Using CoBuphMg™ to Adjust Aquifer pH

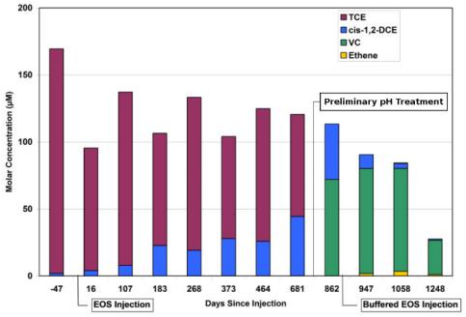
This case study demonstrates how adding CoBupHMg™, a colloidal buffer, can control and adjust aquifer pH for enhanced bioremediation.

PROBLEM

A US Government site had elevated TCE. Low aquifer pH stalled *in situ* bioremediation.

PROJECT GOAL

- Inject organic substrate in the aquifer to enable naturally-occuring bacteria to effect *in situ* anaerobic reductive dechlorination
- Control pH to sustain long-term performance
- Achieve regulatory remediation levels of 5 µg/L TCE in groundwater and 53 µg/kg TCE in soil



METHODOLOGY

Test effectivness of buffered emulsified oil substrate.

Phase I

- Sixteen wells paired to inject and recirculate EOS PRO
- Post-injection performance monitoring for 29 months

Phase II

- Twenty direct push points to inject CoBupHMg™
- Post-injection performance monitoring for 13 months

RESULTS

Buffered substrate overcame the stall in bioremediation caused by low pH. Phase I unbuffered injections resulted in up to 99% TCE reduction, but with little formation of vinyl chloride (VC) or ethene. Phase II buffered injections stimulated the reductive dechlorination process resulting in substantial increases in both VC and ethene.

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