



The Easiest Way  
to Deliver the  
Most Consistent  
Soil VOC  
Results

**The En Core<sup>®</sup> Sampler**

---



To avoid the randomness of other methodologies, USEPA Method 5035 was promulgated in 1997.

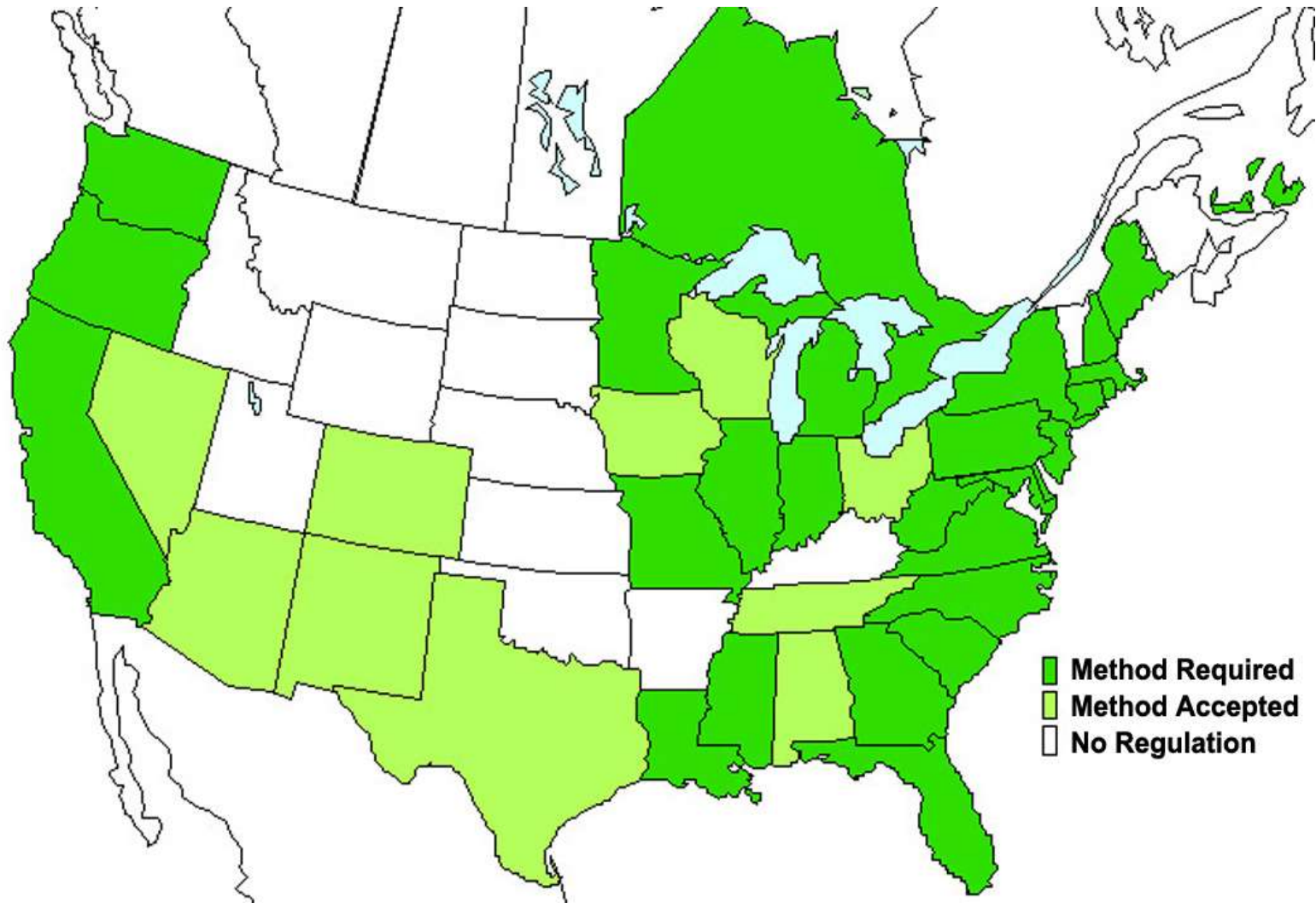


- Field preservation with methanol and sodium bisulfate

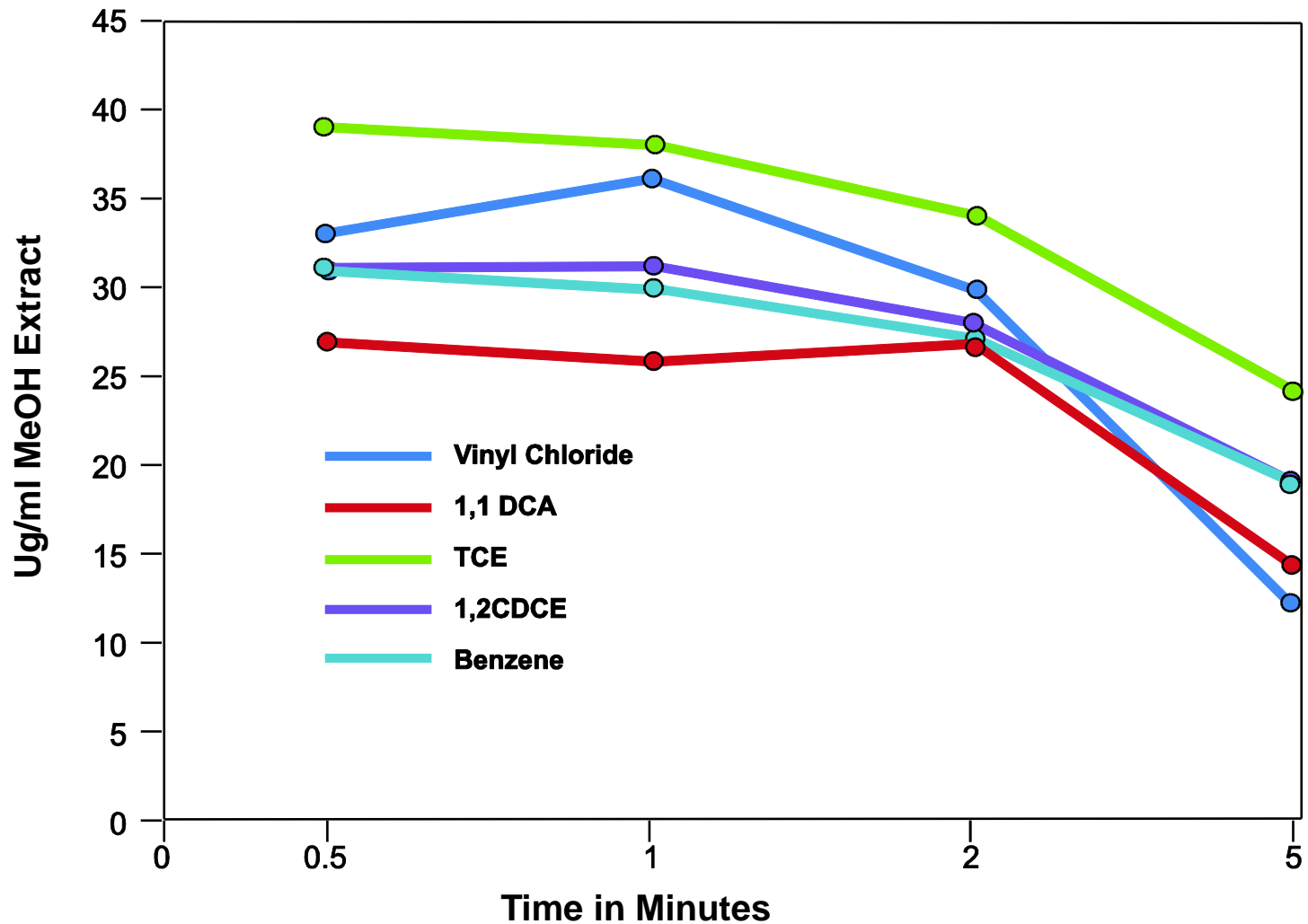


- En Core® Sampler

# Adoption of EPA Method 5035 by Region



# Short Term VOC Stability



# Variables that can Affect VOC Results

- Time to collect sample
- Type of soil – clay, sand, loam
- Microbiology
- Temperature
- Soil moisture
- Wind
- Handling of soil



# Drilling



- Typically requires a two-person drilling crew
- A core is drilled and the liner is extracted



# Best Practice – Acrylic Liners



- Cap liner to preserve volatiles. Do not split until ready to use
- Wait no more than 15-20 minutes before splitting liner
- Core is split open
- Sample immediately with En Core or methanol upon splitting
- Screen and select samples for analysis
- Sample is taken from interval with the highest amount of contamination



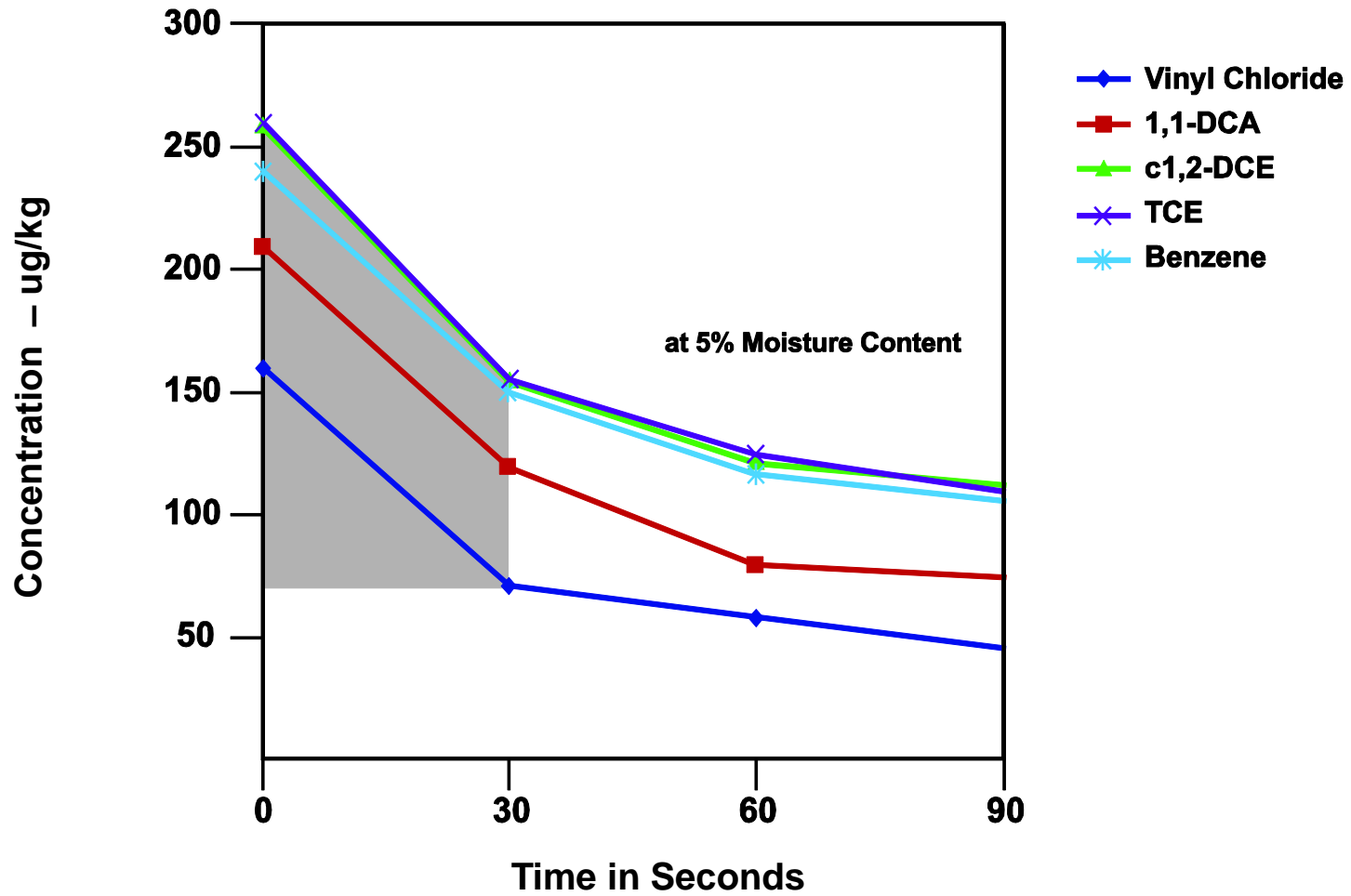
## Things Not to Do:



- Do not leave opened liner exposed while screening
- Do not sample from screening container
- Do not take samples from a second boring after screening initial boring
- Do not use bulk sampling



# VOCs Lost in 30 Seconds of Exposure





## Field Preservation – Methanol



- Tared methanol-charged vials are provided and should be verified before use



## Field Preservation – Methanol



- 1:1 ratio (or lower) of soil to 5, 10, 25 mL of methanol
- Operation must be done quickly



## Field Preservation – Methanol



- Add 5, 10 or 25 g plug of soil to methanol containing vial



# Advantages of Field Preservation



- No further treatment required
- Lower material cost



# Disadvantages of Field Preservation



- Limited shelf life
- More experienced field staff required



## Disadvantages of Field Preservation



- Difficult under adverse weather conditions
- More risk of error, e.g., spillage, mixing labels, etc.



## Disadvantages of Field Preservation



- Vehicle exhaust fumes can contaminate samples during preparation
- Shipping restrictions may apply for methanol





# The En Core<sup>®</sup> Sampler



- Easiest and quickest way to take a soil VOC sample
- Both a sampler and a container
- 5 and 25 g sizes (designed to collect an average weight – exact weight determined in lab)



# Advantages of En Core<sup>®</sup> Sampler



- Easy to use with minimal training
- Less field personnel required



# The En Core<sup>®</sup> Sampler



- Zero headspace design – minimal air trapped
- Disposable version released Nov. 10, 1997



# The En Core<sup>®</sup> Sampler



- More sample throughput
- No hazardous chemicals in the field



# The En Core<sup>®</sup> Sampler



- No shipping restrictions
- Sample preserved in controlled laboratory setting



# The En Core<sup>®</sup> Sampler



- Long shelf life – no expiration

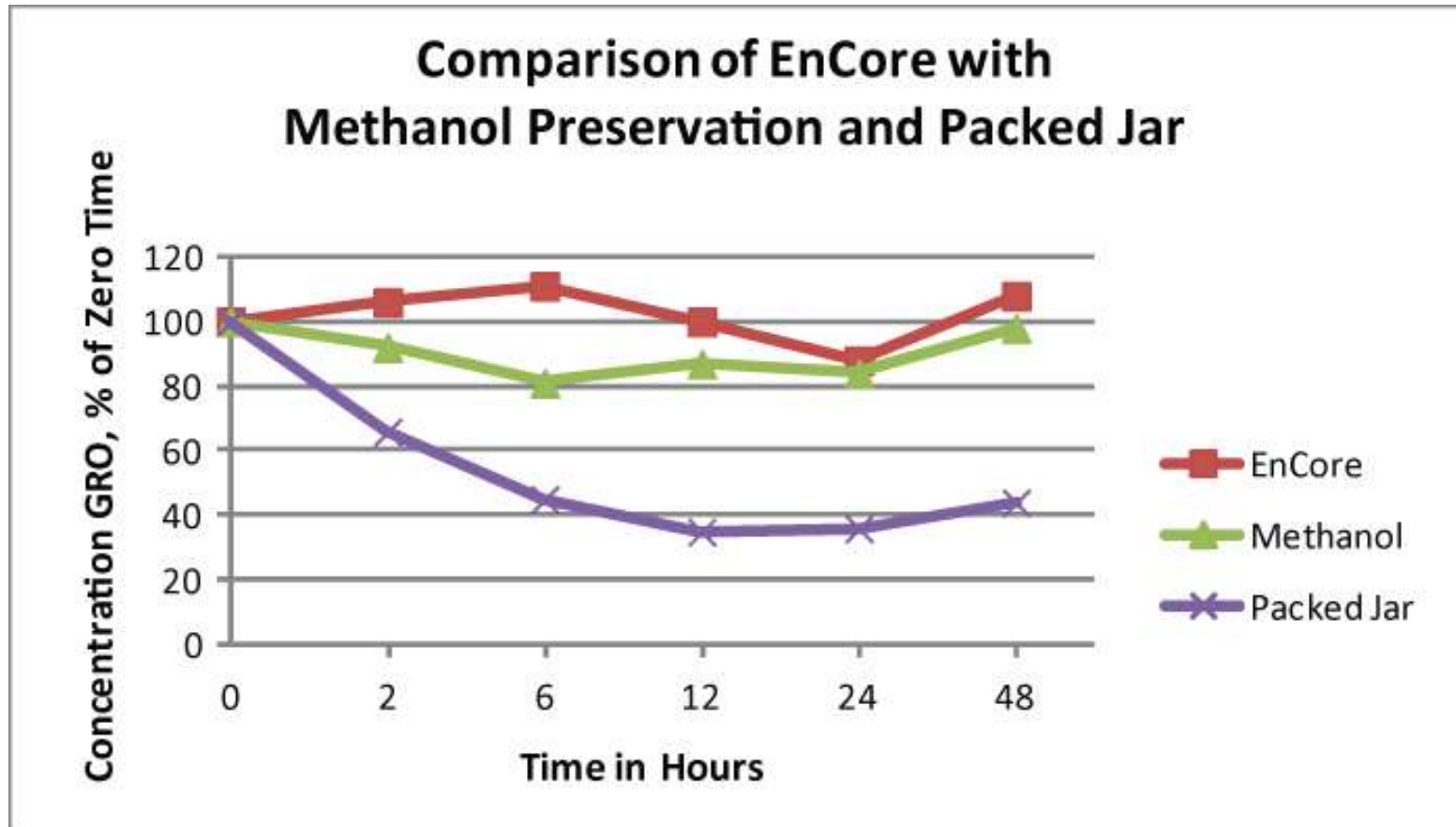


# The En Core<sup>®</sup> Sampler



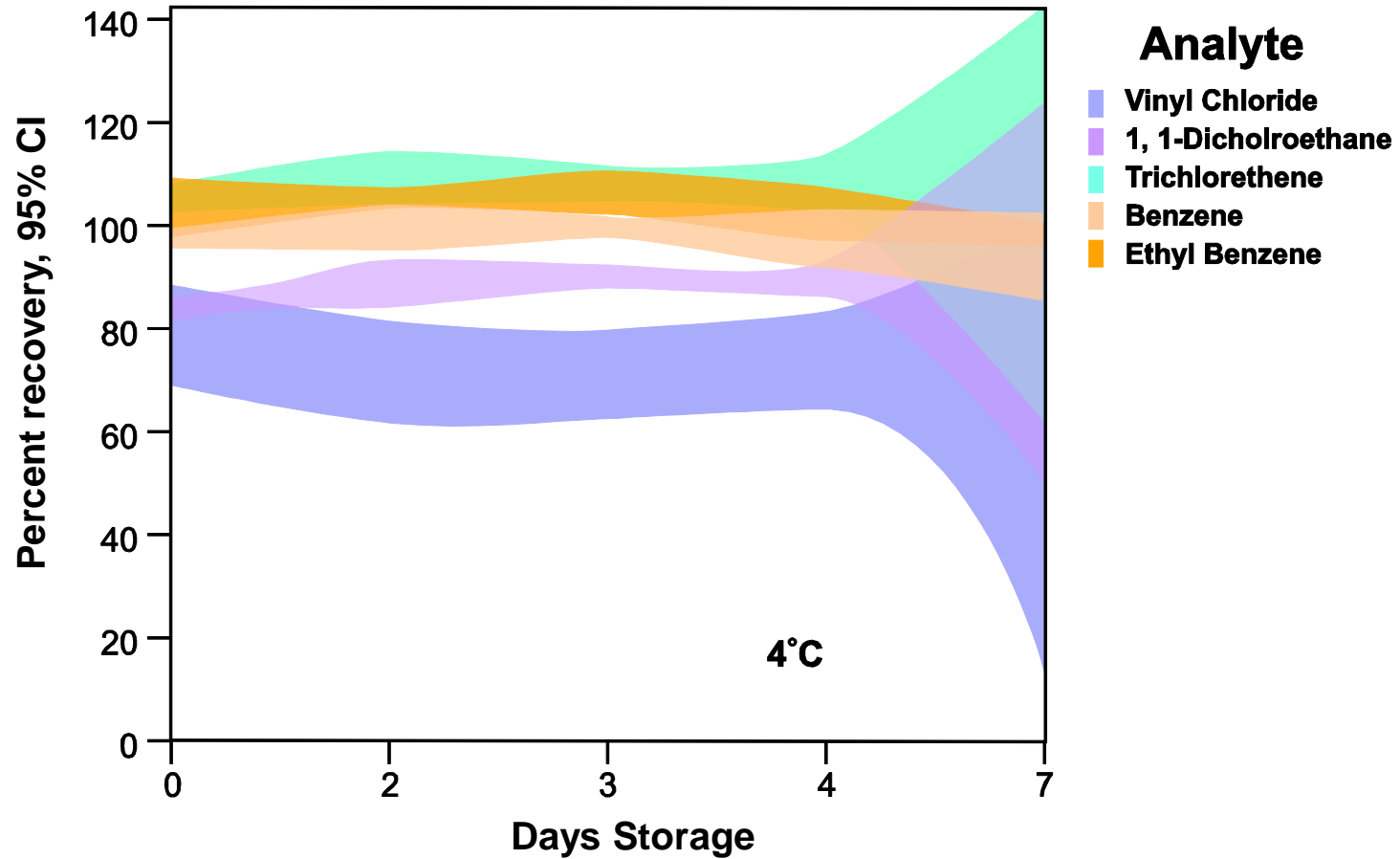
- 48-hour hold time to get into methanol – requires coordination
- Cost of goods is higher, though should be compared to any extra labor costs

# Stability of VOCs within 48 Hours





# Hold time study 0-7 days



# Testing of En Core<sup>®</sup> Sampler

- Every lot tested for quality and performance
- Samples of each lot saved for future reference
- Tested at temperature extremes
- Can be stored frozen
- ASTM approved (only sampler approved) and only sampler to pass ASTM specified validation method (ASTM 6418-09)
- Allowed as an alternative to field methanol in every state that has accepted or requires Method 5035
- Often used to minimize liability – consistency of samples despite variations in field staff experience





To watch training videos  
or for more information:

[www.ennovativetech.com](http://www.ennovativetech.com)

920-465-3960



# Questions?

**Dave Turriff**

En Novative Technologies, Inc.

**920-465-3960**

**dturriff@chemisphereinc.com**

**[www.ennovativetech.com](http://www.ennovativetech.com)**