

Oil Spill Response Atlas – Segment 94

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: 94

IMCRA Mesoscale Region: Bruny

IMCRA Provincial Region: Tasmanian Shelf

Ecosystem Classification: Slightly to Moderately Disturbed Ecosystem

Data Provider: Aquenal

BEMP Sites: M5

Period of record: 17/03/2009 to 11/10/2018.

Default Guideline Values

Data from one location (BEMP-HEDC5 (M5)) has been used in the derivation of the DGVs presented here in. 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 94 (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)	7.1	7.3	7.6	8.1	8.6	8.9	9.3	144
Dissolved Oxygen (%)	89.6	91.3	93.7	97.5	101.3	104.1	108.3	145
Salinity (PPT)	31.8	32.6	33.4	34.5	35.2	35.9	36.2	142
Field Cond@TRef25 (mS/cm)	49.0	50.2	51.4	52.7	54.1	54.7	54.8	84
pH field - sensor TC	7.7	7.8	7.9	8.0	8.2	8.2	8.3	128
Temperature (Celsius)	10.0	10.6	11.3	14.8	17.2	18.4	19.2	144
Turbidity (NTU)	0.4	1.0	1.2	7.0	10.0	12.3	18.1	44
Redox (mV)	-603	25	105	393	446	456	464	88
Chlorophyll a (µg/L)*	0.3	0.3	0.6	1.0	1.5	1.9	2.2	145
TAN as N (mg/L)	0.003	0.003	0.003	0.005	0.007	0.009	0.010	134
Nitrite and Nitrate as N mg/L	0.001	0.001	0.001	0.004	0.054	0.059	0.061	52
Nitrate as N mg/L	0.001	0.001	0.001	0.003	0.037	0.053	0.056	135
Nitrite as N mg/L	0.001	0.001	0.001	0.001	0.004	0.008	0.011	39
Nitrogen (Total) as N mg/L	0.16	0.18	0.22	0.26	0.32	0.34	0.37	145
Phosphorus (Total) as P mg/L	0.02	0.02	0.02	0.03	0.04	0.04	0.04	145
DRP as P mg/L	0.004	0.005	0.005	0.008	0.011	0.012	0.013	96
Silica as Si mg/L	0.1	0.1	0.1	0.3	0.4	0.5	0.5	96

*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)	7.0	7.2	7.4	7.7	8.2	8.3	8.5	36
Dissolved Oxygen (%)	91.3	94.1	96.1	100.4	103.9	105.6	107.9	36
Salinity (PPT)	33.4	33.7	34.2	34.7	35.5	35.8	36.1	34
Field Cond@TRef25 (mS/cm)	51.6	52.1	52.3	53.4	54.3	54.9	55.7	20
pH field - sensor TC	7.6	7.7	7.8	8.0	8.2	8.2	8.2	28
Temperature (Celsius)	15.7	15.9	16.4	17.6	18.8	19.3	19.7	35
Turbidity (NTU)	0.8	1.1	1.8	8.5	13.6	24.9	34.6	13
Redox (mV)	-25	27	37	332	433	438	443	21
Chlorophyll a (µg/L)*	0.3	0.4	0.6	1.0	1.3	1.6	1.7	36
TAN as N (mg/L)	0.002	0.003	0.003	0.005	0.006	0.007	0.007	32
Nitrite and Nitrate as N mg/L	0.001	0.001	0.001	0.001	0.001	0.003	0.004	10
Nitrate as N mg/L	0.001	0.001	0.001	0.001	0.001	0.002	0.003	32
Nitrite as N mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	9
Nitrogen (Total) as N mg/L	0.16	0.18	0.19	0.23	0.26	0.30	0.31	36
Phosphorus (Total) as P mg/L	0.02	0.02	0.02	0.03	0.04	0.04	0.04	36
DRP as P mg/L	0.003	0.004	0.005	0.006	0.008	0.008	0.009	23
Silica as Si mg/L	0.1	0.1	0.1	0.2	0.3	0.4	0.4	23

*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)	7.0	7.2	7.4	7.8	8.2	8.3	8.5	50
Dissolved Oxygen (%)	88.0	91.1	92.4	95.3	98.5	99.7	102.8	50
Salinity (PPT)	32.6	32.9	34.1	34.8	35.8	36.2	36.2	50
Field Cond@TRef25 (mS/cm)	49.9	51.4	52.5	53.2	54.7	54.7	54.7	29
pH field - sensor TC	7.7	7.8	7.9	8.1	8.2	8.2	8.3	45
Temperature (Celsius)	11.9	12.7	13.3	15.4	17.1	18.3	19.0	50
Turbidity (NTU)	2.3	4.3	7.3	8.8	9.5	10.1	10.5	7
Redox (mV)	-999	-946	103	412	448	451	457	32
Chlorophyll a (µg/L)*	0.4	0.6	0.8	1.3	1.7	2.2	2.7	50
TAN as N (mg/L)	0.001	0.003	0.003	0.005	0.008	0.010	0.011	45
Nitrite and Nitrate as N mg/L	0.001	0.001	0.001	0.004	0.022	0.032	0.043	19
Nitrate as N mg/L	0.001	0.001	0.001	0.004	0.015	0.024	0.029	46
Nitrite as N mg/L	0.001	0.001	0.001	0.001	0.006	0.010	0.013	14
Nitrogen (Total) as N mg/L	0.17	0.20	0.23	0.27	0.31	0.32	0.33	50
Phosphorus (Total) as P mg/L	0.02	0.02	0.02	0.03	0.04	0.04	0.04	50
DRP as P mg/L	0.006	0.006	0.007	0.009	0.011	0.012	0.012	32
Silica as Si mg/L	0.1	0.1	0.2	0.3	0.4	0.5	0.5	32

*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)	7.8	8.0	8.3	8.6	9.1	9.3	9.5	29
Dissolved Oxygen (%)	88.4	90.3	93.0	96.0	97.6	100.1	101.9	30
Salinity (PPT)	29.0	30.3	31.7	33.6	34.4	35.1	35.5	29
Field Cond@TRef25 (mS/cm)	46.7	46.9	50.4	52.0	53.1	53.7	53.9	17
pH field - sensor TC	7.8	7.8	7.9	8.0	8.2	8.3	8.5	29
Temperature (Celsius)	9.0	9.7	10.0	10.7	11.2	11.8	12.1	30
Turbidity (NTU)	0.9	1.1	1.7	8.6	12.1	12.4	15.5	11
Redox (mV)	123	145	158	372	462	476	479	18
Chlorophyll a (µg/L)*	0.3	0.3	0.5	0.6	0.8	0.9	1.3	30
TAN as N (mg/L)	0.003	0.003	0.003	0.005	0.007	0.008	0.009	29
Nitrite and Nitrate as N mg/L	0.051	0.052	0.055	0.059	0.061	0.061	0.061	12
Nitrate as N mg/L	0.036	0.037	0.046	0.053	0.057	0.058	0.062	29
Nitrite as N mg/L	0.003	0.003	0.003	0.004	0.008	0.011	0.013	8
Nitrogen (Total) as N mg/L	0.18	0.21	0.24	0.32	0.36	0.38	0.40	30
Phosphorus (Total) as P mg/L	0.02	0.02	0.03	0.03	0.04	0.04	0.05	30
DRP as P mg/L	0.009	0.010	0.010	0.011	0.013	0.014	0.015	21
Silica as Si mg/L	0.3	0.3	0.4	0.5	0.5	0.8	0.9	21

*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)	7.8	8.0	8.1	8.5	8.9	9.3	9.3	29
Dissolved Oxygen (%)	91.5	94.4	97.6	99.6	103.7	108.6	110.5	29
Salinity (PPT)	32.3	32.8	33.3	34.1	34.7	35.1	35.4	29
Field Cond@TRef25 (mS/cm)	49.3	49.9	50.8	52.3	53.2	53.5	54.1	18
pH field - sensor TC	7.7	7.7	7.9	8.0	8.2	8.3	8.3	26
Temperature (Celsius)	10.9	11.2	12.1	13.6	15.1	15.9	16.1	29
Turbidity (NTU)	0.8	1.0	1.1	2.8	5.9	7.0	8.3	13
Redox (mV)	45	97	124	423	438	448	460	17
Chlorophyll a (µg/L)*	0.1	0.3	0.4	1.2	1.8	2.1	2.4	29
TAN as N (mg/L)	0.003	0.003	0.003	0.005	0.007	0.008	0.009	28
Nitrite and Nitrate as N mg/L	0.001	0.001	0.001	0.002	0.023	0.042	0.047	11
Nitrate as N mg/L	0.001	0.001	0.001	0.001	0.006	0.017	0.035	28
Nitrite as N mg/L	0.001	0.001	0.001	0.001	0.001	0.002	0.002	8
Nitrogen (Total) as N mg/L	0.15	0.18	0.19	0.25	0.28	0.33	0.38	29
Phosphorus (Total) as P mg/L	0.02	0.02	0.02	0.03	0.03	0.04	0.04	29
DRP as P mg/L	0.004	0.004	0.005	0.006	0.007	0.007	0.010	20
Silica as Si mg/L	0.1	0.1	0.1	0.1	0.2	0.3	0.4	20

*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)	7.1	7.3	7.6	8.1	8.6	8.8	9.0	144
Dissolved Oxygen (%)	88.4	90.9	92.9	96.3	100.6	103.5	107.0	145
Salinity (PPT)	32.7	33.2	33.6	34.6	35.2	35.9	36.2	142
Field Cond@TRef25 (mS/cm)	51.0	51.2	52.1	53.0	54.2	54.7	55.4	84
pH field - sensor TC	7.7	7.8	7.9	8.1	8.2	8.2	8.3	126
Temperature (Celsius)	10.0	10.6	11.4	14.6	17.0	18.2	18.8	144
Turbidity (NTU)	0.3	0.5	1.4	5.4	9.1	9.6	15.7	43
Redox (mV)	-616	25	106	397	448	459	466	88
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)	6.8	7.0	7.3	7.7	8.2	8.3	8.5	36
Dissolved Oxygen (%)	90.4	91.4	95.6	99.6	103.1	106.2	108.8	36
Salinity (PPT)	33.5	34.0	34.3	34.8	35.5	35.9	36.1	34
Field Cond@TRef25 (mS/cm)	51.7	52.1	52.3	53.4	54.3	54.9	55.8	20
pH field - sensor TC	7.6	7.7	7.9	8.0	8.2	8.2	8.2	28
Temperature (Celsius)	15.2	15.4	16.2	17.4	18.8	19.0	19.3	35
Turbidity (NTU)	1.2	1.9	2.6	7.8	12.1	21.3	27.5	13
Redox (mV)	-25	27	36	335	433	438	444	21
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)	7.1	7.2	7.4	7.7	8.1	8.2	8.5	50
Dissolved Oxygen (%)	87.6	90.6	92.4	95.3	97.2	98.4	101.0	50
Salinity (PPT)	33.4	34.1	34.3	34.9	35.8	36.2	36.4	50
Field Cond@TRef25 (mS/cm)	52.4	52.5	52.8	53.3	54.7	54.9	55.3	29
pH field - sensor TC	7.7	7.8	7.9	8.1	8.2	8.2	8.2	43
Temperature (Celsius)	12.2	12.7	13.4	15.3	17.0	18.0	18.7	50
Turbidity (NTU)	1.9	3.4	5.6	8.6	9.0	9.3	9.5	7
Redox (mV)	-999	-958	105	418	450	459	463	32
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)	7.9	8.0	8.3	8.5	8.8	8.8	9.0	29
Dissolved Oxygen (%)	88.6	89.4	91.6	94.6	96.3	97.0	97.6	30
Salinity (PPT)	32.0	32.2	33.0	34.0	34.5	35.2	35.5	29
Field Cond@TRef25 (mS/cm)	50.4	50.9	51.2	52.0	53.1	53.7	54.0	17
pH field - sensor TC	7.8	7.8	7.9	8.1	8.1	8.2	8.5	29
Temperature (Celsius)	9.3	9.4	10.0	10.7	11.4	11.8	12.0	30
Turbidity (NTU)	0.6	0.7	1.0	8.5	9.3	9.5	12.7	11
Redox (mV)	124	144	158	372	462	475	478	18
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)	7.8	8.0	8.2	8.4	8.9	9.2	9.3	29
Dissolved Oxygen (%)	92.5	95.6	97.5	100.2	103.7	106.3	108.5	29
Salinity (PPT)	32.8	33.0	33.5	34.4	34.9	35.2	35.4	29
Field Cond@TRef25 (mS/cm)	50.4	50.9	51.1	52.5	53.3	53.6	54.2	18
pH field - sensor TC	7.7	7.7	7.9	8.0	8.2	8.3	8.3	26
Temperature (Celsius)	10.6	11.1	11.8	13.3	14.8	15.5	15.9	29
Turbidity (NTU)	0.3	0.3	0.8	2.9	5.4	6.1	6.2	12
Redox (mV)	45	98	127	425	439	450	461	17
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)	7.0	7.2	7.3	7.8	8.4	8.6	8.8	144
Dissolved Oxygen (%)	86.5	89.0	91.4	94.6	97.9	100.5	102.5	145
Salinity (PPT)	33.2	33.5	34.0	34.7	35.4	36.0	36.3	142
Field Cond@TRef25 (mS/cm)	51.6	52.0	52.4	53.3	54.3	54.8	55.6	84
pH field - sensor TC	7.7	7.8	7.9	8.1	8.2	8.2	8.3	126
Temperature (Celsius)	10.0	10.6	11.6	14.3	16.9	17.9	18.6	144
Turbidity (NTU)	0.6	0.7	1.0	4.0	9.7	10.4	13.8	43
Redox (mV)	-627	25	105	399	448	460	473	88
Chlorophyll a (µg/L)*					ND			
TAN as N (mg/L)	0.003	0.003	0.003	0.006	0.009	0.012	0.013	134
Nitrite and Nitrate as N mg/L	0.001	0.001	0.001	0.007	0.056	0.061	0.063	52
Nitrate as N mg/L	0.001	0.001	0.001	0.004	0.041	0.056	0.058	135
Nitrite as N mg/L	0.001	0.001	0.001	0.001	0.005	0.008	0.010	39
Nitrogen (Total) as N mg/L	0.14	0.16	0.21	0.26	0.32	0.34	0.36	145
Phosphorus (Total) as P mg/L	0.02	0.02	0.03	0.03	0.04	0.04	0.05	145
DRP as P mg/L	0.005	0.006	0.006	0.008	0.011	0.012	0.014	96
Silica as Si mg/L	0.1	0.1	0.2	0.3	0.4	0.4	0.5	96

*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)	7.0	7.1	7.2	7.5	8.0	8.2	8.4	36
Dissolved Oxygen (%)	89.9	91.6	93.5	96.4	100.1	102.7	106.2	36
Salinity (PPT)	33.8	34.1	34.3	34.8	35.7	35.9	36.1	34
Field Cond@TRef25 (mS/cm)	52.0	52.0	52.5	53.5	54.3	54.9	56.0	20
pH field - sensor TC	7.7	7.7	7.9	8.1	8.2	8.2	8.2	28
Temperature (Celsius)	14.7	15.0	16.2	16.9	18.4	18.9	19.2	35
Turbidity (NTU)	0.8	1.3	2.2	7.5	9.4	13.4	19.3	13
Redox (mV)	-25	27	35	340	433	439	444	21
Chlorophyll a (µg/L)*					ND			
TAN as N (mg/L)	0.002	0.003	0.003	0.006	0.006	0.009	0.010	32
Nitrite and Nitrate as N mg/L	0.001	0.001	0.001	0.001	0.001	0.003	0.003	10
Nitrate as N mg/L	0.001	0.001	0.001	0.001	0.003	0.003	0.003	32
Nitrite as N mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	9
Nitrogen (Total) as N mg/L	0.13	0.14	0.18	0.22	0.27	0.29	0.30	36
Phosphorus (Total) as P mg/L	0.02	0.02	0.03	0.03	0.04	0.04	0.04	36
DRP as P mg/L	0.005	0.005	0.006	0.006	0.008	0.008	0.009	23
Silica as Si mg/L	0.1	0.1	0.2	0.2	0.3	0.3	0.4	23

*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)	6.9	7.1	7.2	7.7	7.8	8.0	8.2	50
Dissolved Oxygen (%)	86.4	87.5	90.7	93.2	95.5	97.1	97.2	50
Salinity (PPT)	33.7	34.2	34.3	34.9	35.9	36.3	36.7	50
Field Cond@TRef25 (mS/cm)	52.4	52.7	52.9	53.5	54.7	55.3	55.8	29
pH field - sensor TC	7.7	7.8	7.9	8.1	8.2	8.2	8.2	43
Temperature (Celsius)	12.3	12.9	13.4	15.5	17.0	17.9	18.3	50
Turbidity (NTU)	1.5	2.3	3.5	9.3	10.4	10.6	10.8	7
Redox (mV)	-999	-967	104	418	451	460	559	32
Chlorophyll a (µg/L)*					ND			
TAN as N (mg/L)	0.003	0.003	0.003	0.007	0.010	0.014	0.016	45
Nitrite and Nitrate as N mg/L	0.001	0.001	0.001	0.006	0.023	0.033	0.042	19
Nitrate as N mg/L	0.001	0.001	0.001	0.005	0.015	0.024	0.031	46
Nitrite as N mg/L	0.001	0.001	0.001	0.001	0.007	0.008	0.010	14
Nitrogen (Total) as N mg/L	0.18	0.20	0.23	0.27	0.32	0.34	0.36	50
Phosphorus (Total) as P mg/L	0.02	0.02	0.03	0.03	0.04	0.04	0.05	50
DRP as P mg/L	0.007	0.007	0.007	0.009	0.011	0.013	0.013	32
Silica as Si mg/L	0.1	0.1	0.2	0.3	0.4	0.4	0.5	32

*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)	7.4	7.8	8.2	8.4	8.6	8.7	8.8	29
Dissolved Oxygen (%)	84.9	88.7	90.7	93.3	95.3	95.9	96.3	30
Salinity (PPT)	33.1	33.2	33.4	34.0	34.9	35.4	35.6	29
Field Cond@TRef25 (mS/cm)	51.3	51.5	51.9	52.6	53.6	53.9	54.3	17
pH field - sensor TC	7.8	7.8	7.9	8.0	8.1	8.2	8.5	29
Temperature (Celsius)	9.5	9.5	10.0	10.7	11.6	12.1	12.4	30
Turbidity (NTU)	0.5	0.6	1.0	7.7	10.1	10.5	12.3	10
Redox (mV)	123	141	158	372	463	476	478	18
Chlorophyll a (µg/L)*					ND			
TAN as N (mg/L)	0.003	0.003	0.003	0.006	0.008	0.010	0.011	29
Nitrite and Nitrate as N mg/L	0.053	0.055	0.056	0.061	0.063	0.063	0.063	12
Nitrate as N mg/L	0.037	0.040	0.047	0.054	0.058	0.060	0.063	29
Nitrite as N mg/L	0.003	0.003	0.003	0.005	0.008	0.011	0.013	8
Nitrogen (Total) as N mg/L	0.16	0.18	0.24	0.33	0.34	0.37	0.38	30
Phosphorus (Total) as P mg/L	0.02	0.02	0.03	0.03	0.04	0.04	0.05	30
DRP as P mg/L	0.010	0.010	0.011	0.012	0.014	0.015	0.015	21
Silica as Si mg/L	0.3	0.4	0.4	0.4	0.4	0.5	0.5	21

*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	5th %ile	10th %ile	20th %ile	Median	80th %ile	90th %ile	95th %ile	Sample Number
Dissolved Oxygen (mg/L)	7.4	7.5	8.0	8.3	8.7	8.8	9.1	29
Dissolved Oxygen (%)	88.9	91.7	93.0	97.1	100.9	102.1	103.9	29
Salinity (PPT)	33.5	33.6	33.7	34.6	35.1	35.3	35.5	29
Field Cond@TRef25 (mS/cm)	51.3	51.5	52.2	53.1	53.5	53.7	54.3	18
pH field - sensor TC	7.7	7.7	7.9	8.0	8.2	8.3	8.3	26
Temperature (Celsius)	10.9	11.1	11.9	12.9	14.2	15.1	15.6	29
Turbidity (NTU)	0.8	0.8	0.9	1.1	4.0	5.2	5.6	13
Redox (mV)	42	98	128	427	440	451	461	17
Chlorophyll a (µg/L)*					ND			
TAN as N (mg/L)	0.003	0.003	0.004	0.006	0.011	0.012	0.012	28
Nitrite and Nitrate as N mg/L	0.001	0.001	0.002	0.007	0.026	0.044	0.052	11
Nitrate as N mg/L	0.001	0.001	0.001	0.004	0.015	0.026	0.040	28
Nitrite as N mg/L	0.001	0.001	0.001	0.001	0.001	0.002	0.002	8
Nitrogen (Total) as N mg/L	0.15	0.15	0.18	0.25	0.28	0.33	0.36	29
Phosphorus (Total) as P mg/L	0.02	0.02	0.02	0.03	0.03	0.04	0.04	29
DRP as P mg/L	0.005	0.005	0.005	0.007	0.009	0.010	0.010	20
Silica as Si mg/L	0.1	0.1	0.1	0.2	0.2	0.3	0.4	20

*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	7.6	8.6	93.7	101.3	35.2	54.1	7.9	8.2	11.3	17.2	10.0	446	1.7	7.0	54.0	37.0	4.0	0.32	0.04	11.0	0.4
Summer	7.4	8.2	96.1	103.9	35.5	54.3	7.8	8.2	16.4	18.8	13.6~	433	1.3	6.0	1.0~	1.0	1.0~	0.26	0.04	8.0	0.3
Autumn	7.4	8.2	92.4	98.5	35.8	54.7	7.9	8.2	13.3	17.1	9.5~	448	1.7	8.0	22.0	15.0	6.0	0.31	0.04	9.0	0.4
Winter	8.3	9.1	93.0	97.6	34.4	53.1	7.9	8.2	10.0	11.2	12.1~	462	0.8	7.0	61.0~	57.0	8.0~	0.36	0.04	13.0	0.5
Spring	8.1	8.9	97.6	103.7	34.7	53.2	7.9	8.2	12.1	15.1	5.9~	438	1.8	7.0	23.0~	6.0	1.0~	0.28	0.03	7.0	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), ~ <95% confidence. Figures shown above are based on data collected from 17/03/2009 to 11/10/2018.

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	92.9	100.6	35.2	54.2	7.9	8.2	11.4	17.0	9.1	448	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Summer	7.3	8.2	95.6	103.1	35.5	54.3	7.9	8.2	16.2	18.8	12.1~	433	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Autumn	7.4	8.1	92.4	97.2	35.8	54.7	7.9	8.2	13.4	17.0	9.0~	450	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Winter	8.3	8.8	91.6	96.3	34.5	53.1	7.9	8.1	10.0	11.4	9.3~	462	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Spring	8.2	8.9	97.5	103.7	34.9	53.3	7.9	8.2	11.8	14.8	5.4~	439	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, ~ <95% confidence. Figures shown above are based on data collected from 17/03/2009 to 11/10/2018.

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	7.3	8.4	91.4	97.9	35.4	54.3	7.9	8.2	11.6	16.9	9.7	448	ND	9.0	56.0	41.0	5.0	0.32	0.04	11.0	0.4	
Summer	7.2	8.0	93.5	100.1	35.7	54.3	7.9	8.2	16.2	18.4	9.4~	433	ND	6.0	1.0~	3.0	1.0~	0.27	0.04	8.0	0.3	
Autumn	7.2	7.8	90.7	95.5	35.9	54.7	7.9	8.2	13.4	17.0	10.4~	451	ND	10.0	23.0	15.0	7.0	0.32	0.04	11.0	0.4	
Winter	8.2	8.6	90.7	95.3	34.9	53.6	7.9	8.1	10.0	11.6	10.1~	463	ND	8.0	63.0~	58.0	8.0~	0.34	0.04	14.0	0.4	
Spring	8.0	8.7	93.0	100.9	35.1	53.5	7.9	8.2	11.9	14.2	4.0~	440	ND	11.0	26.0~	15.0	1.0~	0.28	0.03	9.0	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, ~ <95% confidence. Figures shown above are based on data collected from 17/03/2009 to 11/10/2018.

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