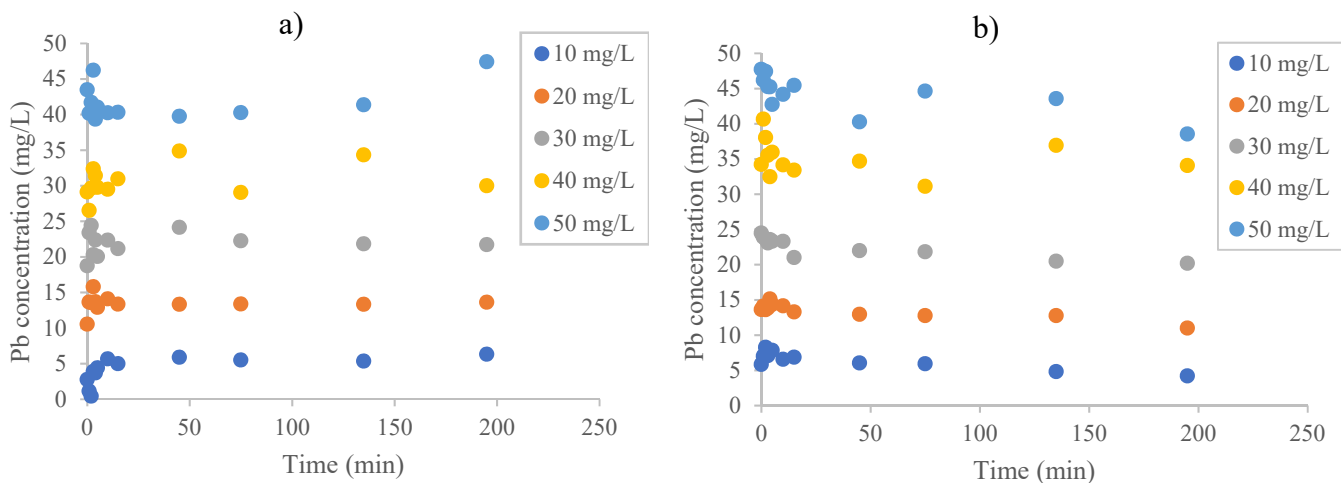


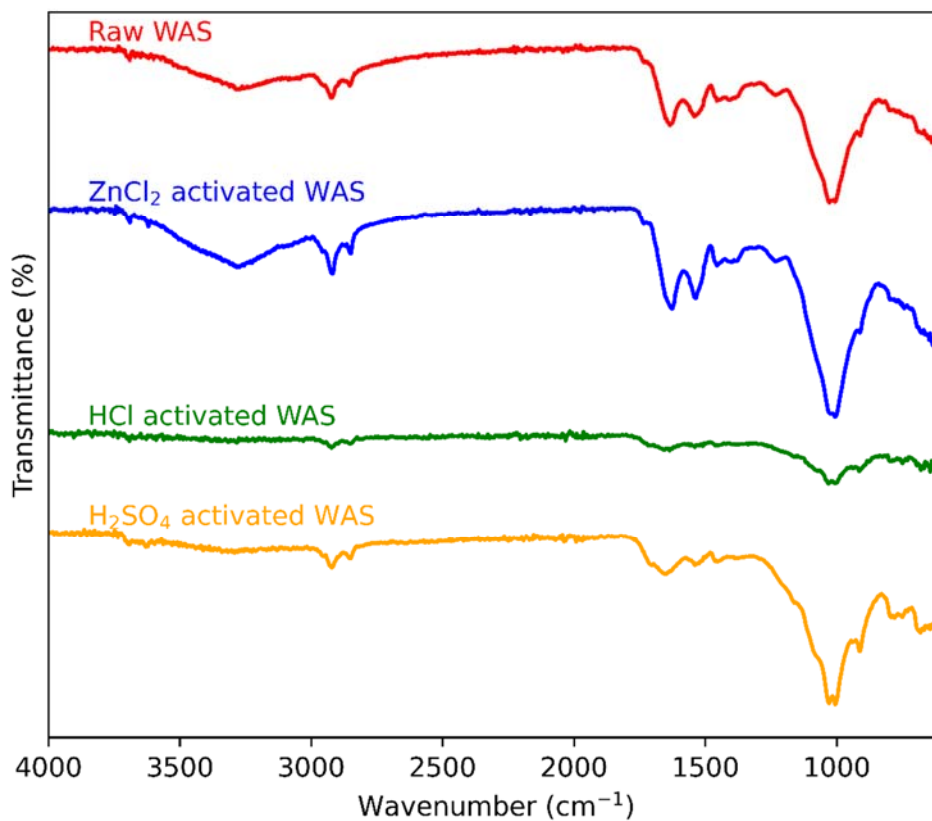
**Supplementary material**

**Table S1:** Equilibrium pH and concentration of solutions with initial pH of 4 and varied initial lead concentration, temperature, and adsorbent type.

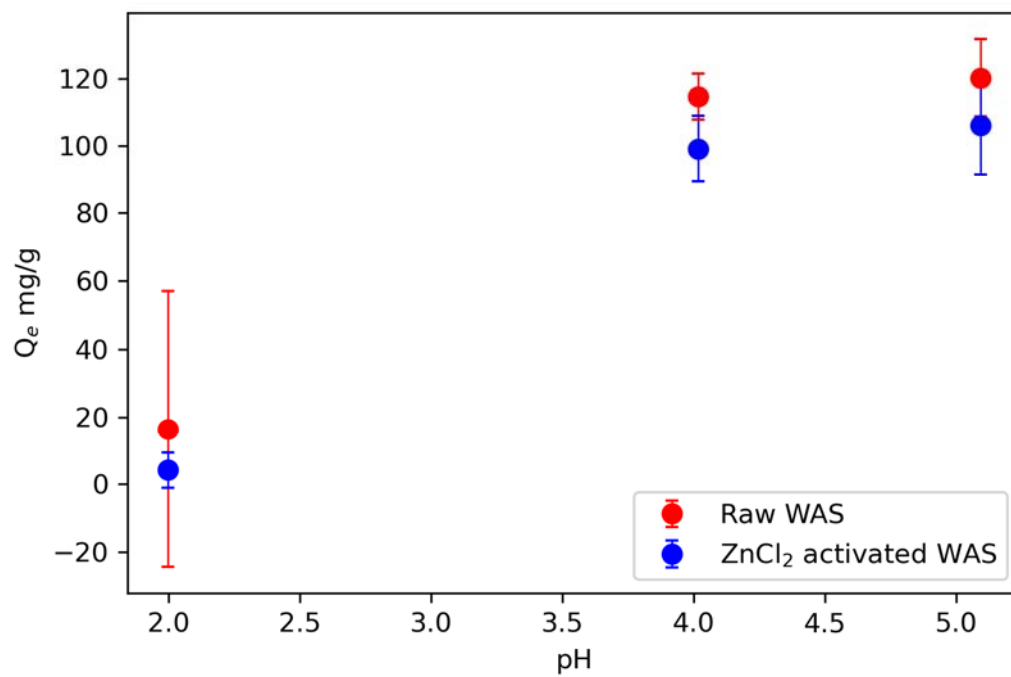
<b>Raw WAS</b>				<b>ZnCl<sub>2</sub> Activated WAS</b>			
Initial Pb <sup>2+</sup> concentration (mg/L)	Temperature (°C)	pH at equilibrium	Qe (mg/g)	Initial Pb <sup>2+</sup> concentration (mg/L)	Temperature (°C)	pH at equilibrium	Qe (mg/g)
0	30	6.7	0	0	30	6.4	0
	40	6.5	0		40	6.3	0
	50	6.7	0		50	6.4	0
50	30	5.2	54	50	30	5.5	59
	40	5.6	56		40	6.1	77
	50	5.5	54		50	5.7	64
250	30	4.3	87	250	30	5.1	65
	40	4.5	165		40	5.2	142
	50	4.1	118		50	5.0	87
500	30	4.1	171	500	30	4.8	151
	40	4.0	196		40	4.8	136
	50	4.0	184		50	4.7	84
750	30	4.0	84	750	30	4.7	178
	40	4.0	248		40	4.8	175
	50	3.9	256		50	4.7	182
1000	30	4.1	306	1000	30	4.8	203
	40	4.0	333		40	4.8	295
	50	3.9	192		50	4.5	94



**Figure S1:** Concentration of Pb(II) in solution as function of time in the presence of a) HCl activated and b) H<sub>2</sub>SO<sub>4</sub> WAS.



**Figure S2:** FTIR spectra of WAS before and after chemical activation.



**Figure S3:** Effect of pH on adsorption capacity of both Raw and ZnCl<sub>2</sub> activated WAS