



Table S2 One-way ANOVA comparison of selected HM pollution for different geographical directions in the target area.

Metals		Sum of Squares	df	Mean Square	F	Sig.
As	Between Groups	311.32	3	103.77	0.953	0.417
	Within Groups	15905.89	146	108.94		
	Total	16217.22	149			
Cr	Between Groups	7.041	3	2.34	2.003	0.116
	Within Groups	171.09	146	1.174		
	Total	178.13	149			
Co	Between Groups	3.103	3	1.034	1.03	0.197
	Within Groups	95.52	146	0.654		
	Total	98.62	149			
Fe	Between Groups	16939.54	3	5646.51	0.187	0.905
	Within Groups	4407446.42	146	30187.98		
	Total	4424385.96	149			
Mn	Between Groups	39.62	3	13.20	0.293	0.830
	Within Groups	6573.87	146	45.02		
	Total	6613.49	149			
Mo	Between Groups	51.90	3	17.30	0.195	0.900
	Within Groups	12944.6	146	88.6616		
	Total	12996.5	149			

Table S3 Correlation matrix of selected HM in ground water samples (n=150).

n=150	As	Cr	Co	Fe	Mn	Mo	Zn	Ni	Hg
As	1.000								
Cr	-0.042	1.000							
Co	0.199		1.000						

## Correlations

Table S4 Correlation matrix of selected HMs in well water samples (n= 33).

Well	As	Cr	Co	Fe	Mn	Mo	Zn	Ni	Hg
As	1.000								
Cr	0.058	1.000							
Co	0.045	-0.001	1.000						
Fe	0.000	0.270	-0.156	1.000					
Mn	0.955*	0.121	0.110	0.080	1.000				
Mo	-0.015	-0.100	-0.240	0.067	0.000	1.000			
Zn	0.074	-0.196	-0.213	0.102	0.120	0.813	1.000		



Table S10 Correlation matrix of selected HMs in eastern direction

Eastern	As	Cr	Co	Fe	Mn	Mo	Zn	Ni	Hg
As	1.000								
Cr	-0.263	1.000							
Co	0.301	0.375	1.000						
Fe	-0.139	-0.046	-0.358	1.000					
Mn	-0.049	0.509	-0.163	0.193	1.000				
Mo	-0.110	0.077	-0.430	0.704	0.523	1.000			
Zn	-0.177	-0.153	-0.368	0.442	-0.156	0.565	1.000		
Ni	0.393	-0.049	-0.106	0.399	0.204	0.268	-0.188	1.000	
Hg	-0.336	0.345	0.209	-0.011	-0.020	-0.047	-0.031	-0.317	1.000

\* correlation is significant at the 0.05 level (2-tailed) \*\* correlation is significant at the 0.01 level (2-tailed)

Table S11 Correlation matrix of selected HMs in slope 0

	As	Cr	Co	Fe	Mn	Mo	Zn	Ni	Hg
As	1.000								
Cr	-1.000*	1.000							
Co	1.000*	-1.000*	1.000						
Fe	1.000*	-1.000*	1.000*	1.000					
Mn	NC <sup>a</sup>	NC	NC	NC	1.000				
Mo	1.000*	-1.000*	1.000*	1.000*	NC	1.000			
Zn	1.000*	-1.000*	1.000*	1.000*	NC	1.000*	1.000		
Ni	1.000*	-1.000*	1.000*	1.000*	NC	1.000*	1.000*	1.000	
Hg	NC	NC	NC	NC	NC	NC	NC	NC	1.000

\*\* correlation is significant at the 0.01 level (2-tailed) <sup>a</sup> cannot be computed because at least one of the variables is not constant

Table S12 Correlation matrix of selected HMs in slope 0-8

	As	Cr	Co	Fe	Mn	Mo	Zn	Ni	Hg
As	1.000								
Cr	0.196	1.000							
Co	0.046	0.140	1.000						
Fe	-0.008	0.399*	-0.063	1.000					
Mn	0.818*	0.157	0.076	0.055	1.000				
Mo	-0.023	-0.084	-0.133	0.066	-0.014	1.000			
Zn	-0.003	0.111	-0.166	0.178	-0.005	0.306	1.000		
Ni	0.197	0.071	-0.082	0.084	0.126	0.841	0.469*	1.000	
Hg	-0.204	-0.446**	-0.311†	-0.005	-0.062	-0.030	0.216	-0.042	1.000

\*\* correlation is significant at the 0.01 level (2-tailed) † correlation is significant at the 0.05 level (2-tailed).

