

APPENDIX 4B

**Operational Noise
Impact Prediction**

**AGREEMENT NO CE29/2001
OUTLYING ISLANDS SEWERAGE STAGE 1 PHASE 1
NGONG PING STW & SEWERAGE INVESTIGATION
FINAL REPORT**

**APPENDIX 4B
Operational Noise Impact Prediction
Ngong Ping STW**

EQUIPMENT INVENTORY FOR NGONG PING STW

Potential noise sources from STW include:	Sound Power Level for Each Equipment	No.	Total Sound Power Level
1. Two submersible pumps (1 duty + 1 standby) @20kW at the "Inlet Work"	105	1	105.0
2. Some Ventilation Fans at Sludge thickening and dewatering and storage unit & Aerobic digester	90	3	94.8
3. Three submersible pumps (2 duty + 1 standby) at Effluent Pumping Station @ 8kW	100	2	103.0
4. Four blowers inside blower room	104	4	110.0
		TOTAL	111.9

All the potential noise sources are enclosed in buildings

**PREDICTED NOISE LEVEL AT NEAREST NSRS
Scenario 1**

Assumed All Equipment Outdoor

Nearest NSRs	Distance to boundary (m)	Distance Correction dB(A)	Sound Power Level dB(A)	Façade Effect dB(A)	Predicted Noise Level dB(A)
Lin Chi Monastery	441	-61	111.9	3	54
Tin Tan Buddha Statue	276	-57	111.9	0	55
Village House Near Bus Terminal/Ngong Ping Road	240	-56	111.9	3	59

Scenario 2

Assumed all equipment in an indoor enclosure as designed

Potential noise sources from STW include:	Sound Power Level for Each Equipment	No.	Correction for inside building	Total Sound Power Level
1. Two submersible pumps (1 duty + 1 standby) @20kW at the "Inlet Work"	105	1	-20	85.0
2. Some Ventilation Fans at Sludge thickening and dewatering and storage unit & Aerobic digester	90	3	0	94.8
3. Three submersible pumps (2 duty + 1 standby) at Effluent Pumping Station @ 8kW	100	2	-20	83.0
4. Four blowers inside blower room	104	4	-20	90.0
		TOTAL		96.6

Nearest NSRs	Distance (m)	Distance Correction dB(A)	Sound Power Level dB(A)	Façade Effect dB(A)	Predicted Noise Level dB(A)
Lin Chi Monastery	441	-61	96.6	3	39
Tin Tan Buddha Statue	276	-57	96.6	0	40
Village House Near Bus Terminal/Ngong Ping Road	240	-56	96.6	3	44

20 dB reduction is assumed for equipment inside building enclosure envelope.

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 Operational Noise Impact Prediction
 Pump Chamber of Package 3**

EQUIPMENT INVENTORY FOR PUMP CHAMBER UNDER PACKAGE 3

Potential noise sources	Sound Power Level for Each Equipment	No.	Total Sound Power Level
1. Local pump chamber @8kW	100	1	100.0
TOTAL			100.0

PREDICTED NOISE LEVEL AT NEAREST NSRS

Lin Chi Monastery

Assumed Pump Chamber Outdoor

Nearest NSRs	Distance to boundary (m)	Distance Correction dB(A)	Sound Power Level dB(A)	Façade Effect dB(A)	Predicted Noise Level dB(A)
Lin Chi Monastery	20	-34	100.0	3	69
Village house along Ngong Ping Road near bus terminal	200	-54	100.0	3	49

Scenario 2

Assumed Pump Chamber Underground

Nearest NSRs	Distance (m)	Distance Correction dB(A)	Sound Power Level dB(A)	Façade Effect dB(A)	Predicted Noise Level dB(A)
Lin Chi Monastery	20	-34	75.0	3	44
Village house along Ngong Ping Road near bus terminal	200	-54	75.0	3	24

Assume a reduction of Sound Power Level of 25dB(A) at the noise source could be achieved if the pump chamber is fully enclosed underground.