Appendix 17.3

Construction Noise Data

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Tables

1 Construction Noise

1.1 Data Tables

1.1.1 The tables in this section present the detailed assumptions and noise calculation information for the construction noise assessment.

1.1.2 Acoustic 'On-Times' have been derived based upon experience, given the definition of the term contained in BS5228-1:2009+A1:2014. The acoustic on-time is the period of time that the equipment is working at full power, or within 3dB of its maximum.

Table 1: Construction Plant Data

Phase	Plant	BS5228 -1 ref	LWA dB	Quantity	Multiple Plant LWA dB	%Acoustic on-time
1. Site Clearance	Petrol driven chain saw (sawing timber)	C5.36	115	1	115	10
	Tracked Excavator	C5.18	108	4	114	30
	Lorry	C2.34	108	4	114	30
	Wheeled Excavator	C4.12	87	4	93	30
2. Compound Construction	Wheeled Backhoe Loader	C2.8	96	1	96	30
	Lorry	C2.34	108	1	108	10
	Vibratory Roller	C2.39	102	1	102	25
3. Compound Operation	Diesel Generator	C4.78	94	1	94	50
	Dumper	C4.9	105	2	108	20
	Wheeled Backhoe Loader	C2.8	96	1	96	30
	Lorry	C2.34	108	1	108	10
4. Stock Proofing	Tractor (towing trailer)	C4.75	107	1	107	25
	Post Rammer	MD*	113	1	113	20
	Hand-held circular saw	C5.36	115	1	115	10
	Nail Gun	MD*	120	1	120	5
5. Pre-Earthworks Drainage	Tracked Excavator	C5.18	108	2	111	30
	Wheeled Mobile Crane	C4.43	98	1	98	30
6. Earthworks General	Tracked Excavator	C5.18	108	2	111	30
	Articulated Dump Truck	C6.26	107	3	111.8	30
	Dozer (41t)	C2.10	108	2	111	25
	Lorry	C2.34	108	4	114	30
7. Earthworks, rolling and compaction	Mini excavator with hydraulic breaker	C5.2	111	1	111	40
	Dozer (41t)	C2.10	108	1	108	25
	Lorry	C2.34	108	2	111	30
8. Sub-Formation	Tracked Excavator	C5.18	108	2	111	30
	Dozer (towing roller)	C2.36	109	2	112	40
	Articulated Dump Truck	C6.26	107	3	111.8	25
	Roller (rolling fill)	C2.37	107	2	110	30
9, Drainage	Tracked Excavator	C5.18	108	2	111	30
	Wheeled Mobile Crane	C4.43	98	1	98	30

Phase	Plant	BS5228 -1 ref	LWA dB	Quantity	Multiple Plant LWA dB	%Acoustic on-time
10. Paving	Asphalt Paver	C5.31	105	2	108	40
	Vibratory compactor	C5.29	110	2	110	40
	Lorry	C2.34	108	2	111	30
	JCB Airmaster	MD*	101	1	101	40
	Pneumatic Breaker	C1.6	111	1	111	20
11. Central Reserve	Dozer (towing roller)	C2.36	109	2	112	40
	Wheeled Excavator	C4.12	87	4	93	30
	HH Circular saw	C5.36	115	1	115	10
12. Road Marking	Lorry	C2.34	108	2	111	30
13. Signage	Hydraulic Hammer Rig	C3.1	117	1	117	30
	Wheeled mobile crane	C4.43	98	1	98	30
	Gas Cutter	C3.34	96	1	96	10
	Lorry	C2.34	108	2	111	30
14. Bridge Foundation Construction	Crawler Mounted Rig	C3.21	107	1	107	50
	Tracked Excavator	C3.24	102	1	102	40
	Concrete Pump & cement mixer truck	C4.24	95	1	95	30
	Concrete Mixer Truck	C4.27	107	1	107	20
	Petrol HH Circular Saw	C4.70	119	1	119	10
	Lorry (44t)	C11.4	111	1	111	20
	Wheeled mobile crane	C4.43	98	1	98	30
	Wheeled mobile telescopic crane	C4.38	106	1	106	25
	Diesel Generator	C4.86	93	1	93	80
15. Bridge Abutment	Petrol HH Circular Saw	C4.70	119	1	119	10
	Wheeled mobile telescopic crane	C4.38	106	1	106	25
	Lorry (44t)	C11.4	111	1	111	20
	Tracked Excavator	C3.24	102	2	105	30
	Concrete Mixer Truck & Truck Mounted Concrete Pump	C4.32	106	1	106	50
	Poker Vibrator	C4.34	97	1	97	30
	Vibratory Tamper	C4.35	91	1	91	40
16. Bridge Deck	Lorry (44t)	C11.4	111	1	111	20
	Wheeled mobile telescopic crane	C4.38	106	2	109	25
	Concrete Mixer Truck & Truck Mounted Concrete Pump	C4.32	106	1	106	50
	Compressor	C5.5	93	1	93	50
	Poker Vibrator	C4.34	97	1	97	30
	Vibratory Tamper	C4.35	91	1	91	40
MD* = Manufacturers Data						

1.1.3 It is assumed that there will not be any particular screening between construction activities and receptors. The ground cover has been assumed to be acoustically soft.

1.1.4 The times of operation of the construction works themselves; a typical 12 hour working day is assumed, (0700-1900 hours) during the week. It is assumed that construction activities will take place for 10 hours, allowing for breaks.

1.1.5 **Table 2** presents the distances assumed for receptors from different phases of work. Where an activity will be undertaken in excess of 350m from works, then the construction phase is not assessed.

Table 2: Distances of Receptors to Various Phases of Construction (m)

Receptor Location		Distance to Receptor (m) in Construction Phase(s)				
		1&4	2&3	5-9	10-13	14-16
1A	Dalnaspidal*	20	60	20	65	95
1B	Dalnaspidal*	210	350	210	270	400
2	Balsporran	100	-	100	130	-
3	Drumochter	40	-	40	50	210
* 1A is closest receptor to works, 1B is receptor furthest from works.						

1.1.6 The calculated noise level from construction activities in each construction phase are presented in **Table 3**.

Table 3: Predicted Construction Noise Levels in Each Construction Phase ($L_{Aeq,T}$ dB)

Construction Phase	Receptors			
	1A	1B	2	3
1	80.8	55.8	63.8	73.8
2	57.3	38.2	-	-
3	60.1	40.9	-	-
4	79.5	54.4	62.5	72.4
5	74.2	49.1	57.2	67.2
6	81.0	55.9	64.0	73.9
7	78.4	53.3	61.4	71.3
8	80.5	55.4	63.5	73.4
9	74.2	49.1	57.2	67.2
10	68.3	52.8	60.7	71.1
11	65.7	50.2	58.2	68.5
12	61.7	46.2	54.1	64.5
13	68.7	53.2	61.2	71.5
14	63.8	48.2	-	55.2
15	63.4	47.8	-	54.8
16	60.9	45.3	-	52.3

1.1.7 The total noise level from construction activities in each construction phase are presented in **Table 4**. The total construction noise level includes the contribution from the existing baseline noise level, included in the first row of **Table 3** for information.

Table 4: Predicted Total Construction Noise Levels in each Construction Phase ($L_{Aeq,T}$ dB)

Phase	Receptors			
	1A	1B	2	3
Measured $L_{Aeq,T}$ dB	MP1 – 57.5		MP2 – 57.4	MP3 – 58.8
1	80.8	59.7	64.7	73.9
2	60.4	57.6	-	-
3	62.0	57.6	-	-
4	79.5	59.2	63.7	72.6
5	74.3	58.1	60.3	67.7
6	81.0	59.8	64.9	74.1
7	78.4	58.9	62.8	71.6
8	80.5	59.6	64.4	73.6
9	74.3	58.1	60.3	67.7
10	68.6	58.8	62.4	71.4
11	66.3	58.2	60.8	69.0
12	63.1	57.8	59.1	65.5
13	69.0	58.9	62.7	71.8
14	64.7	58.0	-	60.4
15	64.4	57.9	-	60.3
16	62.5	57.8	-	59.7