



Exceeding Expectations

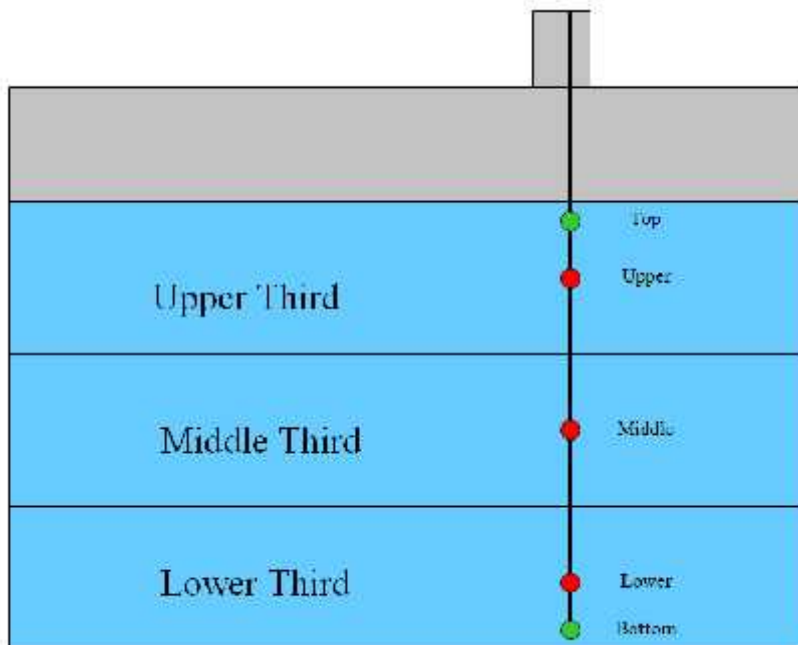
Did you know ...

The difference between an upper, middle, lower and a top, middle, bottom sample???

The difference between a TMB (Top, Middle, Bottom sample) vs. a UML (Upper, Middle, Lower) is all about the level the sample is obtained from...

A TOP sample is obtained 6 inches from the top surface of the product level inside storage tank whereas an UPPER sample is product obtained from the upper third of the total product's level. The same goes for a BOTTOM sample vs. a LOWER. Bottom samples are obtained from the bottom 6 inches of the product level vs. the lower third of the product total quantity inside the tank. A MIDDLE sample is just that... a sample obtained from the middle of the product level.

These are important differences to consider when blending components.



If you would like to be removed from our distribution list or you require information on a certain subject, please let us know via return email. Also, please be advised individual / group AmSpec laboratory / operational tours can be arranged upon request.

Please visit us on our website...www.amspecllc.com or contact us at (800) 286-2208

Other related topics...

A **composite sample** is a blend of spot samples mixed in proportion from where the samples were obtained. The American Petroleum Institute recommends the following spot sample levels for crude oil tanks greater than 1,000 bbl capacity.

- a. Three levels ... tanks containing more than 15 feet of product.
- b. Two levels...tanks containing between 10 and 15 feet of product.
- c. One level from middle... tanks containing less than 10 feet of product.

Spot Sampling Requirements - API Chapter 8.3.2.1			
Tank Capacity / Liquid Level	Required Samples		
	Upper	Middle	Lower
Tank Capacity less than or equal to 1,000 bbls		X	
Tank Capacity greater than 1,000 bbls			
Level less than or equal to 10 ft		X	
Level 10 ft to 15 ft	X		X
Level greater than 15 ft	X	X	X

A **running sample** is obtained by lowering an un-stoppered sampling bottle from the top of the product level to the bottom of the outlet connection and returning it to the top of the product at a uniform rate of speed so the container is approximately 75% full (no more 85%) when withdrawn from the product.



Cage sampler for levels and running samples



Closed system sampler

If you would like to be removed from our distribution list or you require information on a certain subject, please let us know via return email. Also, please be advised individual / group AmSpec laboratory / operational tours can be arranged upon request.

Please visit us on our website...www.amspecllc.com or contact us at (800) 286-2208