Previous Research Fall '05 - Spring '06

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Previous Research by the AguaClara team in Fall of 2005 to Spring of 2006

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Laboratory experimentation with the upflow suspended bed lime feeder during the spring of 2006.

The lime feeder research team investigated the possibility of building a lime feeder for the AguaClara plant at Ojojona. In the end flocculation at Ojojona was successful without lime addition and the lime feeder project was dropped. Daniel Smith, Fulbright Scholar, is evaluating the performance of AguaClara water treatment plants in Honduras. He is routinely measuring pH and alkalinity of the raw and treated waters. From Dan's research we know that low alkalinity waters are common in Honduras and that setting an appropriate alum dose is extremely difficult because addition of a little bit too much alum consumes all of the alkalinity and results in low pH water. At low pH the solubility of
$Al(OH)_3$

increases

ANC control with Lime by Amy Yeh and Melina Diaconis
The following analysis needs to be reviewed and converted to analysis in MathCAD. The analysis includes cost comparisons for ANC control using lime,
$Ca(OH)_2$

, and sodium carbonate
Na_2CO_3

. The mass of the chemical stocks per day is also calculated.
Preliminary chemistry analysis spreadsheet

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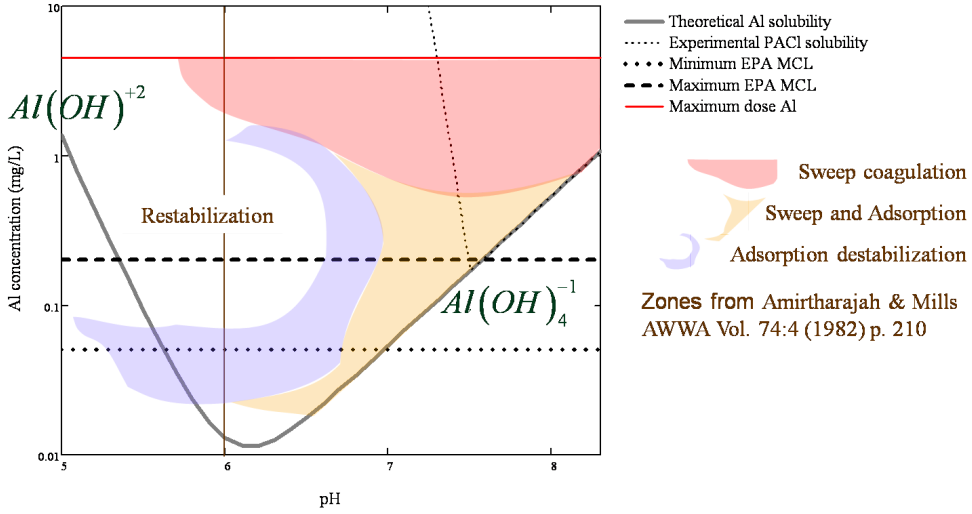

Aluminum solubility diagram showing the importance of maintaining a circumneutral pH for flocculation.

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