Memo

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To: James Della Bona

Cc: Matt Frapple

From: Iain Posnett

Date: 14 August 2024

Subject: KBMS Casuarina Boat Harbour Phase 1 Marine Monitoring - DSDMP Water Quality Monitoring Pre-Disposal Survey

This memo provides confirmation to WA Limestone and the Department of Transport (Dot) the pre-disposal water quality monitoring campaign stipulated by the Dredge Spoil Disposal Management Plan (DSDMP), developed for Phase 1 construction of the Koombana Bay Marine Structures (KBMS) Casuarina Boat Harbour, has been completed.

The DSDMP water quality monitoring program requires fortnightly water quality profiling to be undertaken during disposal activities at 12 sites within and in the vicinity of the modelled dredge plume extent (zone of influence). Monitoring campaigns during disposal actions are required to collect data immediately after an individual disposal action, and then spaced equally in time as the plume disperses until just prior to the next disposal action, for 3 repeats (4 sample repeats in total). The parameters to be measured include turbidity (NTU), photosynthetically active radiation (PAR). Conductivity, temperature, dissolved oxygen and depth.

During the pre- and post-disposal monitoring campaign there will be no disposal actions, as such, only one sample repeat is required for these monitoring campaigns.

MScience scientists completed the pre-disposal monitoring campaign on 09 August 2024.

Tests to assess exceedance of the DSDMP triggers are not required for the pre-disposal campaign, as such, only the raw data collected during the survey has been provided in Table 1. The data will be reported in full (analysed, graphed and discussed) within the first disposal monitoring event summary report, once dredging has commenced.

Table 1. DSDMP water quality monitoring pre-disposal monitoring campaign results

Date	Time	Site	Profile*	Depth (m)	Turbidity (NTU)	PAR (µMol/m2/s)	Conductivity (µS)	Sailinty (g/L)	Temperature (°C)	DO (%)	pH
9/08/2024	850	REF-01	S	1	0.77	145	47081	36.5	17.4	102.3	8.18
			M	9	0.34	30.1	47096	36.5	17.4	102.1	8.18
			B	18	0.66	25.4	47090	36.5	17.4	102.1	8.18
9/08/2024	1016	REF-02	S	1	0.42	516	46671	36.5	17.1	101.7	8.18
			M	10	0.43	193	46627	36.5	17.1	101.2	8.18
			B	20	0.51	62	46604	36.5	17.1	101	8.18
9/08/2024	1043	REF-03	S	1	0.9	501	46690	36.5	17.1	101.3	8.18
			M	10	0.81	236	46687	36.5	17.1	101.1	8.18
			B	20	0.95	92	46683	36.5	17.1	100.9	8.18
9/08/2024	920	REF-04	S	1	0.28	129	47113	36.5	17.4	102.4	8.18
			M	10	0.38	104	47121	36.5	17.4	102.2	8.18
			B	20	0.37	36.6	47095	36.5	17.4	101.9	8.18
9/08/2024	935	DIS-01	S	1	0.32	440	46836	36.5	17.2	102.1	8.18
			M	10	0.3	88	46833	36.5	17.2	101.8	8.18
			B	20	0.33	48	46808	36.5	17.2	101.5	8.18

Date	Time	Site	Profile*	Depth (m)	Turbidity (NTU)	PAR (µMol/m2/s)	Conductivity (µS)	Sailinty (g/L)	Temperature (°C)	DO (%)	pH
9/08/2024	1002	DIS-02	S	1	0.33	425	46769	36.5	17.2	102.1	8.18
			M	10	0.32	141	46758	36.5	17.2	101.7	8.18
			B	20	0.35	81	46743	36.5	17.2	101.5	8.18
9/08/2024	959	DIS-03	S	1	0.33	351	46640	36.5	17.1	102.3	8.18
			M	10	0.34	156	46647	36.5	17.1	101.9	8.18
			B	20	0.34	84	46626	36.5	17	101.7	8.18
9/08/2024	950	DIS-04	S	1	0.32	193	46806	36.5	17.2	102.1	8.18
			M	10	0.29	85	46780	36.5	17.2	101.8	8.18
			B	20	0.3	80	46760	36.5	17.2	101.5	8.18
9/08/2024	925	DIS-05	S	1	0.45	180	46874	36.5	17.3	101.7	8.18
			M	10	0.41	68	46881	36.5	17.3	101.3	8.18
			B	20	0.44	25	46846	36.5	17.2	100.9	8.18
9/08/2024	1008	DIS-06	S	1	0.38	438	46753	36.5	17.2	102.2	8.18
			M	10	0.41	163	46760	36.5	17.2	101.6	8.18
			B	20	0.35	89	46769	36.5	17.2	101.4	8.18
9/08/2024	1030	DIS-07	S	1	0.42	151	46563	36.5	17	102.4	8.18

Date	Time	Site	Profile*	Depth (m)	Turbidity (NTU)	PAR (µMol/m2/s)	Conductivity (µS)	Sailinty (g/L)	Temperature (°C)	DO (%)	pH
			M	10	0.46	67	46342	36.5	16.8	101.9	8.18
			B	20	0.51	38	46202	36.5	16.7	101.8	8.18
9/08/2024	955	DIS-08	S	1	0.32	279	46832	36.5	17.2	102.2	8.18
			M	10	0.27	130	46803	36.5	17.2	101.8	8.18
			B	20	0.31	63	46775	36.5	17.2	101.8	8.18

*S – surface, M – Mid, B - Bottom