

MVV Environment Baldovie
Limited

Dundee EfW CHP

Air Quality Assessment

Appendices

31 March 2020 |

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job Number 270251-04

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Appendices

Appendix A

Receptors

Appendix B

Model Results at Human Receptors

Appendix C

Model Results at Ecological Receptors

Appendix D

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Appendix E

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Construction Dust Assessment

Appendix G

Human Health Risk Assessment

Appendix H

Contour Plots

Appendix A

Receptors

A1 Human Receptors

Table A1: Discrete human receptors

ID	Name	NGR (m)		Height (m)	Distance to site (m)	Direction from site
		X	Y			
1	2 Silver Link Avenue	344099	733312	1.5	690	N
2	41 Ashkirk Gardens	344391	733315	1.5	500	N
3	24 Ashkirk Gardens	344473	733333	1.5	482	N
4	2 Montpellier Gardens	344556	733313	1.5	441	N
5	1 Montpellier Gardens	344598	733280	1.5	402	N
6	Baldovie Cottage West	344696	733303	1.5	428	NE
7	105 Hawick Drive	344867	733323	1.5	500	NE
8	42 Chirnside Place	344449	733586	1.5	731	N
9	Michelin Athletic Club	344976	733191	1.5	461	NE
10	Baldovie Cottage	345090	733269	1.5	597	NE
11	Jubilee Cottage	345140	733306	1.5	660	NE
12	Drumsturdy Road	345204	733342	1.5	732	NE
13	13 Kellas Road	345127	733463	1.5	762	NE
16	1 Bro'ty Ferry Court	345268	732365	1.5	814	SE
17	433 Balunie Drive	345000	732394	1.5	606	SE
18	305 Balunie Drive	344769	732458	1.5	442	SE
19	211 Balunie Drive	344622	732492	1.5	387	SE
20	193 Balunie Drive	344529	732487	1.5	407	S
21	Tayside Police	344424	732597	1.5	354	S
22	222 Balunie Rd	344230	732542	1.5	528	SW
23	158 Balunie Drive	344011	732698	1.5	651	SW
24	168 Balunie Drive	344138	732655	1.5	547	SW
25	18 Balunie Drive	343483	732517	1.5	1,210	SW
26	34 Balunie Crescent	343676	732621	1.5	995	SW
27	Greenfield Cottage, Drumgeith Road	343773	733005	1.5	873	W
28	Rowanbank, Drumgeith Road	343497	733001	1.5	1,146	W
29	Saint Saviour's High School	343574	732811	1.5	1,065	W
30	Braeview Academy	343760	733897	1.5	1,343	NW
31	Ballumbie Primary School	343707	733345	1.5	1,040	NW

ID	Name	NGR (m)		Height (m)	Distance to site (m)	Direction from site
		X	Y			
32	Longhaugh Primary School	342856	733350	1.5	1,841	NW
34	St Pius RC Primary School	343926	732074	1.5	1,074	SW
35	Claypotts Castle Primary School	344642	732023	1.5	857	S
36	1 Kilwinning Place	344002	733123	1.5	680	NW
37	BMX Track	344351	732830	1.5	289	W
38	Civic Amenity Site	344172	732936	1.5	469	W
39	Football Pitch	344811	733161	1.5	331	NE
40	25 Hawick Drive	344763	733451	1.5	585	NE
41	24 Spartleton Place	344873	733556	1.5	716	NE
42	30 Speckled Wood Court	343874	733444	1.5	949	NW
43	15 Kirkconnel Terrace	343856	733287	1.5	881	NW
44	4 Strathaven Terrace	343740	733108	1.5	926	NW
45	27 Duns Crescent	344302	733482	1.5	689	N
46	8 Old Toll Loan	345030	733557	1.5	784	NE
47	101 Hawick Drive	345015	733336	1.5	593	NE
48	71 Hawick Drive	344993	733428	1.5	655	NE
49	63 Hawick Drive	344900	733443	1.5	622	NE
50	42 Coldstream Drive	344658	733346	1.5	467	NE
51	20 Coldstream Drive	344622	733402	1.5	523	NE
52	13 Selkirk Gardens	344584	733470	1.5	593	NE
53	17 Ballumbie Road	344487	733491	1.5	629	N
54	13 Ardminish Place	345013	733749	1.5	947	NE
55	6 Machrie Place	344835	733698	1.5	842	NE
56	36 Traquair Gardens	344735	733772	1.5	898	NE
57	21 Traquair Gardens	344545	733747	1.5	873	N
58	16 Ballumbie Braes	344264	733734	1.5	932	N
59	21 Ballumbie Meadows	344415	733616	1.5	769	N
60	24 Peebles Drive	344590	733658	1.5	780	N
61	170 Aberlady Crescent	344173	733581	1.5	841	NW
62	23 Silver Link Avenue	344028	733410	1.5	807	NW
63	516 Arbroath Road	345446	732115	1.5	1,114	SE
64	22 Baldovie Road	345285	732186	1.5	950	SE
65	54 Gotterstone Drive	344498	731934	1.5	955	S

ID	Name	NGR (m)		Height (m)	Distance to site (m)	Direction from site
		X	Y			
66	28 Balbeggie Street	344198	732102	1.5	893	SW
67	17 Balunie Avenue	343870	732291	1.5	966	SW
68	11 Ballantrae Road	343798	732415	1.5	958	SW
69	55 Ballantrae Place	343983	732542	1.5	736	SW
70	68 Balunie Street	344856	732299	1.5	621	SE
71	35 Balmoral Gardens	344589	732311	1.5	570	S
72	12 Baldovie Terrace	344916	732133	1.5	797	SE
73	103 Balunie Drive	343899	732676	1.5	766	W
74	37a Balunie Avenue	344092	732265	1.5	821	SW
75	64 Strachan Avenue	344067	731975	1.5	1,069	SW
76	66 Balunie Avenue	344412	732216	1.5	701	SW
77	32 Balmerino Road	344076	732473	1.5	693	SW
78	100 Balunie Avenue	344665	732159	1.5	721	S
79	226 Balunie Avenue	345089	732251	1.5	774	SE
80	20 Strachan Avenue	344323	732003	1.5	931	SW
81	279 Balunie Drive	344719	732382	1.5	505	S
82	72 Balmoral Gardens	344479	732430	1.5	477	SW
83	6 Balerno Street	343752	732207	1.5	1,111	SW
84	129 Balunie Drive	344180	732546	1.5	565	SW
85	266 Happyhillock Road	343315	732567	1.5	1,358	W
86	209 Balunie Drive at height	344621	732490	7.5	390	S
87	154 Balunie Drive at height	344011	732698	7.5	651	W
88	130 Balunie Drive at height	344138	732655	7.5	547	W
89	34 Balunie Crescent at height	343676	732621	7.5	995	W
90	Receptor 83 at height	343752	732207	7.5	1,111	SW
91	Receptor 84 at height	344180	732546	7.5	565	SW
92	Receptor 85 at height	343315	732567	7.5	1,358	SW
93	The Toll House	345150	733325	1.5	679	NE
94	50 Haddington Crescent	343526	733400	1.5	1,227	NW
95	71 Lothian Crescent	343672	733472	4.5	1,132	NW
96	502 Arbroath Road	345349	732079	1.5	1,072	SE
97	30 Speckled Wood Court	343874	733444	7.5	949	NW

ID	Name	NGR (m)		Height (m)	Distance to site (m)	Direction from site
		X	Y			
98	32 Balmerino Road	344076	732473	7.5	693	SW
99	1 Whitfield Cottages	343773	733005	1.5	873	W
100	28 Balbeggie Street	344198	732102	7.5	893	SW
101	DT - Baldovie/ Drumgieth Road	345088	733302	2.02	618	NE
102	DT - Drumgeith Road	344696	733290	2.08	415	N
103	DT - Britannia Drive	344167	733328	2.12	649	NE
104	DT - Whitfield Cottage	343903	733028	2.04	748	NE
105	DT - Kellas Road - BG	345517	734449	1.96	1,799	NE
106	DT - Balmerino Road	344190	732616	2.04	518	SW
107	DT - Balunie Drive	345349	732079	2.01	1,072	SE
108	DT - Baldovie Road	344504	732934	2.12	144	Onsite
109	DT - Meadowside Automatic Monitor	340245	730655	1.97	4,923	SW
110	DT - 326 Arbroath Road	344236	731786	2.05	1,164	SW
111	DT - 4 Bro'ty Ferry	345272	732430	2.1	778	SE

A2 Ecological Receptors

Table A2: Ecological receptors

ID	Name	Designation	NGR (m)		Distance to site (km)
			X	Y	
1	Firth of Tay and Eden Estuary	Ramsar / SSSI / SPA / SAC / LNR	331361	725517	15.2
2	Firth of Tay and Eden Estuary	Ramsar / SSSI / SPA / SAC / LNR	332176	726237	14.1
3	Inner Tay Estuary	Ramsar / SSSI / SPA / SAC / LNR	332176	726237	14.1
4	Firth of Tay and Eden Estuary	Ramsar / SSSI / SPA / SAC / LNR	332919	726941	13.1
5	Firth of Tay and Eden Estuary	Ramsar / SSSI / SPA / SAC / LNR	332952	723261	15.1
6	Firth of Tay and Eden Estuary	Ramsar / SSSI / SPA / SAC / LNR	333762	727643	12.1
7	Inner Tay Estuary	Ramsar / SSSI / SPA / SAC / LNR	333762	727643	12.1
8	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	334683	725583	12.3
9	Firth of Tay and Eden Estuary	Ramsar / SSSI / SPA / SAC / LNR	334806	728350	10.8
10	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	335280	724600	12.5
11	Firth of Tay and Eden Estuary	Ramsar / SSSI / SPA / SAC / LNR	336022	728728	9.6
12	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	337066	727139	9.5
13	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	337137	726031	10.2
14	Gallowhill/Cawmill Woods	Ancient Woodland	337204	733145	7.4
15	Firth of Tay and Eden Estuary	Ramsar / SSSI / SPA / SAC / LNR	337324	729003	8.3
16	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	337818	726383	9.4
17	Ancient Woodland	Ancient Woodland	338046	730799	6.9
18	Baldrogon Wood	Ancient Woodland	338086	734379	6.7
19	Wynton Wood	Ancient Woodland	338169	736631	7.5
20	Heathland	Heathland	338239	740196	9.7
21	Firth of Tay and Eden Estuary	Ramsar / SSSI / SPA / SAC / LNR	339025	729230	6.7

ID	Name	Designation	NGR (m)		Distance to site (km)
			X	Y	
22	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	339062	728494	7.1
23	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	339285	727290	7.7
24	Ancient Woodland	Ancient Woodland	339670	734774	5.3
25	Ancient Woodland	Ancient Woodland	340306	733935	4.5
26	Balmerino - Wormit Shore	SSSI	340309	726927	7.4
27	Trottick Mill Ponds	LNR	340725	733667	4.0
28	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	340882	729713	4.9
29	East/West Links Wood	Ancient Woodland	341104	725253	8.4
30	North Hill	Ancient Woodland	341125	726392	7.4
31	River Tay	SAC	341236	747717	15.2
32	Woodland	Woodland	341292	733058	3.3
33	Heathland	Heathland	341369	740096	7.9
34	Waterbody	Waterbody	341568	732125	3.2
35	Balmuir Wood	Ancient Woodland	341935	737135	5.0
36	River Tay	SAC	341956	746714	14.1
37	Dighty Water	Watercourse	342106	733032	2.5
38	Knockhill Wood	Ancient Woodland	342176	725765	7.5
39	Ancient Woodland	Ancient Woodland	342302	735173	3.3
40	Dighty Water	Watercourse	342606	732930	2.0
41	Waterbody	Waterbody	342639	734747	2.7
42	Whitehouse Den	SSSI	342671	739606	7.0
43	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	342834	730790	2.8
44	River Tay	SAC	342834	745988	13.2
45	Dighty Water	Watercourse	342835	732759	1.8
46	Waterbody	Waterbody	342861	734110	2.2
47	Morendy Wood	Ancient Woodland	342917	725014	8.1
48	Corbie Den	Ancient Woodland	342935	740351	7.7
49	Sheihill Wood	Ancient Woodland	343120	736795	4.2
50	Laverock Law	Ancient Woodland	343149	728042	5.1
51	Woodland	Woodland	343272	735616	3.1
52	Dighty Water	Watercourse	343376	732603	1.3
53	Ancient Woodland	Ancient Woodland	343419	740206	7.4
54	Roseberry Wood	Ancient Woodland	343438	726816	6.2

ID	Name	Designation	NGR (m)		Distance to site (km)
			X	Y	
55	Heathland	Heathland	343597	739365	6.6
56	Craig Law	Ancient Woodland	343700	728975	4.0
57	Fithie Burn	Watercourse	343712	734899	2.2
58	Woodland	Woodland	343716	734994	2.3
59	River Tay	SAC	343817	745422	12.6
60	Dighty Water	Watercourse	343821	732762	0.8
61	Woodland	Woodland	343869	733955	1.3
62	Woodland	Woodland	343989	734791	2.0
63	Fithie Burn	Watercourse	344035	734827	2.0
64	Woodland	Woodland	344066	734940	2.1
65	Corbie Den	Ancient Woodland	344108	740667	7.8
66	Woodland	Woodland	344132	734372	1.6
67	Corbie Den	Ancient Woodland	344135	741744	8.9
68	Picklettillem Marsh	SSSI	344152	724936	8.0
69	Woodland	Woodland	344213	734777	1.9
70	Dighty Water	Watercourse	344302	732675	0.4
71	Fithie Burn	Watercourse	344344	734738	1.9
72	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	344412	731011	1.9
73	Woodland	Woodland	344415	735022	2.2
74	East Muirhouse Strip	Ancient Woodland	344448	735936	3.1
75	Brighty Wood	Ancient Woodland	344453	737557	4.7
76	Woodland	Woodland	344475	734035	1.2
77	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	344476	729299	3.6
78	Gallowfauld Burn	Watercourse	344505	742576	9.7
79	Woodland	Woodland	344656	734502	1.6
80	Waterbody	Waterbody	344699	734194	1.3
81	Fithie Burn	Watercourse	344713	734533	1.7
82	Duntrune/Glack Hills	Ancient Woodland	344713	734981	2.1
83	Dighty Water	Watercourse	344729	732565	0.3
84	River Tay	SAC	344741	744657	11.8
85	Woodland	Woodland	344838	728265	4.6
86	Ancient Woodland	Ancient Woodland	344868	742455	9.6
87	St Michael's Wood Marshes	SSSI	344913	723813	9.1
88	St Michael's Wood	Ancient Woodland	344913	723813	9.1

ID	Name	Designation	NGR (m)		Distance to site (km)
			X	Y	
89	Fithie Burn	Watercourse	344938	733516	0.7
90	Gagie Marsh	SSSI	344951	736907	4.0
91	Waterbody	Waterbody	344963	733940	1.1
92	Fithie Burn	Watercourse	344977	733141	0.4
93	Heathland	Heathland	344978	739558	6.7
94	Woodland	Woodland	344997	734203	1.4
95	Woodland	Woodland	344997	734203	1.4
96	Fithie Burn	Watercourse	345008	733857	1.0
97	Fithie Burn	Watercourse	345034	734239	1.4
98	Kirkton Wood	Ancient Woodland	345038	726037	6.9
99	Big Latch	Ancient Woodland	345063	738264	5.4
100	Fithie Burn	Watercourse	345081	732780	0.5
101	Woodland	Woodland	345142	733606	0.9
102	Eden Estuary	LNR	345144	719447	13.4
103	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	345187	729388	3.5
104	Tayport - Tentsmuir Coast	SSSI	345187	729388	3.5
105	Woodland	Woodland	345211	733978	1.2
106	Dighty Water	Watercourse	345275	732517	0.7
107	Woodland	Woodland	345277	733632	1.0
108	Murroes Burn	Watercourse	345319	733591	1.0
109	Waterbody	Waterbody	345361	733560	1.0
110	Murroes Burn	Watercourse	345431	733889	1.3
111	Woodland	Woodland	345446	733343	0.9
112	Murroes Burn	Watercourse	345481	733343	1.0
113	Woodland	Woodland	345484	732978	0.9
114	Murroes Burn	Watercourse	345513	732943	0.9
115	Kellas Wood	Ancient Woodland	345617	735922	3.2
116	Dighty Water	Watercourse	345678	732660	1.1
117	Little Latch	Ancient Woodland	345697	738028	5.3
118	Waterbody	Waterbody	345716	733876	1.5
119	Murroes Burn	Watercourse	345751	733927	1.5
120	River Tay	SAC	345794	743718	10.9
121	Woodland	Woodland	345935	734200	1.9
122	Murroes Burn	Watercourse	346021	734210	1.9
123	Murroes Burn	Watercourse	346075	734667	2.3
124	Tentsmuir	NNR	346082	727002	6.1

ID	Name	Designation	NGR (m)		Distance to site (km)
			X	Y	
125	Dighty Water	Watercourse	346104	732765	1.5
126	Morton Lochs	SSSI	346145	727014	6.1
127	Woodland	Woodland	346199	732667	1.6
128	Rhynd Wood	Ancient Woodland	346238	724097	8.9
129	West Wood	Ancient Woodland	346247	738049	5.4
130	Tentsmuir	NNR	346257	726009	7.1
131	Morton Lochs	SSSI	346348	726021	7.1
132	West Wood	Ancient Woodland	346480	738009	5.5
133	Buckler Heads Wood	Ancient Woodland	346506	736207	3.8
134	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	346535	730366	3.1
135	Monifeth Bay	SSSI	346535	730366	3.1
136	Dighty Water	Watercourse	346553	732905	1.9
137	Woodside Wood	Ancient Woodland	346792	735832	3.7
138	Morton Links	Ancient Woodland	346933	726303	7.0
139	Carrot Hill Meadow	SSSI	346970	740324	7.8
140	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	346975	728783	4.7
141	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	347000	730720	3.2
142	Woodland	Woodland	347155	731311	3
143	Tentsmuir	NNR	347165	727580	5.9
144	FID:59 x	Woodland	347165	735095	3.4
145	Broughty Ferry	LNR	347224	730956	3.2
146	Eden Estuary	LNR	347556	719481	13.7
147	Woodland	Woodland	347621	733479	3.0
148	Ancient Woodland	Ancient Woodland	347694	732521	3.1
149	Broughty Ferry	LNR	347713	731205	3.5
150	Tentsmuir	Ancient Woodland	347748	726340	7.2
151	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	347771	730870	3.7
152	Monifeth Bay	SSSI	347771	730870	3.7
153	Tentsmuir	Ancient Woodland	347779	727026	6.6
154	Tentsmuir	NNR	348301	727996	6.1
155	Gallow Hill	Ancient Woodland	348319	734167	3.9
156	Tentsmuir	Ancient Woodland	348330	724749	8.9
157	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	348375	728496	5.8

ID	Name	Designation	NGR (m)		Distance to site (km)
			X	Y	
158	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	348498	729658	5.0
159	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	348541	718339	15.1
160	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	348804	731554	4.4
161	Monifeth Bay	SSSI	348804	731554	4.4
162	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	348887	719446	14.1
163	Eden Estuary	LNR	348887	719446	14.1
164	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	348923	731935	4.4
165	Laws Hill	Ancient Woodland	349092	734336	4.7
166	Tentsmuir	NNR	349254	728256	6.5
167	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	349396	720613	13.2
168	Eden Estuary	LNR	349396	720613	13.2
169	Denfind Plantation	Ancient Woodland	349602	737762	7.0
170	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	349866	721954	12.1
171	Eden Estuary	LNR	349866	721954	12.1
172	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	349885	728238	7.0
173	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	349973	732102	5.4
174	Eden Estuary	LNR	349977	723213	11.0
175	Tentsmuir	NNR	350051	726158	8.6
176	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	350147	731985	5.6
177	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	350147	723403	11.0
178	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	350153	728412	7.1
179	Barry Links	SSSI	350160	732168	5.6
180	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	350174	718885	15.1
181	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	350350	724855	9.9
182	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	350685	726143	9.1
183	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	350712	731356	6.3

ID	Name	Designation	NGR (m)		Distance to site (km)
			X	Y	
184	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	350824	727242	8.4
185	Ancient Woodland	Woodland	351330	734104	6.8
186	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	351496	731934	6.9
187	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	351499	731916	6.9
188	Weet's/Camustane/+ Woods	Ancient Woodland	351551	737509	8.3
189	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	351729	727153	9.1
190	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	352384	730891	8.0
191	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	352728	731261	8.3
192	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	352740	731277	8.3
193	Tentsmuir	NNR	352870	728368	9.4
194	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	353004	725930	10.9
195	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	353859	730664	9.5
196	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	353861	730651	9.5
197	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	354291	730412	10.0
198	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	355011	730365	10.7
199	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	355735	731527	11.2
200	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	356109	733000	11.5
201	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	356118	729922	11.9
202	Tentsmuir	NNR	358863	728006	15.0
203	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	347525	730974	3.5
204	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	348209	731458	3.8
205	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	348654	731799	4.2
206	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	348398	731233	4.1

ID	Name	Designation	NGR (m)		Distance to site (km)
			X	Y	
207	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	346758	730526	3.2
208	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	347301	730660	3.5
209	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	345680	729270	3.8
210	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	346265	729258	4.0
211	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	346734	729197	4.2
212	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	347258	729008	4.7
213	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	347862	728935	5.1
214	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	346271	728923	4.3
215	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	347648	728508	5.3
216	Firth of Tay and Eden Estuary	Ramsar / SAC / SPA / SSSI	346618	728307	5.0

Appendix B

Model Results at Human Receptors

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B1 Introduction

This appendix presents the model results at all the 111 human receptors for NO₂, PM₁₀ and PM_{2.5} for comparison with the standards and guidelines given in Table 1 of the air quality assessment. The results have been presented in planning format based around Do-Minimum (DM) and Do-Something (DS) to assess the potential impact of parallel operations at the site, together with the potential cumulative effects.

The results tables below contain results for the following scenarios:

- the new EfW CHP facility (under construction) impact (Do-Minimum)
- the new EfW CHP facility (under construction) and the existing EfW facility impact (Do-Something);
- Associated traffic impacts (in isolation) for the DM and DS; and,
- Cumulative impacts of the adjacent Michelin facility, the existing EfW facility, the new EfW CHP facility (under construction) and associated traffic.

These have been presented based upon EPUK/IAQM significance criteria for planning purposes.

B2 Human Receptor Results

B2.1 Parallel Operation Facility Emissions - Normal Operations

Table B1: Annual and hourly mean NO₂ concentrations from the new EfW CHP facility with and without the existing EfW facility

Human Receptor	NO ₂ annual mean concentration (µg/m³)		Significance	Human Receptor	NO ₂ 99.79th percentile 1 hour mean concentration (µg/m³)		Significance
	Air quality standard: 40µg/m³				Air quality standard: 200µg/m³ not to be exceeded more than 18 times per year		
	New EfW CHP (DM)	Existing EfW and New EfW (DS)			New EfW CHP (DM)	Existing EfW and New EfW (DS)	
1	12.54	13.13	Negligible	1	32.95	46.54	Negligible
2	12.42	12.76	Negligible	2	32.64	47.75	Negligible
3	12.40	12.62	Negligible	3	31.59	45.58	Negligible
4	12.39	12.53	Negligible	4	30.88	41.93	Negligible
5	12.38	12.47	Negligible	5	29.79	38.61	Negligible
6	12.39	12.58	Negligible	6	30.62	41.40	Negligible
7	12.52	13.31	Negligible	7	32.64	49.11	Negligible
8	12.42	12.63	Negligible	8	31.02	41.68	Negligible
9	12.91	15.27	Slight adverse	9	33.04	50.62	Negligible
10	13.04	15.23	Negligible	10	33.34	49.55	Negligible
11	13.04	15.06	Negligible	11	32.91	47.92	Negligible
12	13.03	14.89	Negligible	12	32.42	46.37	Negligible

Human Receptor	NO ₂ annual mean concentration (µg/m ³)		Significance	Human Receptor	NO ₂ 99.79th percentile 1 hour mean concentration (µg/m ³)		Significance
	Air quality standard: 40µg/m ³				Air quality standard: 200µg/m ³ not to be exceeded more than 18 times per year		
	New EfW CHP (DM)	Existing EfW and New EfW (DS)			New EfW CHP (DM)	Existing EfW and New EfW (DS)	
13	12.74	13.79	Negligible	13	32.20	44.43	Negligible
14	12.44	12.60	Negligible	14	30.58	38.74	Negligible
15	12.38	12.50	Negligible	15	30.62	39.88	Negligible
16	12.36	12.45	Negligible	16	28.40	38.21	Negligible
17	12.35	12.45	Negligible	17	28.04	37.25	Negligible
18	12.36	12.45	Negligible	18	28.11	38.20	Negligible
19	12.34	12.44	Negligible	19	27.13	37.36	Negligible
20	12.38	12.45	Negligible	20	29.39	38.15	Negligible
21	12.44	12.63	Negligible	21	30.09	40.73	Negligible
22	12.41	12.56	Negligible	22	30.53	41.43	Negligible
23	12.41	12.53	Negligible	23	28.99	35.27	Negligible
24	12.43	12.57	Negligible	24	29.57	37.01	Negligible
25	12.58	12.97	Negligible	25	31.37	40.29	Negligible
26	12.52	12.79	Negligible	26	29.70	36.43	Negligible
27	12.48	12.67	Negligible	27	29.26	35.83	Negligible
28	12.44	12.66	Negligible	28	28.92	35.46	Negligible
29	12.57	12.99	Negligible	29	30.75	39.06	Negligible

Human Receptor	NO ₂ annual mean concentration (µg/m ³)		Significance	Human Receptor	NO ₂ 99.79th percentile 1 hour mean concentration (µg/m ³)		Significance
	Air quality standard: 40µg/m ³				Air quality standard: 200µg/m ³ not to be exceeded more than 18 times per year		
	New EfW CHP (DM)	Existing EfW and New EfW (DS)			New EfW CHP (DM)	Existing EfW and New EfW (DS)	
30	12.48	12.69	Negligible	30	28.06	34.37	Negligible
31	12.36	12.41	Negligible	31	28.76	34.37	Negligible
32	12.37	12.44	Negligible	32	29.70	37.05	Negligible
33	12.64	13.26	Negligible	33	32.73	45.63	Negligible
34	12.35	12.43	Negligible	34	26.43	31.47	Negligible
35	12.54	12.85	Negligible	35	32.33	43.45	Negligible
36	12.42	13.04	Negligible	36	29.43	38.64	Negligible
37	12.43	12.73	Negligible	37	31.19	44.95	Negligible
38	12.46	12.82	Negligible	38	30.97	43.47	Negligible
39	12.53	12.96	Negligible	39	31.32	40.82	Negligible
40	12.59	13.12	Negligible	40	31.81	41.61	Negligible
41	12.61	13.03	Negligible	41	30.93	40.02	Negligible
42	12.45	12.78	Negligible	42	31.98	44.31	Negligible
43	12.56	13.13	Negligible	43	31.89	43.56	Negligible
44	12.77	14.20	Negligible	44	33.30	48.36	Negligible
45	12.63	13.48	Negligible	45	32.95	46.87	Negligible
46	12.51	13.08	Negligible	46	32.42	47.37	Negligible

Human Receptor	NO ₂ annual mean concentration (µg/m ³)		Significance	Human Receptor	NO ₂ 99.79th percentile 1 hour mean concentration (µg/m ³)		Significance
	Air quality standard: 40µg/m ³				Air quality standard: 200µg/m ³ not to be exceeded more than 18 times per year		
	New EfW CHP (DM)	Existing EfW and New EfW (DS)			New EfW CHP (DM)	Existing EfW and New EfW (DS)	
47	12.39	12.56	Negligible	47	30.75	41.20	Negligible
48	12.40	12.57	Negligible	48	30.93	42.35	Negligible
49	12.41	12.60	Negligible	49	31.19	43.30	Negligible
50	12.42	12.63	Negligible	50	31.54	43.47	Negligible
51	12.47	12.77	Negligible	51	30.40	39.87	Negligible
52	12.43	12.67	Negligible	52	30.40	40.51	Negligible
53	12.42	12.61	Negligible	53	30.22	39.53	Negligible
54	12.41	12.58	Negligible	54	30.40	39.80	Negligible
55	12.43	12.67	Negligible	55	30.66	39.97	Negligible
56	12.42	12.64	Negligible	56	30.97	41.30	Negligible
57	12.42	12.61	Negligible	57	31.02	41.49	Negligible
58	12.46	12.79	Negligible	58	31.10	41.53	Negligible
59	12.52	13.02	Negligible	59	31.85	43.39	Negligible
60	12.40	12.50	Negligible	60	29.13	34.84	Negligible
61	12.40	12.49	Negligible	61	29.96	36.53	Negligible
62	12.37	12.45	Negligible	62	29.52	35.73	Negligible
63	12.37	12.44	Negligible	63	30.66	37.68	Negligible

Human Receptor	NO ₂ annual mean concentration (µg/m ³)		Significance	Human Receptor	NO ₂ 99.79th percentile 1 hour mean concentration (µg/m ³)		Significance
	Air quality standard: 40µg/m ³				Air quality standard: 200µg/m ³ not to be exceeded more than 18 times per year		
	New EfW CHP (DM)	Existing EfW and New EfW (DS)			New EfW CHP (DM)	Existing EfW and New EfW (DS)	
64	12.39	12.46	Negligible	64	29.79	35.81	Negligible
65	12.41	12.50	Negligible	65	30.05	37.81	Negligible
66	12.42	12.54	Negligible	66	30.80	40.22	Negligible
67	12.37	12.46	Negligible	67	29.61	38.01	Negligible
68	12.37	12.46	Negligible	68	29.57	38.82	Negligible
69	12.37	12.44	Negligible	69	30.05	37.31	Negligible
70	12.44	12.61	Negligible	70	30.09	39.42	Negligible
71	12.37	12.44	Negligible	71	29.96	37.67	Negligible
72	12.36	12.41	Negligible	72	29.79	35.73	Negligible
73	12.38	12.47	Negligible	73	30.75	39.46	Negligible
74	12.40	12.47	Negligible	74	30.84	38.03	Negligible
75	12.37	12.47	Negligible	75	29.57	37.47	Negligible
76	12.38	12.48	Negligible	76	30.71	38.32	Negligible
77	12.37	12.44	Negligible	77	29.92	36.82	Negligible
78	12.36	12.46	Negligible	78	29.96	39.50	Negligible
79	12.36	12.46	Negligible	79	29.74	40.12	Negligible
80	12.38	12.45	Negligible	80	29.35	34.96	Negligible

Human Receptor	NO ₂ annual mean concentration (µg/m³)		Significance	Human Receptor	NO ₂ 99.79th percentile 1 hour mean concentration (µg/m³)		Significance
	Air quality standard: 40µg/m³				Air quality standard: 200µg/m³ not to be exceeded more than 18 times per year		
	New EfW CHP (DM)	Existing EfW and New EfW (DS)			New EfW CHP (DM)	Existing EfW and New EfW (DS)	
81	12.39	12.46	Negligible	81	30.53	38.93	Negligible
82	12.41	12.53	Negligible	82	28.35	33.70	Negligible
83	12.35	12.45	Negligible	83	28.08	37.37	Negligible
84	12.44	12.63	Negligible	84	30.09	40.75	Negligible
85	12.42	12.56	Negligible	85	30.62	41.54	Negligible
86	12.43	12.57	Negligible	86	29.57	37.01	Negligible
87	12.38	12.45	Negligible	87	29.35	35.01	Negligible
88	12.39	12.46	Negligible	88	30.62	39.21	Negligible
89	12.41	12.53	Negligible	89	28.35	33.68	Negligible
90	13.01	14.91	Negligible	90	32.73	47.39	Negligible
91	12.54	12.90	Negligible	91	29.74	36.93	Negligible
92	12.52	12.91	Negligible	92	30.22	38.01	Negligible
93	12.39	12.49	Negligible	93	29.35	34.96	Negligible
94	12.53	12.98	Negligible	94	31.32	40.82	Negligible
95	12.40	12.47	Negligible	95	30.80	38.01	Negligible
96	12.58	12.97	Negligible	96	31.37	40.29	Negligible
97	12.37	12.44	Negligible	97	30.66	37.66	Negligible

Human Receptor	NO ₂ annual mean concentration (µg/m ³)		Significance	Human Receptor	NO ₂ 99.79th percentile 1 hour mean concentration (µg/m ³)		Significance
	Air quality standard: 40µg/m ³				Air quality standard: 200µg/m ³ not to be exceeded more than 18 times per year		
	New EfW CHP (DM)	Existing EfW and New EfW (DS)			New EfW CHP (DM)	Existing EfW and New EfW (DS)	
98	12.37	12.44	Negligible	98	30.05	37.33	Negligible
99	12.37	12.47	Negligible	99	29.61	37.53	Negligible
100	12.38	12.48	Negligible	100	30.71	38.32	Negligible
101	12.97	14.92	Negligible	101	33.21	48.51	Negligible
102	12.39	12.55	Negligible	102	30.36	40.57	Negligible
103	12.51	13.08	Negligible	103	32.69	47.68	Negligible
104	12.62	13.07	Negligible	104	32.11	42.85	Negligible
105	12.41	12.56	Negligible	105	27.80	32.49	Negligible
106	12.40	12.49	Negligible	106	30.71	39.39	Negligible
107	12.39	12.48	Negligible	107	29.30	34.89	Negligible
108	12.32	12.37	Negligible	108	24.64	27.14	Negligible
109	12.34	12.37	Negligible	109	26.12	27.98	Negligible
110	12.37	12.44	Negligible	110	28.86	34.10	Negligible
111	12.46	12.65	Negligible	111	30.53	39.19	Negligible

Table B2: Annual mean and daily PM₁₀ concentrations of the new EfW CHP facility with and without the existing EfW facility

Human Receptor	PM ₁₀ annual mean concentration (µg/m³)		Significance	Human Receptor	PM ₁₀ 98.08th percentile 24 hour mean concentration (µg/m³)		Significance
	Air quality standard: 18µg/m³				Air quality standard: 50µg/m³ not to be exceeded more than 7 times per year		
	New EfW CHP (DM)	Existing EfW and New EfW (DS)			New EfW CHP (DM)	Existing EfW and New EfW (DS)	
1	9.11	9.12	Negligible	1	25.02	25.12	Negligible
2	9.11	9.11	Negligible	2	25.00	25.12	Negligible
3	9.10	9.11	Negligible	3	24.95	25.06	Negligible
4	9.10	9.10	Negligible	4	24.91	25.00	Negligible
5	9.10	9.10	Negligible	5	24.86	24.93	Negligible
6	9.10	9.10	Negligible	6	24.90	24.99	Negligible
7	9.11	9.12	Negligible	7	25.00	25.13	Negligible
8	9.10	9.11	Negligible	8	24.92	25.00	Negligible
9	9.13	9.15	Negligible	9	25.02	25.16	Negligible
10	9.14	9.15	Negligible	10	25.04	25.16	Negligible
11	9.14	9.15	Negligible	11	25.02	25.13	Negligible
12	9.14	9.15	Negligible	12	24.99	25.10	Negligible
13	9.12	9.13	Negligible	13	24.98	25.08	Negligible
14	9.11	9.11	Negligible	14	24.90	24.96	Negligible
15	9.10	9.10	Negligible	15	24.90	24.97	Negligible

Human Receptor	PM ₁₀ annual mean concentration (µg/m³)		Significance	Human Receptor	PM ₁₀ 98.08th percentile 24 hour mean concentration (µg/m³)		Significance
	Air quality standard: 18µg/m³				Air quality standard: 50µg/m³ not to be exceeded more than 7 times per year		
	New EfW CHP (DM)	Existing EfW and New EfW (DS)			New EfW CHP (DM)	Existing EfW and New EfW (DS)	
16	9.10	9.10	Negligible	16	24.79	24.87	Negligible
17	9.10	9.10	Negligible	17	24.77	24.84	Negligible
18	9.10	9.10	Negligible	18	24.78	24.85	Negligible
19	9.10	9.10	Negligible	19	24.73	24.81	Negligible
20	9.10	9.10	Negligible	20	24.84	24.91	Negligible
21	9.11	9.11	Negligible	21	24.87	24.96	Negligible
22	9.10	9.11	Negligible	22	24.90	24.98	Negligible
23	9.10	9.11	Negligible	23	24.82	24.87	Negligible
24	9.11	9.11	Negligible	24	24.85	24.91	Negligible
25	9.11	9.12	Negligible	25	24.94	25.01	Negligible
26	9.11	9.11	Negligible	26	24.85	24.91	Negligible
27	9.11	9.11	Negligible	27	24.83	24.88	Negligible
28	9.11	9.11	Negligible	28	24.82	24.87	Negligible
29	9.11	9.12	Negligible	29	24.91	24.97	Negligible
30	9.11	9.11	Negligible	30	24.77	24.82	Negligible
31	9.10	9.10	Negligible	31	24.81	24.85	Negligible
32	9.10	9.10	Negligible	32	24.85	24.91	Negligible

Human Receptor	PM ₁₀ annual mean concentration (µg/m³)		Significance	Human Receptor	PM ₁₀ 98.08th percentile 24 hour mean concentration (µg/m³)		Significance
	Air quality standard: 18µg/m³				Air quality standard: 50µg/m³ not to be exceeded more than 7 times per year		
	New EfW CHP (DM)	Existing EfW and New EfW (DS)			New EfW CHP (DM)	Existing EfW and New EfW (DS)	
33	9.12	9.12	Negligible	33	25.01	25.11	Negligible
34	9.10	9.10	Negligible	34	24.69	24.73	Negligible
35	9.11	9.11	Negligible	35	24.99	25.07	Negligible
36	9.10	9.11	Negligible	36	24.84	24.91	Negligible
37	9.11	9.11	Negligible	37	24.93	25.04	Negligible
38	9.11	9.11	Negligible	38	24.92	25.02	Negligible
39	9.11	9.11	Negligible	39	24.94	25.01	Negligible
40	9.11	9.12	Negligible	40	24.96	25.04	Negligible
41	9.11	9.12	Negligible	41	24.92	24.99	Negligible
42	9.11	9.11	Negligible	42	24.97	25.07	Negligible
43	9.11	9.12	Negligible	43	24.96	25.06	Negligible
44	9.12	9.13	Negligible	44	25.04	25.15	Negligible
45	9.12	9.12	Negligible	45	25.02	25.13	Negligible
46	9.11	9.11	Negligible	46	24.99	25.11	Negligible
47	9.10	9.10	Negligible	47	24.91	24.99	Negligible
48	9.10	9.11	Negligible	48	24.92	25.01	Negligible
49	9.10	9.11	Negligible	49	24.93	25.02	Negligible

Human Receptor	PM ₁₀ annual mean concentration (µg/m³)		Significance	Human Receptor	PM ₁₀ 98.08th percentile 24 hour mean concentration (µg/m³)		Significance
	Air quality standard: 18µg/m³				Air quality standard: 50µg/m³ not to be exceeded more than 7 times per year		
	New EfW CHP (DM)	Existing EfW and New EfW (DS)			New EfW CHP (DM)	Existing EfW and New EfW (DS)	
50	9.10	9.11	Negligible	50	24.95	25.04	Negligible
51	9.11	9.11	Negligible	51	24.89	24.96	Negligible
52	9.11	9.11	Negligible	52	24.89	24.97	Negligible
53	9.10	9.11	Negligible	53	24.88	24.95	Negligible
54	9.10	9.11	Negligible	54	24.89	24.96	Negligible
55	9.11	9.11	Negligible	55	24.90	24.98	Negligible
56	9.11	9.11	Negligible	56	24.92	25.00	Negligible
57	9.10	9.11	Negligible	57	24.92	25.00	Negligible
58	9.11	9.11	Negligible	58	24.93	25.01	Negligible
59	9.11	9.11	Negligible	59	24.96	25.05	Negligible
60	9.10	9.10	Negligible	60	24.83	24.87	Negligible
61	9.10	9.10	Negligible	61	24.87	24.92	Negligible
62	9.10	9.10	Negligible	62	24.85	24.89	Negligible
63	9.10	9.10	Negligible	63	24.90	24.96	Negligible
64	9.10	9.10	Negligible	64	24.86	24.91	Negligible
65	9.10	9.11	Negligible	65	24.87	24.93	Negligible
66	9.10	9.11	Negligible	66	24.91	24.98	Negligible

Human Receptor	PM ₁₀ annual mean concentration (µg/m³)		Significance	Human Receptor	PM ₁₀ 98.08th percentile 24 hour mean concentration (µg/m³)		Significance
	Air quality standard: 18µg/m³				Air quality standard: 50µg/m³ not to be exceeded more than 7 times per year		
	New EfW CHP (DM)	Existing EfW and New EfW (DS)			New EfW CHP (DM)	Existing EfW and New EfW (DS)	
67	9.10	9.10	Negligible	67	24.85	24.92	Negligible
68	9.10	9.10	Negligible	68	24.85	24.92	Negligible
69	9.10	9.10	Negligible	69	24.87	24.93	Negligible
70	9.11	9.11	Negligible	70	24.87	24.95	Negligible
71	9.10	9.10	Negligible	71	24.87	24.93	Negligible
72	9.10	9.10	Negligible	72	24.86	24.91	Negligible
73	9.10	9.10	Negligible	73	24.91	24.98	Negligible
74	9.10	9.10	Negligible	74	24.91	24.97	Negligible
75	9.10	9.10	Negligible	75	24.85	24.91	Negligible
76	9.10	9.10	Negligible	76	24.91	24.96	Negligible
77	9.10	9.10	Negligible	77	24.87	24.92	Negligible
78	9.10	9.10	Negligible	78	24.87	24.94	Negligible
79	9.10	9.10	Negligible	79	24.86	24.94	Negligible
80	9.10	9.10	Negligible	80	24.84	24.88	Negligible
81	9.10	9.10	Negligible	81	24.90	24.96	Negligible
82	9.10	9.11	Negligible	82	24.79	24.83	Negligible
83	9.10	9.10	Negligible	83	24.77	24.85	Negligible

Human Receptor	PM ₁₀ annual mean concentration (µg/m³)		Significance	Human Receptor	PM ₁₀ 98.08th percentile 24 hour mean concentration (µg/m³)		Significance
	Air quality standard: 18µg/m³				Air quality standard: 50µg/m³ not to be exceeded more than 7 times per year		
	New EfW CHP (DM)	Existing EfW and New EfW (DS)			New EfW CHP (DM)	Existing EfW and New EfW (DS)	
84	9.11	9.11	Negligible	84	24.87	24.96	Negligible
85	9.10	9.11	Negligible	85	24.90	24.99	Negligible
86	9.11	9.11	Negligible	86	24.85	24.91	Negligible
87	9.10	9.10	Negligible	87	24.84	24.88	Negligible
88	9.10	9.10	Negligible	88	24.90	24.97	Negligible
89	9.10	9.11	Negligible	89	24.79	24.83	Negligible
90	9.13	9.15	Negligible	90	25.01	25.12	Negligible
91	9.11	9.11	Negligible	91	24.86	24.91	Negligible
92	9.11	9.11	Negligible	92	24.88	24.94	Negligible
93	9.10	9.10	Negligible	93	24.84	24.88	Negligible
94	9.11	9.11	Negligible	94	24.94	25.01	Negligible
95	9.10	9.10	Negligible	95	24.91	24.97	Negligible
96	9.11	9.12	Negligible	96	24.94	25.01	Negligible
97	9.10	9.10	Negligible	97	24.90	24.96	Negligible
98	9.10	9.10	Negligible	98	24.87	24.93	Negligible
99	9.10	9.10	Negligible	99	24.85	24.91	Negligible
100	9.10	9.10	Negligible	100	24.91	24.96	Negligible

Human Receptor	PM ₁₀ annual mean concentration (µg/m³)		Significance	Human Receptor	PM ₁₀ 98.08th percentile 24 hour mean concentration (µg/m³)		Significance
	Air quality standard: 18µg/m³				Air quality standard: 50µg/m³ not to be exceeded more than 7 times per year		
	New EfW CHP (DM)	Existing EfW and New EfW (DS)			New EfW CHP (DM)	Existing EfW and New EfW (DS)	
101	9.13	9.15	Negligible	101	25.03	25.15	Negligible
102	9.10	9.10	Negligible	102	24.89	24.97	Negligible
103	9.11	9.11	Negligible	103	25.00	25.12	Negligible
104	9.11	9.12	Negligible	104	24.98	25.06	Negligible
105	9.10	9.11	Negligible	105	24.76	24.80	Negligible
106	9.10	9.10	Negligible	106	24.91	24.97	Negligible
107	9.10	9.10	Negligible	107	24.84	24.88	Negligible
108	9.10	9.10	Negligible	108	24.60	24.62	Negligible
109	9.10	9.10	Negligible	109	24.68	24.69	Negligible
110	9.10	9.10	Negligible	110	24.81	24.85	Negligible
111	9.11	9.11	Negligible	111	24.90	24.96	Negligible

Table B3: Annual mean PM_{2.5} concentrations of the new EfW CHP facility with and without the existing EfW facility

Human Receptor	PM _{2.5} annual mean concentration (µg/m³)		Significance
	Air quality standard: 10µg/m³		
	New EfW CHP (DM)	Existing EfW and New EfW (DS)	
1	5.51	5.52	Negligible
2	5.51	5.51	Negligible
3	5.50	5.51	Negligible
4	5.50	5.50	Negligible
5	5.50	5.50	Negligible
6	5.50	5.50	Negligible
7	5.51	5.52	Negligible
8	5.50	5.51	Negligible
9	5.53	5.55	Negligible
10	5.54	5.55	Negligible
11	5.54	5.55	Negligible
12	5.54	5.55	Negligible
13	5.52	5.53	Negligible
14	5.51	5.51	Negligible
15	5.50	5.50	Negligible
16	5.50	5.50	Negligible
17	5.50	5.50	Negligible

Human Receptor	PM _{2.5} annual mean concentration (µg/m³)		Significance
	Air quality standard: 10µg/m³		
	New EfW CHP (DM)	Existing EfW and New EfW (DS)	
18	5.50	5.50	Negligible
19	5.50	5.50	Negligible
20	5.50	5.50	Negligible
21	5.51	5.51	Negligible
22	5.50	5.51	Negligible
23	5.50	5.51	Negligible
24	5.51	5.51	Negligible
25	5.51	5.52	Negligible
26	5.51	5.51	Negligible
27	5.51	5.51	Negligible
28	5.51	5.51	Negligible
29	5.51	5.52	Negligible
30	5.51	5.51	Negligible
31	5.50	5.50	Negligible
32	5.50	5.50	Negligible
33	5.52	5.52	Negligible
34	5.50	5.50	Negligible
35	5.51	5.51	Negligible

Human Receptor	PM _{2.5} annual mean concentration (µg/m³)		Significance
	Air quality standard: 10µg/m³		
	New EfW CHP (DM)	Existing EfW and New EfW (DS)	
36	5.50	5.51	Negligible
37	5.51	5.51	Negligible
38	5.51	5.51	Negligible
39	5.51	5.51	Negligible
40	5.51	5.52	Negligible
41	5.51	5.52	Negligible
42	5.51	5.51	Negligible
43	5.51	5.52	Negligible
44	5.52	5.53	Negligible
45	5.52	5.52	Negligible
46	5.51	5.51	Negligible
47	5.50	5.50	Negligible
48	5.50	5.51	Negligible
49	5.50	5.51	Negligible
50	5.50	5.51	Negligible
51	5.51	5.51	Negligible
52	5.51	5.51	Negligible
53	5.50	5.51	Negligible

Human Receptor	PM _{2.5} annual mean concentration (µg/m³)		Significance
	Air quality standard: 10µg/m³		
	New EfW CHP (DM)	Existing EfW and New EfW (DS)	
54	5.50	5.51	Negligible
55	5.51	5.51	Negligible
56	5.51	5.51	Negligible
57	5.50	5.51	Negligible
58	5.51	5.51	Negligible
59	5.51	5.51	Negligible
60	5.50	5.50	Negligible
61	5.50	5.50	Negligible
62	5.50	5.50	Negligible
63	5.50	5.50	Negligible
64	5.50	5.50	Negligible
65	5.50	5.51	Negligible
66	5.50	5.51	Negligible
67	5.50	5.50	Negligible
68	5.50	5.50	Negligible
69	5.50	5.50	Negligible
70	5.51	5.51	Negligible
71	5.50	5.50	Negligible

Human Receptor	PM _{2.5} annual mean concentration (µg/m³)		Significance
	Air quality standard: 10µg/m³		
	New EfW CHP (DM)	Existing EfW and New EfW (DS)	
72	5.50	5.50	Negligible
73	5.50	5.50	Negligible
74	5.50	5.50	Negligible
75	5.50	5.50	Negligible
76	5.50	5.50	Negligible
77	5.50	5.50	Negligible
78	5.50	5.50	Negligible
79	5.50	5.50	Negligible
80	5.50	5.50	Negligible
81	5.50	5.50	Negligible
82	5.50	5.51	Negligible
83	5.50	5.50	Negligible
84	5.51	5.51	Negligible
85	5.50	5.51	Negligible
86	5.51	5.51	Negligible
87	5.50	5.50	Negligible
88	5.50	5.50	Negligible
89	5.50	5.51	Negligible

Human Receptor	PM _{2.5} annual mean concentration (µg/m³)		Significance
	Air quality standard: 10µg/m³		
	New EfW CHP (DM)	Existing EfW and New EfW (DS)	
90	5.53	5.55	Negligible
91	5.51	5.51	Negligible
92	5.51	5.51	Negligible
93	5.50	5.50	Negligible
94	5.51	5.51	Negligible
95	5.50	5.50	Negligible
96	5.51	5.52	Negligible
97	5.50	5.50	Negligible
98	5.50	5.50	Negligible
99	5.50	5.50	Negligible
100	5.50	5.50	Negligible
101	5.53	5.55	Negligible
102	5.50	5.50	Negligible
103	5.51	5.51	Negligible
104	5.51	5.52	Negligible
105	5.50	5.51	Negligible
106	5.50	5.50	Negligible
107	5.50	5.50	Negligible

Human Receptor	PM _{2.5} annual mean concentration (µg/m³)		Significance
	Air quality standard: 10µg/m³		
	New EfW CHP (DM)	Existing EfW and New EfW (DS)	
108	5.50	5.50	Negligible
109	5.50	5.50	Negligible
110	5.50	5.50	Negligible
111	5.51	5.51	Negligible

B2.2 Assessment of Traffic Impacts from Parallel Operations

Table B4: Annual mean and hourly NO₂ concentrations of traffic from the new EfW CHP with and without the existing EfW facility

Human Receptor	NO ₂ annual mean concentration (µg/m³)		Significance	NO ₂ 99.79th percentile 1 hour mean concentration (µg/m³)		Significance
	Air quality standard: 40µg/m³			Air quality standard: 200µg/m³ not to be exceeded more than 18 times per year		
	New EfW CHP Traffic (DM)	New EfW CHP Traffic & Existing EfW Traffic (DS)		New EfW CHP Traffic (DM)	New EfW CHP Traffic & Existing EfW Traffic (DS)	
1	12.88	12.90	Negligible	27.16	27.24	Negligible
2	13.49	13.53	Negligible	29.40	29.66	Negligible
3	13.60	13.64	Negligible	29.04	29.29	Negligible
4	14.43	14.49	Negligible	30.42	30.54	Negligible
5	17.59	17.72	Negligible	36.68	36.93	Negligible
6	19.91	20.05	Negligible	40.63	40.96	Negligible
7	16.18	16.26	Negligible	33.32	33.53	Negligible
8	16.20	16.20	Negligible	32.64	32.67	Negligible
9	13.77	13.81	Negligible	28.19	28.26	Negligible
10	18.26	18.42	Negligible	39.00	39.37	Negligible
11	19.16	19.29	Negligible	39.36	39.61	Negligible
12	15.22	15.26	Negligible	32.66	32.81	Negligible
13	15.37	15.38	Negligible	33.27	33.32	Negligible
14	18.76	18.87	Negligible	43.19	43.56	Negligible

Human Receptor	NO ₂ annual mean concentration (µg/m³)		Significance	NO ₂ 99.79th percentile 1 hour mean concentration (µg/m³)		Significance
	Air quality standard: 40µg/m³			Air quality standard: 200µg/m³ not to be exceeded more than 18 times per year		
	New EfW CHP Traffic (DM)	New EfW CHP Traffic & Existing EfW Traffic (DS)		New EfW CHP Traffic (DM)	New EfW CHP Traffic & Existing EfW Traffic (DS)	
15	14.82	14.84	Negligible	30.91	30.95	Negligible
16	15.18	15.19	Negligible	31.49	31.51	Negligible
17	15.52	15.53	Negligible	31.04	31.05	Negligible
18	15.03	15.03	Negligible	30.63	30.64	Negligible
19	13.24	13.25	Negligible	27.25	27.27	Negligible
20	15.99	16.00	Negligible	30.97	30.98	Negligible
21	15.10	15.11	Negligible	30.66	30.68	Negligible
22	13.83	13.83	Negligible	27.78	27.80	Negligible
23	17.26	17.29	Negligible	33.80	33.87	Negligible
24	13.53	13.54	Negligible	27.65	27.66	Negligible
25	17.89	18.01	Negligible	36.36	36.60	Negligible
26	15.94	16.08	Negligible	39.54	40.02	Negligible
27	13.70	13.74	Negligible	26.97	27.05	Negligible
28	12.43	12.43	Negligible	26.08	26.11	Negligible
29	12.62	12.62	Negligible	26.52	26.55	Negligible
30	12.44	12.44	Negligible	26.24	26.27	Negligible
31	12.92	12.93	Negligible	26.39	26.40	Negligible

Human Receptor	NO ₂ annual mean concentration (µg/m ³)		Significance	NO ₂ 99.79th percentile 1 hour mean concentration (µg/m ³)		Significance
	Air quality standard: 40µg/m ³			Air quality standard: 200µg/m ³ not to be exceeded more than 18 times per year		
	New EfW CHP Traffic (DM)	New EfW CHP Traffic & Existing EfW Traffic (DS)		New EfW CHP Traffic (DM)	New EfW CHP Traffic & Existing EfW Traffic (DS)	
32	13.62	13.63	Negligible	28.03	28.05	Negligible
33	13.88	13.92	Negligible	28.75	28.82	Negligible
34	12.99	13.01	Negligible	26.25	26.28	Negligible
35	13.19	13.21	Negligible	26.58	26.67	Negligible
36	13.56	13.60	Negligible	27.91	27.98	Negligible
37	13.38	13.40	Negligible	28.15	28.25	Negligible
38	12.96	12.97	Negligible	27.39	27.44	Negligible
39	12.60	12.60	Negligible	26.42	26.47	Negligible
40	12.75	12.76	Negligible	26.66	26.70	Negligible
41	13.50	13.53	Negligible	28.54	28.64	Negligible
42	12.80	12.81	Negligible	27.06	27.13	Negligible
43	13.19	13.20	Negligible	28.05	28.10	Negligible
44	15.60	15.68	Negligible	33.87	34.08	Negligible
45	13.55	13.57	Negligible	29.17	29.25	Negligible
46	13.39	13.41	Negligible	28.27	28.35	Negligible
47	15.31	15.36	Negligible	33.41	33.54	Negligible
48	14.93	14.95	Negligible	31.99	32.06	Negligible

Human Receptor	NO ₂ annual mean concentration (µg/m ³)		Significance	NO ₂ 99.79th percentile 1 hour mean concentration (µg/m ³)		Significance
	Air quality standard: 40µg/m ³			Air quality standard: 200µg/m ³ not to be exceeded more than 18 times per year		
	New EfW CHP Traffic (DM)	New EfW CHP Traffic & Existing EfW Traffic (DS)		New EfW CHP Traffic (DM)	New EfW CHP Traffic & Existing EfW Traffic (DS)	
49	14.71	14.72	Negligible	30.82	30.88	Negligible
50	13.93	13.94	Negligible	29.21	29.24	Negligible
51	12.76	12.76	Negligible	27.48	27.50	Negligible
52	12.70	12.71	Negligible	26.85	26.89	Negligible
53	12.60	12.61	Negligible	26.56	26.59	Negligible
54	12.61	12.62	Negligible	26.68	26.70	Negligible
55	12.55	12.56	Negligible	26.89	26.92	Negligible
56	13.35	13.36	Negligible	30.06	30.10	Negligible
57	12.79	12.80	Negligible	26.90	26.93	Negligible
58	12.61	12.62	Negligible	26.68	26.72	Negligible
59	12.69	12.70	Negligible	26.75	26.82	Negligible
60	23.90	23.99	Negligible	50.77	50.99	Negligible
61	17.33	17.42	Negligible	43.47	43.77	Negligible
62	14.18	14.19	Negligible	29.04	29.06	Negligible
63	12.99	12.99	Negligible	26.53	26.54	Negligible
64	12.78	12.78	Negligible	25.97	25.97	Negligible
65	12.92	12.93	Negligible	26.36	26.38	Negligible

Human Receptor	NO ₂ annual mean concentration (µg/m³)		Significance	NO ₂ 99.79th percentile 1 hour mean concentration (µg/m³)		Significance
	Air quality standard: 40µg/m³			Air quality standard: 200µg/m³ not to be exceeded more than 18 times per year		
	New EfW CHP Traffic (DM)	New EfW CHP Traffic & Existing EfW Traffic (DS)		New EfW CHP Traffic (DM)	New EfW CHP Traffic & Existing EfW Traffic (DS)	
66	13.09	13.10	Negligible	26.69	26.70	Negligible
67	13.22	13.23	Negligible	27.69	27.73	Negligible
68	13.01	13.02	Negligible	26.83	26.85	Negligible
69	13.54	13.55	Negligible	28.75	28.79	Negligible
70	15.21	15.22	Negligible	30.19	30.23	Negligible
71	12.83	12.83	Negligible	26.11	26.12	Negligible
72	13.26	13.27	Negligible	27.04	27.05	Negligible
73	12.95	12.96	Negligible	26.58	26.60	Negligible
74	12.98	12.98	Negligible	26.54	26.55	Negligible
75	13.16	13.17	Negligible	27.27	27.29	Negligible
76	13.71	13.72	Negligible	29.77	29.83	Negligible
77	13.33	13.34	Negligible	27.26	27.27	Negligible
78	13.20	13.21	Negligible	27.28	27.31	Negligible
79	13.23	13.24	Negligible	26.90	26.91	Negligible
80	12.75	12.76	Negligible	25.98	25.99	Negligible
81	14.98	14.99	Negligible	33.09	33.11	Negligible
82	14.35	14.40	Negligible	35.63	35.87	Negligible

Human Receptor	NO ₂ annual mean concentration (µg/m³)		Significance	NO ₂ 99.79th percentile 1 hour mean concentration (µg/m³)		Significance
	Air quality standard: 40µg/m³			Air quality standard: 200µg/m³ not to be exceeded more than 18 times per year		
	New EfW CHP Traffic (DM)	New EfW CHP Traffic & Existing EfW Traffic (DS)		New EfW CHP Traffic (DM)	New EfW CHP Traffic & Existing EfW Traffic (DS)	
83	13.73	13.73	Negligible	28.59	28.61	Negligible
84	13.72	13.73	Negligible	28.11	28.12	Negligible
85	13.48	13.49	Negligible	27.03	27.05	Negligible
86	13.37	13.38	Negligible	27.25	27.26	Negligible
87	12.74	12.74	Negligible	25.98	25.99	Negligible
88	13.37	13.37	Negligible	28.93	28.95	Negligible
89	13.65	13.68	Negligible	32.27	32.42	Negligible
90	19.53	19.61	Negligible	42.18	42.33	Negligible
91	12.53	12.54	Negligible	26.39	26.43	Negligible
92	12.53	12.53	Negligible	26.25	26.28	Negligible
93	27.07	27.18	Negligible	54.04	54.38	Negligible
94	12.59	12.60	Negligible	26.41	26.46	Negligible
95	12.94	12.94	Negligible	26.43	26.44	Negligible
96	17.89	18.01	Negligible	36.36	36.60	Negligible
97	12.97	12.97	Negligible	26.47	26.49	Negligible
98	13.48	13.49	Negligible	28.51	28.54	Negligible
99	13.13	13.14	Negligible	27.19	27.22	Negligible

Human Receptor	NO ₂ annual mean concentration (µg/m³)		Significance	NO ₂ 99.79th percentile 1 hour mean concentration (µg/m³)		Significance
	Air quality standard: 40µg/m³			Air quality standard: 200µg/m³ not to be exceeded more than 18 times per year		
	New EfW CHP Traffic (DM)	New EfW CHP Traffic & Existing EfW Traffic (DS)		New EfW CHP Traffic (DM)	New EfW CHP Traffic & Existing EfW Traffic (DS)	
100	13.63	13.64	Negligible	29.55	29.61	Negligible
101	23.72	24.02	Negligible	48.78	49.38	Negligible
102	23.28	23.53	Negligible	45.71	46.18	Negligible
103	12.92	12.94	Negligible	27.40	27.50	Negligible
104	20.55	20.73	Negligible	41.15	41.48	Negligible
105	12.39	12.39	Negligible	25.95	25.97	Negligible
106	13.78	13.79	Negligible	27.50	27.52	Negligible
107	27.81	27.93	Negligible	54.73	55.06	Negligible
108	13.57	13.59	Negligible	27.25	27.43	Negligible
109	12.33	12.33	Negligible	25.80	25.82	Negligible
110	29.46	29.53	Negligible	55.68	55.80	Negligible
111	17.33	17.42	Negligible	41.87	42.24	Negligible

Table B5: Annual mean and daily PM₁₀ concentrations of traffic from the new EfW CHP with and without the existing EfW facility

Human Receptor	PM ₁₀ annual mean concentration (µg/m³)		Significance	PM ₁₀ 98.08th percentile 24 hour mean concentration (µg/m³)		Significance
	Air quality standard: 18µg/m³			Air quality standard: 50µg/m³ not to be exceeded more than 7 times per year		
	New EfW CHP Traffic (DM)	New EfW CHP Traffic & Existing EfW Traffic (DS)		New EfW CHP Traffic (DM)	New EfW CHP Traffic & Existing EfW Traffic (DS)	
1	9.15	9.16	Negligible	28.16	28.17	Negligible
2	9.21	9.21	Negligible	28.29	28.30	Negligible
3	9.22	9.22	Negligible	28.31	28.32	Negligible
4	9.29	9.29	Negligible	28.46	28.47	Negligible
5	9.58	9.59	Negligible	29.07	29.09	Negligible
6	9.74	9.75	Negligible	29.34	29.36	Negligible
7	9.46	9.46	Negligible	28.76	28.77	Negligible
8	9.47	9.48	Negligible	28.99	28.99	Negligible
9	9.23	9.23	Negligible	28.33	28.34	Negligible
10	9.56	9.57	Negligible	29.26	29.28	Negligible
11	9.66	9.66	Negligible	29.10	29.12	Negligible
12	9.35	9.36	Negligible	28.65	28.65	Negligible
13	9.39	9.39	Negligible	28.79	28.79	Negligible
14	9.59	9.60	Negligible	29.17	29.18	Negligible
15	9.33	9.33	Negligible	28.61	28.61	Negligible

Human Receptor	PM ₁₀ annual mean concentration (µg/m³)		Significance	PM ₁₀ 98.08th percentile 24 hour mean concentration (µg/m³)		Significance
	Air quality standard: 18µg/m³			Air quality standard: 50µg/m³ not to be exceeded more than 7 times per year		
	New EfW CHP Traffic (DM)	New EfW CHP Traffic & Existing EfW Traffic (DS)		New EfW CHP Traffic (DM)	New EfW CHP Traffic & Existing EfW Traffic (DS)	
16	9.36	9.36	Negligible	28.74	28.75	Negligible
17	9.39	9.39	Negligible	28.78	28.78	Negligible
18	9.35	9.35	Negligible	28.67	28.67	Negligible
19	9.19	9.19	Negligible	28.18	28.18	Negligible
20	9.44	9.44	Negligible	28.77	28.77	Negligible
21	9.35	9.36	Negligible	28.56	28.56	Negligible
22	9.24	9.24	Negligible	28.31	28.31	Negligible
23	9.44	9.44	Negligible	28.72	28.73	Negligible
24	9.21	9.21	Negligible	28.22	28.22	Negligible
25	9.67	9.69	Negligible	29.55	29.59	Negligible
26	9.36	9.37	Negligible	28.83	28.85	Negligible
27	9.23	9.23	Negligible	28.30	28.30	Negligible
28	9.11	9.11	Negligible	28.06	28.06	Negligible
29	9.13	9.13	Negligible	28.11	28.11	Negligible
30	9.11	9.11	Negligible	28.06	28.06	Negligible
31	9.16	9.16	Negligible	28.16	28.16	Negligible
32	9.23	9.23	Negligible	28.31	28.31	Negligible

Human Receptor	PM ₁₀ annual mean concentration (µg/m³)		Significance	PM ₁₀ 98.08th percentile 24 hour mean concentration (µg/m³)		Significance
	Air quality standard: 18µg/m³			Air quality standard: 50µg/m³ not to be exceeded more than 7 times per year		
	New EfW CHP Traffic (DM)	New EfW CHP Traffic & Existing EfW Traffic (DS)		New EfW CHP Traffic (DM)	New EfW CHP Traffic & Existing EfW Traffic (DS)	
33	9.26	9.26	Negligible	28.38	28.39	Negligible
34	9.16	9.16	Negligible	28.15	28.15	Negligible
35	9.18	9.19	Negligible	28.21	28.21	Negligible
36	9.21	9.21	Negligible	28.27	28.28	Negligible
37	9.20	9.20	Negligible	28.26	28.26	Negligible
38	9.16	9.16	Negligible	28.17	28.17	Negligible
39	9.13	9.13	Negligible	28.10	28.10	Negligible
40	9.14	9.14	Negligible	28.14	28.14	Negligible
41	9.21	9.22	Negligible	28.31	28.32	Negligible
42	9.15	9.15	Negligible	28.14	28.15	Negligible
43	9.18	9.18	Negligible	28.20	28.20	Negligible
44	9.39	9.40	Negligible	28.65	28.66	Negligible
45	9.21	9.21	Negligible	28.26	28.27	Negligible
46	9.20	9.20	Negligible	28.25	28.25	Negligible
47	9.37	9.37	Negligible	28.67	28.68	Negligible
48	9.34	9.35	Negligible	28.63	28.64	Negligible
49	9.33	9.33	Negligible	28.54	28.54	Negligible

Human Receptor	PM ₁₀ annual mean concentration (µg/m³)		Significance	PM ₁₀ 98.08th percentile 24 hour mean concentration (µg/m³)		Significance
	Air quality standard: 18µg/m³			Air quality standard: 50µg/m³ not to be exceeded more than 7 times per year		
	New EfW CHP Traffic (DM)	New EfW CHP Traffic & Existing EfW Traffic (DS)		New EfW CHP Traffic (DM)	New EfW CHP Traffic & Existing EfW Traffic (DS)	
50	9.25	9.25	Negligible	28.45	28.45	Negligible
51	9.14	9.14	Negligible	28.14	28.14	Negligible
52	9.14	9.14	Negligible	28.12	28.12	Negligible
53	9.13	9.13	Negligible	28.10	28.10	Negligible
54	9.13	9.13	Negligible	28.11	28.11	Negligible
55	9.12	9.12	Negligible	28.10	28.10	Negligible
56	9.20	9.20	Negligible	28.33	28.33	Negligible
57	9.15	9.15	Negligible	28.14	28.14	Negligible
58	9.13	9.13	Negligible	28.10	28.11	Negligible
59	9.14	9.14	Negligible	28.12	28.12	Negligible
60	9.96	9.97	Negligible	30.40	30.42	Negligible
61	9.48	9.48	Negligible	29.10	29.11	Negligible
62	9.29	9.29	Negligible	28.44	28.44	Negligible
63	9.17	9.17	Negligible	28.17	28.17	Negligible
64	9.14	9.14	Negligible	28.12	28.12	Negligible
65	9.15	9.16	Negligible	28.14	28.14	Negligible
66	9.17	9.17	Negligible	28.18	28.18	Negligible

Human Receptor	PM ₁₀ annual mean concentration (µg/m³)		Significance	PM ₁₀ 98.08th percentile 24 hour mean concentration (µg/m³)		Significance
	Air quality standard: 18µg/m³			Air quality standard: 50µg/m³ not to be exceeded more than 7 times per year		
	New EfW CHP Traffic (DM)	New EfW CHP Traffic & Existing EfW Traffic (DS)		New EfW CHP Traffic (DM)	New EfW CHP Traffic & Existing EfW Traffic (DS)	
67	9.18	9.18	Negligible	28.20	28.20	Negligible
68	9.17	9.17	Negligible	28.16	28.16	Negligible
69	9.22	9.22	Negligible	28.28	28.28	Negligible
70	9.36	9.36	Negligible	28.67	28.68	Negligible
71	9.15	9.15	Negligible	28.13	28.13	Negligible
72	9.20	9.20	Negligible	28.23	28.23	Negligible
73	9.16	9.16	Negligible	28.15	28.15	Negligible
74	9.16	9.16	Negligible	28.16	28.16	Negligible
75	9.18	9.18	Negligible	28.20	28.20	Negligible
76	9.22	9.22	Negligible	28.30	28.30	Negligible
77	9.20	9.20	Negligible	28.24	28.25	Negligible
78	9.18	9.18	Negligible	28.19	28.19	Negligible
79	9.18	9.19	Negligible	28.23	28.23	Negligible
80	9.14	9.14	Negligible	28.12	28.12	Negligible
81	9.34	9.34	Negligible	28.75	28.75	Negligible
82	9.26	9.26	Negligible	28.57	28.58	Negligible
83	9.23	9.23	Negligible	28.33	28.33	Negligible

Human Receptor	PM ₁₀ annual mean concentration (µg/m³)		Significance	PM ₁₀ 98.08th percentile 24 hour mean concentration (µg/m³)		Significance
	Air quality standard: 18µg/m³			Air quality standard: 50µg/m³ not to be exceeded more than 7 times per year		
	New EfW CHP Traffic (DM)	New EfW CHP Traffic & Existing EfW Traffic (DS)		New EfW CHP Traffic (DM)	New EfW CHP Traffic & Existing EfW Traffic (DS)	
84	9.23	9.23	Negligible	28.28	28.28	Negligible
85	9.21	9.21	Negligible	28.25	28.25	Negligible
86	9.19	9.19	Negligible	28.20	28.20	Negligible
87	9.14	9.14	Negligible	28.12	28.12	Negligible
88	9.20	9.20	Negligible	28.30	28.30	Negligible
89	9.21	9.21	Negligible	28.39	28.40	Negligible
90	9.75	9.75	Negligible	29.60	29.61	Negligible
91	9.12	9.12	Negligible	28.09	28.09	Negligible
92	9.12	9.12	Negligible	28.09	28.09	Negligible
93	10.19	10.19	Negligible	30.69	30.71	Negligible
94	9.13	9.13	Negligible	28.10	28.10	Negligible
95	9.16	9.16	Negligible	28.15	28.15	Negligible
96	9.67	9.69	Negligible	29.55	29.59	Negligible
97	9.17	9.17	Negligible	28.17	28.17	Negligible
98	9.21	9.21	Negligible	28.27	28.27	Negligible
99	9.18	9.18	Negligible	28.19	28.19	Negligible
100	9.21	9.22	Negligible	28.28	28.29	Negligible

Human Receptor	PM ₁₀ annual mean concentration (µg/m³)		Significance	PM ₁₀ 98.08th percentile 24 hour mean concentration (µg/m³)		Significance
	Air quality standard: 18µg/m³			Air quality standard: 50µg/m³ not to be exceeded more than 7 times per year		
	New EfW CHP Traffic (DM)	New EfW CHP Traffic & Existing EfW Traffic (DS)		New EfW CHP Traffic (DM)	New EfW CHP Traffic & Existing EfW Traffic (DS)	
101	9.96	9.97	Negligible	29.83	29.86	Negligible
102	9.97	9.98	Negligible	29.82	29.85	Negligible
103	9.16	9.16	Negligible	28.17	28.18	Negligible
104	9.97	9.99	Negligible	30.25	30.30	Negligible
105	9.11	9.11	Negligible	28.05	28.05	Negligible
106	9.23	9.23	Negligible	28.31	28.31	Negligible
107	10.24	10.25	Negligible	30.78	30.80	Negligible
108	9.20	9.20	Negligible	28.24	28.24	Negligible
109	9.10	9.10	Negligible	28.02	28.02	Negligible
110	10.99	11.00	Negligible	31.80	31.82	Negligible
111	9.58	9.59	Negligible	29.38	29.40	Negligible

Table B6: Annual mean PM_{2.5} concentrations of traffic from the new EfW CHP with and without the existing EfW facility

Human Receptor	PM2.5 annual mean concentration (µg/m³)		Significance
	Air quality standard: 10µg/m³		
	New EfW CHP Traffic (DM)	New EfW CHP Traffic & Existing EfW Traffic (DS)	
1	5.53	5.53	Negligible
2	5.56	5.56	Negligible
3	5.57	5.57	Negligible
4	5.61	5.61	Negligible
5	5.78	5.79	Negligible
6	5.88	5.88	Negligible
7	5.71	5.71	Negligible
8	5.72	5.72	Negligible
9	5.58	5.58	Negligible
10	5.78	5.78	Negligible
11	5.83	5.84	Negligible
12	5.65	5.65	Negligible
13	5.67	5.67	Negligible
14	5.80	5.80	Negligible
15	5.63	5.63	Negligible
16	5.65	5.65	Negligible
17	5.67	5.67	Negligible

Human Receptor	PM2.5 annual mean concentration (µg/m³)		Significance
	Air quality standard: 10µg/m³		
	New EfW CHP Traffic (DM)	New EfW CHP Traffic & Existing EfW Traffic (DS)	
18	5.65	5.65	Negligible
19	5.55	5.55	Negligible
20	5.70	5.70	Negligible
21	5.65	5.65	Negligible
22	5.58	5.58	Negligible
23	5.70	5.71	Negligible
24	5.56	5.56	Negligible
25	5.84	5.84	Negligible
26	5.66	5.66	Negligible
27	5.58	5.58	Negligible
28	5.51	5.51	Negligible
29	5.52	5.52	Negligible
30	5.51	5.51	Negligible
31	5.54	5.54	Negligible
32	5.58	5.58	Negligible
33	5.59	5.59	Negligible
34	5.54	5.54	Negligible
35	5.55	5.55	Negligible

Human Receptor	PM2.5 annual mean concentration (µg/m³)		Significance
	Air quality standard: 10µg/m³		
	New EfW CHP Traffic (DM)	New EfW CHP Traffic & Existing EfW Traffic (DS)	
36	5.57	5.57	Negligible
37	5.56	5.56	Negligible
38	5.53	5.54	Negligible
39	5.52	5.52	Negligible
40	5.52	5.53	Negligible
41	5.57	5.57	Negligible
42	5.53	5.53	Negligible
43	5.55	5.55	Negligible
44	5.67	5.68	Negligible
45	5.57	5.57	Negligible
46	5.56	5.56	Negligible
47	5.66	5.66	Negligible
48	5.64	5.64	Negligible
49	5.63	5.63	Negligible
50	5.59	5.59	Negligible
51	5.52	5.52	Negligible
52	5.52	5.52	Negligible
53	5.52	5.52	Negligible

Human Receptor	PM2.5 annual mean concentration (µg/m³)		Significance
	Air quality standard: 10µg/m³		
	New EfW CHP Traffic (DM)	New EfW CHP Traffic & Existing EfW Traffic (DS)	
54	5.52	5.52	Negligible
55	5.51	5.51	Negligible
56	5.56	5.56	Negligible
57	5.53	5.53	Negligible
58	5.52	5.52	Negligible
59	5.52	5.52	Negligible
60	6.02	6.03	Negligible
61	5.73	5.73	Negligible
62	5.61	5.61	Negligible
63	5.54	5.54	Negligible
64	5.53	5.53	Negligible
65	5.53	5.53	Negligible
66	5.54	5.54	Negligible
67	5.55	5.55	Negligible
68	5.54	5.54	Negligible
69	5.57	5.57	Negligible
70	5.66	5.66	Negligible
71	5.53	5.53	Negligible

Human Receptor	PM2.5 annual mean concentration (µg/m³)		Significance
	Air quality standard: 10µg/m³		
	New EfW CHP Traffic (DM)	New EfW CHP Traffic & Existing EfW Traffic (DS)	
72	5.56	5.56	Negligible
73	5.54	5.54	Negligible
74	5.54	5.54	Negligible
75	5.55	5.55	Negligible
76	5.57	5.57	Negligible
77	5.56	5.56	Negligible
78	5.55	5.55	Negligible
79	5.55	5.55	Negligible
80	5.52	5.53	Negligible
81	5.64	5.64	Negligible
82	5.59	5.60	Negligible
83	5.58	5.58	Negligible
84	5.58	5.58	Negligible
85	5.56	5.56	Negligible
86	5.55	5.56	Negligible
87	5.52	5.52	Negligible
88	5.56	5.56	Negligible
89	5.56	5.56	Negligible

Human Receptor	PM2.5 annual mean concentration (µg/m³)		Significance
	Air quality standard: 10µg/m³		
	New EfW CHP Traffic (DM)	New EfW CHP Traffic & Existing EfW Traffic (DS)	
90	5.88	5.89	Negligible
91	5.51	5.51	Negligible
92	5.51	5.51	Negligible
93	6.16	6.17	Negligible
94	5.52	5.52	Negligible
95	5.53	5.53	Negligible
96	5.84	5.84	Negligible
97	5.54	5.54	Negligible
98	5.56	5.57	Negligible
99	5.55	5.55	Negligible
100	5.57	5.57	Negligible
101	6.02	6.03	Negligible
102	6.02	6.03	Negligible
103	5.53	5.53	Negligible
104	6.01	6.02	Negligible
105	5.50	5.50	Negligible
106	5.58	5.58	Negligible
107	6.20	6.20	Negligible

Human Receptor	PM2.5 annual mean concentration (µg/m³)		Significance
	Air quality standard: 10µg/m³		
	New EfW CHP Traffic (DM)	New EfW CHP Traffic & Existing EfW Traffic (DS)	
108	5.56	5.56	Negligible
109	5.50	5.50	Negligible
110	6.60	6.60	Negligible
111	5.78	5.78	Negligible

B2.3 Cumulative Impact of Facility and Traffic Emissions

Table B7: Cumulative NO₂ concentrations of the Michelin facility, the existing EfW facility, the new EfW CHP and associated traffic

Human Receptor	NO ₂ annual mean concentration (µg/m ³)			Significance	Human Receptor	NO ₂ 99.79th percentile 1 hour mean concentration (µg/m ³)			Significance
	Air quality standard: 40µg/m ³)					Air quality standard: 200µg/m ³ not to be exceeded more than 18 times per year			
	New EfW CHP, Michelin, traffic (DM)	Existing EfW, New EfW CHP, Michelin, traffic (DS)	Change			New EfW CHP, Michelin, traffic (DM)	Existing EfW, New EfW CHP, Michelin, traffic (DS)	Change	
1	13.13	13.75	0.61	Negligible	1	35.87	49.54	13.67	Negligible
2	13.63	14.01	0.37	Negligible	2	37.91	53.28	15.37	Negligible
3	13.72	13.98	0.25	Negligible	3	36.53	50.78	14.24	Negligible
4	14.54	14.74	0.20	Negligible	4	37.25	48.42	11.16	Negligible
5	17.70	17.92	0.23	Negligible	5	42.45	51.53	9.08	Negligible
6	20.02	20.35	0.33	Negligible	6	47.30	58.41	11.11	Negligible
7	16.41	17.28	0.87	Negligible	7	42.09	58.76	16.68	Negligible
8	16.33	16.54	0.21	Negligible	8	39.45	50.14	10.69	Negligible
9	14.39	16.79	2.40	Slight adverse	9	37.47	55.13	17.66	Negligible
10	19.02	21.37	2.35	Slight adverse	10	48.52	65.09	16.58	Negligible
11	19.92	22.07	2.15	Negligible	11	48.37	63.64	15.27	Negligible
12	15.97	17.86	1.90	Negligible	12	41.11	55.21	14.10	Negligible
13	15.82	16.87	1.06	Negligible	13	41.43	53.71	12.28	Negligible

Human Receptor	NO ₂ annual mean concentration (µg/m³)			Significance	Human Receptor	NO ₂ 99.79th percentile 1 hour mean concentration (µg/m³)			Significance
	Air quality standard: 40µg/m³)					Air quality standard: 200µg/m³ not to be exceeded more than 18 times per year			
	New EfW CHP, Michelin, traffic (DM)	Existing EfW, New EfW CHP, Michelin, traffic (DS)	Change			New EfW CHP, Michelin, traffic (DM)	Existing EfW, New EfW CHP, Michelin, traffic (DS)	Change	
14	18.89	19.17	0.28	Negligible	14	49.70	58.23	8.53	Negligible
15	14.90	15.04	0.14	Negligible	15	37.56	46.85	9.30	Negligible
16	15.23	15.34	0.11	Negligible	16	35.91	45.73	9.82	Negligible
17	15.56	15.67	0.11	Negligible	17	34.97	44.19	9.22	Negligible
18	15.08	15.17	0.10	Negligible	18	34.59	44.69	10.10	Negligible
19	13.28	13.39	0.11	Negligible	19	30.24	40.50	10.25	Negligible
20	16.06	16.14	0.08	Negligible	20	36.13	44.89	8.77	Negligible
21	15.24	15.44	0.20	Negligible	21	36.46	47.12	10.66	Negligible
22	13.94	14.09	0.14	Negligible	22	34.05	44.97	10.92	Negligible
23	17.36	17.50	0.15	Negligible	23	38.39	44.74	6.35	Negligible
24	13.65	13.81	0.15	Negligible	24	32.84	40.30	7.46	Negligible
25	18.17	18.68	0.50	Negligible	25	43.42	52.59	9.16	Negligible
26	16.16	16.57	0.40	Negligible	26	44.89	52.11	7.21	Negligible
27	13.87	14.10	0.23	Negligible	27	31.86	38.50	6.65	Negligible
28	12.57	12.78	0.21	Negligible	28	30.65	37.22	6.57	Negligible

Human Receptor	NO ₂ annual mean concentration (µg/m³)			Significance	Human Receptor	NO ₂ 99.79th percentile 1 hour mean concentration (µg/m³)			Significance
	Air quality standard: 40µg/m³)					Air quality standard: 200µg/m³ not to be exceeded more than 18 times per year			
	New EfW CHP, Michelin, traffic (DM)	Existing EfW, New EfW CHP, Michelin, traffic (DS)	Change			New EfW CHP, Michelin, traffic (DM)	Existing EfW, New EfW CHP, Michelin, traffic (DS)	Change	
29	12.89	13.31	0.43	Negligible	29	32.96	41.29	8.34	Negligible
30	12.61	12.82	0.21	Negligible	30	30.00	36.33	6.34	Negligible
31	12.97	13.03	0.06	Negligible	31	30.79	36.41	5.63	Negligible
32	13.68	13.76	0.08	Negligible	32	33.42	40.79	7.37	Negligible
33	14.23	14.89	0.66	Negligible	33	37.22	50.18	12.97	Negligible
34	13.06	13.15	0.09	Negligible	34	28.56	33.63	5.08	Negligible
35	13.44	13.77	0.33	Negligible	35	34.73	45.93	11.20	Negligible
36	13.71	14.37	0.66	Negligible	36	33.66	42.94	9.28	Negligible
37	13.51	13.84	0.33	Negligible	37	35.31	49.16	13.85	Negligible
38	13.12	13.49	0.37	Negligible	38	34.24	46.78	12.54	Negligible
39	12.83	13.26	0.43	Negligible	39	33.45	43.00	9.55	Negligible
40	13.05	13.58	0.53	Negligible	40	34.17	44.02	9.84	Negligible
41	13.81	14.27	0.46	Negligible	41	35.15	44.34	9.19	Negligible
42	12.95	13.30	0.34	Negligible	42	34.82	47.22	12.40	Negligible
43	13.45	14.03	0.58	Negligible	43	35.85	47.56	11.71	Negligible

Human Receptor	NO ₂ annual mean concentration (µg/m³)			Significance	Human Receptor	NO ₂ 99.79th percentile 1 hour mean concentration (µg/m³)			Significance
	Air quality standard: 40µg/m³)					Air quality standard: 200µg/m³ not to be exceeded more than 18 times per year			
	New EfW CHP, Michelin, traffic (DM)	Existing EfW, New EfW CHP, Michelin, traffic (DS)	Change			New EfW CHP, Michelin, traffic (DM)	Existing EfW, New EfW CHP, Michelin, traffic (DS)	Change	
44	16.08	17.59	1.51	Negligible	44	43.27	58.54	15.27	Negligible
45	13.88	14.76	0.88	Negligible	45	38.13	52.13	14.00	Negligible
46	13.61	14.20	0.59	Negligible	46	36.66	51.69	15.02	Negligible
47	15.42	15.64	0.22	Negligible	47	40.16	50.74	10.58	Negligible
48	15.05	15.23	0.19	Negligible	48	38.86	50.36	11.49	Negligible
49	14.83	15.03	0.20	Negligible	49	37.90	50.07	12.17	Negligible
50	14.05	14.28	0.22	Negligible	50	36.59	48.54	11.95	Negligible
51	12.92	13.23	0.31	Negligible	51	33.67	43.16	9.49	Negligible
52	12.83	13.08	0.25	Negligible	52	33.07	43.22	10.15	Negligible
53	12.71	12.91	0.20	Negligible	53	32.61	41.94	9.33	Negligible
54	12.72	12.90	0.18	Negligible	54	32.89	42.31	9.42	Negligible
55	12.68	12.93	0.25	Negligible	55	33.28	42.61	9.33	Negligible
56	13.47	13.70	0.22	Negligible	56	36.81	47.18	10.37	Negligible
57	12.91	13.11	0.20	Negligible	57	33.77	44.27	10.50	Negligible
58	12.78	13.12	0.34	Negligible	58	33.51	43.98	10.46	Negligible

Human Receptor	NO ₂ annual mean concentration (µg/m³)			Significance	Human Receptor	NO ₂ 99.79th percentile 1 hour mean concentration (µg/m³)			Significance
	Air quality standard: 40µg/m³)					Air quality standard: 200µg/m³ not to be exceeded more than 18 times per year			
	New EfW CHP, Michelin, traffic (DM)	Existing EfW, New EfW CHP, Michelin, traffic (DS)	Change			New EfW CHP, Michelin, traffic (DM)	Existing EfW, New EfW CHP, Michelin, traffic (DS)	Change	
59	12.92	13.43	0.51	Negligible	59	34.33	45.94	11.61	Negligible
60	23.99	24.17	0.19	Negligible	60	55.63	61.56	5.93	Negligible
61	17.42	17.60	0.19	Negligible	61	49.27	56.14	6.87	Negligible
62	14.24	14.32	0.08	Negligible	62	34.22	40.46	6.23	Negligible
63	13.04	13.12	0.07	Negligible	63	32.86	39.89	7.03	Negligible
64	12.85	12.92	0.07	Negligible	64	31.40	37.42	6.02	Negligible
65	13.01	13.12	0.11	Negligible	65	32.05	39.82	7.78	Negligible
66	13.20	13.33	0.13	Negligible	66	33.17	42.60	9.43	Negligible
67	13.28	13.39	0.11	Negligible	67	33.18	41.62	8.44	Negligible
68	13.07	13.17	0.11	Negligible	68	32.21	41.48	9.28	Negligible
69	13.59	13.68	0.08	Negligible	69	34.58	41.88	7.30	Negligible
70	15.35	15.52	0.18	Negligible	70	35.96	45.33	9.37	Negligible
71	12.88	12.95	0.07	Negligible	71	31.74	39.46	7.72	Negligible
72	13.31	13.37	0.06	Negligible	72	32.47	38.43	5.96	Negligible
73	13.01	13.12	0.11	Negligible	73	33.05	41.78	8.73	Negligible

Human Receptor	NO ₂ annual mean concentration (µg/m³)			Significance	Human Receptor	NO ₂ 99.79th percentile 1 hour mean concentration (µg/m³)			Significance
	Air quality standard: 40µg/m³)					Air quality standard: 200µg/m³ not to be exceeded more than 18 times per year			
	New EfW CHP, Michelin, traffic (DM)	Existing EfW, New EfW CHP, Michelin, traffic (DS)	Change			New EfW CHP, Michelin, traffic (DM)	Existing EfW, New EfW CHP, Michelin, traffic (DS)	Change	
74	13.07	13.14	0.07	Negligible	74	33.08	40.28	7.20	Negligible
75	13.22	13.32	0.11	Negligible	75	32.59	40.51	7.92	Negligible
76	13.79	13.89	0.11	Negligible	76	36.39	44.06	7.68	Negligible
77	13.39	13.47	0.08	Negligible	77	32.83	39.74	6.91	Negligible
78	13.25	13.35	0.11	Negligible	78	33.18	42.75	9.57	Negligible
79	13.29	13.39	0.11	Negligible	79	32.45	42.83	10.39	Negligible
80	12.82	12.90	0.08	Negligible	80	30.95	36.58	5.63	Negligible
81	15.06	15.14	0.08	Negligible	81	39.37	47.79	8.42	Negligible
82	14.45	14.61	0.17	Negligible	82	39.56	45.16	5.59	Negligible
83	13.78	13.87	0.10	Negligible	83	32.56	41.87	9.30	Negligible
84	13.86	14.06	0.20	Negligible	84	33.91	44.59	10.67	Negligible
85	13.60	13.75	0.15	Negligible	85	33.39	44.33	10.94	Negligible
86	13.49	13.65	0.15	Negligible	86	32.44	39.90	7.46	Negligible
87	12.81	12.88	0.07	Negligible	87	30.96	36.63	5.67	Negligible
88	13.45	13.53	0.07	Negligible	88	35.30	43.91	8.61	Negligible

Human Receptor	NO ₂ annual mean concentration (µg/m³)			Significance	Human Receptor	NO ₂ 99.79th percentile 1 hour mean concentration (µg/m³)			Significance
	Air quality standard: 40µg/m³)					Air quality standard: 200µg/m³ not to be exceeded more than 18 times per year			
	New EfW CHP, Michelin, traffic (DM)	Existing EfW, New EfW CHP, Michelin, traffic (DS)	Change			New EfW CHP, Michelin, traffic (DM)	Existing EfW, New EfW CHP, Michelin, traffic (DS)	Change	
89	13.75	13.89	0.15	Negligible	89	36.20	41.68	5.48	Negligible
90	20.25	22.24	1.98	Negligible	90	51.00	65.81	14.81	Negligible
91	12.77	13.14	0.37	Negligible	91	31.83	39.06	7.23	Negligible
92	12.75	13.14	0.38	Negligible	92	32.18	39.99	7.81	Negligible
93	27.15	27.35	0.21	Negligible	93	59.14	65.09	5.96	Negligible
94	12.83	13.29	0.46	Negligible	94	33.45	42.99	9.55	Negligible
95	13.03	13.10	0.07	Negligible	95	32.93	40.15	7.22	Negligible
96	18.17	18.68	0.50	Negligible	96	43.42	52.59	9.16	Negligible
97	13.02	13.10	0.07	Negligible	97	32.80	39.81	7.02	Negligible
98	13.54	13.62	0.08	Negligible	98	34.34	41.65	7.31	Negligible
99	13.19	13.29	0.11	Negligible	99	32.55	40.51	7.95	Negligible
100	13.71	13.81	0.11	Negligible	100	36.17	43.84	7.68	Negligible
101	24.40	26.65	2.25	Slight adverse	101	58.12	74.03	15.90	Negligible
102	23.39	23.80	0.42	Negligible	102	52.12	62.80	10.68	Negligible
103	13.14	13.73	0.59	Negligible	103	35.87	50.97	15.09	Negligible

Human Receptor	NO ₂ annual mean concentration (µg/m³)			Significance	Human Receptor	NO ₂ 99.79th percentile 1 hour mean concentration (µg/m³)			Significance
	Air quality standard: 40µg/m³)					Air quality standard: 200µg/m³ not to be exceeded more than 18 times per year			
	New EfW CHP, Michelin, traffic (DM)	Existing EfW, New EfW CHP, Michelin, traffic (DS)	Change			New EfW CHP, Michelin, traffic (DM)	Existing EfW, New EfW CHP, Michelin, traffic (DS)	Change	
104	20.88	21.51	0.63	Negligible	104	48.99	60.05	11.06	Negligible
105	12.49	12.63	0.14	Negligible	105	29.37	34.08	4.71	Negligible
106	13.87	13.98	0.11	Negligible	106	33.97	42.67	8.71	Negligible
107	27.89	28.10	0.22	Negligible	107	59.79	65.71	5.92	Negligible
108	13.63	13.70	0.07	Negligible	108	27.93	30.61	2.68	Negligible
109	12.35	12.38	0.02	Negligible	109	27.42	29.29	1.88	Negligible
110	29.51	29.65	0.14	Negligible	110	60.18	65.54	5.36	Negligible
111	17.48	17.76	0.28	Negligible	111	48.39	57.43	9.03	Negligible

Table B8: Cumulative PM₁₀ concentrations of the existing EfW facility, the new EfW CHP and associated traffic

Human Receptor	PM ₁₀ annual mean concentration (µg/m³)			Significance	Human Receptor	PM ₁₀ 98.08th percentile 24 hour mean concentration (µg/m³)			Significance
	Air quality standard: 18µg/m³					Air quality standard: 50µg/m³ not to be exceeded more than 7 times per year			
	New EfW CHP and traffic (DM)	Existing EfW, New EfW CHP, traffic (DS)	Change			New EfW CHP and traffic (DM)	Existing EfW, New EfW CHP, traffic (DS)	Change	
1	9.16	9.17	0.01	Negligible	1	28.58	28.69	0.12	Negligible
2	9.22	9.22	<0.01	Negligible	2	28.69	28.82	0.13	Negligible
3	9.22	9.22	<0.01	Negligible	3	28.66	28.78	0.12	Negligible
4	9.29	9.29	<0.01	Negligible	4	28.77	28.87	0.10	Negligible
5	9.58	9.59	0.01	Negligible	5	29.33	29.42	0.09	Negligible
6	9.74	9.75	0.01	Negligible	6	29.64	29.75	0.10	Negligible
7	9.47	9.48	0.01	Negligible	7	29.16	29.30	0.14	Negligible
8	9.47	9.48	0.01	Negligible	8	29.31	29.39	0.08	Negligible
9	9.26	9.28	0.02	Negligible	9	28.75	28.90	0.15	Negligible
10	9.60	9.62	0.03	Negligible	10	29.70	29.84	0.15	Negligible
11	9.70	9.72	0.02	Negligible	11	29.52	29.65	0.14	Negligible
12	9.39	9.41	0.02	Negligible	12	29.04	29.15	0.11	Negligible
13	9.41	9.42	0.01	Negligible	13	29.17	29.27	0.10	Negligible
14	9.60	9.61	0.01	Negligible	14	29.47	29.54	0.07	Negligible

Human Receptor	PM ₁₀ annual mean concentration (µg/m³)			Significance	Human Receptor	PM ₁₀ 98.08th percentile 24 hour mean concentration (µg/m³)			Significance
	Air quality standard: 18µg/m³					Air quality standard: 50µg/m³ not to be exceeded more than 7 times per year			
	New EfW CHP and traffic (DM)	Existing EfW, New EfW CHP, traffic (DS)	Change			New EfW CHP and traffic (DM)	Existing EfW, New EfW CHP, traffic (DS)	Change	
15	9.33	9.33	<0.01	Negligible	15	28.91	28.98	0.07	Negligible
16	9.36	9.37	<0.01	Negligible	16	28.93	29.02	0.09	Negligible
17	9.39	9.40	<0.01	Negligible	17	28.95	29.02	0.07	Negligible
18	9.35	9.35	<0.01	Negligible	18	28.85	28.92	0.08	Negligible
19	9.19	9.19	<0.01	Negligible	19	28.31	28.39	0.08	Negligible
20	9.44	9.44	<0.01	Negligible	20	29.01	29.08	0.07	Negligible
21	9.36	9.36	0.01	Negligible	21	28.83	28.92	0.08	Negligible
22	9.24	9.24	<0.01	Negligible	22	28.61	28.69	0.08	Negligible
23	9.44	9.44	<0.01	Negligible	23	28.94	29.00	0.06	Negligible
24	9.22	9.21	<0.01	Negligible	24	28.47	28.53	0.06	Negligible
25	9.68	9.70	0.02	Negligible	25	29.89	30.00	0.11	Negligible
26	9.37	9.38	0.01	Negligible	26	29.08	29.16	0.07	Negligible
27	9.24	9.24	<0.01	Negligible	27	28.53	28.58	0.05	Negligible
28	9.12	9.12	<0.01	Negligible	28	28.28	28.33	0.05	Negligible
29	9.14	9.15	<0.01	Negligible	29	28.42	28.48	0.06	Negligible
30	9.12	9.12	<0.01	Negligible	30	28.23	28.28	0.05	Negligible

Human Receptor	PM ₁₀ annual mean concentration (µg/m³)			Significance	Human Receptor	PM ₁₀ 98.08th percentile 24 hour mean concentration (µg/m³)			Significance
	Air quality standard: 18µg/m³					Air quality standard: 50µg/m³ not to be exceeded more than 7 times per year			
	New EfW CHP and traffic (DM)	Existing EfW, New EfW CHP, traffic (DS)	Change			New EfW CHP and traffic (DM)	Existing EfW, New EfW CHP, traffic (DS)	Change	
31	9.16	9.16	<0.01	Negligible	31	28.37	28.41	0.04	Negligible
32	9.23	9.23	<0.01	Negligible	32	28.56	28.62	0.06	Negligible
33	9.28	9.28	0.01	Negligible	33	28.79	28.90	0.11	Negligible
34	9.16	9.17	<0.01	Negligible	34	28.24	28.28	0.04	Negligible
35	9.19	9.20	0.01	Negligible	35	28.60	28.68	0.09	Negligible
36	9.21	9.22	0.01	Negligible	36	28.51	28.59	0.08	Negligible
37	9.21	9.21	<0.01	Negligible	37	28.59	28.70	0.11	Negligible
38	9.17	9.17	<0.01	Negligible	38	28.49	28.59	0.10	Negligible
39	9.14	9.14	<0.01	Negligible	39	28.44	28.51	0.07	Negligible
40	9.15	9.16	0.01	Negligible	40	28.50	28.58	0.08	Negligible
41	9.22	9.23	0.01	Negligible	41	28.63	28.71	0.08	Negligible
42	9.16	9.15	<0.01	Negligible	42	28.51	28.62	0.11	Negligible
43	9.19	9.20	0.01	Negligible	43	28.56	28.66	0.09	Negligible
44	9.41	9.43	0.02	Negligible	44	29.09	29.21	0.13	Negligible
45	9.23	9.23	0.01	Negligible	45	28.68	28.80	0.12	Negligible
46	9.21	9.21	<0.01	Negligible	46	28.64	28.76	0.12	Negligible

Human Receptor	PM ₁₀ annual mean concentration (µg/m³)			Significance	Human Receptor	PM ₁₀ 98.08th percentile 24 hour mean concentration (µg/m³)			Significance
	Air quality standard: 18µg/m³					Air quality standard: 50µg/m³ not to be exceeded more than 7 times per year			
	New EfW CHP and traffic (DM)	Existing EfW, New EfW CHP, traffic (DS)	Change			New EfW CHP and traffic (DM)	Existing EfW, New EfW CHP, traffic (DS)	Change	
47	9.37	9.38	<0.01	Negligible	47	28.98	29.07	0.09	Negligible
48	9.34	9.35	0.01	Negligible	48	28.95	29.05	0.10	Negligible
49	9.33	9.33	<0.01	Negligible	49	28.87	28.96	0.09	Negligible
50	9.25	9.26	0.01	Negligible	50	28.80	28.89	0.09	Negligible
51	9.15	9.15	<0.01	Negligible	51	28.43	28.50	0.07	Negligible
52	9.15	9.14	<0.01	Negligible	52	28.41	28.49	0.08	Negligible
53	9.13	9.13	<0.01	Negligible	53	28.38	28.45	0.07	Negligible
54	9.13	9.14	<0.01	Negligible	54	28.40	28.47	0.07	Negligible
55	9.13	9.13	0.01	Negligible	55	28.40	28.48	0.07	Negligible
56	9.21	9.21	<0.01	Negligible	56	28.65	28.73	0.08	Negligible
57	9.15	9.15	<0.01	Negligible	57	28.46	28.54	0.08	Negligible
58	9.14	9.14	<0.01	Negligible	58	28.43	28.52	0.09	Negligible
59	9.15	9.15	<0.01	Negligible	59	28.48	28.57	0.09	Negligible
60	9.96	9.97	0.01	Negligible	60	30.63	30.69	0.06	Negligible
61	9.48	9.49	<0.01	Negligible	61	29.37	29.43	0.06	Negligible
62	9.29	9.29	<0.01	Negligible	62	28.69	28.73	0.05	Negligible

Human Receptor	PM ₁₀ annual mean concentration (µg/m³)			Significance	Human Receptor	PM ₁₀ 98.08th percentile 24 hour mean concentration (µg/m³)			Significance
	Air quality standard: 18µg/m³					Air quality standard: 50µg/m³ not to be exceeded more than 7 times per year			
	New EfW CHP and traffic (DM)	Existing EfW, New EfW CHP, traffic (DS)	Change			New EfW CHP and traffic (DM)	Existing EfW, New EfW CHP, traffic (DS)	Change	
63	9.17	9.17	<0.01	Negligible	63	28.47	28.53	0.05	Negligible
64	9.14	9.15	0.01	Negligible	64	28.38	28.43	0.05	Negligible
65	9.15	9.16	0.01	Negligible	65	28.41	28.47	0.06	Negligible
66	9.17	9.18	<0.01	Negligible	66	28.49	28.56	0.07	Negligible
67	9.18	9.19	0.01	Negligible	67	28.45	28.52	0.07	Negligible
68	9.17	9.17	<0.01	Negligible	68	28.41	28.48	0.07	Negligible
69	9.22	9.22	<0.01	Negligible	69	28.55	28.61	0.06	Negligible
70	9.37	9.37	0.01	Negligible	70	28.94	29.03	0.08	Negligible
71	9.15	9.15	<0.01	Negligible	71	28.40	28.46	0.06	Negligible
72	9.20	9.20	<0.01	Negligible	72	28.49	28.54	0.05	Negligible
73	9.16	9.17	<0.01	Negligible	73	28.46	28.53	0.07	Negligible
74	9.16	9.17	<0.01	Negligible	74	28.47	28.53	0.06	Negligible
75	9.18	9.19	0.00	Negligible	75	28.45	28.51	0.06	Negligible
76	9.22	9.23	0.00	Negligible	76	28.61	28.66	0.06	Negligible
77	9.20	9.21	0.00	Negligible	77	28.51	28.57	0.06	Negligible
78	9.18	9.19	0.00	Negligible	78	28.46	28.53	0.07	Negligible

Human Receptor	PM ₁₀ annual mean concentration (µg/m³)			Significance	Human Receptor	PM ₁₀ 98.08th percentile 24 hour mean concentration (µg/m³)			Significance
	Air quality standard: 18µg/m³					Air quality standard: 50µg/m³ not to be exceeded more than 7 times per year			
	New EfW CHP and traffic (DM)	Existing EfW, New EfW CHP, traffic (DS)	Change			New EfW CHP and traffic (DM)	Existing EfW, New EfW CHP, traffic (DS)	Change	
79	9.18	9.19	0.01	Negligible	79	28.49	28.57	0.08	Negligible
80	9.14	9.15	0.00	Negligible	80	28.36	28.40	0.04	Negligible
81	9.34	9.35	0.01	Negligible	81	29.05	29.11	0.07	Negligible
82	9.26	9.26	0.00	Negligible	82	28.76	28.81	0.05	Negligible
83	9.23	9.23	0.00	Negligible	83	28.50	28.58	0.07	Negligible
84	9.24	9.24	0.00	Negligible	84	28.55	28.64	0.08	Negligible
85	9.21	9.21	0.00	Negligible	85	28.55	28.64	0.09	Negligible
86	9.20	9.20	0.01	Negligible	86	28.45	28.51	0.06	Negligible
87	9.14	9.15	0.00	Negligible	87	28.36	28.40	0.04	Negligible
88	9.20	9.20	0.00	Negligible	88	28.60	28.67	0.07	Negligible
89	9.21	9.21	0.00	Negligible	89	28.58	28.63	0.05	Negligible
90	9.78	9.80	0.02	Negligible	90	30.01	30.13	0.12	Negligible
91	9.13	9.14	0.00	Negligible	91	28.35	28.40	0.06	Negligible
92	9.13	9.13	0.00	Negligible	92	28.37	28.43	0.06	Negligible
93	10.19	10.20	0.00	Negligible	93	30.93	30.99	0.06	Negligible
94	9.14	9.14	0.00	Negligible	94	28.44	28.51	0.07	Negligible

Human Receptor	PM ₁₀ annual mean concentration (µg/m³)			Significance	Human Receptor	PM ₁₀ 98.08th percentile 24 hour mean concentration (µg/m³)			Significance
	Air quality standard: 18µg/m³					Air quality standard: 50µg/m³ not to be exceeded more than 7 times per year			
	New EfW CHP and traffic (DM)	Existing EfW, New EfW CHP, traffic (DS)	Change			New EfW CHP and traffic (DM)	Existing EfW, New EfW CHP, traffic (DS)	Change	
95	9.16	9.16	0.00	Negligible	95	28.46	28.52	0.06	Negligible
96	9.68	9.70	0.02	Negligible	96	29.89	30.00	0.11	Negligible
97	9.17	9.17	0.00	Negligible	97	28.47	28.53	0.05	Negligible
98	9.21	9.21	0.00	Negligible	98	28.54	28.60	0.06	Negligible
99	9.18	9.18	0.00	Negligible	99	28.44	28.50	0.06	Negligible
100	9.21	9.22	0.01	Negligible	100	28.59	28.65	0.07	Negligible
101	9.99	10.02	0.03	Negligible	101	30.26	30.41	0.15	Negligible
102	9.97	9.99	0.02	Negligible	102	30.11	30.22	0.11	Negligible
103	9.17	9.17	0.00	Negligible	103	28.57	28.70	0.13	Negligible
104	9.98	10.01	0.02	Negligible	104	30.63	30.76	0.13	Negligible
105	9.11	9.11	0.00	Negligible	105	28.21	28.25	0.04	Negligible
106	9.23	9.24	0.01	Negligible	106	28.62	28.68	0.07	Negligible
107	10.24	10.25	0.01	Negligible	107	31.02	31.08	0.06	Negligible
108	9.20	9.20	0.00	Negligible	108	28.24	28.26	0.02	Negligible
109	9.10	9.10	0.00	Negligible	109	28.10	28.11	0.01	Negligible
110	10.99	11.00	0.01	Negligible	110	32.01	32.07	0.06	Negligible

Human Receptor	PM ₁₀ annual mean concentration (µg/m³)			Significance	Human Receptor	PM ₁₀ 98.08th percentile 24 hour mean concentration (µg/m³)			Significance
	Air quality standard: 18µg/m³					Air quality standard: 50µg/m³ not to be exceeded more than 7 times per year			
	New EfW CHP and traffic (DM)	Existing EfW, New EfW CHP, traffic (DS)	Change			New EfW CHP and traffic (DM)	Existing EfW, New EfW CHP, traffic (DS)	Change	
111	9.59	9.59	0.01	Negligible	111	29.68	29.76	0.09	Negligible

Table B9: Cumulative PM_{2.5} concentrations of the existing DERL facility, the proposed EfW and associated traffic

Human Receptor	PM _{2.5} annual mean concentration (µg/m³)			Significance
	Air quality standard: 10µg/m³			
	New EfW CHP and traffic (DM)	Existing EfW, New EfW CHP, traffic (DS)	Change	
1	5.54	5.55	0.01	Negligible
2	5.57	5.57	0.01	Negligible
3	5.57	5.58	< 0.01	Negligible
4	5.61	5.62	< 0.01	Negligible
5	5.78	5.79	0.01	Negligible
6	5.88	5.89	0.01	Negligible
7	5.72	5.73	0.01	Negligible
8	5.72	5.73	< 0.01	Negligible
9	5.61	5.63	0.02	Negligible
10	5.82	5.84	0.02	Negligible
11	5.87	5.89	0.02	Negligible
12	5.69	5.70	0.02	Negligible
13	5.69	5.70	0.01	Negligible
14	5.81	5.81	< 0.01	Negligible
15	5.63	5.64	0.01	Negligible
16	5.65	5.66	0.01	Negligible
17	5.67	5.68	< 0.01	Negligible

Human Receptor	PM _{2.5} annual mean concentration (µg/m³)			Significance
	Air quality standard: 10µg/m³			
	New EfW CHP and traffic (DM)	Existing EfW, New EfW CHP, traffic (DS)	Change	
18	5.65	5.65	< 0.01	Negligible
19	5.55	5.55	< 0.01	Negligible
20	5.70	5.70	< 0.01	Negligible
21	5.66	5.66	< 0.01	Negligible
22	5.58	5.59	< 0.01	Negligible
23	5.70	5.71	0.01	Negligible
24	5.57	5.57	< 0.01	Negligible
25	5.85	5.86	0.01	Negligible
26	5.67	5.67	< 0.01	Negligible
27	5.59	5.59	< 0.01	Negligible
28	5.52	5.52	< 0.01	Negligible
29	5.53	5.53	< 0.01	Negligible
30	5.52	5.52	< 0.01	Negligible
31	5.54	5.54	< 0.01	Negligible
32	5.58	5.58	< 0.01	Negligible
33	5.61	5.62	0.01	Negligible
34	5.54	5.54	< 0.01	Negligible
35	5.56	5.56	< 0.01	Negligible

Human Receptor	PM _{2.5} annual mean concentration (µg/m³)			Significance
	Air quality standard: 10µg/m³			
	New EfW CHP and traffic (DM)	Existing EfW, New EfW CHP, traffic (DS)	Change	
36	5.57	5.58	< 0.01	Negligible
37	5.57	5.57	< 0.01	Negligible
38	5.54	5.54	0.01	Negligible
39	5.53	5.53	< 0.01	Negligible
40	5.53	5.54	0.01	Negligible
41	5.58	5.59	< 0.01	Negligible
42	5.54	5.54	< 0.01	Negligible
43	5.56	5.56	< 0.01	Negligible
44	5.69	5.71	0.02	Negligible
45	5.59	5.59	< 0.01	Negligible
46	5.57	5.57	< 0.01	Negligible
47	5.66	5.67	< 0.01	Negligible
48	5.64	5.65	0.01	Negligible
49	5.63	5.64	0.01	Negligible
50	5.59	5.60	< 0.01	Negligible
51	5.53	5.53	0.01	Negligible
52	5.53	5.53	< 0.01	Negligible
53	5.52	5.52	< 0.01	Negligible

Human Receptor	PM _{2.5} annual mean concentration (µg/m³)			Significance
	Air quality standard: 10µg/m³			
	New EfW CHP and traffic (DM)	Existing EfW, New EfW CHP, traffic (DS)	Change	
54	5.52	5.52	< 0.01	Negligible
55	5.52	5.52	0.01	Negligible
56	5.57	5.57	< 0.01	Negligible
57	5.53	5.53	< 0.01	Negligible
58	5.53	5.53	< 0.01	Negligible
59	5.53	5.54	0.01	Negligible
60	6.02	6.03	0.01	Negligible
61	5.73	5.73	< 0.01	Negligible
62	5.61	5.61	< 0.01	Negligible
63	5.54	5.54	< 0.01	Negligible
64	5.53	5.53	< 0.01	Negligible
65	5.53	5.54	< 0.01	Negligible
66	5.54	5.55	< 0.01	Negligible
67	5.55	5.55	< 0.01	Negligible
68	5.54	5.54	< 0.01	Negligible
69	5.57	5.57	< 0.01	Negligible
70	5.67	5.66	< 0.01	Negligible
71	5.53	5.53	< 0.01	Negligible

Human Receptor	PM _{2.5} annual mean concentration (µg/m³)			Significance
	Air quality standard: 10µg/m³			
	New EfW CHP and traffic (DM)	Existing EfW, New EfW CHP, traffic (DS)	Change	
72	5.56	5.56	< 0.01	Negligible
73	5.54	5.54	< 0.01	Negligible
74	5.54	5.54	< 0.01	Negligible
75	5.55	5.55	< 0.01	Negligible
76	5.57	5.58	< 0.01	Negligible
77	5.56	5.56	< 0.01	Negligible
78	5.55	5.55	< 0.01	Negligible
79	5.55	5.55	< 0.01	Negligible
80	5.52	5.53	0.01	Negligible
81	5.64	5.65	< 0.01	Negligible
82	5.59	5.60	0.01	Negligible
83	5.58	5.58	< 0.01	Negligible
84	5.59	5.58	< 0.01	Negligible
85	5.56	5.57	< 0.01	Negligible
86	5.56	5.56	0.01	Negligible
87	5.52	5.53	0.01	Negligible
88	5.56	5.56	< 0.01	Negligible
89	5.56	5.57	0.01	Negligible

Human Receptor	PM _{2.5} annual mean concentration (µg/m³)			Significance
	Air quality standard: 10µg/m³			
	New EfW CHP and traffic (DM)	Existing EfW, New EfW CHP, traffic (DS)	Change	
90	5.91	5.94	0.02	Negligible
91	5.52	5.53	0.01	Negligible
92	5.52	5.53	0.01	Negligible
93	6.16	6.17	0.01	Negligible
94	5.53	5.53	< 0.01	Negligible
95	5.53	5.54	< 0.01	Negligible
96	5.85	5.86	0.01	Negligible
97	5.54	5.54	< 0.01	Negligible
98	5.56	5.57	0.01	Negligible
99	5.55	5.55	< 0.01	Negligible
100	5.57	5.57	< 0.01	Negligible
101	6.05	6.07	0.02	Negligible
102	6.02	6.04	0.01	Negligible
103	5.54	5.55	0.01	Negligible
104	6.02	6.04	0.02	Negligible
105	5.50	5.51	0.01	Negligible
106	5.58	5.58	< 0.01	Negligible
107	6.20	6.20	< 0.01	Negligible

Human Receptor	PM _{2.5} annual mean concentration (µg/m³)			Significance
	Air quality standard: 10µg/m³			
	New EfW CHP and traffic (DM)	Existing EfW, New EfW CHP, traffic (DS)	Change	
108	5.56	5.56	< 0.01	Negligible
109	5.50	5.50	< 0.01	Negligible
110	6.60	6.60	< 0.01	Negligible
111	5.79	5.79	0.01	Negligible

Appendix C

Model Results at Ecological Receptors

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C1.1 Annual mean NO_x concentrations

Table C1: Predicted annual mean NO_x concentrations at sensitive ecological sites, and comparison with the critical level

Ecological receptor ID	Receptor location	EfW CHP Facility (under construction)				EfW CHP Facility (under construction)+ Existing EfW Facility			
		Mod NO _x (PC) (µg/m ³)	1% of EAL test	Tot NO _x (PEC) (µg/m ³)	70% of EAL test	Mod NO _x (PC) (µg/m ³)	1% of EAL test	Tot NO _x (PEC) (µg/m ³)	70% of EAL test
1	Firth of Tay and Eden Estuary	0.007	0.02%	16.0	53.39%	0.023	0.08%	16.0	53.4%
2	Firth of Tay and Eden Estuary	0.007	0.02%	16.0	53.40%	0.026	0.09%	16.0	53.5%
3	Inner Tay Estuary	0.007	0.02%	16.0	53.40%	0.026	0.09%	16.0	53.5%
4	Firth of Tay and Eden Estuary	0.008	0.03%	16.0	53.40%	0.029	0.10%	16.0	53.5%
5	Firth of Tay and Eden Estuary	0.004	0.01%	16.0	53.39%	0.014	0.05%	16.0	53.4%
6	Firth of Tay and Eden Estuary	0.009	0.03%	16.0	53.40%	0.033	0.11%	16.0	53.5%
7	Inner Tay Estuary	0.009	0.03%	16.0	53.40%	0.033	0.11%	16.0	53.5%
8	Firth of Tay and Eden Estuary	0.007	0.02%	16.0	53.39%	0.023	0.08%	16.0	53.4%
9	Firth of Tay and Eden Estuary	0.011	0.04%	16.0	53.41%	0.039	0.13%	16.1	53.5%
10	Firth of Tay and Eden Estuary	0.005	0.02%	16.0	53.39%	0.017	0.06%	16.0	53.4%
11	Firth of Tay and Eden Estuary	0.012	0.04%	16.0	53.41%	0.044	0.15%	16.1	53.5%
12	Firth of Tay and Eden Estuary	0.009	0.03%	16.0	53.40%	0.032	0.11%	16.0	53.5%
13	Firth of Tay and Eden Estuary	0.006	0.02%	16.0	53.39%	0.022	0.07%	16.0	53.4%
14	Gallowhill/Cawmill Woods	0.024	0.08%	16.0	53.45%	0.082	0.27%	16.1	53.6%
15	Firth of Tay and Eden Estuary	0.014	0.05%	16.0	53.42%	0.048	0.16%	16.1	53.5%
16	Firth of Tay and Eden Estuary	0.007	0.02%	16.0	53.39%	0.024	0.08%	16.0	53.5%
17	Ancient Woodland	0.019	0.06%	16.0	53.43%	0.068	0.23%	16.1	53.6%
18	Baldrogon Wood	0.034	0.11%	16.0	53.48%	0.119	0.40%	16.1	53.8%
19	Wynton Wood	0.030	0.10%	16.0	53.47%	0.098	0.33%	16.1	53.7%
20	Heathland	0.013	0.04%	16.0	53.41%	0.039	0.13%	16.1	53.5%

21	Firth of Tay and Eden Estuary	0.015	0.05%	16.0	53.42%	0.053	0.18%	16.1	53.5%
22	Firth of Tay and Eden Estuary	0.011	0.04%	16.0	53.41%	0.042	0.14%	16.1	53.5%
23	Firth of Tay and Eden Estuary	0.008	0.03%	16.0	53.40%	0.028	0.09%	16.0	53.5%
24	Ancient Woodland	0.044	0.15%	16.1	53.52%	0.158	0.53%	16.2	53.9%
25	Ancient Woodland	0.055	0.18%	16.1	53.56%	0.201	0.67%	16.2	54.0%
26	Balmerino - Wormit Shore	0.008	0.03%	16.0	53.40%	0.028	0.09%	16.0	53.5%
27	Trottick Mill Ponds	0.062	0.21%	16.1	53.58%	0.224	0.75%	16.2	54.1%
28	Firth of Tay and Eden Estuary	0.015	0.05%	16.0	53.42%	0.057	0.19%	16.1	53.6%
29	East/West Links Wood	0.009	0.03%	16.0	53.40%	0.035	0.12%	16.0	53.5%
30	North Hill	0.009	0.03%	16.0	53.40%	0.033	0.11%	16.0	53.5%
31	River Tay	0.005	0.02%	16.0	53.39%	0.018	0.06%	16.0	53.4%
32	Woodland	0.063	0.21%	16.1	53.58%	0.226	0.75%	16.2	54.1%
33	Heathland	0.014	0.05%	16.0	53.42%	0.050	0.17%	16.1	53.5%
34	Waterbody	0.042	0.14%	16.1	53.51%	0.156	0.52%	16.2	53.9%
35	Balmuir Wood	0.029	0.10%	16.0	53.47%	0.107	0.36%	16.1	53.7%
36	River Tay	0.006	0.02%	16.0	53.39%	0.019	0.06%	16.0	53.4%
37	Dighty Water	0.087	0.29%	16.1	53.66%	0.315	1.05%	16.3	54.4%
38	Knockhill Wood	0.010	0.03%	16.0	53.40%	0.041	0.14%	16.1	53.5%
39	Ancient Woodland	0.056	0.19%	16.1	53.56%	0.220	0.73%	16.2	54.1%
40	Dighty Water	0.105	0.35%	16.1	53.72%	0.372	1.24%	16.4	54.6%
41	Waterbody	0.068	0.23%	16.1	53.60%	0.279	0.93%	16.3	54.3%
42	Whitehouse Den	0.013	0.04%	16.0	53.42%	0.052	0.17%	16.1	53.5%
43	Firth of Tay and Eden Estuary	0.018	0.06%	16.0	53.43%	0.074	0.25%	16.1	53.6%
44	River Tay	0.006	0.02%	16.0	53.39%	0.021	0.07%	16.0	53.4%
45	Dighty Water	0.100	0.33%	16.1	53.71%	0.342	1.14%	16.4	54.5%
46	Waterbody	0.101	0.34%	16.1	53.71%	0.433	1.44%	16.4	54.8%
47	Morendy Wood	0.011	0.04%	16.0	53.41%	0.043	0.14%	16.1	53.5%

48	Corbie Den	0.011	0.04%	16.0	53.41%	0.041	0.14%	16.1	53.5%
49	Sheihill Wood	0.028	0.09%	16.0	53.47%	0.113	0.38%	16.1	53.7%
50	Laverock Law	0.012	0.04%	16.0	53.41%	0.052	0.17%	16.1	53.5%
51	Woodland	0.045	0.15%	16.1	53.52%	0.182	0.61%	16.2	54.0%
52	Dighty Water	0.104	0.35%	16.1	53.72%	0.353	1.18%	16.4	54.5%
53	Ancient Woodland	0.011	0.04%	16.0	53.41%	0.041	0.14%	16.1	53.5%
54	Roseberry Wood	0.013	0.04%	16.0	53.41%	0.053	0.18%	16.1	53.5%
55	Heathland	0.013	0.04%	16.0	53.42%	0.050	0.17%	16.1	53.5%
56	Craig Law	0.014	0.05%	16.0	53.42%	0.058	0.19%	16.1	53.6%
57	Fithie Burn	0.058	0.19%	16.1	53.57%	0.245	0.82%	16.3	54.2%
58	Woodland	0.055	0.18%	16.1	53.55%	0.231	0.77%	16.2	54.1%
59	River Tay	0.007	0.02%	16.0	53.39%	0.023	0.08%	16.0	53.4%
60	Dighty Water	0.159	0.53%	16.2	53.90%	0.569	1.90%	16.6	55.3%
61	Woodland	0.114	0.38%	16.1	53.75%	0.520	1.73%	16.5	55.1%
62	Woodland	0.056	0.19%	16.1	53.56%	0.238	0.79%	16.2	54.2%
63	Fithie Burn	0.054	0.18%	16.1	53.55%	0.227	0.76%	16.2	54.1%
64	Woodland	0.050	0.17%	16.1	53.54%	0.208	0.69%	16.2	54.1%
65	Corbie Den	0.011	0.04%	16.0	53.41%	0.038	0.13%	16.0	53.5%
66	Woodland	0.071	0.24%	16.1	53.61%	0.309	1.03%	16.3	54.4%
67	Corbie Den	0.010	0.03%	16.0	53.40%	0.034	0.11%	16.0	53.5%
68	Picklettille Marsh	0.013	0.04%	16.0	53.41%	0.050	0.17%	16.1	53.5%
69	Woodland	0.052	0.17%	16.1	53.55%	0.218	0.73%	16.2	54.1%
70	Dighty Water	0.043	0.14%	16.1	53.51%	0.183	0.61%	16.2	54.0%
71	Fithie Burn	0.052	0.17%	16.1	53.55%	0.215	0.72%	16.2	54.1%
72	Firth of Tay and Eden Estuary	0.028	0.09%	16.0	53.47%	0.116	0.39%	16.1	53.8%
73	Woodland	0.045	0.15%	16.1	53.52%	0.186	0.62%	16.2	54.0%
74	East Muirhouse Strip	0.032	0.11%	16.0	53.48%	0.127	0.42%	16.1	53.8%

75	Brighty Wood	0.021	0.07%	16.0	53.44%	0.078	0.26%	16.1	53.6%
76	Woodland	0.080	0.27%	16.1	53.64%	0.361	1.20%	16.4	54.6%
77	Firth of Tay and Eden Estuary	0.017	0.06%	16.0	53.43%	0.069	0.23%	16.1	53.6%
78	Gallowfauld Burn	0.009	0.03%	16.0	53.40%	0.031	0.10%	16.0	53.5%
79	Woodland	0.059	0.20%	16.1	53.57%	0.240	0.80%	16.3	54.2%
80	Waterbody	0.071	0.24%	16.1	53.61%	0.302	1.01%	16.3	54.4%
81	Fithie Burn	0.058	0.19%	16.1	53.56%	0.234	0.78%	16.2	54.2%
82	Duntrune/Glack Hills	0.046	0.15%	16.1	53.53%	0.187	0.62%	16.2	54.0%
83	Dighty Water	0.021	0.07%	16.0	53.44%	0.174	0.58%	16.2	53.9%
84	River Tay	0.008	0.03%	16.0	53.40%	0.026	0.09%	16.0	53.5%
85	Woodland	0.015	0.05%	16.0	53.42%	0.070	0.23%	16.1	53.6%
86	Ancient Woodland	0.009	0.03%	16.0	53.40%	0.031	0.10%	16.0	53.5%
87	St Michael's Wood Marshes	0.012	0.04%	16.0	53.41%	0.046	0.15%	16.1	53.5%
88	St Michael's Wood	0.012	0.04%	16.0	53.41%	0.046	0.15%	16.1	53.5%
89	Fithie Burn	0.171	0.57%	16.2	53.94%	1.061	3.54%	17.1	56.9%
90	Gagie Marsh	0.024	0.08%	16.0	53.45%	0.089	0.30%	16.1	53.7%
91	Waterbody	0.091	0.30%	16.1	53.68%	0.437	1.46%	16.4	54.8%
92	Fithie Burn	0.581	1.94%	16.6	55.31%	5.303	17.68%	21.3	71.0%
93	Heathland	0.013	0.04%	16.0	53.42%	0.047	0.16%	16.1	53.5%
94	Woodland	0.072	0.24%	16.1	53.61%	0.312	1.04%	16.3	54.4%
95	Woodland	0.072	0.24%	16.1	53.61%	0.312	1.04%	16.3	54.4%
96	Fithie Burn	0.108	0.36%	16.1	53.73%	0.536	1.79%	16.5	55.2%
97	Fithie Burn	0.071	0.24%	16.1	53.61%	0.307	1.02%	16.3	54.4%
98	Kirkton Wood	0.014	0.05%	16.0	53.42%	0.056	0.19%	16.1	53.6%
99	Big Latch	0.017	0.06%	16.0	53.43%	0.062	0.21%	16.1	53.6%
100	Fithie Burn	0.000	0.00%	16.0	53.37%	0.000	0.00%	16.0	53.4%
101	Woodland	0.254	0.85%	16.3	54.22%	1.325	4.42%	17.3	57.8%

102	Eden Estuary	0.008	0.03%	16.0	53.40%	0.031	0.10%	16.0	53.5%
103	Firth of Tay and Eden Estuary	0.016	0.05%	16.0	53.42%	0.071	0.24%	16.1	53.6%
104	Tayport - Tentsmuir Coast	0.016	0.05%	16.0	53.42%	0.071	0.24%	16.1	53.6%
105	Woodland	0.124	0.41%	16.1	53.78%	0.573	1.91%	16.6	55.3%
106	Dighty Water	0.155	0.52%	16.2	53.89%	0.650	2.17%	16.7	55.5%
107	Woodland	0.302	1.01%	16.3	54.38%	1.515	5.05%	17.5	58.4%
108	Murroes Burn	0.355	1.18%	16.4	54.56%	1.821	6.07%	17.8	59.4%
109	Waterbody	0.404	1.35%	16.4	54.72%	2.108	7.03%	18.1	60.4%
110	Murroes Burn	0.200	0.67%	16.2	54.04%	0.909	3.03%	16.9	56.4%
111	Woodland	0.748	2.49%	16.8	55.86%	4.089	13.63%	20.1	67.0%
112	Murroes Burn	0.753	2.51%	16.8	55.88%	4.032	13.44%	20.0	66.8%
113	Woodland	0.787	2.62%	16.8	55.99%	3.057	10.19%	19.1	63.6%
114	Murroes Burn	0.714	2.38%	16.7	55.75%	2.689	8.96%	18.7	62.3%
115	Kellas Wood	0.030	0.10%	16.0	53.47%	0.113	0.38%	16.1	53.7%
116	Dighty Water	0.318	1.06%	16.3	54.43%	1.170	3.90%	17.2	57.3%
117	Little Latch	0.017	0.06%	16.0	53.43%	0.060	0.20%	16.1	53.6%
118	Waterbody	0.256	0.85%	16.3	54.22%	1.155	3.85%	17.2	57.2%
119	Murroes Burn	0.237	0.79%	16.2	54.16%	1.055	3.52%	17.1	56.9%
120	River Tay	0.008	0.03%	16.0	53.40%	0.027	0.09%	16.0	53.5%
121	Woodland	0.165	0.55%	16.2	53.92%	0.698	2.33%	16.7	55.7%
122	Murroes Burn	0.169	0.56%	16.2	53.94%	0.717	2.39%	16.7	55.8%
123	Murroes Burn	0.097	0.32%	16.1	53.69%	0.393	1.31%	16.4	54.7%
124	Tentsmuir	0.012	0.04%	16.0	53.41%	0.053	0.18%	16.1	53.5%
125	Dighty Water	0.350	1.17%	16.4	54.54%	1.268	4.23%	17.3	57.6%
126	Morton Lochs	0.012	0.04%	16.0	53.41%	0.053	0.18%	16.1	53.5%
127	Woodland	0.280	0.93%	16.3	54.31%	1.032	3.44%	17.0	56.8%
128	Rhynd Wood	0.011	0.04%	16.0	53.41%	0.043	0.14%	16.1	53.5%

129	West Wood	0.016	0.05%	16.0	53.42%	0.058	0.19%	16.1	53.6%
130	Tentsmuir	0.012	0.04%	16.0	53.41%	0.050	0.17%	16.1	53.5%
131	Morton Lochs	0.012	0.04%	16.0	53.41%	0.049	0.16%	16.1	53.5%
132	West Wood	0.017	0.06%	16.0	53.43%	0.061	0.20%	16.1	53.6%
133	Buckler Heads Wood	0.035	0.12%	16.0	53.49%	0.136	0.45%	16.1	53.8%
134	Firth of Tay and Eden Estuary	0.019	0.06%	16.0	53.43%	0.084	0.28%	16.1	53.7%
135	Monifeth Bay	0.019	0.06%	16.0	53.43%	0.084	0.28%	16.1	53.7%
136	Dighty Water	0.349	1.16%	16.4	54.54%	1.306	4.35%	17.3	57.7%
137	Woodside Wood	0.048	0.16%	16.1	53.53%	0.188	0.63%	16.2	54.0%
138	Morton Links	0.011	0.04%	16.0	53.41%	0.046	0.15%	16.1	53.5%
139	Carrot Hill Meadow	0.010	0.03%	16.0	53.41%	0.036	0.12%	16.0	53.5%
140	Firth of Tay and Eden Estuary	0.012	0.04%	16.0	53.41%	0.053	0.18%	16.1	53.5%
141	Firth of Tay and Eden Estuary	0.031	0.10%	16.0	53.47%	0.145	0.48%	16.2	53.9%
142	Woodland	0.050	0.17%	16.1	53.54%	0.233	0.78%	16.2	54.1%
143	Tentsmuir	0.011	0.04%	16.0	53.41%	0.046	0.15%	16.1	53.5%
144	Woodland	0.093	0.31%	16.1	53.68%	0.364	1.21%	16.4	54.6%
145	Broughty Ferry	0.039	0.13%	16.1	53.50%	0.183	0.61%	16.2	54.0%
146	Eden Estuary	0.008	0.03%	16.0	53.40%	0.030	0.10%	16.0	53.5%
147	Woodland	0.314	1.05%	16.3	54.42%	1.232	4.11%	17.2	57.5%
148	Ancient Woodland	0.169	0.56%	16.2	53.93%	0.664	2.21%	16.7	55.6%
149	Broughty Ferry	0.050	0.17%	16.1	53.54%	0.229	0.76%	16.2	54.1%
150	Tentsmuir	0.009	0.03%	16.0	53.40%	0.041	0.14%	16.1	53.5%
151	Firth of Tay and Eden Estuary	0.041	0.14%	16.1	53.51%	0.185	0.62%	16.2	54.0%
152	Monifeth Bay	0.041	0.14%	16.1	53.51%	0.185	0.62%	16.2	54.0%
153	Tentsmuir	0.010	0.03%	16.0	53.40%	0.042	0.14%	16.1	53.5%
154	Tentsmuir	0.011	0.04%	16.0	53.41%	0.048	0.16%	16.1	53.5%
155	Gallow Hill	0.234	0.78%	16.2	54.15%	0.896	2.99%	16.9	56.4%

156	Tentsmuir	0.008	0.03%	16.0	53.40%	0.035	0.12%	16.0	53.5%
157	Firth of Tay and Eden Estuary	0.014	0.05%	16.0	53.42%	0.058	0.19%	16.1	53.6%
158	Firth of Tay and Eden Estuary	0.025	0.08%	16.0	53.46%	0.109	0.36%	16.1	53.7%
159	Firth of Tay and Eden Estuary	0.006	0.02%	16.0	53.39%	0.026	0.09%	16.0	53.5%
160	Firth of Tay and Eden Estuary	0.073	0.24%	16.1	53.61%	0.301	1.00%	16.3	54.4%
161	Monifeth Bay	0.073	0.24%	16.1	53.61%	0.301	1.00%	16.3	54.4%
162	Firth of Tay and Eden Estuary	0.007	0.02%	16.0	53.39%	0.027	0.09%	16.0	53.5%
163	Eden Estuary	0.007	0.02%	16.0	53.39%	0.027	0.09%	16.0	53.5%
164	Firth of Tay and Eden Estuary	0.096	0.32%	16.1	53.69%	0.391	1.30%	16.4	54.7%
165	Laws Hill	0.198	0.66%	16.2	54.03%	0.740	2.47%	16.8	55.8%
166	Tentsmuir	0.016	0.05%	16.0	53.42%	0.067	0.22%	16.1	53.6%
167	Firth of Tay and Eden Estuary	0.007	0.02%	16.0	53.39%	0.028	0.09%	16.0	53.5%
168	Eden Estuary	0.007	0.02%	16.0	53.39%	0.028	0.09%	16.0	53.5%
169	Denfind Plantation	0.030	0.10%	16.0	53.47%	0.107	0.36%	16.1	53.7%
170	Firth of Tay and Eden Estuary	0.007	0.02%	16.0	53.39%	0.027	0.09%	16.0	53.5%
171	Eden Estuary	0.007	0.02%	16.0	53.39%	0.027	0.09%	16.0	53.5%
172	Firth of Tay and Eden Estuary	0.019	0.06%	16.0	53.43%	0.076	0.25%	16.1	53.6%
173	Firth of Tay and Eden Estuary	0.095	0.32%	16.1	53.69%	0.399	1.33%	16.4	54.7%
174	Eden Estuary	0.007	0.02%	16.0	53.39%	0.028	0.09%	16.0	53.5%
175	Tentsmuir	0.010	0.03%	16.0	53.40%	0.038	0.13%	16.0	53.5%
176	Firth of Tay and Eden Estuary	0.088	0.29%	16.1	53.67%	0.369	1.23%	16.4	54.6%
177	Firth of Tay and Eden Estuary	0.007	0.02%	16.0	53.39%	0.028	0.09%	16.0	53.5%
178	Firth of Tay and Eden Estuary	0.020	0.07%	16.0	53.44%	0.084	0.28%	16.1	53.7%
179	Barry Links	0.096	0.32%	16.1	53.69%	0.403	1.34%	16.4	54.7%
180	Firth of Tay and Eden Estuary	0.006	0.02%	16.0	53.39%	0.024	0.08%	16.0	53.5%
181	Firth of Tay and Eden Estuary	0.008	0.03%	16.0	53.40%	0.032	0.11%	16.0	53.5%
182	Firth of Tay and Eden Estuary	0.011	0.04%	16.0	53.41%	0.042	0.14%	16.1	53.5%

183	Firth of Tay and Eden Estuary	0.061	0.20%	16.1	53.57%	0.250	0.83%	16.3	54.2%
184	Firth of Tay and Eden Estuary	0.016	0.05%	16.0	53.42%	0.063	0.21%	16.1	53.6%
185	Ancient Woodland	0.136	0.45%	16.1	53.82%	0.502	1.67%	16.5	55.0%
186	Firth of Tay and Eden Estuary	0.074	0.25%	16.1	53.62%	0.307	1.02%	16.3	54.4%
187	Firth of Tay and Eden Estuary	0.073	0.24%	16.1	53.62%	0.305	1.02%	16.3	54.4%
188	Weet's/Camustane/+ Woods	0.046	0.15%	16.1	53.53%	0.159	0.53%	16.2	53.9%
189	Firth of Tay and Eden Estuary	0.017	0.06%	16.0	53.43%	0.068	0.23%	16.1	53.6%
190	Firth of Tay and Eden Estuary	0.045	0.15%	16.1	53.52%	0.184	0.61%	16.2	54.0%
191	Firth of Tay and Eden Estuary	0.051	0.17%	16.1	53.54%	0.209	0.70%	16.2	54.1%
192	Firth of Tay and Eden Estuary	0.051	0.17%	16.1	53.54%	0.210	0.70%	16.2	54.1%
193	Tentsmuir	0.021	0.07%	16.0	53.44%	0.085	0.28%	16.1	53.7%
194	Firth of Tay and Eden Estuary	0.015	0.05%	16.0	53.42%	0.057	0.19%	16.1	53.6%
195	Firth of Tay and Eden Estuary	0.039	0.13%	16.1	53.50%	0.157	0.52%	16.2	53.9%
196	Firth of Tay and Eden Estuary	0.039	0.13%	16.1	53.50%	0.157	0.52%	16.2	53.9%
197	Firth of Tay and Eden Estuary	0.036	0.12%	16.0	53.49%	0.142	0.47%	16.2	53.8%
198	Firth of Tay and Eden Estuary	0.034	0.11%	16.0	53.49%	0.135	0.45%	16.1	53.8%
199	Firth of Tay and Eden Estuary	0.046	0.15%	16.1	53.52%	0.180	0.60%	16.2	54.0%
200	Firth of Tay and Eden Estuary	0.060	0.20%	16.1	53.57%	0.229	0.76%	16.2	54.1%
201	Firth of Tay and Eden Estuary	0.030	0.10%	16.0	53.47%	0.115	0.38%	16.1	53.8%
202	Tentsmuir	0.019	0.06%	16.0	53.43%	0.071	0.24%	16.1	53.6%
203	Firth of Tay and Eden Estuary	0.042	0.14%	16.1	53.51%	0.193	0.64%	16.2	54.0%
204	Firth of Tay and Eden Estuary	0.065	0.22%	16.1	53.59%	0.284	0.95%	16.3	54.3%
205	Firth of Tay and Eden Estuary	0.088	0.29%	16.1	53.67%	0.359	1.20%	16.4	54.6%
206	Firth of Tay and Eden Estuary	0.055	0.18%	16.1	53.56%	0.243	0.81%	16.3	54.2%
207	Firth of Tay and Eden Estuary	0.023	0.08%	16.0	53.45%	0.107	0.36%	16.1	53.7%
208	Firth of Tay and Eden Estuary	0.033	0.11%	16.0	53.48%	0.153	0.51%	16.2	53.9%
209	Firth of Tay and Eden Estuary	0.014	0.05%	16.0	53.42%	0.066	0.22%	16.1	53.6%

210	Firth of Tay and Eden Estuary	0.013	0.04%	16.0	53.41%	0.060	0.20%	16.1	53.6%
211	Firth of Tay and Eden Estuary	0.013	0.04%	16.0	53.41%	0.058	0.19%	16.1	53.6%
212	Firth of Tay and Eden Estuary	0.013	0.04%	16.0	53.41%	0.056	0.19%	16.1	53.6%
213	Firth of Tay and Eden Estuary	0.014	0.05%	16.0	53.42%	0.061	0.20%	16.1	53.6%
214	Firth of Tay and Eden Estuary	0.013	0.04%	16.0	53.41%	0.059	0.20%	16.1	53.6%
215	Firth of Tay and Eden Estuary	0.012	0.04%	16.0	53.41%	0.051	0.17%	16.1	53.5%
216	Firth of Tay and Eden Estuary	0.012	0.04%	16.0	53.41%	0.053	0.18%	16.1	53.5%

C1.2 Daily mean NO_x concentrations

Table C2: Predicted daily mean NO_x concentrations at sensitive ecological sites, and comparison with the critical level

Ecological Receptor ID	Receptor Location	EfW CHP Facility (under construction)				EfW CHP Facility (under construction)+ Existing EfW Facility			
		Mod NO _x (PC) (µg/m ³)	1% of EAL test	Tot NO _x (PEC) (µg/m ³)	70% of EAL test	Mod NO _x (PC) (µg/m ³)	1% of EAL test	Tot NO _x (PEC) (µg/m ³)	70% of EAL test
1	Firth of Tay and Eden Estuary	0.12	0.16%	32.1	42.9%	0.41	0.54%	32.4	43.2%
2	Firth of Tay and Eden Estuary	0.13	0.18%	32.2	42.9%	0.45	0.60%	32.5	43.3%
3	Inner Tay Estuary	0.13	0.18%	32.2	42.9%	0.45	0.60%	32.5	43.3%
4	Firth of Tay and Eden Estuary	0.14	0.18%	32.2	42.9%	0.48	0.64%	32.5	43.3%
5	Firth of Tay and Eden Estuary	0.10	0.13%	32.1	42.8%	0.32	0.43%	32.3	43.1%
6	Firth of Tay and Eden Estuary	0.14	0.19%	32.2	42.9%	0.51	0.68%	32.5	43.4%
7	Inner Tay Estuary	0.14	0.19%	32.2	42.9%	0.51	0.68%	32.5	43.4%
8	Firth of Tay and Eden Estuary	0.14	0.18%	32.2	42.9%	0.48	0.64%	32.5	43.3%
9	Firth of Tay and Eden Estuary	0.19	0.25%	32.2	42.9%	0.69	0.92%	32.7	43.6%
10	Firth of Tay and Eden Estuary	0.12	0.16%	32.1	42.9%	0.40	0.54%	32.4	43.2%
11	Firth of Tay and Eden Estuary	0.20	0.27%	32.2	43.0%	0.75	1.01%	32.8	43.7%
12	Firth of Tay and Eden Estuary	0.18	0.25%	32.2	42.9%	0.67	0.89%	32.7	43.6%
13	Firth of Tay and Eden Estuary	0.15	0.20%	32.2	42.9%	0.53	0.70%	32.5	43.4%
14	Gallowhill/Cawmill Woods	0.36	0.48%	32.4	43.2%	1.22	1.63%	33.2	44.3%
15	Firth of Tay and Eden Estuary	0.24	0.32%	32.3	43.0%	0.81	1.08%	32.8	43.8%
16	Firth of Tay and Eden Estuary	0.16	0.21%	32.2	42.9%	0.54	0.72%	32.6	43.4%
17	Ancient Woodland	0.45	0.60%	32.5	43.3%	1.87	2.49%	33.9	45.2%
18	Baldrogon Wood	0.34	0.45%	32.4	43.1%	1.36	1.82%	33.4	44.5%
19	Wynton Wood	0.39	0.51%	32.4	43.2%	1.08	1.44%	33.1	44.1%
20	Heathland	0.22	0.29%	32.2	43.0%	0.61	0.81%	32.6	43.5%
21	Firth of Tay and Eden Estuary	0.31	0.41%	32.3	43.1%	1.03	1.38%	33.1	44.1%

22	Firth of Tay and Eden Estuary	0.26	0.34%	32.3	43.0%	0.93	1.25%	33.0	43.9%
23	Firth of Tay and Eden Estuary	0.17	0.22%	32.2	42.9%	0.57	0.76%	32.6	43.5%
24	Ancient Woodland	0.47	0.63%	32.5	43.3%	1.72	2.29%	33.7	45.0%
25	Ancient Woodland	0.57	0.76%	32.6	43.5%	2.07	2.75%	34.1	45.5%
26	Balmerino - Wormit Shore	0.14	0.19%	32.2	42.9%	0.50	0.67%	32.5	43.4%
27	Trottick Mill Ponds	0.68	0.90%	32.7	43.6%	2.69	3.59%	34.7	46.3%
28	Firth of Tay and Eden Estuary	0.40	0.54%	32.4	43.2%	1.46	1.94%	33.5	44.6%
29	East/West Links Wood	0.16	0.21%	32.2	42.9%	0.68	0.90%	32.7	43.6%
30	North Hill	0.18	0.24%	32.2	42.9%	0.74	0.98%	32.8	43.7%
31	River Tay	0.09	0.12%	32.1	42.8%	0.30	0.40%	32.3	43.1%
32	Woodland	0.93	1.24%	33.0	43.9%	3.29	4.39%	35.3	47.1%
33	Heathland	0.27	0.36%	32.3	43.1%	0.98	1.30%	33.0	44.0%
34	Waterbody	0.57	0.76%	32.6	43.5%	2.79	3.72%	34.8	46.4%
35	Balmuir Wood	0.46	0.62%	32.5	43.3%	1.71	2.29%	33.7	45.0%
36	River Tay	0.09	0.13%	32.1	42.8%	0.33	0.44%	32.3	43.1%
37	Dighty Water	1.24	1.65%	33.3	44.4%	4.51	6.01%	36.5	48.7%
38	Knockhill Wood	0.20	0.27%	32.2	43.0%	0.89	1.18%	32.9	43.9%
39	Ancient Woodland	0.85	1.14%	32.9	43.8%	3.65	4.87%	35.7	47.6%
40	Dighty Water	1.40	1.86%	33.4	44.6%	5.38	7.18%	37.4	49.9%
41	Waterbody	1.05	1.40%	33.1	44.1%	4.45	5.93%	36.5	48.6%
42	Whitehouse Den	0.20	0.26%	32.2	43.0%	0.79	1.05%	32.8	43.7%
43	Firth of Tay and Eden Estuary	0.50	0.67%	32.5	43.4%	1.75	2.33%	33.8	45.0%
44	River Tay	0.09	0.12%	32.1	42.8%	0.34	0.45%	32.4	43.1%
45	Dighty Water	1.55	2.06%	33.6	44.8%	5.28	7.04%	37.3	49.7%
46	Waterbody	1.08	1.45%	33.1	44.1%	4.58	6.10%	36.6	48.8%
47	Morendy Wood	0.24	0.32%	32.3	43.0%	0.97	1.29%	33.0	44.0%
48	Corbie Den	0.17	0.23%	32.2	42.9%	0.69	0.92%	32.7	43.6%

49	Sheihill Wood	0.47	0.62%	32.5	43.3%	2.11	2.81%	34.1	45.5%
50	Laverock Law	0.26	0.34%	32.3	43.0%	1.09	1.45%	33.1	44.2%
51	Woodland	0.81	1.07%	32.8	43.8%	3.49	4.65%	35.5	47.4%
52	Dighty Water	1.62	2.16%	33.6	44.9%	6.03	8.04%	38.1	50.7%
53	Ancient Woodland	0.16	0.21%	32.2	42.9%	0.66	0.88%	32.7	43.6%
54	Roseberry Wood	0.27	0.37%	32.3	43.1%	1.19	1.58%	33.2	44.3%
55	Heathland	0.17	0.23%	32.2	42.9%	0.77	1.02%	32.8	43.7%
56	Craig Law	0.34	0.45%	32.4	43.1%	1.17	1.56%	33.2	44.3%
57	Fithie Burn	1.14	1.52%	33.2	44.2%	4.46	5.95%	36.5	48.6%
58	Woodland	1.06	1.41%	33.1	44.1%	4.17	5.56%	36.2	48.3%
59	River Tay	0.10	0.14%	32.1	42.8%	0.39	0.52%	32.4	43.2%
60	Dighty Water	2.66	3.55%	34.7	46.2%	9.80	13.07%	41.8	55.8%
61	Woodland	1.70	2.27%	33.7	45.0%	7.46	9.95%	39.5	52.6%
62	Woodland	1.01	1.35%	33.0	44.0%	3.88	5.18%	35.9	47.9%
63	Fithie Burn	0.91	1.21%	32.9	43.9%	3.50	4.67%	35.5	47.4%
64	Woodland	0.76	1.02%	32.8	43.7%	2.92	3.90%	34.9	46.6%
65	Corbie Den	0.18	0.24%	32.2	42.9%	0.67	0.89%	32.7	43.6%
66	Woodland	1.37	1.82%	33.4	44.5%	5.64	7.52%	37.7	50.2%
67	Corbie Den	0.15	0.20%	32.2	42.9%	0.59	0.78%	32.6	43.5%
68	Pickletillem Marsh	0.19	0.25%	32.2	43.0%	0.87	1.16%	32.9	43.9%
69	Woodland	0.69	0.92%	32.7	43.6%	2.78	3.70%	34.8	46.4%
70	Dighty Water	1.55	2.06%	33.6	44.8%	5.47	7.30%	37.5	50.0%
71	Fithie Burn	0.62	0.83%	32.6	43.5%	2.45	3.26%	34.5	46.0%
72	Firth of Tay and Eden Estuary	0.89	1.19%	32.9	43.9%	3.16	4.22%	35.2	46.9%
73	Woodland	0.56	0.74%	32.6	43.4%	2.86	3.82%	34.9	46.5%
74	East Muirhouse Strip	0.52	0.69%	32.5	43.4%	2.39	3.18%	34.4	45.9%
75	Brighty Wood	0.37	0.50%	32.4	43.2%	1.52	2.03%	33.5	44.7%

76	Woodland	0.93	1.24%	33.0	43.9%	4.17	5.56%	36.2	48.3%
77	Firth of Tay and Eden Estuary	0.41	0.55%	32.4	43.2%	1.47	1.96%	33.5	44.7%
78	Gallowfauld Burn	0.14	0.19%	32.2	42.9%	0.55	0.74%	32.6	43.4%
79	Woodland	0.75	1.00%	32.8	43.7%	2.90	3.87%	34.9	46.6%
80	Waterbody	0.90	1.19%	32.9	43.9%	3.77	5.03%	35.8	47.7%
81	Fithie Burn	0.70	0.94%	32.7	43.6%	2.76	3.68%	34.8	46.4%
82	Duntrune/Glack Hills	0.66	0.87%	32.7	43.6%	3.23	4.30%	35.2	47.0%
83	Dighty Water	1.79	2.38%	33.8	45.1%	7.55	10.06%	39.6	52.8%
84	River Tay	0.11	0.15%	32.1	42.9%	0.44	0.59%	32.5	43.3%
85	Woodland	0.32	0.43%	32.3	43.1%	1.24	1.65%	33.3	44.3%
86	Ancient Woodland	0.14	0.19%	32.2	42.9%	0.54	0.72%	32.6	43.4%
87	St Michael's Wood Marshes	0.21	0.29%	32.2	43.0%	0.92	1.23%	32.9	43.9%
88	St Michael's Wood	0.21	0.29%	32.2	43.0%	0.92	1.23%	32.9	43.9%
89	Fithie Burn	1.98	2.64%	34.0	45.3%	10.07	13.43%	42.1	56.1%
90	Gagie Marsh	0.38	0.51%	32.4	43.2%	1.55	2.06%	33.6	44.8%
91	Waterbody	1.19	1.59%	33.2	44.3%	5.63	7.51%	37.7	50.2%
92	Fithie Burn	3.70	4.94%	35.7	47.6%	25.79	34.38%	57.8	77.1%
93	Heathland	0.21	0.28%	32.2	43.0%	0.79	1.06%	32.8	43.8%
94	Woodland	0.91	1.21%	32.9	43.9%	3.94	5.25%	36.0	48.0%
95	Woodland	0.91	1.21%	32.9	43.9%	3.94	5.25%	36.0	48.0%
96	Fithie Burn	1.39	1.86%	33.4	44.6%	6.58	8.77%	38.6	51.5%
97	Fithie Burn	0.89	1.19%	32.9	43.9%	3.85	5.13%	35.9	47.8%
98	Kirkton Wood	0.22	0.30%	32.2	43.0%	1.00	1.33%	33.0	44.0%
99	Big Latch	0.26	0.35%	32.3	43.0%	1.02	1.36%	33.0	44.1%
100	Fithie Burn	0.00	0.00%	32.0	42.7%	0.00	0.00%	32.0	42.7%
101	Woodland	2.31	3.07%	34.3	45.8%	11.97	15.96%	44.0	58.7%
102	Eden Estuary	0.15	0.20%	32.2	42.9%	0.62	0.82%	32.6	43.5%

103	Firth of Tay and Eden Estuary	0.37	0.50%	32.4	43.2%	1.62	2.17%	33.6	44.9%
104	Tayport - Tentsmuir Coast	0.37	0.50%	32.4	43.2%	1.62	2.17%	33.6	44.9%
105	Woodland	1.38	1.84%	33.4	44.5%	5.74	7.66%	37.8	50.4%
106	Dighty Water	2.15	2.87%	34.2	45.6%	9.05	12.07%	41.1	54.8%
107	Woodland	2.76	3.67%	34.8	46.4%	11.85	15.79%	43.9	58.5%
108	Murroes Burn	2.94	3.92%	35.0	46.6%	11.41	15.22%	43.4	57.9%
109	Waterbody	2.89	3.86%	34.9	46.6%	11.79	15.72%	43.8	58.4%
110	Murroes Burn	1.94	2.59%	34.0	45.3%	8.46	11.28%	40.5	54.0%
111	Woodland	3.68	4.91%	35.7	47.6%	15.82	21.09%	47.8	63.8%
112	Murroes Burn	3.54	4.72%	35.6	47.4%	15.25	20.33%	47.3	63.0%
113	Woodland	3.03	4.04%	35.1	46.7%	12.03	16.04%	44.0	58.7%
114	Murroes Burn	3.00	3.99%	35.0	46.7%	11.04	14.72%	43.1	57.4%
115	Kellas Wood	0.30	0.40%	32.3	43.1%	1.26	1.68%	33.3	44.4%
116	Dighty Water	2.08	2.77%	34.1	45.5%	7.79	10.39%	39.8	53.1%
117	Little Latch	0.22	0.29%	32.2	43.0%	0.85	1.13%	32.9	43.8%
118	Waterbody	1.84	2.45%	33.9	45.1%	6.48	8.64%	38.5	51.3%
119	Murroes Burn	1.76	2.35%	33.8	45.0%	6.25	8.33%	38.3	51.0%
120	River Tay	0.13	0.17%	32.1	42.9%	0.38	0.50%	32.4	43.2%
121	Woodland	1.42	1.89%	33.4	44.6%	5.20	6.93%	37.2	49.6%
122	Murroes Burn	1.32	1.76%	33.3	44.5%	4.71	6.27%	36.7	49.0%
123	Murroes Burn	0.98	1.31%	33.0	44.0%	3.81	5.08%	35.8	47.8%
124	Tentsmuir	0.22	0.29%	32.2	43.0%	0.86	1.15%	32.9	43.8%
125	Dighty Water	1.53	2.03%	33.5	44.7%	6.01	8.01%	38.0	50.7%
126	Morton Lochs	0.21	0.28%	32.2	43.0%	0.84	1.12%	32.9	43.8%
127	Woodland	1.59	2.12%	33.6	44.8%	5.52	7.35%	37.5	50.1%
128	Rhynd Wood	0.18	0.23%	32.2	42.9%	0.64	0.86%	32.7	43.6%
129	West Wood	0.22	0.30%	32.2	43.0%	0.85	1.14%	32.9	43.8%

130	Tentsmuir	0.20	0.26%	32.2	43.0%	0.77	1.02%	32.8	43.7%
131	Morton Lochs	0.19	0.26%	32.2	43.0%	0.74	0.99%	32.8	43.7%
132	West Wood	0.22	0.29%	32.2	43.0%	0.81	1.08%	32.8	43.8%
133	Buckler Heads Wood	0.31	0.41%	32.3	43.1%	1.65	2.20%	33.7	44.9%
134	Firth of Tay and Eden Estuary	0.26	0.34%	32.3	43.0%	1.19	1.58%	33.2	44.3%
135	Monifeth Bay	0.26	0.34%	32.3	43.0%	1.19	1.58%	33.2	44.3%
136	Dighty Water	1.31	1.74%	33.3	44.4%	4.60	6.13%	36.6	48.8%
137	Woodside Wood	0.46	0.62%	32.5	43.3%	2.39	3.19%	34.4	45.9%
138	Morton Links	0.18	0.24%	32.2	42.9%	0.78	1.04%	32.8	43.7%
139	Carrot Hill Meadow	0.16	0.21%	32.2	42.9%	0.56	0.75%	32.6	43.4%
140	Firth of Tay and Eden Estuary	0.19	0.26%	32.2	43.0%	0.79	1.05%	32.8	43.7%
141	Firth of Tay and Eden Estuary	0.45	0.60%	32.5	43.3%	2.00	2.67%	34.0	45.4%
142	Woodland	0.53	0.71%	32.6	43.4%	2.10	2.80%	34.1	45.5%
143	Tentsmuir	0.15	0.20%	32.2	42.9%	0.69	0.93%	32.7	43.6%
144	Woodland	0.69	0.92%	32.7	43.6%	2.53	3.37%	34.6	46.1%
145	Broughty Ferry	0.42	0.56%	32.4	43.3%	2.01	2.68%	34.0	45.4%
146	Eden Estuary	0.12	0.16%	32.1	42.9%	0.47	0.62%	32.5	43.3%
147	Woodland	1.08	1.44%	33.1	44.1%	3.93	5.24%	36.0	47.9%
148	Ancient Woodland	0.74	0.99%	32.8	43.7%	3.07	4.09%	35.1	46.8%
149	Broughty Ferry	0.47	0.63%	32.5	43.3%	2.00	2.67%	34.0	45.4%
150	Tentsmuir	0.14	0.18%	32.2	42.9%	0.62	0.82%	32.6	43.5%
151	Firth of Tay and Eden Estuary	0.39	0.53%	32.4	43.2%	1.75	2.33%	33.8	45.0%
152	Monifeth Bay	0.39	0.53%	32.4	43.2%	1.75	2.33%	33.8	45.0%
153	Tentsmuir	0.15	0.20%	32.2	42.9%	0.59	0.79%	32.6	43.5%
154	Tentsmuir	0.15	0.20%	32.2	42.9%	0.64	0.86%	32.7	43.6%
155	Gallow Hill	0.87	1.16%	32.9	43.9%	3.36	4.48%	35.4	47.2%
156	Tentsmuir	0.14	0.18%	32.2	42.9%	0.56	0.75%	32.6	43.5%

157	Firth of Tay and Eden Estuary	0.18	0.24%	32.2	42.9%	0.87	1.16%	32.9	43.9%
158	Firth of Tay and Eden Estuary	0.33	0.44%	32.4	43.1%	1.47	1.95%	33.5	44.7%
159	Firth of Tay and Eden Estuary	0.11	0.15%	32.1	42.8%	0.43	0.58%	32.5	43.3%
160	Firth of Tay and Eden Estuary	0.68	0.91%	32.7	43.6%	2.83	3.77%	34.9	46.5%
161	Monifeth Bay	0.68	0.91%	32.7	43.6%	2.83	3.77%	34.9	46.5%
162	Firth of Tay and Eden Estuary	0.12	0.16%	32.1	42.9%	0.45	0.60%	32.5	43.3%
163	Eden Estuary	0.12	0.16%	32.1	42.9%	0.45	0.60%	32.5	43.3%
164	Firth of Tay and Eden Estuary	0.64	0.85%	32.7	43.6%	2.51	3.34%	34.5	46.0%
165	Laws Hill	0.73	0.97%	32.7	43.7%	2.74	3.65%	34.8	46.4%
166	Tentsmuir	0.24	0.32%	32.3	43.0%	1.04	1.39%	33.1	44.1%
167	Firth of Tay and Eden Estuary	0.12	0.17%	32.1	42.9%	0.47	0.63%	32.5	43.3%
168	Eden Estuary	0.12	0.17%	32.1	42.9%	0.47	0.63%	32.5	43.3%
169	Denfind Plantation	0.41	0.55%	32.4	43.2%	1.51	2.02%	33.5	44.7%
170	Firth of Tay and Eden Estuary	0.11	0.14%	32.1	42.8%	0.44	0.59%	32.5	43.3%
171	Eden Estuary	0.11	0.14%	32.1	42.8%	0.44	0.59%	32.5	43.3%
172	Firth of Tay and Eden Estuary	0.27	0.36%	32.3	43.1%	1.10	1.47%	33.1	44.2%
173	Firth of Tay and Eden Estuary	0.58	0.78%	32.6	43.5%	2.39	3.18%	34.4	45.9%
174	Eden Estuary	0.11	0.15%	32.1	42.8%	0.45	0.60%	32.5	43.3%
175	Tentsmuir	0.11	0.15%	32.1	42.9%	0.57	0.76%	32.6	43.5%
176	Firth of Tay and Eden Estuary	0.54	0.71%	32.6	43.4%	2.27	3.03%	34.3	45.7%
177	Firth of Tay and Eden Estuary	0.11	0.15%	32.1	42.8%	0.44	0.58%	32.5	43.3%
178	Firth of Tay and Eden Estuary	0.27	0.36%	32.3	43.1%	1.12	1.49%	33.1	44.2%
179	Barry Links	0.59	0.79%	32.6	43.5%	2.41	3.21%	34.4	45.9%
180	Firth of Tay and Eden Estuary	0.11	0.15%	32.1	42.8%	0.41	0.55%	32.4	43.2%
181	Firth of Tay and Eden Estuary	0.11	0.14%	32.1	42.8%	0.42	0.56%	32.4	43.3%
182	Firth of Tay and Eden Estuary	0.15	0.19%	32.2	42.9%	0.69	0.92%	32.7	43.6%
183	Firth of Tay and Eden Estuary	0.52	0.69%	32.5	43.4%	1.99	2.65%	34.0	45.3%

184	Firth of Tay and Eden Estuary	0.23	0.31%	32.3	43.0%	0.95	1.26%	33.0	44.0%
185	Ancient Woodland	0.44	0.59%	32.5	43.3%	1.83	2.44%	33.8	45.1%
186	Firth of Tay and Eden Estuary	0.47	0.63%	32.5	43.3%	1.92	2.56%	33.9	45.3%
187	Firth of Tay and Eden Estuary	0.47	0.62%	32.5	43.3%	1.91	2.55%	33.9	45.2%
188	Weet's/Camustane/+ Woods	0.40	0.53%	32.4	43.2%	1.33	1.77%	33.4	44.5%
189	Firth of Tay and Eden Estuary	0.23	0.30%	32.3	43.0%	0.90	1.21%	32.9	43.9%
190	Firth of Tay and Eden Estuary	0.42	0.56%	32.4	43.3%	1.61	2.14%	33.6	44.8%
191	Firth of Tay and Eden Estuary	0.36	0.48%	32.4	43.2%	1.48	1.98%	33.5	44.7%
192	Firth of Tay and Eden Estuary	0.36	0.48%	32.4	43.2%	1.48	1.98%	33.5	44.7%
193	Tentsmuir	0.18	0.24%	32.2	42.9%	0.81	1.08%	32.8	43.8%
194	Firth of Tay and Eden Estuary	0.20	0.27%	32.2	43.0%	0.78	1.04%	32.8	43.7%
195	Firth of Tay and Eden Estuary	0.36	0.47%	32.4	43.2%	1.37	1.83%	33.4	44.5%
196	Firth of Tay and Eden Estuary	0.36	0.47%	32.4	43.2%	1.37	1.83%	33.4	44.5%
197	Firth of Tay and Eden Estuary	0.34	0.46%	32.4	43.2%	1.32	1.76%	33.3	44.5%
198	Firth of Tay and Eden Estuary	0.32	0.43%	32.3	43.1%	1.23	1.64%	33.3	44.3%
199	Firth of Tay and Eden Estuary	0.32	0.43%	32.3	43.1%	1.21	1.61%	33.2	44.3%
200	Firth of Tay and Eden Estuary	0.30	0.41%	32.3	43.1%	1.15	1.53%	33.2	44.2%
201	Firth of Tay and Eden Estuary	0.29	0.39%	32.3	43.1%	1.12	1.49%	33.1	44.2%
202	Tentsmuir	0.20	0.27%	32.2	43.0%	0.78	1.05%	32.8	43.7%
203	Firth of Tay and Eden Estuary	0.42	0.56%	32.4	43.3%	1.86	2.48%	33.9	45.2%
204	Firth of Tay and Eden Estuary	0.60	0.81%	32.6	43.5%	2.73	3.64%	34.8	46.3%
205	Firth of Tay and Eden Estuary	0.72	0.96%	32.7	43.7%	2.89	3.86%	34.9	46.6%
206	Firth of Tay and Eden Estuary	0.48	0.65%	32.5	43.3%	2.26	3.02%	34.3	45.7%
207	Firth of Tay and Eden Estuary	0.35	0.46%	32.4	43.2%	1.63	2.18%	33.7	44.9%
208	Firth of Tay and Eden Estuary	0.43	0.57%	32.5	43.3%	1.95	2.60%	34.0	45.3%
209	Firth of Tay and Eden Estuary	0.35	0.46%	32.4	43.2%	1.24	1.66%	33.3	44.4%
210	Firth of Tay and Eden Estuary	0.25	0.33%	32.3	43.0%	1.01	1.35%	33.0	44.0%

211	Firth of Tay and Eden Estuary	0.20	0.27%	32.2	43.0%	0.86	1.14%	32.9	43.8%
212	Firth of Tay and Eden Estuary	0.20	0.26%	32.2	43.0%	0.78	1.04%	32.8	43.7%
213	Firth of Tay and Eden Estuary	0.18	0.24%	32.2	42.9%	0.88	1.17%	32.9	43.9%
214	Firth of Tay and Eden Estuary	0.26	0.34%	32.3	43.0%	1.05	1.40%	33.1	44.1%
215	Firth of Tay and Eden Estuary	0.18	0.24%	32.2	42.9%	0.72	0.96%	32.7	43.7%
216	Firth of Tay and Eden Estuary	0.20	0.26%	32.2	43.0%	0.88	1.18%	32.9	43.9%

C1.3 Annual mean SO₂ Concentrations

Table C3: Predicted annual mean SO₂ concentrations at sensitive ecological sites, and comparison with the critical level

Ecological receptor ID	Receptor location	EfW CHP Facility (under construction)				EfW CHP Facility (under construction)+ Existing EfW Facility			
		Mod SO ₂ (PC) (µg/m ³)	1% of EAL test	Tot SO ₂ (PEC) (µg/m ³)	70% of EAL test	Mod SO ₂ (PC) (µg/m ³)	1% of EAL test	Tot SO ₂ (PEC) (µg/m ³)	70% of EAL test
1	Firth of Tay and Eden Estuary	0.0016	0.016%	2.30	23.0%	0.0036	0.036%	2.30	23.0%
2	Firth of Tay and Eden Estuary	0.0019	0.019%	2.30	23.0%	0.0041	0.041%	2.30	23.0%
3	Inner Tay Estuary	0.0019	0.019%	2.30	23.0%	0.0041	0.041%	2.30	23.0%
4	Firth of Tay and Eden Estuary	0.0021	0.021%	2.30	23.0%	0.0047	0.047%	2.31	23.1%
5	Firth of Tay and Eden Estuary	0.0011	0.011%	2.30	23.0%	0.0023	0.023%	2.30	23.0%
6	Firth of Tay and Eden Estuary	0.0024	0.024%	2.30	23.0%	0.0053	0.053%	2.31	23.1%
7	Inner Tay Estuary	0.0024	0.024%	2.30	23.0%	0.0053	0.053%	2.31	23.1%
8	Firth of Tay and Eden Estuary	0.0016	0.016%	2.30	23.0%	0.0036	0.036%	2.30	23.0%
9	Firth of Tay and Eden Estuary	0.0027	0.027%	2.30	23.0%	0.0061	0.061%	2.31	23.1%
10	Firth of Tay and Eden Estuary	0.0013	0.013%	2.30	23.0%	0.0027	0.027%	2.30	23.0%
11	Firth of Tay and Eden Estuary	0.0031	0.031%	2.30	23.0%	0.0069	0.069%	2.31	23.1%
12	Firth of Tay and Eden Estuary	0.0022	0.022%	2.30	23.0%	0.0050	0.050%	2.31	23.1%
13	Firth of Tay and Eden Estuary	0.0016	0.016%	2.30	23.0%	0.0036	0.036%	2.30	23.0%
14	Gallowhill/Cawmill Woods	0.0060	0.060%	2.31	23.1%	0.0131	0.131%	2.31	23.1%
15	Firth of Tay and Eden Estuary	0.0035	0.035%	2.30	23.0%	0.0077	0.077%	2.31	23.1%
16	Firth of Tay and Eden Estuary	0.0017	0.017%	2.30	23.0%	0.0038	0.038%	2.30	23.0%
17	Ancient Woodland	0.0047	0.047%	2.31	23.1%	0.0106	0.106%	2.31	23.1%
18	Baldrogon Wood	0.0085	0.085%	2.31	23.1%	0.0188	0.188%	2.32	23.2%
19	Wynton Wood	0.0074	0.074%	2.31	23.1%	0.0158	0.158%	2.32	23.2%
20	Heathland	0.0032	0.032%	2.30	23.0%	0.0064	0.064%	2.31	23.1%

21	Firth of Tay and Eden Estuary	0.0037	0.037%	2.30	23.0%	0.0084	0.084%	2.31	23.1%
22	Firth of Tay and Eden Estuary	0.0028	0.028%	2.30	23.0%	0.0066	0.066%	2.31	23.1%
23	Firth of Tay and Eden Estuary	0.0019	0.019%	2.30	23.0%	0.0044	0.044%	2.30	23.0%
24	Ancient Woodland	0.0111	0.111%	2.31	23.1%	0.0250	0.250%	2.33	23.3%
25	Ancient Woodland	0.0138	0.138%	2.31	23.1%	0.0316	0.316%	2.33	23.3%
26	Balmerino - Wormit Shore	0.0020	0.020%	2.30	23.0%	0.0044	0.044%	2.30	23.0%
27	Trottick Mill Ponds	0.0155	0.155%	2.32	23.2%	0.0353	0.353%	2.34	23.4%
28	Firth of Tay and Eden Estuary	0.0038	0.038%	2.30	23.0%	0.0089	0.089%	2.31	23.1%
29	East/West Links Wood	0.0023	0.023%	2.30	23.0%	0.0055	0.055%	2.31	23.1%
30	North Hill	0.0022	0.022%	2.30	23.0%	0.0051	0.051%	2.31	23.1%
31	River Tay	0.0013	0.013%	2.30	23.0%	0.0028	0.028%	2.30	23.0%
32	Woodland	0.0158	0.158%	2.32	23.2%	0.0356	0.356%	2.34	23.4%
33	Heathland	0.0035	0.035%	2.30	23.0%	0.0079	0.079%	2.31	23.1%
34	Waterbody	0.0106	0.106%	2.31	23.1%	0.0245	0.245%	2.32	23.2%
35	Balmuir Wood	0.0073	0.073%	2.31	23.1%	0.0168	0.168%	2.32	23.2%
36	River Tay	0.0014	0.014%	2.30	23.0%	0.0030	0.030%	2.30	23.0%
37	Dighty Water	0.0218	0.218%	2.32	23.2%	0.0496	0.496%	2.35	23.5%
38	Knockhill Wood	0.0025	0.025%	2.30	23.0%	0.0063	0.063%	2.31	23.1%
39	Ancient Woodland	0.0140	0.140%	2.31	23.1%	0.0340	0.340%	2.33	23.3%
40	Dighty Water	0.0262	0.262%	2.33	23.3%	0.0588	0.588%	2.36	23.6%
41	Waterbody	0.0170	0.170%	2.32	23.2%	0.0427	0.427%	2.34	23.4%
42	Whitehouse Den	0.0033	0.033%	2.30	23.0%	0.0080	0.080%	2.31	23.1%
43	Firth of Tay and Eden Estuary	0.0046	0.046%	2.31	23.1%	0.0114	0.114%	2.31	23.1%
44	River Tay	0.0015	0.015%	2.30	23.0%	0.0033	0.033%	2.30	23.0%
45	Dighty Water	0.0251	0.251%	2.33	23.3%	0.0545	0.545%	2.36	23.6%
46	Waterbody	0.0252	0.252%	2.33	23.3%	0.0658	0.658%	2.37	23.7%
47	Morendy Wood	0.0027	0.027%	2.30	23.0%	0.0067	0.067%	2.31	23.1%

48	Corbie Den	0.0028	0.028%	2.30	23.0%	0.0065	0.065%	2.31	23.1%
49	Sheihill Wood	0.0071	0.071%	2.31	23.1%	0.0174	0.174%	2.32	23.2%
50	Laverock Law	0.0031	0.031%	2.30	23.0%	0.0080	0.080%	2.31	23.1%
51	Woodland	0.0113	0.113%	2.31	23.1%	0.0280	0.280%	2.33	23.3%
52	Dighty Water	0.0259	0.259%	2.33	23.3%	0.0563	0.563%	2.36	23.6%
53	Ancient Woodland	0.0029	0.029%	2.30	23.0%	0.0065	0.065%	2.31	23.1%
54	Roseberry Wood	0.0032	0.032%	2.30	23.0%	0.0081	0.081%	2.31	23.1%
55	Heathland	0.0033	0.033%	2.30	23.0%	0.0078	0.078%	2.31	23.1%
56	Craig Law	0.0036	0.036%	2.30	23.0%	0.0089	0.089%	2.31	23.1%
57	Fithie Burn	0.0146	0.146%	2.32	23.2%	0.0374	0.374%	2.34	23.4%
58	Woodland	0.0137	0.137%	2.31	23.1%	0.0352	0.352%	2.34	23.4%
59	River Tay	0.0016	0.016%	2.30	23.0%	0.0037	0.037%	2.30	23.0%
60	Dighty Water	0.0399	0.399%	2.34	23.4%	0.0899	0.899%	2.39	23.9%
61	Woodland	0.0284	0.284%	2.33	23.3%	0.0780	0.780%	2.38	23.8%
62	Woodland	0.0140	0.140%	2.31	23.1%	0.0363	0.363%	2.34	23.4%
63	Fithie Burn	0.0135	0.135%	2.31	23.1%	0.0346	0.346%	2.34	23.4%
64	Woodland	0.0124	0.124%	2.31	23.1%	0.0317	0.317%	2.33	23.3%
65	Corbie Den	0.0028	0.028%	2.30	23.0%	0.0061	0.061%	2.31	23.1%
66	Woodland	0.0178	0.178%	2.32	23.2%	0.0468	0.468%	2.35	23.5%
67	Corbie Den	0.0025	0.025%	2.30	23.0%	0.0054	0.054%	2.31	23.1%
68	Pickletillem Marsh	0.0032	0.032%	2.30	23.0%	0.0077	0.077%	2.31	23.1%
69	Woodland	0.0131	0.131%	2.31	23.1%	0.0333	0.333%	2.33	23.3%
70	Dighty Water	0.0107	0.107%	2.31	23.1%	0.0278	0.278%	2.33	23.3%
71	Fithie Burn	0.0131	0.131%	2.31	23.1%	0.0330	0.330%	2.33	23.3%
72	Firth of Tay and Eden Estuary	0.0070	0.070%	2.31	23.1%	0.0177	0.177%	2.32	23.2%
73	Woodland	0.0113	0.113%	2.31	23.1%	0.0285	0.285%	2.33	23.3%
74	East Muirhouse Strip	0.0080	0.080%	2.31	23.1%	0.0196	0.196%	2.32	23.2%

75	Brighty Wood	0.0052	0.052%	2.31	23.1%	0.0122	0.122%	2.31	23.1%
76	Woodland	0.0201	0.201%	2.32	23.2%	0.0543	0.543%	2.35	23.5%
77	Firth of Tay and Eden Estuary	0.0042	0.042%	2.30	23.0%	0.0106	0.106%	2.31	23.1%
78	Gallowfauld Burn	0.0023	0.023%	2.30	23.0%	0.0050	0.050%	2.31	23.1%
79	Woodland	0.0148	0.148%	2.32	23.2%	0.0368	0.368%	2.34	23.4%
80	Waterbody	0.0178	0.178%	2.32	23.2%	0.0460	0.460%	2.35	23.5%
81	Fithie Burn	0.0145	0.145%	2.32	23.2%	0.0360	0.360%	2.34	23.4%
82	Duntrune/Glack Hills	0.0116	0.116%	2.31	23.1%	0.0287	0.287%	2.33	23.3%
83	Dighty Water	0.0052	0.052%	2.31	23.1%	0.0239	0.239%	2.32	23.2%
84	River Tay	0.0019	0.019%	2.30	23.0%	0.0041	0.041%	2.30	23.0%
85	Woodland	0.0038	0.038%	2.30	23.0%	0.0105	0.105%	2.31	23.1%
86	Ancient Woodland	0.0023	0.023%	2.30	23.0%	0.0050	0.050%	2.31	23.1%
87	St Michael's Wood Marshes	0.0029	0.029%	2.30	23.0%	0.0071	0.071%	2.31	23.1%
88	St Michael's Wood	0.0029	0.029%	2.30	23.0%	0.0071	0.071%	2.31	23.1%
89	Fithie Burn	0.0427	0.427%	2.34	23.4%	0.1515	1.515%	2.45	24.5%
90	Gagie Marsh	0.0060	0.060%	2.31	23.1%	0.0140	0.140%	2.31	23.1%
91	Waterbody	0.0229	0.229%	2.32	23.2%	0.0650	0.650%	2.37	23.7%
92	Fithie Burn	0.1454	1.454%	2.45	24.5%	0.7221	7.221%	3.02	30.2%
93	Heathland	0.0034	0.034%	2.30	23.0%	0.0074	0.074%	2.31	23.1%
94	Woodland	0.0180	0.180%	2.32	23.2%	0.0473	0.473%	2.35	23.5%
95	Woodland	0.0180	0.180%	2.32	23.2%	0.0473	0.473%	2.35	23.5%
96	Fithie Burn	0.0271	0.271%	2.33	23.3%	0.0793	0.793%	2.38	23.8%
97	Fithie Burn	0.0178	0.178%	2.32	23.2%	0.0465	0.465%	2.35	23.5%
98	Kirkton Wood	0.0035	0.035%	2.30	23.0%	0.0086	0.086%	2.31	23.1%
99	Big Latch	0.0043	0.043%	2.30	23.0%	0.0098	0.098%	2.31	23.1%
100	Fithie Burn	0.0000	0.000%	2.30	23.0%	0.0000	0.000%	2.30	23.0%
101	Woodland	0.0635	0.635%	2.36	23.6%	0.1943	1.943%	2.49	24.9%

102	Eden Estuary	0.0020	0.020%	2.30	23.0%	0.0048	0.048%	2.31	23.1%
103	Firth of Tay and Eden Estuary	0.0040	0.040%	2.30	23.0%	0.0107	0.107%	2.31	23.1%
104	Tayport - Tentsmuir Coast	0.0040	0.040%	2.30	23.0%	0.0107	0.107%	2.31	23.1%
105	Woodland	0.0309	0.309%	2.33	23.3%	0.0859	0.859%	2.39	23.9%
106	Dighty Water	0.0388	0.388%	2.34	23.4%	0.0993	0.993%	2.40	24.0%
107	Woodland	0.0754	0.754%	2.38	23.8%	0.2237	2.237%	2.52	25.2%
108	Murroes Burn	0.0888	0.888%	2.39	23.9%	0.2678	2.678%	2.57	25.7%
109	Waterbody	0.1011	1.011%	2.40	24.0%	0.3092	3.092%	2.61	26.1%
110	Murroes Burn	0.0499	0.499%	2.35	23.5%	0.1366	1.366%	2.44	24.4%
111	Woodland	0.1869	1.869%	2.49	24.9%	0.5950	5.950%	2.90	29.0%
112	Murroes Burn	0.1882	1.882%	2.49	24.9%	0.5887	5.887%	2.89	28.9%
113	Woodland	0.1967	1.967%	2.50	25.0%	0.4740	4.740%	2.77	27.7%
114	Murroes Burn	0.1784	1.784%	2.48	24.8%	0.4196	4.196%	2.72	27.2%
115	Kellas Wood	0.0074	0.074%	2.31	23.1%	0.0176	0.176%	2.32	23.2%
116	Dighty Water	0.0794	0.794%	2.38	23.8%	0.1835	1.835%	2.48	24.8%
117	Little Latch	0.0042	0.042%	2.30	23.0%	0.0094	0.094%	2.31	23.1%
118	Waterbody	0.0639	0.639%	2.36	23.6%	0.1738	1.738%	2.47	24.7%
119	Murroes Burn	0.0592	0.592%	2.36	23.6%	0.1592	1.592%	2.46	24.6%
120	River Tay	0.0020	0.020%	2.30	23.0%	0.0043	0.043%	2.30	23.0%
121	Woodland	0.0412	0.412%	2.34	23.4%	0.1063	1.063%	2.41	24.1%
122	Murroes Burn	0.0423	0.423%	2.34	23.4%	0.1092	1.092%	2.41	24.1%
123	Murroes Burn	0.0242	0.242%	2.32	23.2%	0.0604	0.604%	2.36	23.6%
124	Tentsmuir	0.0031	0.031%	2.30	23.0%	0.0081	0.081%	2.31	23.1%
125	Dighty Water	0.0874	0.874%	2.39	23.9%	0.1996	1.996%	2.50	25.0%
126	Morton Lochs	0.0031	0.031%	2.30	23.0%	0.0080	0.080%	2.31	23.1%
127	Woodland	0.0700	0.700%	2.37	23.7%	0.1619	1.619%	2.46	24.6%
128	Rhynd Wood	0.0027	0.027%	2.30	23.0%	0.0066	0.066%	2.31	23.1%

129	West Wood	0.0040	0.040%	2.30	23.0%	0.0091	0.091%	2.31	23.1%
130	Tentsmuir	0.0030	0.030%	2.30	23.0%	0.0076	0.076%	2.31	23.1%
131	Morton Lochs	0.0029	0.029%	2.30	23.0%	0.0075	0.075%	2.31	23.1%
132	West Wood	0.0041	0.041%	2.30	23.0%	0.0095	0.095%	2.31	23.1%
133	Buckler Heads Wood	0.0088	0.088%	2.31	23.1%	0.0211	0.211%	2.32	23.2%
134	Firth of Tay and Eden Estuary	0.0046	0.046%	2.31	23.1%	0.0126	0.126%	2.31	23.1%
135	Monifeth Bay	0.0046	0.046%	2.31	23.1%	0.0126	0.126%	2.31	23.1%
136	Dighty Water	0.0874	0.874%	2.39	23.9%	0.2042	2.042%	2.50	25.0%
137	Woodside Wood	0.0120	0.120%	2.31	23.1%	0.0291	0.291%	2.33	23.3%
138	Morton Links	0.0027	0.027%	2.30	23.0%	0.0070	0.070%	2.31	23.1%
139	Carrot Hill Meadow	0.0026	0.026%	2.30	23.0%	0.0057	0.057%	2.31	23.1%
140	Firth of Tay and Eden Estuary	0.0029	0.029%	2.30	23.0%	0.0080	0.080%	2.31	23.1%
141	Firth of Tay and Eden Estuary	0.0078	0.078%	2.31	23.1%	0.0217	0.217%	2.32	23.2%
142	Woodland	0.0124	0.124%	2.31	23.1%	0.0348	0.348%	2.34	23.4%
143	Tentsmuir	0.0026	0.026%	2.30	23.0%	0.0070	0.070%	2.31	23.1%
144	Woodland	0.0233	0.233%	2.32	23.2%	0.0564	0.564%	2.36	23.6%
145	Broughty Ferry	0.0098	0.098%	2.31	23.1%	0.0274	0.274%	2.33	23.3%
146	Eden Estuary	0.0019	0.019%	2.30	23.0%	0.0046	0.046%	2.31	23.1%
147	Woodland	0.0784	0.784%	2.38	23.8%	0.1906	1.906%	2.49	24.9%
148	Ancient Woodland	0.0422	0.422%	2.34	23.4%	0.1027	1.027%	2.40	24.0%
149	Broughty Ferry	0.0125	0.125%	2.31	23.1%	0.0343	0.343%	2.33	23.3%
150	Tentsmuir	0.0023	0.023%	2.30	23.0%	0.0062	0.062%	2.31	23.1%
151	Firth of Tay and Eden Estuary	0.0102	0.102%	2.31	23.1%	0.0278	0.278%	2.33	23.3%
152	Monifeth Bay	0.0102	0.102%	2.31	23.1%	0.0278	0.278%	2.33	23.3%
153	Tentsmuir	0.0024	0.024%	2.30	23.0%	0.0063	0.063%	2.31	23.1%
154	Tentsmuir	0.0028	0.028%	2.30	23.0%	0.0073	0.073%	2.31	23.1%
155	Gallow Hill	0.0585	0.585%	2.36	23.6%	0.1393	1.393%	2.44	24.4%

156	Tentsmuir	0.0021	0.021%	2.30	23.0%	0.0054	0.054%	2.31	23.1%
157	Firth of Tay and Eden Estuary	0.0034	0.034%	2.30	23.0%	0.0088	0.088%	2.31	23.1%
158	Firth of Tay and Eden Estuary	0.0063	0.063%	2.31	23.1%	0.0166	0.166%	2.32	23.2%
159	Firth of Tay and Eden Estuary	0.0016	0.016%	2.30	23.0%	0.0040	0.040%	2.30	23.0%
160	Firth of Tay and Eden Estuary	0.0182	0.182%	2.32	23.2%	0.0462	0.462%	2.35	23.5%
161	Monifeth Bay	0.0182	0.182%	2.32	23.2%	0.0462	0.462%	2.35	23.5%
162	Firth of Tay and Eden Estuary	0.0017	0.017%	2.30	23.0%	0.0042	0.042%	2.30	23.0%
163	Eden Estuary	0.0017	0.017%	2.30	23.0%	0.0042	0.042%	2.30	23.0%
164	Firth of Tay and Eden Estuary	0.0241	0.241%	2.32	23.2%	0.0600	0.600%	2.36	23.6%
165	Laws Hill	0.0494	0.494%	2.35	23.5%	0.1157	1.157%	2.42	24.2%
166	Tentsmuir	0.0040	0.040%	2.30	23.0%	0.0102	0.102%	2.31	23.1%
167	Firth of Tay and Eden Estuary	0.0017	0.017%	2.30	23.0%	0.0043	0.043%	2.30	23.0%
168	Eden Estuary	0.0017	0.017%	2.30	23.0%	0.0043	0.043%	2.30	23.0%
169	Denfind Plantation	0.0075	0.075%	2.31	23.1%	0.0169	0.169%	2.32	23.2%
170	Firth of Tay and Eden Estuary	0.0017	0.017%	2.30	23.0%	0.0042	0.042%	2.30	23.0%
171	Eden Estuary	0.0017	0.017%	2.30	23.0%	0.0042	0.042%	2.30	23.0%
172	Firth of Tay and Eden Estuary	0.0047	0.047%	2.31	23.1%	0.0117	0.117%	2.31	23.1%
173	Firth of Tay and Eden Estuary	0.0239	0.239%	2.32	23.2%	0.0609	0.609%	2.36	23.6%
174	Eden Estuary	0.0017	0.017%	2.30	23.0%	0.0043	0.043%	2.30	23.0%
175	Tentsmuir	0.0024	0.024%	2.30	23.0%	0.0059	0.059%	2.31	23.1%
176	Firth of Tay and Eden Estuary	0.0221	0.221%	2.32	23.2%	0.0563	0.563%	2.36	23.6%
177	Firth of Tay and Eden Estuary	0.0017	0.017%	2.30	23.0%	0.0043	0.043%	2.30	23.0%
178	Firth of Tay and Eden Estuary	0.0051	0.051%	2.31	23.1%	0.0129	0.129%	2.31	23.1%
179	Barry Links	0.0241	0.241%	2.32	23.2%	0.0616	0.616%	2.36	23.6%
180	Firth of Tay and Eden Estuary	0.0015	0.015%	2.30	23.0%	0.0037	0.037%	2.30	23.0%
181	Firth of Tay and Eden Estuary	0.0020	0.020%	2.30	23.0%	0.0049	0.049%	2.31	23.1%
182	Firth of Tay and Eden Estuary	0.0027	0.027%	2.30	23.0%	0.0066	0.066%	2.31	23.1%

183	Firth of Tay and Eden Estuary	0.0152	0.152%	2.32	23.2%	0.0383	0.383%	2.34	23.4%
184	Firth of Tay and Eden Estuary	0.0040	0.040%	2.30	23.0%	0.0098	0.098%	2.31	23.1%
185	Ancient Woodland	0.0339	0.339%	2.33	23.3%	0.0786	0.786%	2.38	23.8%
186	Firth of Tay and Eden Estuary	0.0184	0.184%	2.32	23.2%	0.0469	0.469%	2.35	23.5%
187	Firth of Tay and Eden Estuary	0.0183	0.183%	2.32	23.2%	0.0466	0.466%	2.35	23.5%
188	Weet's/Camustane/+ Woods	0.0116	0.116%	2.31	23.1%	0.0253	0.253%	2.33	23.3%
189	Firth of Tay and Eden Estuary	0.0043	0.043%	2.30	23.0%	0.0105	0.105%	2.31	23.1%
190	Firth of Tay and Eden Estuary	0.0112	0.112%	2.31	23.1%	0.0282	0.282%	2.33	23.3%
191	Firth of Tay and Eden Estuary	0.0128	0.128%	2.31	23.1%	0.0321	0.321%	2.33	23.3%
192	Firth of Tay and Eden Estuary	0.0128	0.128%	2.31	23.1%	0.0323	0.323%	2.33	23.3%
193	Tentsmuir	0.0054	0.054%	2.31	23.1%	0.0132	0.132%	2.31	23.1%
194	Firth of Tay and Eden Estuary	0.0037	0.037%	2.30	23.0%	0.0088	0.088%	2.31	23.1%
195	Firth of Tay and Eden Estuary	0.0098	0.098%	2.31	23.1%	0.0242	0.242%	2.32	23.2%
196	Firth of Tay and Eden Estuary	0.0098	0.098%	2.31	23.1%	0.0241	0.241%	2.32	23.2%
197	Firth of Tay and Eden Estuary	0.0089	0.089%	2.31	23.1%	0.0219	0.219%	2.32	23.2%
198	Firth of Tay and Eden Estuary	0.0086	0.086%	2.31	23.1%	0.0209	0.209%	2.32	23.2%
199	Firth of Tay and Eden Estuary	0.0114	0.114%	2.31	23.1%	0.0278	0.278%	2.33	23.3%
200	Firth of Tay and Eden Estuary	0.0150	0.150%	2.32	23.2%	0.0356	0.356%	2.34	23.4%
201	Firth of Tay and Eden Estuary	0.0074	0.074%	2.31	23.1%	0.0178	0.178%	2.32	23.2%
202	Tentsmuir	0.0048	0.048%	2.31	23.1%	0.0111	0.111%	2.31	23.1%
203	Firth of Tay and Eden Estuary	0.0105	0.105%	2.31	23.1%	0.0289	0.289%	2.33	23.3%
204	Firth of Tay and Eden Estuary	0.0164	0.164%	2.32	23.2%	0.0431	0.431%	2.34	23.4%
205	Firth of Tay and Eden Estuary	0.0221	0.221%	2.32	23.2%	0.0551	0.551%	2.36	23.6%
206	Firth of Tay and Eden Estuary	0.0139	0.139%	2.31	23.1%	0.0368	0.368%	2.34	23.4%
207	Firth of Tay and Eden Estuary	0.0059	0.059%	2.31	23.1%	0.0160	0.160%	2.32	23.2%
208	Firth of Tay and Eden Estuary	0.0082	0.082%	2.31	23.1%	0.0229	0.229%	2.32	23.2%
209	Firth of Tay and Eden Estuary	0.0035	0.035%	2.30	23.0%	0.0099	0.099%	2.31	23.1%

210	Firth of Tay and Eden Estuary	0.0033	0.033%	2.30	23.0%	0.0090	0.090%	2.31	23.1%
211	Firth of Tay and Eden Estuary	0.0032	0.032%	2.30	23.0%	0.0087	0.087%	2.31	23.1%
212	Firth of Tay and Eden Estuary	0.0031	0.031%	2.30	23.0%	0.0085	0.085%	2.31	23.1%
213	Firth of Tay and Eden Estuary	0.0036	0.036%	2.30	23.0%	0.0093	0.093%	2.31	23.1%
214	Firth of Tay and Eden Estuary	0.0032	0.032%	2.30	23.0%	0.0088	0.088%	2.31	23.1%
215	Firth of Tay and Eden Estuary	0.0029	0.029%	2.30	23.0%	0.0078	0.078%	2.31	23.1%
216	Firth of Tay and Eden Estuary	0.0030	0.030%	2.30	23.0%	0.0080	0.080%	2.31	23.1%

C1.4 Annual mean NH₃ concentrations

Table C4: Predicted annual mean NH₃ concentrations at sensitive ecological sites, and comparison with the critical level

Ecological receptor ID	Receptor location	EFW CHP Facility (under construction)				EFW CHP Facility (under construction)+ Existing EFW Facility			
		Mod NH ₃ (PC) (µg/m ³)	1% of EAL test	Tot NH ₃ (PEC) (µg/m ³)	70% of EAL test	Mod NH ₃ (PC) (µg/m ³)	1% of EAL test	Tot NH ₃ (PEC) (µg/m ³)	70% of EAL test
1	Firth of Tay and Eden Estuary	0.0002	0.016%	0.96	96.0%	0.0002	0.023%	0.96	96.0%
2	Firth of Tay and Eden Estuary	0.0002	0.019%	0.96	96.0%	0.0003	0.026%	0.96	96.0%
3	Inner Tay Estuary	0.0002	0.019%	0.96	96.0%	0.0003	0.026%	0.96	96.0%
4	Firth of Tay and Eden Estuary	0.0002	0.021%	0.96	96.0%	0.0003	0.029%	0.96	96.0%
5	Firth of Tay and Eden Estuary	0.0001	0.011%	0.96	96.0%	0.0002	0.015%	0.96	96.0%
6	Firth of Tay and Eden Estuary	0.0002	0.024%	0.96	96.0%	0.0003	0.033%	0.96	96.0%
7	Inner Tay Estuary	0.0002	0.024%	0.96	96.0%	0.0003	0.033%	0.96	96.0%
8	Firth of Tay and Eden Estuary	0.0002	0.016%	0.96	96.0%	0.0002	0.023%	0.96	96.0%
9	Firth of Tay and Eden Estuary	0.0003	0.027%	0.96	96.0%	0.0004	0.038%	0.96	96.0%
10	Firth of Tay and Eden Estuary	0.0001	0.013%	0.96	96.0%	0.0002	0.018%	0.96	96.0%
11	Firth of Tay and Eden Estuary	0.0003	0.031%	0.96	96.0%	0.0004	0.043%	0.96	96.0%
12	Firth of Tay and Eden Estuary	0.0002	0.022%	0.96	96.0%	0.0003	0.031%	0.96	96.0%
13	Firth of Tay and Eden Estuary	0.0002	0.016%	0.96	96.0%	0.0002	0.022%	0.96	96.0%
14	Gallowhill/Cawmill Woods	0.0006	0.060%	0.96	96.1%	0.0008	0.083%	0.96	96.1%
15	Firth of Tay and Eden Estuary	0.0003	0.035%	0.96	96.0%	0.0005	0.048%	0.96	96.0%
16	Firth of Tay and Eden Estuary	0.0002	0.017%	0.96	96.0%	0.0002	0.023%	0.96	96.0%
17	Ancient Woodland	0.0005	0.047%	0.96	96.0%	0.0007	0.066%	0.96	96.1%
18	Baldrogon Wood	0.0008	0.085%	0.96	96.1%	0.0012	0.118%	0.96	96.1%
19	Wynton Wood	0.0007	0.074%	0.96	96.1%	0.0010	0.101%	0.96	96.1%
20	Heathland	0.0003	0.032%	0.96	96.0%	0.0004	0.042%	0.96	96.0%

21	Firth of Tay and Eden Estuary	0.0004	0.037%	0.96	96.0%	0.0005	0.052%	0.96	96.1%
22	Firth of Tay and Eden Estuary	0.0003	0.028%	0.96	96.0%	0.0004	0.040%	0.96	96.0%
23	Firth of Tay and Eden Estuary	0.0002	0.019%	0.96	96.0%	0.0003	0.027%	0.96	96.0%
24	Ancient Woodland	0.0011	0.111%	0.96	96.1%	0.0016	0.156%	0.96	96.2%
25	Ancient Woodland	0.0014	0.138%	0.96	96.1%	0.0020	0.196%	0.96	96.2%
26	Balmerino—Wormit Shore	0.0002	0.020%	0.96	96.0%	0.0003	0.028%	0.96	96.0%
27	Trottick Mill Ponds	0.0015	0.155%	0.96	96.2%	0.0022	0.219%	0.96	96.2%
28	Firth of Tay and Eden Estuary	0.0004	0.038%	0.96	96.0%	0.0005	0.054%	0.96	96.1%
29	East/West Links Wood	0.0002	0.023%	0.96	96.0%	0.0003	0.033%	0.96	96.0%
30	North Hill	0.0002	0.022%	0.96	96.0%	0.0003	0.031%	0.96	96.0%
31	River Tay	0.0001	0.013%	0.96	96.0%	0.0002	0.018%	0.96	96.0%
32	Woodland	0.0016	0.158%	0.96	96.2%	0.0022	0.222%	0.96	96.2%
33	Heathland	0.0004	0.035%	0.96	96.0%	0.0005	0.049%	0.96	96.0%
34	Waterbody	0.0011	0.106%	0.96	96.1%	0.0015	0.151%	0.96	96.2%
35	Balmuir Wood	0.0007	0.073%	0.96	96.1%	0.0010	0.104%	0.96	96.1%
36	River Tay	0.0001	0.014%	0.96	96.0%	0.0002	0.019%	0.96	96.0%
37	Dighty Water	0.0022	0.218%	0.96	96.2%	0.0031	0.308%	0.96	96.3%
38	Knockhill Wood	0.0003	0.025%	0.96	96.0%	0.0004	0.037%	0.96	96.0%
39	Ancient Woodland	0.0014	0.140%	0.96	96.1%	0.0020	0.204%	0.96	96.2%
40	Dighty Water	0.0026	0.262%	0.96	96.3%	0.0037	0.367%	0.96	96.4%
41	Waterbody	0.0017	0.170%	0.96	96.2%	0.0025	0.253%	0.96	96.3%
42	Whitehouse Den	0.0003	0.033%	0.96	96.0%	0.0005	0.048%	0.96	96.0%
43	Firth of Tay and Eden Estuary	0.0005	0.046%	0.96	96.0%	0.0007	0.068%	0.96	96.1%
44	River Tay	0.0001	0.015%	0.96	96.0%	0.0002	0.021%	0.96	96.0%
45	Dighty Water	0.0025	0.251%	0.96	96.3%	0.0035	0.345%	0.96	96.3%
46	Waterbody	0.0025	0.252%	0.96	96.3%	0.0038	0.383%	0.96	96.4%
47	Morendy Wood	0.0003	0.027%	0.96	96.0%	0.0004	0.040%	0.96	96.0%

48	Corbie Den	0.0003	0.028%	0.96	96.0%	0.0004	0.040%	0.96	96.0%
49	Sheihill Wood	0.0007	0.071%	0.96	96.1%	0.0010	0.104%	0.96	96.1%
50	Laverock Law	0.0003	0.031%	0.96	96.0%	0.0005	0.047%	0.96	96.0%
51	Woodland	0.0011	0.113%	0.96	96.1%	0.0017	0.167%	0.96	96.2%
52	Dighty Water	0.0026	0.259%	0.96	96.3%	0.0036	0.357%	0.96	96.4%
53	Ancient Woodland	0.0003	0.029%	0.96	96.0%	0.0004	0.040%	0.96	96.0%
54	Roseberry Wood	0.0003	0.032%	0.96	96.0%	0.0005	0.048%	0.96	96.0%
55	Heathland	0.0003	0.033%	0.96	96.0%	0.0005	0.048%	0.96	96.0%
56	Craig Law	0.0004	0.036%	0.96	96.0%	0.0005	0.053%	0.96	96.1%
57	Fithie Burn	0.0015	0.146%	0.96	96.1%	0.0022	0.219%	0.96	96.2%
58	Woodland	0.0014	0.137%	0.96	96.1%	0.0021	0.206%	0.96	96.2%
59	River Tay	0.0002	0.016%	0.96	96.0%	0.0002	0.023%	0.96	96.0%
60	Dighty Water	0.0040	0.399%	0.96	96.4%	0.0056	0.559%	0.97	96.6%
61	Woodland	0.0028	0.284%	0.96	96.3%	0.0044	0.443%	0.96	96.4%
62	Woodland	0.0014	0.140%	0.96	96.1%	0.0021	0.212%	0.96	96.2%
63	Fithie Burn	0.0013	0.135%	0.96	96.1%	0.0020	0.203%	0.96	96.2%
64	Woodland	0.0012	0.124%	0.96	96.1%	0.0019	0.187%	0.96	96.2%
65	Corbie Den	0.0003	0.028%	0.96	96.0%	0.0004	0.039%	0.96	96.0%
66	Woodland	0.0018	0.178%	0.96	96.2%	0.0027	0.272%	0.96	96.3%
67	Corbie Den	0.0002	0.025%	0.96	96.0%	0.0003	0.034%	0.96	96.0%
68	Pickletillem Marsh	0.0003	0.032%	0.96	96.0%	0.0005	0.047%	0.96	96.0%
69	Woodland	0.0013	0.131%	0.96	96.1%	0.0020	0.196%	0.96	96.2%
70	Dighty Water	0.0011	0.107%	0.96	96.1%	0.0016	0.162%	0.96	96.2%
71	Fithie Burn	0.0013	0.131%	0.96	96.1%	0.0019	0.195%	0.96	96.2%
72	Firth of Tay and Eden Estuary	0.0007	0.070%	0.96	96.1%	0.0010	0.105%	0.96	96.1%
73	Woodland	0.0011	0.113%	0.96	96.1%	0.0017	0.169%	0.96	96.2%
74	East Muirhouse Strip	0.0008	0.080%	0.96	96.1%	0.0012	0.117%	0.96	96.1%

75	Brighty Wood	0.0005	0.052%	0.96	96.1%	0.0007	0.074%	0.96	96.1%
76	Woodland	0.0020	0.201%	0.96	96.2%	0.0031	0.311%	0.96	96.3%
77	Firth of Tay and Eden Estuary	0.0004	0.042%	0.96	96.0%	0.0006	0.062%	0.96	96.1%
78	Gallowfauld Burn	0.0002	0.023%	0.96	96.0%	0.0003	0.032%	0.96	96.0%
79	Woodland	0.0015	0.148%	0.96	96.1%	0.0022	0.219%	0.96	96.2%
80	Waterbody	0.0018	0.178%	0.96	96.2%	0.0027	0.269%	0.96	96.3%
81	Fithie Burn	0.0015	0.145%	0.96	96.1%	0.0021	0.214%	0.96	96.2%
82	Duntrune/Glack Hills	0.0012	0.116%	0.96	96.1%	0.0017	0.171%	0.96	96.2%
83	Dighty Water	0.0005	0.052%	0.96	96.1%	0.0011	0.112%	0.96	96.1%
84	River Tay	0.0002	0.019%	0.96	96.0%	0.0003	0.026%	0.96	96.0%
85	Woodland	0.0004	0.038%	0.96	96.0%	0.0006	0.060%	0.96	96.1%
86	Ancient Woodland	0.0002	0.023%	0.96	96.0%	0.0003	0.032%	0.96	96.0%
87	St Michael's Wood Marshes	0.0003	0.029%	0.96	96.0%	0.0004	0.043%	0.96	96.0%
88	St Michael's Wood	0.0003	0.029%	0.96	96.0%	0.0004	0.043%	0.96	96.0%
89	Fithie Burn	0.0043	0.427%	0.96	96.4%	0.0078	0.777%	0.97	96.8%
90	Gagie Marsh	0.0006	0.060%	0.96	96.1%	0.0009	0.086%	0.96	96.1%
91	Waterbody	0.0023	0.229%	0.96	96.2%	0.0036	0.364%	0.96	96.4%
92	Fithie Burn	0.0145	1.454%	0.97	97.5%	0.0331	3.309%	0.99	99.3%
93	Heathland	0.0003	0.034%	0.96	96.0%	0.0005	0.047%	0.96	96.0%
94	Woodland	0.0018	0.180%	0.96	96.2%	0.0027	0.274%	0.96	96.3%
95	Woodland	0.0018	0.180%	0.96	96.2%	0.0027	0.274%	0.96	96.3%
96	Fithie Burn	0.0027	0.271%	0.96	96.3%	0.0044	0.439%	0.96	96.4%
97	Fithie Burn	0.0018	0.178%	0.96	96.2%	0.0027	0.270%	0.96	96.3%
98	Kirkton Wood	0.0004	0.035%	0.96	96.0%	0.0005	0.052%	0.96	96.1%
99	Big Latch	0.0004	0.043%	0.96	96.0%	0.0006	0.061%	0.96	96.1%
100	Fithie Burn	0.0000	0.000%	0.96	96.0%	0.0000	0.000%	0.96	96.0%
101	Woodland	0.0063	0.635%	0.97	96.6%	0.0106	1.056%	0.97	97.1%

102	Eden Estuary	0.0002	0.020%	0.96	96.0%	0.0003	0.029%	0.96	96.0%
103	Firth of Tay and Eden Estuary	0.0004	0.040%	0.96	96.0%	0.0006	0.061%	0.96	96.1%
104	Tayport – Tentsmuir Coast	0.0004	0.040%	0.96	96.0%	0.0006	0.061%	0.96	96.1%
105	Woodland	0.0031	0.309%	0.96	96.3%	0.0049	0.486%	0.96	96.5%
106	Dighty Water	0.0039	0.388%	0.96	96.4%	0.0058	0.583%	0.97	96.6%
107	Woodland	0.0075	0.754%	0.97	96.8%	0.0123	1.231%	0.97	97.2%
108	Murroes Burn	0.0089	0.888%	0.97	96.9%	0.0146	1.464%	0.97	97.5%
109	Waterbody	0.0101	1.011%	0.97	97.0%	0.0168	1.680%	0.98	97.7%
110	Murroes Burn	0.0050	0.499%	0.96	96.5%	0.0078	0.778%	0.97	96.8%
111	Woodland	0.0187	1.869%	0.98	97.9%	0.0318	3.182%	0.99	99.2%
112	Murroes Burn	0.0188	1.882%	0.98	97.9%	0.0317	3.171%	0.99	99.2%
113	Woodland	0.0197	1.967%	0.98	98.0%	0.0286	2.859%	0.99	98.9%
114	Murroes Burn	0.0178	1.784%	0.98	97.8%	0.0256	2.560%	0.99	98.6%
115	Kellas Wood	0.0007	0.074%	0.96	96.1%	0.0011	0.107%	0.96	96.1%
116	Dighty Water	0.0079	0.794%	0.97	96.8%	0.0113	1.129%	0.97	97.1%
117	Little Latch	0.0004	0.042%	0.96	96.0%	0.0006	0.059%	0.96	96.1%
118	Waterbody	0.0064	0.639%	0.97	96.6%	0.0099	0.993%	0.97	97.0%
119	Murroes Burn	0.0059	0.592%	0.97	96.6%	0.0091	0.913%	0.97	96.9%
120	River Tay	0.0002	0.020%	0.96	96.0%	0.0003	0.028%	0.96	96.0%
121	Woodland	0.0041	0.412%	0.96	96.4%	0.0062	0.621%	0.97	96.6%
122	Murroes Burn	0.0042	0.423%	0.96	96.4%	0.0064	0.638%	0.97	96.6%
123	Murroes Burn	0.0024	0.242%	0.96	96.2%	0.0036	0.358%	0.96	96.4%
124	Tentsmuir	0.0003	0.031%	0.96	96.0%	0.0005	0.047%	0.96	96.0%
125	Dighty Water	0.0087	0.874%	0.97	96.9%	0.0124	1.235%	0.97	97.2%
126	Morton Lochs	0.0003	0.031%	0.96	96.0%	0.0005	0.047%	0.96	96.0%
127	Woodland	0.0070	0.700%	0.97	96.7%	0.0100	0.996%	0.97	97.0%
128	Rhynd Wood	0.0003	0.027%	0.96	96.0%	0.0004	0.040%	0.96	96.0%

129	West Wood	0.0004	0.040%	0.96	96.0%	0.0006	0.056%	0.96	96.1%
130	Tentsmuir	0.0003	0.030%	0.96	96.0%	0.0004	0.044%	0.96	96.0%
131	Morton Lochs	0.0003	0.029%	0.96	96.0%	0.0004	0.044%	0.96	96.0%
132	West Wood	0.0004	0.041%	0.96	96.0%	0.0006	0.059%	0.96	96.1%
133	Buckler Heads Wood	0.0009	0.088%	0.96	96.1%	0.0013	0.128%	0.96	96.1%
134	Firth of Tay and Eden Estuary	0.0005	0.046%	0.96	96.0%	0.0007	0.072%	0.96	96.1%
135	Monifeth Bay	0.0005	0.046%	0.96	96.0%	0.0007	0.072%	0.96	96.1%
136	Dighty Water	0.0087	0.874%	0.97	96.9%	0.0125	1.249%	0.97	97.2%
137	Woodside Wood	0.0012	0.120%	0.96	96.1%	0.0018	0.175%	0.96	96.2%
138	Morton Links	0.0003	0.027%	0.96	96.0%	0.0004	0.040%	0.96	96.0%
139	Carrot Hill Meadow	0.0003	0.026%	0.96	96.0%	0.0004	0.036%	0.96	96.0%
140	Firth of Tay and Eden Estuary	0.0003	0.029%	0.96	96.0%	0.0005	0.046%	0.96	96.0%
141	Firth of Tay and Eden Estuary	0.0008	0.078%	0.96	96.1%	0.0012	0.122%	0.96	96.1%
142	Woodland	0.0012	0.124%	0.96	96.1%	0.0020	0.196%	0.96	96.2%
143	Tentsmuir	0.0003	0.026%	0.96	96.0%	0.0004	0.040%	0.96	96.0%
144	Woodland	0.0023	0.233%	0.96	96.2%	0.0034	0.340%	0.96	96.3%
145	Broughty Ferry	0.0010	0.098%	0.96	96.1%	0.0015	0.155%	0.96	96.2%
146	Eden Estuary	0.0002	0.019%	0.96	96.0%	0.0003	0.027%	0.96	96.0%
147	Woodland	0.0078	0.784%	0.97	96.8%	0.0114	1.145%	0.97	97.1%
148	Ancient Woodland	0.0042	0.422%	0.96	96.4%	0.0062	0.617%	0.97	96.6%
149	Broughty Ferry	0.0013	0.125%	0.96	96.1%	0.0020	0.195%	0.96	96.2%
150	Tentsmuir	0.0002	0.023%	0.96	96.0%	0.0004	0.036%	0.96	96.0%
151	Firth of Tay and Eden Estuary	0.0010	0.102%	0.96	96.1%	0.0016	0.158%	0.96	96.2%
152	Monifeth Bay	0.0010	0.102%	0.96	96.1%	0.0016	0.158%	0.96	96.2%
153	Tentsmuir	0.0002	0.024%	0.96	96.0%	0.0004	0.036%	0.96	96.0%
154	Tentsmuir	0.0003	0.028%	0.96	96.0%	0.0004	0.042%	0.96	96.0%
155	Gallow Hill	0.0059	0.585%	0.97	96.6%	0.0085	0.845%	0.97	96.8%

156	Tentsmuir	0.0002	0.021%	0.96	96.0%	0.0003	0.031%	0.96	96.0%
157	Firth of Tay and Eden Estuary	0.0003	0.034%	0.96	96.0%	0.0005	0.051%	0.96	96.1%
158	Firth of Tay and Eden Estuary	0.0006	0.063%	0.96	96.1%	0.0010	0.096%	0.96	96.1%
159	Firth of Tay and Eden Estuary	0.0002	0.016%	0.96	96.0%	0.0002	0.024%	0.96	96.0%
160	Firth of Tay and Eden Estuary	0.0018	0.182%	0.96	96.2%	0.0027	0.272%	0.96	96.3%
161	Monifeth Bay	0.0018	0.182%	0.96	96.2%	0.0027	0.272%	0.96	96.3%
162	Firth of Tay and Eden Estuary	0.0002	0.017%	0.96	96.0%	0.0003	0.025%	0.96	96.0%
163	Eden Estuary	0.0002	0.017%	0.96	96.0%	0.0003	0.025%	0.96	96.0%
164	Firth of Tay and Eden Estuary	0.0024	0.241%	0.96	96.2%	0.0036	0.357%	0.96	96.4%
165	Laws Hill	0.0049	0.494%	0.96	96.5%	0.0071	0.707%	0.97	96.7%
166	Tentsmuir	0.0004	0.040%	0.96	96.0%	0.0006	0.060%	0.96	96.1%
167	Firth of Tay and Eden Estuary	0.0002	0.017%	0.96	96.0%	0.0003	0.025%	0.96	96.0%
168	Eden Estuary	0.0002	0.017%	0.96	96.0%	0.0003	0.025%	0.96	96.0%
169	Denfind Plantation	0.0007	0.075%	0.96	96.1%	0.0011	0.105%	0.96	96.1%
170	Firth of Tay and Eden Estuary	0.0002	0.017%	0.96	96.0%	0.0002	0.025%	0.96	96.0%
171	Eden Estuary	0.0002	0.017%	0.96	96.0%	0.0002	0.025%	0.96	96.0%
172	Firth of Tay and Eden Estuary	0.0005	0.047%	0.96	96.0%	0.0007	0.069%	0.96	96.1%
173	Firth of Tay and Eden Estuary	0.0024	0.239%	0.96	96.2%	0.0036	0.358%	0.96	96.4%
174	Eden Estuary	0.0002	0.017%	0.96	96.0%	0.0003	0.026%	0.96	96.0%
175	Tentsmuir	0.0002	0.024%	0.96	96.0%	0.0004	0.035%	0.96	96.0%
176	Firth of Tay and Eden Estuary	0.0022	0.221%	0.96	96.2%	0.0033	0.331%	0.96	96.3%
177	Firth of Tay and Eden Estuary	0.0002	0.017%	0.96	96.0%	0.0003	0.026%	0.96	96.0%
178	Firth of Tay and Eden Estuary	0.0005	0.051%	0.96	96.1%	0.0008	0.076%	0.96	96.1%
179	Barry Links	0.0024	0.241%	0.96	96.2%	0.0036	0.361%	0.96	96.4%
180	Firth of Tay and Eden Estuary	0.0001	0.015%	0.96	96.0%	0.0002	0.022%	0.96	96.0%
181	Firth of Tay and Eden Estuary	0.0002	0.020%	0.96	96.0%	0.0003	0.029%	0.96	96.0%
182	Firth of Tay and Eden Estuary	0.0003	0.027%	0.96	96.0%	0.0004	0.039%	0.96	96.0%

183	Firth of Tay and Eden Estuary	0.0015	0.152%	0.96	96.2%	0.0023	0.226%	0.96	96.2%
184	Firth of Tay and Eden Estuary	0.0004	0.040%	0.96	96.0%	0.0006	0.058%	0.96	96.1%
185	Ancient Woodland	0.0034	0.339%	0.96	96.3%	0.0048	0.483%	0.96	96.5%
186	Firth of Tay and Eden Estuary	0.0018	0.184%	0.96	96.2%	0.0028	0.276%	0.96	96.3%
187	Firth of Tay and Eden Estuary	0.0018	0.183%	0.96	96.2%	0.0027	0.274%	0.96	96.3%
188	Weet's/Camustane/+ Woods	0.0012	0.116%	0.96	96.1%	0.0016	0.160%	0.96	96.2%
189	Firth of Tay and Eden Estuary	0.0004	0.043%	0.96	96.0%	0.0006	0.063%	0.96	96.1%
190	Firth of Tay and Eden Estuary	0.0011	0.112%	0.96	96.1%	0.0017	0.167%	0.96	96.2%
191	Firth of Tay and Eden Estuary	0.0013	0.128%	0.96	96.1%	0.0019	0.190%	0.96	96.2%
192	Firth of Tay and Eden Estuary	0.0013	0.128%	0.96	96.1%	0.0019	0.191%	0.96	96.2%
193	Tentsmuir	0.0005	0.054%	0.96	96.1%	0.0008	0.079%	0.96	96.1%
194	Firth of Tay and Eden Estuary	0.0004	0.037%	0.96	96.0%	0.0005	0.053%	0.96	96.1%
195	Firth of Tay and Eden Estuary	0.0010	0.098%	0.96	96.1%	0.0014	0.144%	0.96	96.1%
196	Firth of Tay and Eden Estuary	0.0010	0.098%	0.96	96.1%	0.0014	0.144%	0.96	96.1%
197	Firth of Tay and Eden Estuary	0.0009	0.089%	0.96	96.1%	0.0013	0.131%	0.96	96.1%
198	Firth of Tay and Eden Estuary	0.0009	0.086%	0.96	96.1%	0.0013	0.126%	0.96	96.1%
199	Firth of Tay and Eden Estuary	0.0011	0.114%	0.96	96.1%	0.0017	0.167%	0.96	96.2%
200	Firth of Tay and Eden Estuary	0.0015	0.150%	0.96	96.2%	0.0022	0.216%	0.96	96.2%
201	Firth of Tay and Eden Estuary	0.0007	0.074%	0.96	96.1%	0.0011	0.107%	0.96	96.1%
202	Tentsmuir	0.0005	0.048%	0.96	96.0%	0.0007	0.068%	0.96	96.1%
203	Firth of Tay and Eden Estuary	0.0010	0.105%	0.96	96.1%	0.0016	0.164%	0.96	96.2%
204	Firth of Tay and Eden Estuary	0.0016	0.164%	0.96	96.2%	0.0025	0.250%	0.96	96.2%
205	Firth of Tay and Eden Estuary	0.0022	0.221%	0.96	96.2%	0.0033	0.327%	0.96	96.3%
206	Firth of Tay and Eden Estuary	0.0014	0.139%	0.96	96.1%	0.0021	0.212%	0.96	96.2%
207	Firth of Tay and Eden Estuary	0.0006	0.059%	0.96	96.1%	0.0009	0.091%	0.96	96.1%
208	Firth of Tay and Eden Estuary	0.0008	0.082%	0.96	96.1%	0.0013	0.129%	0.96	96.1%
209	Firth of Tay and Eden Estuary	0.0004	0.035%	0.96	96.0%	0.0006	0.056%	0.96	96.1%

210	Firth of Tay and Eden Estuary	0.0003	0.033%	0.96	96.0%	0.0005	0.051%	0.96	96.1%
211	Firth of Tay and Eden Estuary	0.0003	0.032%	0.96	96.0%	0.0005	0.049%	0.96	96.0%
212	Firth of Tay and Eden Estuary	0.0003	0.031%	0.96	96.0%	0.0005	0.049%	0.96	96.0%
213	Firth of Tay and Eden Estuary	0.0004	0.036%	0.96	96.0%	0.0005	0.054%	0.96	96.1%
214	Firth of Tay and Eden Estuary	0.0003	0.032%	0.96	96.0%	0.0005	0.050%	0.96	96.1%
215	Firth of Tay and Eden Estuary	0.0003	0.029%	0.96	96.0%	0.0004	0.045%	0.96	96.0%
216	Firth of Tay and Eden Estuary	0.0003	0.030%	0.96	96.0%	0.0005	0.046%	0.96	96.0%

Ecological Receptor ID	Receptor Location	EfW CHP Facility				EfW CHP Facility + Existing EfW Facility			
		Mod NH ₃ (PC) (µg/m ³)	1% test	Tot NH ₃ (PEC) (µg/m ³)	70% test	Mod NH ₃ (PC) (µg/m ³)	1% test	Tot NH ₃ (PEC) (µg/m ³)	70% test
1	Firth of Tay and Eden Estuary	0.0002	0.016%	0.89	89.0%	0.0002	0.023%	0.89	89.0%
2	Firth of Tay and Eden Estuary	0.0002	0.019%	0.89	89.0%	0.0003	0.026%	0.89	89.0%
3	Inner Tay Estuary	0.0002	0.019%	0.89	89.0%	0.0003	0.026%	0.89	89.0%
4	Firth of Tay and Eden Estuary	0.0002	0.021%	0.89	89.0%	0.0003	0.029%	0.89	89.0%
5	Firth of Tay and Eden Estuary	0.0001	0.011%	0.89	89.0%	0.0002	0.015%	0.89	89.0%
6	Firth of Tay and Eden Estuary	0.0002	0.024%	0.89	89.0%	0.0003	0.033%	0.89	89.0%
7	Inner Tay Estuary	0.0002	0.024%	0.89	89.0%	0.0003	0.033%	0.89	89.0%
8	Firth of Tay and Eden Estuary	0.0002	0.016%	0.89	89.0%	0.0002	0.023%	0.89	89.0%
9	Firth of Tay and Eden Estuary	0.0003	0.027%	0.89	89.0%	0.0004	0.038%	0.89	89.0%
10	Firth of Tay and Eden Estuary	0.0001	0.013%	0.89	89.0%	0.0002	0.018%	0.89	89.0%
11	Firth of Tay and Eden Estuary	0.0003	0.031%	0.89	89.0%	0.0004	0.043%	0.89	89.0%
12	Firth of Tay and Eden Estuary	0.0002	0.022%	0.89	89.0%	0.0003	0.031%	0.89	89.0%
13	Firth of Tay and Eden Estuary	0.0002	0.016%	0.89	89.0%	0.0002	0.022%	0.89	89.0%
14	Gallowhill/Cawmill Woods	0.0006	0.060%	0.89	89.1%	0.0008	0.083%	0.89	89.1%

15	Firth of Tay and Eden Estuary	0.0003	0.035%	0.89	89.0%	0.0005	0.048%	0.89	89.0%
16	Firth of Tay and Eden Estuary	0.0002	0.017%	0.89	89.0%	0.0002	0.023%	0.89	89.0%
17	Ancient Woodland	0.0005	0.047%	0.89	89.0%	0.0007	0.066%	0.89	89.1%
18	Baldrogon Wood	0.0008	0.085%	0.89	89.1%	0.0012	0.118%	0.89	89.1%
19	Wynton Wood	0.0007	0.074%	0.89	89.1%	0.0010	0.101%	0.89	89.1%
20	Heathland	0.0003	0.032%	0.89	89.0%	0.0004	0.042%	0.89	89.0%
21	Firth of Tay and Eden Estuary	0.0004	0.037%	0.89	89.0%	0.0005	0.052%	0.89	89.1%
22	Firth of Tay and Eden Estuary	0.0003	0.028%	0.89	89.0%	0.0004	0.040%	0.89	89.0%
23	Firth of Tay and Eden Estuary	0.0002	0.019%	0.89	89.0%	0.0003	0.027%	0.89	89.0%
24	Ancient Woodland	0.0011	0.111%	0.89	89.1%	0.0016	0.156%	0.89	89.2%
25	Ancient Woodland	0.0014	0.138%	0.89	89.1%	0.0020	0.196%	0.89	89.2%
26	Balmerino - Wormit Shore	0.0002	0.020%	0.89	89.0%	0.0003	0.028%	0.89	89.0%
27	Trottick Mill Ponds	0.0015	0.155%	0.89	89.2%	0.0022	0.219%	0.89	89.2%
28	Firth of Tay and Eden Estuary	0.0004	0.038%	0.89	89.0%	0.0005	0.054%	0.89	89.1%
29	East/West Links Wood	0.0002	0.023%	0.89	89.0%	0.0003	0.033%	0.89	89.0%
30	North Hill	0.0002	0.022%	0.89	89.0%	0.0003	0.031%	0.89	89.0%
31	River Tay	0.0001	0.013%	0.89	89.0%	0.0002	0.018%	0.89	89.0%
32	Woodland	0.0016	0.158%	0.89	89.2%	0.0022	0.222%	0.89	89.2%
33	Heathland	0.0004	0.035%	0.89	89.0%	0.0005	0.049%	0.89	89.0%

34	Waterbody	0.0011	0.106%	0.89	89.1%	0.0015	0.151%	0.89	89.2%
35	Balmuir Wood	0.0007	0.073%	0.89	89.1%	0.0010	0.104%	0.89	89.1%
36	River Tay	0.0001	0.014%	0.89	89.0%	0.0002	0.019%	0.89	89.0%
37	Dighty Water	0.0022	0.218%	0.89	89.2%	0.0031	0.308%	0.89	89.3%
38	Knockhill Wood	0.0003	0.025%	0.89	89.0%	0.0004	0.037%	0.89	89.0%
39	Ancient Woodland	0.0014	0.140%	0.89	89.1%	0.0020	0.204%	0.89	89.2%
40	Dighty Water	0.0026	0.262%	0.89	89.3%	0.0037	0.367%	0.89	89.4%
41	Waterbody	0.0017	0.170%	0.89	89.2%	0.0025	0.253%	0.89	89.3%
42	Whitehouse Den	0.0003	0.033%	0.89	89.0%	0.0005	0.048%	0.89	89.0%
43	Firth of Tay and Eden Estuary	0.0005	0.046%	0.89	89.0%	0.0007	0.068%	0.89	89.1%
44	River Tay	0.0001	0.015%	0.89	89.0%	0.0002	0.021%	0.89	89.0%
45	Dighty Water	0.0025	0.251%	0.89	89.3%	0.0035	0.345%	0.89	89.3%
46	Waterbody	0.0025	0.252%	0.89	89.3%	0.0038	0.383%	0.89	89.4%
47	Morendy Wood	0.0003	0.027%	0.89	89.0%	0.0004	0.040%	0.89	89.0%
48	Corbie Den	0.0003	0.028%	0.89	89.0%	0.0004	0.040%	0.89	89.0%
49	Sheihill Wood	0.0007	0.071%	0.89	89.1%	0.0010	0.104%	0.89	89.1%
50	Laverock Law	0.0003	0.031%	0.89	89.0%	0.0005	0.047%	0.89	89.0%
51	Woodland	0.0011	0.113%	0.89	89.1%	0.0017	0.167%	0.89	89.2%
52	Dighty Water	0.0026	0.259%	0.89	89.3%	0.0036	0.357%	0.89	89.4%
53	Ancient Woodland	0.0003	0.029%	0.89	89.0%	0.0004	0.040%	0.89	89.0%
54	Roseberry Wood	0.0003	0.032%	0.89	89.0%	0.0005	0.048%	0.89	89.0%
55	Heathland	0.0003	0.033%	0.89	89.0%	0.0005	0.048%	0.89	89.0%
56	Craig Law	0.0004	0.036%	0.89	89.0%	0.0005	0.053%	0.89	89.1%
57	Fithie Burn	0.0015	0.146%	0.89	89.1%	0.0022	0.219%	0.89	89.2%
58	Woodland	0.0014	0.137%	0.89	89.1%	0.0021	0.206%	0.89	89.2%

59	River Tay	0.0002	0.016%	0.89	89.0%	0.0002	0.023%	0.89	89.0%
60	Dighty Water	0.0040	0.399%	0.89	89.4%	0.0056	0.559%	0.90	89.6%
61	Woodland	0.0028	0.284%	0.89	89.3%	0.0044	0.443%	0.89	89.4%
62	Woodland	0.0014	0.140%	0.89	89.1%	0.0021	0.212%	0.89	89.2%
63	Fithie Burn	0.0013	0.135%	0.89	89.1%	0.0020	0.203%	0.89	89.2%
64	Woodland	0.0012	0.124%	0.89	89.1%	0.0019	0.187%	0.89	89.2%
65	Corbie Den	0.0003	0.028%	0.89	89.0%	0.0004	0.039%	0.89	89.0%
66	Woodland	0.0018	0.178%	0.89	89.2%	0.0027	0.272%	0.89	89.3%
67	Corbie Den	0.0002	0.025%	0.89	89.0%	0.0003	0.034%	0.89	89.0%
68	Pickletillem Marsh	0.0003	0.032%	0.89	89.0%	0.0005	0.047%	0.89	89.0%
69	Woodland	0.0013	0.131%	0.89	89.1%	0.0020	0.196%	0.89	89.2%
70	Dighty Water	0.0011	0.107%	0.89	89.1%	0.0016	0.162%	0.89	89.2%
71	Fithie Burn	0.0013	0.131%	0.89	89.1%	0.0019	0.195%	0.89	89.2%
72	Firth of Tay and Eden Estuary	0.0007	0.070%	0.89	89.1%	0.0010	0.105%	0.89	89.1%
73	Woodland	0.0011	0.113%	0.89	89.1%	0.0017	0.169%	0.89	89.2%
74	East Muirhouse Strip	0.0008	0.080%	0.89	89.1%	0.0012	0.117%	0.89	89.1%
75	Brighty Wood	0.0005	0.052%	0.89	89.1%	0.0007	0.074%	0.89	89.1%
76	Woodland	0.0020	0.201%	0.89	89.2%	0.0031	0.311%	0.89	89.3%
77	Firth of Tay and Eden Estuary	0.0004	0.042%	0.89	89.0%	0.0006	0.062%	0.89	89.1%
78	Gallowfauld Burn	0.0002	0.023%	0.89	89.0%	0.0003	0.032%	0.89	89.0%
79	Woodland	0.0015	0.148%	0.89	89.1%	0.0022	0.219%	0.89	89.2%
80	Waterbody	0.0018	0.178%	0.89	89.2%	0.0027	0.269%	0.89	89.3%
81	Fithie Burn	0.0015	0.145%	0.89	89.1%	0.0021	0.214%	0.89	89.2%
82	Duntrune/Glack Hills	0.0012	0.116%	0.89	89.1%	0.0017	0.171%	0.89	89.2%

83	Dighty Water	0.0005	0.052%	0.89	89.1%	0.0011	0.112%	0.89	89.1%
84	River Tay	0.0002	0.019%	0.89	89.0%	0.0003	0.026%	0.89	89.0%
85	Woodland	0.0004	0.038%	0.89	89.0%	0.0006	0.060%	0.89	89.1%
86	Ancient Woodland	0.0002	0.023%	0.89	89.0%	0.0003	0.032%	0.89	89.0%
87	St Michael's Wood Marshes	0.0003	0.029%	0.89	89.0%	0.0004	0.043%	0.89	89.0%
88	St Michael's Wood	0.0003	0.029%	0.89	89.0%	0.0004	0.043%	0.89	89.0%
89	Fithie Burn	0.0043	0.427%	0.89	89.4%	0.0078	0.777%	0.90	89.8%
90	Gagie Marsh	0.0006	0.060%	0.89	89.1%	0.0009	0.086%	0.89	89.1%
91	Waterbody	0.0023	0.229%	0.89	89.2%	0.0036	0.364%	0.89	89.4%
92	Fithie Burn	0.0145	1.454%	0.90	90.5%	0.0331	3.309%	0.92	92.3%
93	Heathland	0.0003	0.034%	0.89	89.0%	0.0005	0.047%	0.89	89.0%
94	Woodland	0.0018	0.180%	0.89	89.2%	0.0027	0.274%	0.89	89.3%
95	Woodland	0.0018	0.180%	0.89	89.2%	0.0027	0.274%	0.89	89.3%
96	Fithie Burn	0.0027	0.271%	0.89	89.3%	0.0044	0.439%	0.89	89.4%
97	Fithie Burn	0.0018	0.178%	0.89	89.2%	0.0027	0.270%	0.89	89.3%
98	Kirkton Wood	0.0004	0.035%	0.89	89.0%	0.0005	0.052%	0.89	89.1%
99	Big Latch	0.0004	0.043%	0.89	89.0%	0.0006	0.061%	0.89	89.1%
100	Fithie Burn	0.0000	0.000%	0.89	89.0%	0.0000	0.000%	0.89	89.0%
101	Woodland	0.0063	0.635%	0.90	89.6%	0.0106	1.056%	0.90	90.1%
102	Eden Estuary	0.0002	0.020%	0.89	89.0%	0.0003	0.029%	0.89	89.0%
103	Firth of Tay and Eden Estuary	0.0004	0.040%	0.89	89.0%	0.0006	0.061%	0.89	89.1%
104	Tayport - Tentsmuir Coast	0.0004	0.040%	0.89	89.0%	0.0006	0.061%	0.89	89.1%
105	Woodland	0.0031	0.309%	0.89	89.3%	0.0049	0.486%	0.89	89.5%
106	Dighty Water	0.0039	0.388%	0.89	89.4%	0.0058	0.583%	0.90	89.6%

107	Woodland	0.0075	0.754%	0.90	89.8%	0.0123	1.231%	0.90	90.2%
108	Murroes Burn	0.0089	0.888%	0.90	89.9%	0.0146	1.464%	0.90	90.5%
109	Waterbody	0.0101	1.011%	0.90	90.0%	0.0168	1.680%	0.91	90.7%
110	Murroes Burn	0.0050	0.499%	0.89	89.5%	0.0078	0.778%	0.90	89.8%
111	Woodland	0.0187	1.869%	0.91	90.9%	0.0318	3.182%	0.92	92.2%
112	Murroes Burn	0.0188	1.882%	0.91	90.9%	0.0317	3.171%	0.92	92.2%
113	Woodland	0.0197	1.967%	0.91	91.0%	0.0286	2.859%	0.92	91.9%
114	Murroes Burn	0.0178	1.784%	0.91	90.8%	0.0256	2.560%	0.92	91.6%
115	Kellas Wood	0.0007	0.074%	0.89	89.1%	0.0011	0.107%	0.89	89.1%
116	Dighty Water	0.0079	0.794%	0.90	89.8%	0.0113	1.129%	0.90	90.1%
117	Little Latch	0.0004	0.042%	0.89	89.0%	0.0006	0.059%	0.89	89.1%
118	Waterbody	0.0064	0.639%	0.90	89.6%	0.0099	0.993%	0.90	90.0%
119	Murroes Burn	0.0059	0.592%	0.90	89.6%	0.0091	0.913%	0.90	89.9%
120	River Tay	0.0002	0.020%	0.89	89.0%	0.0003	0.028%	0.89	89.0%
121	Woodland	0.0041	0.412%	0.89	89.4%	0.0062	0.621%	0.90	89.6%
122	Murroes Burn	0.0042	0.423%	0.89	89.4%	0.0064	0.638%	0.90	89.6%
123	Murroes Burn	0.0024	0.242%	0.89	89.2%	0.0036	0.358%	0.89	89.4%
124	Tentsmuir	0.0003	0.031%	0.89	89.0%	0.0005	0.047%	0.89	89.0%
125	Dighty Water	0.0087	0.874%	0.90	89.9%	0.0124	1.235%	0.90	90.2%
126	Morton Lochs	0.0003	0.031%	0.89	89.0%	0.0005	0.047%	0.89	89.0%
127	Woodland	0.0070	0.700%	0.90	89.7%	0.0100	0.996%	0.90	90.0%
128	Rhynd Wood	0.0003	0.027%	0.89	89.0%	0.0004	0.040%	0.89	89.0%
129	West Wood	0.0004	0.040%	0.89	89.0%	0.0006	0.056%	0.89	89.1%
130	Tentsmuir	0.0003	0.030%	0.89	89.0%	0.0004	0.044%	0.89	89.0%
131	Morton Lochs	0.0003	0.029%	0.89	89.0%	0.0004	0.044%	0.89	89.0%
132	West Wood	0.0004	0.041%	0.89	89.0%	0.0006	0.059%	0.89	89.1%

133	Buckler Heads Wood	0.0009	0.088%	0.89	89.1%	0.0013	0.128%	0.89	89.1%
134	Firth of Tay and Eden Estuary	0.0005	0.046%	0.89	89.0%	0.0007	0.072%	0.89	89.1%
135	Monifeth Bay	0.0005	0.046%	0.89	89.0%	0.0007	0.072%	0.89	89.1%
136	Dighty Water	0.0087	0.874%	0.90	89.9%	0.0125	1.249%	0.90	90.2%
137	Woodside Wood	0.0012	0.120%	0.89	89.1%	0.0018	0.175%	0.89	89.2%
138	Morton Links	0.0003	0.027%	0.89	89.0%	0.0004	0.040%	0.89	89.0%
139	Carrot Hill Meadow	0.0003	0.026%	0.89	89.0%	0.0004	0.036%	0.89	89.0%
140	Firth of Tay and Eden Estuary	0.0003	0.029%	0.89	89.0%	0.0005	0.046%	0.89	89.0%
141	Firth of Tay and Eden Estuary	0.0008	0.078%	0.89	89.1%	0.0012	0.122%	0.89	89.1%
142	Woodland	0.0012	0.124%	0.89	89.1%	0.0020	0.196%	0.89	89.2%
143	Tentsmuir	0.0003	0.026%	0.89	89.0%	0.0004	0.040%	0.89	89.0%
144	FID:59 x	0.0023	0.233%	0.89	89.2%	0.0034	0.340%	0.89	89.3%
145	Broughty Ferry	0.0010	0.098%	0.89	89.1%	0.0015	0.155%	0.89	89.2%
146	Eden Estuary	0.0002	0.019%	0.89	89.0%	0.0003	0.027%	0.89	89.0%
147	Woodland	0.0078	0.784%	0.90	89.8%	0.0114	1.145%	0.90	90.1%
148	Ancient Woodland	0.0042	0.422%	0.89	89.4%	0.0062	0.617%	0.90	89.6%
149	Broughty Ferry	0.0013	0.125%	0.89	89.1%	0.0020	0.195%	0.89	89.2%
150	Tentsmuir	0.0002	0.023%	0.89	89.0%	0.0004	0.036%	0.89	89.0%
151	Firth of Tay and Eden Estuary	0.0010	0.102%	0.89	89.1%	0.0016	0.158%	0.89	89.2%
152	Monifeth Bay	0.0010	0.102%	0.89	89.1%	0.0016	0.158%	0.89	89.2%
153	Tentsmuir	0.0002	0.024%	0.89	89.0%	0.0004	0.036%	0.89	89.0%
154	Tentsmuir	0.0003	0.028%	0.89	89.0%	0.0004	0.042%	0.89	89.0%

155	Gallow Hill	0.0059	0.585%	0.90	89.6%	0.0085	0.845%	0.90	89.8%
156	Tentsmuir	0.0002	0.021%	0.89	89.0%	0.0003	0.031%	0.89	89.0%
157	Firth of Tay and Eden Estuary	0.0003	0.034%	0.89	89.0%	0.0005	0.051%	0.89	89.1%
158	Firth of Tay and Eden Estuary	0.0006	0.063%	0.89	89.1%	0.0010	0.096%	0.89	89.1%
159	Firth of Tay and Eden Estuary	0.0002	0.016%	0.89	89.0%	0.0002	0.024%	0.89	89.0%
160	Firth of Tay and Eden Estuary	0.0018	0.182%	0.89	89.2%	0.0027	0.272%	0.89	89.3%
161	Monifeth Bay	0.0018	0.182%	0.89	89.2%	0.0027	0.272%	0.89	89.3%
162	Firth of Tay and Eden Estuary	0.0002	0.017%	0.89	89.0%	0.0003	0.025%	0.89	89.0%
163	Eden Estuary	0.0002	0.017%	0.89	89.0%	0.0003	0.025%	0.89	89.0%
164	Firth of Tay and Eden Estuary	0.0024	0.241%	0.89	89.2%	0.0036	0.357%	0.89	89.4%
165	Laws Hill	0.0049	0.494%	0.89	89.5%	0.0071	0.707%	0.90	89.7%
166	Tentsmuir	0.0004	0.040%	0.89	89.0%	0.0006	0.060%	0.89	89.1%
167	Firth of Tay and Eden Estuary	0.0002	0.017%	0.89	89.0%	0.0003	0.025%	0.89	89.0%
168	Eden Estuary	0.0002	0.017%	0.89	89.0%	0.0003	0.025%	0.89	89.0%
169	Denfind Plantation	0.0007	0.075%	0.89	89.1%	0.0011	0.105%	0.89	89.1%
170	Firth of Tay and Eden Estuary	0.0002	0.017%	0.89	89.0%	0.0002	0.025%	0.89	89.0%
171	Eden Estuary	0.0002	0.017%	0.89	89.0%	0.0002	0.025%	0.89	89.0%
172	Firth of Tay and Eden Estuary	0.0005	0.047%	0.89	89.0%	0.0007	0.069%	0.89	89.1%
173	Firth of Tay and Eden Estuary	0.0024	0.239%	0.89	89.2%	0.0036	0.358%	0.89	89.4%
174	Eden Estuary	0.0002	0.017%	0.89	89.0%	0.0003	0.026%	0.89	89.0%

175	Tentsmuir	0.0002	0.024%	0.89	89.0%	0.0004	0.035%	0.89	89.0%
176	Firth of Tay and Eden Estuary	0.0022	0.221%	0.89	89.2%	0.0033	0.331%	0.89	89.3%
177	Firth of Tay and Eden Estuary	0.0002	0.017%	0.89	89.0%	0.0003	0.026%	0.89	89.0%
178	Firth of Tay and Eden Estuary	0.0005	0.051%	0.89	89.1%	0.0008	0.076%	0.89	89.1%
179	Barry Links	0.0024	0.241%	0.89	89.2%	0.0036	0.361%	0.89	89.4%
180	Firth of Tay and Eden Estuary	0.0001	0.015%	0.89	89.0%	0.0002	0.022%	0.89	89.0%
181	Firth of Tay and Eden Estuary	0.0002	0.020%	0.89	89.0%	0.0003	0.029%	0.89	89.0%
182	Firth of Tay and Eden Estuary	0.0003	0.027%	0.89	89.0%	0.0004	0.039%	0.89	89.0%
183	Firth of Tay and Eden Estuary	0.0015	0.152%	0.89	89.2%	0.0023	0.226%	0.89	89.2%
184	Firth of Tay and Eden Estuary	0.0004	0.040%	0.89	89.0%	0.0006	0.058%	0.89	89.1%
185	Ancient Woodland	0.0034	0.339%	0.89	89.3%	0.0048	0.483%	0.89	89.5%
186	Firth of Tay and Eden Estuary	0.0018	0.184%	0.89	89.2%	0.0028	0.276%	0.89	89.3%
187	Firth of Tay and Eden Estuary	0.0018	0.183%	0.89	89.2%	0.0027	0.274%	0.89	89.3%
188	Weet's/Camustane/+ Woods	0.0012	0.116%	0.89	89.1%	0.0016	0.160%	0.89	89.2%
189	Firth of Tay and Eden Estuary	0.0004	0.043%	0.89	89.0%	0.0006	0.063%	0.89	89.1%
190	Firth of Tay and Eden Estuary	0.0011	0.112%	0.89	89.1%	0.0017	0.167%	0.89	89.2%
191	Firth of Tay and Eden Estuary	0.0013	0.128%	0.89	89.1%	0.0019	0.190%	0.89	89.2%

192	Firth of Tay and Eden Estuary	0.0013	0.128%	0.89	89.1%	0.0019	0.191%	0.89	89.2%
193	Tentsmuir	0.0005	0.054%	0.89	89.1%	0.0008	0.079%	0.89	89.1%
194	Firth of Tay and Eden Estuary	0.0004	0.037%	0.89	89.0%	0.0005	0.053%	0.89	89.1%
195	Firth of Tay and Eden Estuary	0.0010	0.098%	0.89	89.1%	0.0014	0.144%	0.89	89.1%
196	Firth of Tay and Eden Estuary	0.0010	0.098%	0.89	89.1%	0.0014	0.144%	0.89	89.1%
197	Firth of Tay and Eden Estuary	0.0009	0.089%	0.89	89.1%	0.0013	0.131%	0.89	89.1%
198	Firth of Tay and Eden Estuary	0.0009	0.086%	0.89	89.1%	0.0013	0.126%	0.89	89.1%
199	Firth of Tay and Eden Estuary	0.0011	0.114%	0.89	89.1%	0.0017	0.167%	0.89	89.2%
200	Firth of Tay and Eden Estuary	0.0015	0.150%	0.89	89.2%	0.0022	0.216%	0.89	89.2%
201	Firth of Tay and Eden Estuary	0.0007	0.074%	0.89	89.1%	0.0011	0.107%	0.89	89.1%
202	Tentsmuir	0.0005	0.048%	0.89	89.0%	0.0007	0.068%	0.89	89.1%
203	Firth of Tay and Eden Estuary	0.0010	0.105%	0.89	89.1%	0.0016	0.164%	0.89	89.2%
204	Firth of Tay and Eden Estuary	0.0016	0.164%	0.89	89.2%	0.0025	0.250%	0.89	89.2%
205	Firth of Tay and Eden Estuary	0.0022	0.221%	0.89	89.2%	0.0033	0.327%	0.89	89.3%
206	Firth of Tay and Eden Estuary	0.0014	0.139%	0.89	89.1%	0.0021	0.212%	0.89	89.2%
207	Firth of Tay and Eden Estuary	0.0006	0.059%	0.89	89.1%	0.0009	0.091%	0.89	89.1%
208	Firth of Tay and Eden Estuary	0.0008	0.082%	0.89	89.1%	0.0013	0.129%	0.89	89.1%

209	Firth of Tay and Eden Estuary	0.0004	0.035%	0.89	89.0%	0.0006	0.056%	0.89	89.1%
210	Firth of Tay and Eden Estuary	0.0003	0.033%	0.89	89.0%	0.0005	0.051%	0.89	89.1%
211	Firth of Tay and Eden Estuary	0.0003	0.032%	0.89	89.0%	0.0005	0.049%	0.89	89.0%
212	Firth of Tay and Eden Estuary	0.0003	0.031%	0.89	89.0%	0.0005	0.049%	0.89	89.0%
213	Firth of Tay and Eden Estuary	0.0004	0.036%	0.89	89.0%	0.0005	0.054%	0.89	89.1%
214	Firth of Tay and Eden Estuary	0.0003	0.032%	0.89	89.0%	0.0005	0.050%	0.89	89.1%
215	Firth of Tay and Eden Estuary	0.0003	0.029%	0.89	89.0%	0.0004	0.045%	0.89	89.0%
216	Firth of Tay and Eden Estuary	0.0003	0.030%	0.89	89.0%	0.0005	0.046%	0.89	89.0%

C1.5 Weekly HF concentrations

Table C5: Predicted weekly mean HF concentrations at sensitive ecological sites, and comparison with the critical level

Ecological receptor ID	Receptor location	EfW CHP Facility (under construction)		EfW CHP Facility (under construction) + Existing EfW Facility	
		Mod HF (PC) ($\mu\text{g}/\text{m}^3$)	1% of EAL test	Mod HF (PC) ($\mu\text{g}/\text{m}^3$)	1% of EAL test
1	Firth of Tay and Eden Estuary	0.0002	0.03%	0.0002	0.03%
2	Firth of Tay and Eden Estuary	0.0002	0.03%	0.0002	0.03%
3	Inner Tay Estuary	0.0002	0.03%	0.0002	0.03%
4	Firth of Tay and Eden Estuary	0.0002	0.04%	0.0002	0.04%
5	Firth of Tay and Eden Estuary	0.0001	0.02%	0.0001	0.02%
6	Firth of Tay and Eden Estuary	0.0002	0.05%	0.0003	0.05%

7	Inner Tay Estuary	0.0002	0.05%	0.0003	0.05%
8	Firth of Tay and Eden Estuary	0.0002	0.04%	0.0002	0.04%
9	Firth of Tay and Eden Estuary	0.0003	0.06%	0.0003	0.06%
10	Firth of Tay and Eden Estuary	0.0001	0.03%	0.0001	0.03%
11	Firth of Tay and Eden Estuary	0.0003	0.07%	0.0003	0.07%
12	Firth of Tay and Eden Estuary	0.0003	0.06%	0.0003	0.06%
13	Firth of Tay and Eden Estuary	0.0002	0.04%	0.0002	0.04%
14	Gallowhill/Cawmill Woods	0.0005	0.11%	0.0006	0.11%
15	Firth of Tay and Eden Estuary	0.0003	0.07%	0.0003	0.07%
16	Firth of Tay and Eden Estuary	0.0002	0.04%	0.0002	0.04%
17	Ancient Woodland	0.0006	0.13%	0.0007	0.13%
18	Baldrogon Wood	0.0006	0.12%	0.0006	0.12%
19	Wynton Wood	0.0005	0.10%	0.0005	0.10%
20	Heathland	0.0002	0.05%	0.0002	0.05%
21	Firth of Tay and Eden Estuary	0.0004	0.09%	0.0004	0.09%
22	Firth of Tay and Eden Estuary	0.0004	0.08%	0.0004	0.08%
23	Firth of Tay and Eden Estuary	0.0002	0.04%	0.0002	0.04%
24	Ancient Woodland	0.0008	0.16%	0.0008	0.16%
25	Ancient Woodland	0.0009	0.18%	0.0009	0.18%
26	Balmerino - Wormit Shore	0.0002	0.04%	0.0002	0.04%
27	Trottick Mill Ponds	0.0011	0.21%	0.0011	0.22%
28	Firth of Tay and Eden Estuary	0.0006	0.12%	0.0006	0.12%
29	East/West Links Wood	0.0002	0.04%	0.0002	0.04%
30	North Hill	0.0002	0.04%	0.0002	0.04%
31	River Tay	0.0001	0.03%	0.0001	0.03%
32	Woodland	0.0014	0.28%	0.0014	0.29%
33	Heathland	0.0003	0.06%	0.0003	0.06%

34	Waterbody	0.0012	0.24%	0.0013	0.25%
35	Balmuir Wood	0.0005	0.09%	0.0005	0.10%
36	River Tay	0.0001	0.03%	0.0001	0.03%
37	Dighty Water	0.0018	0.36%	0.0019	0.37%
38	Knockhill Wood	0.0002	0.04%	0.0002	0.04%
39	Ancient Woodland	0.0009	0.17%	0.0009	0.18%
40	Dighty Water	0.0022	0.45%	0.0023	0.46%
41	Waterbody	0.0011	0.22%	0.0011	0.23%
42	Whitehouse Den	0.0003	0.07%	0.0003	0.07%
43	Firth of Tay and Eden Estuary	0.0007	0.14%	0.0007	0.14%
44	River Tay	0.0001	0.03%	0.0001	0.03%
45	Dighty Water	0.0024	0.47%	0.0024	0.48%
46	Waterbody	0.0021	0.41%	0.0021	0.43%
47	Morendy Wood	0.0003	0.06%	0.0003	0.06%
48	Corbie Den	0.0003	0.06%	0.0003	0.06%
49	Sheihill Wood	0.0006	0.13%	0.0007	0.13%
50	Laverock Law	0.0002	0.05%	0.0003	0.05%
51	Woodland	0.0009	0.19%	0.0010	0.19%
52	Dighty Water	0.0023	0.45%	0.0023	0.46%
53	Ancient Woodland	0.0003	0.05%	0.0003	0.05%
54	Roseberry Wood	0.0003	0.06%	0.0003	0.07%
55	Heathland	0.0003	0.06%	0.0003	0.06%
56	Craig Law	0.0004	0.07%	0.0004	0.07%
57	Fithie Burn	0.0013	0.26%	0.0013	0.26%
58	Woodland	0.0012	0.25%	0.0013	0.25%
59	River Tay	0.0002	0.03%	0.0002	0.03%
60	Dighty Water	0.0035	0.70%	0.0036	0.72%

61	Woodland	0.0016	0.32%	0.0016	0.33%
62	Woodland	0.0013	0.26%	0.0014	0.27%
63	Fithie Burn	0.0013	0.25%	0.0013	0.26%
64	Woodland	0.0012	0.23%	0.0012	0.24%
65	Corbie Den	0.0002	0.05%	0.0002	0.05%
66	Woodland	0.0017	0.33%	0.0017	0.34%
67	Corbie Den	0.0002	0.04%	0.0002	0.04%
68	Pickletillem Marsh	0.0004	0.07%	0.0004	0.07%
69	Woodland	0.0012	0.24%	0.0012	0.24%
70	Dighty Water	0.0017	0.33%	0.0017	0.35%
71	Fithie Burn	0.0011	0.22%	0.0011	0.23%
72	Firth of Tay and Eden Estuary	0.0009	0.18%	0.0009	0.19%
73	Woodland	0.0009	0.18%	0.0009	0.18%
74	East Muirhouse Strip	0.0006	0.11%	0.0006	0.12%
75	Brighty Wood	0.0004	0.07%	0.0004	0.08%
76	Woodland	0.0017	0.34%	0.0017	0.35%
77	Firth of Tay and Eden Estuary	0.0004	0.09%	0.0004	0.09%
78	Gallowfauld Burn	0.0002	0.04%	0.0002	0.04%
79	Woodland	0.0011	0.23%	0.0012	0.23%
80	Waterbody	0.0014	0.28%	0.0015	0.29%
81	Fithie Burn	0.0011	0.22%	0.0011	0.23%
82	Duntrune/Glack Hills	0.0008	0.17%	0.0009	0.17%
83	Dighty Water	0.0014	0.29%	0.0015	0.30%
84	River Tay	0.0002	0.03%	0.0002	0.03%
85	Woodland	0.0004	0.08%	0.0004	0.08%
86	Ancient Woodland	0.0002	0.04%	0.0002	0.04%
87	St Michael's Wood Marshes	0.0003	0.05%	0.0003	0.05%

88	St Michael's Wood	0.0003	0.05%	0.0003	0.05%
89	Fithie Burn	0.0031	0.61%	0.0033	0.65%
90	Gagie Marsh	0.0004	0.08%	0.0004	0.08%
91	Waterbody	0.0019	0.38%	0.0020	0.39%
92	Fithie Burn	0.0130	2.59%	0.0136	2.72%
93	Heathland	0.0002	0.05%	0.0003	0.05%
94	Woodland	0.0015	0.30%	0.0016	0.31%
95	Woodland	0.0015	0.30%	0.0016	0.31%
96	Fithie Burn	0.0021	0.42%	0.0022	0.44%
97	Fithie Burn	0.0015	0.30%	0.0015	0.31%
98	Kirkton Wood	0.0003	0.06%	0.0003	0.06%
99	Big Latch	0.0003	0.06%	0.0003	0.06%
100	Fithie Burn	0.0000	0.00%	0.0000	0.00%
101	Woodland	0.0053	1.05%	0.0055	1.10%
102	Eden Estuary	0.0002	0.03%	0.0002	0.03%
103	Firth of Tay and Eden Estuary	0.0004	0.07%	0.0004	0.08%
104	Tayport - Tentsmuir Coast	0.0004	0.07%	0.0004	0.08%
105	Woodland	0.0022	0.45%	0.0023	0.47%
106	Dighty Water	0.0038	0.75%	0.0039	0.78%
107	Woodland	0.0066	1.32%	0.0069	1.38%
108	Murroes Burn	0.0078	1.57%	0.0082	1.64%
109	Waterbody	0.0089	1.77%	0.0092	1.85%
110	Murroes Burn	0.0042	0.84%	0.0044	0.88%
111	Woodland	0.0119	2.38%	0.0123	2.46%
112	Murroes Burn	0.0113	2.27%	0.0117	2.34%
113	Woodland	0.0080	1.61%	0.0083	1.67%
114	Murroes Burn	0.0078	1.56%	0.0081	1.61%

115	Kellas Wood	0.0005	0.11%	0.0005	0.11%
116	Dighty Water	0.0047	0.93%	0.0048	0.97%
117	Little Latch	0.0003	0.06%	0.0003	0.06%
118	Waterbody	0.0054	1.08%	0.0056	1.12%
119	Murroes Burn	0.0050	1.00%	0.0052	1.04%
120	River Tay	0.0002	0.03%	0.0002	0.03%
121	Woodland	0.0035	0.69%	0.0036	0.72%
122	Murroes Burn	0.0035	0.70%	0.0036	0.73%
123	Murroes Burn	0.0019	0.39%	0.0020	0.40%
124	Tentsmuir	0.0003	0.06%	0.0003	0.06%
125	Dighty Water	0.0039	0.78%	0.0040	0.81%
126	Morton Lochs	0.0003	0.06%	0.0003	0.06%
127	Woodland	0.0035	0.70%	0.0036	0.72%
128	Rhynd Wood	0.0002	0.05%	0.0002	0.05%
129	West Wood	0.0002	0.05%	0.0003	0.05%
130	Tentsmuir	0.0003	0.05%	0.0003	0.05%
131	Morton Lochs	0.0002	0.05%	0.0003	0.05%
132	West Wood	0.0003	0.05%	0.0003	0.05%
133	Buckler Heads Wood	0.0005	0.11%	0.0005	0.11%
134	Firth of Tay and Eden Estuary	0.0005	0.10%	0.0005	0.10%
135	Monifeth Bay	0.0005	0.10%	0.0005	0.10%
136	Dighty Water	0.0036	0.71%	0.0037	0.73%
137	Woodside Wood	0.0009	0.17%	0.0009	0.18%
138	Morton Links	0.0002	0.05%	0.0002	0.05%
139	Carrot Hill Meadow	0.0002	0.04%	0.0002	0.04%
140	Firth of Tay and Eden Estuary	0.0003	0.05%	0.0003	0.05%
141	Firth of Tay and Eden Estuary	0.0006	0.12%	0.0006	0.12%

142	Woodland	0.0011	0.22%	0.0012	0.23%
143	Tentsmuir	0.0002	0.05%	0.0002	0.05%
144	Woodland	0.0017	0.34%	0.0017	0.35%
145	Broughty Ferry	0.0009	0.17%	0.0009	0.18%
146	Eden Estuary	0.0002	0.03%	0.0002	0.04%
147	Woodland	0.0032	0.65%	0.0034	0.67%
148	Ancient Woodland	0.0018	0.37%	0.0019	0.38%
149	Broughty Ferry	0.0011	0.22%	0.0011	0.23%
150	Tentsmuir	0.0002	0.04%	0.0002	0.04%
151	Firth of Tay and Eden Estuary	0.0009	0.18%	0.0009	0.19%
152	Monifeth Bay	0.0009	0.18%	0.0009	0.19%
153	Tentsmuir	0.0002	0.04%	0.0002	0.04%
154	Tentsmuir	0.0003	0.05%	0.0003	0.05%
155	Gallow Hill	0.0020	0.40%	0.0021	0.42%
156	Tentsmuir	0.0002	0.04%	0.0002	0.04%
157	Firth of Tay and Eden Estuary	0.0003	0.06%	0.0003	0.06%
158	Firth of Tay and Eden Estuary	0.0005	0.09%	0.0005	0.10%
159	Firth of Tay and Eden Estuary	0.0001	0.03%	0.0001	0.03%
160	Firth of Tay and Eden Estuary	0.0011	0.22%	0.0012	0.23%
161	Monifeth Bay	0.0011	0.22%	0.0012	0.23%
162	Firth of Tay and Eden Estuary	0.0001	0.03%	0.0002	0.03%
163	Eden Estuary	0.0001	0.03%	0.0002	0.03%
164	Firth of Tay and Eden Estuary	0.0011	0.23%	0.0012	0.24%
165	Laws Hill	0.0018	0.36%	0.0019	0.37%
166	Tentsmuir	0.0003	0.06%	0.0003	0.06%
167	Firth of Tay and Eden Estuary	0.0001	0.03%	0.0002	0.03%
168	Eden Estuary	0.0001	0.03%	0.0002	0.03%

169	Denfind Plantation	0.0005	0.09%	0.0005	0.10%
170	Firth of Tay and Eden Estuary	0.0001	0.03%	0.0001	0.03%
171	Eden Estuary	0.0001	0.03%	0.0001	0.03%
172	Firth of Tay and Eden Estuary	0.0003	0.06%	0.0003	0.07%
173	Firth of Tay and Eden Estuary	0.0012	0.25%	0.0013	0.26%
174	Eden Estuary	0.0001	0.03%	0.0001	0.03%
175	Tentsmuir	0.0002	0.04%	0.0002	0.04%
176	Firth of Tay and Eden Estuary	0.0011	0.23%	0.0012	0.24%
177	Firth of Tay and Eden Estuary	0.0001	0.03%	0.0001	0.03%
178	Firth of Tay and Eden Estuary	0.0003	0.07%	0.0004	0.07%
179	Barry Links	0.0012	0.25%	0.0013	0.26%
180	Firth of Tay and Eden Estuary	0.0001	0.03%	0.0001	0.03%
181	Firth of Tay and Eden Estuary	0.0002	0.04%	0.0002	0.04%
182	Firth of Tay and Eden Estuary	0.0002	0.04%	0.0002	0.04%
183	Firth of Tay and Eden Estuary	0.0008	0.16%	0.0008	0.17%
184	Firth of Tay and Eden Estuary	0.0003	0.06%	0.0003	0.06%
185	Ancient Woodland	0.0015	0.30%	0.0015	0.30%
186	Firth of Tay and Eden Estuary	0.0010	0.20%	0.0010	0.21%
187	Firth of Tay and Eden Estuary	0.0010	0.20%	0.0010	0.20%
188	Weet's/Camustane/+ Woods	0.0006	0.12%	0.0006	0.12%
189	Firth of Tay and Eden Estuary	0.0003	0.06%	0.0003	0.06%
190	Firth of Tay and Eden Estuary	0.0007	0.13%	0.0007	0.14%
191	Firth of Tay and Eden Estuary	0.0007	0.14%	0.0007	0.14%
192	Firth of Tay and Eden Estuary	0.0007	0.14%	0.0007	0.14%
193	Tentsmuir	0.0004	0.08%	0.0004	0.08%
194	Firth of Tay and Eden Estuary	0.0002	0.05%	0.0003	0.05%
195	Firth of Tay and Eden Estuary	0.0006	0.12%	0.0006	0.12%

196	Firth of Tay and Eden Estuary	0.0006	0.12%	0.0006	0.12%
197	Firth of Tay and Eden Estuary	0.0006	0.11%	0.0006	0.12%
198	Firth of Tay and Eden Estuary	0.0005	0.11%	0.0006	0.11%
199	Firth of Tay and Eden Estuary	0.0006	0.13%	0.0007	0.13%
200	Firth of Tay and Eden Estuary	0.0008	0.15%	0.0008	0.16%
201	Firth of Tay and Eden Estuary	0.0005	0.10%	0.0005	0.10%
202	Tentsmuir	0.0004	0.07%	0.0004	0.08%
203	Firth of Tay and Eden Estuary	0.0009	0.19%	0.0010	0.19%
204	Firth of Tay and Eden Estuary	0.0012	0.24%	0.0013	0.25%
205	Firth of Tay and Eden Estuary	0.0012	0.24%	0.0012	0.25%
206	Firth of Tay and Eden Estuary	0.0011	0.22%	0.0011	0.23%
207	Firth of Tay and Eden Estuary	0.0005	0.11%	0.0005	0.11%
208	Firth of Tay and Eden Estuary	0.0007	0.13%	0.0007	0.14%
209	Firth of Tay and Eden Estuary	0.0004	0.09%	0.0004	0.09%
210	Firth of Tay and Eden Estuary	0.0003	0.06%	0.0003	0.07%
211	Firth of Tay and Eden Estuary	0.0003	0.06%	0.0003	0.06%
212	Firth of Tay and Eden Estuary	0.0003	0.06%	0.0003	0.06%
213	Firth of Tay and Eden Estuary	0.0003	0.06%	0.0003	0.06%
214	Firth of Tay and Eden Estuary	0.0003	0.07%	0.0003	0.07%
215	Firth of Tay and Eden Estuary	0.0003	0.05%	0.0003	0.06%
216	Firth of Tay and Eden Estuary	0.0003	0.06%	0.0003	0.06%

C1.6 Daily HF concentrations

Table C6: Predicted daily mean HF concentrations at sensitive ecological sites, and comparison with the critical level

Ecological receptor ID	Receptor location	EfW CHP Facility (under construction)		EfW CHP Facility (under construction) + Existing EfW Facility	
		Mod HF (PC) (µg/m³)	1% of EAL test	Mod HF (PC) (µg/m³)	1% of EAL test
1	Firth of Tay and Eden Estuary	0.0006	0.012%	0.0006	0.012%
2	Firth of Tay and Eden Estuary	0.0007	0.013%	0.0007	0.013%
3	Inner Tay Estuary	0.0007	0.013%	0.0007	0.013%
4	Firth of Tay and Eden Estuary	0.0007	0.014%	0.0007	0.014%
5	Firth of Tay and Eden Estuary	0.0005	0.010%	0.0005	0.010%
6	Firth of Tay and Eden Estuary	0.0007	0.014%	0.0007	0.015%
7	Inner Tay Estuary	0.0007	0.014%	0.0007	0.015%
8	Firth of Tay and Eden Estuary	0.0007	0.014%	0.0007	0.014%
9	Firth of Tay and Eden Estuary	0.0009	0.019%	0.0010	0.019%
10	Firth of Tay and Eden Estuary	0.0006	0.012%	0.0006	0.012%
11	Firth of Tay and Eden Estuary	0.0010	0.020%	0.0010	0.021%
12	Firth of Tay and Eden Estuary	0.0009	0.018%	0.0010	0.019%
13	Firth of Tay and Eden Estuary	0.0008	0.015%	0.0008	0.016%
14	Gallowhill/Cawmill Woods	0.0018	0.036%	0.0018	0.037%
15	Firth of Tay and Eden Estuary	0.0012	0.024%	0.0012	0.025%
16	Firth of Tay and Eden Estuary	0.0008	0.016%	0.0008	0.016%
17	Ancient Woodland	0.0022	0.045%	0.0023	0.046%
18	Baldriggon Wood	0.0017	0.034%	0.0017	0.035%
19	Wynton Wood	0.0019	0.039%	0.0020	0.039%
20	Heathland	0.0011	0.022%	0.0011	0.022%
21	Firth of Tay and Eden Estuary	0.0016	0.031%	0.0016	0.032%

22	Firth of Tay and Eden Estuary	0.0013	0.026%	0.0013	0.027%
23	Firth of Tay and Eden Estuary	0.0008	0.017%	0.0009	0.017%
24	Ancient Woodland	0.0024	0.047%	0.0024	0.048%
25	Ancient Woodland	0.0029	0.057%	0.0029	0.059%
26	Balmerino - Wormit Shore	0.0007	0.014%	0.0007	0.015%
27	Trottick Mill Ponds	0.0034	0.068%	0.0035	0.070%
28	Firth of Tay and Eden Estuary	0.0020	0.040%	0.0021	0.042%
29	East/West Links Wood	0.0008	0.016%	0.0008	0.016%
30	North Hill	0.0009	0.018%	0.0009	0.019%
31	River Tay	0.0005	0.009%	0.0005	0.009%
32	Woodland	0.0047	0.093%	0.0048	0.096%
33	Heathland	0.0013	0.027%	0.0014	0.028%
34	Waterbody	0.0028	0.057%	0.0030	0.059%
35	Balmuir Wood	0.0023	0.046%	0.0024	0.048%
36	River Tay	0.0005	0.009%	0.0005	0.010%
37	Dighty Water	0.0062	0.124%	0.0064	0.128%
38	Knockhill Wood	0.0010	0.020%	0.0010	0.021%
39	Ancient Woodland	0.0043	0.085%	0.0044	0.088%
40	Dighty Water	0.0070	0.140%	0.0072	0.144%
41	Waterbody	0.0052	0.105%	0.0054	0.109%
42	Whitehouse Den	0.0010	0.020%	0.0010	0.020%
43	Firth of Tay and Eden Estuary	0.0025	0.050%	0.0026	0.052%
44	River Tay	0.0005	0.009%	0.0005	0.010%
45	Dighty Water	0.0077	0.155%	0.0079	0.159%
46	Waterbody	0.0054	0.108%	0.0056	0.112%
47	Morendy Wood	0.0012	0.024%	0.0013	0.025%
48	Corbie Den	0.0008	0.017%	0.0009	0.018%

49	Sheihill Wood	0.0023	0.047%	0.0024	0.049%
50	Laverock Law	0.0013	0.026%	0.0013	0.027%
51	Woodland	0.0040	0.081%	0.0042	0.084%
52	Dighty Water	0.0081	0.162%	0.0084	0.167%
53	Ancient Woodland	0.0008	0.016%	0.0008	0.016%
54	Roseberry Wood	0.0014	0.027%	0.0014	0.029%
55	Heathland	0.0009	0.017%	0.0009	0.018%
56	Craig Law	0.0017	0.034%	0.0017	0.035%
57	Fithie Burn	0.0057	0.114%	0.0059	0.118%
58	Woodland	0.0053	0.106%	0.0055	0.109%
59	River Tay	0.0005	0.010%	0.0005	0.011%
60	Dighty Water	0.0133	0.266%	0.0137	0.274%
61	Woodland	0.0085	0.170%	0.0088	0.177%
62	Woodland	0.0051	0.101%	0.0052	0.105%
63	Fithie Burn	0.0045	0.091%	0.0047	0.094%
64	Woodland	0.0038	0.076%	0.0039	0.079%
65	Corbie Den	0.0009	0.018%	0.0009	0.018%
66	Woodland	0.0068	0.137%	0.0071	0.142%
67	Corbie Den	0.0008	0.015%	0.0008	0.016%
68	Picklettille Marsh	0.0010	0.019%	0.0010	0.020%
69	Woodland	0.0035	0.069%	0.0036	0.071%
70	Dighty Water	0.0077	0.155%	0.0080	0.159%
71	Fithie Burn	0.0031	0.062%	0.0032	0.064%
72	Firth of Tay and Eden Estuary	0.0044	0.089%	0.0046	0.091%
73	Woodland	0.0028	0.056%	0.0029	0.058%
74	East Muirhouse Strip	0.0026	0.052%	0.0027	0.054%
75	Brighty Wood	0.0019	0.037%	0.0019	0.039%

76	Woodland	0.0046	0.093%	0.0048	0.096%
77	Firth of Tay and Eden Estuary	0.0021	0.041%	0.0021	0.043%
78	Gallowfauld Burn	0.0007	0.014%	0.0007	0.015%
79	Woodland	0.0038	0.075%	0.0039	0.078%
80	Waterbody	0.0045	0.090%	0.0046	0.093%
81	Fithie Burn	0.0035	0.070%	0.0036	0.073%
82	Duntrune/Glack Hills	0.0033	0.066%	0.0034	0.068%
83	Dighty Water	0.0089	0.179%	0.0093	0.185%
84	River Tay	0.0006	0.011%	0.0006	0.012%
85	Woodland	0.0016	0.032%	0.0017	0.033%
86	Ancient Woodland	0.0007	0.014%	0.0007	0.014%
87	St Michael's Wood Marshes	0.0011	0.021%	0.0011	0.022%
88	St Michael's Wood	0.0011	0.021%	0.0011	0.022%
89	Fithie Burn	0.0099	0.198%	0.0103	0.207%
90	Gagie Marsh	0.0019	0.038%	0.0020	0.039%
91	Waterbody	0.0060	0.119%	0.0062	0.124%
92	Fithie Burn	0.0185	0.370%	0.0198	0.395%
93	Heathland	0.0010	0.021%	0.0011	0.021%
94	Woodland	0.0045	0.091%	0.0047	0.094%
95	Woodland	0.0045	0.091%	0.0047	0.094%
96	Fithie Burn	0.0070	0.139%	0.0073	0.145%
97	Fithie Burn	0.0045	0.089%	0.0046	0.093%
98	Kirkton Wood	0.0011	0.022%	0.0012	0.023%
99	Big Latch	0.0013	0.026%	0.0014	0.027%
100	Fithie Burn	0.0000	0.000%	0.0000	0.000%
101	Woodland	0.0115	0.231%	0.0121	0.241%
102	Eden Estuary	0.0007	0.015%	0.0008	0.015%

103	Firth of Tay and Eden Estuary	0.0019	0.037%	0.0019	0.039%
104	Tayport - Tentsmuir Coast	0.0019	0.037%	0.0019	0.039%
105	Woodland	0.0069	0.138%	0.0071	0.143%
106	Dighty Water	0.0108	0.215%	0.0112	0.223%
107	Woodland	0.0138	0.276%	0.0143	0.286%
108	Murroes Burn	0.0147	0.294%	0.0152	0.304%
109	Waterbody	0.0145	0.289%	0.0150	0.299%
110	Murroes Burn	0.0097	0.194%	0.0101	0.201%
111	Woodland	0.0184	0.368%	0.0191	0.382%
112	Murroes Burn	0.0177	0.354%	0.0184	0.367%
113	Woodland	0.0152	0.303%	0.0157	0.313%
114	Murroes Burn	0.0150	0.300%	0.0154	0.309%
115	Kellas Wood	0.0015	0.030%	0.0015	0.031%
116	Dighty Water	0.0104	0.208%	0.0107	0.214%
117	Little Latch	0.0011	0.022%	0.0011	0.023%
118	Waterbody	0.0092	0.184%	0.0094	0.189%
119	Murroes Burn	0.0088	0.176%	0.0091	0.181%
120	River Tay	0.0006	0.013%	0.0006	0.013%
121	Woodland	0.0071	0.142%	0.0073	0.146%
122	Murroes Burn	0.0066	0.132%	0.0068	0.136%
123	Murroes Burn	0.0049	0.098%	0.0051	0.101%
124	Tentsmuir	0.0011	0.022%	0.0011	0.022%
125	Dighty Water	0.0076	0.153%	0.0079	0.158%
126	Morton Lochs	0.0010	0.021%	0.0011	0.022%
127	Woodland	0.0079	0.159%	0.0082	0.163%
128	Rhynd Wood	0.0009	0.018%	0.0009	0.018%
129	West Wood	0.0011	0.022%	0.0011	0.023%

130	Tentsmuir	0.0010	0.020%	0.0010	0.020%
131	Morton Lochs	0.0010	0.019%	0.0010	0.020%
132	West Wood	0.0011	0.022%	0.0011	0.022%
133	Buckler Heads Wood	0.0016	0.031%	0.0016	0.033%
134	Firth of Tay and Eden Estuary	0.0013	0.026%	0.0013	0.027%
135	Monifeth Bay	0.0013	0.026%	0.0013	0.027%
136	Dighty Water	0.0065	0.131%	0.0067	0.134%
137	Woodside Wood	0.0023	0.046%	0.0024	0.049%
138	Morton Links	0.0009	0.018%	0.0009	0.019%
139	Carrot Hill Meadow	0.0008	0.016%	0.0008	0.016%
140	Firth of Tay and Eden Estuary	0.0010	0.019%	0.0010	0.020%
141	Firth of Tay and Eden Estuary	0.0022	0.045%	0.0023	0.047%
142	Woodland	0.0027	0.053%	0.0028	0.055%
143	Tentsmuir	0.0008	0.015%	0.0008	0.016%
144	Woodland	0.0035	0.069%	0.0036	0.071%
145	Broughty Ferry	0.0021	0.042%	0.0022	0.044%
146	Eden Estuary	0.0006	0.012%	0.0006	0.012%
147	Woodland	0.0054	0.108%	0.0056	0.111%
148	Ancient Woodland	0.0037	0.074%	0.0038	0.077%
149	Broughty Ferry	0.0024	0.047%	0.0025	0.049%
150	Tentsmuir	0.0007	0.014%	0.0007	0.014%
151	Firth of Tay and Eden Estuary	0.0020	0.039%	0.0020	0.041%
152	Monifeth Bay	0.0020	0.039%	0.0020	0.041%
153	Tentsmuir	0.0008	0.015%	0.0008	0.016%
154	Tentsmuir	0.0008	0.015%	0.0008	0.016%
155	Gallow Hill	0.0043	0.087%	0.0045	0.090%
156	Tentsmuir	0.0007	0.014%	0.0007	0.014%

157	Firth of Tay and Eden Estuary	0.0009	0.018%	0.0009	0.019%
158	Firth of Tay and Eden Estuary	0.0017	0.033%	0.0017	0.035%
159	Firth of Tay and Eden Estuary	0.0005	0.011%	0.0006	0.011%
160	Firth of Tay and Eden Estuary	0.0034	0.068%	0.0035	0.071%
161	Monifeth Bay	0.0034	0.068%	0.0035	0.071%
162	Firth of Tay and Eden Estuary	0.0006	0.012%	0.0006	0.013%
163	Eden Estuary	0.0006	0.012%	0.0006	0.013%
164	Firth of Tay and Eden Estuary	0.0032	0.064%	0.0033	0.066%
165	Laws Hill	0.0036	0.073%	0.0037	0.075%
166	Tentsmuir	0.0012	0.024%	0.0013	0.025%
167	Firth of Tay and Eden Estuary	0.0006	0.012%	0.0006	0.013%
168	Eden Estuary	0.0006	0.012%	0.0006	0.013%
169	Denfind Plantation	0.0021	0.041%	0.0021	0.042%
170	Firth of Tay and Eden Estuary	0.0005	0.011%	0.0005	0.011%
171	Eden Estuary	0.0005	0.011%	0.0005	0.011%
172	Firth of Tay and Eden Estuary	0.0014	0.027%	0.0014	0.028%
173	Firth of Tay and Eden Estuary	0.0029	0.058%	0.0030	0.060%
174	Eden Estuary	0.0006	0.011%	0.0006	0.012%
175	Tentsmuir	0.0006	0.011%	0.0006	0.012%
176	Firth of Tay and Eden Estuary	0.0027	0.054%	0.0028	0.056%
177	Firth of Tay and Eden Estuary	0.0006	0.011%	0.0006	0.012%
178	Firth of Tay and Eden Estuary	0.0014	0.027%	0.0014	0.028%
179	Barry Links	0.0030	0.059%	0.0031	0.061%
180	Firth of Tay and Eden Estuary	0.0006	0.011%	0.0006	0.011%
181	Firth of Tay and Eden Estuary	0.0005	0.011%	0.0006	0.011%
182	Firth of Tay and Eden Estuary	0.0007	0.015%	0.0008	0.015%
183	Firth of Tay and Eden Estuary	0.0026	0.052%	0.0027	0.054%

184	Firth of Tay and Eden Estuary	0.0012	0.023%	0.0012	0.024%
185	Ancient Woodland	0.0022	0.044%	0.0023	0.046%
186	Firth of Tay and Eden Estuary	0.0024	0.047%	0.0024	0.049%
187	Firth of Tay and Eden Estuary	0.0023	0.047%	0.0024	0.048%
188	Weet's/Camustane/+ Woods	0.0020	0.040%	0.0021	0.041%
189	Firth of Tay and Eden Estuary	0.0011	0.023%	0.0012	0.024%
190	Firth of Tay and Eden Estuary	0.0021	0.042%	0.0022	0.043%
191	Firth of Tay and Eden Estuary	0.0018	0.036%	0.0019	0.038%
192	Firth of Tay and Eden Estuary	0.0018	0.036%	0.0019	0.037%
193	Tentsmuir	0.0009	0.018%	0.0009	0.019%
194	Firth of Tay and Eden Estuary	0.0010	0.020%	0.0010	0.021%
195	Firth of Tay and Eden Estuary	0.0018	0.036%	0.0018	0.037%
196	Firth of Tay and Eden Estuary	0.0018	0.036%	0.0018	0.037%
197	Firth of Tay and Eden Estuary	0.0017	0.034%	0.0018	0.036%
198	Firth of Tay and Eden Estuary	0.0016	0.032%	0.0017	0.033%
199	Firth of Tay and Eden Estuary	0.0016	0.032%	0.0017	0.033%
200	Firth of Tay and Eden Estuary	0.0015	0.030%	0.0016	0.031%
201	Firth of Tay and Eden Estuary	0.0015	0.029%	0.0015	0.030%
202	Tentsmuir	0.0010	0.020%	0.0011	0.021%
203	Firth of Tay and Eden Estuary	0.0021	0.042%	0.0022	0.043%
204	Firth of Tay and Eden Estuary	0.0030	0.060%	0.0031	0.063%
205	Firth of Tay and Eden Estuary	0.0036	0.072%	0.0037	0.074%
206	Firth of Tay and Eden Estuary	0.0024	0.048%	0.0025	0.050%
207	Firth of Tay and Eden Estuary	0.0017	0.035%	0.0018	0.036%
208	Firth of Tay and Eden Estuary	0.0021	0.043%	0.0022	0.045%
209	Firth of Tay and Eden Estuary	0.0017	0.035%	0.0018	0.036%
210	Firth of Tay and Eden Estuary	0.0012	0.025%	0.0013	0.026%

211	Firth of Tay and Eden Estuary	0.0010	0.020%	0.0011	0.021%
212	Firth of Tay and Eden Estuary	0.0010	0.020%	0.0010	0.020%
213	Firth of Tay and Eden Estuary	0.0009	0.018%	0.0009	0.019%
214	Firth of Tay and Eden Estuary	0.0013	0.026%	0.0013	0.026%
215	Firth of Tay and Eden Estuary	0.0009	0.018%	0.0009	0.018%
216	Firth of Tay and Eden Estuary	0.0010	0.020%	0.0010	0.021%

C1.7 HCl concentrations

Table C7: Predicted HCl concentrations and total deposition at sensitive ecological sites

Ecological receptor ID	Receptor location	HCl annual mean concentration (PC) ($\mu\text{g}/\text{m}^3$)		EfW CHP Facility (under construction)			EfW CHP Facility (under construction) + Existing EfW Facility		
		Proposed EfW Facility	Proposed EfW Facility + Existing EfW Facility	HCl dry deposition (PC) (kg/ha/yr)	HCl wet deposition (PC) (kg/ha/yr)	HCl annual mean total deposition (PC) (kg/ha/yr)	HCl dry deposition (PC) (kg/ha/yr)	HCl wet deposition (PC) (kg/ha/yr)	HCl annual mean total deposition (PC) (kg/ha/yr)
1	Firth of Tay and Eden Estuary	0.0003	0.0018	0.0025	0.0000	0.0025	0.0137	0.0000	0.0138
2	Firth of Tay and Eden Estuary	0.0004	0.0020	0.0028	0.0000	0.0028	0.0156	0.0000	0.0156
3	Inner Tay Estuary	0.0004	0.0020	0.0028	0.0000	0.0028	0.0156	0.0000	0.0156
4	Firth of Tay and Eden Estuary	0.0004	0.0023	0.0032	0.0000	0.0032	0.0176	0.0000	0.0176
5	Firth of Tay and Eden Estuary	0.0002	0.0011	0.0017	0.0000	0.0017	0.0085	0.0000	0.0085
6	Firth of Tay and Eden Estuary	0.0005	0.0026	0.0036	0.0000	0.0036	0.0200	0.0001	0.0200
7	Inner Tay Estuary	0.0005	0.0026	0.0036	0.0000	0.0036	0.0200	0.0001	0.0200
8	Firth of Tay and Eden Estuary	0.0003	0.0018	0.0025	0.0000	0.0025	0.0137	0.0000	0.0137
9	Firth of Tay and Eden Estuary	0.0005	0.0030	0.0042	0.0000	0.0042	0.0231	0.0001	0.0232
10	Firth of Tay and Eden Estuary	0.0003	0.0013	0.0020	0.0000	0.0020	0.0102	0.0000	0.0102
11	Firth of Tay and Eden Estuary	0.0006	0.0034	0.0048	0.0000	0.0048	0.0261	0.0001	0.0262
12	Firth of Tay and Eden Estuary	0.0004	0.0025	0.0034	0.0000	0.0034	0.0190	0.0001	0.0190

13	Firth of Tay and Eden Estuary	0.0003	0.0018	0.0025	0.0000	0.0025	0.0134	0.0000	0.0135
14	Gallowhill/Cawmill Woods	0.0012	0.0064	0.0221	0.0000	0.0221	0.1173	0.0001	0.1175
15	Firth of Tay and Eden Estuary	0.0007	0.0038	0.0053	0.0000	0.0053	0.0289	0.0001	0.0289
16	Firth of Tay and Eden Estuary	0.0003	0.0019	0.0025	0.0000	0.0025	0.0143	0.0000	0.0144
17	Ancient Woodland	0.0009	0.0053	0.0172	0.0000	0.0172	0.0975	0.0001	0.0976
18	Baldrogon Wood	0.0017	0.0092	0.0312	0.0000	0.0313	0.1701	0.0002	0.1703
19	Wynton Wood	0.0015	0.0076	0.0272	0.0000	0.0272	0.1396	0.0002	0.1397
20	Heathland	0.0006	0.0030	0.0049	0.0000	0.0049	0.0230	0.0001	0.0231
21	Firth of Tay and Eden Estuary	0.0007	0.0042	0.0057	0.0000	0.0057	0.0320	0.0001	0.0321
22	Firth of Tay and Eden Estuary	0.0006	0.0033	0.0044	0.0000	0.0044	0.0253	0.0001	0.0253
23	Firth of Tay and Eden Estuary	0.0004	0.0022	0.0029	0.0000	0.0029	0.0170	0.0000	0.0170
24	Ancient Woodland	0.0022	0.0124	0.0409	0.0000	0.0409	0.2274	0.0003	0.2276
25	Ancient Woodland	0.0028	0.0157	0.0510	0.0001	0.0510	0.2897	0.0003	0.2901
26	Balmerino - Wormit Shore	0.0004	0.0022	0.0030	0.0000	0.0030	0.0168	0.0000	0.0169
27	Trottick Mill Ponds	0.0031	0.0176	0.0237	0.0001	0.0238	0.1346	0.0004	0.1350
28	Firth of Tay and Eden Estuary	0.0008	0.0045	0.0058	0.0000	0.0058	0.0347	0.0001	0.0348
29	East/West Links Wood	0.0005	0.0028	0.0084	0.0000	0.0084	0.0512	0.0001	0.0513
30	North Hill	0.0004	0.0026	0.0080	0.0000	0.0080	0.0475	0.0001	0.0475
31	River Tay	0.0003	0.0014	0.0020	0.0000	0.0020	0.0106	0.0000	0.0106
32	Woodland	0.0032	0.0177	0.0580	0.0001	0.0581	0.3249	0.0004	0.3252

33	Heathland	0.0007	0.0039	0.0054	0.0000	0.0054	0.0297	0.0001	0.0298
34	Waterbody	0.0021	0.0122	0.0163	0.0000	0.0163	0.0937	0.0003	0.0939
35	Balmuir Wood	0.0015	0.0084	0.0269	0.0000	0.0270	0.1549	0.0002	0.1551
36	River Tay	0.0003	0.0015	0.0021	0.0000	0.0021	0.0114	0.0000	0.0115
37	Dighty Water	0.0044	0.0247	0.0334	0.0001	0.0335	0.1892	0.0005	0.1897
38	Knockhill Wood	0.0005	0.0033	0.0092	0.0000	0.0092	0.0602	0.0001	0.0603
39	Ancient Woodland	0.0028	0.0174	0.0514	0.0001	0.0515	0.3206	0.0004	0.3210
40	Dighty Water	0.0052	0.0291	0.0401	0.0001	0.0402	0.2228	0.0006	0.2235
41	Waterbody	0.0034	0.0222	0.0261	0.0001	0.0262	0.1698	0.0005	0.1703
42	Whitehouse Den	0.0007	0.0041	0.0051	0.0000	0.0051	0.0313	0.0001	0.0314
43	Firth of Tay and Eden Estuary	0.0009	0.0058	0.0071	0.0000	0.0071	0.0448	0.0001	0.0449
44	River Tay	0.0003	0.0016	0.0023	0.0000	0.0023	0.0126	0.0000	0.0126
45	Dighty Water	0.0050	0.0265	0.0384	0.0001	0.0385	0.2033	0.0006	0.2038
46	Waterbody	0.0050	0.0347	0.0386	0.0001	0.0387	0.2659	0.0007	0.2666
47	Morendy Wood	0.0005	0.0034	0.0101	0.0000	0.0101	0.0634	0.0001	0.0635
48	Corbie Den	0.0006	0.0032	0.0104	0.0000	0.0105	0.0598	0.0001	0.0598
49	Sheihill Wood	0.0014	0.0089	0.0261	0.0000	0.0261	0.1642	0.0002	0.1644
50	Laverock Law	0.0006	0.0042	0.0115	0.0000	0.0115	0.0765	0.0001	0.0766
51	Woodland	0.0023	0.0144	0.0417	0.0000	0.0417	0.2656	0.0003	0.2659
52	Dighty Water	0.0052	0.0274	0.0397	0.0001	0.0398	0.2098	0.0006	0.2104
53	Ancient Woodland	0.0006	0.0032	0.0106	0.0000	0.0106	0.0597	0.0001	0.0598
54	Roseberry Wood	0.0006	0.0042	0.0118	0.0000	0.0118	0.0780	0.0001	0.0781
55	Heathland	0.0007	0.0039	0.0051	0.0000	0.0051	0.0300	0.0001	0.0301
56	Craig Law	0.0007	0.0046	0.0132	0.0000	0.0132	0.0849	0.0001	0.0850
57	Fithie Burn	0.0029	0.0196	0.0223	0.0001	0.0224	0.1501	0.0004	0.1505
58	Woodland	0.0027	0.0184	0.0505	0.0001	0.0506	0.3385	0.0004	0.3389

59	River Tay	0.0003	0.0018	0.0025	0.0000	0.0025	0.0140	0.0000	0.0141
60	Dighty Water	0.0080	0.0444	0.0611	0.0002	0.0613	0.3407	0.0010	0.3417
61	Woodland	0.0057	0.0418	0.1045	0.0001	0.1046	0.7701	0.0009	0.7710
62	Woodland	0.0028	0.0190	0.0516	0.0001	0.0517	0.3505	0.0004	0.3509
63	Fithie Burn	0.0027	0.0181	0.0206	0.0001	0.0207	0.1390	0.0004	0.1394
64	Woodland	0.0025	0.0166	0.0458	0.0001	0.0458	0.3049	0.0004	0.3052
65	Corbie Den	0.0006	0.0030	0.0103	0.0000	0.0103	0.0550	0.0001	0.0550
66	Woodland	0.0036	0.0247	0.0656	0.0001	0.0657	0.4550	0.0005	0.4555
67	Corbie Den	0.0005	0.0027	0.0091	0.0000	0.0091	0.0488	0.0001	0.0489
68	Pickletillem Marsh	0.0006	0.0039	0.0118	0.0000	0.0118	0.0726	0.0001	0.0727
69	Woodland	0.0026	0.0174	0.0482	0.0001	0.0483	0.3198	0.0004	0.3201
70	Dighty Water	0.0021	0.0146	0.0164	0.0000	0.0164	0.1123	0.0003	0.1126
71	Fithie Burn	0.0026	0.0171	0.0201	0.0001	0.0201	0.1313	0.0004	0.1316
72	Firth of Tay and Eden Estuary	0.0014	0.0092	0.0108	0.0000	0.0108	0.0706	0.0002	0.0708
73	Woodland	0.0023	0.0148	0.0417	0.0000	0.0418	0.2727	0.0003	0.2730
74	East Muirhouse Strip	0.0016	0.0101	0.0294	0.0000	0.0295	0.1855	0.0002	0.1857
75	Brighty Wood	0.0010	0.0062	0.0190	0.0000	0.0190	0.1134	0.0001	0.1136
76	Woodland	0.0040	0.0290	0.0738	0.0001	0.0739	0.5334	0.0006	0.5341
77	Firth of Tay and Eden Estuary	0.0008	0.0055	0.0064	0.0000	0.0064	0.0422	0.0001	0.0423
78	Gallowfauld Burn	0.0005	0.0024	0.0035	0.0000	0.0035	0.0185	0.0001	0.0186
79	Woodland	0.0030	0.0190	0.0545	0.0001	0.0545	0.3502	0.0004	0.3506
80	Waterbody	0.0036	0.0241	0.0274	0.0001	0.0274	0.1851	0.0005	0.1856
81	Fithie Burn	0.0029	0.0186	0.0223	0.0001	0.0223	0.1423	0.0004	0.1427
82	Duntrune/Glack Hills	0.0023	0.0148	0.0427	0.0000	0.0427	0.2729	0.0003	0.2732
83	Dighty Water	0.0010	0.0147	0.0080	0.0000	0.0080	0.1124	0.0003	0.1127
84	River Tay	0.0004	0.0020	0.0029	0.0000	0.0029	0.0153	0.0000	0.0154

85	Woodland	0.0008	0.0056	0.0141	0.0000	0.0141	0.1038	0.0001	0.1039
86	Ancient Woodland	0.0005	0.0024	0.0086	0.0000	0.0086	0.0449	0.0001	0.0449
87	St Michael's Wood Marshes	0.0006	0.0036	0.0108	0.0000	0.0108	0.0666	0.0001	0.0667
88	St Michael's Wood	0.0006	0.0036	0.0108	0.0000	0.0108	0.0666	0.0001	0.0667
89	Fithie Burn	0.0085	0.0878	0.0655	0.0002	0.0657	0.6736	0.0019	0.6754
90	Gagie Marsh	0.0012	0.0070	0.0092	0.0000	0.0092	0.0537	0.0002	0.0539
91	Waterbody	0.0046	0.0353	0.0351	0.0001	0.0352	0.2708	0.0008	0.2715
92	Fithie Burn	0.0291	0.4497	0.2229	0.0006	0.2235	3.4483	0.0097	3.4580
93	Heathland	0.0007	0.0036	0.0052	0.0000	0.0052	0.0279	0.0001	0.0279
94	Woodland	0.0036	0.0250	0.0663	0.0001	0.0664	0.4596	0.0005	0.4601
95	Woodland	0.0036	0.0250	0.0663	0.0001	0.0664	0.4596	0.0005	0.4601
96	Fithie Burn	0.0054	0.0435	0.0415	0.0001	0.0417	0.3335	0.0009	0.3344
97	Fithie Burn	0.0036	0.0245	0.0272	0.0001	0.0273	0.1882	0.0005	0.1887
98	Kirkton Wood	0.0007	0.0044	0.0129	0.0000	0.0129	0.0816	0.0001	0.0817
99	Big Latch	0.0009	0.0049	0.0159	0.0000	0.0159	0.0897	0.0001	0.0898
100	Fithie Burn	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
101	Woodland	0.0127	0.1081	0.2337	0.0003	0.2340	1.9894	0.0023	1.9918
102	Eden Estuary	0.0004	0.0024	0.0075	0.0000	0.0075	0.0444	0.0001	0.0444
103	Firth of Tay and Eden Estuary	0.0008	0.0057	0.0061	0.0000	0.0061	0.0438	0.0001	0.0439
104	Tayport - Tentsmuir Coast	0.0008	0.0057	0.0061	0.0000	0.0061	0.0438	0.0001	0.0439
105	Woodland	0.0062	0.0463	0.1138	0.0001	0.1139	0.8512	0.0010	0.8522
106	Dighty Water	0.0078	0.0519	0.1428	0.0002	0.1430	0.9544	0.0011	0.9555
107	Woodland	0.0151	0.1232	0.1157	0.0003	0.1160	0.9448	0.0026	0.9474
108	Murroes Burn	0.0178	0.1484	0.3268	0.0004	0.3272	2.7302	0.0032	2.7334
109	Waterbody	0.0202	0.1720	0.1550	0.0004	0.1554	1.3190	0.0037	1.3227

110	Murroes Burn	0.0100	0.0732	0.0766	0.0002	0.0768	0.5610	0.0016	0.5626
111	Woodland	0.0374	0.3351	0.2866	0.0008	0.2874	2.5690	0.0072	2.5762
112	Murroes Burn	0.0376	0.3298	0.6927	0.0008	0.6935	6.0691	0.0071	6.0762
113	Woodland	0.0393	0.2416	0.3017	0.0008	0.3025	1.8526	0.0052	1.8578
114	Murroes Burn	0.0357	0.2117	0.6565	0.0008	0.6573	3.8949	0.0045	3.8994
115	Kellas Wood	0.0015	0.0089	0.0113	0.0000	0.0114	0.0686	0.0002	0.0688
116	Dighty Water	0.0159	0.0918	0.2922	0.0003	0.2926	1.6890	0.0020	1.6910
117	Little Latch	0.0008	0.0046	0.0064	0.0000	0.0065	0.0356	0.0001	0.0357
118	Waterbody	0.0128	0.0929	0.2352	0.0003	0.2355	1.7100	0.0020	1.7120
119	Murroes Burn	0.0118	0.0848	0.0907	0.0003	0.0910	0.6500	0.0018	0.6518
120	River Tay	0.0004	0.0021	0.0031	0.0000	0.0031	0.0159	0.0000	0.0160
121	Woodland	0.0082	0.0557	0.0632	0.0002	0.0633	0.4273	0.0012	0.4285
122	Murroes Burn	0.0085	0.0572	0.1557	0.0002	0.1559	1.0531	0.0012	1.0543
123	Murroes Burn	0.0048	0.0312	0.0370	0.0001	0.0372	0.2396	0.0007	0.2403
124	Tentsmuir	0.0006	0.0043	0.0048	0.0000	0.0048	0.0327	0.0001	0.0328
125	Dighty Water	0.0175	0.0993	0.1341	0.0004	0.1344	0.7616	0.0021	0.7637
126	Morton Lochs	0.0006	0.0042	0.0047	0.0000	0.0047	0.0325	0.0001	0.0326
127	Woodland	0.0140	0.0810	0.2578	0.0003	0.2581	1.4907	0.0017	1.4924
128	Rhynd Wood	0.0005	0.0034	0.0099	0.0000	0.0099	0.0629	0.0001	0.0630
129	West Wood	0.0008	0.0045	0.0147	0.0000	0.0147	0.0834	0.0001	0.0835
130	Tentsmuir	0.0006	0.0040	0.0109	0.0000	0.0109	0.0730	0.0001	0.0731
131	Morton Lochs	0.0006	0.0039	0.0045	0.0000	0.0045	0.0301	0.0001	0.0302
132	West Wood	0.0008	0.0048	0.0153	0.0000	0.0153	0.0878	0.0001	0.0879
133	Buckler Heads Wood	0.0018	0.0107	0.0323	0.0000	0.0324	0.1978	0.0002	0.1980
134	Firth of Tay and Eden Estuary	0.0009	0.0067	0.0171	0.0000	0.0171	0.1240	0.0001	0.1241
135	Monifeth Bay	0.0009	0.0067	0.0071	0.0000	0.0071	0.0517	0.0001	0.0518

136	Dightly Water	0.0175	0.1027	0.1340	0.0004	0.1343	0.7875	0.0022	0.7897
137	Woodside Wood	0.0024	0.0149	0.0184	0.0001	0.0185	0.1140	0.0003	0.1143
138	Morton Links	0.0005	0.0037	0.0098	0.0000	0.0098	0.0680	0.0001	0.0680
139	Carrot Hill Meadow	0.0005	0.0028	0.0095	0.0000	0.0095	0.0508	0.0001	0.0509
140	Firth of Tay and Eden Estuary	0.0006	0.0043	0.0108	0.0000	0.0108	0.0786	0.0001	0.0787
141	Firth of Tay and Eden Estuary	0.0016	0.0117	0.0119	0.0000	0.0119	0.0896	0.0003	0.0899
142	Woodland	0.0025	0.0188	0.0190	0.0001	0.0191	0.1442	0.0004	0.1446
143	Tentsmuir	0.0005	0.0037	0.0097	0.0000	0.0097	0.0684	0.0001	0.0685
144	Woodland	0.0047	0.0288	0.0859	0.0001	0.0860	0.5299	0.0006	0.5305
145	Broughty Ferry	0.0020	0.0148	0.0361	0.0000	0.0361	0.2725	0.0003	0.2728
146	Eden Estuary	0.0004	0.0023	0.0029	0.0000	0.0029	0.0180	0.0001	0.0180
147	Woodland	0.0157	0.0975	0.2885	0.0003	0.2888	1.7945	0.0021	1.7966
148	Ancient Woodland	0.0084	0.0525	0.1554	0.0002	0.1556	0.9670	0.0011	0.9681
149	Broughty Ferry	0.0025	0.0184	0.0461	0.0001	0.0462	0.3388	0.0004	0.3392
150	Tentsmuir	0.0005	0.0033	0.0036	0.0000	0.0036	0.0249	0.0001	0.0250
151	Firth of Tay and Eden Estuary	0.0020	0.0149	0.0374	0.0000	0.0374	0.2746	0.0003	0.2749
152	Monifeth Bay	0.0020	0.0149	0.0156	0.0000	0.0156	0.1144	0.0003	0.1147
153	Tentsmuir	0.0005	0.0033	0.0037	0.0000	0.0037	0.0256	0.0001	0.0257
154	Tentsmuir	0.0006	0.0038	0.0103	0.0000	0.0103	0.0708	0.0001	0.0708
155	Gallow Hill	0.0117	0.0707	0.0898	0.0003	0.0900	0.5417	0.0015	0.5432
156	Tentsmuir	0.0004	0.0028	0.0076	0.0000	0.0076	0.0519	0.0001	0.0520
157	Firth of Tay and Eden Estuary	0.0007	0.0046	0.0124	0.0000	0.0124	0.0854	0.0001	0.0855
158	Firth of Tay and Eden Estuary	0.0013	0.0088	0.0097	0.0000	0.0097	0.0672	0.0002	0.0674

159	Firth of Tay and Eden Estuary	0.0003	0.0021	0.0025	0.0000	0.0025	0.0158	0.0000	0.0158
160	Firth of Tay and Eden Estuary	0.0036	0.0240	0.0280	0.0001	0.0281	0.1840	0.0005	0.1846
161	Monifeth Bay	0.0036	0.0240	0.0280	0.0001	0.0281	0.1840	0.0005	0.1846
162	Firth of Tay and Eden Estuary	0.0003	0.0022	0.0026	0.0000	0.0026	0.0167	0.0000	0.0168
163	Eden Estuary	0.0003	0.0022	0.0026	0.0000	0.0026	0.0167	0.0000	0.0168
164	Firth of Tay and Eden Estuary	0.0048	0.0310	0.0887	0.0001	0.0888	0.5709	0.0007	0.5716
165	Laws Hill	0.0099	0.0582	0.0758	0.0002	0.0760	0.4464	0.0013	0.4477
166	Tentsmuir	0.0008	0.0053	0.0148	0.0000	0.0149	0.0976	0.0001	0.0977
167	Firth of Tay and Eden Estuary	0.0003	0.0022	0.0026	0.0000	0.0026	0.0169	0.0000	0.0170
168	Eden Estuary	0.0003	0.0022	0.0026	0.0000	0.0026	0.0169	0.0000	0.0170
169	Denfind Plantation	0.0015	0.0084	0.0275	0.0000	0.0275	0.1547	0.0002	0.1549
170	Firth of Tay and Eden Estuary	0.0003	0.0022	0.0061	0.0000	0.0061	0.0401	0.0000	0.0402
171	Eden Estuary	0.0003	0.0022	0.0025	0.0000	0.0026	0.0167	0.0000	0.0168
172	Firth of Tay and Eden Estuary	0.0009	0.0061	0.0172	0.0000	0.0172	0.1116	0.0001	0.1117
173	Firth of Tay and Eden Estuary	0.0048	0.0318	0.0366	0.0001	0.0367	0.2437	0.0007	0.2444
174	Eden Estuary	0.0003	0.0023	0.0026	0.0000	0.0026	0.0173	0.0000	0.0173
175	Tentsmuir	0.0005	0.0031	0.0088	0.0000	0.0088	0.0562	0.0001	0.0562
176	Firth of Tay and Eden Estuary	0.0044	0.0294	0.0338	0.0001	0.0339	0.2253	0.0006	0.2260
177	Firth of Tay and Eden Estuary	0.0003	0.0022	0.0026	0.0000	0.0026	0.0172	0.0000	0.0172

178	Firth of Tay and Eden Estuary	0.0010	0.0067	0.0079	0.0000	0.0079	0.0514	0.0001	0.0516
179	Barry Links	0.0048	0.0322	0.0369	0.0001	0.0370	0.2466	0.0007	0.2473
180	Firth of Tay and Eden Estuary	0.0003	0.0019	0.0023	0.0000	0.0023	0.0148	0.0000	0.0148
181	Firth of Tay and Eden Estuary	0.0004	0.0025	0.0030	0.0000	0.0030	0.0193	0.0001	0.0193
182	Firth of Tay and Eden Estuary	0.0005	0.0034	0.0041	0.0000	0.0041	0.0257	0.0001	0.0258
183	Firth of Tay and Eden Estuary	0.0030	0.0199	0.0233	0.0001	0.0233	0.1527	0.0004	0.1531
184	Firth of Tay and Eden Estuary	0.0008	0.0050	0.0061	0.0000	0.0061	0.0383	0.0001	0.0385
185	Ancient Woodland	0.0068	0.0394	0.0520	0.0001	0.0521	0.3020	0.0008	0.3029
186	Firth of Tay and Eden Estuary	0.0037	0.0245	0.0678	0.0001	0.0679	0.4502	0.0005	0.4507
187	Firth of Tay and Eden Estuary	0.0037	0.0243	0.0280	0.0001	0.0281	0.1864	0.0005	0.1869
188	Weet's/Camustane/+ Woods	0.0023	0.0123	0.0178	0.0000	0.0178	0.0945	0.0003	0.0948
189	Firth of Tay and Eden Estuary	0.0009	0.0054	0.0159	0.0000	0.0159	0.0994	0.0001	0.0995
190	Firth of Tay and Eden Estuary	0.0022	0.0146	0.0172	0.0000	0.0173	0.1122	0.0003	0.1125
191	Firth of Tay and Eden Estuary	0.0026	0.0166	0.0196	0.0001	0.0196	0.1275	0.0004	0.1279
192	Firth of Tay and Eden Estuary	0.0026	0.0167	0.0197	0.0001	0.0197	0.1283	0.0004	0.1286
193	Tentsmuir	0.0011	0.0068	0.0082	0.0000	0.0082	0.0518	0.0001	0.0519
194	Firth of Tay and Eden Estuary	0.0007	0.0045	0.0057	0.0000	0.0057	0.0344	0.0001	0.0345

195	Firth of Tay and Eden Estuary	0.0020	0.0125	0.0150	0.0000	0.0151	0.0957	0.0003	0.0959
196	Firth of Tay and Eden Estuary	0.0020	0.0124	0.0150	0.0000	0.0150	0.0953	0.0003	0.0956
197	Firth of Tay and Eden Estuary	0.0018	0.0112	0.0137	0.0000	0.0137	0.0862	0.0002	0.0864
198	Firth of Tay and Eden Estuary	0.0017	0.0107	0.0132	0.0000	0.0132	0.0821	0.0002	0.0824
199	Firth of Tay and Eden Estuary	0.0023	0.0142	0.0176	0.0000	0.0176	0.1092	0.0003	0.1095
200	Firth of Tay and Eden Estuary	0.0030	0.0180	0.0230	0.0001	0.0231	0.1381	0.0004	0.1385
201	Firth of Tay and Eden Estuary	0.0015	0.0091	0.0113	0.0000	0.0114	0.0695	0.0002	0.0697
202	Tentsmuir	0.0010	0.0056	0.0073	0.0000	0.0073	0.0427	0.0001	0.0428
203	Firth of Tay and Eden Estuary	0.0021	0.0156	0.0160	0.0000	0.0161	0.1194	0.0003	0.1198
204	Firth of Tay and Eden Estuary	0.0033	0.0227	0.0251	0.0001	0.0252	0.1743	0.0005	0.1748
205	Firth of Tay and Eden Estuary	0.0044	0.0285	0.0338	0.0001	0.0339	0.2185	0.0006	0.2191
206	Firth of Tay and Eden Estuary	0.0028	0.0195	0.0213	0.0001	0.0213	0.1497	0.0004	0.1501
207	Firth of Tay and Eden Estuary	0.0012	0.0086	0.0090	0.0000	0.0090	0.0659	0.0002	0.0661
208	Firth of Tay and Eden Estuary	0.0016	0.0123	0.0126	0.0000	0.0127	0.0946	0.0003	0.0948
209	Firth of Tay and Eden Estuary	0.0007	0.0053	0.0054	0.0000	0.0054	0.0409	0.0001	0.0410
210	Firth of Tay and Eden Estuary	0.0007	0.0048	0.0050	0.0000	0.0050	0.0371	0.0001	0.0372

211	Firth of Tay and Eden Estuary	0.0006	0.0046	0.0049	0.0000	0.0049	0.0355	0.0001	0.0356
212	Firth of Tay and Eden Estuary	0.0006	0.0045	0.0048	0.0000	0.0048	0.0347	0.0001	0.0348
213	Firth of Tay and Eden Estuary	0.0007	0.0049	0.0055	0.0000	0.0055	0.0377	0.0001	0.0378
214	Firth of Tay and Eden Estuary	0.0006	0.0047	0.0050	0.0000	0.0050	0.0363	0.0001	0.0364
215	Firth of Tay and Eden Estuary	0.0006	0.0041	0.0045	0.0000	0.0045	0.0316	0.0001	0.0317
216	Firth of Tay and Eden Estuary	0.0006	0.0042	0.0046	0.0000	0.0046	0.0325	0.0001	0.0326

C1.8 Nutrient nitrogen deposition

Table C8: Nutrient nitrogen deposition critical loads and background deposition levels

Designated area	Receptor IDs	Most sensitive habitat	EfW CHP and Existing EfW Facilities	
			CL _{NN} (kg N/ha/yr)	Bgd dep N (kg N/ha/yr)
Firth of Tay and Eden Estuary	1, 2, 4, 5, 6, 8, 9, 10, 11, 12, 13, 15, 16, 21, 22, 23, 28, 43, 72, 77, 103, 134, 140, 141, 151, 157, 158, 159, 160, 162, 164, 167, 170, 172, 173, 176, 177, 178, 180, 181, 182, 183, 184, 186, 187, 189, 190, 191, 192, 194, 195, 196, 197, 198, 199, 200, 201, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216	Estuary/Pioneer, low-mid, mid-upper saltmarshes	20	15.68
Inner Tay Estuary	3, 7	Transition Saltmarsh/Upland flushes fens and swamps	10	14
River Tay	31, 36, 44, 59, 84, 120	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoeto-Nanojuncetea	3	5.18
River Tay	31, 36, 44, 59, 84, 120	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoeto-Nanojuncetea	10	17.92
Pickletillem Marsh	68	Basin Fen/Upland Flushes Fens and Swamps	10	15
St Michael's Wood Marshes	87	Upland Flushes Fens and Swamps	10	12.6
Gagie Marsh	90	Upland Flushes Fens and Swamps	10	16.8
Tayport - Tentsmuir Coast	104	Sand-Dunes/Coastal Vegetated Shingle	8	9.38
Morton Lochs	126, 131	Sand-Dunes/Coastal Vegetated Shingle	8	9.38
Carrot Hill Meadow	139	Spring Fen/Upland Flushes Fens and Swamps	10	14.7
Barry Links	179	Sand-Dunes/Coastal Vegetated Shingle	8	9.94

Table C9: Impacts as a percentage of critical load

Designated area	EfW CHP Facility (under construction)				EfW CHP Facility (under construction) + Existing EfW Facility			
	(PC) Max N (kg N/ha/yr)	(PEDR) Max N + Bgd (kg N/ha/yr)	PC/CL (%)	PEDR/CL (%)	(PC) Max N (kg N/ha/yr)	(PEDR) Max N + Bgd (kg N/ha/yr)	PC/CL (%)	PEDR/CL (%)
Firth of Tay and Eden Estuary	0.0222	15.70	0.111%	79%	0.0588	15.74	0.294%	79%
Inner Tay Estuary	0.0022	14.00	0.022%	140%	0.0051	14.01	0.051%	140%
River Tay	0.0019	5.18	0.062%	173%	0.0041	5.18	0.138%	173%
River Tay	0.0019	17.92	0.019%	179%	0.0041	17.92	0.041%	179%
Pickletillem Marsh	0.0051	15.01	0.051%	150%	0.0137	15.01	0.137%	150%
St Michael's Wood Marshes	0.0046	12.60	0.046%	126%	0.0126	12.61	0.126%	126%
Gagie Marsh	0.0055	16.81	0.055%	168%	0.0134	16.81	0.134%	168%
Tayport - Tentsmuir Coast	0.0037	9.38	0.046%	117%	0.0103	9.39	0.129%	117%
Morton Lochs	0.0049	9.38	0.061%	117%	0.0143	9.39	0.179%	117%
Carrot Hill Meadow	0.0041	14.70	0.041%	147%	0.0099	14.71	0.099%	147%
Barry Links	0.0222	9.96	0.277%	125%	0.0594	10.00	0.743%	125%

C1.9 Acid deposition

Table C10: Acid deposition critical loads and background deposition rates

Designated area	Receptor IDs	Most sensitive habitat	Proposed and Existing EfW Facilities				
			CLNmin (kg N/ha/yr)	CLNmax (kg N/ha/yr)	CLS (kg N/ha/yr)	N bgd (kg N/ha/yr)	S bgd (kg N/ha/yr)
Inner Tay Estuary	3, 7	Transition Saltmarsh/Lowland fens	0.438	4.498	4.6	1.0	0.3
Pickletillem Marsh	68	Basin Fen/Lowland Fens	0.223	4.263	4.4	0.9	0.24
St Michael's Wood Marshes	87	Lowland Fens	0.438	1.13	0.79	0.9	0.24
Gagie Marsh	90	Lowland Fens	0.223	1.753	1.53	1.2	0.23
Tayport - Tentsmuir Coast	104	Sand-Dunes/Coastal Vegetated Shingle	0.223	0.63	0.38	0.67	0.21
Morton Lochs	126, 131	Sand-Dunes/Coastal Vegetated Shingle	0.223	1.3	0.78	0.67	0.21
Carrot Hill Meadow	139	Spring Fen/Lowland Fens	0.223	1.753	1.53	1.05	0.25
Barry Links	179	Sand-Dunes/Coastal Vegetated Shingle	0.223	0.63	0.38	0.71	0.21

Table C11: Maximum nitrogen and sulphur deposition at the designated areas

Designated area	EfW CHP Facility (under construction)		EfW CHP Facility (under construction) + Existing EfW Facility	
	Max N dep (keg N/ha/yr)	Max S dep (keg S/ha/yr)	Max N dep (keg N/ha/yr)	Max S dep (keg S/ha/yr)
Inner Tay Estuary	0.00016	0.00028	0.00036	0.00063
Picklettillem Marsh	0.00036	0.00076	0.00098	0.00183
St Michael's Wood Marshes	0.00033	0.00069	0.00090	0.00168
Gagie Marsh	0.00040	0.00071	0.00096	0.00165
Tayport - Tentsmuir Coast	0.00026	0.00047	0.00074	0.00127
Morton Lochs	0.00035	0.00073	0.00102	0.00190
Carrot Hill Meadow	0.00029	0.00061	0.00071	0.00134
Barry Links	0.00159	0.00285	0.00424	0.00728

Table C12: Assessment of acid deposition impact on designated areas

Receptor location	EfW CHP Facility (under construction)			EfW CHP Facility (under construction) + Existing EfW Facility		
	PC % of Critical Load Function	Background % of Critical Load Function	PEC % of Critical Load Function	PC % of Critical Load Function	Background % of Critical Load Function	PEC % of Critical Load Function
Inner Tay Estuary	0.03%	29%	29%	0.11%	29%	29%
Picklettillem Marsh	0.04%	27%	27%	0.17%	27%	27%
St Michael's Wood Marshes	0.15%	101%	101%	0.59%	101%	101%
Gagie Marsh	0.20%	82%	82%	0.74%	82%	82%
Tayport - Tentsmuir Coast	0.37%	140%	140%	1.64%	140%	141%
Morton Lochs	0.14%	68%	68%	0.59%	68%	68%
Carrot Hill Meadow	0.09%	74%	74%	0.29%	74%	74%
Barry Links	2.26%	146%	148%	9.29%	146%	155%

Appendix D

Construction Traffic Results

Table D.1: Predicted annual mean NO₂ concentrations (µg/m³) and impact descriptor

ID	Name	Annual mean NO ₂ concentrations (µg/m ³)			Impact descriptor
		Existing	Construction	Change	
1	2 Silver Link Avenue	12.5	12.5	<0.1	Negligible
2	41 Ashkirk Gardens	12.9	12.9	<0.1	Negligible
3	24 Ashkirk Gardens	13.0	13.0	<0.1	Negligible
4	2 Montpellier Gardens	13.5	13.6	0.1	Negligible
5	1 Montpellier Gardens	26.3	26.4	0.1	Negligible
6	Baldovie Cottage West	28.0	28.2	0.1	Negligible
7	105 Hawick Drive	15.0	15.0	0.1	Negligible
8	42 Chirnside Place	15.0	15.0	<0.1	Negligible
9	Michelin Athletic Club	14.6	14.6	<0.1	Negligible
10	Baldovie Cottage	27.8	27.9	0.1	Negligible
11	Jubilee Cottage	28.4	28.5	0.1	Negligible
12	Drumsturdy Road	14.2	14.3	<0.1	Negligible
13	13 Kellas Road	13.9	14.0	<0.1	Negligible
16	1 Bro'ty Ferry Court	27.2	27.2	0.1	Negligible
17	433 Balunie Drive	22.4	22.4	<0.1	Negligible
18	305 Balunie Drive	22.6	22.6	<0.1	Negligible
19	211 Balunie Drive	22.9	22.9	<0.1	Negligible
20	193 Balunie Drive	22.6	22.6	<0.1	Negligible
21	Tayside Police	21.5	21.5	<0.1	Negligible
22	222 Balunie Rd	23.4	23.4	<0.1	Negligible
23	158 Balunie Drive	14.1	14.1	<0.1	Negligible
24	168 Balunie Drive	21.9	21.9	<0.1	Negligible
25	18 Balunie Drive	15.7	15.7	<0.1	Negligible
26	34 Balunie Crescent	19.2	19.2	<0.1	Negligible
27	Greenfield Cottage, Drumgeith Road	22.4	22.6	0.1	Negligible
28	Rowanbank, Drumgeith Road	15.3	15.4	0.1	Negligible
29	Saint Saviour's High School	13.1	13.2	<0.1	Negligible
30	Braeview Academy	12.2	12.2	<0.1	Negligible
31	Ballumbie Primary School	12.3	12.3	<0.1	Negligible
32	Longhaugh Primary School	12.2	12.2	<0.1	Negligible
34	St Pius RC Primary School	12.4	12.4	<0.1	Negligible

ID	Name	Annual mean NO ₂ concentrations (µg/m ³)			Impact descriptor
		Existing	Construction	Change	
35	Claypotts Castle Primary School	12.7	12.7	<0.1	Negligible
36	1 Kilwinning Place	14.7	14.7	<0.1	Negligible
37	BMX Track	14.0	14.0	<0.1	Negligible
38	Civic Amenity Site	14.2	14.2	<0.1	Negligible
39	Football Pitch	13.0	13.0	<0.1	Negligible
40	25 Hawick Drive	12.9	12.9	<0.1	Negligible
41	24 Spartleton Place	12.6	12.6	<0.1	Negligible
42	30 Speckled Wood Court	12.3	12.3	<0.1	Negligible
43	15 Kirkconnel Terrace	12.4	12.4	<0.1	Negligible
44	4 Strathaven Terrace	12.9	12.9	<0.1	Negligible
45	27 Duns Crescent	12.4	12.4	<0.1	Negligible
46	8 Old Toll Loan	12.7	12.7	<0.1	Negligible
47	101 Hawick Drive	14.4	14.5	0.1	Negligible
48	71 Hawick Drive	13.0	13.0	<0.1	Negligible
49	63 Hawick Drive	12.9	12.9	<0.1	Negligible
50	42 Coldstream Drive	14.0	14.1	0.1	Negligible
51	20 Coldstream Drive	13.8	13.8	<0.1	Negligible
52	13 Selkirk Gardens	13.8	13.8	<0.1	Negligible
53	17 Ballumbie Road	13.1	13.1	<0.1	Negligible
54	13 Ardminish Place	12.4	12.4	<0.1	Negligible
55	6 Machrie Place	12.4	12.4	<0.1	Negligible
56	36 Traquair Gardens	12.3	12.3	<0.1	Negligible
57	21 Traquair Gardens	12.3	12.3	<0.1	Negligible
58	16 Ballumbie Braes	12.3	12.3	<0.1	Negligible
59	21 Ballumbie Meadows	12.7	12.7	<0.1	Negligible
60	24 Peebles Drive	12.4	12.5	<0.1	Negligible
61	170 Aberlady Crescent	12.3	12.3	<0.1	Negligible
62	23 Silver Link Avenue	12.4	12.4	<0.1	Negligible
63	516 Arbroath Road	31.9	32.0	0.1	Negligible
64	22 Baldovie Road	26.6	26.6	0.1	Negligible
65	54 Gotterstone Drive	13.0	13.0	<0.1	Negligible
66	28 Balbeggie Street	12.5	12.5	<0.1	Negligible
67	17 Balunie Avenue	12.4	12.4	<0.1	Negligible
68	11 Ballantrae Road	12.5	12.5	<0.1	Negligible

ID	Name	Annual mean NO ₂ concentrations (µg/m ³)			Impact descriptor
		Existing	Construction	Change	
69	55 Ballantrae Place	12.6	12.6	<0.1	Negligible
70	68 Balunie Street	12.6	12.6	<0.1	Negligible
71	35 Balmoral Gardens	12.5	12.5	<0.1	Negligible
72	12 Baldovie Terrace	12.7	12.7	<0.1	Negligible
73	103 Balunie Drive	14.6	14.6	<0.1	Negligible
74	37a Balunie Avenue	12.9	12.9	<0.1	Negligible
75	64 Strachan Avenue	13.0	13.0	<0.1	Negligible
76	66 Balunie Avenue	12.9	12.9	<0.1	Negligible
77	32 Balmerino Road	13.0	13.0	<0.1	Negligible
78	100 Balunie Avenue	13.0	13.0	<0.1	Negligible
79	226 Balunie Avenue	13.3	13.3	<0.1	Negligible
80	20 Strachan Avenue	13.1	13.1	<0.1	Negligible
81	279 Balunie Drive	13.1	13.1	<0.1	Negligible
82	72 Balmoral Gardens	13.2	13.2	<0.1	Negligible
83	6 Balerno Street	12.8	12.8	<0.1	Negligible
84	129 Balunie Drive	22.5	22.5	<0.1	Negligible
85	266 Happyhillock Road	13.8	13.8	<0.1	Negligible
86	209 Balunie Drive at height	21.8	21.8	<0.1	Negligible
87	154 Balunie Drive at height	21.8	21.9	<0.1	Negligible
88	130 Balunie Drive at height	13.4	13.4	<0.1	Negligible
89	34 Balunie Crescent at height	13.3	13.3	<0.1	Negligible
90	Receptor 83 at height	12.8	12.8	<0.1	Negligible
91	Receptor 84 at height	21.5	21.6	<0.1	Negligible
92	Receptor 85 at height	13.4	13.4	<0.1	Negligible
93	The Toll House	28.6	28.7	0.1	Negligible
94	50 Haddington Crescent	12.3	12.3	<0.1	Negligible
95	71 Lothian Crescent	12.3	12.3	<0.1	Negligible
96	502 Arbroath Road	31.6	31.7	0.1	Negligible
97	30 Speckled Wood Court	12.3	12.3	<0.1	Negligible
98	32 Balmerino Road	13.0	13.0	<0.1	Negligible
99	1 Whitfield Cottages	22.4	22.6	0.1	Negligible
100	28 Balbeggie Street	12.9	12.9	<0.1	Negligible
101	12 Baldovie Terrace	13.1	13.1	<0.1	Negligible
102	100 Balunie Avenue	13.0	13.0	<0.1	Negligible

ID	Name	Annual mean NO ₂ concentrations (µg/m ³)			Impact descriptor
		Existing	Construction	Change	
103	226 Balunie Avenue	13.2	13.3	<0.1	Negligible
104	DT - Baldovie/Drumgieth Road	31.0	31.2	0.2	Negligible
105	DT - Drumgeith Road	30.2	30.4	0.2	Negligible
106	DT - Britannia Drive	12.5	12.5	<0.1	Negligible
107	DT - Whitfield Cottage	24.4	24.6	0.2	Negligible
108	DT - Kellas Road - BG	12.1	12.1	<0.1	Negligible
109	DT - Balmerino Road	13.6	13.6	<0.1	Negligible
110	DT - Balunie Drive	32.0	32.1	0.1	Negligible
111	DT - Baldovie Road	14.5	14.5	<0.1	Negligible

Table 1: Predicted Annual Mean PM₁₀ Concentrations (µg/m³) and Impact Descriptor

ID	Name	Annual mean PM ₁₀ concentrations (µg/m ³)			Impact descriptor
		Existing	Construction	Change	
1	2 Silver Link Avenue	12.1	12.1	<0.1	Negligible
2	41 Ashkirk Gardens	12.1	12.1	<0.1	Negligible
3	24 Ashkirk Gardens	12.1	12.1	<0.1	Negligible
4	2 Montpellier Gardens	12.2	12.2	<0.1	Negligible
5	1 Montpellier Gardens	12.5	12.5	<0.1	Negligible
6	Baldovie Cottage West	12.8	12.8	<0.1	Negligible
7	105 Hawick Drive	12.4	12.4	<0.1	Negligible
8	42 Chirnside Place	12.5	12.5	<0.1	Negligible
9	Michelin Athletic Club	12.1	12.1	<0.1	Negligible
10	Baldovie Cottage	12.5	12.5	<0.1	Negligible
11	Jubilee Cottage	12.6	12.6	<0.1	Negligible
12	Drumsturdy Road	12.3	12.3	<0.1	Negligible
13	13 Kellas Road	12.3	12.3	<0.1	Negligible
16	1 Bro'ty Ferry Court	14.1	14.1	<0.1	Negligible
17	433 Balunie Drive	12.0	12.0	<0.1	Negligible
18	305 Balunie Drive	12.1	12.1	<0.1	Negligible
19	211 Balunie Drive	12.1	12.1	<0.1	Negligible
20	193 Balunie Drive	12.1	12.1	<0.1	Negligible
21	Tayside Police	11.9	11.9	<0.1	Negligible

ID	Name	Annual mean PM ₁₀ concentrations (µg/m ³)			Impact descriptor
		Existing	Construction	Change	
22	222 Balunie Rd	12.2	12.2	<0.1	Negligible
23	158 Balunie Drive	12.3	12.3	<0.1	Negligible
24	168 Balunie Drive	12.0	12.0	<0.1	Negligible
25	18 Balunie Drive	12.4	12.4	<0.1	Negligible
26	34 Balunie Crescent	12.1	12.1	<0.1	Negligible
27	Greenfield Cottage, Drumgeith Road	12.6	12.7	<0.1	Negligible
28	Rowanbank, Drumgeith Road	12.2	12.2	<0.1	Negligible
29	Saint Saviour's High School	12.1	12.2	<0.1	Negligible
30	Braeview Academy	12.0	12.0	<0.1	Negligible
31	Ballumbie Primary School	12.0	12.0	<0.1	Negligible
32	Longhaugh Primary School	12.0	12.0	<0.1	Negligible
34	St Pius RC Primary School	12.0	12.0	<0.1	Negligible
35	Claypotts Castle Primary School	12.1	12.1	<0.1	Negligible
36	1 Kilwinning Place	12.2	12.2	<0.1	Negligible
37	BMX Track	12.1	12.1	<0.1	Negligible
38	Civic Amenity Site	12.1	12.1	<0.1	Negligible
39	Football Pitch	12.1	12.1	<0.1	Negligible
40	25 Hawick Drive	12.1	12.1	<0.1	Negligible
41	24 Spartleton Place	12.1	12.1	<0.1	Negligible
42	30 Speckled Wood Court	12.0	12.0	<0.1	Negligible
43	15 Kirkconnel Terrace	12.0	12.0	<0.1	Negligible
44	4 Strathaven Terrace	12.1	12.1	<0.1	Negligible
45	27 Duns Crescent	12.0	12.0	<0.1	Negligible
46	8 Old Toll Loan	12.1	12.1	<0.1	Negligible
47	101 Hawick Drive	12.3	12.4	<0.1	Negligible
48	71 Hawick Drive	12.1	12.1	<0.1	Negligible
49	63 Hawick Drive	12.1	12.1	<0.1	Negligible
50	42 Coldstream Drive	12.3	12.3	<0.1	Negligible
51	20 Coldstream Drive	12.3	12.3	<0.1	Negligible
52	13 Selkirk Gardens	12.3	12.3	<0.1	Negligible
53	17 Ballumbie Road	12.2	12.2	<0.1	Negligible
54	13 Ardminish Place	12.0	12.0	<0.1	Negligible
55	6 Machrie Place	12.0	12.0	<0.1	Negligible

ID	Name	Annual mean PM ₁₀ concentrations (µg/m ³)			Impact descriptor
		Existing	Construction	Change	
56	36 Traquair Gardens	12.0	12.0	<0.1	Negligible
57	21 Traquair Gardens	12.0	12.0	<0.1	Negligible
58	16 Ballumbie Braes	12.0	12.0	<0.1	Negligible
59	21 Ballumbie Meadows	12.1	12.1	<0.1	Negligible
60	24 Peebles Drive	12.0	12.0	<0.1	Negligible
61	170 Aberlady Crescent	12.0	12.0	<0.1	Negligible
62	23 Silver Link Avenue	12.0	12.0	<0.1	Negligible
63	516 Arbroath Road	16.1	16.1	<0.1	Negligible
64	22 Baldovie Road	14.2	14.2	<0.1	Negligible
65	54 Gotterstone Drive	12.1	12.1	<0.1	Negligible
66	28 Balbeggie Street	12.1	12.1	<0.1	Negligible
67	17 Balunie Avenue	12.0	12.0	<0.1	Negligible
68	11 Ballantrae Road	12.1	12.1	<0.1	Negligible
69	55 Ballantrae Place	12.1	12.1	<0.1	Negligible
70	68 Balunie Street	12.1	12.1	<0.1	Negligible
71	35 Balmoral Gardens	12.1	12.1	<0.1	Negligible
72	12 Baldovie Terrace	12.1	12.1	<0.1	Negligible
73	103 Balunie Drive	12.3	12.3	<0.1	Negligible
74	37a Balunie Avenue	12.0	12.0	<0.1	Negligible
75	64 Strachan Avenue	12.1	12.1	<0.1	Negligible
76	66 Balunie Avenue	12.1	12.1	<0.1	Negligible
77	32 Balmerino Road	12.1	12.1	<0.1	Negligible
78	100 Balunie Avenue	12.1	12.1	<0.1	Negligible
79	226 Balunie Avenue	12.1	12.1	<0.1	Negligible
80	20 Strachan Avenue	12.1	12.1	<0.1	Negligible
81	279 Balunie Drive	12.1	12.1	<0.1	Negligible
82	72 Balmoral Gardens	12.1	12.1	<0.1	Negligible
83	6 Balerno Street	12.0	12.0	<0.1	Negligible
84	129 Balunie Drive	12.0	12.0	<0.1	Negligible
85	266 Happyhillock Road	12.1	12.1	<0.1	Negligible
86	209 Balunie Drive at height	11.9	11.9	<0.1	Negligible
87	154 Balunie Drive at height	11.9	11.9	<0.1	Negligible
88	130 Balunie Drive at height	12.1	12.1	<0.1	Negligible
89	34 Balunie Crescent at height	12.1	12.1	<0.1	Negligible

ID	Name	Annual mean PM ₁₀ concentrations (µg/m ³)			Impact descriptor
		Existing	Construction	Change	
90	Receptor 83 at height	12.0	12.0	<0.1	Negligible
91	Receptor 84 at height	11.9	11.9	<0.1	Negligible
92	Receptor 85 at height	12.1	12.1	<0.1	Negligible
93	The Toll House	12.7	12.7	<0.1	Negligible
94	50 Haddington Crescent	12.0	12.0	<0.1	Negligible
95	71 Lothian Crescent	12.0	12.0	<0.1	Negligible
96	502 Arbroath Road	19.5	19.5	<0.1	Negligible
97	30 Speckled Wood Court	12.0	12.0	<0.1	Negligible
98	32 Balmerino Road	12.1	12.1	<0.1	Negligible
99	1 Whitfield Cottages	12.6	12.7	<0.1	Negligible
100	28 Balbeggie Street	12.1	12.1	<0.1	Negligible
101	12 Baldovie Terrace	12.1	12.1	<0.1	Negligible
102	100 Balunie Avenue	12.1	12.1	<0.1	Negligible
103	226 Balunie Avenue	12.2	12.2	<0.1	Negligible
104	DT - Baldovie/Drumgieth Road	13.0	13.0	<0.1	Negligible
105	DT - Drumgeith Road	13.0	13.1	<0.1	Negligible
106	DT - Britannia Drive	12.1	12.1	<0.1	Negligible
107	DT - Whitfield Cottage	13.0	13.0	<0.1	Negligible
108	DT - Kellas Road - BG	12.0	12.0	<0.1	Negligible
109	DT - Balmerino Road	12.1	12.1	<0.1	Negligible
110	DT - Balunie Drive	19.6	19.6	<0.1	Negligible
111	DT - Baldovie Road	12.1	12.1	<0.1	Negligible

Table 2: Predicted annual mean PM_{2.5} concentrations (µg/m³) and impact descriptor

ID	Name	Annual mean PM _{2.5} concentrations (µg/m ³)			Impact descriptor
		Existing	Construction	Change	
1	2 Silver Link Avenue	6.0	6.0	<0.1	Negligible
2	41 Ashkirk Gardens	6.1	6.1	<0.1	Negligible
3	24 Ashkirk Gardens	6.1	6.1	<0.1	Negligible
4	2 Montpellier Gardens	6.1	6.1	<0.1	Negligible
5	1 Montpellier Gardens	6.3	6.3	<0.1	Negligible
6	Baldovie Cottage West	6.5	6.5	<0.1	Negligible
7	105 Hawick Drive	6.3	6.3	<0.1	Negligible

ID	Name	Annual mean PM _{2.5} concentrations (µg/m ³)			Impact descriptor
		Existing	Construction	Change	
8	42 Chirnside Place	6.3	6.3	<0.1	Negligible
9	Michelin Athletic Club	6.1	6.1	<0.1	Negligible
10	Baldovie Cottage	6.3	6.3	<0.1	Negligible
11	Jubilee Cottage	6.4	6.4	<0.1	Negligible
12	Drumsturdy Road	6.2	6.2	<0.1	Negligible
13	13 Kellas Road	6.2	6.2	<0.1	Negligible
16	1 Bro'ty Ferry Court	6.3	6.3	<0.1	Negligible
17	433 Balunie Drive	6.1	6.1	<0.1	Negligible
18	305 Balunie Drive	6.2	6.2	<0.1	Negligible
19	211 Balunie Drive	6.2	6.2	<0.1	Negligible
20	193 Balunie Drive	6.2	6.2	<0.1	Negligible
21	Tayside Police	6.1	6.1	<0.1	Negligible
22	222 Balunie Rd	6.2	6.2	<0.1	Negligible
23	158 Balunie Drive	6.2	6.2	<0.1	Negligible
24	168 Balunie Drive	6.1	6.1	<0.1	Negligible
25	18 Balunie Drive	6.2	6.2	<0.1	Negligible
26	34 Balunie Crescent	6.1	6.1	<0.1	Negligible
27	Greenfield Cottage, Drumgeith Road	6.4	6.4	<0.1	Negligible
28	Rowanbank, Drumgeith Road	6.1	6.1	<0.1	Negligible
29	Saint Saviour's High School	6.1	6.1	<0.1	Negligible
30	Braeview Academy	6.0	6.0	<0.1	Negligible
31	Ballumbie Primary School	6.0	6.0	<0.1	Negligible
32	Longhagh Primary School	6.0	6.0	<0.1	Negligible
34	St Pius RC Primary School	6.0	6.0	<0.1	Negligible
35	Claypotts Castle Primary School	6.1	6.1	<0.1	Negligible
36	1 Kilwinning Place	6.1	6.1	<0.1	Negligible
37	BMX Track	6.0	6.0	<0.1	Negligible
38	Civic Amenity Site	6.1	6.1	<0.1	Negligible
39	Football Pitch	6.1	6.1	<0.1	Negligible
40	25 Hawick Drive	6.1	6.1	<0.1	Negligible
41	24 Spartleton Place	6.0	6.0	<0.1	Negligible
42	30 Speckled Wood Court	6.0	6.0	<0.1	Negligible
43	15 Kirkconnel Terrace	6.0	6.0	<0.1	Negligible

ID	Name	Annual mean PM _{2.5} concentrations (µg/m ³)			Impact descriptor
		Existing	Construction	Change	
44	4 Strathaven Terrace	6.1	6.1	<0.1	Negligible
45	27 Duns Crescent	6.0	6.0	<0.1	Negligible
46	8 Old Toll Loan	6.0	6.1	<0.1	Negligible
47	101 Hawick Drive	6.2	6.2	<0.1	Negligible
48	71 Hawick Drive	6.1	6.1	<0.1	Negligible
49	63 Hawick Drive	6.1	6.1	<0.1	Negligible
50	42 Coldstream Drive	6.2	6.2	<0.1	Negligible
51	20 Coldstream Drive	6.2	6.2	<0.1	Negligible
52	13 Selkirk Gardens	6.2	6.2	<0.1	Negligible
53	17 Ballumbie Road	6.1	6.1	<0.1	Negligible
54	13 Ardminish Place	6.0	6.0	<0.1	Negligible
55	6 Machrie Place	6.0	6.0	<0.1	Negligible
56	36 Traquair Gardens	6.0	6.0	<0.1	Negligible
57	21 Traquair Gardens	6.0	6.0	<0.1	Negligible
58	16 Ballumbie Braes	6.0	6.0	<0.1	Negligible
59	21 Ballumbie Meadows	6.1	6.1	<0.1	Negligible
60	24 Peebles Drive	6.0	6.0	<0.1	Negligible
61	170 Aberlady Crescent	6.0	6.0	<0.1	Negligible
62	23 Silver Link Avenue	6.0	6.0	<0.1	Negligible
63	516 Arbroath Road	6.4	6.4	<0.1	Negligible
64	22 Baldovie Road	6.2	6.2	<0.1	Negligible
65	54 Gotterstone Drive	6.1	6.1	<0.1	Negligible
66	28 Balbeggie Street	6.0	6.0	<0.1	Negligible
67	17 Balunie Avenue	6.0	6.0	<0.1	Negligible
68	11 Ballantrae Road	6.0	6.0	<0.1	Negligible
69	55 Ballantrae Place	6.0	6.0	<0.1	Negligible
70	68 Balunie Street	6.0	6.0	<0.1	Negligible
71	35 Balmoral Gardens	6.0	6.0	<0.1	Negligible
72	12 Baldovie Terrace	6.1	6.1	<0.1	Negligible
73	103 Balunie Drive	6.2	6.2	<0.1	Negligible
74	37a Balunie Avenue	6.0	6.0	<0.1	Negligible
75	64 Strachan Avenue	6.0	6.0	<0.1	Negligible
76	66 Balunie Avenue	6.0	6.0	<0.1	Negligible
77	32 Balmerino Road	6.0	6.0	<0.1	Negligible
78	100 Balunie Avenue	6.0	6.0	<0.1	Negligible

ID	Name	Annual mean PM _{2.5} concentrations (µg/m ³)			Impact descriptor
		Existing	Construction	Change	
79	226 Balunie Avenue	6.1	6.1	<0.1	Negligible
80	20 Strachan Avenue	6.0	6.0	<0.1	Negligible
81	279 Balunie Drive	6.0	6.0	<0.1	Negligible
82	72 Balmoral Gardens	6.0	6.1	<0.1	Negligible
83	6 Balerno Street	6.0	6.0	<0.1	Negligible
84	129 Balunie Drive	6.1	6.1	<0.1	Negligible
85	266 Happyhillock Road	6.1	6.1	<0.1	Negligible
86	209 Balunie Drive at height	6.1	6.1	<0.1	Negligible
87	154 Balunie Drive at height	6.1	6.1	<0.1	Negligible
88	130 Balunie Drive at height	6.1	6.1	<0.1	Negligible
89	34 Balunie Crescent at height	6.1	6.1	<0.1	Negligible
90	Receptor 83 at height	6.0	6.0	<0.1	Negligible
91	Receptor 84 at height	6.1	6.1	<0.1	Negligible
92	Receptor 85 at height	6.1	6.1	<0.1	Negligible
93	The Toll House	6.4	6.4	<0.1	Negligible
94	50 Haddington Crescent	6.0	6.0	<0.1	Negligible
95	71 Lothian Crescent	6.0	6.0	<0.1	Negligible
96	502 Arbroath Road	6.6	6.6	<0.1	Negligible
97	30 Speckled Wood Court	6.0	6.0	<0.1	Negligible
98	32 Balmerino Road	6.0	6.0	<0.1	Negligible
99	1 Whitfield Cottages	6.4	6.4	<0.1	Negligible
100	28 Balbeggie Street	6.0	6.0	<0.1	Negligible
101	12 Baldovie Terrace	6.1	6.1	<0.1	Negligible
102	100 Balunie Avenue	6.0	6.0	<0.1	Negligible
103	226 Balunie Avenue	6.1	6.1	<0.1	Negligible
104	DT - Baldovie/ Drumgieth Road	6.6	6.6	<0.1	Negligible
105	DT - Drumgeith Road	6.6	6.6	<0.1	Negligible
106	DT - Britannia Drive	6.0	6.0	<0.1	Negligible
107	DT - Whitfield Cottage	6.6	6.6	<0.1	Negligible
108	DT - Kellas Road - BG	6.0	6.0	<0.1	Negligible
109	DT - Balmerino Road	6.1	6.1	<0.1	Negligible
110	DT - Balunie Drive	6.6	6.6	<0.1	Negligible
111	DT - Baldovie Road	6.1	6.1	<0.1	Negligible

Appendix E

Odour Modelling Results

E1 Odour Results

Table E.1: Predicted 1 hour 98th percentile odour concentrations (OU_E/m^3)

ID	Name	Odour concentration (OU_E/m^3)		
		Existing EfW and EfW CHP - Normal Operations	Existing EfW and EfW CHP - Maintenance Period	Existing EfW and EfW CHP - Maintenance (at Limit Values)
1	2 Silver Link Avenue	0.22	0.41	0.83
2	41 Ashkirk Gardens	0.37	0.58	1.21
3	24 Ashkirk Gardens	0.31	0.52	1.08
4	2 Montpellier Gardens	0.31	0.54	1.11
5	1 Montpellier Gardens	0.36	0.60	1.22
6	Baldovie Cottage West	0.30	0.53	1.06
7	105 Hawick Drive	0.25	0.42	0.86
8	42 Chirnside Place	0.13	0.23	0.46
9	Michelin Athletic Club	0.47	0.79	1.63
10	Baldovie Cottage	0.36	0.60	1.23
11	Jubilee Cottage	0.31	0.53	1.08
12	Drumsturdy Road	0.28	0.47	0.96
13	13 Kellas Road	0.18	0.29	0.59
14	1 Bro'ty Ferry Court	0.10	0.21	0.40
15	433 Balunie Drive	0.11	0.24	0.45
16	305 Balunie Drive	0.11	0.25	0.45
17	211 Balunie Drive	0.11	0.32	0.55
18	193 Balunie Drive	0.17	0.49	0.84
19	Tayside Police	0.24	0.78	1.30
20	222 Balunie Rd	0.23	0.48	0.90
21	158 Balunie Drive	0.25	0.44	0.85
22	168 Balunie Drive	0.30	0.55	1.11
23	18 Balunie Drive	0.09	0.17	0.32
24	34 Balunie Crescent	0.12	0.22	0.45
25	Greenfield Cottage, Drumgeith Road	0.15	0.28	0.55
26	Rowanbank, Drumgeith Road	0.10	0.18	0.36
27	Saint Saviour's High School	0.11	0.21	0.41
28	Braeview Academy	0.06	0.12	0.24
29	Ballumbie Primary School	0.10	0.20	0.38

ID	Name	Odour concentration (ou _E /m ³)		
		Existing EfW and EfW CHP under construction - Normal Operations	Existing EfW and EfW CHP under construction - Upset Operations	Existing EfW and EfW CHP under construction - Upset (at Limit Values)
30	Longhaugh Primary School	0.04	0.08	0.15
31	St Pius RC Primary School	0.07	0.15	0.29
32	Claypotts Castle Primary School	0.07	0.14	0.28
33	1 Kilwinning Place	0.21	0.39	0.77
34	BMX Track	0.65	1.11	2.06
35	Civic Amenity Site	0.44	0.76	1.54
36	Football Pitch	0.55	0.82	1.71
37	25 Hawick Drive	0.18	0.32	0.64
38	24 Spartleton Place	0.13	0.23	0.47
39	30 Speckled Wood Court	0.13	0.25	0.48
40	44 Summerfield Avenue	0.13	0.27	0.52
41	40 Summerfield Avenue	0.13	0.23	0.46
42	27 Duns Crescent	0.20	0.34	0.68
43	8 Old Toll Loan	0.12	0.21	0.42
44	93 Hawick Drive	0.28	0.44	0.93
45	100 Hawick Drive	0.17	0.30	0.60
46	68 Hawick Drive	0.16	0.28	0.58
47	38 Coldstream Drive	0.26	0.44	0.92
48	20 Coldstream Drive	0.22	0.39	0.78
49	11 Coldstream Drive	0.17	0.31	0.63
50	17 Ballumbie Road	0.17	0.29	0.59
51	13 Ardmish Place	0.08	0.15	0.30
52	6 Machrie Place	0.09	0.18	0.35
53	77 Traquair Gardens	0.08	0.14	0.28
54	29 Traquair Gardens	0.09	0.16	0.33
55	16 Ballumbie Braes	0.10	0.17	0.35
56	19 Ballumbie Meadows	0.12	0.22	0.44
57	24 Peebles Drive	0.10	0.18	0.37
58	172 Aberlady Crescent	0.15	0.25	0.52
59	23 Silver Link Avenue	0.17	0.31	0.61
60	516 Arbroath Road	0.05	0.12	0.22
61	22 Baldovie Road	0.07	0.14	0.27
62	54 Gotterstone Drive	0.07	0.15	0.28
63	28 Balbeggie Street	0.08	0.17	0.31

ID	Name	Odour concentration (ou _E /m ³)		
		Existing EfW and EfW CHP under construction - Normal Operations	Existing EfW and EfW CHP under construction - Upset Operations	Existing EfW and EfW CHP under construction - Upset (at Limit Values)
64	17 Balunie Avenue	0.09	0.19	0.37
65	11 Ballantrae Road	0.13	0.23	0.46
66	55 Ballantrae Place	0.19	0.35	0.69
67	68 Balunie Street	0.07	0.16	0.30
68	35 Balmoral Gardens	0.12	0.29	0.53
69	12 Baldovie Terrace	0.05	0.10	0.19
70	111 Balunie Drive	0.19	0.34	0.68
71	37a Balunie Avenue	0.11	0.23	0.43
72	64 Strachan Avenue	0.06	0.14	0.26
73	66 Balunie Avenue	0.10	0.24	0.43
74	32 Balmerino Road	0.16	0.32	0.62
75	100 Balunie Avenue	0.08	0.18	0.34
76	200 Balunie Avenue	0.07	0.15	0.30
77	20 Strachan Avenue	0.07	0.17	0.29
78	279 Balunie Drive	0.08	0.19	0.36
79	72 Balmoral Gardens	0.17	0.42	0.75
80	6 Balerno Street	0.08	0.15	0.30
81	129 Balunie Drive	0.21	0.44	0.85
82	266 Happyhillock Road	0.08	0.13	0.27
83	209 Balunie Drive at height	0.12	0.33	0.59
84	154 Balunie Drive at height	0.25	0.43	0.85
85	130 Balunie Drive at height	0.30	0.55	1.10
86	34 Balunie Crescent at height	0.12	0.22	0.45
87	6 Balerno Street at height	0.08	0.15	0.30
88	129 Balunie Drive at height	0.21	0.44	0.86
89	266 Happyhillock Road at height	0.08	0.13	0.27
90	The Toll House	0.30	0.50	1.05
91	50 Haddington Crescent	0.07	0.15	0.28
92	71 Lothian Crescent	0.09	0.18	0.33
93	502 Arbroath Road	0.05	0.11	0.21
94	30 Speckled Wood Court at height	0.13	0.25	0.47
95	32 Balmerino Road at height	0.16	0.32	0.61

ID	Name	Odour concentration (ou _E /m ³)		
		Existing EfW and EfW CHP under construction - Normal Operations	Existing EfW and EfW CHP under construction - Upset Operations	Existing EfW and EfW CHP under construction - Upset (at Limit Values)
96	Whitfield Cottage façade	0.15	0.28	0.55
97	28 Balbeggie Street at height	0.08	0.17	0.31
98	12 Baldovie Terrace at height	0.05	0.10	0.19
99	100 Balunie Avenue at height	0.08	0.18	0.34
100	226 Balunie Avenue at height	0.07	0.15	0.30
101	DT - Baldovie/Drumgieth Road	0.33	0.57	1.13
102	DT - Drumgeith Road	0.31	0.55	1.10
103	DT - Britannia Drive	0.25	0.46	0.92
104	DT - Whitfield Cottage	0.19	0.36	0.71
105	DT - Kellas Road - BG	0.03	0.05	0.10
106	DT - Balmerino Road	0.27	0.55	1.05
107	DT - Balunie Drive	0.05	0.11	0.21
108	DT - Baldovie Road	0.50	0.92	1.48
109	DT - Meadowside Automatic Monitor	0.01	0.02	0.04
110	DT - 326 Arbroath Road	0.05	0.11	0.22
111	DT - 4 Bro'ty Ferry	0.11	0.26	0.47

E2 Odour contours for normal operations



Legend

 Red Line Boundary

 EfW CHP Vent

 DERL Vent

 Discrete Receptors

**Odour contours for 1
hour mean 98th
percentile (oue/m³)**

 0.000 - 0.025

 0.025 - 0.050

 0.050 - 0.075

 0.075 - 0.100

 0.100 - 0.250

 0.250 - 0.500

 0.500 - 0.750

 0.750 - 1.000

0 0.1 0.2 0.4 0.6 0.8 1
Kilometers



E3 Odour contours for maintenance period



Legend

-  Red Line Boundary
-  EfW CHP Vent
-  DERL Vent
-  Discrete Receptors

Odour contours for 1 hour mean 98th percentile (ou/m^3)

-  0.000 - 0.025
-  0.025 - 0.050
-  0.050 - 0.075
-  0.075 - 0.100
-  0.100 - 0.250
-  0.250 - 0.500
-  0.500 - 0.750
-  0.750 - 1.000
-  1.000 - 1.600



0 0.1 0.2 0.4 0.6 0.8 1

Kilometers

E4 Odour contours for maintenance period at SEPA limit values



Legend

- Red Line Boundary
- EfW CHP Vent
- DERL Vent
- Discrete Receptors

Odour contours for 1 hour mean 98th percentile (ou/m^3)

- 0.000 - 0.025
- 0.025 - 0.050
- 0.050 - 0.075
- 0.075 - 0.100
- 0.100 - 0.250
- 0.250 - 0.500
- 0.500 - 0.750
- 0.750 - 1.000
- 1.000 - 3.000

0 0.1 0.2 0.4 0.6 0.8 1 Kilometers



Appendix F

Construction Dust Assessment

F1 Construction Dust Assessment

F1.1 Method of Construction Assessment

The effects of dust emissions arising from construction have been assessed using the qualitative approach described in the latest guidance¹ by the Institute of Air Quality Management (IAQM). Emissions from NRMM are likely to be small and so have not been assessed in this report. The use of machinery that is compliant with current standards for emissions will be adequate to ensure that impacts from this equipment will be negligible.

An 'impact' is described as a change in pollutant concentrations or dust deposition, while an 'effect' is described as the consequence of an impact. The main impacts that may arise during construction of the Proposed Scheme are:

- Dust deposition, resulting in the soiling of surfaces;
- Visible dust plumes;
- Elevated PM₁₀ (and PM_{2.5}) concentrations as a result of dust generating activities on site; and
- An increase in NO₂ and PM₁₀ concentrations due to exhaust emissions from non-road mobile machinery and vehicles accessing the site.

The IAQM guidance considers the potential for dust emissions from dust-generating activities, such as demolition of existing structures, earthworks, construction of new structures and trackout. Earthworks refer to the processes of soil stripping, ground levelling, excavation and land capping, while trackout is the transport of dust and dirt from a site onto the public road network where it may be deposited and then re-suspended by vehicles using the network. This arises when vehicles leave a site with dusty materials, which may then spill onto the road, or when they travel over muddy ground on site and then transfer dust and dirt onto the road network.

For each of these dust-generating activities, the guidance considers three separate effects: annoyance due to dust soiling; harm to ecological receptors; and the risk of health effects due to a significant increase in PM₁₀ exposure. The receptors can be human or ecological and are chosen based on their sensitivity to dust soiling and PM₁₀ exposure.

The methodology takes into account the scale on which the above effects are likely to be generated (classed as small, medium or large), the levels of background PM₁₀ concentrations and the distance to the closest receptor, in order to determine the sensitivity of the area. These factors are then taken into consideration when deriving the overall risk for the site. Suitable mitigation measures are also proposed to reduce the risk of the site.

¹ Institute of Air Quality Management (2014); Guidance on the assessment of dust from demolition and construction

There are five steps in the assessment process described in the IAQM guidance. These are summarised in Figure F1 and a further description is provided in the following sections.

F1.1.1 Step 1: Need for Assessment

The first step is the initial screening for the need for a detailed assessment. According to the IAQM guidance, an assessment is required where there are sensitive receptors within 350m of the site boundary (for ecological receptors that is 50m) and/or within 50m of the route(s) used by the construction vehicles on the public highway and up to 500m from the site entrance(s).

F1.1.2 Step 2: Assess Risk of Dust Impacts

This step is split into three sections as follows:

- 2A. Define the potential dust emission magnitude;
- 2B. Define the sensitivity of the area; and
- 2C. Define the risk of impacts.

Each of the dust-generating activities is given a dust emission magnitude depending on the scale and nature of the works (step 2A) based on the criteria shown in Table F1.

Figure F1: IAQM dust assessment methodology

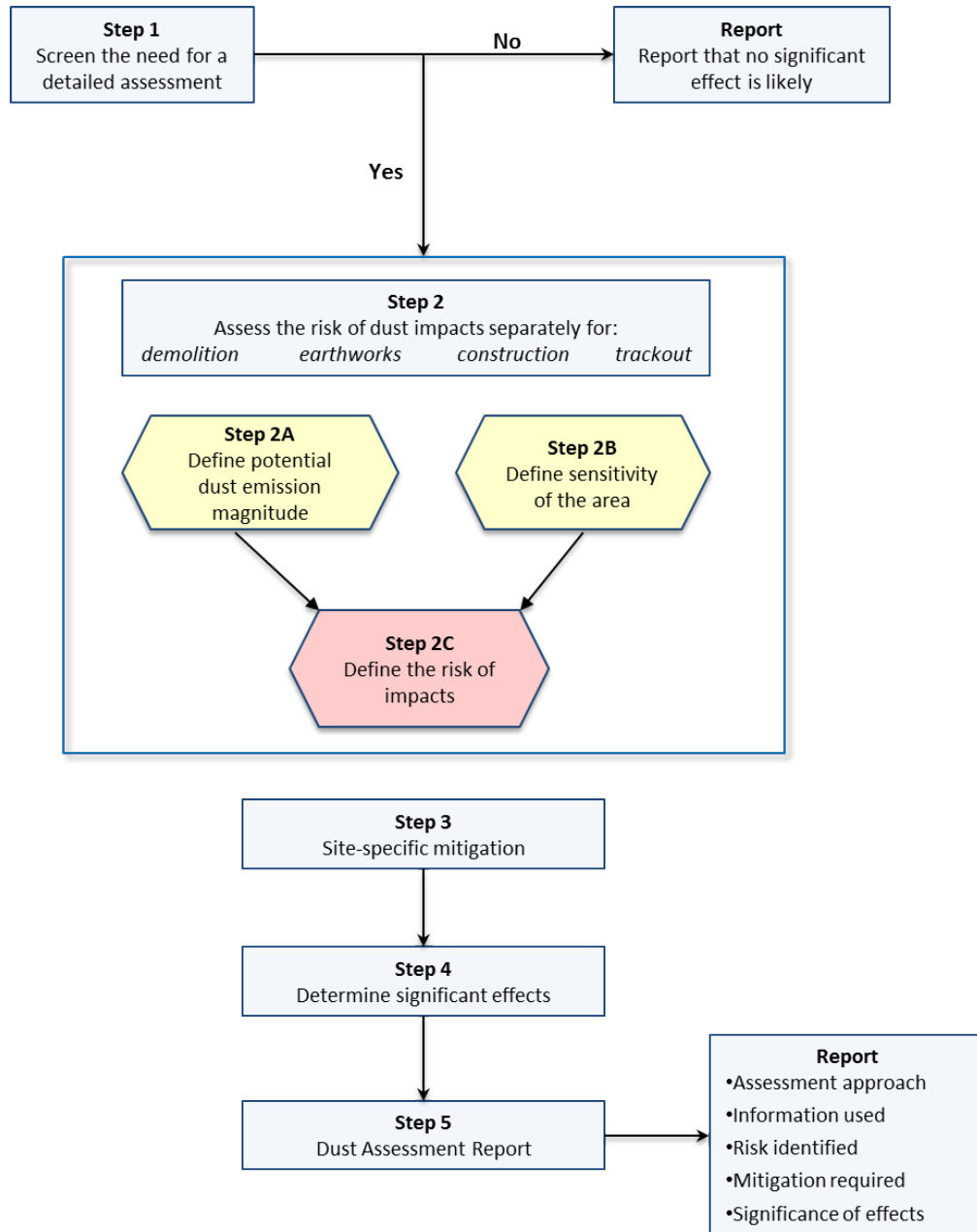


Table F1: Categorisation of dust emission magnitude

Dust Emission Magnitude		
Small	Medium	Large
Demolition		
• total building volume <20,000m³ • construction material with low potential for dust release (e.g. metal cladding or timber) • demolition activities <10m above ground • demolition during wetter months	• total building volume 20,000 - 50,000m³ • potentially dusty construction material • demolition activities 10 - 20m above ground level	• total building volume >50,000m³ • potentially dusty construction material (e.g. concrete) • on-site crushing and screening • demolition activities >20m above ground level
Earthworks		
• total site area <2,500m² • soil type with large grain size (e.g. sand) • <5 heavy earth moving vehicles active at any one time • formation of bunds <4m in height • total material moved <10,000 tonnes • earthworks during wetter months	• total site area 2,500m² - 10,000m² • moderately dusty soil type (e.g. silt) • 5 – 10 heavy earth moving vehicles active at any one time • formation of bunds 4 - 8m in height • total material moved 20,000 - 100,000 tonnes	• total site area >10,000m² • potentially dusty soil type (e.g. clay, which will be prone to suspension when dry due to small particle size) • >10 heavy earth moving vehicles active at any one time • formation of bunds >8m in height • total material moved >100,000 tonnes
Construction		
• total building volume <25,000 m³ • construction material with low potential for dust release (e.g. metal cladding or timber)	• total building volume 25,000 - 100,000m³ • potentially dusty construction material (e.g. concrete) • on-site concrete batching	• total building volume >100,000m³ • on-site concrete batching • sandblasting
Trackout		
• <10 HDV (>3.5t) outward movements in any one day • surface material with low potential for dust release • unpaved road length <50m	• 10 – 50 HDV (>3.5t) outward movements in any one day • moderately dusty surface material (e.g. high clay content) • unpaved road length 50 – 100m;	• >50 HDV (>3.5t) outward movements in any one day • potentially dusty surface material (e.g. high clay content) • unpaved road length >100m

The sensitivity of the surrounding area is then determined (step 2B) for each dust effect from the above dust-generating activities, based on the proximity and number of receptors, their sensitivity to dust, the local PM₁₀ background concentrations and any other site-specific factors. Table F2 and Table F3 show the criteria for defining the sensitivity of the area to different dust effects.

Table F2: Sensitivity of the area to dust soiling effects on people and property

Receptor sensitivity	Number of receptors	Distance from the source (m)			
		< 20	< 50	< 100	< 350
High	> 100	High	High	Medium	Low
	10 – 100	High	Medium	Low	Low
	< 10	Medium	Low	Low	Low
Medium	> 1	Medium	Low	Low	Low
Low	> 1	Low	Low	Low	Low

Table F3: Sensitivity of the area to human health impacts

Background PM ₁₀ concentrations (annual mean)	Number of receptors	Distance from the source (m)				
		< 20	< 50	< 100	< 200	< 350
High receptor sensitivity						
> 18µg/m ³	> 100	High	High	High	Medium	Low
	10 – 100			Medium	Low	
	< 10		Medium	Low		
16 – 18µg/m ³	> 100	High	High	Medium	Low	Low
	10 – 100		Medium	Low		
	< 10					
14 – 16µg/m ³	> 100	High	Medium	Low	Low	Low
	10 – 100					
	< 10	Medium	Low			
< 14µg/m ³	> 100	Medium	Low	Low	Low	Low
	10 – 100	Low				
	< 10					
Medium receptor sensitivity						
–	> 10	High	Medium	Low	Low	Low
	< 10	Medium	Low			
Low receptor sensitivity						
–	> 1	Low	Low	Low	Low	Low

The overall risk of the impacts for each activity is then determined (step 2C) prior to the identification of any necessary mitigation measures (Table F4) and an overall risk for the site is then derived.

F1.1.3 Step 3: Determine the Site-Specific Mitigation

Once each of the activities is assigned a risk rating, appropriate mitigation measures are identified. Where the risk is negligible, no mitigation measures beyond those required by legislation are necessary.

Table F4: Risk of dust impacts

Sensitivity of area	Dust emission magnitude		
	Large	Medium	Small
Demolition			
High	High risk site	Medium risk site	Medium risk site
Medium	High risk site	Medium risk site	Low risk site
Low	Medium risk site	Low risk site	Negligible
Earthworks			
High	High risk site	Medium risk site	Low risk site
Medium	Medium risk site	Medium risk site	Low risk site
Low	Low risk site	Low risk site	Negligible
Construction			
High	High risk site	Medium risk site	Low risk site
Medium	Medium risk site	Medium risk site	Low risk site
Low	Low risk site	Low risk site	Negligible
Trackout			
High	High risk site	Medium risk site	Low risk site
Medium	Medium risk site	Low risk site	Negligible
Low	Low risk site	Low risk site	Negligible

F1.1.4 Step 4: Determine Any Significant Residual Effects

After the risk of dust impacts has been determined and the appropriate dust mitigation measures identified, the final step is to determine whether there are any residual significant effects. The IAQM guidance notes that it is anticipated that with the implementation of effective site-specific mitigation measures, the environmental effect will not be significant in most cases.

F1.1.5 Step 5: Prepare a Dust Assessment Report

The last step of the assessment is the preparation of a Dust Assessment Report. This forms part of this report (see section F1.2).

F1.2 Construction Assessment

The area of the Proposed Scheme covers an area of approximately 204ha. As discussed in paragraphs F1.1.1 to F1.1.5 the IAQM guidance takes into consideration four dust generating activities: demolition, earthworks, construction and trackout. The site is currently a brownfield site which is used for processing and recycling of highway redevelopment and construction material as well as being part of the existing DERL site. The flood mitigation area and the construction compound are undeveloped land. Demolition of the existing DERL facility will be subject to separate applications and so an assessment of demolition is not required in this assessment. Potential impacts from earthworks, construction and trackout are considered in the following sections.

F1.2.1 Sensitive Receptors

Sensitive receptors are defined as those dwellings, schools and hospitals that are likely to experience a change in pollutant concentrations and/or dust nuisance due to the construction and operation of the Proposed Scheme.

A review of the areas surrounding the main EfW CHP site (Areas A, C, D and E as shown on Volume 1 Appendix C1) has been carried out, and a map is shown in Figure F2 which identifies the sensitive receptors within 20m, 50m, 100m and 350m of the Application Site boundary, following the IAQM guidance.

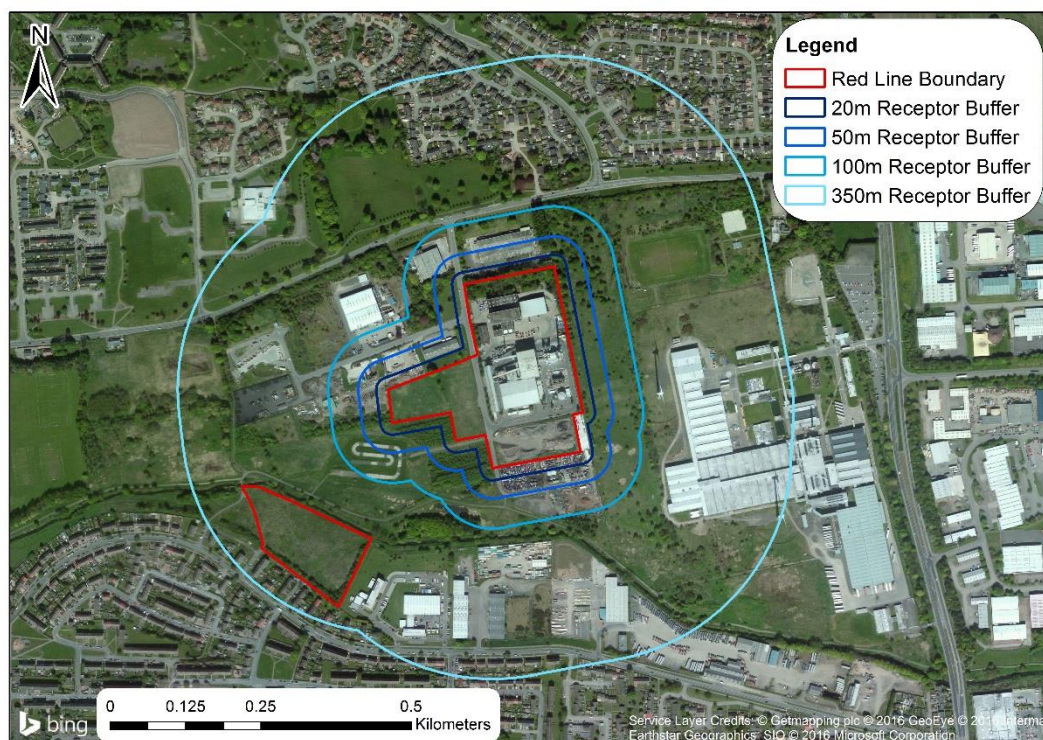
There are no receptors within 100m of the main site boundary which are considered to be of a high sensitivity, such as residential dwellings. There are fewer than 10 commercial properties within 100m which are considered to be of a medium sensitivity. Newlands Primary School lies within 350m of the Application Site, and there are residential receptors within 350m of the Proposed Scheme, to the north and south. The overall receptor sensitivity to dust soiling and PM₁₀ exposure has therefore been classified as high according to the IAQM guidance, as a precautionary assumption.

For the pre-selected flood mitigation area (Area B) there are approximately 20 residential receptors within 20m of the Application Site boundary, to the south.

There are no ecological receptors sensitive to dust within 350m of the Application Site boundary, and therefore the sensitivity of the area to ecological impacts is negligible.

Transient receptors, such as users of access roads, local footpaths and other public rights of way, are not considered to be of high sensitivity as they are not exposed to emissions continuously or for extended periods.

Figure F2: Construction dust receptor buffer areas



F1.2.2 Dust Emission Magnitude

Following the methodology described in section 4.2.1, each dust generating activity has been assigned a dust emission magnitude as shown in Table F5. For the pre-selected flood mitigation area, only earthworks are expected to occur.

Table F5: Dust emission magnitude for dust generating activities

Activity	Dust emission magnitude	Reasoning
Demolition	-	No demolition will be required.
Earthworks	Large	Total site area for the main EfW CHP site (Areas A, C, D and E) is greater than 10,000m ² (expected to be around 60,000m ²). Material is expected to be imported to raise the main site level by approximately 1m. Total site area for the pre-selected flood mitigation area (Area B) is greater than 10,000m ² (expected to be around 20,000m ²). The area has a potentially dusty soil type (clay, silt, and gravel). No earth will be removed from Area B.
Construction	Large	Total building volume greater than 100,000m ³ (expected to be around 200,000m ³). Work on-site during construction is anticipated to include excavations, earthworks, piling, and concrete construction of foundations, buildings, roads and hard-standing areas.
Trackout	Large	Between greater than 50 HDV (>3.5t) outward movements in any one day during the peak construction period, and dusty surface material (clay). Unpaved road

Activity	Dust emission magnitude	Reasoning
		will run around the full perimeter of the main building site (estimated to be around 350m) outside of the main building footprint. No earth will be removed from Area B.

F1.2.3 Sensitivity of the Area

For the main EfW CHP site (Areas A, C, D and E), the sensitivity of the area to dust soiling has been assigned as medium, due to the presence of approximately four commercial receptors within 20m of the Application Site boundary.

For the pre-selected flood mitigation area (Area B) the sensitivity of the area to dust soiling has been assigned as high, due to the presence of approximately 20 residential receptors within 20m of the Application Site.

There will be a shallow excavation over an area of about 8,500 m² with the excavated material (about 2,000 m³) forming a mound to screen the housing.

The sensitivity of the main EfW CHP site and pre-selected flood mitigation site to human health impacts has been assigned as low, due to the low background PM₁₀ concentrations of 12.3µg/m³.

F1.2.4 Risk of Impacts

Taking into consideration the dust emission magnitude and the sensitivity of the area, the main EfW CHP site (Areas A, C, D and E) has been classified as medium risk to dust soiling and low risk to human health impacts for all activities, as shown in Table F6. For earthworks at the flood mitigation area, the Application Site has been classified as high risk to dust soiling and low risk to human health impacts. Specific relevant mitigation is described in the CEMP.

Table F6: Summary of dust risks prior to mitigation

Activity	Sensitivity of the surrounding area	
	Dust soiling	Human health
Earthworks (main site)	Medium Risk	Low risk
Earthworks (flood mitigation area)	High Risk	Low risk
Construction	Medium Risk	Low risk
Trackout	Medium Risk	Low risk

F1.3 Construction Mitigation

The dust emitting activities assessed in Section F1.2 can be greatly reduced or eliminated by applying the site specific mitigation measures for high risk sites according to the IAQM guidance. The guidance notes that it is anticipated that with the implementation of effective site-specific mitigation measures, the environmental effect will not be significant in most cases. All appropriate mitigation measures have been included in the Construction Environmental Management Plan (CEMP) for the Proposed Scheme.

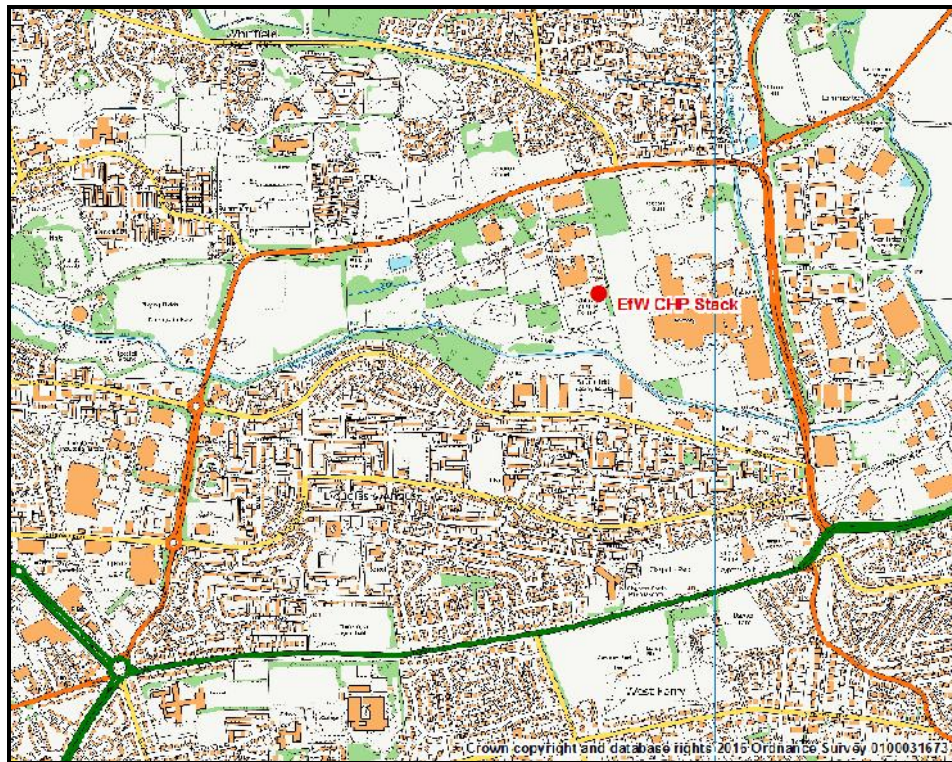
Appendix G

Human Health Risk Assessment



ENERGY FROM WASTE COMBINED HEAT AND POWER FACILITY, DUNDEE:

HUMAN HEALTH RISK ASSESSMENT



February 2017

Report Reference: C25-P03-R02



Gair Consulting Ltd
Independent Air
Quality & Odour
Specialists

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1 INTRODUCTION

1.1 BACKGROUND

This human health risk assessment (HHRA) is part of a suite of documents submitted to Dundee City Council (DCC) in support of an application for planning permission by MVV Environment Services Limited (MVV) (the Applicant) for the construction and operation of an Energy from Waste Combined Heat and Power Facility (EfW CHP facility) (The Proposed Scheme) on land situated on Forties Road, in the north-east of Dundee (the Application Site). The proposed EfW CHP facility would replace the existing Dundee Energy Recycling Ltd (DERL) EfW facility on the neighbouring site on Forties Road. The existing DERL plant has been operational since September 1999 and will cease operating on the successful commissioning of the proposed EfW CHP facility.

This assessment considers the effects of human exposure from emissions to air from the proposed EfW CHP facility.

This assessment has been undertaken to support the planning application for the proposed EfW CHP facility. In general, worst case assumptions are made with regard to the treatment of the emissions from the proposed EfW CHP facility and the exposure of local people to the pollutants emitted. The baseline position for the assessment is the operation of the current DERL facility. Therefore, the exposure to emissions from the proposed EfW CHP facility needs to be considered in addition to exposure to the existing DERL plant emissions via soils which may be contaminated with emissions from the existing facility.

The Application Site is located in an industrial area to the northeast of the centre of Dundee. The nearest residential settlements are at Ballumbie to the north and Douglas and Angus to the south. The locations of the existing DERL plant stack and the proposed EfW CHP stacks are presented in *Figure 1.1*.

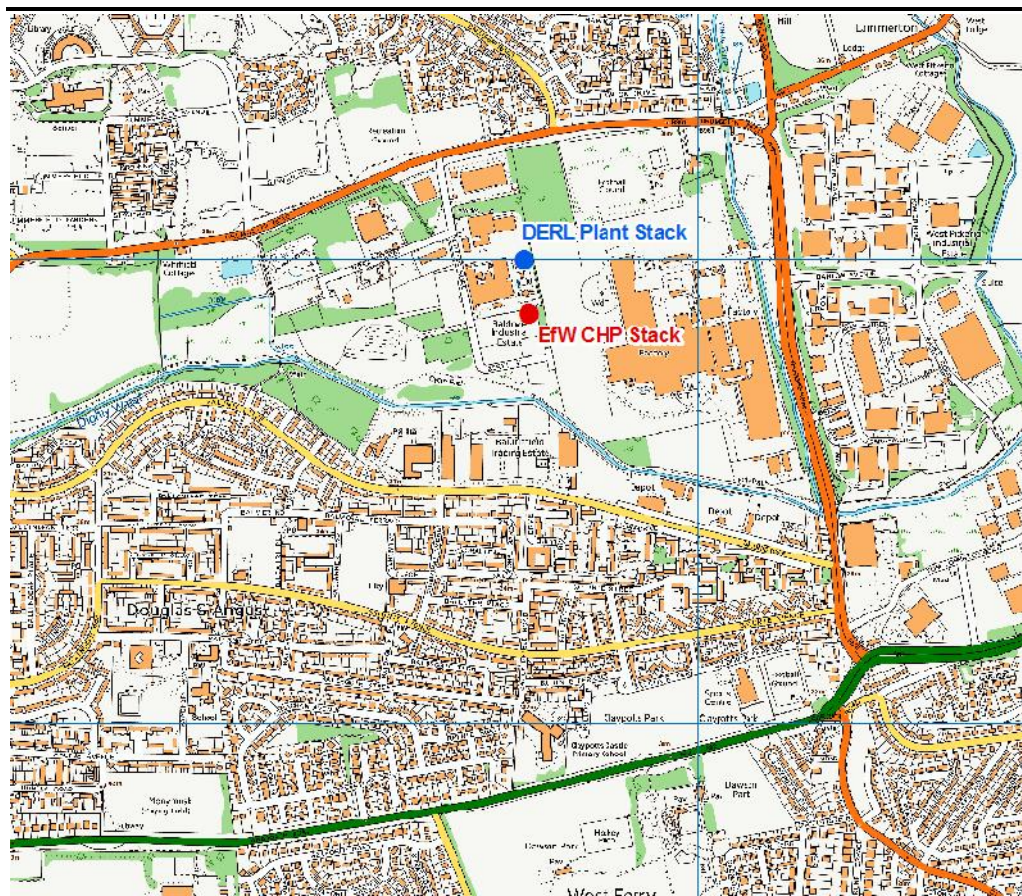
The facility would utilise waste material as a fuel and as a consequence it would need to comply with the emission limits imposed by the Industrial Emissions Directive (IED) for the thermal treatment of waste. The assessment considers exposure to emissions to air, and subsequent deposition to soil, only as human exposure to any harmful pollutants discharged directly to the aquatic environment and from solid waste disposal is considered to be negligible and therefore excluded from the assessment.

1.2 PURPOSE OF THE ASSESSMENT

This report documents the findings of the impact of emissions on human health from direct and indirect exposure to emissions to air from the proposed EfW CHP facility. It has been prepared in accordance with our understanding of the

requirements of the Environment Agency, as the regulator, for these types of development in England. In particular, this is a human health risk assessment of dioxin/furan emissions from the facility based on either the former Her Majesty's Inspectorate of Pollution (HMIP) or the United States (US) Environmental Protection Agency (EPA) Human Health Risk Assessment Protocol (HHRAP) methodology. Human exposure to dioxins and furans has been compared against the Committee of Toxicity (COT) Tolerable Daily Intake (TDI) of 2 pg/kg per day.

FIGURE 1.1 LOCATION OF THE STACKS ASSOCIATED WITH THE EXISTING AND PROPOSED FACILITIES



An assessment of exposure to dioxin-like polychlorinated biphenyls (PCBs) has also been included. It should be noted that the former HMIP method does not have the capability to consider dioxin-like PCBs and the US EPA HHRAP method is limited in this respect. The HHRAP method does not contain physical properties or exposure parameters for individual dioxin-like PCBs but does provide information for two dioxin-like PCB mixtures (Aroclor 1016 and Aroclor 1254). Therefore, for these two substances typical emissions for dioxin-like PCBs have been included in the Industrial Risk Assessment Program (IRAP) model and these have been assumed to comprise entirely of Aroclor 1016 or Aroclor 1254 depending on which substance gives rise to the highest exposure.

Emissions of trace metals from the existing DERL plant and proposed EfW CHP facility have also been included in the assessment.

For this HHRA, the assessment considers the impact of the proposed EfW CHP facility operating alone over a period of 30 years. The existing DERL plant has operated for approximately 17 years. Therefore, a cumulative assessment of emissions from both facilities has been carried out. The existing DERL plant replaced an incinerator at Baldovie which was closed in 1996 as it was unable to meet the more stringent emission limits in the former European Directive on Waste Incineration (89/429/EC). However, it is considered that any contamination from the older incinerator will be accounted for in background exposure. Therefore, two scenarios have been considered as follows:

-) the proposed EfW CHP facility operating alone; and
-) cumulative impacts associated with the proposed EfW CHP facility operating but whilst there may be historical contamination of soils from the operation of the existing DERL plant.

It is not possible using the IRAP model to assess historical contamination from the DERL plant whilst the EfW CHP facility is operating in the future. Therefore, it is assumed that the two plant operate together in the future for the duration of the operation of the DERL (assumed to be 20 years). This represents worst-case conditions since there is no assumed loss of the DERL plant contaminants from soils once it ceases to operate.

1.3 SCOPE OF THE ASSESSMENT

The emissions from the facility would contain a number of substances that cannot be evaluated in terms of their effects on human health simply by reference to ambient air quality standards. Health effects could occur through exposure routes other than purely inhalation. As such, an assessment needs to be made of the overall human *exposure* to the substances by the local population and then the *risk* that this exposure causes.

The assessment presented here considers the impact of certain substances released by the facility on the health of the local population at the point of maximum exposure. These substances are those that are 'persistent' in the environment and have several pathways from the point of release to the human receptor. Essentially, they can be described as dioxins/furans and metals. They are present in extremely small quantities and are typically measured in mass units of nanogrammes (ng = 10^{-9} g), picogrammes (pg = 10^{-12} g) and femtogrammes (fg = 10^{-15} g).

Unlike substances such as nitrogen dioxide, which have short term, acute effects on the respiratory system, dioxins/furans and metals have the potential to cause effects through long term, cumulative exposure. A lifetime is the

conventional period over which such effects are evaluated. A lifetime is taken to be 70 years.

The exposure scenarios used here represent a highly unrealistic situation in which all exposure assumptions are chosen to represent a worst case and should be treated as an extreme view of the risks to health. While individual high-end exposure estimates may represent actual exposure possibilities (albeit at very low frequency), the possibility of all high end exposure assumptions accumulating in one individual is, for practical purposes, never realised. Therefore, intakes presented here should be regarded as an extreme upper estimate of the actual exposure that would be experienced by the real population in the locality.

1.4

APPROACH TO THE ASSESSMENT

The risk assessment process is based on the application of the US EPA HHRAP¹. This protocol has been assembled into a commercially available model, Industrial Risk Assessment Program (IRAP, Version 4.5.6) and marketed by Lakes Environmental of Ontario.

The approach seeks to quantify the *hazard* faced by the receptor, the *exposure* of the receptor to the substances identified as being a potential hazard and then to assess the *risk* of the exposure, as follows:

- J *Quantification of the exposure*: an exposure evaluation determines the dose and intake of key indicator chemicals for an exposed person. The dose is defined as the amount of a substance contacting body boundaries (in the case of inhalation, the lungs) and intake is the amount of the substance absorbed into the body. The evaluation is based upon worst-case, conservative scenarios, with respect to the following:
 - J location of the exposed individual and duration of exposure;
 - J exposure rate;
 - J emission rate from the source.
- J *Risk characterisation*: following the above steps, the risk is characterised by examining the toxicity of the chemicals to which the individual has been exposed, and evaluating the significance of the calculated dose in the context of probabilistic risk.

1 US EPA Office of Solid Waste (September 2005) Human Health Risk Assessment Protocol for Hazardous Waste Combustion Facilities

2.1 INTRODUCTION

An exposure assessment for the purposes of characterising the health impact of the facility's emissions requires the following steps:

- (1) Measurement or estimation of emissions from the source.
- (2) Modelling the fate and transport of the emitted substances through the atmosphere and through soil, water and biota following deposition onto land. Concentrations of the emitted chemicals in the environmental media are estimated at the point of exposure, which may be through inhalation or ingestion.
- (3) Calculation of the uptake of the emitted chemicals into humans coming into contact with the affected media and the subsequent distribution in the body.

With regard to Step (3), the exposure assessment considers the uptake of polychlorinated dibenzo-para-dioxins and polychlorinated dibenzofurans (PCDD/Fs, often abbreviated to 'dioxins/furans'), dioxin-like PCBs and metals by various categories of human receptors. In addition, emissions of polycyclic aromatic hydrocarbons (PAHs) are considered, based on typical emissions of one of the more toxic PAHs, that of benzo(a)pyrene (B[a]P).

2.2 POTENTIAL EXPOSURE PATHWAYS

There are two primary exposure 'routes' where humans may come into contact with chemicals that may be of concern:

-) direct, via inhalation; or
-) indirect, via ingestion of water, soil, vegetation and animals and animal products that become contaminated through the food chain.

There are four other potential exposure pathways of concern following the introduction of substances into the atmosphere:

-) ingestion of drinking water;
-) dermal (skin) contact with soil;
-) incidental ingestion of soil; and
-) dermal (skin) contact with water.

The possible exposure pathways included in the IRAP model are shown in *Figure 2.1*. Dermal contact with soil is an insignificant exposure pathway on the basis of the infrequent and sporadic nature of the events and the very low dermal absorption factors for this exposure route, coupled with the low plausible total dose that may be experienced (when considered over the lifetime of an individual). Health risk assessments of similar emissions (Pasternach (1989) *The Risk Assessment of Environmental and Human Health Hazards*, John Wiley, New York) have concluded that dermal absorption of soil is at least one order of magnitude less efficient than lung absorption.

Similar arguments are relevant with respect to the elimination of aquatic pathways from consideration; swimming, fishing and other recreational activities are also sporadic and unlikely to lead to significant exposures or uptake of any contamination into the human body via dermal contact with water.

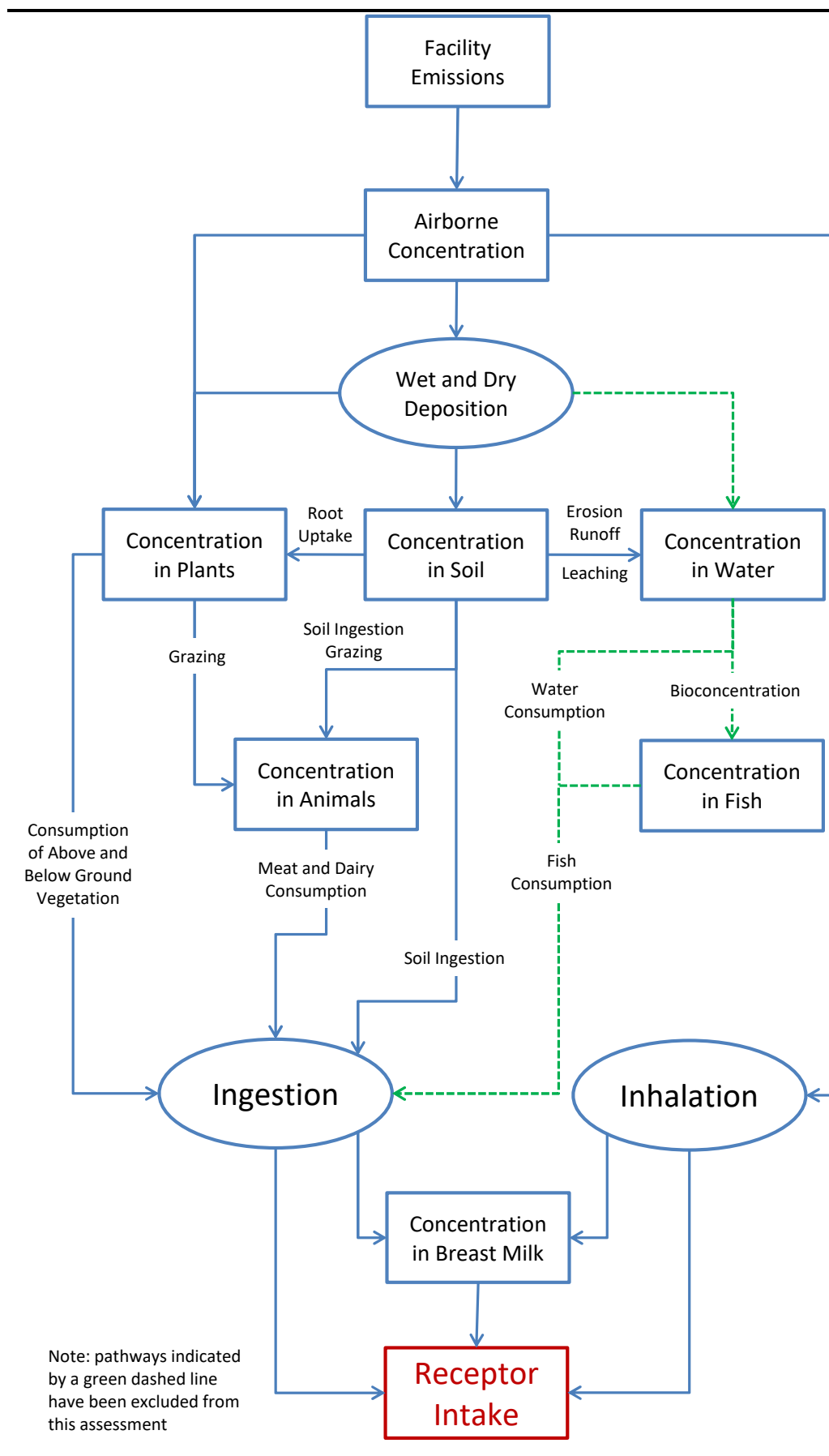
Exposure via drinking water requires contamination of drinking water sources local to the point of consumption. The likelihood of contamination reaching a level of concern in the local water sources and ground water supplies is extremely low, particularly where there is no large scale storage (e.g. reservoirs) or catchment areas for local water supplies. However, the US EPA's HHRAP does include the ingestion of drinking water from surface water sources as a potential exposure pathway where water bodies and water sheds have been defined within the exposure scenario. The ingestion of groundwater as a source of local drinking water is not considered by the HHRAP as it is considered to be an insignificant exposure pathway for combustion emissions.

On the basis of the assessment of the potential significance of the exposure pathways the key exposure pathways which are relevant to the assessment and, hence, subject to examination in detail are as follows:

-) inhalation;
-) ingestion of food; and
-) ingestion of soil.

The ingestion of drinking water from surface water sources is only considered a potential exposure pathway where there is a local surface water body which provides local drinking water. However, there are no drinking water reservoirs in close proximity to the site. Furthermore, it is our experience that drinking water from a reservoir located close to this type of facility makes a very small contribution to the total exposure. Therefore, exposure via drinking water is generally only considered where there is the potential for exposure via the ingestion of fish and the presence of edible fish farms (e.g. trout or salmon farms). Therefore, for the purposes of this EIA, exposure via drinking water has been excluded.

FIGURE 2.1 EXPOSURE PATHWAYS FOR RECEPTORS



The exposures arising from ingestion have been assessed with reference to the following:

-) milk from home-reared cows;
-) eggs from home-reared chickens;
-) home-reared beef;
-) home-reared pork;
-) home-reared chicken;
-) home-grown vegetable and fruit produce;
-) breast milk; and
-) soil (incidental).

The inclusion of all food groups in the assessment conservatively assumes that both arable and pasture land are present within areas used for farming and that residents located at the predicted maximum annual average ground level concentration grow and consume their own vegetables. This is, in reality, a highly unlikely scenario. It has been adopted, however, as a means of building a high degree of conservatism into the assessment. It should be noted that not all exposure scenarios would result in the ingestion of home-reared meat and animal products and these food products are only considered by the HHRAP for farmers and the families of farmers. Similarly, the ingestion of fish is only considered where there is a local closed water body that is used for fishing and where the diet of the fisher (and family) may be regularly supplemented by fish caught from these local water sources.

There are no closed water bodies within 3 km of the site stocked with edible fish (e.g. trout or salmon) and it is considered that the diet of local residents is unlikely to be regularly supplemented with fish contaminated with emissions from the facility. Therefore, a fisher receptor has been excluded from the assessment.

2.4 EMISSIONS AND DISPERSION MODELLING INPUT DATA

2.4.1 Compounds of Potential Concern (COPCs)

The substances which have been considered in the assessment are referred to as the Compounds of Potential Concern (COPCs). The substances that have been included for this assessment are those that are authorised emissions and which are included in the EPA HHRAP COPC database for the assessment of long term health effects. Although emission limits for PAHs are not currently set, monitoring of PAHs is required by the regulations. Therefore, benzo(a)pyrene has been included in the assessment to represent PAH emissions. Therefore, the following have been considered as COPCs for the facility:

-) PCDD/Fs (individual congeners) and dioxin-like PCBs;
-) benzo(a)pyrene;

-) antimony (Sb);
-) arsenic (As);
-) cadmium (Cd);
-) chromium (Cr), trivalent and hexavalent;
-) mercury (Hg);
-) lead (Pb); and
-) nickel (Ni).

The 2005 protocol excludes thallium (Tl) by virtue of there being no reference dose, reference concentration or cancer slope factors for thallium. This is at variance with the draft 1998 protocol which did include thallium in the assessment of hazards. The toxic properties of thallium are well known and it is our opinion that thallium should be included in the assessment of hazards. Therefore, the 1998 US EPA reference data have been used to assess the hazards associated with exposure to thallium.

2.4.2 Emission Concentrations for the COPCs

Emission Parameters

The proposed EfW CHP facility comprises an individual flue whereas the existing DERL plant comprises two flues combined within a single stack and can be considered as a single emission source. For the EIA, this assessment considers two scenarios: the existing DERL plant; and the proposed ERF.

For the proposed EfW CHP facility, emission parameters are consistent with those used for the air quality assessment, as follows:

-) stack height of 90m above ground level;
-) an internal stack diameter of 1.58m;
-) a nominal emission velocity of 15 m s⁻¹; and
-) an exhaust temperature of 130°C.

With respect to the emission velocity, this is considered to represent worst-case conditions. The emission velocity is the minimum velocity that would be considered and any increase in velocity will increase the vertical momentum of the plume and aid dispersion of the emissions.

Metals Emissions

For the metals considered for the health risk assessment, the individual emission concentrations are presented in *Table 2.1*. For the Group 1 metals (cadmium and thallium) and Group 2 metals (mercury) these have been derived from information provided in the Defra report on Emissions from Waste

Management Facilities². For Group 3 metals, emissions have been derived from information provided by the Environment Agency³ in England and published on the Government UK website⁴. Some of the Group 3 metals are excluded from this assessment, on the grounds that they pose little or no hazard in the context of long term health impacts, and as such are not included in the EPA HHRAP COPC database; these are cobalt, copper, manganese and vanadium. This approach to the release rates for metals is different to that used for the air quality assessment, which initially assumes that release rates are constantly at the limit values. However, this is an extreme worst-case scenario and is effectively a method for screening out those metals that would not have a significant impact.

TABLE 2.1 METAL EMISSION RATES USED IN THE IRAP MODEL FOR THE PROPOSED EFW CHP FACILITY

Pollutant	Percentage of Relevant Group	Emission Concentration (mg Nm ⁻³)	Emission Rate for the Proposed EFW CHP (g s ⁻¹)
Antimony	2.3%	0.0115	0.00027
Arsenic	5.0%	0.0250	0.00058
Cadmium	2.7%	0.0014	0.000031
Chromium III	18.4%	0.0920	0.0021
Chromium VI	0.03%	0.00013	0.0000035
Lead	10.1%	0.0503	0.0012
Mercury	6.4%	0.0032	0.000075
Nickel	44.0%	0.220	0.0051
Thallium	2.7%	0.0014	0.000031

In accordance with the methodology it is important that loss of mercury to the global cycle is accounted for. For this purpose, the IRAP default values have been used and it is assumed that of the total mercury emitted 51.8% is lost to the global cycle, 48.0% is deposited as divalent mercury and 0.2% is emitted as elemental mercury. The model assumes that human exposure to elemental mercury occurs only through direct inhalation of the vapour phase elemental form. Human exposure to divalent mercury occurs through both indirect and direct inhalation pathways in the form of vapour and particle-bound mercuric chloride.

² WR 0608 Emissions from Waste Management Facilities, Report for Defra, ERM (July 2011)

³ Releases from Municipal Waste Incinerators, Guidance on Assessing Group 3 Metal Stack Emissions from Incinerators, Environment Agency, Version 4 (June 2016)

⁴ <https://www.gov.uk/government/publications/waste-incinerators-guidance-on-impact-assessment-for-group-3-metals-stack>

Therefore, the following emission rates for mercury have been assumed:

-) elemental mercury at $1.5 \times 10^{-7} \text{ g s}^{-1}$ for the proposed EfW CHP facility;
and
-) mercuric chloride at $3.6 \times 10^{-5} \text{ g s}^{-1}$ for the proposed EfW CHP facility.

For the existing DERL plant, measured emissions data have been used to determine the proportion of each metal emitted from the DERL facility. A summary of metal emissions assumed is provided in *Table 2.2*. Emissions of chromium VI are assumed to be 0.016% of the group emission limit. This factor has been derived from the Environment Agency's guidance of 0.01% multiplied by a factor of 1.6 since measured total chromium for the DERL were 1.6 times higher than the Environment Agency's guidance ³.

TABLE 2.2 METAL EMISSION RATES USED IN THE IRAP MODEL FOR THE DERL PLANT

Pollutant	Emission Concentration (mg Nm ⁻³)	Emission Rate for the Existing DERL (g s ⁻¹)
Antimony	0.0094	0.00011
Arsenic	0.0046	0.000053
Cadmium	0.0088	0.00010
Chromium III	0.0132	0.00015
Chromium VI	0.000078	0.00000089
Lead	0.0095	0.00011
Mercury	0.0045	0.000052
Nickel	0.0093	0.00011
Thallium	0.0044	0.000050
Elemental mercury	0.0000090	0.00000010
Mercuric chloride	0.0022	0.000025

Polychlorinated dibenzo-p- dioxins, polychlorinated dibenzo furans (PCDD/Fs) and Other Organic Emissions

The general term dioxins denotes a family of compounds, with each compound composed of two benzene rings interconnected with two oxygen atoms. There are 75 individual dioxins, with each distinguished by the position of chlorine or other halogen atoms positioned on the benzene rings. Furans are similar in structure to dioxins, but have a carbon bond instead of one of the two oxygen atoms connecting the two benzene rings. There are 135 individual furan compounds. Each individual furan or dioxin compound is referred to as a congener and each has a different toxicity and physical properties with regard to its atmospheric behaviour. It is important, therefore, that the exposure methodology determines the fate and transport of PCDD/Fs on a congener specific basis. It does this by accounting for the varying volatility of the

congeners and their different toxicities. Consequently, information regarding the PCDD/F annual mean ground level concentrations on a congener specific basis is required. For the purposes of the exposure assessment, the congener profile for the facility is presented in *Table 2.3*, this has been derived from measured data for the DERL and it is assumed that the proposed EfW CHP facility will have a similar profile since the waste treated will be the same. The international toxic equivalency factors are given and used to derive the toxic equivalent emission (I-TEQ). As a worst-case, it is assumed that PCDD/F emissions are at the maximum emission limit of 0.1 ng I-TEQ Nm⁻³ for both the existing DERL plant and the proposed EfW CHP facility.

TABLE 2.3 PCDD/F CONGENER PROFILE FOR THE EXISTING DERL PLANT AND PROPOSED EfW CHP FACILITY

Congener	Annual Mean Emission Concentration (ng Nm ⁻³) (a)	I-TEF toxic equivalent factors)	Annual Mean Emission Concentration (ng I-TEQ Nm ⁻³) (a)
2,3,7,8-TCDD	0.0074	1.0	0.0074
1,2,3,7,8-PeCDD	0.019	0.5	0.0093
1,2,3,4,7,8-HxCDD	0.019	0.1	0.0019
1,2,3,7,8,9-HxCDD	0.029	0.1	0.0029
1,2,3,6,7,8-HxCDD	0.051	0.1	0.0051
1,2,3,4,6,7,8-HpCDD	0.37	0.01	0.0037
OCDD	1.1	0.001	0.0011
2,3,7,8-TCDF	0.035	0.1	0.0035
2,3,4,7,8-PeCDF	0.076	0.5	0.0382
1,2,3,7,8-PeCDF	0.047	0.05	0.0024
1,2,3,4,7,8-HxCDF	0.068	0.1	0.0068
1,2,3,7,8,9-HxCDF	0.016	0.1	0.0016
1,2,3,6,7,8-HxCDF	0.060	0.1	0.0060
2,3,4,6,7,8-HxCDF	0.083	0.1	0.0083
1,2,3,4,6,7,8-HpCDF	0.16	0.01	0.0016
1,2,3,4,7,8,9-HpCDF	0.021	0.01	0.00021
OCDF	0.082	0.001	0.000082
Total (ng Nm⁻³)	2.2		0.1

The total emission of dioxin-like PCBs has also been obtained from measured data. Based on these measurements, a total dioxin-like PCBs emission concentration of 8.7 x 10⁻⁷ mg m⁻³ (1.4 x 10⁻⁸ mg TEQ m⁻³ with an average TEF of 0.016) is assumed.

For benzo(a)pyrene, measured data for the DERL has also been assumed as information available on typical emissions data is limited. Therefore, it is assumed that emissions are 4.9 x 10⁻⁵ mg Nm⁻³).

For the proposed EfW CHP facility, the emission rates for each substance as input to the IRAP model are provided in *Table 2.4*.

TABLE 2.4 PCDD/F AND OTHER ORGANIC EMISSION RATES USED IN THE IRAP MODEL FOR THE PROPOSED EfW CHP FACILITY

Congener	Emission Concentration (mg Nm ⁻³)	Emission Rate (g s ⁻¹)
2,3,7,8-TCDD	0.0074 x 10 ⁻⁶	1.7 x 10 ⁻¹⁰
1,2,3,7,8-PeCDD	0.019 x 10 ⁻⁶	4.3 x 10 ⁻¹⁰
1,2,3,4,7,8-HxCDD	0.019 x 10 ⁻⁶	4.4 x 10 ⁻¹⁰
1,2,3,7,8,9-HxCDD	0.029 x 10 ⁻⁶	6.6 x 10 ⁻¹⁰
1,2,3,6,7,8-HxCDD	0.051 x 10 ⁻⁶	1.2 x 10 ⁻⁹
1,2,3,4,6,7,8-HpCDD	0.37 x 10 ⁻⁶	8.5 x 10 ⁻⁹
OCDD	1.1 x 10 ⁻⁶	2.5 x 10 ⁻⁸
2,3,7,8-TCDF	0.035 x 10 ⁻⁶	8.1 x 10 ⁻¹⁰
2,3,4,7,8-PeCDF	0.076 x 10 ⁻⁶	1.8 x 10 ⁻⁹
1,2,3,7,8-PeCDF	0.047 x 10 ⁻⁶	1.1 x 10 ⁻⁹
1,2,3,4,7,8-HxCDF	0.068 x 10 ⁻⁶	1.6 x 10 ⁻⁹
1,2,3,7,8,9-HxCDF	0.016 x 10 ⁻⁶	3.8 x 10 ⁻¹⁰
1,2,3,6,7,8-HxCDF	0.060 x 10 ⁻⁶	1.4 x 10 ⁻⁹
2,3,4,6,7,8-HxCDF	0.083 x 10 ⁻⁶	1.9 x 10 ⁻⁹
1,2,3,4,6,7,8-HpCDF	0.16 x 10 ⁻⁶	3.7 x 10 ⁻⁹
1,2,3,4,7,8,9-HpCDF	0.021 x 10 ⁻⁶	5.0 x 10 ⁻¹⁰
OCDF	0.82 x 10 ⁻⁶	1.9 x 10 ⁻⁹
Aroclor 1016/1254	0.87 x 10 ⁻⁶	2.0 x 10 ⁻⁸
Benzo(a)pyrene	4.9 x 10 ⁻⁵	1.1 x 10 ⁻⁶
Antimony	0.0015	0.000035
Arsenic	0.0010	0.000023
Cadmium	0.0014	0.000031
Chromium	0.0085	0.00020
Chromium, hexavalent	0.000050	0.0000012
Lead	0.011	0.00026
Mercury	0.0032	0.000075
Nickel	0.015	0.00035
Thallium	0.0014	0.000031
Elemental mercury	0.0000064	1.5 x 10 ⁻⁷
Mercuric chloride	0.0015	3.6 x 10 ⁻⁵

2.5 DISPERSION MODELLING ASSUMPTIONS

The air quality assessment has relied upon the use of the UK Atmospheric Dispersion Modelling System (ADMS) to estimate ground level concentrations

of pollutants. The IRAP model, however, has been designed to accept only output files from the US EPA ISC or AERMOD dispersion models, reflecting its North American origins and its need to follow the US EPA risk assessment protocol. To maintain consistency with the air quality assessment, it has been possible to use output from the ADMS model with IRAP using the following procedure:

-) generation of ISC input files and output files for the study area;
-) generation of ADMS output data using the approach outlined in the US EPA risk assessment protocol; and
-) inserting the ADMS results into the ISC output files.

For the modelling, all emission properties, building heights, and other relevant factors were retained from the air quality assessment. As the health risk assessment requires information on the deposition of substances to surfaces as well as airborne concentrations of substances, the ADMS dispersion model has also been used to predict the following:

-) the airborne concentration of vapour, particle and particle bound substances emitted;
-) the wet deposition rate of vapour, particle and particle bound substances; and
-) the dry deposition rate of vapour, particle and particle bound substances.

For dry deposition of particles and particle bound contaminants a fixed deposition velocity of 0.01 m s^{-1} has been used. The facility would be equipped with fabric filters and the emitted particles are likely to be predominantly in the size range $1 - 2 \text{ }\mu\text{m}$ in diameter. For particles of this size, deposition velocities are likely to be of the order of 0.001 to 0.01 m s^{-1} . Therefore, as a worst-case, for the ADMS modelling a value of 0.01 m s^{-1} has been adopted.

2.6 DISPERSION MODELLING RESULTS

A summary of the key results from the ADMS dispersion modelling is presented in *Table 2.5* for the proposed EfW CHP facility. These are the maximum predicted within the model domain using the 2015 Leuchars Airfield meteorological data set. This year was selected as it was the year that provided highest predicted annual mean concentrations based on the air quality assessment carried out for the facility.

TABLE 2.5

**MAXIMUM ANNUAL AVERAGE PARTICLE PHASE CONCENTRATIONS AND
PARTICLE PHASE DEPOSITION RATES ESTIMATED FOR THE PROPOSED EfW
CHP FACILITY**

Pollutant	Max Annual Average Concentration (a)	Max Annual Average Deposition Rate (b)
Metals	(ng m⁻³)	(mg m⁻² year⁻¹)
Antimony	0.073	0.23
Arsenic	0.16	0.50
Cadmium	0.0085	0.027
Chromium III	0.58	1.9
Chromium VI	0.00095	0.0030
Lead	0.32	1.0
Nickel	1.4	4.4
Thallium	0.0085	0.027
Elemental mercury	0.000040	0.00013
Mercuric chloride	0.010	0.031
Benzo(a)pyrene	0.00031	0.0010
PCDD/Fs	(fg m⁻³)	(fg m⁻³)
2,3,7,8-TCDD	0.047	0.15
1,2,3,7,8-PeCDD	0.12	0.37
1,2,3,4,7,8-HxCDD	0.12	0.38
1,2,3,7,8,9-HxCDD	0.18	0.57
1,2,3,6,7,8-HxCDD	0.32	1.0
1,2,3,4,6,7,8-HpCDD	2.3	7.4
OCDD	6.9	22.0
2,3,7,8-TCDF	0.22	0.70
2,3,4,7,8-PeCDF	0.48	1.5
1,2,3,7,8-PeCDF	0.30	0.95
1,2,3,4,7,8-HxCDF	0.4	1.4
1,2,3,7,8,9-HxCDF	0.10	0.33
1,2,3,6,7,8-HxCDF	0.38	1.2
2,3,4,6,7,8-HxCDF	0.53	1.7
1,2,3,4,6,7,8-HpCDF	1.0	3.2
1,2,3,4,7,8,9-HpCDF	0.14	0.43
OCDF	0.51	1.6
Aroclor 1016/1254	5.5	17.5
(a) Where 1 ng m ⁻³ is equal to 1 x 10 ⁻⁹ g m ⁻³ and 1 fg m ⁻³ is equal to 1 x 10 ⁻¹⁵ g m ⁻³		
(b) Where 1 mg m ⁻² year ⁻¹ is equal to 1 x 10 ⁻³ g m ⁻² year ⁻¹ and 1 ng m ⁻² year ⁻¹ is equal to 1 x 10 ⁻⁹ g m ⁻² year ⁻¹		

3.1 INTRODUCTION

Exposure of an individual to a chemical may occur either by inhalation or ingestion (including food, water and soil). Of interest is the total dose of the chemical received by the individual through the combination of possible routes, and the IRAP model has been developed to estimate the dose received by the human body, often referred to as the external dose.

Exposure to COPCs is a function of the estimated concentration of the substance in the environmental media with which individuals may come into contact (i.e. exposure point concentrations) and the duration of contact. The concentration at the point of contact is itself a function of the transfer through air, soil, water, plants and animals that form part of the overall pathway. Exposure equations have been developed which combine exposure factors (e.g. exposure duration, frequency and medium intake rate) and exposure point concentrations. The dose equations therefore facilitate estimation of the received dose and account for the properties of the route of exposure, i.e. ingestion and inhalation.

For those substances that bio-accumulate, i.e. become more concentrated higher up the food chain, especially in body fats, the exposure through ingestion of meats and milk is of particular significance.

The IRAP model user has the facility to adjust some of the key exposure factors. An example is the diet of the receptor and the proportion of which is local produce, which may be contaminated. Obviously, if a nearby resident eats no food grown locally, then that person's diet cannot be contaminated by the emissions from the source, in this case the proposed EfW CHP facility. It is conventional to investigate two types of receptor, a farmer and a resident. It is assumed that a farmer eats proportionately more locally grown food than a resident. Where the potential exists for the consumption of locally caught fish a fisher receptor may also be considered. For this assessment, the consumption of locally caught fish has been screened out as it is not considered to be a significant exposure pathway (refer *Section 2.3*).

The receptor types can also be divided into adults and children. Children are important receptors because they tend to ingest soil and dusts directly and have lower body weights, so that the effect of the same dose is greater in the child than in the adult.

The IRAP model is designed to accept output files of airborne concentrations and deposition rates. From these, it proceeds to calculate the concentrations of the pollutants of concern in the environmental media, foodstuffs and the human receptor.

The model requires a wide range of input parameters to be defined, these include:

-) physical and chemical properties of the COPCs;
-) site information, including site specific data; and
-) receptor information – for each receptor type (e.g. adult or child, resident or farmer or fisher).

The HHRAP default values, which are incorporated into the IRAP model, have been used for the majority of these input values. These data are provided in the following sections.

3.2 INPUT PARAMETERS FOR THE COPCs

The IRAP model contains a database of physical and chemical parameters for each of 206 COPCs. This database is based on default values provided by the HHRAP and all default values have been used for this assessment.

These parameters are used to determine how each of the COPCs behave in the environment and their presence and accumulation in various food products (meat, fish, animal products, vegetation, soil and water). For cadmium and 2,3,7,8-TCDD (the most toxic of the PCDD/Fs), the default parameters are provided in *Table 3.1*.

TABLE 3.1 IRAP INPUT PARAMETERS FOR CADMIUM AND 2, 3, 7, 8-TCDD

Parameter Description	Symbol	Units	Cadmium	2,3,7,8-TCDD
Chemical abstract service number	CAS No.	-	7440-43-9	1746-01-6
Molecular weight	MW	g mole ⁻¹	112.4	322.0
Melting point of chemical	T_m	K	593.2	578.7
Vapour pressure	V_p	atm	5.5 x 10 ⁻¹²	1.97 x 10 ⁻¹²
Aqueous solubility	S	mg l ⁻¹	123000	1.93 x 10 ⁻⁵
Henry's Law constant	H	atm-m ³ mol ⁻¹	0.031	3.29 x 10 ⁻⁵
Diffusivity of COPC in air	D_a	cm ² s ⁻¹	0.0772	0.104
Diffusivity of COPC in water	D_w	cm ² s ⁻¹	9.6 x 10 ⁻⁶	5.6 x 10 ⁻⁶
Octanol-water partition coefficient	K_ow	-	0.85	6,309,573
Organic carbon-water partition coefficient	K_oc	ml g ⁻¹	0	3,890,451
Soil-water partition coefficient	Kd_s	ml g ⁻¹	75	38,904
Suspended sediments/surface water partition coefficient	Kd_sw	l kg ⁻¹	75	291,784
Bed sediment/sediment pore water partition coefficient	Kd_bs	ml g ⁻¹	75	155,618

TABLE 3.1

IRAP INPUT PARAMETERS FOR CADMIUM AND 2, 3, 7, 8-TCDD

Parameter Description	Symbol	Units	Cadmium	2,3,7,8-TCDD
COPC loss constant due to biotic and abiotic degradation	K_sg	a ⁻¹	0	0.03
Fraction of COPC air concentration in vapour phase	f_v		0.009	0.664
Root concentration factor	RCF	ml g ⁻¹	0	39,999
Plant-soil bioconcentration factor for below ground produce	br_root_veg	-	0.064	1.03
Plant-soil bioconcentration factor for leafy vegetables	br_leafy_veg	-	0.125	0.00455
Plant-soil bioconcentration factor for forage	br_forage	-	0.364	0.00455
COPC air-to-plant biotransfer factor for leafy vegetables	bv_leafy_veg	-	0	65,500
COPC air-to-plant biotransfer factor for forage	bv_forage	-	0	65,500
COPC biotransfer factor for milk	ba_milk	day kg ⁻¹	6.5 x 10 ⁻⁶	0.0055
COPC biotransfer factor for beef	ba_beef	day kg ⁻¹	1.2 x 10 ⁻⁴	0.026
COPC biotransfer factor for pork	ba_pork	day kg ⁻¹	1.9 x 10 ⁻⁴	0.032
Bioconcentration factor for COPC in eggs	Bcf_egg	-	0.0025	0.060
Bioconcentration factor for COPC in chicken	Bcf_chicken	-	0	3.32
Fish bioconcentration factor	BCF_fish	l kg ⁻¹	907	34,400
Fish bioaccumulation factor	BAF_fish	l kg ⁻¹	0	0
Biota-sediment accumulation factor	BSAF_fish	-	0	0.09
Plant-soil bioconcentration factor for grain	br_grain	-	0.062	0.00455
Plant-soil bioconcentration factor for eggs	br_egg	-	0.0025	0.011
COPC biotransfer factor for chicken	ba_chicken	day kg ⁻¹	0.11	0.019

Toxicity factors (e.g. reference doses, unit risk factors) are provided in *Table 3.2* for all of the COPCs. These are used to determine the carcinogenic risk or hazard associated with exposure to each COPC via inhalation or ingestion exposure pathways.

TABLE 3.2

TOXICITY FACTORS FOR THE COPCs CONSIDERED FOR THE ASSESSMENT

COPC	Ingestion Reference Dose	Inhalation Reference Concentration	Ingestion Carcinogenic Slope Factor (b)	Inhalation Unit Risk Factor (b)
Symbol	RfD	RfC	Ing_csf	Inh_URF
Units	(mg kg ⁻¹ d ⁻¹)	(mg m ⁻³)	(mg kg ⁻¹ d ⁻¹) ⁻¹	(µg m ⁻³) ⁻¹
Metals				
Antimony	0.0004	0.0014	0	0
Arsenic	0.0003	3.0 × 10 ⁻⁵	1.5	0.0043
Cadmium	0.0004	0.0002	0.38	0.0018
Chromium III	1.5	5.3	0	0
Chromium VI	0.0030	8.0 × 10 ⁻⁶	0	0.012
Lead	0.000429	0.0015	0.0085	1.2 × 10 ⁻⁵
Nickel	0.02	0.0002	0	0.00024
Thallium (a)	0.00008	0.00028	0	0
Elemental mercury	8.57 × 10 ⁻⁵	0.0003	0	0
Mercuric chloride	0.0003	0.0011	0	0
Methyl mercury	0.0001	0.00035	0	0
Benzo(a)pyrene	0	0	7.3	0.0011
PCDD/Fs				
2,3,7,8-TCDD	1 × 10 ⁻⁹	0	150000	38
1,2,3,7,8-PeCDD	0	0	150000	38
1,2,3,4,7,8-HxCDD	0	0	15000	3.8
1,2,3,7,8,9-HxCDD	0	0	6200	3.8
1,2,3,6,7,8-HxCDD	0	0	6200	3.8
1,2,3,4,6,7,8-HpCDD	0	0	1500	0.38
OCDD	0	0	15	0.011
2,3,7,8-TCDF	0	0	15000	3.8
2,3,4,7,8-PeCDF	0	0	75000	11.4
1,2,3,7,8-PeCDF	0	0	7500	1.14
1,2,3,4,7,8-HxCDF	0	0	15000	3.8
1,2,3,7,8,9-HxCDF	0	0	15000	3.8
1,2,3,6,7,8-HxCDF	0	0	15000	3.8
2,3,4,6,7,8-HxCDF	0	0	15000	3.8
1,2,3,4,6,7,8-HpCDF	0	0	1500	0.38
1,2,3,4,7,8,9-HpCDF	0	0	1500	0.38
OCDF	0	0	15	0.011
Aroclor 1016	7 × 10 ⁻⁵	2.5 × 10 ⁻⁴	0	0
Aroclor 1254	2 × 10 ⁻⁵	7 × 10 ⁻⁵	0	0
(a) Reference data for thallium have been taken from the 1998 US EPA HHRA protocol				
(b) For PCDD/Fs, values derived as advised by Lakes Environmental				

The Reference Dose (ingestion) and Reference Concentration (inhalation) for each COPC is used to determine the non-carcinogenic risk associated with exposure. The Carcinogenic Slope Factors (ingestion) are used to determine the

carcinogenic risk from ingestion. The Unit Risk Factors are used to determine the carcinogenic risk from inhalation. The methodology used for calculating total non-carcinogenic and carcinogenic risk is provided in *Section 4.2*.

3.3

SITE AND SITE SPECIFIC PARAMETERS

The IRAP health risk assessment model requires information relating to the industrial location and its surroundings. The parameters required include the following.

-) The fraction of animal feed (grain, silage and forage) grown on contaminated soils and quantity of animal feed and soil consumed by the various animal species considered.
-) The interception fraction for above ground vegetation, forage and silage and length of vegetation exposure to deposition. The yield/standing crop biomass is also required.
-) Input data for assessing the risks associated with exposure to breast milk, including:
 -) body weight of infant;
 -) exposure duration;
 -) proportion of ingested COPC stored in fat;
 -) proportion of mother's weight that is fat;
 -) fraction of fat in breast milk;
 -) fraction of ingested contaminant that is absorbed; and
 -) half-life of dioxins in adults and ingestion rate of breast milk.
-) Other physical parameters (e.g. soil dry bulk density, density of air, soil mixing zone depth).

For all of these parameters the IRAP/EPA HHRAP default values have been used and these are presented in *Annex A*. Other site specific parameters are also required which are not provided by the IRAP model. These parameters were specified for the facility location as follows:

-) Annual average evapotranspiration rate of 53.2 cm a⁻¹ (assumed to be 70% of total precipitation);
-) Annual average precipitation of 76 cm a⁻¹ (based on local meteorological data for Leuchars Airfield between 2011 and 2015);
-) Annual average irrigation of 0 cm a⁻¹;
-) Annual average runoff of 7.6 cm a⁻¹ (assumed to be 10% of total precipitation);

-) An annual average wind velocity of 5.0 m s^{-1} (based on Leuchars Airfield meteorological data for 2011 to 2015); and
-) A time period over which deposition occurs of 30 years.

3.4 RECEPTOR INFORMATION

Within the IRAP model there are three possible receptor types; Resident, Farmer and Fisher but not all may be considered appropriate. For this assessment, only Farmer and Resident receptors are considered. Information relating to each receptor type (adult and/or child) is required by the model where these receptor types are used. The information required includes the following:

-) Food (meat, dairy products, fish and vegetables), water and soil consumption rates for each receptor type. However, only Fishers are assumed to consume fish and only Farmers are assumed to consume locally reared animals and animal products.
-) Fraction of contaminated food, water and soil which is consumed by each receptor type.
-) Input data for the inhalation exposure including: inhalation exposure duration, inhalation exposure frequency, inhalation exposure time; and inhalation rate.
-) Input data for the ingestion exposure including: exposure duration, exposure frequency, exposure time; and body weight of receptor.

For the purposes of this assessment the default IRAP/HHRAP parameters have been used to define the characteristics of the receptors. The input data used are presented in *Annex B*.

4.1 SELECTION OF RECEPTORS

In addition to defining specific locations for assessment, IRAP can be used to determine the location of maximum impact over an area based on the results of the dispersion model. For each defined land-use area, IRAP selects the locations which represent the maximum predicted concentrations or deposition rates for the area selected. The locations of these various maxima are often co-located resulting in the selection of one to nine receptor locations per defined area. This approach is adopted by IRAP since the maximum receptor impact may occur at any one of the maximum concentration or deposition locations identified.

For the proposed EfW CHP facility, residential exposure within the immediate vicinity is limited by the industrial nature of the site. The nearest residential areas are to the south at Douglas and Angus and to the north to the north of Drumgeith Road and Ballumbie Road. Based on the surrounding residential areas, ten areas where residential exposure may occur have been defined. The urban nature of the land use around the site means that areas used for farming are somewhat limited to areas to the north beyond residential areas. Therefore, two farmer receptor areas have been selected for agricultural land to the north.

For each type of receptor, up to nine locations are selected based on the maximum predicted airborne concentration, maximum predicted wet deposition rate and maximum dry deposition rate for gas, particle and particle bound phases. These maxima are often co-located, however, and each receptor type could have between one and nine identified receptor locations per defined area.

For the proposed EfW CHP facility, four farmer receptors and thirteen residential receptors have been assessed. For all of the receptor types, adult and child receptors have been considered. The locations of the resident and farmer receptors are presented in *Figure 4.1* and described in *Table 4.1*. At other locations not specifically considered in the assessment, the predicted hazards and risks would be lower than predicted for the discrete receptors considered.

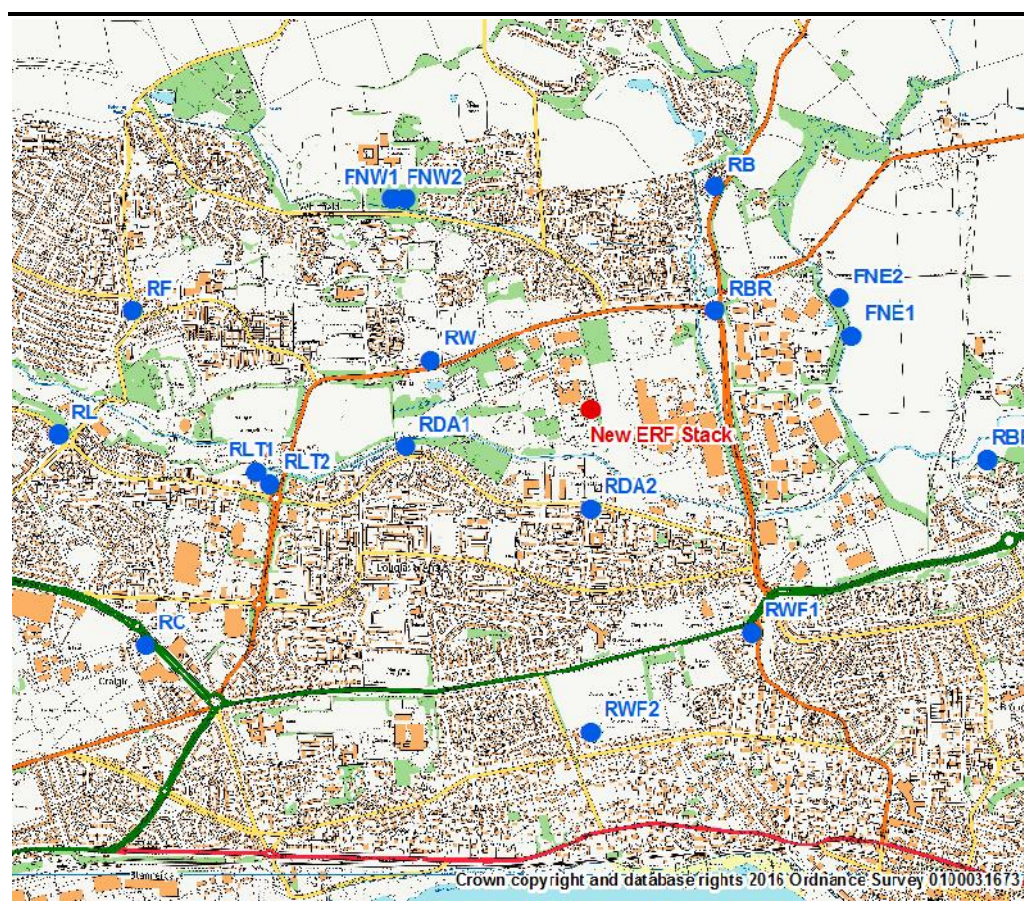
TABLE 4.1

SENSITIVE RECEPTORS CONSIDERED FOR THE HHRA

Receptor Name	Code	Grid Reference	
		x	y
Farmer NE 1	FNE1	345687	733179
Farmer NE 2	FNE2	345637	733329
Farmer NW 1	FNW1	343887	733729
Farmer NW 2	FNW2	343837	733729
Resident Ballumbie	RB	345137	733779
Resident Ballumbie Road	RBR	345137	733279
Resident Broughty Ferry	RBF	346237	732679
Resident Craigie	RC	342837	731929
Resident Douglas & Angus1	RDA1	343887	732729
Resident Douglas & Angus2	RDA2	344637	732479
Resident Fintry	RF	342787	733279
Resident Linlathen	RL	342487	732779
Resident Longtown 1	RLT1	343287	732629
Resident Longtown 2	RLT2	343337	732579
Resident West Ferry 1	RWF1	345287	731979
Resident West Ferry 2	RWF2	344637	731579
Resident Whitfield	RW	343987	733079

FIGURE 4.1

LOCATION OF THE RESIDENT AND FARMER RECEPTORS



4.2.1

Non-carcinogenic Risk

The non-carcinogenic effect of the emissions on human health can be assessed in terms of the *Hazard Quotient* (HQ). For ingestion, the HQ is calculated as the Average Daily Dose (ADD) divided by the reference dose (RfD). For example, the HQ for ingestion exposure for cadmium (Cd) is calculated as follows:

$$HQ_{Ing, Cd} = \frac{ADD_{Ing, Cd}}{RfD_{Ing, Cd}}$$

Where:

$$ADD_{Ing, Cd} = \frac{I_{Ing, Cd} \times ED \times EF}{AT \times 365}$$

Where: $ADD_{Ing, Cd}$ = ingestion dose for cadmium; ED is the exposure duration (dependent on the receptor type); EF is the exposure frequency (350 days per year); and AT is the averaging time (equal to ED for non-carcinogenic effects and 70 years for carcinogenic risks).

For inhalation, the HQ is calculated as the exposure concentration divided by the reference concentration (RfC). For example, the HQ for inhalation exposure for cadmium (Cd) is calculated as follows:

$$HQ_{Inh, Cd} = \frac{EC_{Cd} \times 0.001}{RfC_{Inh, Cd}}$$

Where:

$$EC_{Cd} = \frac{C_a \times ED \times EF}{AT \times 365}$$

Where: EC_{Cd} is the exposure concentration ($\mu\text{g m}^{-3}$), $RfC_{Inh, Cd}$ is the reference concentration for cadmium (mg m^{-3}) and C_a is the concentration of cadmium in air.

The Reference Dose and Reference Concentration for each COPC and exposure pathway are provided in *Section 3.2*. The RfDs and RfCs are set conservatively, that is they are protective of health and doses at or greater than the RfD or RfC indicate the potential for effect, rather than clear and certain indication of an effect. For example, should the maximum daily intake for the new source, in this case the facility, be equal to the RfD, then the HQ would be equal to 1.0 and this would indicate the potential for a health effect. On the other hand, a hazard

quotient of less than unity (1.0) implies that such an exposure would not create an adverse non-carcinogenic health effect.

The *Hazard Index* (HI) is the sum of the individual COPC/pathway HQs and assumes that there are no synergistic or antagonist health effects arising from the release. The smaller the HI, the less risk to human health is implied.

4.2.2 Carcinogenic Risk

The risk of interest in this context is the extra lifetime risk associated with the total dose resulting from exposure to the facility emissions. For each COPC, the US EPA has calculated a carcinogenic slope factor (CSF). These are calculated for ingestion exposure whereas for inhalation exposure, a unit risk factor (URF) has been adopted. A summary of the factors used for this assessment is provided in *Section 3.2*. Where the CSF or URF is zero, this indicates that the COPC is non-carcinogenic via that exposure route. The IRAP model uses these values to calculate a cancer risk for each pollutant and for each pathway for exposure, so that the results can be expressed in a high degree of detail.

The risk associated with the ingestion exposure (food, water and soil) to cadmium is calculated as follows:

$$Risk_{Ing, Cd} = \sum ADD_{Ing, Cd} \times CSF_{Ing, Cd}$$

Where $ADD_{Ing, Cd}$ is the sum of the average daily dose from all ingestion exposure routes.

The risk associated with the inhalation of cadmium is calculated as follows:

$$Risk_{Inh, Cd} = \sum EC_{Cd} \times URF_{Inh, Cd}$$

4.3 IMPACT ASSESSMENT FOR THE PROPOSED EfW CHP FACILITY

4.3.1 Assessment of Non-carcinogenic Effects – Proposed EfW CHP Facility

The Hazard Index (HI) calculated by IRAP for emissions from the proposed EfW CHP facility for each of the receptors (adult and child) is presented in *Table 4.2* (highest values for each receptor type are picked out in bold type).

TABLE 4.2

HAZARD INDEX FOR RESIDENT AND FARMER RECEPTORS - PROPOSED EfW CHP FACILITY

Receptor Name	Hazard Index (HI) – Proposed EfW CHP	
	Adult	Child
Farmer NE 1	0.018	0.023
Farmer NE 2	0.017	0.021
Farmer NW 1	0.0032	0.0042
Farmer NW 2	0.0032	0.0042
Resident Ballumbie	0.0019	0.0023
Resident Ballumbie Road	0.0085	0.010
Resident Broughty Ferry	0.0031	0.0038
Resident Craigie	0.00045	0.00057
Resident Douglas & Angus1	0.0016	0.0021
Resident Douglas & Angus2	0.00066	0.0010
Resident Fintry	0.0014	0.0018
Resident Linlathen	0.00080	0.00099
Resident Longtown 1	0.0010	0.0013
Resident Longtown 2	0.00098	0.0012
Resident West Ferry 1	0.00060	0.00075
Resident West Ferry 2	0.00050	0.00067
Resident Whitfield	0.0040	0.0049
<i>Criterion</i>	1.0	

The HIs are well below unity (1.0) and so it is highly unlikely that emissions of COPCs from the facility would cause an adverse non-carcinogenic health risk. For the proposed EfW CHP facility, the highest HI is predicted for the Farmer Northeast 1 Child and is a factor of around 43 less than unity. The maximum residential HI is 0.0085 for Resident Ballumbie Road (child) and is a factor of 100 less than unity. Despite being located further from the emission source, predicted HIs for farmers are higher than for the residential receptors because of the assumed consumption of animal products.

4.3.2

Assessment of Carcinogenic Effects – Proposed EfW CHP Facility

The total lifetime risk calculated by IRAP for emissions from the facility for each of the receptors (adult and child) is presented in *Table 4.3*.

TABLE 4.3

TOTAL LIFETIME RISK FOR FARMER AND RESIDENT RECEPTORS

Receptor Name	Lifetime Risk – Proposed EfW CHP	
	Adult	Child
Farmer NE 1	4.0×10^{-6}	8.5×10^{-7}
Farmer NE 2	3.8×10^{-6}	8.1×10^{-7}
Farmer NW 1	7.7×10^{-7}	1.6×10^{-7}
Farmer NW 2	7.6×10^{-7}	1.6×10^{-7}
Resident Ballumbie	8.9×10^{-8}	2.8×10^{-8}
Resident Ballumbie Road	3.9×10^{-7}	1.2×10^{-7}
Resident Broughty Ferry	1.4×10^{-7}	4.4×10^{-8}
Resident Craigie	2.2×10^{-8}	7.3×10^{-9}
Resident Douglas & Angus1	8.0×10^{-8}	2.7×10^{-8}
Resident Douglas & Angus2	4.2×10^{-8}	1.8×10^{-8}
Resident Fintry	6.8×10^{-8}	2.2×10^{-8}
Resident Linlathen	3.8×10^{-8}	1.2×10^{-8}
Resident Longtown 1	5.0×10^{-8}	1.6×10^{-8}
Resident Longtown 2	4.8×10^{-8}	1.6×10^{-8}
Resident West Ferry 1	2.9×10^{-8}	9.7×10^{-9}
Resident West Ferry 2	2.6×10^{-8}	9.3×10^{-9}
Resident Whitfield	1.9×10^{-7}	6.0×10^{-8}
Criterion	7.0×10^{-5}	

For the proposed EfW CHP facility, the highest carcinogenic risk is predicted for Farmer Northeast 1 (adult) and Resident Ballumbie Road (adult). The additional, total, **lifetime** risks to these receptors are 4.0×10^{-6} , (1 in 250,000) and 3.9×10^{-7} (1 in 2,564,100), respectively. Expressed as an **annual** risk, these risk estimates become 1 in 17,500,000 for Farmer Northeast 1 and 1 in 179,487,000 for Resident Ballumbie Road, assuming a lifetime of 70 years. Such risks are well within an annual risk of 1×10^{-6} (1 in 1 million), conventionally considered to be acceptable for industrial regulation in the UK ⁵.

4.3.3

Exposure to Dioxins, Furans and Dioxin-like PCBs – Proposed EfW CHP Facility

Comparison of Dioxin/Furan Exposure with WHO and UK Guidance

The World Health Organization (WHO) recommends a tolerable daily intake for dioxins/furans of 1 to 4 pg I-TEQ kg-BW⁻¹ d⁻¹ (picogrammes as the International Toxic Equivalent per kilogram bodyweight per day) ⁽⁶⁾. The TDI represents the tolerable daily intake for lifetime exposure and short-term

⁵ Risk Assessment for Environmental Professionals, CIWEM Publication (December 2001)

⁶ Assessment of the Health Risk of Dioxins: Re-evaluation of the Tolerable Daily Intake (TDI), WHO Consultation, May 25-29 1998, Geneva, Switzerland

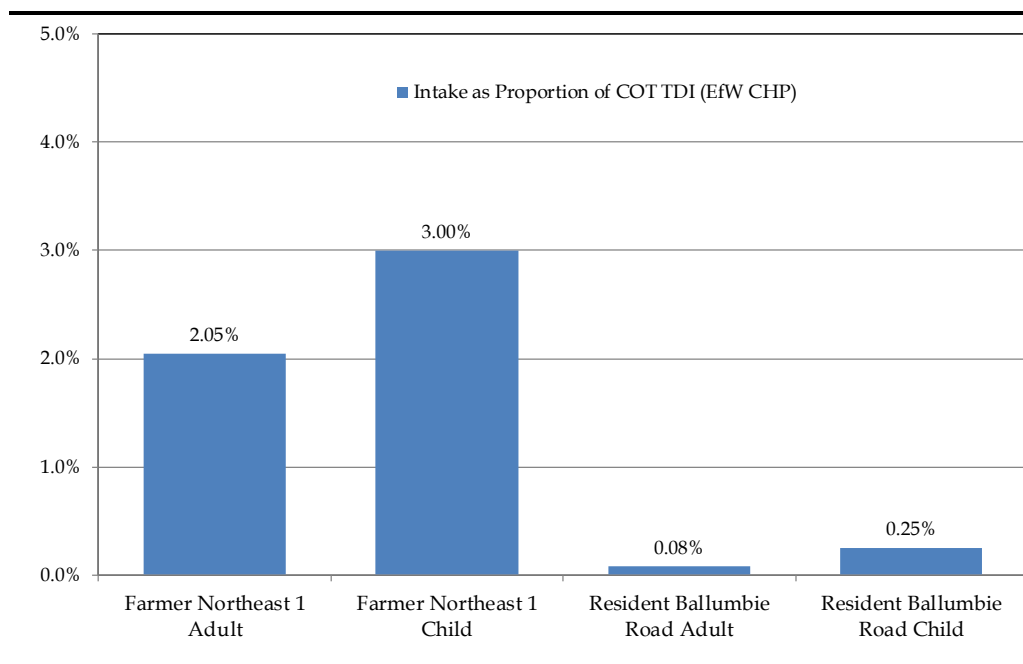
excursions above the TDI would have no consequence provided that the average intake over long periods is not exceeded. The average (lifetime) daily intake of dioxins/furans for the receptors considered is presented in *Table 4.4*. These are also compared to the Committee on Toxicity (COT) TDI of 2 pg I-TEQ kg-BW⁻¹ d⁻¹ for dioxins, furans and dioxin-like PCBs. These are also presented as a percentage of the Committee on Toxicity (COT) TDI of 2 pg I-TEQ kg-BW⁻¹ d⁻¹ in *Figure 4.2* for the Farmer Northeast 1 and Resident Ballumbie Road receptors, where highest exposures are predicted.

TABLE 4.4 **COMPARISON OF AVERAGE DAILY INTAKES WITH THE UK AND WHO'S TDI FOR DIOXINS/FURANS (pg I-TEQ kg-BW⁻¹ d⁻¹)**

Receptor Name	Proposed EfW CHP Facility	
	Adult	Child
Farmer NE 1	0.041	0.060
Farmer NE 2	0.039	0.058
Farmer NW 1	0.0085	0.013
Farmer NW 2	0.0084	0.012
Resident Ballumbie	0.00038	0.0012
Resident Ballumbie Road	0.0016	0.0050
Resident Broughty Ferry	0.00058	0.0018
Resident Craigie	0.00012	0.00037
Resident Douglas & Angus1	0.00043	0.0014
Resident Douglas & Angus2	0.00043	0.0014
Resident Fintry	0.00031	0.00095
Resident Linlathen	0.00018	0.00057
Resident Longtown 1	0.00025	0.00079
Resident Longtown 2	0.00025	0.00077
Resident West Ferry 1	0.00015	0.00048
Resident West Ferry 2	0.00017	0.00053
Resident Whitfield	0.00088	0.0027
WHO TDI	1 to 4 pg I-TEQ kg-BW ⁻¹ d ⁻¹	
Committee on Toxicity (COT) TDI	2 pg I-TEQ kg-BW ⁻¹ d ⁻¹	

For the proposed EfW CHP facility, the contribution of the facility to the COT TDI is less than 3.0% for the farmer receptors and 0.3% for the residential receptors.

FIGURE 4.2 PREDICTED INTAKE OF DIOXINS AND FURANS FOR THE FARMER AND RESIDENT RECEPTORS AS A PERCENTAGE OF THE COMMITTEE ON TOXICITY TOLERABLE DAILY INTAKE



Total Intake

The contribution of the facility to total intake is calculated as follows:

-) predicted incremental intake due to emissions from the facility;
-) average daily background intake (i.e. that arising from other sources), referred to as the mean daily intake (MDI);
-) the total intake (i.e. the sum of the predicted incremental intake and the MDI);
-) a comparison of the total intake with the TDI for dioxin/furans.

For all receptors, the total intakes are presented in *Table 4.5*. Results are presented for both adult and child receptors.

TABLE 4.5

COMPARISON OF TOTAL INTAKE WITH THE COT TDI – PROPOSED EfW CHP FACILITY

Receptor	Total Intake from the Facility (pg I-TEQ kg ⁻¹ d ⁻¹)	Total Intake Facility + MDI (pg I-TEQ kg ⁻¹ d ⁻¹)	Facility as %age of TDI	Total Intake as %age of TDI
Adult Receptors				
Farmer NE 1	0.041	0.74	2.1%	37.1%
Farmer NE 2	0.039	0.74	2.0%	37.0%
Farmer NW 1	0.0085	0.71	0.4%	35.4%
Farmer NW 2	0.0084	0.71	0.4%	35.4%
Resident Ballumbie	0.00038	0.70	0.0%	35.0%
Resident Ballumbie Road	0.0016	0.70	0.1%	35.1%
Resident Broughty Ferry	0.00058	0.70	0.0%	35.0%
Resident Craigie	0.00012	0.70	0.0%	35.0%
Resident Douglas & Angus1	0.00043	0.70	0.0%	35.0%
Resident Douglas & Angus2	0.00043	0.70	0.0%	35.0%
Resident Fintry	0.00031	0.70	0.0%	35.0%
Resident Linlathen	0.00018	0.70	0.0%	35.0%
Resident Longtown 1	0.00025	0.70	0.0%	35.0%
Resident Longtown 2	0.00025	0.70	0.0%	35.0%
Resident West Ferry 1	0.00015	0.70	0.0%	35.0%
Resident West Ferry 2	0.00017	0.70	0.0%	35.0%
Resident Whitfield	0.00088	0.70	0.0%	35.0%
Child Receptors				
Farmer NE 1	0.060	2.16	3.0%	108.0%
Farmer NE 2	0.058	2.16	2.9%	107.9%
Farmer NW 1	0.013	2.11	0.6%	105.6%
Farmer NW 2	0.012	2.11	0.6%	105.6%
Resident Ballumbie	0.0012	2.10	0.1%	105.1%
Resident Ballumbie Road	0.0050	2.10	0.2%	105.2%
Resident Broughty Ferry	0.0018	2.10	0.1%	105.1%
Resident Craigie	0.00037	2.10	0.0%	105.0%
Resident Douglas & Angus1	0.0014	2.10	0.1%	105.1%
Resident Douglas & Angus2	0.0014	2.10	0.1%	105.1%
Resident Fintry	0.00095	2.10	0.0%	105.0%
Resident Linlathen	0.00057	2.10	0.0%	105.0%
Resident Longtown 1	0.00079	2.10	0.0%	105.0%
Resident Longtown 2	0.00077	2.10	0.0%	105.0%
Resident West Ferry 1	0.00048	2.10	0.0%	105.0%
Resident West Ferry 2	0.00053	2.10	0.0%	105.0%
Resident Whitfield	0.0027	2.10	0.1%	105.1%
<i>COT TDI</i>	2	2	-	-

The MDI is derived from background adult intakes provided in the former Science Report published by the Environment Agency ⁷ which provides a value of 49 pg WHO-TEQ d⁻¹. The MDI for an adult receptor and child receptor is calculated as follows:

-) for an adult receptor a MDI of 0.7 pg I-TEQ kg⁻¹ d⁻¹ ⁸ is derived by dividing the background intake by a bodyweight of 70 kg;
-) for a child receptor a MDI of 2.1 pg I-TEQ kg⁻¹ d⁻¹ is derived by dividing the background intake by a bodyweight of 15 kg and applying an adult to child correction factor of 0.65.

For the child receptor, the MDI for dioxin/furans exceeds the TDI without the contribution from the facility. However, in deriving the MDI for the child receptors, a bodyweight of 15 kg has been used in order to be consistent with the IRAP predictions which assume a bodyweight of 15 kg. As a consequence the MDI is higher than it would be for a 20 kg child (typically assumed in the UK) and also represents a worst case. For a 20 kg child (adult to child correction factor of 0.74) the MDI for a child would be 1.8 pg I-TEQ kg⁻¹ d⁻¹ and below the COT TDI.

For inhalation and oral intake of PCDD/Fs for adults, total intake is well below the TDI. Background exposure represents approximately 35% of total exposure. At worst, the proposed EfW CHP facility contributes 2.1% to the TDI for adults.

For inhalation and oral intake of PCDD/Fs for children, the background intake is in excess of the TDI. At worst the additional contribution from the facility for a child is 0.060 pg TEQ kg⁻¹ d⁻¹ (3.0% of the COT TDI). Combined with the background exposure for a 20 kg child (1.8 pg TEQ kg⁻¹ d⁻¹) the total intake would be below the TDI (93.0%). Furthermore, it should be noted that the TDI for PCDD/Fs is set for the purposes of assessing lifetime exposure and these elevated background exposures for children are therefore not representative of long term exposure.

Infant Breast Milk Exposure to Dioxins and Furans

Another exposure pathway of interest is infant exposure to PCDDs (polychlorinated di benzo(p)dioxins) and PCDFs (polychlorinated dibenzofurans) via the ingestion of their mother's breast milk. This is because the potential for contamination of breast milk is particularly high for dioxin-like compounds such as these, as they are extremely lipophilic (fat soluble) and hence likely to accumulate in breast milk. Further, the infant body weight is

⁷ Soil Guideline Values for dioxins, furans and dioxin-like PCBs in soil, Environment Agency, Science Report SC050021/Dioxins SGV, September 2009 (withdrawn)

⁸ No correction is provided between the WHO-TEF and the I-TEF but a sensitivity analysis indicates that correcting between the two systems would have negligible impact on the results

smaller and it could be argued that the effect is therefore proportionately greater than in an adult.

This exposure is measured by the Average Daily Dose (ADD) on the basis of an averaging time of 1 year. In the US, a threshold value of 50 pg kg⁻¹ d⁻¹ of 2,3,7,8-TCDD TEQ is cited as being potentially harmful. The IRAP model calculates the ADD that would result from an adult receptor breast feeding an infant. A summary of the ADD for each of the infants of the adult receptors considered for the assessment is presented in *Table 4.6*.

TABLE 4.6 ASSESSMENT OF THE AVERAGE DAILY DOSE FOR A BREAST-FED INFANT OF AN ADULT RECEPTOR – PROPOSED EfW CHP FACILITY

Receptor Name	Average Daily Dose from Breast Feeding (pg kg ⁻¹ d ⁻¹ of 2,3,7,8-TCDD)
Farmer NE 1	0.52
Farmer NE 2	0.50
Farmer NW 1	0.10
Farmer NW 2	0.10
Resident Ballumbie	0.0036
Resident Ballumbie Road	0.015
Resident Broughty Ferry	0.0055
Resident Craigie	0.0011
Resident Douglas & Angus1	0.0040
Resident Douglas & Angus2	0.0038
Resident Fintry	0.0029
Resident Linlathen	0.0017
Resident Longtown 1	0.0024
Resident Longtown 2	0.0023
Resident West Ferry 1	0.0014
Resident West Ferry 2	0.0016
Resident Whitfield	0.0083
<i>US EPA Criterion</i>	<i>50</i>
<i>WHO criterion</i>	<i>1 to 4</i>
<i>UK criterion (COT)</i>	<i>2</i>

For the proposed EfW CHP facility, the highest ADDs are calculated for the infants of the farmer receptors and represent at worst less than 1.0% of the US EPA criterion of 50 pg kg⁻¹ d⁻¹ of 2,3,7,8-TCDD. The calculated ADDs for residential receptors are lower compared to the farmer since the most significant exposure to dioxins/furans is via the food chain, particularly animals and animal products. The farmer receptors are assumed to consume contaminated meat and dairy products. The residential receptors, however, are only assumed to consume vegetable products which are less significant with regard to exposure to dioxins/furans.

For the proposed EfW CHP facility, the ADDs for the infants of the farmer receptors are up to 26% of the COT criterion. The duration of exposure is short, however, and the average daily intake over the lifetime of the individual would be substantially less. Highest exposure is predicted for infants of Farmer Northeast 1 adults, for whom lifetime exposure would consist of the following components:

-) One year as a breast fed infant at 0.52 pg I-TEQ kg-BW⁻¹ d⁻¹;
-) Five years as a child farmer at 0.060 pg I-TEQ kg-BW⁻¹ d⁻¹;
-) 40 years as an adult farmer at 0.041 pg I-TEQ kg-BW⁻¹ d⁻¹;
-) 24 years as an adult resident at 0.0016 pg I-TEQ kg-BW⁻¹ d⁻¹ (worst-case).

This would result in a total average (lifetime) daily intake of 0.036 pg I-TEQ kg-BW⁻¹ d⁻¹. This is well below COT TDI and the lower range of the WHO TDI, which is set specifically for lifetime exposure.

The WHO recognises that breast-fed infants would be exposed to higher intakes for a short duration, but also that breast feeding itself provides associated benefits.

4.4 CUMULATIVE IMPACT ASSESSMENT

4.4.1 Introduction

A cumulative assessment has been carried out for the operation of the proposed EfW CHP facility and the previous operation of the existing DERL plant. The existing DERL plant has operated for approximately 17 years (since September 1999). As a consequence, it will have operated after the introduction of stricter controls on emissions from municipal waste incinerators in 1996 which restricted emissions to 1 ng Nm⁻³ but before further regulation in 2003 restricting emissions to the current limit of 0.1 ng m⁻³. However, it is considered that historical exposure to dioxins (i.e. prior to 2003 will be accounted for in background exposure). Therefore, cumulative effects from exposure to the existing DERL plant are assessed for the plant operating for 20 years but with emissions at the current emission limit of 0.1 ng Nm⁻³. For present day exposure this represents a worst-case as emissions in 2015 indicated that actual emissions were around 0.05 ng Nm⁻³ (50% of the emission limit). In addition, the assessment assumes that the existing DERL plant operates for the next 20 years alongside the proposed EfW CHP facility rather than the past 20 years as the IRAP model is not able to predict future exposure to historical contamination from a facility that has ceased operating. Therefore, no account has been taken of the removal of the existing DERL plant contaminants in soil via degradation, leaching and other processes over the next 20-30 years. Therefore, the cumulative assessment is considered to represent worst-case conditions.

4.4.2

Cumulative Assessment of Non-carcinogenic Effects

The Hazard Index (HI) calculated by IRAP for the combined exposure to emissions from the existing DERL plant emissions and the proposed EfW CHP facility for each of the receptors (adult and child) is presented in *Table 4.7*.

TABLE 4.7 CUMULATIVE HAZARD INDEX FOR RESIDENT AND FARMER RECEPTORS

Receptor Name	Hazard Index (HI)			
	DERL Adult	DERL Child	Combined Adult	Combined Child
Farmer NE 1	0.018	0.023	0.036	0.045
Farmer NE 2	0.020	0.025	0.037	0.047
Farmer NW 1	0.0042	0.0054	0.0075	0.0096
Farmer NW 2	0.0042	0.0053	0.0074	0.0094
Resident Ballumbie	0.00062	0.0011	0.0025	0.0034
Resident Ballumbie Road	0.0046	0.0078	0.013	0.018
Resident Broughty Ferry	0.00065	0.0011	0.0038	0.0049
Resident Craigie	0.00011	0.00022	0.00056	0.00079
Resident Douglas & Angus1	0.00043	0.00082	0.0021	0.0029
Resident Douglas & Angus2	0.00037	0.00078	0.0010	0.0018
Resident Fintry	0.00035	0.00063	0.0018	0.0024
Resident Linlathen	0.00019	0.00035	0.00099	0.0013
Resident Longtown 1	0.00025	0.00048	0.0013	0.0018
Resident Longtown 2	0.00024	0.00046	0.0012	0.0017
Resident West Ferry 1	0.00014	0.00026	0.00073	0.0010
Resident West Ferry 2	0.00014	0.00029	0.00065	0.00096
Resident Whitfield	0.0011	0.0021	0.0051	0.0070
Criterion	1.0			

The HIs for combined exposure to the existing DERL plant and the proposed EfW CHP facility are well below unity (1.0) and so it is highly unlikely that emissions of COPCs from the facility would cause an adverse non-carcinogenic health risk when cumulative impacts are considered. For the combined exposure, the highest HI is predicted for the Farmer Northeast 2 Child and is a factor of around 21 less than unity. The maximum combined residential HI is 0.018 for Resident Ballumbie Road 1 (child) and is a factor of 56 less than unity.

4.4.3

Cumulative Assessment of Carcinogenic Effects

The total lifetime risk calculated by IRAP for the combined exposure to emissions from the existing DERL plant and the proposed EfW CHP facility for each of the receptors (adult and child) is presented in *Table 4.8*.

TABLE 4.8

CUMULATIVE TOTAL LIFETIME RISK FOR FARMER AND RESIDENT RECEPTORS

Receptor Name	Lifetime Risk (HI)			
	DERL Adult	DERL Child	Combined Adult	Combined Child
Farmer NE 1	4.3×10^{-6}	9.3×10^{-7}	8.3×10^{-6}	1.8×10^{-6}
Farmer NE 2	4.8×10^{-6}	1.0×10^{-6}	8.7×10^{-6}	1.8×10^{-6}
Farmer NW 1	9.7×10^{-7}	2.1×10^{-7}	1.7×10^{-6}	3.7×10^{-7}
Farmer NW 2	9.6×10^{-7}	2.1×10^{-7}	1.7×10^{-6}	3.7×10^{-7}
Resident Ballumbie	5.1×10^{-8}	1.9×10^{-8}	1.4×10^{-7}	4.6×10^{-8}
Resident Ballumbie Road	3.7×10^{-7}	1.3×10^{-7}	7.6×10^{-7}	2.5×10^{-7}
Resident Broughty Ferry	5.3×10^{-8}	1.9×10^{-8}	2.0×10^{-7}	6.4×10^{-8}
Resident Craigie	9.5×10^{-9}	3.7×10^{-9}	3.1×10^{-8}	1.1×10^{-8}
Resident Douglas & Angus1	3.6×10^{-8}	1.4×10^{-8}	1.2×10^{-7}	4.0×10^{-8}
Resident Douglas & Angus2	3.1×10^{-8}	1.3×10^{-8}	7.3×10^{-8}	3.1×10^{-8}
Resident Fintry	2.8×10^{-8}	1.1×10^{-8}	9.7×10^{-8}	3.2×10^{-8}
Resident Linlathen	1.5×10^{-8}	5.8×10^{-9}	5.4×10^{-8}	1.8×10^{-8}
Resident Longtown 1	2.1×10^{-8}	7.9×10^{-9}	7.1×10^{-8}	2.4×10^{-8}
Resident Longtown 2	2.0×10^{-8}	7.7×10^{-9}	6.8×10^{-8}	2.3×10^{-8}
Resident West Ferry 1	1.1×10^{-8}	4.4×10^{-9}	4.1×10^{-8}	1.4×10^{-8}
Resident West Ferry 2	1.2×10^{-8}	4.9×10^{-9}	3.8×10^{-8}	1.4×10^{-8}
Resident Whitfield	9.3×10^{-8}	3.4×10^{-8}	2.8×10^{-7}	9.5×10^{-8}
Criterion	7.0×10^{-5}			

The highest carcinogenic risk for combined exposure to the existing DERL plant and proposed EfW CHP facility is predicted for Farmer Northeast 2 (adult) and Resident Ballumbie Road (adult). The additional, total, **lifetime** risks to these receptors are 8.7×10^{-6} , (1 in 114,900) and 7.6×10^{-7} (1 in 1,315,800), respectively. Expressed as an **annual** risk, these risk estimates become 1 in 8,043,000 for Farmer Northeast 2 and 1 in 92,106,000 for Resident Ballumbie Road, assuming a lifetime of 70 years. Such risks are well within an annual risk of 1×10^{-6} (1 in 1 million), conventionally considered to be acceptable for industrial regulation in the UK ⁹.

4.4.4

Combined Exposure to Dioxins, Furans and Dioxin-like PCBs

Comparison of Dioxin/Furan Exposure with WHO and UK Guidance

For combined emissions from the existing DERL plant and the proposed EfW CHP facility, the average (lifetime) daily intake of dioxins/furans is presented in Table 4.9. These are also compared to the Committee on Toxicity (COT) TDI of 2 pg I-TEQ kg-BW⁻¹ d⁻¹ for dioxins, furans and dioxin-like PCBs.

⁹ Risk Assessment for Environmental Professionals, CIWEM Publication (December 2001)

TABLE 4.9

COMBINED AVERAGE DAILY INTAKES AS A FRACTION OF THE UK AND WHO'S TDI FOR DIOXINS/FURANS (pg I-TEQ kg-BW⁻¹ d⁻¹)

Receptor Name	Existing DERL Plant		Combined Exposure	
	Adult	Child	Adult	Child
Farmer NE 1	0.049	0.072	0.090	0.13
Farmer NE 2	0.055	0.080	0.094	0.14
Farmer NW 1	0.011	0.017	0.020	0.029
Farmer NW 2	0.011	0.017	0.020	0.029
Resident Ballumbie	0.00044	0.0014	0.00082	0.0025
Resident Ballumbie Road	0.0029	0.0090	0.0045	0.014
Resident Broughty Ferry	0.00045	0.0014	0.0010	0.0032
Resident Craigie	0.00010	0.00031	0.00022	0.00068
Resident Douglas & Angus1	0.00036	0.0011	0.00079	0.0025
Resident Douglas & Angus2	0.00037	0.0012	0.00080	0.0025
Resident Fintry	0.00026	0.00081	0.00057	0.0018
Resident Linlathen	0.00015	0.00047	0.00033	0.0010
Resident Longtown 1	0.00021	0.00065	0.00046	0.0014
Resident Longtown 2	0.00020	0.00063	0.00045	0.0014
Resident West Ferry 1	0.00012	0.00036	0.00027	0.00084
Resident West Ferry 2	0.00014	0.00043	0.00031	0.00097
Resident Whitfield	0.00085	0.0026	0.0017	0.0054
WHO TDI	1 to 4 pg I-TEQ kg-BW ⁻¹ d ⁻¹			
Committee on Toxicity (COT) TDI	2 pg I-TEQ kg-BW ⁻¹ d ⁻¹			

For the combined exposure to the existing DERL plant and the proposed EfW CHP facility, the contribution to the COT TDI is less than 6.9% for the farmer receptors and less than 0.7% for the residential receptors.

Infant Breast Milk Exposure to Dioxins and Furans

A summary of the ADD for each of the infants of the adult receptors considered for the assessment is presented in *Table 4.10* for combined exposure to the existing DERL plant and the proposed EfW CHP facility.

For the combined exposure, the highest ADDs are calculated for the infants of the farmer receptors and represent at worst less than 2.4% of the US EPA criterion of 50 pg kg⁻¹ d⁻¹ of 2,3,7,8-TCDD. The calculated ADDs for residential receptors are lower compared to the farmer. Highest residential exposure is predicted for Resident Ballumbie Road and is 0.1% of the US EPA criterion.

TABLE 4.10 ASSESSMENT OF THE COMBINED AVERAGE DAILY DOSE FOR A BREAST-FED INFANT OF AN ADULT RECEPTOR

Receptor Name	Average Daily Dose from Breast Feeding (pg kg ⁻¹ d ⁻¹ of 2,3,7,8-TCDD)
Farmer NE 1	1.2
Farmer NE 2	1.2
Farmer NW 1	0.25
Farmer NW 2	0.24
Resident Ballumbie	0.0082
Resident Ballumbie Road	0.046
Resident Broughty Ferry	0.010
Resident Craigie	0.0021
Resident Douglas & Angus1	0.0076
Resident Douglas & Angus2	0.0075
Resident Fintry	0.0056
Resident Linlathen	0.0032
Resident Longtown 1	0.0045
Resident Longtown 2	0.0044
Resident West Ferry 1	0.0026
Resident West Ferry 2	0.0029
Resident Whitfield	0.017
<i>US EPA Criterion</i>	50
<i>WHO criterion</i>	1 to 4
<i>UK criterion (COT)</i>	2

For the combined exposure, the ADDs for the infants of the farmer receptors are up to 60% of the COT criterion. However, as discussed previously, the duration of exposure is short and the average daily intake over the lifetime of the individual would be substantially less at around 0.082 pg kg⁻¹ d⁻¹ of 2,3,7,8-TCDD.

The WHO recognises that breast-fed infants would be exposed to higher intakes for a short duration, but also that breast feeding itself provides associated benefits.

5.1 SUMMARY

5.1.1 Scope of the Assessment

The possible impacts on human health arising from dioxins and furans (PCDD/F), dioxin-like PCBs and trace metals emitted from the proposed EfW CHP facility have been assessed under the very worst-case scenario, namely that of an individual exposed for a lifetime to the effects of the highest airborne concentrations and consuming mostly locally grown food. This equates to a hypothetical farmer consuming food grown on limited rural areas within the locality. Therefore, this builds a high degree of conservatism into the assessment. The assessment has also identified more plausible pathways of exposure for the individuals considered (e.g. residents). Deposition and subsequent uptake of the compounds of potential concern (COPCs) into the food chain is likely to be the more numerically significant pathway over direct inhalation.

The purpose of the assessment is to determine the impact on human health of the proposed EfW CHP facility. In addition, consideration has been given to the cumulative impacts arising from the previous operation of the existing DERL plant which will have resulted in the deposition of COPCs to soils which may still be present during the operation of the proposed EfW CHP facility.

5.1.2 Non-carcinogenic Health Risks for the Proposed EfW CHP Facility

The Hazard Index (HI) calculated by IRAP are all well below unity (1.0) and so it is highly unlikely that emissions of COPCs from the proposed EfW CHP facility would cause an adverse non-carcinogenic health risk. For the EfW CHP facility, the highest HI is predicted for the Farmer Northeast 1 (child) this is a factor of around 43 less than unity. The maximum residential HI is 0.010 for Resident Ballumbie Road (child) and is a factor of 100 less than unity. Therefore, the exposure to non-carcinogens is assessed as negligible.

5.1.3 Carcinogenic Health Risks for the Proposed EfW CHP Facility

The additional, **lifetime** carcinogenic risk arising from inhalation and ingestion of COPCs was assessed using US EPA cancer potency factors and unit risk factors, resulting in a worst case estimates for the future operational throughput as follows:

-) 4.0×10^{-6} (1 in 250,000) for the farmer; and
-) 3.9×10^{-7} (1 in 2,564,100) for the resident.

The assessment of health effects arising from exposure to COPCs indicates that emissions from the proposed EfW CHP facility do not pose a significant risk to health, given what is considered to be an acceptable level of lifetime risk in the UK, i.e. 1 in 14,300 (i.e. equivalent to an annual risk of 1 in 1,000,000 over a lifetime of 70 years).

5.1.4 Exposure to Dioxins, Furans and Dioxin-like PCBs for the Proposed EfW CHP Facility

For the proposed future operational throughput, the contribution of the facility to the COT TDI (2 pg I-TEQ kg-BW⁻¹ d⁻¹) is less than 3.0% for the farmer receptors and less than 0.3% for the residential receptors.

Exposure to dioxins via breast milk has also been assessed. The highest intakes at 0.52 pg kg⁻¹ d⁻¹ of 2,3,7,8-TCDD are calculated for the infants of the farmer receptors and represent at worst 1.0% of the US EPA criterion of 50 pg kg⁻¹ d⁻¹ of 2,3,7,8-TCDD for exposure to dioxins via breast milk. Although this is up to 26% of the COT criterion, the duration of exposure is short and the average daily intake over the lifetime of the individual would be substantially less at around 0.036 pg kg⁻¹ d⁻¹ of 2,3,7,8-TCDD even for the worst-case assumptions adopted for the assessment.

The WHO recognises that breast-fed infants would be exposed to higher intakes for a short duration, but also that breast feeding itself provides associated benefits.

5.1.5 Cumulative Impacts of the Existing DERL Plant and the Proposed EfW CHP Facility

The cumulative assessment arising from the previous operation of the existing DERL plant and the future operation of the proposed EfW CHP facility is considered to represent worst-case conditions with respect to emission concentrations and the accumulation of COPCs in soils. The assessment assumes that the existing DERL plant operates for the next 20 years alongside the proposed EfW CHP facility rather than the past 20 years as the IRAP model is not able to predict future exposure to historical contamination from a facility that has ceased operating. This is considered to represent worst-case conditions for the cumulative assessment.

The HIs for combined exposure to the existing DERL plant and the proposed EfW CHP facility are also well below unity (1.0) and so it is highly unlikely that emissions of COPCs from the facility would cause an adverse non-carcinogenic health risk when cumulative impacts are considered. For the combined exposure, the highest HI is predicted for the Farmer Northeast 2 Child and is a factor of around 21 less than unity.

The highest carcinogenic risk for combined exposure to the existing DERL plant and proposed EfW CHP facility is predicted for Farmer Northeast 2 (adult) and

Resident Ballumbie Road (adult). The additional, total, **lifetime** risks to these receptors are 8.7×10^{-6} , (1 in 114,900) and 7.6×10^{-7} (1 in 1,315,800), respectively. Expressed as an **annual** risk, these risk estimates become 1 in 8,043,000 for Farmer Northeast 2 and 1 in 92,106,000 for Resident Ballumbie Road, assuming a lifetime of 70 years. Such risks are well within an annual risk of 1×10^{-6} (1 in 1 million),

For the combined exposure to the existing DERL plant and the proposed EfW CHP facility, the contribution to the COT TDI is less than 6.9% for the farmer receptors, 0.7% for the residential receptors.

The highest intakes at $1.2 \text{ pg kg}^{-1} \text{ d}^{-1}$ of 2,3,7,8-TCDD are calculated for the infants of the farmer receptors and represent at worst 2.4% of the US EPA criterion of $50 \text{ pg kg}^{-1} \text{ d}^{-1}$ of 2,3,7,8-TCDD. Although this is up to 60% of the COT criterion, the duration of exposure is short and the average daily intake over the lifetime of the individual would be substantially less at around $0.082 \text{ pg kg}^{-1} \text{ d}^{-1}$ of 2,3,7,8-TCDD even for the very worst-case assumptions adopted for the cumulative assessment.

5.2 CONCLUSIONS

The risk assessment methodology used in this assessment has been structured so as to create 'realistic' worst case estimates of risk for residents. A number of features in the methodology give rise to this degree of conservatism, most obviously through the assumption that the exposed individual and consumes most of his/her above ground vegetable products derived from this area where deposition would occur. For farmer receptors, the ingestion of home-reared meat and animal products are also considered. This assumes that both arable and pasture land are present within the locality.

For the proposed EfW CHP facility and the cumulative impacts of the proposed EfW CHP facility and existing DERL plant, it has been demonstrated that the maximally exposed individual is not subject to a significant carcinogenic risk or non-carcinogenic hazard, arising from exposures via both inhalation and the ingestion of foods.

ANNEX A

SITE PARAMETERS

Annex A: Site Parameters Defined for the Health Risk Assessment

Parameter	Parameter Value	IRAP Symbol	Units
Soil dry bulk density	1.5	bd	g cm ⁻³
Forage fraction grown on contam. soil eaten by CATTLE	1.0	beef_fi_forage	--
Grain fraction grown on contam. soil eaten by CATTLE	1.0	beef_fi_grain	--
Silage fraction grown on contam. eaten by CATTLE	1.0	beef_fi_silage	--
Qty of forage eaten by CATTLE each day	8.8	beef_qp_forage	kg DW d ⁻¹
Qty of grain eaten by CATTLE each day	0.47	beef_qp_grain	kg DW d ⁻¹
Qty of silage eaten by CATTLE each day	2.5	beef_qp_silage	kg DW d ⁻¹
Grain fraction grown on contam. soil eaten by CHICKEN	1.0	chick_fi_grain	--
Qty of grain eaten by CHICKEN each day	0.2	chick_qp_grain	kg DW d ⁻¹
Fish lipid content	0.07	f_lipid	--
Fraction of CHICKEN's diet that is soil	0.1	fd_chicken	--
Universal gas constant	8.205e-5	gas_r	atm-m ³ mol ⁻¹ K ⁻¹
Plant surface loss coefficient	18	kp	a ⁻¹
Fraction of mercury emissions NOT lost to the global cycle	0.48	merc_q_corr	--
Fraction of mercury speciated into methyl mercury in produce	0.22	mercmethyl_ag	--
Fraction of mercury speciated into methyl mercury in soil	0.02	mercmethyl_sc	--
Forage fraction grown contam. soil, eaten by MILK CATTLE	1.0	milk_fi_forage	--
Grain fraction grown contam. soil, eaten by MILK CATTLE	1.0	milk_fi_grain	--
Silage fraction grown contam. soil, eaten by MILK CATTLE	1.0	milk_fi_silage	--
Qty of forage eaten by MILK CATTLE each day	13.2	milk_qp_forage	kg DW d ⁻¹
Qty of grain eaten by MILK CATTLE each day	3.0	milk_qp_grain	kg DW d ⁻¹
Qty of silage eaten by MILK CATTLE each day	4.1	milk_qp_silage	kg DW d ⁻¹
Averaging time	1	milkfat_at	a
Body weight of infant	9.4	milfat_bw_infant	kg
Exposure duration of infant to breast milk	1	milkfat_ed	a
Proportion of ingested dioxin that is stored in fat	0.9	milkfat_f1	--
Proportion of mothers weight that is fat	0.3	milkfat_f2	--
Fraction of fat in breast milk	0.04	milkfat_f3	--
Fraction of ingested contaminant that is absorbed	0.9	milkfat_f4	--
Half-life of dioxin in adults	2555	milkfat_h	d
Ingestion rate of breast milk	0.688	milkfat_ir_milk	kg d ⁻¹
Viscosity of air corresponding to air temp.	1.81e-04	mu_a	g cm ⁻¹ s ⁻¹
Fraction of grain grown on contam. soil eaten by PIGS	1.0	pork_fi_grain	--
Fraction of silage grown on contam. soil and eaten by PIGS	1.0	pork_fi_silage	--
Qty of grain eaten by PIGS each day	3.3	pork_qp_grain	kg DW d ⁻¹
Qty of silage eaten by PIGS each day	1.4	pork_qp_silage	kg DW d ⁻¹
Qty of soil eaten by CATTLE	0.5	qs_beef	kg d ⁻¹
Qty of soil eaten by CHICKEN	0.022	qs_chick	kg d ⁻¹
Qty of soil eaten by DAIRY CATTLE	0.4	qs_milk	kg d ⁻¹
Qty of soil eaten by PIGS	0.37	qs_pork	kg d ⁻¹
Density of air	1.2e-3	rho_a	g cm ⁻³
Solids particle density	2.7	rho_s	g cm ⁻³
Interception fraction - edible portion ABOVEGROUND	0.39	rp	--
Interception fraction - edible portion FORAGE	0.5	rp_forage	--
Interception fraction - edible portion SILAGE	0.46	rp_silage	--
Ambient air temperature	298	t	K
Temperature correction factor	1.026	theta	--
Soil volumetric water content	0.2	theta_s	mL cm ⁻³
Length of plant expos. to depos. - ABOVEGROUND	0.16	tp	a
Length of plant expos. to depos. - FORAGE	0.12	tp_forage	a
Length of plant expos. to depos. - SILAGE	0.16	tp_silage	a
Average annual wind speed	3.9	u	m s ⁻¹
Dry deposition velocity	0.5	vdv	cm s ⁻¹
Dry deposition velocity for mercury	2.9	vdv_hg	cm s ⁻¹
Wind velocity	3.9	w	m s ⁻¹
Yield/standing crop biomass - edible portion ABOVEGROUND	2.24	yp	kg DW m ⁻²
Yield/standing crop biomass - edible portion FORAGE	0.24	yp_forage	kg DW m ⁻²
Yield/standing crop biomass - edible portion SILAGE	0.8	yp_silage	kg DW m ⁻²
Soil mixing zone depth	2.0	z	cm

ANNEX B

SCENARIO PARAMETERS

Annex B: Exposure Scenario Parameters

Parameter Description	Adult Resident	Child Resident	Adult Farmer	Child Farmer	Adult Fisher	Child Fisher	Units
Averaging time for carcinogens	70	70	70	70	70	70	a
Averaging time for noncarcinogens	30	6	40	6	30	6	a
Consumption rate of BEEF	0.0	0.0	0.00122	0.00075	0.0	0.0	kg kg ⁻¹ FW d ⁻¹
Body weight	70	15	70	15	70	15	kg
Consumption rate of POULTRY	0.0	0.0	0.00066	0.00045	0.0	0.0	kg kg ⁻¹ FW d ⁻¹
Consumption rate of ABOVEGROUND PRODUCE	0.00032	0.00077	0.00047	0.00113	0.00032	0.00077	kg kg ⁻¹ DW d ⁻¹
Consumption rate of BELOWGROUND PRODUCE	0.00014	0.00023	0.00017	0.00028	0.00014	0.00023	kg kg ⁻¹ DW d ⁻¹
Consumption rate of DRINKING WATER	1.4	0.67	1.4	0.67	1.4	0.67	L d ⁻¹
Consumption rate of PROTECTED ABOVEGROUND PRODUCE	0.00061	0.0015	0.00064	0.00157	0.00061	0.0015	kg kg ⁻¹ DW d ⁻¹
Consumption rate of SOIL	0.0001	0.0002	0.0001	0.0002	0.0001	0.0002	kg d ⁻¹
Exposure duration	30	6	40	6	30	6	yr
Exposure frequency	350	350	350	350	350	350	d a ⁻¹
Consumption rate of EGGS	0.0	0.0	0.00075	0.00054	0.0	0.0	kg kg ⁻¹ FW d ⁻¹
Fraction of contaminated ABOVEGROUND PRODUCE	1.0	1.0	1.0	1.0	1.0	1.0	--
Fraction of contaminated DRINKING WATER	1.0	1.0	1.0	1.0	1.0	1.0	--
Fraction contaminated SOIL	1.0	1.0	1.0	1.0	1.0	1.0	--
Consumption rate of FISH	0.0	0.0	0.0	0.0	0.00125	0.00088	kg kg ⁻¹ FW d ⁻¹
Fraction of contaminated FISH	1.0	1.0	1.0	1.0	1.0	1.0	--
Inhalation exposure duration	30	6	40	6	30	6	a
Inhalation exposure frequency	350	350	350	350	350	350	d a ⁻¹
Inhalation exposure time	24	24	24	24	24	24	h d ⁻¹
Fraction of contaminated BEEF	1	1	1	1	1	1	--
Fraction of contaminated POULTRY	1	1	1	1	1	1	--
Fraction of contaminated EGGS	1	1	1	1	1	1	--
Fraction of contaminated MILK	1	1	1	1	1	1	--
Fraction of contaminated PORK	1	1	1	1	1	1	--
Inhalation rate	0.83	0.30	0.83	0.30	0.83	0.30	m ³ h ⁻¹
Consumption rate of MILK	0.0	0.0	0.01367	0.02268	0.0	0.0	kg kg ⁻¹ FW d ⁻¹
Consumption rate of PORK	0.0	0.0	0.00055	0.00042	0.0	0.0	kg kg ⁻¹ FW d ⁻¹
Time period at the beginning of combustion	0	0	0	0	0	0	a
Length of exposure duration	30	6	40	6	30	6	a



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Appendix H

Contour Plots

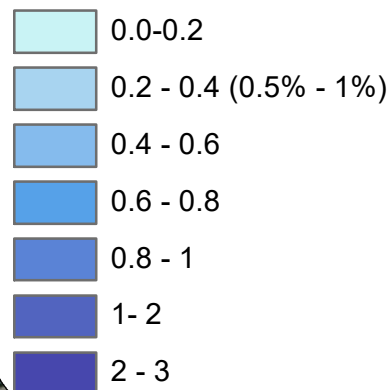


Legend

 Red Line Boundary

 EfW CHP Stack

**Process contribution
annual mean NO₂ for
EfW and Michelin
($\mu\text{g}/\text{m}^3$)
EAL $40\mu\text{g}/\text{m}^3$**



0 0.25 0.5

1

1.5

2

Kilometers



Legend

 Red Line Boundary

 EfW CHP Stack

 DERL Stack

**Process contribution
annual mean NO₂ for
EfW, DERL, and
Michelin (µg/m³)
EAL 40µg/m³**

 0.0 - 0.2

 0.2 - 0.4 (0.5% - 1%)

 0.4 - 0.6

 0.6 - 0.8

 0.8 - 1

 1 - 2

 2 - 3

 0 0.25 0.5

1 1.5 2
Kilometers