



# Biofuels Webinar Series

## NWGLDE Challenges with Release Detection Equipment Used with Tank Systems Containing Biofuels

Curt Johnson

Alabama Department of Environmental Management

NWGLDE Chair







# National Work Group On Leak Detection Evaluations (NWGLDE)

What is the NWGLDE?

NWGLDE Website Link:

<http://www.nwglde.org>





# Challenges with Release Detection Equipment Used With Ethanol and Ethanol Blends

Properties of Ethanol





# Challenges with Release Detection Equipment Used With Ethanol and Ethanol Blends

Example 1: Float Water Sensors





# Challenges with Release Detection Equipment Used With Ethanol Blends

Example 2: Conductivity Float Sensors





# NWGLDE Alternative Fuel Disclaimer Statement at

<http://www.nwglde.org/disclaimer.html>

“Unless specifically indicated on the individual data sheets, performance with alternative fuels has not been demonstrated.”





# NWGLDE Biodiesel Disclaimer “Exceptions” Statement at

<http://www.nwglde.org/disclaimer.html>

**Biodiesel B6 through B20 meeting ASTM D7467 and biodiesel B100 meeting ASTM D6751** may be used with all equipment listed for diesel whether or not these alternative fuels are included on individual data sheets. This exception DOES NOT APPLY to leak detection test methods using Out-Of Tank Product Detection (Vapor Phase) for B6-B20, and Out-Of Tank Product Detection (Liquid and Vapor Phase) and any tracer-based test methods for B100. For these methods, individual data sheets will have to be referenced to determine applicability.





# Release Detection Methods with Biofuels Listed

## AUTOMATIC TANK GAUGING METHOD

### **Certification Leak Threshold**

Leak rate of 0.2 gph with PD = 99% and PFA = 1%.  
0.1 gph.

A tank system should not be declared tight if the test result indicates a loss or gain that equals or exceeds this threshold.

### **Applicability**

Gasoline, diesel, aviation fuel, biodiesel blends B6-B20 meeting ASTM D7467, biodiesel B100 meeting ASTM D6751\*.

Other liquids with known coefficients of expansion and density may be tested after consultation with the manufacturer.





# Release Detection Methods with Biofuels Close to Being Listed

## AUTOMATIC MECHANICAL LINE LEAK DETECTOR

### **Certification Leak Threshold**

Leak rate of 3.0 gph with PD = 100% and PFA = 0%.  
2.0 gph.

A pipeline system should not be declared tight if the test result indicates a loss that equals or exceeds this threshold.

### **Applicability**

Gasoline, diesel, aviation fuel, ethanol blends up through E100, biodiesel blends B6-B20 meeting ASTM D7467, biodiesel B100 meeting ASTM D6751\*.

Other liquids with known coefficients of expansion and density may be tested after consultation with the manufacturer.





# Release Detection Methods with Issues Preventing Biofuels From Being Listed

- Method will not work with diesel
- No ASTM standard for B21 through B99
- Review of Final Battelle “Technology Assessment”





# Questions

