Supplementary Materials For:

Effects of Ionic Strength on Arsenate Adsorption at Aluminum Hydroxide-Water Interface

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This Supporting Materials document include pages, figure, and tables: page
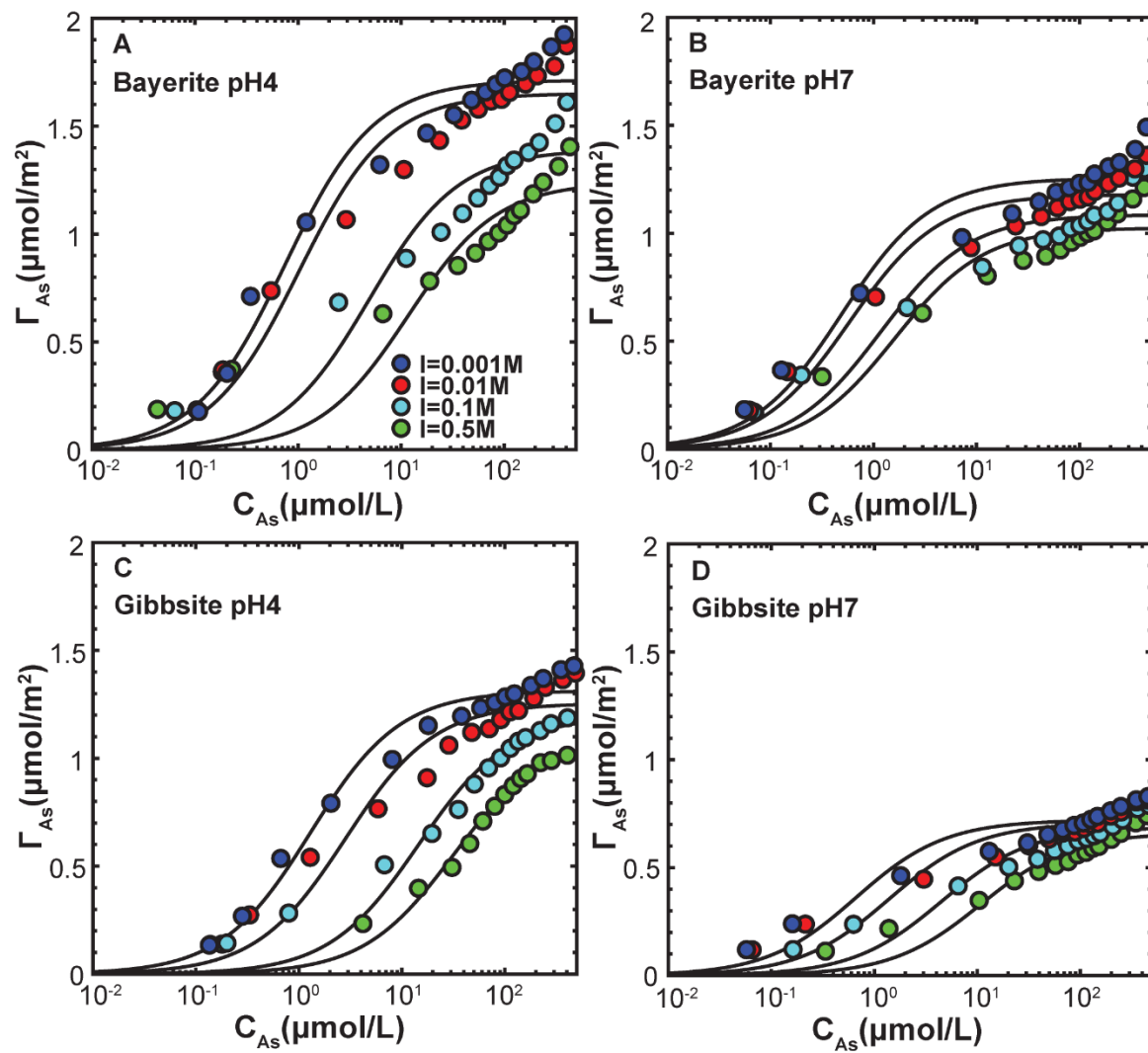
Figure S1. Single Langmuir isotherm fits (black lines) to arsenate adsorption in different ionic strength on bayerite (A) pH 4 and (B) pH 7, on gibbsite at (C) pH 4 and (D) pH 7. Detailed fitting parameters are summed in Table S1.
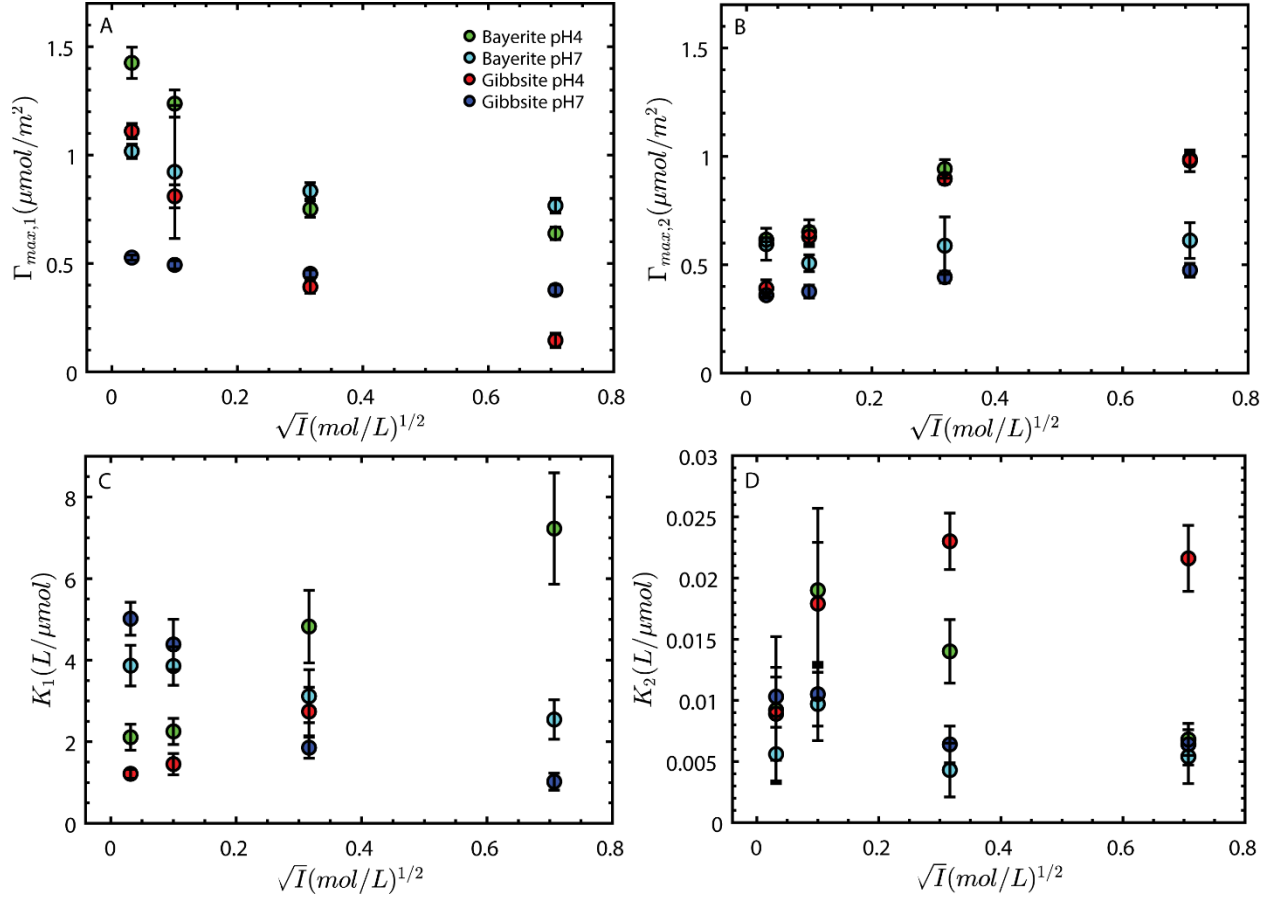
Figure S2. Correlations of Dual Langmuir fitting parameters (A) $\Gamma_{max,1}$, (B) $\Gamma_{max,2}$, (C) K_1 and (D) K_2 versus square root of ionic strength.

Table S1. Fitting parameters for Single Langmuir isotherms

Mineral	Ionic Strength (mol/L)	Γ_{max} (μmol/m^2)	K (L/μmol)	R-factor [a]
Bayerite pH 4	0.5	1.24±0.08	0.09±0.04	0.12
Bayerite pH 4	0.1	1.39±0.07	0.20±0.08	0.11
Bayerite pH 4	0.01	1.65±0.05	0.98±0.26	0.074
Bayerite pH 4	0.001	1.71±0.04	1.34±0.29	0.067
Bayerite pH 7	0.5	1.03±0.04	0.62±0.26	0.094
Bayerite pH 7	0.1	1.09±0.04	0.85±0.38	0.096
Bayerite pH 7	0.01	1.18±0.03	1.71±0.55	0.077
Bayerite pH 7	0.001	1.26±0.04	2.02±0.66	0.079
Gibbsite pH 4	0.5	1.09±0.04	0.032±0.005	0.043
Gibbsite pH 4	0.1	1.19±0.02	0.07±0.04	0.065
Gibbsite pH 4	0.01	1.26±0.04	0.35±0.10	0.086
Gibbsite pH 4	0.001	1.31±0.03	0.77±0.13	0.054
Gibbsite pH 7	0.5	0.66±0.03	0.092±0.03	0.091
Gibbsite pH 7	0.1	0.69±0.03	0.22±0.09	0.099
Gibbsite pH 7	0.01	0.71±0.03	0.72±0.09	0.097
Gibbsite pH 7	0.001	0.72±0.02	1.51±0.02	0.095

[a] Goodness-of-fit parameter. The R-factor is the sum of the differences between the data and the fit at each data point, divided by the sum of the data at each corresponding point. Smaller R-factor values reflect better fits.