
APPENDIX 7.8

**CALCULATION OF CONSTRUCTION NOISE
LEVELS AT REPRESENTATIVE NOISE
SENSITIVE RECEIVER DURING NORMAL
DAYTIME WORKING HOURS - MITIGATED
SCENARIO**

Activity	Reference Legend*	SWL	Distance	SPL	Duration (Months)	2005												2006												2007												2008												2009												2010												
						1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12													
Site Clearance & Set up Site Office		119	190	69	2	69																																																																								
Stage III																																																																														
Return Activated Sludge (Stage III) - Modification works to the RAS withdrawal system	33	Pipe work or other Miscellaneous works	111	340	55	6	55																																																																							
Diversion of Pipework at stage III	6	Pipe work or other Miscellaneous works	111	190	60	6	60																																																																							
Construction of Final Clarifiers (2 no.)	6	Piling work Excavation Concreting work	110 124 116	164 164 164	69 74 69	14	69, 74, 69																																																																							
SBR		Piling work Concreting work	116 115	168 163	66 66	8	66																																																																							
Provision of Pipework for Supernatant		Pipe work or other Miscellaneous works	111	184	60	3	60																																																																							
Modification of inter-connection pipeline for under sewerage between Stage III and stage IV inlet works		Pipe work or other Miscellaneous works	111	224	59	4	59																																																																							
Provision of inter-connection pipeline for sludge between stage III and stage IV digestion tanks		Pipe work or other Miscellaneous works	111	176	61	8	61																																																																							
Stage IV																																																																														
Grit removal unit - construction of 1 new debris grit removal units	3	Concreting work Pipe work or other Miscellaneous works	115 111	210 210	64 59	8	64, 59																																																																							
Reconstruction of Final Clarifiers (Phase 1) - FST no. 6	6	Demolition Piling work Excavation Concreting work	120 118 121 115	364 364 364 384	64 59 65 59	15	64, 59, 65, 59																																																																							
Reconstruction of Final Clarifiers (Phase 2) - FST no. 4 & 5	6	Demolition Piling work Excavation Concreting work	123 119 124 118	330 330 330 330	67 63 66 63	14	67, 63, 66, 63																																																																							
Reconstruction of Final Clarifiers (Phase 3) - FST no. 1, 2 & 3	6	Demolition Piling work Excavation Concreting work	125 120 125 120	300 300 300 300	70 66 71 65	16	70, 66, 71, 65																																																																							
Sludge treatment building (both Stages) - Sludge Dewatering House	31	Piling work Excavation Concreting work Pipe work or other Miscellaneous works	116 121 115 111	280 280 280 280	62 67 61 57	15	62, 67, 61, 57																																																																							
- SAS thickening House	7	Piling work Excavation Concreting work Pipe work or other Miscellaneous works	116 121 115 111	304 304 304 304	61 66 61 56	15	61, 66, 61, 56																																																																							
Primary Sludge Thickener - Construction of gravity thickener	16	Piling work Excavation Concreting work Pipe work or other Miscellaneous works	116 121 115 111	278 278 278 278	62 67 61 57	12	62, 67, 61, 57																																																																							
Re-construction of flexible pavement (both Stages)		Concreting work	115	228	63	9	63																																																																							
Pipe works from FSTs to outlet	6	Pipe work or other Miscellaneous works	111	280	57	12	57																																																																							
Commissioning of Plant						1	63																																																																							
Overall Noise Level-Phase 1																																																																														
						69 70 64 59 64 64 68 69 66 72 73 73 75 73 73 72 73 74 73 71 66 66 66 66 67 67 66 67 68 63 71 66 66 71 71 71 65 65 65 65 65 65 63 63 63																																																																								

Activity	Reference Legend*	SWL	Distance	SPL	Duration (Months)	2005												2006												2007												2008												2009												2010												
						1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12													
Site Clearance & Set up Site Office		119	299	65	2	65																																																																								
Stage III																																																																														
Modification of Screen Unit - Reduce Bar Spacing from 15mm to 12mm	2		111		5	0																																																																								
Reconstruction of Pipeline System Connecting to the RAS Pumping Station	6	Pipe work or other Miscellaneous works	111	210	59	8	59																																																																							
RAS Pipeline between Stage III and Stage V with Connection to the Thickening and Dewatering facilities		Pipe work or other Miscellaneous works	111	296	56	3	56																																																																							
Upgrading of Digested Sludge Pipeline between the Dewatering House of Stage III to the Digesters of Stage IV		Pipe work or other Miscellaneous works	111	200	60	3	60																																																																							
Provision of Compressed Air Pipe between the Blower House of Stage III and Stage IV		Pipe work or other Miscellaneous works	111	180	60	3	60																																																																							
Replacement and Modification of Methane Gas Pipe for Gas Holders between Stage III and Stage IV		Pipe work or other Miscellaneous works	111	190	60	3	60																																																																							
Provision of Washwater Rings for Stage III and Stage IV		Pipe work or other Miscellaneous works	111	70	69	3	69																																																																							
Stage IV																																																																														
Modification of Screen House - modification of existing channel		Pipe work or other Miscellaneous works	111	204	69	7	69																																																																							
Primary Settlement Tank (1 no.) - PST no. 5 and associated distribution chambers	4	Piling work Excavation Concreting work Pipe work or other Miscellaneous works	116 121 115 111	288 288 288 288	61 67 61 56	11	61, 67, 61, 56																																																																							
Aeration Tank - aeration tank with upper floor for housing blowers transformer room	5	Piling work Excavation Concreting work Pipe work or other Miscellaneous works	116 121 115 111	290 290 290 290	61 66 61 56	14	61, 66, 61, 56																																																																							
Construction of Aeration Tank No. 6,7	5	Piling work Excavation Concreting work Pipe work or other Miscellaneous works	116 121 115 111	346 346 348 346	60 65 59 55	18	60, 65, 59, 55																																																																							
Installation of air main to aeration tank	5	Pipe work or other Miscellaneous works	111	270	57	3	57																																																																							
Mixed Liquor Channel	25	Excavation Concreting work Pipe work or other Miscellaneous works	121 115 111	330 330 330	65 60 60	6	65, 60, 60																																																																							
Construction of Final Clarifiers -FST no. 11 & 12	6	Piling work Excavation Concreting work	115 121 115	404 404 404	59 64 58	13	59, 64, 58																																																																							
Reconstruction of Final Clarifiers -FST no. 7, 8, 9 & 10	6	Demolition Piling work Excavation Concreting work	120 116 121 115	380 380 380 360	63 59 64 59	16	63, 59, 64, 59																																																																							
Primary Sludge Thickeners - Construction of gravity thickener	16	Piling work Concreting work Pipe work or other Miscellaneous works	116 115 111	278 278 278	62 61 57	10	62, 61, 57																																																																							
Sludge Digestion Tank & Gas Holder Support	9 & 11	Piling work Excavation Concreting work Pipe work or other Miscellaneous works	116 121 115 111	197 197 197 197	65 70 64 60	9	65, 70, 64, 60																																																																							
UV Channel	24	Excavation Concreting work Pipe work or other Miscellaneous works	121 115 111	226 226 226	69 63 59	6	69, 63, 59																																																																							
Commissioning of Plant						4	59																																																																							
Overall Noise Level-Phase 2																																																																														
						65 68 68 68 69 69 71 70 69 71 72 72 69 68 71 69 68 66 65 69 66 66 70 70 65 64 62 62 59 59																																																																								