



METHOD 3810

DISSOLVED GAS ANALYSIS IN WATER SAMPLES USING A GC HEADSPACE EQUILIBRATION TECHNIQUE

Method Overview

The measurement of dissolved gases - such as methane, ethane, and ethylene - in ground water using headspace created with helium in a 40ml VOA vial. The dissolved gases in the sample partition between the gas and liquid phases and equilibrate at ambient temperatures with some agitation. An aliquot of this headspace is analyzed by gas chromatography and flame ionization detection to determine the gases concentration. The concentration of the gas dissolved in the water can then be calculated using Henry's Law constant for analytes of interest.

METHOD DETECTION AND REPORTING LIMITS

Reporting limits achieved by Methods 3810, 8015, or RSK175 can vary from .6 to 20ug/L for target compounds. Actual detection limits may vary slightly due to the partitioning properties of compounds utilizing method techniques and equipment. See your local Pace® RSK175 or dissolved gases compound lists for specific compounds and reporting limits available.

METHOD SPECIFICATIONS

Method Holding Time: Analyzed within 14 days of collection if preserved at <2pH with HCL at time of collection; this timeframe is reduced to 7 days when utilizing an unpreserved container.

Method Turnaround Time: 10 working days. Rush TATs available.

Method QAQC:

- ICAL performed as specified by the method.
- Continuous calibration is monitored prior to and after completion of analysis.
- Lab Blank/Control performed per maximum 20 samples.
- Surrogate recoveries monitored with each injection.

METHOD SAMPLING GUIDE

Water samples from field monitoring wells are collected in 40mL amber vials. The sample is gently added down the side of the bottle so as not to agitate or create bubbles, which could strip gases dissolved in water. The collection bottles are received from the laboratory with hydrochloric acid preservation and should be filled so that there is no headspace or bubbles in the sample vial. Water samples are kept at -6C immediately after sampling up until headspace creation. Include all critical sampling information on completed chain of custody document.