

# Assessment of Soil Potentially Toxic Metal Pollution in Kolchugino Town, Russia: Characteristics and Pollution

## Quality control

The quality control of the measured elements was weighted using certified reference soil sample (Sod-podzolic sandy soil sample governmental standard sample GSO 2498-83). The absolute relative difference between the standard and measured mass fractions is up to 22%. The results of the standard and measured mass fractions are tabulated in Table S1.

**Table S1.** the standard mass fraction of the standard and the measured (mg/kg).

Elements	Standard mass fraction mg/kg	Measured mass fraction mg/kg
Cu	9±4	11±0.8
Pb	8±1	8.5±0.6
Zn	10±2	12.2±0.8
Cd	0.10±0.03	0.080±0.006

## Risk index RI

The interpretation categories are given as follows;  $RI < 150$  - low potential ecological risk;  $150 \leq RI < 300$  - moderate potential ecological risk;  $300 \leq RI < 600$  - considerable potential ecological risk;  $RI \geq 600$  high potential ecological risk.

**Table S2.** Details on the pollution indices and the corresponding areas analyzed by LULC

ID	Lat	Long	PLI	TPI	RI	LULC
1	56.317	39.361	110	107	528	Urban
2	56.318	39.374	89	86	452	Green
3	56.317	39.386	50	47	264	Urban
4	56.311	39.361	59	56	268	Urban
5	56.313	39.376	93	90	467	Urban
6	56.312	39.385	109	106	607	Urban
7	56.306	39.348	118	115	381	Industrial
8	56.305	39.361	75	72	401	Urban
9	56.304	39.374	94	91	510	Industrial
10	56.306	39.402	156	153	643	Industrial
11	56.298	39.333	186	183	922	Green
12	56.297	39.348	84	81	317	Urban
13	56.297	39.362	263	260	1013	Urban
14	56.299	39.374	911	908	4519	Industrial

15	56.297	39.387	595	592	2953	Industrial
16	56.299	39.399	982	979	4686	Industrial
17	56.292	39.344	177	174	594	Urban
18	56.297	39.387	183	180	890	Industrial
19	56.292	39.374	116	113	427	Urban
20	56.293	39.387	660	657	3396	Industrial
21	56.284	39.348	222	219	913	Green
22	56.284	39.359	183	180	696	Green
23	56.285	39.375	375	372	1840	Industrial
24	56.289	39.403	269	266	1217	Urban

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