

## Dissolved Gas Concentrations

The addition of oxygen has proven effective in the enhancement of biodegradation of hydrocarbon related compounds including MTBE. The iSOC<sup>®</sup> Gas inFusion technology is also effective in the infusion of any gas into groundwater. The controlled addition of gases such as hydrogen, methane and propane to groundwater has been successfully used to enhance the natural attenuation of chlorinated solvents such as TCE and PCE.

The table below illustrates potential dissolved gas concentrations for four gases based on water column of different depths.

<b>iSOC<sup>®</sup> Dissolved Gas Concentrations in a Water Column</b>					
<b>Gas Type</b>	<b>Water Depth in Feet</b>				
	<b>5'</b>	<b>10'</b>	<b>15'</b>	<b>20'</b>	<b>25'</b>
<b>Oxygen</b>	42	55	62	69	111
<b>Methane</b>	22	30	33	37	59
<b>Propane</b>	66	88	99	110	175
<b>Ethane</b>	57	75	85	95	150

### Atmospheric Pressure Determines DO Levels:

iSOC<sup>®</sup> will deliver about 41 PPM of dissolved oxygen (DO) per atmosphere of head pressure on the iSOC<sup>®</sup> unit. Based on standard atmospheric pressure of 14.7 psi (1 bar) at sea level to about 10 psi at 10,000 feet elevation, an iSOC<sup>®</sup> unit positioned at the bottom of a well with a water depth of 35 feet—roughly 2 atmospheres (2 bar) —can be expected to deliver in the order of 82 PPM DO. This is simply based on the atmospheric pressure of 14.7 psi (1 bar) plus the water head pressure of 15.6 psi (~1 bar) creating a total pressure of 29.9 psi or about 2 atmospheres or 2 Bar. A 33-foot (10-meter) water column is equal to one atmosphere being 14.7 psi or 1 bar.