

ENHANCED ANAEROBIC BIOREMEDIATION

EBS will supply free bottles for contracted projects with 5-days prior notice to sampling. Bottle Types Per Well for Enhanced Bioremediation Microbial Studies using Groundwater Samples:

<u>ANALYSES</u>	<u>BOTTLE TYPE</u>
BIOLOGICAL ANALYSES:	
Heterotrophic Count and Specific Hydrocarbon Degraders	1 Liter Plastic; UP
CHEMICAL ANALYSES:	
Methane, ethane, acetylene, ethane	(1) 40 ml VOA
Organic acids (formaldehyde, lactic acid, propionic acid and butyrate)	(1) 40 ml VOA
Phosphorous (PO ₄), H ₂ S	(1) 40 ml VOA
Dissolved Mn, NH ₃	(1) 40 ml VOA
Genetic Test for D. ethenogenes (GC)	(1) 40 ml VOA
Molecular Hydrogen	(1) 40 ml VOA
pH, Alkalinity, o-Phosphate, Nitrate, Sulfate, BOD	1 Liter Plastic; UP
Total Dissolved Solids (TDS)	1 Liter Plastic; UP
Total Inorganic Carbon (TIC)	125 ml Amber; UP
Total Organic Carbon (TOC)	125 ml Amber; HCl
Ammonia as nitrogen	2 Liter Plastic; H ₂ SO ₄
Chemical Oxygen Demand (COD)	500 ml Amber, H ₂ SO ₄

*	Plastic: high density polyethylene
**	Better performed in the field
UP	Unpreserved
Amber	Colored Glass Bottle
VOA	Volatile Organic Analysis; Clear Glass Bottle
BOD	Biological Oxygen Demand
2 Liter	Appx. ½ gallon

Field Tests:

Dissolved oxygen (DO), pH, temp,
Oxidation-Reduction Potential (ORP),
Ferrous Iron (Fe²⁺) Reduced Form,
Total Iron

Calculations:

(Fe³⁺) Oxidized Form,
Dissolved carbon dioxide (CO₂)

- Please provide a separate 1-liter container for BOD so there is sufficient volume to do all the additional tests with just one liter. Also, BOD needs to be measured from a container with minimal or no headspace.

SOIL SAMPLES:

For Soil Sample Bench Tests: Please provide a minimum of 5 to 8 soil tubes (2-inch diameter by 6-inch long tubes). Bench tests require 3 to 4 gallons of soil with 3 to 4 gallons of groundwater.

Analyses that can be conducted: sediment oxygen demand (SOD) (also called solid oxygen demand); pH evaluation, treatment testing.

Please note there is another list for enhanced anaerobic bioremediation testing.

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