gPRO® Technology

Summary Regarding Water Quality Tests for Baseline Markers to measure gPRO® Progress

There are quite a few ways to look at performance monitoring in bioremediation and related natural attenuation approaches.

- BOD
- Alkalinity
- Bacteria
- DO
- pH
- Temperature
- ORP (oxidation-reduction potential)
- Changes in contaminant concentration over time.
- (Understanding the geochemistry of the site related to the oxidation-reduction potential is important).
- A standard BOD test will help to evaluate overall biological oxygen demand and will indicate if there are other organic compounds present in addition to the contaminants of concern.
- There may also be oxygen demand related to inorganic species present such as reduced iron in particular that should also be measured.

CO_2 generation is key to evaluating progress (increased biological mineralization of contaminants).

- Generally you can expect to see increases in CO_2 and corresponding reductions in target contaminants over time.
- If increased CO_2 does not correspond to reductions in concentrations over the longer term, that may be an indicator that the biological approach is working but a persistent source (eg. soil contamination above water table) is still active.
- In higher pH environments (ph > 7.5), Alkalinity is a good way to evaluate CO_2.

Total inorganic carbon (TIC) may also be used and may be better at lower pH (<7.5) sites.

For a detailed one-page discussion of CO_2 measurement go to www.microseeps.com click on Technical Resources and then pick CO_2 Measurements for Monitored Natural Attenuation.