Supplementary Table S1: Two-way ANOVA results for Agroecological Zone and Geological Age

Term	df	sumsq	meansq	statistic	p.value	Response
AEZ	5	5,468.881	1,093.776	50.416	<0.001	P
Geology	4	827.292	206.823	9.533	<0.001	P
AEZ:Geology	16	1,624.412	101.526	4.680	<0.001	P
Residuals	1,356	29,418.207	21.695		<0.001	P
AEZ	5	73,753,118.885	14,750,623.777	127.581	<0.001	Al_ox
Geology	4	890,164.386	222,541.097	1.925	0.104	Al_ox
AEZ: Geology	16	21,571,558.550	1,348,222.409	11.661	<0.001	Al_ox
Residuals	1,356	156,777,754.293	115,617.813			Al_ox
AEZ	5	126,824,316.573	25,364,863.315	62.615	<0.001	Fe_ox
Geology	4	2,122,255.127	530,563.782	1.310	0.264	Fe_ox
AEZ: Geology	16	95,789,895.089	5,986,868.443	14.779	<0.001	Fe_ox
Residuals	1,356	549,305,779.629	405,092.758		<0.001	Fe_ox
AEZ	5	50.325	10.065	78.034	<0.001	pH
Geology	4	7.889	1.972	15.291	<0.001	pH
AEZ: Geology	16	14.438	0.902	6.996	<0.001	pH
Residuals	1,356	174.901	0.129			pH

Term	df	sumsq	meansq	statistic	p.value	Response
AEZ	5	169.197	33.839	185.507	<0.001	SOC
V	4	8.718	2.180	11.948	<0.001	SOC
AEZ: Geology	16	18.424	1.151	6.312	<0.001	SOC
Residuals	1,356	247.355	0.182			SOC
AEZ	5	22,112.199	4,422.440	30.436	<0.001	Clay
Geology	4	782.954	195.739	1.347	0.250	Clay
AEZ: Geology	16	27,410.712	1,713.169	11.791	<0.001	Clay
Residuals	1,356	197,027.565	145.301			Clay
AEZ	5	113,791,358.706	22,758,271.741	900.560	<0.001	Precip
Geology	4	5,176,505.945	1,294,126.486	51.209	<0.001	Precip
AEZ: Geology	16	11,979,019.373	748,688.711	29.626	<0.001	Precip
Residuals	1,356	34,267,807.420	25,271.244			Precip
AEZ	5	833,383.877	166,676.775	27.310	<0.001	PSI
Geology	4	6,409.564	1,602.391	0.263	0.902	PSI
AEZ: Geology	16	1,220,316.497	76,269.781	12.497	<0.001	PSI
Residuals	1,356	8,275,722.578	6,103.040			PSI