Supplementary Materials

Table S1a. XRF analysis of the standard reference material (SRM 2711a), %SR values (n=5), and detection limits.

Metal	Mass (Da)	Measured value ($mg.kg^{-1}$)	Certified value ($mg.kg^{-1}$)	%SR
Cr	52	49.4 ± 4.1	52.3 ± 2.9	20
Mn	55	600.0 ± 69.1	675.0 ± 18	20
Fe	56	27,595.1 ± 478	28,200.0 ± 400	5
Ni	59	20.6 ± 3.4	21.7 ± 0.7	23
Cu	64	140.1 ± 42	140.0 ± 2.0	19
Zn	65	397.8 ± 13.5	414.0 ± 11	11
As	75	101.1 ± 2.1	107.0 ± 5	15
Pb	207	1,366.2 ± 48	1,400.0 ± 10	8

Table S1b. Determination of detection limit (DL) and quantification limit (LOQ) of the standard reference material (SRM 2710a)

Element	Background Intensidad	Standard Intensity	Standar Concentration	the count time (s)	DL (mg/kg)	LOQ (mg/kg)
Cr	1	19	23	10	1.13	3.73
Mn	1	415	2140	10	4.89	16.14
Fe	68	25,503	43300	10	13.27	43.79
Ni	10	12	8	10	2.13	7.03
Cu	270	6,123	3420	10	8.71	28.74
Zn	193	9,187	4180	10	6.00	18.0
As	1	28,395	1540	10	0.05	0.17
Pb	25	22,851	5520	10	1.16	3.83

DL: Detection Limit
LQD: Quantification Limit

$$DL=\frac{3Ci}{Np}\sqrt{\frac{Nb}{t}}$$

DL, Ci, Nb, and t are the detection limit, the concentration of element ith, background count ratio, net count ratio, and the count time, respectively.

Limit of quantification (LOQ):
LOQ = 3,3 DL

Referencia:
Van Grieken, R., Markowicz, A., 2001. Handbook of X-ray Spectrometry. CRC press.

Table S2. Pollution/ecological Indices, classification and interpretation.

Index	IgeO	Interpretation	Reference
Igeo	$I_{geo} < 0$	No pollution	Muller, G. (1969). Index of geoaccumulation in sediments of the Rhine River. GeoJournal, 2, 108–118.
	$0 < I_{geo} < 1$	Slight pollution	
	$1 < I_{geo} < 2$	Partially moderate pollution	
	$2 < I_{geo} < 3$	Moderate pollution	
	$3 < I_{geo} < 4$	Partially serious pollution	
	$4 < I_{geo} < 5$	Serious pollution	
	$I_{geo} > 5$	Severe pollution	
EF	$0 < EF < 1$	No enrichment	Sutherland, R.A. Bed Sediment-Associated Trace Metals in an Urban Stream, Oahu, Hawaii. Cases Solut. Environ. Geol. 2000, 39.
	$EF < 2$	Minimal enrichment	
	$2 < EF < 5$	Moderate enrichment	
	$5 < EF < 20$	Significant enrichment	
	$20 < EF < 40$	Very high enrichment	
	$40 < EF$	Extremely high enrichment	
PI	$PI < 1$	low level of pollution	Wei, B.; Yang, L. A Review of Heavy Metal Contaminations in Urban Soils, Urban Road Dusts and Agricultural Soils from China. Microchem. J. 2010, 94, 99–107.
	$1 \leq PI < 3$	moderate pollution	
	$3 \leq PI$	Strong pollution	
Ecological Risk			
Ei	< 40	Low	Hakanson, L. An Ecological Risk Index for Aquatic Pollution Control.a Sedimentological Approach. Water Res. 1980, 14, 975–1001, doi:10.1016/0043-1354(80)90143-8.
	40 – 80	Moderate	
	80 – 160	Considerate	
	160 – 320	High	
	>320	Very high	
RI	< 150	Low	Hakanson, L. An Ecological Risk Index for Aquatic Pollution Control.a Sedimentological Approach. Water Res. 1980, 14, 975–1001, doi:10.1016/0043-1354(80)90143-8.
	150 – 300	Moderate	
	300 – 600	Considerate	
	–	High	
	>600	Very high	

Table S3. Geographic location and physicochemical properties of La Mata, Dominican Republic.

Sample	Latitude	Longitude	pH 1:2	OM (%)	CEC meq/100 g suelos	CE (µs/cm)	% Sand	% Silt	% Clay
LM01	19.11708	-70.14789	5.66	4.04	12.41	0.16	54.52	30.00	15.48
LM02	19.11220	-70.15800	5.31	6.43	15.41	0.54	25.80	34.72	39.48
LM03	19.10805	-70.15202	6.13	4.49	12.17	0.17	25.80	44.72	29.48
LM04	19.10494	-70.15487	6.18	4.84	14.56	0.22	27.80	36.72	35.48
LM05	19.11873	-70.15013	5.96	3.28	16.80	0.25	25.80	28.72	45.48
LM06	19.11406	-70.15317	6.74	2.80	15.41	0.23	17.80	34.00	48.20
LM07	19.10998	-70.15534	5.55	5.15	12.92	0.18	23.80	50.72	25.48
LM08	19.10722	-70.15940	5.57	4.71	15.18	0.39	14.52	36.00	49.48
LM09	19.12073	-70.15379	5.48	5.46	13.72	0.28	19.80	34.00	46.20
LM10	19.11565	-70.15572	6.01	4.07	15.16	0.33	22.52	30.00	47.48
LM11	19.11220	-70.14898	5.81	4.11	13.47	0.22	19.80	34.00	46.20
LM12	19.12248	-70.15681	5.85	4.39	15.86	0.47	20.52	25.28	54.20
LM13	19.11771	-70.15816	6.00	4.39	15.18	0.27	17.80	36.72	45.48
LM14	19.11359	-70.16118	5.32	5.46	12.94	0.24	18.52	32.00	49.48
LM15	19.10929	-70.16290	5.08	4.39	13.07	0.41	16.52	34.00	49.48
LM16	19.12358	-70.15882	5.74	6.53	18.63	0.54	18.52	36.00	45.48
LM17	19.11891	-70.16116	5.59	4.82	14.00	0.34	23.80	26.72	49.48
LM18	19.11517	-70.16390	5.48	2.24	13.79	0.37	22.52	26.00	51.48
LM19	19.11100	-70.16575	5.73	6.11	15.30	0.38	28.52	30.00	41.48
LM20	19.11296	-70.16895	5.56	4.60	13.56	0.39	20.52	26.00	53.48
LM21	19.12307	-70.16808	5.94	5.73	15.92	0.21	19.80	32.00	48.20
LM22	19.11801	-70.17001	6.31	3.01	15.52	0.22	21.80	28.00	50.20
LM23	19.11801	-70.17001	5.74	4.84	14.24	0.20	20.52	27.28	52.20
LM24	19.11614	-70.17310	5.23	5.88	13.20	0.23	24.52	22.00	53.48
LM25	19.11359	-70.17545	5.72	3.76	12.95	0.16	22.52	26.00	51.48
LM26	19.11423	-70.17661	5.57	4.28	13.65	0.17	20.52	26.00	53.48
LM27	19.12107	-70.17018	5.77	4.80	16.35	0.25	13.08	34.72	52.20
LM28	19.11161	-70.17934	6.12	3.76	13.47	0.14	29.24	31.28	39.48
LM29	19.13248	-70.17702	5.81	3.72	17.60	0.15	21.2	33.3	45.5
LM30	19.12782	-70.17969	6.96	2.59	29.95	0.22	17.2	33.3	49.5
LM31	19.12272	-70.18023	5.88	1.64	14.85	0.09	15.2	32.0	52.8
LM32	19.11811	-70.18340	5.87	3.83	10.63	0.18	29.2	36.0	34.8
		MIN	**5.08**	**1.64**	**10.63**	**0.09**	**13.08**	**22.00**	**15.48**
		MAX	**6.96**	**6.53**	**29.95**	**0.54**	**54.52**	**50.72**	**54.20**
		MEAN	**5.80**	**4.38**	**14.93**	**0.27**	**22.51**	**32.13**	**45.37**
		SDT	**0.40**	**1.17**	**3.20**	**0.12**	**7.19**	**5.73**	**8.92**

*STD standard deviation

Table S4. Total heavy metal concentrations in surface soils of La Mata, Dominican Republic.

Sample	Latitude	Longitude	Fe	Mn	Cr	Cu	Ni	Zn	Pb	As
			mg/kg							
LM01	19.11708	-70.14789	53400.5	3396.1	644.3	50.5	179.3	382.1	40.2	5.6
LM02	19.11220	-70.14898	72065.5	4682.8	344.5	13.9	5.1	222.6	43.9	4.8
LM03	19.10805	-70.15202	65849.4	3463.6	673.1	37.8	57.5	518.0	32.3	5.0
LM04	19.10494	-70.15487	95053.6	7340.0	673.5	6.4	73.5	389.4	34.5	5.3
LM05	19.11873	-70.15013	76888.7	4781.7	427.5	33.7	5.7	29.8	40.5	4.8
LM06	19.11406	-70.15317	65484.4	169.9	427.8	45.7	12.0	79.6	47.2	4.6
LM07	19.10998	-70.15534	66689.4	3584.2	700.4	36.2	56.4	577.6	29.5	5.5
LM08	19.10722	-70.15940	69662.5	664.4	410.7	38.1	15.1	264.5	40.0	5.0
LM09	19.12073	-70.15379	70803.4	262.2	366.8	45.3	3.7	50.5	46.5	4.8
LM10	19.11565	-70.15572	61297.6	399.1	311.6	33.0	10.3	119.4	37.7	4.7
LM11	19.11220	-70.15800	61577.0	345.0	294.5	56.8	7.4	150.9	40.1	5.1
LM12	19.12248	-70.15681	83258.5	557.2	321.8	26.9	9.0	129.9	40.9	4.8
LM13	19.11771	-70.15816	81229.6	443.9	332.1	50.3	3.2	77.7	33.2	4.7
LM14	19.11359	-70.16118	68414.3	226.6	292.6	31.7	12.4	44.1	33.3	5.1
LM15	19.10929	-70.16290	64607.9	597.3	323.1	56.3	12.8	22.6	34.2	4.7
LM16	19.12358	-70.15882	71649.4	619.4	335.6	72.7	8.9	316.9	35.3	4.6
LM17	19.11891	-70.16116	85224.4	1530.5	357.6	37.1	0.0	206.5	42.4	5.7
LM18	19.11517	-70.16390	98024.0	2111.4	400.6	44.5	9.2	75.6	46.9	5.0
LM19	19.11100	-70.16575	72448.2	2552.7	285.0	52.3	19.3	210.1	23.9	5.3
LM20	19.11296	-70.16895	98449.1	628.2	329.0	47.8	11.8	274.2	42.8	5.1
LM21	19.12749	-70.16627	69122.7	544.9	421.0	2.0	0.0	45.8	29.0	4.9
LM22	19.12307	-70.16808	82209.5	1435.4	386.2	18.7	0.0	31.7	58.5	2.9
LM23	19.11971	-70.17089	84730.6	1592.7	379.5	11.3	0.0	28.6	71.6	2.6
LM24	19.11614	-70.17310	100708.2	1913.2	379.5	7.5	0.0	29.3	67.0	3.6
LM25	19.12869	-70.17086	93753.2	2033.0	358.0	31.0	0.0	510.8	67.6	5.5
LM26	19.12558	-70.17295	68939.4	470.1	354.6	2.0	0.0	97.7	52.6	5.1
LM27	19.12152	-70.17551	68461.5	297.8	553.1	6.7	0.0	201.3	50.6	4.9
LM28	19.11703	-70.17804	62112.5	452.3	709.3	16.2	0.0	287.2	48.9	4.8
LM29	19.13248	-70.17702	63841.87	484.50	531.4	53.1	0.0	238.0	39.8	5.7
LM30	19.12782	-70.17969	66343.43	2297.50	501.6	34.7	118.2	537.4	43.3	5.1
LM31	19.12272	-70.18023	68698.93	1571.80	314.1	53.8	0.0	64.7	46.3	4.6
LM32	19.11811	-70.18340	48520.63	250.20	488.7	29.9	0.0	188.2	26.9	4.8
		MIN	**48520.63**	**169.90**	**285.00**	**2.00**	**0.00**	**22.63**	**23.90**	**2.56**
		MAX	**100708.17**	**7340.00**	**709.30**	**72.65**	**179.27**	**577.57**	**71.60**	**5.67**
		MEAN	**73735.00**	**1615.60**	**425.90**	**33.86**	**19.71**	**200.09**	**42.73**	**4.83**
		STD	**13109.12**	**1690.53**	**129.78**	**18.46**	**39.05**	**166.71**	**11.46**	**0.69**

*STD standard deviation

Table S5. Descriptive statistics of pH, % Organic Matter (OM), and the heavy metal concentrations of local background samples in soils La Mata, Dominican Republic (n=4).

Sample	Latitude	Longitude	pH	MO	Fe	Mn	Cr	Cu	Ni	Zn	Pb	As
				(%)	(mg/kg)							
F1	19.11038	-70.14922	6.17	2.52	66504	407	539	8	7	195	51	5
F2	19.12511	-70.15851	6.37	1.22	66295	1451	449	47	10	280	43	5
F3	19.11257	-70.17149	6.10	2.41	32347	140	258	11	9	70	17	2
F4	19.12484	-70.18334	6.34	1.68	62517	3549	422	42	12	315	42	4
		MIN	**6.10**	**1.22**	**32347**	**140**	**258**	**8.0**	**7.0**	**70.0**	**17.0**	**2.0**
		MAX	**6.37**	**2.52**	**66504**	**3549**	**539**	**47.0**	**12.0**	**315.0**	**51.0**	**5.0**
		MEAN	**6.25**	**1.96**	**56916**	**1387**	**417**	**27.0**	**9.5**	**215.0**	**38.3**	**4.0**
		STD	**0.13**	**0.62**	**16481**	**1549**	**117**	**20.3**	**2.1**	**109.0**	**14.7**	**1.4**

*STD standard deviation

Table S6. Geo-accumulation Index (Igeo) in surface soils of La Mata, Dominican Republic, using LB as background.

Sample	Mn	Cr	Cu	Ni	Zn	Pb	As
LM01	0.71	0.04	1.42	3.65	0.24	-0.51	-0.09
LM02	1.17	-0.86	-1.55	-1.50	-0.53	-0.39	-0.31
LM03	0.74	0.11	-0.10	2.01	0.68	-0.83	-0.26
LM04	1.82	0.11	-2.66	2.37	0.27	-0.73	-0.19
LM05	1.20	-0.55	-0.27	-1.32	-3.44	-0.50	-0.32
LM06	-3.61	-0.55	0.17	-0.25	-2.02	-0.28	-0.39
LM07	0.78	0.16	-0.16	1.98	0.84	-0.96	-0.13
LM08	-1.65	-0.61	-0.09	0.09	-0.29	-0.52	-0.25
LM09	-2.99	-0.77	0.16	-1.96	-2.67	-0.30	-0.31
LM10	-2.38	-1.01	-0.30	-0.47	-1.43	-0.61	-0.36
LM11	-2.59	-1.09	0.49	-0.96	-1.10	-0.52	-0.23
LM12	-1.90	-0.96	-0.59	-0.67	-1.31	-0.49	-0.32
LM13	-2.23	-0.91	0.31	-2.15	-2.05	-0.79	-0.35
LM14	-3.20	-1.10	-0.35	-0.20	-2.87	-0.78	-0.23
LM15	-1.80	-0.95	0.47	-0.15	-3.83	-0.75	-0.35
LM16	-1.75	-0.90	0.84	-0.68	-0.03	-0.70	-0.37
LM17	-0.44	-0.81	-0.13	–	-0.64	-0.44	-0.08
LM18	0.02	-0.64	0.14	-0.63	-2.09	-0.29	-0.27
LM19	0.30	-1.13	0.37	0.44	-0.62	-1.26	-0.19
LM20	-1.73	-0.93	0.24	-0.27	-0.23	-0.42	-0.23
LM21	-1.93	-0.57	-4.34	–	-2.82	-0.99	-0.28
LM22	-0.54	-0.70	-1.11	–	-3.35	0.03	-1.07
LM23	-0.39	-0.72	-1.85	–	-3.50	0.32	-1.23
LM24	-0.12	-0.72	-2.43	–	-3.46	0.22	-0.74
LM25	-0.03	-0.81	-0.39	–	0.66	0.24	-0.12
LM26	-2.15	-0.82	-4.34	–	-1.72	-0.13	-0.24
LM27	-2.80	-0.18	-2.60	–	-0.68	-0.18	-0.29
LM28	-2.20	0.18	-1.32	–	-0.17	-0.23	-0.32
LM29	-2.10	-0.24	0.39	–	-0.44	-0.53	-0.08
LM30	0.14	-0.32	-0.22	3.05	0.74	-0.40	-0.24
LM31	-0.40	-0.99	0.41	–	-2.32	-0.31	-0.39
LM32	-3.06	-0.36	-0.44	–	-0.78	-1.09	-0.31
MIN	**-3.61**	**-1.13**	**-4.34**	**-2.15**	**-3.83**	**-1.26**	**-1.23**
MAX	**1.82**	**0.18**	**1.42**	**3.65**	**0.84**	**0.32**	**-0.08**
MEAN	**-1.10**	**-0.61**	**-0.62**	**0.12**	**-1.28**	**-0.47**	**-0.33**
STD	**1.50**	**0.40**	**1.38**	**1.64**	**1.43**	**0.37**	**0.25**

*STD standard deviation

Table S7. Geo-accumulation Index (Igeo) in surface soils of La Mata, Dominican Republic, using World average shale (WAS) as background.

Sample	Mn	Cr	Cu	Ni	Zn	Pb	As
LM01	1.41	2.25	-0.42	0.81	1.42	0.42	-1.79
LM02	1.88	1.35	-2.28	-4.34	0.64	0.55	-2.01
LM03	1.44	2.32	-0.84	-0.83	1.86	0.11	-1.96
LM04	2.53	2.32	-3.40	-0.47	1.45	0.20	-1.89
LM05	1.91	1.66	-1.00	-4.16	-2.26	0.43	-2.02
LM06	-2.91	1.66	-0.56	-3.09	-0.84	0.65	-2.09
LM07	1.49	2.38	-0.90	-0.85	2.02	-0.02	-1.83
LM08	-0.94	1.61	-0.83	-2.75	0.89	0.42	-1.95
LM09	-2.28	1.44	-0.58	-4.80	-1.50	0.63	-2.01
LM10	-1.68	1.21	-1.03	-3.31	-0.26	0.33	-2.06
LM11	-1.89	1.13	-0.25	-3.79	0.08	0.42	-1.93
LM12	-1.19	1.25	-1.33	-3.51	-0.13	0.45	-2.02
LM13	-1.52	1.30	-0.42	-4.99	-0.87	0.15	-2.05
LM14	-2.49	1.12	-1.09	-3.04	-1.69	0.15	-1.93
LM15	-1.09	1.26	-0.26	-2.99	-2.65	0.19	-2.05
LM16	-1.04	1.31	0.11	-3.52	1.15	0.23	-2.07
LM17	0.26	1.41	-0.86	–	0.54	0.50	-1.78
LM18	0.73	1.57	-0.60	-3.47	-0.92	0.65	-1.97
LM19	1.00	1.08	-0.37	-2.40	0.56	-0.33	-1.89
LM20	-1.02	1.29	-0.50	-3.11	0.94	0.51	-1.93
LM21	-1.23	1.64	-5.08	–	-1.64	-0.05	-1.98
LM22	0.17	1.52	-1.85	–	-2.17	0.96	-2.77
LM23	0.32	1.49	-2.58	–	-2.32	1.25	-2.93
LM24	0.59	1.49	-3.16	–	-2.28	1.16	-2.44
LM25	0.67	1.41	-1.12	–	1.84	1.17	-1.82
LM26	-1.44	1.39	-5.08	–	-0.54	0.81	-1.94
LM27	-2.10	2.03	-3.33	–	0.50	0.75	-1.99
LM28	-1.50	2.39	-2.06	–	1.01	0.71	-2.02
LM29	-1.40	1.98	-0.35	–	0.74	0.41	-1.78
LM30	0.85	1.89	-0.96	0.21	1.92	0.53	-1.94
LM31	0.30	1.22	-0.33	–	-1.14	0.63	-2.09
LM32	-2.35	1.86	-1.18	–	0.40	-0.16	-2.01
MIN	**-2.91**	**1.08**	**-5.08**	**-4.99**	**-2.65**	**-0.33**	**-2.93**
MAX	**2.53**	**2.39**	**0.11**	**0.81**	**2.02**	**1.25**	**-1.78**
MEAN	**-0.39**	**1.60**	**-1.39**	**-2.72**	**-0.10**	**0.46**	**-2.03**
STD	**1.50**	**0.40**	**1.34**	**1.64**	**1.43**	**0.37**	**0.25**

*STD standard deviation

Table S8. Enrichment Factor (EF) in surface soils of La Mata, Dominican Republic, using LB as background.

Sample	Mn	Cr	Cu	Ni	Zn	Pb	As
LM01	2.61	1.65	1.99	20.11	1.89	1.12	1.50
LM02	2.67	0.65	0.41	0.42	0.82	0.91	0.95
LM03	2.16	1.40	1.21	5.23	2.08	0.73	1.08
LM04	3.17	0.97	0.14	4.63	1.08	0.54	0.79
LM05	2.55	0.76	0.92	0.44	0.10	0.78	0.89
LM06	0.11	0.89	1.47	1.09	0.32	1.07	0.99
LM07	2.21	1.43	1.14	5.07	2.29	0.66	1.17
LM08	0.39	0.80	1.15	1.30	1.01	0.85	1.03
LM09	0.15	0.71	1.35	0.31	0.19	0.98	0.97
LM10	0.27	0.69	1.13	1.00	0.52	0.91	1.08
LM11	0.23	0.65	1.94	0.72	0.65	0.97	1.19
LM12	0.27	0.53	0.68	0.64	0.41	0.73	0.82
LM13	0.22	0.56	1.31	0.24	0.25	0.61	0.82
LM14	0.14	0.58	0.98	1.09	0.17	0.72	1.06
LM15	0.38	0.68	1.84	1.19	0.09	0.79	1.04
LM16	0.35	0.64	2.14	0.74	1.17	0.73	0.92
LM17	0.74	0.57	0.92	0.00	0.64	0.74	0.95
LM18	0.88	0.56	0.96	0.56	0.20	0.71	0.72
LM19	1.45	0.54	1.52	1.60	0.77	0.49	1.03
LM20	0.26	0.46	1.02	0.72	0.74	0.65	0.74
LM21	0.32	0.83	0.06	0.00	0.18	0.62	1.02
LM22	0.72	0.64	0.48	0.00	0.10	1.06	0.49
LM23	0.77	0.61	0.28	0.00	0.09	1.26	0.43
LM24	0.78	0.51	0.16	0.00	0.08	0.99	0.51
LM25	0.89	0.52	0.70	0.00	1.44	1.07	0.84
LM26	0.28	0.70	0.06	0.00	0.38	1.13	1.05
LM27	0.18	1.10	0.21	0.00	0.78	1.10	1.02
LM28	0.30	1.56	0.55	0.00	1.22	1.17	1.10
LM29	0.31	1.14	1.75	0.00	0.99	0.93	1.26
LM30	1.42	1.03	1.10	10.67	2.14	0.97	1.09
LM31	0.94	0.62	1.65	0.00	0.25	1.00	0.95
LM32	0.21	1.37	1.30	0.00	1.03	0.82	1.42
MIN	**0.11**	**0.46**	**0.06**	**0.00**	**0.08**	**0.49**	**0.43**
MAX	**3.17**	**1.65**	**2.14**	**20.11**	**2.29**	**1.26**	**1.50**
MEAN	**0.89**	**0.82**	**1.02**	**1.81**	**0.75**	**0.87**	**0.97**
STD	**0.9**	**0.3**	**0.6**	**4.0**	**0.6**	**0.2**	**0.2**

*STD standard deviation

Table S9. Enrichment Factor (EF) in surface soils of La Mata, Dominican Republic, using World average shale (WAS) as background.

Sample	Mn	Cr	Cu	Ni	Zn	Pb	As
LM01	3.53	6.33	0.99	2.33	3.55	1.78	0.38
LM02	3.61	2.51	0.20	0.05	1.53	1.44	0.24
LM03	2.92	5.36	0.60	0.61	3.91	1.16	0.28
LM04	4.29	3.72	0.07	0.54	2.04	0.86	0.20
LM05	3.45	2.92	0.46	0.05	0.19	1.24	0.23
LM06	0.14	3.43	0.73	0.13	0.60	1.70	0.25
LM07	2.98	5.51	0.57	0.59	4.30	1.04	0.30
LM08	0.53	3.09	0.57	0.15	1.89	1.36	0.26
LM09	0.21	2.72	0.67	0.04	0.35	1.55	0.25
LM10	0.36	2.67	0.56	0.12	0.97	1.45	0.28
LM11	0.31	2.51	0.97	0.08	1.22	1.54	0.30
LM12	0.37	2.03	0.34	0.07	0.78	1.16	0.21
LM13	0.30	2.14	0.65	0.03	0.48	0.97	0.21
LM14	0.18	2.24	0.49	0.13	0.32	1.15	0.27
LM15	0.51	2.62	0.91	0.14	0.17	1.25	0.26
LM16	0.48	2.46	1.06	0.09	2.20	1.16	0.23
LM17	1.00	2.20	0.46	0.00	1.20	1.18	0.24
LM18	1.20	2.14	0.48	0.07	0.38	1.13	0.18
LM19	1.96	2.06	0.76	0.18	1.44	0.78	0.26
LM20	0.35	1.75	0.51	0.08	1.38	1.03	0.19
LM21	0.44	3.19	0.03	0.00	0.33	0.99	0.26
LM22	0.97	2.46	0.24	0.00	0.19	1.68	0.13
LM23	1.04	2.35	0.14	0.00	0.17	1.99	0.11
LM24	1.05	1.98	0.08	0.00	0.14	1.57	0.13
LM25	1.20	2.00	0.35	0.00	2.71	1.70	0.21
LM26	0.38	2.70	0.03	0.00	0.70	1.80	0.27
LM27	0.24	4.24	0.10	0.00	1.46	1.74	0.26
LM28	0.40	5.99	0.27	0.00	2.30	1.86	0.28
LM29	0.42	4.37	0.87	0.00	1.85	1.47	0.32
LM30	1.92	3.96	0.55	1.24	4.02	1.54	0.28
LM31	1.27	2.40	0.82	0.00	0.47	1.59	0.24
LM32	0.29	5.28	0.65	0.00	1.93	1.31	0.36
MIN	**0.14**	**1.75**	**0.03**	**0.00**	**0.14**	**0.78**	**0.11**
MAX	**4.29**	**6.33**	**1.06**	**2.33**	**4.30**	**1.99**	**0.38**
MEAN	**1.20**	**3.17**	**0.51**	**0.21**	**1.41**	**1.38**	**0.25**
STD	**1.2**	**1.3**	**0.3**	**0.5**	**1.2**	**0.3**	**0.1**

*STD standard deviation

Table S10. Single Pollution Index (PI) in surface soils of La Mata, Dominican Republic, using LB as background.

Sample	Mn	Cr	Cu	Ni	Zn	Pb	As
LM01	0.05	0.01	0.00	0.00	0.01	0.00	0.00
LM02	2.90	0.81	0.41	0.26	1.11	1.03	1.00
LM03	2.14	1.58	1.12	2.92	2.59	0.76	1.04
LM04	4.54	1.58	0.19	3.73	1.95	0.81	1.09
LM05	2.96	1.00	0.99	0.29	0.15	0.95	0.99
LM06	0.11	1.00	1.35	0.61	0.40	1.10	0.95
LM07	2.22	1.64	1.07	2.86	2.89	0.69	1.14
LM08	0.41	0.96	1.12	0.77	1.32	0.94	1.04
LM09	0.16	0.86	1.34	0.19	0.25	1.09	1.00
LM10	0.25	0.73	0.97	0.52	0.60	0.88	0.97
LM11	0.21	0.69	1.68	0.37	0.75	0.94	1.06
LM12	0.34	0.76	0.79	0.45	0.65	0.96	0.99
LM13	0.27	0.78	1.49	0.16	0.39	0.78	0.97
LM14	0.14	0.69	0.94	0.63	0.22	0.78	1.06
LM15	0.37	0.76	1.66	0.65	0.11	0.80	0.97
LM16	0.38	0.79	2.15	0.45	1.58	0.83	0.96
LM17	0.95	0.84	1.10	0.00	1.03	0.99	1.17
LM18	1.31	0.94	1.31	0.47	0.38	1.10	1.03
LM19	1.58	0.67	1.54	0.98	1.05	0.56	1.09
LM20	0.39	0.77	1.41	0.60	1.37	1.00	1.06
LM21	0.34	0.99	0.06	0.00	0.23	0.68	1.02
Lm22	0.89	0.91	0.55	0.00	0.16	1.37	0.59
LM23	0.99	0.89	0.33	0.00	0.14	1.68	0.53
LM24	1.18	0.89	0.22	0.00	0.15	1.57	0.75
LM25	1.26	0.84	0.92	0.00	2.55	1.58	1.15
LM26	0.29	0.83	0.06	0.00	0.49	1.23	1.05
LM27	0.18	1.30	0.20	0.00	1.01	1.18	1.01
LM28	0.28	1.67	0.48	0.00	1.44	1.15	0.99
LM29	0.30	1.25	1.57	0.00	1.19	0.93	1.17
LM30	1.42	1.18	1.02	6.00	2.69	1.01	1.05
LM31	0.97	0.74	1.59	0.00	0.32	1.08	0.95
LM32	0.15	1.15	0.88	0.00	0.94	0.63	1.00
MIN	**0.05**	**0.01**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**
MAX	**4.54**	**1.67**	**2.15**	**6.00**	**2.89**	**1.68**	**1.17**
MEAN	**0.94**	**0.95**	**0.95**	**0.72**	**0.94**	**0.97**	**0.96**
STD	**1.04**	**0.34**	**0.57**	**1.33**	**0.83**	**0.32**	**0.22**

*STD standard deviation

Table S11. Single Pollution Index (PI) in surface soils of La Mata, Dominican Republic, using WAS as background.

Sample	Mn	Cr	Cu	Ni	Zn	Pb	As
LM01	4.00	7.16	1.12	2.64	4.02	2.01	0.43
LM02	5.51	3.83	0.31	0.07	2.34	2.20	0.37
LM03	4.07	7.48	0.84	0.85	5.45	1.62	0.38
LM04	8.64	7.48	0.14	1.08	4.10	1.73	0.41
LM05	5.63	4.75	0.75	0.08	0.31	2.03	0.37
LM06	0.20	4.75	1.01	0.18	0.84	2.36	0.35
LM07	4.22	7.78	0.80	0.83	6.08	1.48	0.42
LM08	0.78	4.56	0.85	0.22	2.78	2.00	0.39
LM09	0.31	4.08	1.01	0.05	0.53	2.32	0.37
LM10	0.47	3.46	0.73	0.15	1.26	1.88	0.36
LM11	0.41	3.27	1.26	0.11	1.59	2.01	0.39
LM12	0.66	3.58	0.60	0.13	1.37	2.05	0.37
LM13	0.52	3.69	1.12	0.05	0.82	1.66	0.36
LM14	0.27	3.25	0.70	0.18	0.46	1.67	0.39
LM15	0.70	3.59	1.25	0.19	0.24	1.71	0.36
LM16	0.73	3.73	1.61	0.13	3.34	1.77	0.36
LM17	1.80	3.97	0.83	0.00	2.17	2.12	0.44
LM18	2.48	4.45	0.99	0.14	0.80	2.35	0.38
LM19	3.00	3.17	1.16	0.28	2.21	1.20	0.41
LM20	0.74	3.66	1.06	0.17	2.89	2.14	0.39
LM21	0.64	4.68	0.04	0.00	0.48	1.45	0.38
Lm22	1.69	4.29	0.42	0.00	0.33	2.93	0.22
LM23	1.87	4.22	0.25	0.00	0.30	3.58	0.20
LM24	2.25	4.22	0.17	0.00	0.31	3.35	0.28
LM25	2.39	3.98	0.69	0.00	5.38	3.38	0.43
LM26	0.55	3.94	0.04	0.00	1.03	2.63	0.39
LM27	0.35	6.15	0.15	0.00	2.12	2.53	0.38
LM28	0.53	7.88	0.36	0.00	3.02	2.45	0.37
LM29	0.57	5.90	1.18	0.00	2.51	1.99	0.44
LM30	2.70	5.57	0.77	1.74	5.66	2.17	0.39
LM31	1.85	3.49	1.20	0.00	0.68	2.32	0.35
LM32	0.29	5.43	0.66	0.00	1.98	1.34	0.37
MIN	**0.20**	**3.17**	**0.04**	**0.00**	**0.24**	**1.20**	**0.20**
MAX	**8.64**	**7.88**	**1.61**	**2.64**	**6.08**	**3.58**	**0.44**
MEAN	**1.96**	**4.75**	**0.74**	**0.31**	**2.16**	**2.16**	**0.37**
STD	**2.03**	**1.47**	**0.42**	**0.59**	**1.79**	**0.57**	**0.05**

*STD standard deviation

Table S12. The potential Ecological risk factor (E_r^i) in surface soils of La Mata, Dominican Republic, using LB as background.

Sample	Mn	Cr	Cu	Ni	Zn	Pb	As
LM01	4.90	3.09	1.87	18.87	8.89	5.26	14.08
LM02	6.75	1.65	0.51	0.53	5.18	5.74	12.08
LM03	5.00	3.23	1.40	6.06	12.05	4.22	12.50
LM04	10.59	3.23	0.24	7.74	9.06	4.51	13.17
LM05	6.90	2.05	1.25	0.60	0.69	5.29	12.00
LM06	0.25	2.05	1.69	1.26	1.85	6.17	11.42
LM07	5.17	3.36	1.34	5.94	13.43	3.86	13.75
LM08	0.96	1.97	1.41	1.59	6.15	5.23	12.58
LM09	0.38	1.76	1.68	0.38	1.18	6.07	12.08
LM10	0.58	1.49	1.22	1.08	2.78	4.92	11.67
LM11	0.50	1.41	2.10	0.77	3.51	5.25	12.83
LM12	0.80	1.54	1.00	0.94	3.02	5.35	12.00
LM13	0.64	1.59	1.86	0.34	1.81	4.34	11.75
LM14	0.33	1.40	1.17	1.31	1.03	4.35	12.75
LM15	0.86	1.55	2.08	1.35	0.53	4.47	11.75
LM16	0.89	1.61	2.69	0.94	7.37	4.61	11.58
LM17	2.21	1.71	1.38	0.00	4.80	5.55	14.17
LM18	3.05	1.92	1.65	0.97	1.76	6.14	12.42
LM19	3.68	1.37	1.94	2.03	4.89	3.12	13.17
LM20	0.91	1.58	1.77	1.25	6.38	5.59	12.75
LM21	0.79	2.02	0.07	0.00	1.06	3.78	12.33
LM22	2.07	1.85	0.69	0.00	0.74	7.65	7.13
LM23	2.30	1.82	0.42	0.00	0.66	9.36	6.41
LM24	2.76	1.82	0.28	0.00	0.68	8.76	9.00
LM25	2.93	1.72	1.15	0.00	11.88	8.84	13.83
LM26	0.68	1.70	0.07	0.00	2.27	6.87	12.67
LM27	0.43	2.65	0.25	0.00	4.68	6.61	12.25
LM28	0.65	3.40	0.60	0.00	6.68	6.40	12.00
LM29	0.70	2.55	1.97	0.00	5.53	5.20	14.17
LM30	3.31	2.41	1.28	12.44	12.50	5.66	12.67
LM31	2.27	1.51	1.99	0.00	1.50	6.05	11.42
LM32	0.36	2.34	1.11	0.00	4.38	3.51	12.08
MIN	**0.25**	**1.37**	**0.07**	**0.00**	**0.53**	**3.12**	**6.41**
MAX	**10.59**	**3.40**	**2.69**	**18.87**	**13.43**	**9.36**	**14.17**
MEAN	**2.33**	**2.04**	**1.25**	**2.07**	**4.65**	**5.59**	**12.08**
STD	**2.44**	**0.62**	**0.68**	**4.11**	**3.88**	**1.50**	**1.72**

*STD standard deviation

THE POTENTIAL ECOLOGICAL RISK INDEX (RI)

RI= $\Sigma E_r^{i}{}_{\text{mean}}$= [2.33 (Mn) + 2.04 (Cr) + 1.25 (Cu) + 2.07 (Ni) + 4.65 (Zn) + 5.59 (Pb) + 12.08 (As)] = 30.02

Table S13. The potential Ecological risk factor (E_r^i) in surface soils of La Mata, Dominican Republic, using WAS as background.

Sample	Mn	Cr	Cu	Ni	Zn	Pb	As
LM01	4.00	7.16	1.12	2.64	4.02	2.01	0.43
LM02	5.51	3.83	0.31	0.07	2.34	2.20	0.37
LM03	4.07	7.48	0.84	0.85	5.45	1.62	0.38
LM04	8.64	7.48	0.14	1.08	4.10	1.73	0.41
LM05	5.63	4.75	0.75	0.08	0.31	2.03	0.37
LM06	0.20	4.75	1.01	0.18	0.84	2.36	0.35
LM07	4.22	7.78	0.80	0.83	6.08	1.48	0.42
LM08	0.78	4.56	0.85	0.22	2.78	2.00	0.39
LM09	0.31	4.08	1.01	0.05	0.53	2.32	0.37
LM10	0.47	3.46	0.73	0.15	1.26	1.88	0.36
LM11	0.41	3.27	1.26	0.11	1.59	2.01	0.39
LM12	0.66	3.58	0.60	0.13	1.37	2.05	0.37
LM13	0.52	3.69	1.12	0.05	0.82	1.66	0.36
LM14	0.27	3.25	0.70	0.18	0.46	1.67	0.39
LM15	0.70	3.59	1.25	0.19	0.24	1.71	0.36
LM16	0.73	3.73	1.61	0.13	3.34	1.77	0.36
LM17	1.80	3.97	0.83	0.00	2.17	2.12	0.44
LM18	2.48	4.45	0.99	0.14	0.80	2.35	0.38
LM19	3.00	3.17	1.16	0.28	2.21	1.20	0.41
LM20	0.74	3.66	1.06	0.17	2.89	2.14	0.39
LM21	0.64	4.68	0.04	0.00	0.48	1.45	0.38
LM22	1.69	4.29	0.42	0.00	0.33	2.93	0.22
LM23	1.87	4.22	0.25	0.00	0.30	3.58	0.20
LM24	2.25	4.22	0.17	0.00	0.31	3.35	0.28
LM25	2.39	3.98	0.69	0.00	5.38	3.38	0.43
LM26	0.55	3.94	0.04	0.00	1.03	2.63	0.39
LM27	0.35	6.15	0.15	0.00	2.12	2.53	0.38
LM28	0.53	7.88	0.36	0.00	3.02	2.45	0.37
LM29	0.57	5.90	1.18	0.00	2.51	1.99	0.44
LM30	2.70	5.57	0.77	1.74	5.66	2.17	0.39
LM31	1.85	3.49	1.20	0.00	0.68	2.32	0.35
LM32	0.29	5.43	0.66	0.00	1.98	1.34	0.37
MIN	**0.20**	**3.17**	**0.04**	**0.00**	**0.24**	**1.20**	**0.20**
MAX	**8.64**	**7.88**	**1.61**	**2.64**	**6.08**	**3.58**	**0.44**
MEAN	**1.90**	**4.73**	**0.75**	**0.29**	**2.11**	**2.14**	**0.37**
STD	**1.99**	**1.44**	**0.41**	**0.57**	**1.75**	**0.57**	**0.05**

*STD standard deviation

THE POTENTIAL ECOLOGICAL RISK INDEX (RI)

RI= $\Sigma E_{r\ \text{mean}}^{i}$= [1.90 (Mn) + 4.73 (Cr) + 0.75 (Cu) + 0.29 (Ni) + 2.11 (Zn) + 2.14 (Pb) + 0.37 (As)] = 12.29