

# Supplementary Information

## Use of Chemometric Tools to Determine the Source of Metals in Sediments of the Rivers of the Turvo/Grande Hydrographical Basin, São Paulo State, Brazil

Mariele B. Campanha,<sup>a</sup> João Paulo Romera,<sup>a</sup> Jéssica Coelho,<sup>a</sup> Edenír R. Pereira-Filho,<sup>b</sup>  
Altair B. Moreira<sup>a</sup> and Márcia C. Bisinoti<sup>\*a</sup>

<sup>a</sup>Department of Chemistry and Environmental Sciences, Institute of Biosciences, Literature and Exact Sciences, São Paulo State University “Júlio de Mesquita Filho” (UNESP),  
R. Cristóvão Colombo 2265, 15054-000 São José do Rio Preto-SP, Brazil

<sup>b</sup>Department of Chemistry, Federal University of São Carlos,  
Rod. Washington Luiz Km 235, 13565-905 São Carlos-SP, Brazil

**Table S1.** Pearson correlation coefficients (*r*) for metals, granulometry, and OMC of sediments samples from CAPRP for all periods studied

Element	[Cr]	[Cu]	[Pb]	[Ni]	[Zn]	[Fe]	[Mn]	[Al]	[K]	% clay	% silt	% sand	% OMC
Cr	1.00	–	–	–	–	–	–	–	–	–	–	–	–
Cu	<b>0.71</b>	1.00	–	–	–	–	–	–	–	–	–	–	–
Pb	<b>0.87</b>	<b>0.76</b>	1.00	–	–	–	–	–	–	–	–	–	–
Ni	<b>0.91</b>	<b>0.76</b>	<b>0.80</b>	1.00	–	–	–	–	–	–	–	–	–
Zn	0.46	<b>0.70</b>	0.61	0.39	1.00	–	–	–	–	–	–	–	–
Fe	<b>0.93</b>	<b>0.67</b>	<b>0.86</b>	<b>0.89</b>	0.41	1.00	–	–	–	–	–	–	–
Mn	<b>0.86</b>	0.54	<b>0.76</b>	<b>0.84</b>	0.34	<b>0.90</b>	1.00	–	–	–	–	–	–
Al	<b>0.64</b>	<b>0.63</b>	0.42	<b>0.80</b>	0.21	<b>0.64</b>	<b>0.66</b>	1.00	–	–	–	–	–
K	<b>0.87</b>	<b>0.82</b>	<b>0.86</b>	<b>0.90</b>	0.55	<b>0.88</b>	<b>0.82</b>	<b>0.66</b>	1.00	–	–	–	–
% clay	<b>0.65</b>	0.17	0.50	<b>0.65</b>	0.27	<b>0.71</b>	<b>0.68</b>	0.50	0.42	1.00	–	–	–
% silt	<b>0.79</b>	0.45	<b>0.68</b>	<b>0.77</b>	0.54	<b>0.81</b>	<b>0.72</b>	0.50	<b>0.64</b>	<b>0.78</b>	1.00	–	–
% sand	<b>-0.78</b>	-0.38	<b>-0.66</b>	<b>-0.76</b>	-0.48	<b>-0.82</b>	<b>-0.73</b>	-0.50	<b>-0.61</b>	<b>-0.88</b>	<b>-0.98</b>	1.00	–
% OMC	<b>0.84</b>	<b>0.66</b>	<b>0.81</b>	<b>0.86</b>	<b>0.72</b>	<b>0.77</b>	<b>0.68</b>	0.54	<b>0.81</b>	<b>0.69</b>	<b>0.79</b>	<b>-0.80</b>	1.00

Highlighted values are significant at the level of 0.01.

**Table S2.** Pearson correlation coefficients ( $r$ ) for metals, granulometry, and OMC of samples of sediment from RTURARG for all periods studied

Element	[Cr]	[Cu]	[Pb]	[Ni]	[Zn]	[Fe]	[Mn]	[Al]	[K]	% clay	% silt	% sand	% OMC
Cr	1.00		–	–	–	–	–	–	–	–	–	–	–
Cu	<b>0.82</b>	1.00		–	–	–	–	–	–	–	–	–	–
Pb	0.52	<b>0.79</b>	1.00		–	–	–	–	–	–	–	–	–
Ni	0.41	<b>0.73</b>	<b>0.95</b>	1.00		–	–	–	–	–	–	–	–
Zn	0.54	<b>0.75</b>	<b>0.92</b>	<b>0.95</b>	1.00		–	–	–	–	–	–	–
Fe	0.31	0.59	<b>0.68</b>	<b>0.60</b>	0.58	1.00		–	–	–	–	–	–
Mn	<b>0.79</b>	0.53	0.22	0.05	0.23	0.14	1.00		–	–	–	–	–
Al	<b>0.76</b>	<b>0.69</b>	0.34	0.15	0.27	0.50	<b>0.80</b>	1.00		–	–	–	–
K	–0.08	–0.16	–0.18	–0.18	–0.24	–0.04	–0.12	0.04	1.00		–	–	–
% clay	<b>0.75</b>	<b>0.68</b>	0.54	0.30	0.38	<b>0.87</b>	<b>0.79</b>	<b>0.86</b>	<b>0.79</b>	1.00		–	–
% silt	0.42	0.31	0.23	–0.10	–0.03	<b>0.66</b>	<b>0.71</b>	<b>0.76</b>	<b>0.79</b>	<b>0.83</b>	1.00		–
% sand	<b>–0.53</b>	–0.42	–0.32	–0.01	–0.08	<b>–0.74</b>	<b>–0.76</b>	<b>–0.81</b>	<b>–0.82</b>	<b>–0.90</b>	<b>–0.99</b>	1.00	
% OMC	–0.08	–0.13	–0.19	–0.39	–0.40	0.19	0.24	0.31	<b>0.61</b>	<b>0.77</b>	<b>0.78</b>	<b>–0.82</b>	1.00

Highlighted values are significant at the level of 0.01.

**Table S3.** Pearson correlation coefficients ( $r$ ) for metals, granulometry, and OMC of samples of sediment from RGRANDE for all periods studied

Element	[Cr]	[Cu]	[Pb]	[Ni]	[Zn]	[Fe]	[Mn]	[Al]	[K]	% clay	% silt	% sand	% OMC
Cr	1.00	–	–	–	–	–	–	–	–	–	–	–	–
Cu	<b>0.89</b>	1.00	–	–	–	–	–	–	–	–	–	–	–
Pb	<b>0.85</b>	<b>0.83</b>	1.00	–	–	–	–	–	–	–	–	–	–
Ni	0.43	0.53	<b>0.64</b>	1.00	–	–	–	–	–	–	–	–	–
Zn	0.39	0.46	<b>0.68</b>	<b>0.97</b>	1.00	–	–	–	–	–	–	–	–
Fe	<b>0.87</b>	<b>0.80</b>	<b>0.85</b>	<b>0.76</b>	<b>0.71</b>	1.00	–	–	–	–	–	–	–
Mn	0.25	0.35	0.55	<b>0.91</b>	<b>0.93</b>	<b>0.60</b>	1.00	–	–	–	–	–	–
Al	0.44	0.54	<b>0.70</b>	<b>0.98</b>	<b>0.98</b>	<b>0.73</b>	<b>0.91</b>	1.00	–	–	–	–	–
K	0.12	0.04	0.47	<b>0.70</b>	<b>0.82</b>	0.45	<b>0.71</b>	<b>0.74</b>	1.00	–	–	–	–
% clay	–0.22	–0.08	–0.09	–0.18	–0.22	–0.19	0.07	–0.16	–0.45	1.00	–	–	–
% silt	<b>–0.63</b>	–0.51	–0.40	–0.58	–0.58	–0.56	–0.39	–0.54	–0.13	0.52	1.00	–	–
% sand	<b>0.60</b>	0.47	0.38	0.56	0.56	0.54	0.34	0.52	0.18	<b>–0.63</b>	<b>–0.99</b>	1.00	–
% OMC	<b>0.68</b>	0.55	<b>0.82</b>	<b>0.80</b>	<b>0.82</b>	<b>0.75</b>	<b>0.78</b>	<b>0.82</b>	0.41	–0.26	–0.44	0.45	1.00

Highlighted values are significant at the level of 0.01.