



**The National Marine Biological
Analytical Quality Control Scheme**

**Macrobenthic Exercise Results – MB15
General Version**

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EXERCISE DETAILS

Macrobenthos #15

Type/Contents – Day Grab; approx. 1.5 litres moderately rich, marine, muddy sand sediment; Filey Bay, Scarborough; 41m Depth; 1mm sieve mesh processing.

Circulated – 17/10/2007

Completion Date – 21/12/2007

Number of Participating Laboratories – 15

Number of Results Received – 10

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Table 1. Results from the analysis of Macrobenthic sample MB15 by the participating laboratories.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LabCode	PL	Number of Taxa			Number of Individuals				Not extracted			Individuals Count Error	Similarity index	Taxonomic errors
		UM	Diff (n)	%max	PL	UM	Diff (n)	%max	New Taxa	Ind	%ind			
LB1401	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LB1402	60	69	-9	13.0	322	341	-19	5.6	9	21	6.2	2	92.84	5
LB1403	48	55	-7	12.7	341	342	-1	0.3	4	9	2.6	8	90.64	11
LB1404	47	60	-13	21.7	326	321	5	1.5	1	1	0.3	6	84.62	10
LB1405	64	72	-8	11.1	353	357	-4	1.1	10	6	1.7	2	95.16	6
LB1406	59	72	-13	18.1	369	407	-38	9.3	8	37	9.1	-1	93.45	2
LB1407	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LB1408	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LB1409	54	57	-3	5.3	255	256	-1	0.4	4	4	1.6	3	94.68	3
LB1411	67	74	-7	9.5	453	454	-1	0.2	7	2	0.4	1	97.63	5
LB1412	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LB1413	62	76	-14	18.4	271	277	-6	2.2	9	7	2.5	1	86.79	10
LB1414	58	64	-6	9.4	265	275	-10	3.6	9	11	4.0	1	94.78	1
LB1415	70	73	-3	4.1	440	442	-2	0.5	8	2	0.5	0	93.54	10
LB1416	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Key: PL - participating laboratory.
 UM - Unicomarine Ltd.
 "-" - No data. See Section 6 in the forthcoming Annual Report, for details.

Table 2. Comparison of the efficiency of extraction of fauna by the participating laboratories for the major taxonomic groups present in sample MB15.

LabCode		Nemertea	Polychaeta	Oligochaeta	Chelicerata	Crustacea	Echinodermata	Mollusca	Other	Overall
LB1402	UM count	8	152	-	-	29	92	54	6	341
	PL missed	0	0	-	-	2	13	6	0	21
	%missed	0.0	0.0	-	-	6.9	14.1	11.1	0.0	6.2
LB1403	UM count	5	127	-	-	26	98	86	-	342
	PL missed	0	1	-	-	0	4	4	-	9
	%missed	0.0	0.8	-	-	0.0	4.1	4.7	-	2.6
LB1404	UM count	-	143	-	-	36	81	61	-	321
	PL missed	-	0	-	-	0	0	1	-	1
	%missed	-	0.0	-	-	0.0	0.0	1.6	-	0.3
LB1405	UM count	4	146	-	-	58	86	59	4	357
	PL missed	0	0	-	-	0	0	6	0	6
	%missed	0.0	0.0	-	-	0.0	0.0	10.2	0.0	1.7
LB1406	UM count	6	177	-	1	44	87	86	6	407
	PL missed	0	17	-	1	8	1	10	0	37
	%missed	0.0	9.6	-	100.0	18.2	1.1	11.6	0.0	9.1
LB1409	UM count	7	127	-	-	9	57	52	4	256
	PL missed	0	2	-	-	0	1	1	0	4
	%missed	0.0	1.6	-	-	0.0	1.8	1.9	0.0	1.6
LB1411	UM count	5	300	-	3	42	42	58	4	454
	PL missed	0	0	-	1	0	0	1	0	2
	%missed	0.0	0.0	-	33.3	0.0	0.0	1.7	0.0	0.4
LB1413	UM count	4	119	-	6	17	61	70	-	277
	PL missed	0	5	-	0	0	1	1	-	7
	%missed	0.0	4.2	-	0.0	0.0	1.6	1.4	-	2.5
LB1414	UM count	7	149	-	-	16	52	47	4	275
	PL missed	0	1	-	-	0	1	9	0	11
	%missed	0.0	0.7	-	-	0.0	1.9	19.1	0.0	4.0
LB1415	UM count	10	193	-	-	56	74	107	2	442
	PL missed	0	2	-	-	0	0	0	0	2
	%missed	0.0	1.0	-	-	0.0	0.0	0.0	0.0	0.5

Key: PL - participating laboratory.
 UM - Unicmarine Ltd.
 "-" - No data. See Section 6 in the forthcoming Annual Report, for details.

Table 3. Comparison of the estimates of biomass made by the participating laboratories with those made by Unicomarine Ltd. for the major taxonomic groups present in sample MB15. Values are in grams (g).

LabCode		Nemertea	Polychaeta	Oligochaeta	Chelicerata	Crustacea	Echinodermata	Mollusca	Other	Overall	
LB1402	PL	1.321	1.3391	-	-	0.0648	14.1046	13.7129	0.003	30.5454	
	UM	0.776	0.8063	-	-	0.0442	9.4208	13.2726	0.0015	24.3214	
	%diff.	41.3	39.8	-	-	31.8	33.2	3.2	50.0	20.3762	
LB1403	PL	0.1723	0.74444	-	-	0.03386	0.99629	0.66124	-	2.60813	
	UM	0.1436	0.8753	-	-	0.0316	1.4206	0.6739	-	3.145	
	%diff.	16.7	-17.6	-	-	6.7	-42.6	-1.9	-	-20.58448	
LB1404	PL	-	0.9958	-	-	0.0527	0.8896	0.6554	-	2.5935	
	UM	-	0.9703	-	-	0.0662	0.907	0.6606	-	2.6041	
	%diff.	-	2.6	-	-	-25.6	-2.0	-0.8	-	-0.408714	
LB1405	PL	0.3046	1.0234	-	-	0.0788	6.6109	1.7344	0.0143	9.76640	
	UM	0.3228	0.7425	-	-	0.0763	7.6455	1.6868	0.0127	10.4866	
	%diff.	-6.0	27.4	-	-	3.2	-15.6	2.7	11.2	-7.374263	
LB1406	PL	-	-	-	-	-	-	-	-	0	
	UM	-	NO BIOMASS DATA							-	0
	%diff.	-	-	-	-	-	-	-	-	-	
LB1409	PL	-	-	-	-	-	-	-	-	0	
	UM	-	NO BIOMASS DATA							-	0
	%diff.	-	-	-	-	-	-	-	-	-	
LB1411	PL	-	-	-	-	-	-	-	-	0	
	UM	-	NO BIOMASS DATA							-	0
	%diff.	-	-	-	-	-	-	-	-	-	
LB1413	PL	0.0046	1.3528	-	0.0082	0.1022	2.6126	2.0916	-	6.172	
	UM	0.003	1.3498	-	0.0078	0.1051	2.8004	2.0108	-	6.2769	
	%diff.	34.8	0.2	-	4.9	-2.8	-7.2	3.9	-	-1.7	
LB1414	PL	0.16	1.6577	-	-	0.0533	2.3194	0.7147	0.0001	4.9052	
	UM	0.1019	0.9818	-	-	0.0487	1.9546	0.6502	0.0001	3.7373	
	%diff.	36.3	40.8	-	-	8.6	15.7	9.0	0.0	23.8	
LB1415	PL	-	-	-	-	-	-	-	-	0	
	UM	-	NO BIOMASS DATA							-	0
	%diff.	-	-	-	-	-	-	-	-	-	

Key: PL - participating laboratory
UM - Unicomarine Ltd.
"-" - No data. See Section 6 in the forthcoming Annual Report, for details.

Table 4. Variation in faunal content of samples distributed as MB15.

Taxa*

LabCode	Nemertea	Polychaeta	Oligochaeta	Chelicerata	Crustacea	Echinodermata	Mollusca	Other	Total taxa
LB1402	1	29	-	-	5	6	19	9	69
LB1403	1	24	-	-	7	2	18	3	55
LB1404	-	25	-	-	6	4	17	8	60
LB1405	1	26	-	-	13	4	15	14	73
LB1406	1	27	-	1	9	4	19	11	72
LB1409	1	21	-	-	5	3	15	12	57
LB1411	1	27	-	2	8	3	15	18	74
LB1413	1	24	-	2	7	4	15	23	76
LB1414	1	28	-	-	7	2	14	12	64
LB1415	1	26	-	-	9	2	19	16	73
Mean	1	26	-	2	8	3	17	13	67
Max	1	29	-	2	13	6	19	23	76
Min	1	21	-	1	5	2	14	3	55

*UM data used for all faunal groups (includes all faunal groups).

Individuals*

LabCode	Nemertea	Polychaeta	Oligochaeta	Chelicerata	Crustacea	Echinodermata	Mollusca	Other	Total Ind.
LB1402	8	152	-	-	29	92	54	6	341
LB1403	5	127	-	-	26	98	86	-	342
LB1404	-	143	-	-	36	81	61	-	321
LB1405	4	146	-	-	58	86	59	4	357
LB1406	6	177	-	1	44	87	86	6	407
LB1409	7	127	-	-	9	57	52	4	256
LB1411	5	300	-	3	42	42	58	4	454
LB1413	4	119	-	6	17	61	70	-	277
LB1414	7	149	-	-	16	52	47	4	275
LB1415	10	193	-	-	56	74	107	2	442
Mean	6	163	-	3	33	73	68	4	347
Max	10	300	-	6	58	98	107	6	454
Min	4	119	-	1	9	42	47	2	256

*UM data used for all faunal groups (includes all faunal groups).

Table 5. Sample processing options selected for MB15 by participating laboratories.

	LB1402	LB1403	LB1404	LB1405	LB1406	LB1409	LB1411	LB1413	LB1414	LB1415	
Faunal groups extracted*	Nematodes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	Bryozoans	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	Hydroids	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	Copepods	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	Tunicates	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	Anthozoans	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	Aquatic Insects	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	Unattached Bryozoans	-	-	-	-	-	-	<input checked="" type="checkbox"/>	-	-	-
	Foraminifera	-	-	-	-	-	-	<input checked="" type="checkbox"/>	-	-	-

** Note that all faunal groups are assumed to be extracted when no sample processing details has been submitted*

Figure 2. MB15 data reanalysed by Unicomarine Ltd. (untransformed)

