

APPENDIX 4.4

**Operation Noise
Impacts**

Project : WENT Landfill Extension
 Title : Fixed Plant Noise Assessment (Without Mitigation Measures)
 Date : 15 Jul 2009

NSR : NSR-1
 (Hai Pak Nai)

Source	SWL / Unit dB(A)	Qty Nos	% Util	Total SWL dB(A)	Dist m	Correction						SPL		
						Dist dB(A)	Facade dB(A)	Air dB(A)	Tonal dB(A)	Topo dB(A)	Screen dB(A)	Daytime dB(A)	Evening dB(A)	Night-time dB(A)
<i>Daytime, Evening and Night-time</i>														
Leachate treatment plant (WENT) ^[1]	75	1	100%	75	1285	-70	3	-4	6	0	0	10	10	10
Leachate treatment plant (WENT Ext) ^[1]	75	1	100%	75	1435	-71	3	-4	6	0	0	9	9	9
Ammonia stripping plant (WENT) ^[1]	88	1	100%	88	1255	-70	3	-4	6	0	0	23	23	23
Ammonia stripping plant (WENT Ext) ^[1]	88	1	100%	88	1385	-71	3	-4	6	0	0	22	22	22
LFG Treatment plant (WENT) ^[2]	95	1	100%	95	1165	-69	3	-3	6	0	0	31	31	31
LFG Treatment plant (WENT Ext) ^[2]	95	1	100%	95	1315	-70	3	-4	6	0	0	30	30	30
<i>Daytime</i>														
Refuse vehicle / hr [3]												30		
Waste Filling														
Compactor (CNP 050)	105	2	100%	108	1150	-69	3	-3		-10		28		
Dump truck (CNP 068)	105	1	100%	105	1150	-69	3	-3		-10		25		
Dozer (CNP 030)	115	2	100%	118	1150	-69	3	-3		-10		38		
Backhoe (CNP 081)	112	1	100%	112	1150	-69	3	-3		-10		32		
Berth 1 - HATS (Barging Idling + Lifting Gear)	98	1	80%	97	270	-57	3					43		
Berth 2 - NLTS (Barge Idling + Lifting Gear)	100	1	80%	99	370	-59	3					43		
Berth 3 - WKTS (Grantry Crane)	98	1	80%	97	460	-61	3					39		
Berth 4 - OITF (Barge Idling + Lifting Gear)	100		80%		565	-63	3							
Berth 5 - IWTS (Barge Idling + Lifting Gear)	100	1	80%	99	650	-64	3					38		
Berth 6 - IETS (Barge Idling + Lifting Gear)	100	1	80%	99	750	-66	3					37		
<i>Evening</i>														
Refuse vehicle / hr [3]													26	
Waste Filling														
Compactor (CNP 050)	105	2	100%	108	1150	-69	3	-3		-10		28		
Dump truck (CNP 068)	105	1	100%	105	1150	-69	3	-3		-10		25		
Dozer (CNP 030)	115	2	100%	118	1150	-69	3	-3		-10		38		
Backhoe (CNP 081)	112	1	100%	112	1150	-69	3	-3		-10		32		
Berth 1 - HATS (Barging Idling + Lifting Gear)	98	1	50%	95	270	-57	3					41		
Berth 2 - NLTS (Barge Idling + Lifting Gear)	100		50%		370	-59	3							
Berth 3 - WKTS (Grantry Crane)	98	1	50%	95	460	-61	3					37		
Berth 4 - OITF (Barge Idling + Lifting Gear)	100		50%		565	-63	3							
Berth 5 - IWTS (Barge Idling + Lifting Gear)	100	1	50%	97	650	-64	3					36		
Berth 6 - IETS (Barge Idling + Lifting Gear)	100		50%		750	-66	3							
<i>Night-time</i>														
Refuse vehicle / hr [3]														0
Waste Filling														
Compactor (CNP 050)	105		100%		1150	-69	3	-3		-10				
Dump truck (CNP 068)	105		100%		1150	-69	3	-3		-10				
Dozer (CNP 030)	115		100%		1150	-69	3	-3		-10				
Backhoe (CNP 081)	112		100%		1150	-69	3	-3		-10				
Berth 1 - HATS (Barging Idling + Lifting Gear)	98		50%		270	-57	3							
Berth 2 - NLTS (Barge Idling + Lifting Gear)	100		50%		370	-59	3							
Berth 3 - WKTS (Grantry Crane)	98		50%		460	-61	3							
Berth 4 - OITF (Barge Idling + Lifting Gear)	100		50%		565	-63	3							
Berth 5 - IWTS (Barge Idling + Lifting Gear)	100	1	50%	97	650	-64	3							36
Berth 6 - IETS (Barge Idling + Lifting Gear)	100	1	50%	97	750	-66	3							34
Total Noise Impacts, dB(A)												49	45	40
Criterion, dB(A)												45	43	37
Exceedence, dB(A)												4	2	3

Note:
 [1] : Based on results in the approved EIA Report for NENT Landfill Extension
 [2] : Based on site measurements
 [3] : See separate calculations for noise impacts from haul road

Project : WENT Landfill Extension
 Title : Fixed Plant Noise Assessment (With 3.5m bund along eastern end as Mitigation Measures)
 Date : 15 Jul 2009

NSR : NSR-1

(Hai Pak Nai)

Source	SWL / Unit dB(A)	Qty Nos	% Util	Total SWL dB(A)	Dist m	Correction						SPL		
						Dist dB(A)	Facade dB(A)	Air dB(A)	Tonal dB(A)	Topo dB(A)	Screen dB(A)	Daytime dB(A)	Evening dB(A)	Night-time dB(A)
<i>Daytime, Evening and Night-time</i>														
Leachate treatment plant (WENT) [1]	75	1	100%	75	1285	-70	3	-4	6	0	0	10	10	10
Leachate treatment plant (WENT Ext) [1]	75	1	100%	75	1435	-71	3	-4	6	0	0	9	9	9
Ammonia stripping plant (WENT) [1]	88	1	100%	88	1255	-70	3	-4	6	0	0	23	23	23
Ammonia stripping plant (WENT Ext) [1]	88	1	100%	88	1365	-71	3	-4	6	0	0	22	22	22
LFG Treatment plant (WENT) [2]	95	1	100%	95	1165	-69	3	-3	6	0	0	31	31	31
LFG Treatment plant (WENT Ext) [2]	95	1	100%	95	1315	-70	3	-4	6	0	0	30	30	30
<i>Daytime</i>														
Refuse vehicle / hr [3]														
Waste Filling												30		
Compactor (CNP 050)	105	2	100%	108	1150	-69	3	-3		-10		28		
Dump truck (CNP 068)	105	1	100%	105	1150	-69	3	-3		-10		25		
Dozer (CNP 030)	115	2	100%	118	1150	-69	3	-3		-10		38		
Backhoe (CNP 081)	112	1	100%	112	1150	-69	3	-3		-10		32		
Berth 1 - HATS (Barging Idling + Lifting Gear)	98	1	80%	97	270	-57	3				-9	34		
Berth 2 - NLTS (Barge Idling + Lifting Gear)	100	1	80%	99	370	-59	3				-9	34		
Berth 3 - WKTS (Grantry Crane)	98	1	80%	97	460	-61	3					39		
Berth 4 - OITF (Barge Idling + Lifting Gear)	100		80%	565	565	-63	3				-9			
Berth 5 - IWTS (Barge Idling + Lifting Gear)	100	1	80%	99	650	-64	3				-9	29		
Berth 6 - IETS (Barge Idling + Lifting Gear)	100	1	80%	99	750	-66	3				-9	28		
<i>Evening</i>														
Refuse vehicle / hr [3]													26	
Waste Filling														
Compactor (CNP 050)	105	2	100%	108	1150	-69	3	-3		-10		28		
Dump truck (CNP 068)	105	1	100%	105	1150	-69	3	-3		-10		25		
Dozer (CNP 030)	115	2	100%	118	1150	-69	3	-3		-10		38		
Backhoe (CNP 081)	112	1	100%	112	1150	-69	3	-3		-10		32		
Berth 1 - HATS (Barging Idling + Lifting Gear)	98	1	50%	95	270	-57	3				-9	32		
Berth 2 - NLTS (Barge Idling + Lifting Gear)	100		50%	370	370	-59	3				-9			
Berth 3 - WKTS (Grantry Crane)	98	1	50%	460	460	-61	3					37		
Berth 4 - OITF (Barge Idling + Lifting Gear)	100		50%	565	565	-63	3				-9			
Berth 5 - IWTS (Barge Idling + Lifting Gear)	100	1	50%	97	650	-64	3				-9	27		
Berth 6 - IETS (Barge Idling + Lifting Gear)	100		50%	750	750	-66	3				-9			
<i>Night-time</i>														
Refuse vehicle / hr [3]														0
Waste Filling														
Compactor (CNP 050)	105		100%	1150	1150	-69	3	-3		-10				
Dump truck (CNP 068)	105		100%	1150	1150	-69	3	-3		-10				
Dozer (CNP 030)	115		100%	1150	1150	-69	3	-3		-10				
Backhoe (CNP 081)	112		100%	1150	1150	-69	3	-3		-10				
Berth 1 - HATS (Barging Idling + Lifting Gear)	98		50%	270	270	-57	3				-9			
Berth 2 - NLTS (Barge Idling + Lifting Gear)	100		50%	370	370	-59	3				-9			
Berth 3 - WKTS (Grantry Crane)	98		50%	460	460	-61	3							
Berth 4 - OITF (Barge Idling + Lifting Gear)	100		50%	565	565	-63	3				-9			
Berth 5 - IWTS (Barge Idling + Lifting Gear)	100	1	50%	97	650	-64	3				-9			27
Berth 6 - IETS (Barge Idling + Lifting Gear)	100	1	50%	97	750	-66	3				-9			25
Total Noise Impacts, dB(A)												44	43	35
Criterion, dB(A)												45	43	37
Exceedence, dB(A)												-	-	-

Note:

[1] : Based on results in the approved EIA Report for NENT Landfill Extension

[2] : Based on site measurements

[3] : See separate calculations for noise impacts from haul road

Project : WENT Landfill Extension
 Title : Noise from Haul Road
 Date : 15 July 2009

NSR : NSR-1
 (Hai Pak Nai)

Source	Period	SWL / Unit dB(A)	Qty Nos	% Util	Total SWL dB(A)	Dist m	Speed kph	[2] Angle deg	Correction [1]						SPL		
									Dist dB(A)	Facade dB(A)	Air dB(A)	Speed dB(A)	Angle dB(A)	Topo dB(A)	Daytime dB(A)	Evening dB(A)	Night-time dB(A)
Refuse vehicle / hr - Daytime only	II	97	183	100%	120	1150	20	90	-31	3	-3	-13	-3	-10	30		
Refuse vehicle / hr - Evening only	III	97	90	100%	117	1150	20	90	-31	3	-3	-13	-3	-10		26	
Refuse vehicle / hr - Night-time only	III	97		100%		1150	20	90	-31	3	-3	-13	-3	-10			
Noise Impacts from Haul Road, dB(A)															30	26	-

Note:

- I - Daytime, evening and night-time operation
- II - Daytime operation only
- III - Evening operation only

[1]: Based on BS 5228 Pt 1: 1997 D3.5.2 Method for mobile plant using a regular well defined route (haul road)

$$L_{eq} = L_w - 33 + 10 \log(Qty) - 10 \log(speed) - 10 \log(dist) + 10 \log(angle/180) + C_{facade}$$