



United States Geological Survey

Certificate of Analysis

Marine Sediment, MAG-1

MAG-1 is a fine grained gray-brown clayey mud with low carbonate content, from the Wilkinson Basin of the Gulf of Maine. The collection site was approximately 125 km east of Boston, Massachusetts. The age of the sediment is Holocene, but probably includes reworked Pleistocene sediment from surrounding areas.

Element concentrations were determined by cooperating laboratories using a variety of analytical methods. Certificate values are based primarily on international data compilations (Abbey, 1983, Gladney and Roelandts, 1988, Govindaraju, 1994). USGS reports (Flanagan, 1967, 1976) provide background information on this material.

Recommended values

Oxide	Wt %	±	Oxide	Wt %	±
Al ₂ O ₃	16.4	0.30	MnO	0.098	0.009
CaO	1.37	0.10	Na ₂ O	3.83	0.11
Fe ₂ O ₃ T	6.80	0.60	P ₂ O ₅	0.16	0.021
K ₂ O	3.55	0.17	SiO ₂	50.4	0.96
MgO	3.00	0.10	TiO ₂	0.75	0.07

Element	µg/g	±	Element	µg/g	±	Element	µg/g	±
B	140	6	F	770	80	Sb	0.96	0.1
Ba	480	41	Ga	20	1.5	Sc	17	1
Be	3.2	0.4	Gd	5.8	0.7	Sm	7.5	0.6
Cd	0.20	0.03	Hf	3.7	0.5	Sr	150	15
Ce	88	9	Ho	1.0	0.1	Tb	0.96	0.09
Cl	31000	600	La	43	4	Th	12	1
Co	20	1.6	Li	79	4	U	2.7	0.3
Cr	97	8	Lu	0.4	0.04	V	140	6
Cs	8.6	0.7	Nd	38	5	Y	28	3
Cu	30	3	Ni	53	8	Yb	2.6	0.3
Dy	5.2	0.3	Pb	24	3	Zn	130	6
Eu	1.6	0.14	Rb	150	6	Zr	130	13

Oxide	Wt %	Other	Wt %
Fe ₂ O ₃	3.49	H ₂ O+	5.6
FeO	3.06	H ₂ O-	2.39
		S _{tot}	0.39
		C _{tot}	2.15

Element	µg/g	Element	µg/g	Element	µg/g
Ag	0.08	Er	3	Sn	3.6
As	9.2	Hg	0.02	Ta	1.1
Au	0.0024	I	380	Tm	0.43
Bi	0.34	Mo	1.6	W	1.4
Br	250	Nb	12		

