

# Tritium Analysis

## Liquid Scintillation Analyzer

The Packard TRI-CARB Liquid Scintillation Analyzer, allows for low level tritium analysis.

- Direct counting of samples with higher  $^3\text{H}$  content
- Electrolytic enrichment followed by counting for samples with low level  $^3\text{H}$  content

PLACE  
STAMP  
HERE

# NEED ISOTOPIC ANALYSES?



# ILLINOIS STATE GEOLOGICAL SURVEY

Isotopic Analytical Services



Illinois State Geological Survey  
Stable Isotope Laboratories  
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Champaign, IL 61820



## What We Do

Located on the University of Illinois, Urbana-Champaign campus, the Illinois State Geological Survey's (ISGS) Stable Isotope Laboratories (SIL) provide analytical services for local, regional, national, and international researchers, agencies, municipalities, and private citizens.

Analyses available:

- Isotopic analyses of hydrogen (H/D), carbon ( $^{13}\text{C}/^{12}\text{C}$ ), nitrogen ( $^{15}\text{N}/^{14}\text{N}$ ), and oxygen ( $^{18}\text{O}/^{16}\text{O}$ )
- $\delta^{13}\text{C}$  and  $\delta^{18}\text{O}$  of solid inorganic samples such as carbonate material
- $\delta^{13}\text{C}$  and  $\delta^{15}\text{N}$  of solid inorganic (such as soils) and organic (such as plant or animal material) by combustion
- $\delta^2\text{H}$  and  $\delta^{18}\text{O}$  of solid inorganic (such as soils) and organic (such as plant or animal material) by pyrolysis
- $\delta^2\text{H}$  and  $\delta^{18}\text{O}$  in water
- $\delta^{13}\text{C}$  of dissolved inorganic carbon (DIC) in water
- Tritium analysis by direct counting or electrolytic enrichment for low level samples

## Finnigan MAT 252

### Kiel III Carbonate Device

The Kiel III Carbonate Device coupled to a Finnigan MAT 252 Isotope Ratio Mass Spectrometer (IRMS) allows for high-precision, high-throughput analysis of carbonate samples following acid digestion.

- $\delta^{13}\text{C}$  and  $\delta^{18}\text{O}$  of solid inorganic samples
- Reference materials: NBS-19, NBS-18, L-SVEC

### Dual Inlet

The Dual-Inlet system of the Finnigan MAT 252 IRMS allows for the highest precision analysis of pure gas samples following offline preparation.

- $\delta^{13}\text{C}$  and  $\delta^{18}\text{O}$  of pure  $\text{CO}_2$  samples
- $\delta^{13}\text{C}$  of DIC
- Reference materials: NBS-19, NBS-18, L-SVEC, Oztech Trading Co. Isotope Ratio Reference Gases



Contact for pricing and sample submission information.

## Contact Us:

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## Thermo Scientific Delta V Advantage

### Elemental Analyzer

The CE Instruments NC 2500 Elemental Analyzer in series with a ConFlo IV universal interface coupled to a Delta V Advantage IRMS, allows for continuous flow analysis following sample combustion at  $1000^\circ\text{C}$ .

- $\delta^{13}\text{C}$  and  $\delta^{15}\text{N}$  of solid inorganic material, such as soils and sediments
- $\delta^{13}\text{C}$  and  $\delta^{15}\text{N}$  of solid organic material, such as plant and animal tissues
- Reference materials: USGS-40, USGS-41, IAEA-N1, IAEA-N2, IAEA-N3

### TC/EA

The Thermo Scientific TC/EA, with zero-blank autosampler for solids or GC PAL autosampler for water, in series with a ConFlo IV universal interface coupled to a Delta V Advantage IRMS, allows for continuous flow analysis following sample pyrolysis at  $1400^\circ\text{C}$ .

- $\delta^2\text{H}$  and  $\delta^{18}\text{O}$  of solid inorganic material, such as soils and sediments
- $\delta^2\text{H}$  and  $\delta^{18}\text{O}$  of solid organic material, such as plant and animal tissues
- $\delta^2\text{H}$  and  $\delta^{18}\text{O}$  in water
- Reference materials: IAEA-601, IAEA-602, IAEA-C3, VSMOW, VSLAP, GISP

### GasBench II

The GasBench II coupled to a Delta V Advantage IRMS, allows for analysis of carbonates or DIC following acid digestion.

- $\delta^{13}\text{C}$  and  $\delta^{18}\text{O}$  of carbonates
- $\delta^{13}\text{C}$  of DIC
- Reference materials: NBS-19, NBS-18, L-SVEC