus</i>	Common Rat Snake	Common
<i>Trachemys scripta elegans</i>	Red-eared Slider	Common

ANNEX E-4

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