

Supplementary Data 2—Minor and trace-element content (ppm) of vertebrate fossils and host rock from the Z6 bed, Zambrana site. See stratigraphic position of Z6-S sample in Iriarte et al. (2003, fig. 3). n.q. = no quantified data as ppm.

Z6	1	2	3	4	5	6	7	8	9	SED	Z6-S	2-sed	6-sed	8-sed	9-sed
Ba	657.67	836.8	3586.67	890.2	847.41	1209.11	2359.55	1496.05	397.66		179.75	178.57	231.08	96.44	201.25
Ce	4521.22	2189.36	1573.38	2873.5	1494.93	738.11	97.51	1159.75	670.71		83.96	228.66	160.73	46.25	110.87
Co	10.04	5.66	3.04	7.45	6.2	3.92	3.07	3.22	5.92		4.94	6.21	3.59	3.58	4.88
Cr	11.68	20.19	13.75	11.52	6.39	4.57	41.96	21.03	7.36		54.41	38.26	5.14	20.49	5.34
Cu	n.q.	n.q.	n.q.	n.q.	12.33	32.13	n.q.	n.q.	40.72		n.q.	n.q.	34.94	23.85	15.39
Dy	57.74	35.22	87.99	59.63	74.66	27.68	4.86	64.8	33.02		4.44	9.52	6.96	3.19	9.33
Eu	21.44	12.23	29.17	20.08	22.8	9.15	3.15	21.51	8.87		2.89	4.27	1.98	0.96	2.29
Ga	13.13	12.01	26.99	8.29	3.98	3.7	24.82	13.6	4.21		14.28	8.92	8.26	7.06	9.88
Gd	110.7	66.85	161.8	113.65	147.85	56.06	11.27	126.68	59.96		0.16	8.33	11.24	3.58	12.53
Ho	13.54	8	18.49	11.71	12.6	4.27	3.16	12.22	5.68		3.18	3.96	0.65	n.q.	1.22
La	560.46	361.63	487.87	600.03	744.81	382.69	21.79	357.84	324.43		18.07	64.92	77.08	21.76	67.31
Lu	7.69	4.15	8.53	4.78	2.84	0.98	3.13	4.59	1.43		3.2	3.29	0.24	0.06	0.51
Nd	505.3	295.09	620.08	517.78	647.57	283.62	21.44	492.53	215		16.22	54.48	51.31	20.9	53.84
Ni	73.82	34.78	26.61	62.49	61.46	25.75	19.76	34.31	48.43		23.04	21.2	26.2	19.29	29.43
Pb	37.66	13.07	18.95	15.23	1.94	2.28	11.28	15.87	3.48		7.63	6.03	2.74	3.35	3.66
Pr	124.85	73.06	147.66	126.99	145.02	71.07	7.69	116.34	59.46		6.58	15.62	20.94	14.37	21.34
Sm	88.47	50.55	128.96	89.49	105.15	41.87	7.18	100.35	37.5		5.85	12.55	9	4.12	10.28
Th	24.1	12.64	3.65	11.91	2.27	1.67	6.9	6.11	2.02		8.55	5.02	4.29	3.76	5.47
Tb	14.06	8.03	19.48	12.93	14.47	5.18	2.42	13.85	5.77		2.37	3.25	0.92	0.17	1.23
Tm	7.37	4.13	8.57	4.98	3.1	0.95	2.77	4.91	1.42		2.84	3.03	0.07	n.q.	0.31
U	1299.91	982.35	637.01	1795.18	1646.27	998.8	28.88	397.09	1576.15		88.14	209.65	231.65	24.15	189.67
V	684.44	699.97	367.21	888.79	950.33	723.87	152.56	165.64	561.03		920.29	618.25	968.15	100.16	1416.31
Y	297.19	220.02	465.71	369.66	468.26	258.08	20.1	361.52	244.57		16.24	52.28	61.26	17.2	51.56
Yb	17.27	10.53	22.45	15.36	19.03	6.56	3.3	14.33	9.6		3.47	4.59	1.73	0.57	3.44
Zn	189.49	1101.6	181.59	483.42	42.69	241.26	91.67	117.25	90.27		100.04	529.86	124.59	236.53	57.24
Zr	205.21	101.41	353.42	84.65	1.53	8.19	297.99	165.25	34.5		388.76	93.26	75.05	18.06	86.18

1, rib fragment; 2, turtle shell plate; 3, mammalian tooth; 4-6, limb bones; 7-9, indeterminate bone fragments; Z6-S, sediment sample of the Z6 bed; 2-sed, 6-sed, 8-sed, and 9-sed, host rock sediment taken from the 2, 6, 8, and 9 fossil samples.