APCA 4

Rachel Tao

1/23/2021

Loadings

element	MeanConc	source_1	source_2	source_3	source_4	r_squared	PredConc	Pct_error
aluminum	22.52	0.59	-0.05	29.36	2.21	0.56	32.10	42.55
ammonium	1119.33	466.25	3.49	165.92	505.94	0.95	1141.59	1.99
arsenic	0.49	0.17	0.01	0.09	0.08	0.15	0.35	-28.68
barium	1.95	0.48	0.40	1.81	-0.06	0.15	2.64	35.36
bromine	3.05	1.12	0.35	0.42	0.48	0.32	2.36	-22.48
cadmium	1.68	0.12	-0.06	0.18	-0.07	0.01	0.18	-89.53
calcium	51.67	23.96	2.13	21.97	1.25	0.49	49.31	-4.56
chlorine	36.83	19.40	39.14	-10.19	1.94	0.68	50.30	36.58
$\operatorname{chromium}$	2.13	1.41	-0.37	0.84	-0.56	0.05	1.32	-38.06
copper	4.63	2.41	0.08	1.98	0.30	0.53	4.77	3.05
EC	706.94	325.83	-4.39	239.40	39.01	0.51	599.84	-15.15
iron	105.50	32.66	-2.12	52.81	2.93	0.73	86.29	-18.21
lead	2.01	1.53	0.13	0.29	0.20	0.36	2.15	6.72
magnesium	7.32	-1.24	6.28	2.20	0.11	0.90	7.35	0.33
manganese	2.09	1.34	-0.02	0.79	0.12	0.76	2.25	7.25
nickel	4.91	3.70	-0.02	0.21	0.21	0.59	4.10	-16.61
nitrate	1604.06	1146.81	102.44	-76.08	340.80	0.59	1513.96	-5.62
OC	2706.61	461.43	-15.19	861.34	428.91	0.67	1736.49	-35.84
pm25	10356.26	2647.17	209.75	2800.86	2532.95	0.85	8190.72	-20.91
potassium	39.33	13.23	8.45	18.12	7.47	0.19	47.27	20.17
selenium	0.39	0.12	0.01	0.08	0.13	0.29	0.35	-10.89
silicon	61.29	3.91	0.31	73.46	4.70	0.79	82.38	34.40
sodium	95.14	8.07	49.50	10.07	2.86	0.74	70.49	-25.91
sulfur	791.26	54.70	0.25	263.55	325.61	0.91	644.11	-18.60
titanium	2.39	0.20	-0.03	2.54	0.19	0.60	2.89	20.95
vanadium	2.86	1.57	0.07	1.31	0.74	0.44	3.70	29.39
zinc	25.90	23.40	1.37	-2.62	0.12	0.75	22.28	-13.99

Source proportions

element	source_1	source_2	source_3	source_4
aluminum	1.83	0.00	91.30	6.87
ammonium	40.84	0.31	14.53	44.32
arsenic	49.39	3.83	25.28	21.51
barium	17.89	14.94	67.18	0.00
bromine	47.36	14.63	17.82	20.19
cadmium	41.06	0.00	58.94	0.00
$\operatorname{calcium}$	48.59	4.32	44.55	2.54
chlorine	32.07	64.72	0.00	3.21
$\operatorname{chromium}$	62.59	0.00	37.41	0.00
copper	50.46	1.59	41.57	6.38
EC	53.92	0.00	39.62	6.46
iron	36.95	0.00	59.74	3.31
lead	71.10	6.03	13.48	9.39
magnesium	0.00	73.17	25.58	1.25
manganese	59.39	0.00	35.09	5.52
nickel	89.75	0.00	5.19	5.06
nitrate	72.12	6.44	0.00	21.43
OC	26.34	0.00	49.17	24.49
pm25	32.32	2.56	34.20	30.92
potassium	27.99	17.88	38.33	15.80
selenium	35.21	3.55	22.74	38.50
silicon	4.74	0.37	89.18	5.71
sodium	11.44	70.22	14.28	4.05
sulfur	8.49	0.04	40.92	50.55
titanium	6.78	0.00	86.84	6.38
vanadium	42.56	1.96	35.40	20.08
zinc	94.00	5.51	0.00	0.50

Bar graph of the above proportions

