

Lam, P. GT10-11 - Particulate composition

(<http://osprey.bco-dmo.org/dataset.cfm?id=14269&flag=view>)

Recoveries for certified reference materials by various labs and digests: For each CRM, certified values (mg/kg) with absolute (1SD) and relative uncertainties (RSD, %) are shown, along with recovered values and absolute uncertainties (1SD). **Bold:** recovered values and uncertainties converted to percent certified for summarization purposes. Underlined: comparisons to uncertified informational values from the GeoReM CRM database. NA: Not applicable (no certified or information values for comparison). *BCR414 is CRM414: “Trace Elements in Plankton”; n=6; †PACS-1 and MESS-3 “Marine Sediment Reference Materials for Trace Metals”, Canadian National Research Council; n=5. 10-35mg of each CRM was used to determine recoveries. This is less than the certified mass, but better approximates loading of marine particles. Recovered values are within 1SD of the certified value for all elements except for BCR414-Mo (140%) and V (119%), PACS-1 Pb (76%), and MESS-3 Fe (91%), Pb (74%).

CRM		Element														Mean	
		Al	Cd	Co	Cu	Fe	Mn	Mo	Ni	P	Pb	Sr	Ti	U	V		Zn
BCR414*	Certified (mg/kg)	<u>2597</u>	0.383	1.43	29.5	1850	299	1.35	18.8	<u>18588</u>	3.97	261	NA	<u>0.14</u>	8.1	111.6	
	SD	<u>39</u>	<u>0.014</u>	<u>0.06</u>	<u>1.3</u>	<u>190</u>	<u>13</u>	<u>0.2</u>	<u>0.8</u>	<u>4843</u>	<u>0.19</u>	<u>25</u>	NA	<u>0.01</u>	<u>0.18</u>	<u>2.5</u>	
	RSD (%)	<u>1.5</u>	<u>3.7</u>	<u>4.2</u>	<u>4.4</u>	<u>10</u>	<u>4.3</u>	<u>15</u>	<u>4.3</u>	<u>26</u>	<u>4.8</u>	<u>9.6</u>	NA	<u>7.1</u>	<u>2.2</u>	<u>2.2</u>	
	Recovered (mg/kg)	3025	0.369	1.79	32.8	2115	304	1.88	28.5	15773	4.24	274	132.5	0.18	9.7	129.4	
	SD	440	0.062	0.36	3.4	261	38	0.2	9.5	1697	0.42	35	12.4	0.09	1.32	23.9	
	Recovered (%)	<u>116</u>	96	126	111	114	102	140	152	<u>85</u>	107	105	NA	<u>131</u>	119	116	116
RSD (%)	<u>15</u>	17	20	11	12	13	12	33	<u>11</u>	10	13	NA	<u>50</u>	14	18	18	
PACS-1 [†]	Certified (mg/kg)	66200	2.11	11.5	310	40900	440	5.43	39.5	960	183	276	4430	3	133	364	
	SD	3200	0.15	0.3	12	600	19	0.28	2.3	40	8	30	320	NA	5	23	
	RSD (%)	4.8	7.1	2.6	3.9	1.5	4.3	5.2	5.8	4.2	4.4	11	NA	NA	3.8	6.3	
	Recovered (mg/kg)	64030	2.24	12.2	297	40644	424	5.26	46.4	968	139	257	4196	2.3	130	319	
	SD	6680	0.23	2.0	15	3138	27	0.23	9.5	60	32	20	224	0.1	7	57	
	Recovered (%)	97	106	106	96	99	96	97	118	101	76	93	95	75	98	88	96
RSD (%)	10	10	16	5.2	7.7	6.5	4.4	20	6.2	23	7.8	5.3	5.6	5.6	18	10	
MESS-3 [†]	Certified (mg/kg)	85900	0.24	14.4	33.9	43400	324	2.78	46.9	1200	21.1	129	4400	4	243	159	
	SD	2300	0.01	2	1.6	1100	12	0.07	2.2	NA	0.7	11	NA	NA	10	8	
	RSD (%)	2.7	4.2	14	4.7	3	3.7	2.5	4.7	NA	3.3	8.5	NA	NA	4.1	5.0	
	Recovered (mg/kg)	78261	0.26	13.3	32.6	39590	330	2.72	49.3	1206	15.7	129	4000	3.6	227	149	
	SD	6514	0.07	1	3.3	2332	46	0.18	6.0	85	1.3	9	265	0.3	13	10	
	Recovered (%)	91	110	92	96	91	102	98	105	101	74	100	91	89	94	94	95
RSD (%)	8.3	28	8.2	10	5.9	14	6.5	12	7.0	8.5	7.2	6.6	7.6	5.9	6.5	9.5	