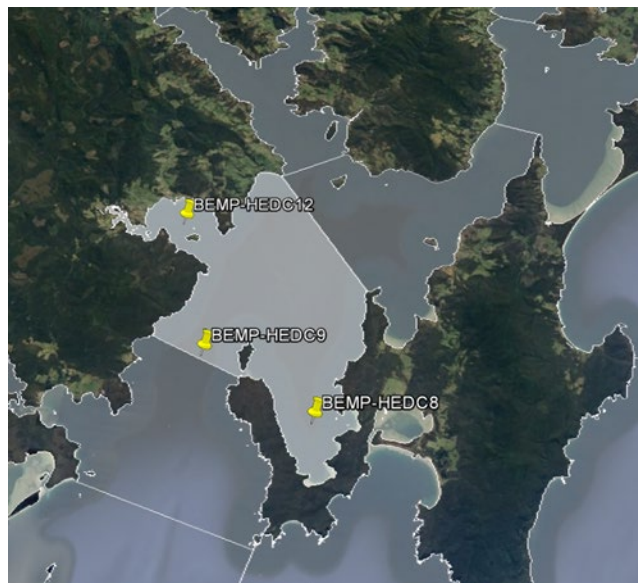


Oil Spill Response Atlas – Segment 99

The default guideline values (DGVs) for aquatic ecosystems presented herein have been derived from site specific information in accordance with the National Water Quality Management Strategy (NWQMS).



Water Body Name: D'Entrecasteaux Channel

OSRA Segment: 99

IMCRA Mesoscale Region: Bruny

IMCRA Provincial Region: Tasmanian Shelf

Ecosystem Classification: Slightly to Moderately Disturbed Ecosystem

Data Provider: Aquenal

BEMP Sites: M8, M9 and M12

Period of record: 17/03/2009 to 12/10/2018.

Default Guideline Values

Data from three locations (BEMP-HEDC8 (M8), BEMP-HEDC9 (M9), and BEMP-HEDC12 (M12)) have been used in the derivation of the DGVs presented here in. For each site field measurements were taken at the surface, 5 metres and approximately one metre from the bottom. Nutrient samples for laboratory analysis were taken at the surface, and near the bottom of the water column. Chlorophyll a data was collected for laboratory analysis from a 12 metre integrated sample (surface to a depth of 12 metres).

The following tables display the combined data as percentiles for the surface, 5 metre depth and near the bottom of the water column. The laboratory data from the surface or bottom can be considered for nutrient DGVs for the 5 metre depth. The shaded values represent the default guideline values (DGVs) for aquatic ecosystems for the depth indicated on an annual or seasonal basis. These can be applied as DGVs for aquatic ecosystems of waters encompassed within OSRA segment 99 (as highlighted above). The DGVs are summarised in Appendix A. The following links provide Information on the [IMCRA spatial network](#) and the Interim [Default guideline values for Coastal and Marine waters](#) of Tasmania.

Annual DGVs for Aquatic Ecosystems for Surface waters (Shaded)

Parameter	5 th %ile	10 th %ile	20 th %ile	Median	80 th %ile	90 th %ile	95 th %ile	Sample Number
Dissolved Oxygen (mg/L)	7.2	7.4	7.7	8.1	8.7	9.0	9.3	428
Dissolved Oxygen (%)	87.9	90.7	93.7	99.8	105.0	107.8	111.8	430
Salinity (PPT)	32.7	33.5	34.2	35.0	35.7	36.2	36.4	421
Field Cond@TRef25 (mS/cm)	50.6	51.5	52.5	53.6	54.6	55.0	56.0	252
pH field - sensor TC	7.7	7.8	7.9	8.1	8.2	8.3	8.3	379
Temperature (Celsius)	10.8	11.4	12.1	14.9	17.1	18.1	18.6	428
Turbidity (NTU)	0.3	0.4	1.0	3.9	10.1	16.9	24.3	135
Redox (mV)	-955	18	95	382	445	454	463	262
Chlorophyll a (µg/L)*	0.3	0.3	0.6	1.1	1.9	2.7	3.2	434
TAN as N (mg/L)	0.002	0.003	0.003	0.005	0.007	0.009	0.012	401
Nitrite and Nitrate as N mg/L	0.001	0.001	0.001	0.005	0.050	0.058	0.060	155
Nitrate as N mg/L	0.001	0.001	0.001	0.003	0.038	0.049	0.055	404
Nitrite as N mg/L	0.001	0.001	0.001	0.001	0.006	0.010	0.013	116
Nitrogen (Total) as N mg/L	0.15	0.17	0.21	0.26	0.32	0.35	0.36	434
Phosphorus (Total) as P mg/L	0.02	0.02	0.02	0.03	0.03	0.04	0.04	434
DRP as P mg/L	0.002	0.003	0.004	0.006	0.010	0.011	0.013	288
Silica as Si mg/L	0.1	0.1	0.1	0.2	0.3	0.4	0.5	288

*Integrated sample 0 to 12 metres, TAN=Total Ammonia Nitrogen (NH₃ and NH₄⁺), DRP= Dissolved Reactive Phosphorous. ND = No data collected.

Summer DGVs for Aquatic Ecosystems for Surface waters (Shaded)

Parameter	5 th %ile	10 th %ile	20 th %ile	Median	80 th %ile	90 th %ile	95 th %ile	Sample Number
Dissolved Oxygen (mg/L)	7.3	7.4	7.7	8.0	8.4	8.6	8.8	103
Dissolved Oxygen (%)	93.6	97.7	99.2	102.9	107.6	110.2	111.9	103
Salinity (PPT)	33.7	33.9	34.6	35.0	35.8	36.1	36.2	97
Field Cond@TRef25 (mS/cm)	51.5	52.1	52.6	53.8	54.6	55.2	56.0	60
pH field - sensor TC	7.7	7.8	7.9	8.1	8.2	8.3	8.3	79
Temperature (Celsius)	15.5	15.8	16.2	17.4	18.3	18.9	19.4	101
Turbidity (NTU)	0.4	0.4	1.0	8.0	19.3	27.3	33.1	37
Redox (mV)	-32	28	36	352	435	439	453	62
Chlorophyll a (µg/L)*	0.3	0.4	0.6	1.0	1.6	2.1	2.7	106
TAN as N (mg/L)	0.001	0.002	0.003	0.005	0.006	0.007	0.007	93
Nitrite and Nitrate as N mg/L	0.001	0.001	0.001	0.001	0.002	0.003	0.004	28
Nitrate as N mg/L	0.001	0.001	0.001	0.001	0.002	0.003	0.004	93
Nitrite as N mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	25
Nitrogen (Total) as N mg/L	0.12	0.14	0.17	0.24	0.30	0.32	0.33	106
Phosphorus (Total) as P mg/L	0.02	0.02	0.02	0.03	0.03	0.04	0.04	106
DRP as P mg/L	0.002	0.002	0.003	0.004	0.006	0.006	0.008	68
Silica as Si mg/L	0.1	0.1	0.1	0.1	0.2	0.2	0.3	68

*Integrated sample 0 to 12 metres, TAN=Total Ammonia Nitrogen (NH₃ and NH₄⁺), DRP= Dissolved Reactive Phosphorous. ND = No data collected.

Autumn DGVs for Aquatic Ecosystems for Surface waters (Shaded)

Parameter	5 th %ile	10 th %ile	20 th %ile	Median	80 th %ile	90 th %ile	95 th %ile	Sample Number
Dissolved Oxygen (mg/L)	6.9	7.1	7.4	7.9	8.2	8.4	8.7	150
Dissolved Oxygen (%)	87.0	88.0	91.5	96.8	102.2	105.2	108.8	150
Salinity (PPT)	33.4	34.3	34.7	35.2	36.0	36.4	37.0	149
Field Cond@TRef25 (mS/cm)	52.0	52.6	53.0	53.9	54.9	55.7	56.5	86
pH field - sensor TC	7.8	7.8	7.9	8.1	8.2	8.3	8.3	135
Temperature (Celsius)	12.5	13.4	14.0	15.6	17.0	17.8	18.3	150
Turbidity (NTU)	0.3	1.0	2.8	7.7	9.0	9.3	10.8	24
Redox (mV)	-999	-999	82	386	441	449	455	95
Chlorophyll a (µg/L)*	0.3	0.6	0.9	1.4	2.6	3.5	4.2	152
TAN as N (mg/L)	0.003	0.003	0.003	0.005	0.008	0.011	0.014	137
Nitrite and Nitrate as N mg/L	0.001	0.001	0.001	0.004	0.030	0.040	0.048	58
Nitrate as N mg/L	0.001	0.001	0.001	0.006	0.019	0.026	0.032	140
Nitrite as N mg/L	0.001	0.001	0.001	0.001	0.010	0.012	0.013	43
Nitrogen (Total) as N mg/L	0.18	0.20	0.22	0.26	0.31	0.33	0.35	152
Phosphorus (Total) as P mg/L	0.02	0.02	0.02	0.03	0.04	0.04	0.04	152
DRP as P mg/L	0.003	0.004	0.005	0.007	0.009	0.010	0.011	97
Silica as Si mg/L	0.1	0.1	0.1	0.2	0.2	0.3	0.4	97

*Integrated sample 0 to 12 metres, TAN=Total Ammonia Nitrogen (NH₃ and NH₄⁺), DRP= Dissolved Reactive Phosphorous. ND = No data collected.

Winter DGVs for Aquatic Ecosystems for Surface waters (Shaded)

Parameter	5 th %ile	10 th %ile	20 th %ile	Median	80 th %ile	90 th %ile	95 th %ile	Sample Number
Dissolved Oxygen (mg/L)	7.6	7.7	7.9	8.3	8.8	9.1	9.3	88
Dissolved Oxygen (%)	87.2	89.0	91.0	95.0	98.7	100.7	102.6	90
Salinity (PPT)	31.6	32.3	33.5	34.5	35.5	35.9	36.1	88
Field Cond@TRef25 (mS/cm)	49.0	50.3	51.5	53.2	54.3	54.5	54.8	52
pH field - sensor TC	7.8	7.8	7.9	8.0	8.1	8.2	8.2	87
Temperature (Celsius)	9.5	10.0	10.7	11.7	12.4	12.8	13.0	90
Turbidity (NTU)	0.4	0.5	0.7	5.7	10.9	18.0	20.2	37
Redox (mV)	108	128	144	367	462	468	470	54
Chlorophyll a (µg/L)*	0.3	0.3	0.3	0.6	0.8	1.0	1.2	90
TAN as N (mg/L)	0.003	0.003	0.003	0.005	0.007	0.008	0.009	87
Nitrite and Nitrate as N mg/L	0.046	0.048	0.049	0.055	0.060	0.063	0.064	36
Nitrate as N mg/L	0.033	0.036	0.040	0.048	0.055	0.058	0.061	87
Nitrite as N mg/L	0.002	0.003	0.004	0.004	0.008	0.013	0.014	24
Nitrogen (Total) as N mg/L	0.16	0.22	0.24	0.32	0.35	0.37	0.38	90
Phosphorus (Total) as P mg/L	0.02	0.02	0.03	0.03	0.04	0.04	0.05	90
DRP as P mg/L	0.008	0.009	0.009	0.010	0.013	0.014	0.014	63
Silica as Si mg/L	0.2	0.2	0.2	0.3	0.4	0.6	0.8	63

*Integrated sample 0 to 12 metres, TAN=Total Ammonia Nitrogen (NH₃ and NH₄⁺), DRP= Dissolved Reactive Phosphorous. ND = No data collected.

Spring DGVs for Aquatic Ecosystems for Surface waters (Shaded)

Parameter	5 th %ile	10 th %ile	20 th %ile	Median	80 th %ile	90 th %ile	95 th %ile	Sample Number
Dissolved Oxygen (mg/L)	8.0	8.2	8.3	8.8	9.1	9.4	9.6	87
Dissolved Oxygen (%)	94.2	97.2	100.0	103.5	107.1	112.1	115.4	87
Salinity (PPT)	32.8	33.3	33.9	34.8	35.5	35.7	36.0	87
Field Cond@TRef25 (mS/cm)	50.6	51.0	51.9	53.4	53.9	54.3	55.5	54
pH field - sensor TC	7.7	7.7	7.8	8.1	8.2	8.3	8.4	78
Temperature (Celsius)	11.2	11.5	12.1	13.5	14.9	15.6	17.1	87
Turbidity (NTU)	0.2	0.3	0.9	2.2	5.3	12.0	14.9	37
Redox (mV)	3	63	119	419	444	456	461	51
Chlorophyll a (µg/L)*	0.5	0.5	0.7	1.4	2.2	2.9	3.1	86
TAN as N (mg/L)	0.003	0.003	0.003	0.004	0.007	0.009	0.011	84
Nitrite and Nitrate as N mg/L	0.001	0.001	0.001	0.001	0.029	0.042	0.049	33
Nitrate as N mg/L	0.001	0.001	0.001	0.001	0.015	0.026	0.046	84
Nitrite as N mg/L	0.001	0.001	0.001	0.001	0.002	0.003	0.004	24
Nitrogen (Total) as N mg/L	0.14	0.17	0.20	0.24	0.29	0.35	0.36	86
Phosphorus (Total) as P mg/L	0.02	0.02	0.02	0.03	0.03	0.04	0.04	86
DRP as P mg/L	0.002	0.002	0.002	0.004	0.006	0.008	0.010	60
Silica as Si mg/L	0.1	0.1	0.1	0.1	0.2	0.3	0.4	60

*Integrated sample 0 to 12 metres, TAN=Total Ammonia Nitrogen (NH₃ and NH₄⁺), DRP= Dissolved Reactive Phosphorous. ND = No data collected.

Annual DGVs for Aquatic Ecosystems for mid water 5 m (Shaded)

Parameter	5 th %ile	10 th %ile	20 th %ile	Median	80 th %ile	90 th %ile	95 th %ile	Sample Number
Dissolved Oxygen (mg/L)	7.2	7.3	7.6	8.1	8.6	9.0	9.2	429
Dissolved Oxygen (%)	87.0	90.2	93.2	98.7	105.1	107.5	110.9	431
Salinity (PPT)	33.9	34.2	34.5	35.1	35.9	36.3	36.7	422
Field Cond@TRef25 (mS/cm)	52.1	52.5	52.9	53.8	54.8	55.3	56.6	252
pH field - sensor TC	7.7	7.8	7.9	8.1	8.2	8.3	8.3	374
Temperature (Celsius)	10.8	11.5	12.2	14.6	16.7	17.6	18.1	429
Turbidity (NTU)	0.1	0.2	0.6	3.1	9.0	15.4	21.1	131
Redox (mV)	-972	30	96	409	446	456	465	262
Chlorophyll a (µg/L)*					ND			
TAN as N (mg/L)					ND			
Nitrite and Nitrate as N mg/L					ND			
Nitrate as N mg/L					ND			
Nitrite as N mg/L					ND			
Nitrogen (Total) as N mg/L					ND			
Phosphorus (Total) as P mg/L					ND			
DRP as P mg/L					ND			
Silica as Si mg/L					ND			

*Integrated sample 0 to 12 metres, TAN=Total Ammonia Nitrogen (NH₃ and NH₄⁺), DRP= Dissolved Reactive Phosphorous. ND = No data collected.

Summer DGVs for Aquatic Ecosystems for mid water 5 m (Shaded)

Parameter	5 th %ile	10 th %ile	20 th %ile	Median	80 th %ile	90 th %ile	95 th %ile	Sample Number
Dissolved Oxygen (mg/L)	7.2	7.3	7.7	8.1	8.5	8.6	9.0	104
Dissolved Oxygen (%)	92.9	94.2	98.0	103.4	106.9	109.9	113.8	104
Salinity (PPT)	34.2	34.4	34.7	35.0	35.9	36.1	36.3	98
Field Cond@TRef25 (mS/cm)	52.2	52.5	52.7	53.9	54.6	55.2	56.1	60
pH field - sensor TC	7.7	7.8	7.9	8.1	8.2	8.3	8.3	80
Temperature (Celsius)	14.6	15.0	15.8	16.9	17.9	18.5	18.8	102
Turbidity (NTU)	0.2	0.2	0.4	7.0	15.6	25.4	26.7	41
Redox (mV)	-30	30	37	360	435	440	454	62
Chlorophyll a (µg/L)*					ND			
TAN as N (mg/L)					ND			
Nitrite and Nitrate as N mg/L					ND			
Nitrate as N mg/L					ND			
Nitrite as N mg/L					ND			
Nitrogen (Total) as N mg/L					ND			
Phosphorus (Total) as P mg/L					ND			
DRP as P mg/L					ND			
Silica as Si mg/L					ND			

*Integrated sample 0 to 12 metres, TAN=Total Ammonia Nitrogen (NH₃ and NH₄⁺), DRP= Dissolved Reactive Phosphorous. ND = No data collected.

Autumn DGVs for Aquatic Ecosystems for mid water 5 m (Shaded)

Parameter	5 th %ile	10 th %ile	20 th %ile	Median	80 th %ile	90 th %ile	95 th %ile	Sample Number
Dissolved Oxygen (mg/L)	7.0	7.2	7.4	7.8	8.2	8.3	8.4	150
Dissolved Oxygen (%)	85.7	87.9	91.6	96.3	100.9	104.2	107.8	150
Salinity (PPT)	34.3	34.5	34.9	35.2	36.2	36.5	37.3	149
Field Cond@TRef25 (mS/cm)	52.6	53.0	53.3	54.2	55.1	56.2	57.1	86
pH field - sensor TC	7.8	7.8	7.9	8.1	8.2	8.3	8.3	129
Temperature (Celsius)	12.8	13.6	14.1	15.5	16.8	17.4	17.9	150
Turbidity (NTU)	0.1	0.4	2.0	7.8	8.9	9.1	9.1	23
Redox (mV)	-999	-999	84	408	443	450	461	95
Chlorophyll a (µg/L)*					ND			
TAN as N (mg/L)					ND			
Nitrite and Nitrate as N mg/L					ND			
Nitrate as N mg/L					ND			
Nitrite as N mg/L					ND			
Nitrogen (Total) as N mg/L					ND			
Phosphorus (Total) as P mg/L					ND			
DRP as P mg/L					ND			
Silica as Si mg/L					ND			

*Integrated sample 0 to 12 metres, TAN=Total Ammonia Nitrogen (NH₃ and NH₄⁺), DRP= Dissolved Reactive Phosphorous. ND = No data collected.

Winter DGVs for Aquatic Ecosystems for mid water 5 m (Shaded)

Parameter	5 th %ile	10 th %ile	20 th %ile	Median	80 th %ile	90 th %ile	95 th %ile	Sample Number
Dissolved Oxygen (mg/L)	7.3	7.6	7.8	8.2	8.5	8.9	9.1	88
Dissolved Oxygen (%)	84.7	87.9	90.8	93.8	97.2	98.7	100.1	90
Salinity (PPT)	33.6	34.0	34.3	34.9	35.9	36.3	36.5	88
Field Cond@TRef25 (mS/cm)	51.7	52.5	52.9	53.8	54.7	55.0	55.5	52
pH field - sensor TC	7.8	7.8	7.8	8.0	8.2	8.2	8.3	87
Temperature (Celsius)	9.5	10.2	10.8	11.9	12.6	12.8	13.1	90
Turbidity (NTU)	0.1	0.2	0.5	8.1	10.0	15.2	17.3	33
Redox (mV)	109	127	145	366	462	468	470	54
Chlorophyll a (µg/L)*					ND			
TAN as N (mg/L)					ND			
Nitrite and Nitrate as N mg/L					ND			
Nitrate as N mg/L					ND			
Nitrite as N mg/L					ND			
Nitrogen (Total) as N mg/L					ND			
Phosphorus (Total) as P mg/L					ND			
DRP as P mg/L					ND			
Silica as Si mg/L					ND			

*Integrated sample 0 to 12 metres, TAN=Total Ammonia Nitrogen (NH₃ and NH₄⁺), DRP= Dissolved Reactive Phosphorous. ND = No data collected.

Spring DGVs for Aquatic Ecosystems for mid water 5 m (Shaded)

Parameter	5 th %ile	10 th %ile	20 th %ile	Median	80 th %ile	90 th %ile	95 th %ile	Sample Number
Dissolved Oxygen (mg/L)	8.1	8.2	8.4	8.7	9.1	9.3	9.6	87
Dissolved Oxygen (%)	95.3	96.0	98.7	103.2	107.9	111.0	113.4	87
Salinity (PPT)	33.9	34.1	34.3	35.0	35.6	36.0	36.5	87
Field Cond@TRef25 (mS/cm)	51.8	52.2	52.8	53.7	54.2	54.7	56.6	54
pH field - sensor TC	7.7	7.8	7.8	8.1	8.2	8.3	8.4	78
Temperature (Celsius)	11.0	11.4	11.9	13.1	14.5	15.0	15.3	87
Turbidity (NTU)	0.2	0.3	0.7	2.0	5.1	6.0	9.2	34
Redox (mV)	3	64	120	425	445	457	461	51
Chlorophyll a (µg/L)*					ND			
TAN as N (mg/L)					ND			
Nitrite and Nitrate as N mg/L					ND			
Nitrate as N mg/L					ND			
Nitrite as N mg/L					ND			
Nitrogen (Total) as N mg/L					ND			
Phosphorus (Total) as P mg/L					ND			
DRP as P mg/L					ND			
Silica as Si mg/L					ND			

*Integrated sample 0 to 12 metres, TAN=Total Ammonia Nitrogen (NH₃ and NH₄⁺), DRP= Dissolved Reactive Phosphorous. ND = No data collected.

Annual DGVs for Aquatic Ecosystems for bottom waters (Shaded)

Parameter	5 th %ile	10 th %ile	20 th %ile	Median	80 th %ile	90 th %ile	95 th %ile	Sample Number
Dissolved Oxygen (mg/L)	6.4	6.8	7.1	7.7	8.2	8.4	8.6	430
Dissolved Oxygen (%)	79.9	83.3	86.3	92.6	97.2	100.1	103.1	432
Salinity (PPT)	34.7	34.8	34.9	35.4	36.3	36.6	37.4	423
Field Cond@TRef25 (mS/cm)	53.1	53.2	53.7	54.6	55.2	56.3	57.2	253
pH field - sensor TC	7.7	7.8	7.9	8.1	8.2	8.3	8.3	375
Temperature (Celsius)	11.4	11.8	12.2	14.0	15.7	16.3	16.9	430
Turbidity (NTU)	0.5	0.7	1.2	4.6	9.8	12.4	14.2	123
Redox (mV)	-999	20	90	412	448	460	469	263
Chlorophyll a (µg/L)*					ND			
TAN as N (mg/L)	0.003	0.003	0.005	0.010	0.017	0.021	0.024	400
Nitrite and Nitrate as N mg/L	0.004	0.010	0.017	0.037	0.052	0.057	0.061	154
Nitrate as N mg/L	0.004	0.007	0.012	0.025	0.048	0.054	0.058	403
Nitrite as N mg/L	0.001	0.001	0.001	0.004	0.008	0.012	0.014	115
Nitrogen (Total) as N mg/L	0.16	0.18	0.22	0.29	0.34	0.36	0.37	432
Phosphorus (Total) as P mg/L	0.02	0.02	0.03	0.03	0.04	0.04	0.05	433
DRP as P mg/L	0.006	0.007	0.008	0.010	0.013	0.014	0.016	288
Silica as Si mg/L	0.1	0.1	0.1	0.2	0.2	0.3	0.3	288

*Integrated sample 0 to 12 metres, TAN=Total Ammonia Nitrogen (NH₃ and NH₄⁺), DRP= Dissolved Reactive Phosphorous. ND = No data collected.

Summer DGVs for Aquatic Ecosystems for bottom waters (Shaded)

Parameter	5 th %ile	10 th %ile	20 th %ile	Median	80 th %ile	90 th %ile	95 th %ile	Sample Number
Dissolved Oxygen (mg/L)	6.6	6.8	7.0	7.5	8.1	8.4	8.5	104
Dissolved Oxygen (%)	83.2	83.9	86.2	93.1	100.0	103.0	105.6	104
Salinity (PPT)	34.7	34.8	35.0	35.3	36.2	36.4	36.6	98
Field Cond@TRef25 (mS/cm)	53.0	53.1	53.3	54.4	55.0	55.4	56.9	60
pH field - sensor TC	7.7	7.8	7.9	8.1	8.3	8.3	8.3	80
Temperature (Celsius)	13.4	13.7	14.3	15.3	16.0	16.9	17.4	102
Turbidity (NTU)	0.4	0.7	1.3	6.0	9.2	10.8	12.8	33
Redox (mV)	-28	28	37	352	436	441	453	62
Chlorophyll a (µg/L)*					ND			
TAN as N (mg/L)	0.004	0.006	0.007	0.014	0.022	0.027	0.029	92
Nitrite and Nitrate as N mg/L	0.001	0.003	0.004	0.011	0.027	0.048	0.053	27
Nitrate as N mg/L	0.002	0.003	0.005	0.011	0.024	0.045	0.058	92
Nitrite as N mg/L	0.001	0.001	0.001	0.002	0.006	0.007	0.011	24
Nitrogen (Total) as N mg/L	0.14	0.16	0.19	0.27	0.32	0.34	0.35	104
Phosphorus (Total) as P mg/L	0.02	0.02	0.03	0.03	0.04	0.05	0.05	105
DRP as P mg/L	0.006	0.007	0.008	0.010	0.012	0.014	0.016	68
Silica as Si mg/L	0.1	0.1	0.1	0.2	0.2	0.3	0.3	68

*Integrated sample 0 to 12 metres, TAN=Total Ammonia Nitrogen (NH₃ and NH₄⁺), DRP= Dissolved Reactive Phosphorous. ND = No data collected.

Autumn DGVs for Aquatic Ecosystems for bottom waters (Shaded)

Parameter	5 th %ile	10 th %ile	20 th %ile	Median	80 th %ile	90 th %ile	95 th %ile	Sample Number
Dissolved Oxygen (mg/L)	6.0	6.4	6.8	7.4	7.8	8.0	8.2	151
Dissolved Oxygen (%)	76.4	79.6	83.7	90.3	95.6	98.4	99.6	151
Salinity (PPT)	34.8	34.9	35.0	35.4	36.5	36.7	37.5	150
Field Cond@TRef25 (mS/cm)	53.1	53.3	53.8	54.9	55.4	56.5	57.2	87
pH field - sensor TC	7.8	7.8	7.9	8.1	8.2	8.3	8.3	130
Temperature (Celsius)	13.7	13.9	14.1	15.4	16.3	16.8	16.9	151
Turbidity (NTU)	1.1	1.7	2.0	7.8	11.6	14.2	14.7	28
Redox (mV)	-999	-999	80	414	448	457	492	96
Chlorophyll a (µg/L)*					ND			
TAN as N (mg/L)	0.003	0.003	0.006	0.010	0.016	0.020	0.022	137
Nitrite and Nitrate as N mg/L	0.012	0.016	0.018	0.030	0.045	0.050	0.053	58
Nitrate as N mg/L	0.006	0.008	0.012	0.020	0.033	0.039	0.053	140
Nitrite as N mg/L	0.001	0.001	0.004	0.007	0.012	0.015	0.017	43
Nitrogen (Total) as N mg/L	0.17	0.20	0.24	0.29	0.33	0.36	0.37	152
Phosphorus (Total) as P mg/L	0.02	0.02	0.02	0.03	0.04	0.04	0.05	152
DRP as P mg/L	0.006	0.007	0.008	0.010	0.012	0.013	0.016	97
Silica as Si mg/L	0.1	0.1	0.1	0.2	0.2	0.3	0.3	97

*Integrated sample 0 to 12 metres, TAN=Total Ammonia Nitrogen (NH₃ and NH₄⁺), DRP= Dissolved Reactive Phosphorous. ND = No data collected.

Winter DGVs for Aquatic Ecosystems for bottom waters (Shaded)

Parameter	5 th %ile	10 th %ile	20 th %ile	Median	80 th %ile	90 th %ile	95 th %ile	Sample Number
Dissolved Oxygen (mg/L)	7.0	7.3	7.6	7.9	8.2	8.4	8.6	88
Dissolved Oxygen (%)	83.5	85.6	88.1	92.8	95.1	96.2	97.9	90
Salinity (PPT)	34.3	34.5	34.7	35.2	36.1	36.8	37.3	88
Field Cond@TRef25 (mS/cm)	53.0	53.3	53.5	54.4	55.3	55.9	57.1	52
pH field - sensor TC	7.8	7.8	7.9	8.0	8.1	8.2	8.3	87
Temperature (Celsius)	10.6	10.7	11.5	12.2	12.9	13.3	13.7	90
Turbidity (NTU)	0.5	0.5	0.8	8.0	10.9	12.7	13.9	33
Redox (mV)	109	125	146	365	462	469	470	54
Chlorophyll a (µg/L)*					ND			
TAN as N (mg/L)	0.002	0.003	0.003	0.004	0.006	0.007	0.009	87
Nitrite and Nitrate as N mg/L	0.043	0.044	0.049	0.055	0.058	0.062	0.063	36
Nitrate as N mg/L	0.034	0.037	0.041	0.048	0.053	0.057	0.059	87
Nitrite as N mg/L	0.001	0.002	0.003	0.004	0.006	0.010	0.012	24
Nitrogen (Total) as N mg/L	0.17	0.19	0.22	0.33	0.35	0.37	0.38	90
Phosphorus (Total) as P mg/L	0.02	0.02	0.03	0.03	0.04	0.04	0.05	90
DRP as P mg/L	0.008	0.009	0.009	0.011	0.013	0.014	0.015	63
Silica as Si mg/L	0.1	0.1	0.1	0.2	0.2	0.3	0.3	63

*Integrated sample 0 to 12 metres, TAN=Total Ammonia Nitrogen (NH₃ and NH₄⁺), DRP= Dissolved Reactive Phosphorous. ND = No data collected.

Spring DGVs for Aquatic Ecosystems for bottom waters (Shaded)

Parameter	5 th %ile	10 th %ile	20 th %ile	Median	80 th %ile	90 th %ile	95 th %ile	Sample Number
Dissolved Oxygen (mg/L)	7.2	7.4	7.6	8.1	8.5	8.7	9.0	87
Dissolved Oxygen (%)	85.4	87.3	89.1	95.0	99.8	102.3	104.3	87
Salinity (PPT)	34.7	34.8	34.9	35.7	36.2	36.4	37.5	87
Field Cond@TRef25 (mS/cm)	53.4	53.6	54.0	54.5	54.9	56.0	57.1	54
pH field - sensor TC	7.7	7.7	7.8	8.1	8.2	8.3	8.3	78
Temperature (Celsius)	11.2	11.5	11.9	12.4	13.2	13.4	13.6	87
Turbidity (NTU)	0.3	0.8	1.2	3.0	6.0	8.1	10.9	29
Redox (mV)	2	64	118	425	447	457	461	51
Chlorophyll a (µg/L)*					ND			
TAN as N (mg/L)	0.003	0.005	0.006	0.012	0.018	0.021	0.022	84
Nitrite and Nitrate as N mg/L	0.015	0.017	0.022	0.038	0.050	0.052	0.057	33
Nitrate as N mg/L	0.010	0.014	0.019	0.032	0.048	0.056	0.058	84
Nitrite as N mg/L	0.001	0.001	0.001	0.003	0.005	0.006	0.007	24
Nitrogen (Total) as N mg/L	0.19	0.22	0.24	0.28	0.33	0.35	0.37	86
Phosphorus (Total) as P mg/L	0.02	0.03	0.03	0.03	0.04	0.04	0.05	86
DRP as P mg/L	0.007	0.008	0.009	0.011	0.013	0.015	0.017	60
Silica as Si mg/L	0.1	0.1	0.1	0.1	0.2	0.2	0.2	60

*Integrated sample 0 to 12 metres, TAN=Total Ammonia Nitrogen (NH₃ and NH₄⁺), DRP= Dissolved Reactive Phosphorous. ND = No data collected.

Appendix A

Surface	Physico-chemical indicators and default guideline values for aquatic ecosystems																				
	DO (mg/L)		DO (% sat)		Salinity	Cond	pH		Temp (°C)		Turb	Redox	Chl a	TAN as N	NO _x as N	NO ₃ as N	NO ₂ as N	Total N as N	Total P as P	DRP as P	SiO ₂ as Si
	lower	upper	lower	upper	(PPT)	(mS/cm)	lower	upper	lower	upper	NTU	(mV)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(µg/L)	(mg/L)
Annual	7.7	8.7	93.7	105.0	35.7	54.6	7.9	8.2	12.1	17.1	10.1	445	1.9	7.0	50.0	38.0	6.0	0.32	0.03	10.0	0.3
Summer	7.7	8.4	99.2	107.6	35.8	54.6	7.9	8.2	16.2	18.3	19.3	435	1.6	6.0	2.0	2.0	1.0	0.30	0.03	6.0	0.2
Autumn	7.4	8.2	91.5	102.2	36.0	54.9	7.9	8.2	14.0	17.0	9.0	441	2.6	8.0	30.0	19.0	10.0	0.31	0.04	9.0	0.2
Winter	7.9	8.8	91.0	98.7	35.5	54.3	7.9	8.1	10.7	12.4	10.9	462	0.8	7.0	60.0	55.0	8.0	0.35	0.04	13.0	0.4
Spring	8.3	9.1	100.0	107.1	35.5	53.9	7.8	8.2	12.1	14.9	5.3	444	2.2	7.0	29.0	15.0	2.0	0.29	0.03	6.0	0.2

NB: DO (dissolved oxygen), Turb (turbidity), Chl a (Chlorophyll a – Lab analysis), TAN (Total Ammonia Nitrogen (NH₃ and NH₄⁺)), NO_x (Nitrite and Nitrate), NO₃ (Nitrate), NO₂ (Nitrite), DRP (Dissolved reactive phosphorous), SiO₂ (Silica). Figures shown above are based on data collected from 17/03/2009 to 12/10/2018.

5 metres	Physico-chemical indicators and default guideline values for aquatic ecosystems																					
	DO (mg/L)		DO (% sat)		Salinity	Cond	pH		Temp (°C)		Turb	Redox	Chl a	TAN as N	NO _x as N	NO ₃ as N	NO ₂ as N	Total N as N	Total P as P	DRP as P	SiO ₂ as Si	
	lower	upper	lower	upper	(PPT)	(mS/cm)	lower	upper	lower	upper	NTU	(mV)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(µg/L)	(mg/L)	
Annual	7.6	8.6	93.2	105.1	35.9	54.8	7.9	8.2	12.2	16.7	9.0	446	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Summer	7.7	8.5	98.0	106.9	35.9	54.6	7.9	8.2	15.8	17.9	15.6	435	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Autumn	7.4	8.2	91.6	100.9	36.2	55.1	7.9	8.2	14.1	16.8	8.9	443	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Winter	7.8	8.5	90.8	97.2	35.9	54.7	7.8	8.2	10.8	12.6	10.0	462	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Spring	8.4	9.1	98.7	107.9	35.6	54.2	7.8	8.2	11.9	14.5	5.1	445	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NB: DO (dissolved oxygen), Turb (turbidity), Chl a (Chlorophyll a – Lab analysis), TAN (Total Ammonia Nitrogen (NH₃ and NH₄⁺)), NO_x (Nitrite and Nitrate), NO₃ (Nitrate), NO₂ (Nitrite), DRP (Dissolved reactive phosphorous), SiO₂ (Silica), ND = No Data. Figures shown above are based on data collected from 17/03/2009 to 12/10/2018.

Bottom	Physico-chemical indicators and default guideline values for aquatic ecosystems																				
	DO (mg/L)		DO (% sat)		Salinity	Cond	pH		Temp (°C)		Turb	Redox	Chl a	TAN as N	NO _x as N	NO ₃ as N	NO ₂ as N	Total N as N	Total P as P	DRP as P	SiO ₂ as Si
	lower	upper	lower	upper	(PPT)	(mS/cm)	lower	upper	lower	upper	NTU	(mV)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(µg/L)	(mg/L)
Annual	7.1	8.2	86.3	97.2	36.3	55.2	7.9	8.2	12.2	15.7	9.8	448	ND	17.0	52.0	48.0	8.0	0.34	0.04	13.0	0.2
Summer	7.0	8.1	86.2	100.0	36.2	55.0	7.9	8.3	14.3	16.0	9.2	436	ND	22.0	27.0	24.0	6.0	0.32	0.04	12.0	0.2
Autumn	6.8	7.8	83.7	95.6	36.5	55.4	7.9	8.2	14.1	16.3	11.6	448	ND	16.0	45.0	33.0	12.0	0.33	0.04	12.0	0.2
Winter	7.6	8.2	88.1	95.1	36.1	55.3	7.9	8.1	11.5	12.9	10.9	462	ND	6.0	58.0	53.0	6.0	0.35	0.04	13.0	0.2
Spring	7.6	8.5	89.1	99.8	36.2	54.9	7.8	8.2	11.9	13.2	6.0	447	ND	18.0	50.0	48.0	5.0	0.33	0.04	13.0	0.2

NB: DO (dissolved oxygen), Turb (turbidity), Chl a (Chlorophyll a – Lab analysis), TAN (Total Ammonia Nitrogen (NH₃ and NH₄⁺)), NO_x (Nitrite and Nitrate), NO₃ (Nitrate), NO₂ (Nitrite), DRP (Dissolved reactive phosphorous), SiO₂ (Silica), ND = No Data. Figures shown above are based on data collected from 17/03/2009 to 12/10/2018.

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