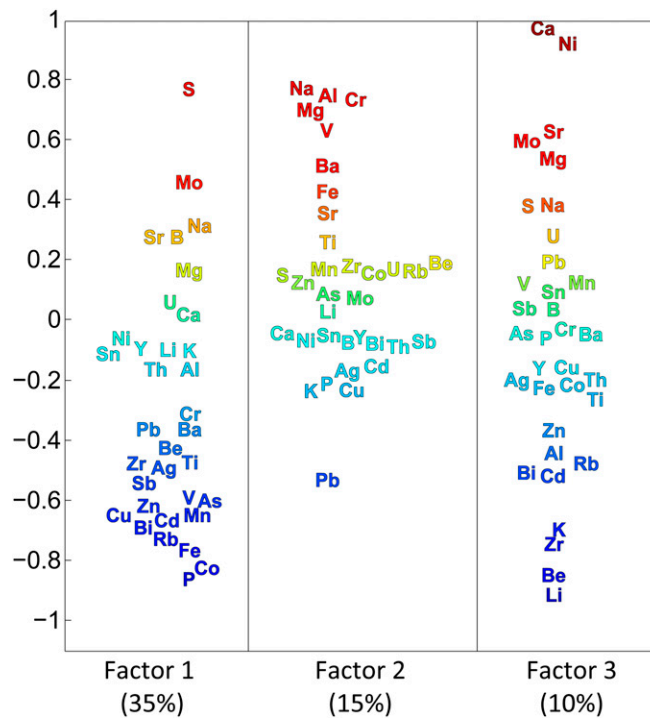


# Supporting Information

Delile et al. 10.1073/pnas.1600893113



**Fig. S1.** Factor analysis of major and trace element concentrations. Component loadings of the varimax-rotated factor (three-factor model) for 34 elements performed on samples ( $n = 61$ ) taken in the stratigraphic section of the ancient harbor of Naples (see refs. 20 and 44 for examples of factor analysis applied to ancient harbor deposits). In this study, instructive factor 2 clearly points out severe pollution of the harbor's water body by Pb, which is not accompanied by other heavy metals, such as Cu, Sn, and Fe. This approach demonstrates that the major source of Pb in the sediments is archaeological artifacts composed of Pb. When the factor analysis is run without Pb, no noticeable changes to the other factors are observed.



**Table S1. Summary of the analytical data of this study for the stratigraphic section of the ancient harbor of Naples, the harbor substratum, and the travertine deposits**

Material	Code	Depth (cm)	Pb (ppm)	EF <sub>Pb</sub>	<sup>208</sup> Pb/ <sup>204</sup> Pb	<sup>207</sup> Pb/ <sup>204</sup> Pb	<sup>206</sup> Pb/ <sup>204</sup> Pb	T <sub>mod</sub> (Ma)	μ	κ
Sediments (leachate)	N1	0	242.4	6.6	38.750	15.668	18.572	174.6	9.751	3.980
Sediments (leachate)	N2	-15	227.4	6.2	38.714	15.666	18.554	184.9	9.749	3.973
Sediments (leachate)	N3	-33	146.3	3.5	38.778	15.672	18.607	154.4	9.755	3.973
Sediments (leachate)	N4	-35	250.6	6.1	38.728	15.669	18.567	179.6	9.754	3.973
Sediments (leachate)	N5	-45	177.7	5.0	38.749	15.672	18.587	169.5	9.758	3.972
Sediments (leachate)	N6	-51	258.8	6.5	38.672	15.662	18.525	200.2	9.744	3.970
Sediments (leachate)	N7	-60	136.7	3.5	38.856	15.674	18.678	106.6	9.752	3.968
Sediments (leachate)	N8	-73	109.5	2.6	38.941	15.682	18.746	68.6	9.762	3.969
Sediments (leachate)	N9	-74	133.9	3.2	38.875	15.679	18.685	107.5	9.761	3.974
Sediments (leachate)	N10	-88	131.4	3.3	38.831	15.677	18.647	132.7	9.761	3.975
Sediments (leachate)	N11L d	-102	146.8	3.8	38.820	15.676	18.641	135.7	9.759	3.974
Sediments (leachate)	N12	-122	125.5	3.2	38.868	15.675	18.688	100.9	9.753	3.968
Sediments (leachate)	N13L d	-136	137.1	3.4	38.875	15.676	18.700	93.4	9.753	3.965
Sediments (leachate)	N14L d	-149	141.9	3.4	38.917	15.683	18.718	90.0	9.767	3.975
Sediments (leachate)	N15	-164	92.7	2.1	38.996	15.688	18.797	40.0	9.769	3.967
Sediments (leachate)	N16	-171	119.3	2.9	38.836	15.676	18.653	127.4	9.759	3.974
Sediments (leachate)	N17	-176	145.4	3.6	38.832	15.675	18.649	128.9	9.758	3.974
Sediments (leachate)	N18	-186	134.9	3.3	38.811	15.675	18.642	134.0	9.758	3.969
Sediments (leachate)	N19	-193	127.9	3.1	38.869	15.680	18.680	113.5	9.764	3.974
Sediments (leachate)	N20	-195	122.6	3.0	38.893	15.678	18.707	90.8	9.757	3.969
Sediments (leachate)	N21	-208	114.7	2.8	38.901	15.682	18.711	93.6	9.765	3.971
Sediments (leachate)	N22	-215	122.5	2.9	38.955	15.687	18.747	74.6	9.772	3.976
Sediments (leachate)	N23	-228	121.4	2.9	38.817	15.676	18.647	131.6	9.759	3.969
Sediments (leachate)	N24	-243	99.0	2.3	38.838	15.676	18.666	117.4	9.756	3.967
Sediments (leachate)	N25	-258	131.6	3.1	38.845	15.676	18.667	116.7	9.757	3.970
Sediments (leachate)	N26L d	-270	140.7	3.4	38.795	15.669	18.629	134.8	9.746	3.967
Sediments (leachate)	N27L d	-277	129.5	3.0	38.795	15.667	18.634	130.3	9.752	3.969
Sediments (leachate)	N28	-285	132.7	3.2	38.813	15.672	18.641	130.4	9.751	3.970
Sediments (leachate)	N29	-293	98.4	2.3	38.839	15.674	18.662	119.1	9.755	3.970
Sediments (leachate)	N30	-301	106.2	2.5	38.824	15.673	18.650	125.5	9.753	3.970
Sediments (leachate)	N31	-309	117.1	2.9	38.763	15.667	18.604	150.7	9.746	3.967
Sediments (leachate)	N32	-317	121.7	3.0	38.733	15.667	18.574	172.0	9.749	3.971
Sediments (leachate)	N33	-325	128.0	3.2	38.728	15.668	18.567	178.1	9.751	3.973
Sediments (leachate)	N34	-333	149.1	3.7	38.730	15.669	18.566	180.5	9.754	3.974
Sediments (leachate)	N35	-341	132.4	3.3	38.746	15.669	18.584	167.9	9.752	3.972
Sediments (leachate)	N36	-349	133.9	3.3	38.747	15.670	18.585	168.4	9.754	3.972
Sediments (leachate)	N37	-357	119.9	2.8	38.775	15.671	18.614	148.7	9.753	3.968
Sediments (leachate)	N38	-365	116.5	2.7	38.781	15.673	18.620	146.7	9.756	3.968
Sediments (leachate)	N39	-373	116.0	2.8	38.742	15.669	18.580	169.9	9.752	3.972
Sediments (leachate)	N40	-381	121.8	3.0	38.755	15.670	18.589	165.3	9.754	3.973
Sediments (leachate)	N41	-389	119.7	2.9	38.772	15.672	18.603	156.9	9.755	3.973
Sediments (leachate)	N42	-397	133.5	3.3	38.757	15.668	18.594	159.0	9.748	3.971
Sediments (leachate)	N43	-405	111.1	2.8	38.791	15.668	18.619	142.2	9.747	3.972
Sediments (leachate)	N44 d	-413	137.6	3.5	38.797	15.669	18.621	141.8	9.749	3.973
Sediments (leachate)	N45L d	-421	145.3	3.5	38.836	15.677	18.636	141.3	9.763	3.984
Sediments (leachate)	N46	-429	138.5	3.6	38.840	15.678	18.639	139.1	9.764	3.983
Sediments (leachate)	N47	-437	132.5	3.4	38.861	15.679	18.651	131.9	9.764	3.986
Sediments (leachate)	N48	-445	127.2	3.2	38.880	15.680	18.662	126.0	9.766	3.988
Sediments (leachate)	N49	-453	140.3	3.6	38.877	15.683	18.661	130.2	9.771	3.989
Sediments (leachate)	N50	-461	138.1	3.8	38.890	15.679	18.673	116.8	9.763	3.987
Sediments (leachate)	N51	-469	143.8	3.6	38.882	15.681	18.662	127.5	9.768	3.990
Sediments (leachate)	N52	-477	156.3	4.1	38.872	15.676	18.653	127.7	9.759	3.990
Sediments (leachate)	N53	-485	152.8	4.1	38.928	15.682	18.707	96.0	9.765	3.985
Sediments (leachate)	N54	-493	143.7	3.9	38.915	15.681	18.689	107.1	9.764	3.989
Sediments (leachate)	N55	-501	137.8	3.8	38.899	15.683	18.674	120.4	9.769	3.991
Sediments (leachate)	N56	-509	119.5	3.1	38.904	15.678	18.686	105.8	9.759	3.985
Sediments (leachate)	N57	-517	115.5	3.0	38.925	15.684	18.697	105.2	9.769	3.989
Sediments (leachate)	N58	-525	154.4	4.2	38.920	15.681	18.700	100.1	9.764	3.985
Sediments (leachate)	N59	-533	128.4	3.4	38.941	15.684	18.715	92.3	9.767	3.986
Sediments (leachate)	N60	-541	144.7	4.4	38.945	15.685	18.713	95.6	9.771	3.990
Sediments (leachate)	N61	-549	146.8	4.0	38.960	15.687	18.728	86.8	9.772	3.988
Sediments (residue)	N2R	-15	—	—	39.158	15.689	19.011	-112.8	9.753	3.920

