Supplementary Materials

Table S1. Average mass of PM10 per 1 m^2 and relative concentration of PM10 fraction in all RDS.

	Amount of PM10 in RDS per 1m^2	**Relative % of PM10 for Total RDS**
Unit	g/m2	%
Min.	0.16	0.02
Max.	40.72	5.02
Average	8.56	1.18
Standard deviation	7.72	0.83

Table S2. The results of the same analytical procedure using two types of certified reference materials, MESS-4 and PACS-3 (National Research Council, Ottawa, ON, Canada)

Elements	**Unit**	**Average Value MESS 3 (n = 6)**	**S.D.**	**Recovery (%)**	**Average Value PACS 2 (n = 6)**	**S.D.**	**Recovery (%)**
24 Mg	%	1.79	0.13	111.86	1.48	0.10	100.71
27 Al	%	8.77	0.51	102.12	6.71	0.42	101.31
47 Ti	%	0.43	0.01	97.23	0.44	0.01	99.27
57 Fe	%	4.34	0.18	100.10	4.31	0.29	105.26
31 P	%	0.12	0.00	100.97	0.10	0.00	101.76
7 Li	ug/g	67.87	2.60	92.21	30.20	1.34	93.79
9 Be	ug/g	2.44	0.10	106.13	1.11	0.05	111.26
55 Mn	ug/g	327.93	16.10	101.21	447.91	28.70	101.80
51 V	ug/g	241.46	3.72	99.37	135.64	1.88	101.99
52 Cr	ug/g	104.87	2.13	99.87	93.50	2.78	103.09
55 Mn	ug/g	322.95	4.98	99.68	441.06	3.17	100.24
59 Co	ug/g	13.83	0.31	96.06	11.72	0.09	101.90
60 Ni	ug/g	46.09	1.38	98.27	41.02	2.01	103.84
65 Cu	ug/g	35.47	3.79	104.64	304.18	6.65	98.12
66 Zn	ug/g	156.05	1.67	98.14	375.98	9.59	103.29
75 As	ug/g	21.42	0.39	101.04	28.53	0.99	108.91
107 Ag	ug/g	0.36	0.01	200.74	1.15	0.03	94.64
111 Cd	ug/g	0.37	0.01	152.39	2.29	0.06	108.31
114 Cd	ug/g	0.28	0.01	116.56	2.66	0.06	126.29
118 Sn	ug/g	2.11	0.11	84.35	19.16	0.64	96.74
121 Sb	ug/g	1.11	0.03	108.87	11.76	0.51	104.05
208 Pb	ug/g	22.10	0.46	104.26	180.80	15.90	98.80
			Min	92.208805		Min	93.7857
			Max	116.56217		Max	105.2571

Table S3. Specific chemical parameters used in the health risk assessment.

Factor		**Value**
IngR	mg/day	50
InhR	m^3/day	20
ABS, DAFabsorption	(Unitless)	10^{-3} (1, As-0.03, Cd-10^{-3})
EF	days/365days	240
ED	years	70
CF	Kg/mg	10-6
BW -EPA	kg	70
PEF	m^3/kg	1.36 * 109 Joes and Sr 2019, 1.316 * 109 Adamiec and Jr 2019
SA	cm^2	5700
SL(AF,SAF)adherence	mg/cm^2*h	0.2
RfD	mg/kg-day	Chemical specific Value

Table S4. Coefficients of Kendall's tau_b correlation analysis among the I_{geo} of metals in PM10 of RDS.

	Mg	Al	Ti	Fe	P	Li	Be	V	Cr	Mn	Co	Ni	Cu	Zn	As	Ag	Cd	Sn	Sb	Pb	Hg
Mg	1.000	-.151	-.076	.356	-.060	-.059	-.209	.426	.356	.427	-.029	.216	-.218	.004	-.138	-.119	-.069	-.136	-.169	-.185	-.151
Al		1.000	.423	-.439	-.071	.434	.474	-.234	-.409	-.418	-.114	-.362	-.162	-.334	-.120	-.225	-.272	-.099	-.099	-.135	-.357
Ti			1.000	-.114	.141	.291	.389	-.270	-.085	-.226	.050	-.083	-.095	-.103	-.224	-.244	-.232	.047	-.089	-.025	-.378
Fe				1.000	.049	-.334	-.320	.332	.643	.599	.262	.588	.048	.373	-.020	.089	.149	.125	-.013	.070	**.208**
P					1.000	.077	.044	-.174	.152	-.171	.143	.086	.243	.031	.088	.128	.118	.275	.210	.291	.018
Li						1.000	.363	-.267	-.297	-.327	-.148	-.349	-.233	-.418	-.186	-.284	-.348	-.181	-.145	-.232	-.369
Be							1.000	-.311	-.352	-.412	-.045	-.305	-.156	-.318	-.101	-.274	-.333	-.081	-.068	-.092	-.327
V								1.000	.330	.441	.153	.328	.038	.205	.217	.231	.259	.052	.073	.086	.313
Cr									1.000	.510	.287	.615	.110	.349	.040	.208	.269	.215	.087	.174	.265
Mn										1.000	.121	.401	-.122	.275	-.068	.041	.097	-.075	-.149	-.098	.162
Co											1.000	.440	.311	.312	.268	.319	.319	.446	.351	.433	.302
Ni												1.000	.222	.435	.117	.266	.301	.308	.169	.259	.304
Cu													1.000	.433	.487	.641	.605	.644	.636	.664	.494
Zn														1.000	.230	.430	.487	.412	.289	.396	.392
As															1.000	.608	.554	.395	.544	.525	.569
Ag																1.000	.773	.523	.606	.641	.665
Cd																	1.000	.532	.572	.659	.673
Sn																		1.000	.673	.725	.432
Sb																			1.000	.724	.540
Pb																				1.000	.494
Hg																					1.000

: positive correlation with $p<0.01$; : negative correlation with $p<0.01$: correlation with $p<0.05$

Table S5. Rotated component matrix extracted by principle component analysis (PCA) with Varimax rotation with Kaiser Normalization for heavy metals related to anthropogenic activities in PM10 of RDS.

	Component	
	1	2
Mg	-.267	**.852**
Fe	-.012	**.972**
V	.497	**.767**
Cr	.077	**.922**
Mn	-.100	**.921**
Ni	.369	**.794**
Cu	**.983**	-.089
Zn	**.881**	.261
As	**.950**	-.105
Ag	**.985**	.036
Cd	**.982**	.124
Sn	**.877**	.100
Sb	**.974**	-.037
Pb	**.963**	-.020
Hg	**.911**	.317
PLI	**.974**	.005
% of Variance	60.357	28.869
Cumulative %	60.357	89.225

Table S6. Coefficients of Kendall's tau_b correlation analysis among the I_{geo} of metals in PM10 of RDS.

	PLI	Zn/Cu	Cu/Sb
PLI	1.000	-.243	-.158
Zn/Cu		1.000	.102
Cu/Sb			1.000

: $p < 0.05$

Table S7. Pearson's correlation analysis among the I_{geo} of metals in PM10 of RDS.

	$AsCR_{ing}$	$CdCR_{ing}$	$NiCR_{ing}$	$PbCR_{ing}$	HI	Traffic volume
$AsCR_{ing}$	1	.711	-.156	.114	.450	.019
$CdCR_{ing}$		1	.548	.238	.496	.072
$NiCR_{ing}$			1	.125	.115	-.080
$PbCR_{ing}$				1	.936	.929
HI					1	.828
Traffic volume						1

: $p < 0.05$

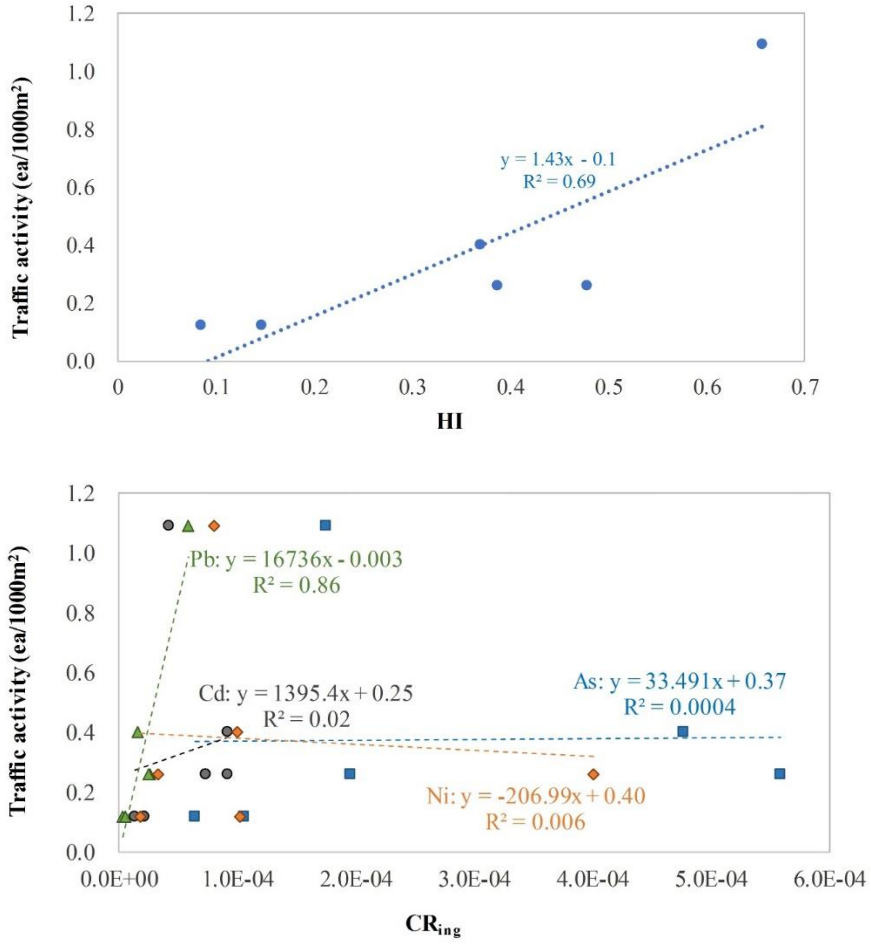

Figure S1. Correlation between health risk of PM10 and traffic activity (traffic volume)