

Appendix 7.6

Laboratory Testing Results
Summary and Disposal
Classification of the 2012
Marine SI (conducted in
accordance with the endorsed
Supplementary SSTP)

Table 1: Chemical testing results for the marine SI works conducted in 2011 in accordance with the Supplementary SSTP

Sample ID	Metals (mg/kg)								Metalloid (mg/kg)	Organic-non-PAHs (µg/kg)	Organic-PAHs (µg/kg)		Organo-metallics (µg/L)	Classification under ETWB TC(W) No. 34/2002
	Ag	Cd	Cr	Cu	Ni	Pb	Zn	Hg	As	Total PCBs	Low M.W. PAHs	High M.W. PAHs	TBT	
VR1 GRAB	0.1	0.5	5	21	7	10	15	0.05	2	<18	23500	84400	<0.015	10xLCEL*
VR1 0.9-1.9M	2.6	3.4	56	130	21	161	423	1.42	9	<18	577	3380	<0.015	H
VR1 1.9-2.9M	<0.1	<0.2	23	6	16	16	54	<0.05	4	<18	<550	<1700	<0.015	L
VR1 2.9-3.9M	<0.1	<0.2	9	2	6	6	20	<0.05	2	<18	<550	<1700	<0.015	L
VR1 6.0-6.9M	<0.1	<0.2	4	1	2	6	5	<0.05	<1	<18	<550	<1700	<0.015	L
VR2 GRAB	0.2	<0.2	5	44	3	6	18	<0.05	<1	<18	17400	56700	0.189	10xLCEL*
VR2 0.9-1.9M	<0.1	<0.2	9	2	6	6	19	<0.05	1	<18	<550	<1700	<0.015	L
VR2 1.9-2.9M	<0.1	<0.2	17	4	12	10	36	<0.05	2	<18	<550	<1700	<0.015	L
VR2 2.9-3.9M	<0.1	<0.2	8	2	4	7	14	<0.05	1	<18	<550	<1700	<0.015	L
VR3 GRAB	6.1	1.7	75	600	35	120	352	1.05	6	46	200000	1050000	0.075	10xLCEL*
VR3 0.9-1.9M	9.6	1.6	81	618	39	125	549	1.04	7	169	557000	1890000	<0.015	10xLCEL*
VR3 1.9-2.9M	<0.1	<0.2	17	6	14	11	34	<0.05	3	<18	570	2000	<0.015	M*
VR3 2.9-3.9M	<0.1	<0.2	24	7	17	21	60	0.06	5	<18	<550	<1700	<0.015	L
VR3 6.0-6.9M	<0.1	<0.2	14	2	6	10	20	<0.05	3	<18	<550	<1700	<0.015	L
VR4 GRAB	7.2	2.3	99	817	47	134	470	1.45	10	137	114000	860000	<0.015	10xLCEL*
VR4 0.9-1.9M	14.0	2.2	361	4990	204	548	1280	5.14	8	266	612000	1220000	<0.015	10xLCEL*
VR4 1.9-2.9M	7.4	23.7	458	605	205	238	1350	2.24	7	116	235000	337000	<0.015	10xLCEL*
VR4 3.0-4.0M	20.0	2.5	514	8120	296	784	1600	8.78	8	1340	161000	413000	<0.015	10xLCEL*
VR4 6.0-6.9M	<0.1	<0.2	19	4	12	12	38	<0.05	3	<18	<550	<1700	<0.015	L
VR5 GRAB	11.4	2.4	143	1240	56	195	514	5.11	11	55	100000	485000	<0.015	10xLCEL*
VR5 0.9-1.9M	14.7	4.0	539	4700	204	392	1230	5.24	9	1400	120000	289000	<0.015	10xLCEL*
VR5 1.9-2.9M	6.8	9.3	346	573	170	254	1060	4.73	11	622	217000	486000	<0.015	10xLCEL*
VR5 2.9-3.9M	0.3	<0.2	23	46	16	81	98	0.88	7	<18	<550	<1700	<0.015	M*

Sample ID	Metals (mg/kg)								Metalloid (mg/kg)	Organic-non-PAHs (µg/kg)	Organic-PAHs (µg/kg)		Organo-metallics (µg/L)	Classification under ETWB TC(W) No. 34/2002
	Ag	Cd	Cr	Cu	Ni	Pb	Zn	Hg	As	Total PCBs	Low M.W. PAHs	High M.W. PAHs	TBT	
VR5 6.0-7.0M	<0.1	<0.2	24	46	15	16	43	<0.05	3	<18	<550	<1700	<0.015	L
GB1	20.0	4.9	1190	13400	526	979	1330	12.9	10	192	351000	690000	<0.015	10xLCEL*
GB2	2.9	2.6	64	385	29	89	469	0.77	4	89	1870000	2500000	0.030	10xLCEL*
GB3	8.9	2.3	124	884	50	138	473	1.58	9	41	838000	3070000	<0.015	10xLCEL*
GB4	1.0	0.6	37	91	18	38	117	0.43	5	130	1600000	1550000	0.041	10xLCEL*
GB5	5.7	1.4	135	360	37	277	654	1.20	7	238	378000	1230000	0.029	10xLCEL*
GB6	5.2	1.2	74	604	30	84	275	1.04	6	100	227000	1210000	<0.015	10xLCEL*
GB7	6.1	2.0	115	970	48	126	427	1.51	8	160	185000	1050000	<0.015	10xLCEL*
GB8	10.8	2.3	145	1450	53	164	469	2.06	10	105	36300	223000	<0.015	10xLCEL*
GB9	6.1	1.8	95	663	38	98	336	1.24	8	95	330000	1690000	<0.015	10xLCEL*
GB10	8.6	2.6	150	1530	61	183	472	1.85	9	158	305000	1810000	0.693	10xLCEL*
GB11	6.5	1.8	93	706	39	121	437	1.26	8	128	1120000	1920000	<0.015	10xLCEL*
Reference	0.1	<0.2	36	16	24	31	96	<0.05	7	<18	<550	<1700	<0.015	L

Notes:

[1] **Bold** denotes exceedance of LCEL

[2] **Bold** denotes exceedance of UCEL

[3] **Bold** denotes exceedance of 10 x LCEL

[4] * denotes samples require biological screening test

[5] Low molecular weight (Low M. W.) PAHs include acenaphthene, acenaphthylene, anthracene, fluorene, naphthalene, and phenanthrene

[6] High molecular weight (High M. W.) PAHs include benzo[a]anthracene, benzo[a]pyrene, chrysene, dibenzo[a,h]anthracene, fluoranthene, pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, indeno[1,2,3-c,d]pyrene and benzo[g,h,i]perylene

[7] Total PCBs include 2,4' diCB, 2,2',5' triCB, 2,4,4' triCB, 2,2',3,5' tetraCB, 2,2',5,5' tetraCB, 2,3',4,4' tetraCB, 3,3',4,4' tetraCB, 2,2',4,5,5' pentaCB, 2,3,3',4,4' pentaCB, 2,3',4,4',5' pentaCB, 3,3',4,4',5' pentaCB, 2,2',3,3',4,4' hexaCB, 2,2',3,4,4',5' hexaCB, 2,2',4,4',5,5' hexaCB, 3,3',4,4',5,5' hexaCB, 2,2',3,3',4,4',5' heptaCB, 2,2',3,4,4',5,5' heptaCB, 2,2',3,4',5,5',6 heptaCB

Table 2: Biological screening test results for the marine SI works conducted in 2011 in accordance with the Supplementary SSTP

Sample ID		10-day Amphipod Survival Test	20-Day Polychaete Survival and Growth Test	48-60-hour Bivalve Survival and Normality Test	Overall Results
VR3 GRAB	Composite Sample	Passed	Passed	Passed	Passed
VR3 0.9-1.9M					
VR3 1.9-2.9M	-	Passed	Failed	Passed	Failed
VR4 GRAB	Composite Sample	Passed	Failed	Failed	Failed
VR4 0.9-1.9M					
VR4 1.9-2.9M					
VR4 3.0-4.0M					
VR5 GRAB	Composite Sample	Passed	Failed	Passed	Failed
VR5 0.9-1.9M					
VR5 1.9-2.9M					
VR5 2.9-3.9M	-	Failed	Failed	Passed	Failed
VR1 GRAB	Composite Sample	Passed	Passed	Passed	Passed
VR2 GRAB					
GB2					
GB1	-	Failed	Passed	Passed	Failed
GB11	Composite Sample	Failed	Passed	Passed	Failed
GB3					
GB4					
GB5					
GB8	-	Failed	Passed	Passed	Failed

Sample ID		10-day Amphipod Survival Test	20-Day Polychaete Survival and Growth Test	48-60-hour Bivalve Survival and Normality Test	Overall Results
GB6	Composite Sample	Passed	Passed	Passed	Passed
GB7					
GB9					
GB10					

Table 3: Disposal classification based on the chemical and biological testing results

Sample ID	Classification under ETWB TC(W) No. 34/2002 based on chemical test results	Biological Test Results	Final Sediment Classification	Disposal Classification
VR1 GRAB	10xLCEL	Passed	Hp	Type 2 – Confined Marine Disposal
VR1 0.9-1.9M	H	-	H	Type 2 – Confined Marine Disposal
VR1 1.9-2.9M	L	-	L	Type 1 – Open Sea Disposal
VR1 2.9-3.9M	L	-	L	Type 1 – Open Sea Disposal
VR1 6.0-6.9M	L	-	L	Type 1 – Open Sea Disposal
VR2 GRAB	10xLCEL	Passed	Hp	Type 2 – Confined Marine Disposal
VR2 0.9-1.9M	L	-	L	Type 1 – Open Sea Disposal
VR2 1.9-2.9M	L	-	L	Type 1 – Open Sea Disposal
VR2 2.9-3.9M	L	-	L	Type 1 – Open Sea Disposal
VR3 GRAB	10xLCEL	Passed	Hp	Type 2 – Confined Marine Disposal
VR3 0.9-1.9M	10xLCEL	Passed	Hp	Type 2 – Confined Marine Disposal
VR3 1.9-2.9M	M	Failed	Mf	Type 2 – Confined Marine Disposal
VR3 2.9-3.9M	L	-	L	Type 1 – Open Sea Disposal
VR3 6.0-6.9M	L	-	L	Type 1 – Open Sea Disposal
VR4 GRAB	10xLCEL	Failed	Hf	Type 3 – Special Treatment/ Disposal
VR4 0.9-1.9M	10xLCEL	Failed	Hf	Type 3 – Special Treatment/ Disposal
VR4 1.9-2.9M	10xLCEL	Failed	Hf	Type 3 – Special Treatment/ Disposal
VR4 3.0-4.0M	10xLCEL	Failed	Hf	Type 3 – Special Treatment/ Disposal
VR4 6.0-6.9M	L	-	L	Type 1 – Open Sea Disposal
VR5 GRAB	10xLCEL	Failed	Hf	Type 3 – Special Treatment/ Disposal
VR5 0.9-1.9M	10xLCEL		Hf	Type 3 – Special Treatment/ Disposal
VR5 1.9-2.9M	10xLCEL		Hf	Type 3 – Special Treatment/ Disposal
VR5 2.9-3.9M	M		Mf	Type 2 – Confined Marine Disposal

Sample ID	Classification under ETWB TC(W) No. 34/2002 based on chemical test results	Biological Test Results	Final Sediment Classification	Disposal Classification
VR5 6.0-7.0M	L	-	L	Type 1 – Open Sea Disposal
GB1	<u>10xLCEL</u>	Failed	Hf	Type 3 – Special Treatment/ Disposal
GB2	<u>10xLCEL</u>	Passed	Hp	Type 2 – Confined Marine Disposal
GB3	<u>10xLCEL</u>	Failed	Hf	Type 3 – Special Treatment/ Disposal
GB4	<u>10xLCEL</u>	Failed	Hf	Type 3 – Special Treatment/ Disposal
GB5	<u>10xLCEL</u>	Failed	Hf	Type 3 – Special Treatment/ Disposal
GB6	<u>10xLCEL</u>	Passed	Hp	Type 2 – Confined Marine Disposal
GB7	<u>10xLCEL</u>	Passed	Hp	Type 2 – Confined Marine Disposal
GB8	<u>10xLCEL</u>	Failed	Hf	Type 3 – Special Treatment/ Disposal
GB9	<u>10xLCEL</u>	Passed	Hp	Type 2 – Confined Marine Disposal
GB10	<u>10xLCEL</u>	Passed	Hp	Type 2 – Confined Marine Disposal
GB11	<u>10xLCEL</u>	Failed	Hf	Type 3 – Special Treatment/ Disposal