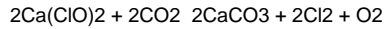


FC Chlorine Precipitation

Chlorine Precipitation

Currently in Honduras, there are flow controllers treating water with Calcium Hypochlorite. An issue has arisen however, making it more difficult to effectively continue this type of treatment process. Calcium hypochlorite reacts with carbon dioxide to form calcium carbonate.



When treating water in some communities with Calcium Hypochlorite, especially when the water has a high alkalinity, calcium carbonate precipitates out at a very high rate. This results in clogging or failure at the float valve.

This summer, the late Demo Plant team spent time mixing similar concentrations of water/Calcium Hypochlorite solution and running this solution through the flow controller, in order to observe this precipitate forming.

The next step is treating the problem. To prevent failure at the float valve, the Chlorine Precipitation team has two proposed solutions that they are currently exploring:

- Creating a procedure for the water treatment plant operators to perform that would result in the settlement of all calcium carbonate formed before the solution is delivered to the plant.
- Figuring out an additional chemical solution to add to the hypochlorinator that would result in a lower pH and prevent the precipitate from forming at all. This would mean finding the exact concentration and amount of acid to add into the stock tank, which would result in the desired pH and alkalinity.

FC Chlorine Precipitation [goals](#), [challenges](#), and [meeting minutes](#).

[Recommendations for Honduran Communities that are Experiencing Flow Restriction Problems in the Chlorine Feed System](#)

FC Chlorine Precipitation Experiments

Fall 2008

[*Restricted Flow of Hypochlorinators](#)

[*Calcium Carbonate Settling Observations](#)

[*Leaking Bulkhead Fittings](#)

[*Volume of Water Required to Completely Dissolve \$\text{Ca}\(\text{ClO}\)_2\$ \(MathCad\)](#)

[*Fall 2008 Semester Summary and Conclusions](#)