

ATTACHMENT G - AMEL AND MDEL AMMONIA STANDARDS BASED ON 2013 FRESHWATER ACUTE CRITERIA

Table G-1. pH and Temperature Dependent AMEL Ammonia Criteria

pH	Temp (°C)																	
	0	14.0	15.0	16.0	17.0	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0	27.0	28.0	29.0	30.0
6.5	12	12	12	12	11	10	9.4	8.6	7.9	7.3	6.7	6.2	5.7	5.3	4.8	4.4	4.1	3.8
6.6	12	12	12	12	11	10	9.0	8.3	7.6	7.0	6.5	5.9	5.5	5.0	4.6	4.3	3.9	3.6
6.7	11	11	11	11	10	9.3	8.6	7.9	7.3	6.7	6.1	5.7	5.2	4.8	4.4	4.1	3.7	3.4
6.8	11	11	11	10	9.5	8.8	8.1	7.4	6.8	6.3	5.8	5.3	4.9	4.5	4.2	3.8	3.5	3.2
6.9	10	10	10	9.6	8.9	8.2	7.5	6.9	6.4	5.9	5.4	5.0	4.6	4.2	3.9	3.6	3.3	3.0
7.0	9.2	9.2	9.2	8.9	8.2	7.5	6.9	6.4	5.9	5.4	5.0	4.6	4.2	3.9	3.6	3.3	3.0	2.8
7.1	8.4	8.4	8.4	8.1	7.5	6.9	6.3	5.8	5.3	4.9	4.5	4.2	3.8	3.5	3.3	3.0	2.8	2.5
7.2	7.5	7.5	7.5	7.3	6.7	6.2	5.7	5.2	4.8	4.4	4.1	3.7	3.5	3.2	2.9	2.7	2.5	2.3
7.3	6.7	6.7	6.7	6.5	5.9	5.5	5.0	4.6	4.3	3.9	3.6	3.3	3.1	2.8	2.6	2.4	2.2	2.0
7.4	5.8	5.8	5.8	5.7	5.2	4.8	4.4	4.1	3.7	3.4	3.2	2.9	2.7	2.5	2.3	2.1	1.9	1.8
7.5	5.1	5.1	5.1	4.9	4.5	4.2	3.8	3.5	3.2	3.0	2.7	2.5	2.3	2.1	2.0	1.8	1.7	1.5
7.6	4.3	4.3	4.3	4.2	3.9	3.6	3.3	3.0	2.8	2.6	2.3	2.2	2.0	1.8	1.7	1.6	1.4	1.3
7.7	3.7	3.7	3.7	3.6	3.3	3.0	2.8	2.6	2.4	2.2	2.0	1.8	1.7	1.6	1.4	1.3	1.2	1.1
7.8	3.1	3.1	3.1	3.0	2.8	2.5	2.3	2.1	2.0	1.8	1.7	1.5	1.4	1.3	1.2	1.1	1.0	0.9
7.9	2.6	2.6	2.6	2.5	2.3	2.1	1.9	1.8	1.6	1.5	1.4	1.3	1.2	1.1	1.0	0.9	0.8	0.8
8.0	2.1	2.1	2.1	2.1	1.9	1.8	1.6	1.5	1.4	1.3	1.2	1.1	1.0	0.9	0.8	0.8	0.7	0.6
8.1	1.8	1.8	1.8	1.7	1.6	1.5	1.3	1.2	1.1	1.0	1.0	0.9	0.8	0.7	0.7	0.6	0.6	0.5
8.2	1.5	1.5	1.5	1.4	1.3	1.2	1.1	1.0	0.9	0.9	0.8	0.7	0.7	0.6	0.6	0.5	0.5	0.4
8.3	1.2	1.2	1.2	1.2	1.1	1.0	0.9	0.8	0.8	0.7	0.7	0.6	0.6	0.5	0.5	0.4	0.4	0.4
8.4	1.0	1.0	1.0	1.0	0.9	0.8	0.7	0.7	0.6	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.3	0.3
8.5	0.8	0.8	0.8	0.8	0.7	0.7	0.6	0.6	0.5	0.5	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.2
8.6	0.7	0.7	0.7	0.7	0.6	0.6	0.5	0.5	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2
8.7	0.6	0.6	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2
8.8	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1
8.9	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1
9.0	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1

Table G-2. pH and Temperature Dependent MDEL Ammonia Criteria

pH	Temp (°C)																	
	0	14.0	15.0	16.0	17.0	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0	27.0	28.0	29.0	30.0
6.5	32	32	32	31	29	27	25	23	21	19	18	16	15	14	13	12	11	10
6.6	31	31	31	30	28	26	24	22	20	18	17	16	14	13	12	11	10	9
6.7	30	30	30	29	26	24	22	21	19	17	16	15	14	13	12	11	10	9
6.8	28	28	28	27	25	23	21	19	18	16	15	14	13	12	11	10	9	8
6.9	26	26	26	25	23	21	20	18	17	15	14	13	12	11	10	9	9	8
7.0	24	24	24	23	21	20	18	17	15	14	13	12	11	10	9.3	8.6	7.9	7.3
7.1	22	22	22	21	19	18	16	15	14	13	12	11	10	9.2	8.5	7.8	7.2	6.6
7.2	20	20	20	19	18	16	15	14	13	12	11	9.8	9.0	8.3	7.6	7.0	6.5	6.0
7.3	17	17	17	17	16	14	13	12	11	10	9.4	8.7	8.0	7.4	6.8	6.2	5.7	5.3
7.4	15	15	15	15	14	13	12	11	9.8	9.0	8.3	7.6	7.0	6.5	5.9	5.5	5.0	4.6
7.5	13	13	13	13	12	11	10	9.2	8.5	7.8	7.2	6.6	6.1	5.6	5.1	4.7	4.4	4.0
7.6	11	11	11	11	10	9.3	8.6	7.9	7.2	6.7	6.1	5.6	5.2	4.8	4.4	4.1	3.7	3.4
7.7	9.6	9.6	9.6	9.3	8.6	7.9	7.3	6.7	6.1	5.7	5.2	4.8	4.4	4.1	3.7	3.4	3.2	2.9
7.8	8.1	8.1	8.1	7.8	7.2	6.6	6.1	5.6	5.2	4.8	4.4	4.0	3.7	3.4	3.1	2.9	2.7	2.4
7.9	6.7	6.7	6.7	6.5	6.0	5.5	5.1	4.7	4.3	4.0	3.7	3.4	3.1	2.8	2.6	2.4	2.2	2.0
8.0	5.6	5.6	5.6	5.4	5.0	4.6	4.2	3.9	3.6	3.3	3.0	2.8	2.6	2.4	2.2	2.0	1.8	1.7
8.1	4.6	4.6	4.6	4.5	4.1	3.8	3.5	3.2	3.0	2.7	2.5	2.3	2.1	2.0	1.8	1.7	1.5	1.4
8.2	3.8	3.8	3.8	3.7	3.4	3.1	2.9	2.6	2.4	2.2	2.1	1.9	1.7	1.6	1.5	1.4	1.3	1.2
8.3	3.1	3.1	3.1	3.0	2.8	2.6	2.4	2.2	2.0	1.8	1.7	1.6	1.4	1.3	1.2	1.1	1.0	1.0
8.4	2.6	2.6	2.6	2.5	2.3	2.1	1.9	1.8	1.7	1.5	1.4	1.3	1.2	1.1	1.0	0.9	0.9	0.8
8.5	2.1	2.1	2.1	2.1	1.9	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.0	0.9	0.8	0.8	0.7	0.6
8.6	1.8	1.8	1.8	1.7	1.6	1.4	1.3	1.2	1.1	1.0	1.0	0.9	0.8	0.7	0.7	0.6	0.6	0.5
8.7	1.5	1.5	1.5	1.4	1.3	1.2	1.1	1.0	0.9	0.9	0.8	0.7	0.7	0.6	0.6	0.5	0.5	0.4
8.8	1.2	1.2	1.2	1.2	1.1	1.0	0.9	0.9	0.8	0.7	0.7	0.6	0.6	0.5	0.5	0.4	0.4	0.4
8.9	1.0	1.0	1.0	1.0	0.9	0.8	0.8	0.7	0.7	0.6	0.6	0.5	0.5	0.4	0.4	0.4	0.3	0.3
9.0	0.9	0.9	0.9	0.9	0.8	0.7	0.7	0.6	0.6	0.5	0.5	0.4	0.4	0.4	0.3	0.3	0.3	0.3