

**FY 2016**

**ANNUAL REPORT ON THE QUALITY OF  
KEROSENE AND MOTOR FUEL IN  
TENNESSEE**



**IN FULLFILLMENT OF THE REQUIREMENTS OF  
TCA 47-18-1304**

---

**SUBMITTED BY THE  
TENNESSEE DEPARTMENT OF AGRICULTURE  
JAI TEMPLETON, COMMISSIONER**



## **ANNUAL REPORT ON THE QUALITY OF KEROSENE AND MOTOR FUEL IN TENNESSEE**

### **TABLE OF CONTENTS**

- I. Effectiveness of Program**
  - a. Violation % Graphs**
  - b. State Wide Violation Graph**
  - c. Gasoline, Diesel, Kerosene Trend Graph**
- II. Consumer Complaints Summary**
- III. Inspection Data**
  - a. State Wide Summary**
  - b. TN Region Summary**
  - c. Business Type Summary**
  - d. Inspection Type Summary**
  - e. County Distribution Data**
- IV. Enforcement Summary**

# Fy 15-16 Annual Report on the Quality of Kerosene and Motor Fuel in Tennessee

## Executive Summary

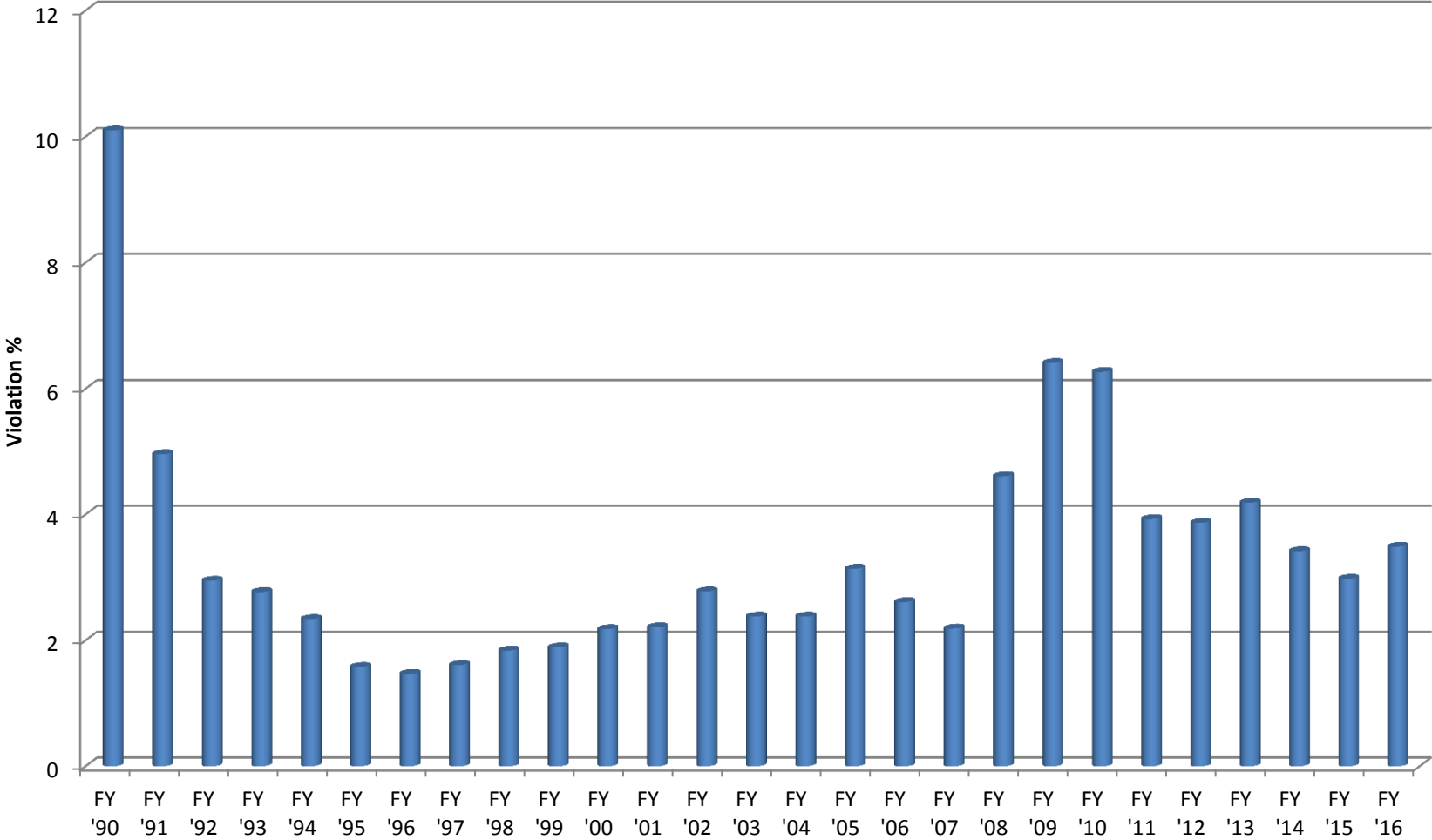
The Kerosene and Motor Fuels Quality Inspection Act, T.C.A. 47-18-1301 et seq., was signed into law in 1989. Under this law, the Commissioner of Agriculture is charged with establishing and administering a fuel quality inspection program to ensure that kerosene and motor fuels conveyed for consumption in Tennessee are labeled and posted in accordance with federal and state law, and meet applicable standards established by the ASTM International, formerly the American Society for Testing and Materials. This law was created in response to a 1988 statewide survey of fuel quality in Tennessee conducted by the Department of Agriculture. In this survey, approximately 30 percent of the samples tested failed to meet either the labeled declarations or the minimum ASTM standards.

The program implementation proved to be very successful. Within two years of administering the Act, the overall fuel compliance rate increased to a little more than 98 percent—a dramatic change from the results of the pre-program survey and the first year of implementation. This is demonstrated in the graph located within this report titled Annual Sample Violation Summary. When viewing this graph, note the spike in violations beginning in FY 2008 through FY 2010. This spike represents the introduction of alternative fuels into the Tennessee market. The majority of the increases in violations can be attributed to fuel dispenser labeling requirements. Tennessee rules require that fuels containing oxygenated compounds, such as ethanol, be labeled as such for consumer information.

We are pleased to note that our routine surveillance of biodiesel has continued to demonstrate marked improvements. The introduction of alternative fuels in FY 2008 included the influx of biodiesel and biodiesel-blended fuels. At that time, the processing of biodiesel had not been refined to ensure that all biodiesel products consistently met ASTM specifications. Improvement of the production methods led to fewer violations. FY 2014 started a decreasing trend in biodiesel violations that has continued; routine testing of biodiesel blendstock found no violations in 2016. This past year, the department achieved an overall compliance rate of 96 percent for all fuel products tested. This high compliance rate indicates that Tennesseans can expect the highest quality in transportation and heating fuels.

The quality assured under the Kerosene and Motor Fuels Quality Inspection Act continues to provide Tennessee with the confidence that every fuel purchase provides a product that is fit-for-purpose and satisfies the requirements of their equipment.

**TENNESSEE DEPARTMENT OF AGRICULTURE**  
**Annual Sample Violation Summary**  
All Regulated Products Tested



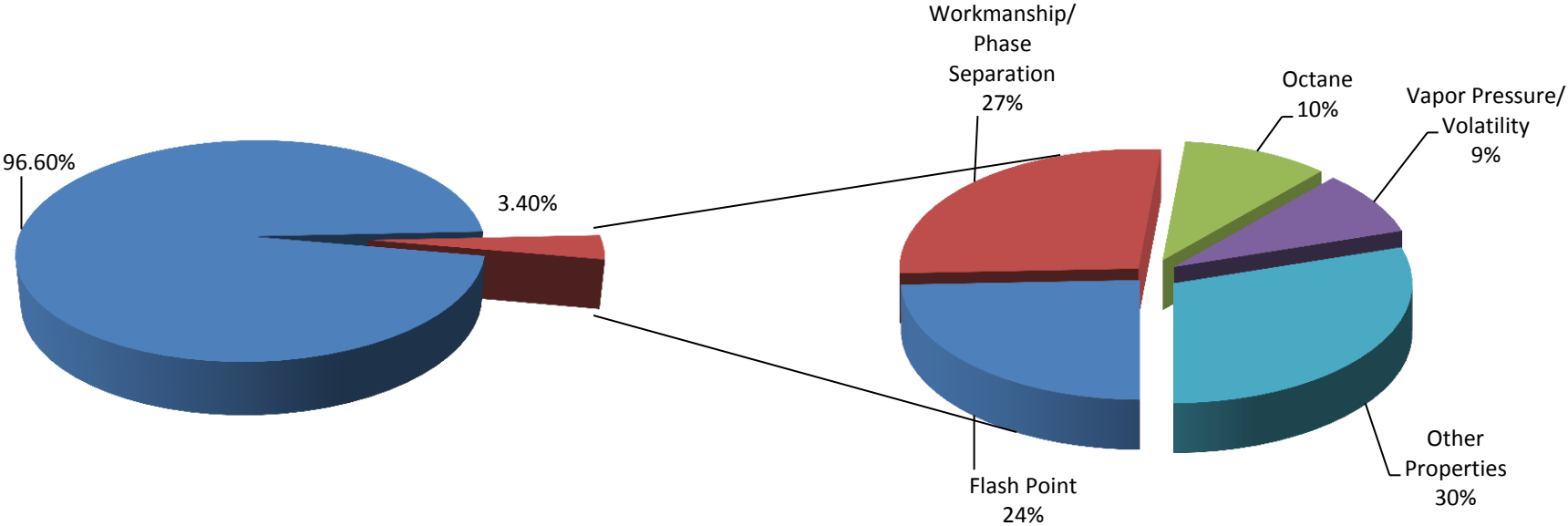
EFFECTIVENESS OF PROGRAM  
Consumer & Industry Services

# TENNESSEE DEPARTMENT OF AGRICULTURE

## State Wide Violation Summary

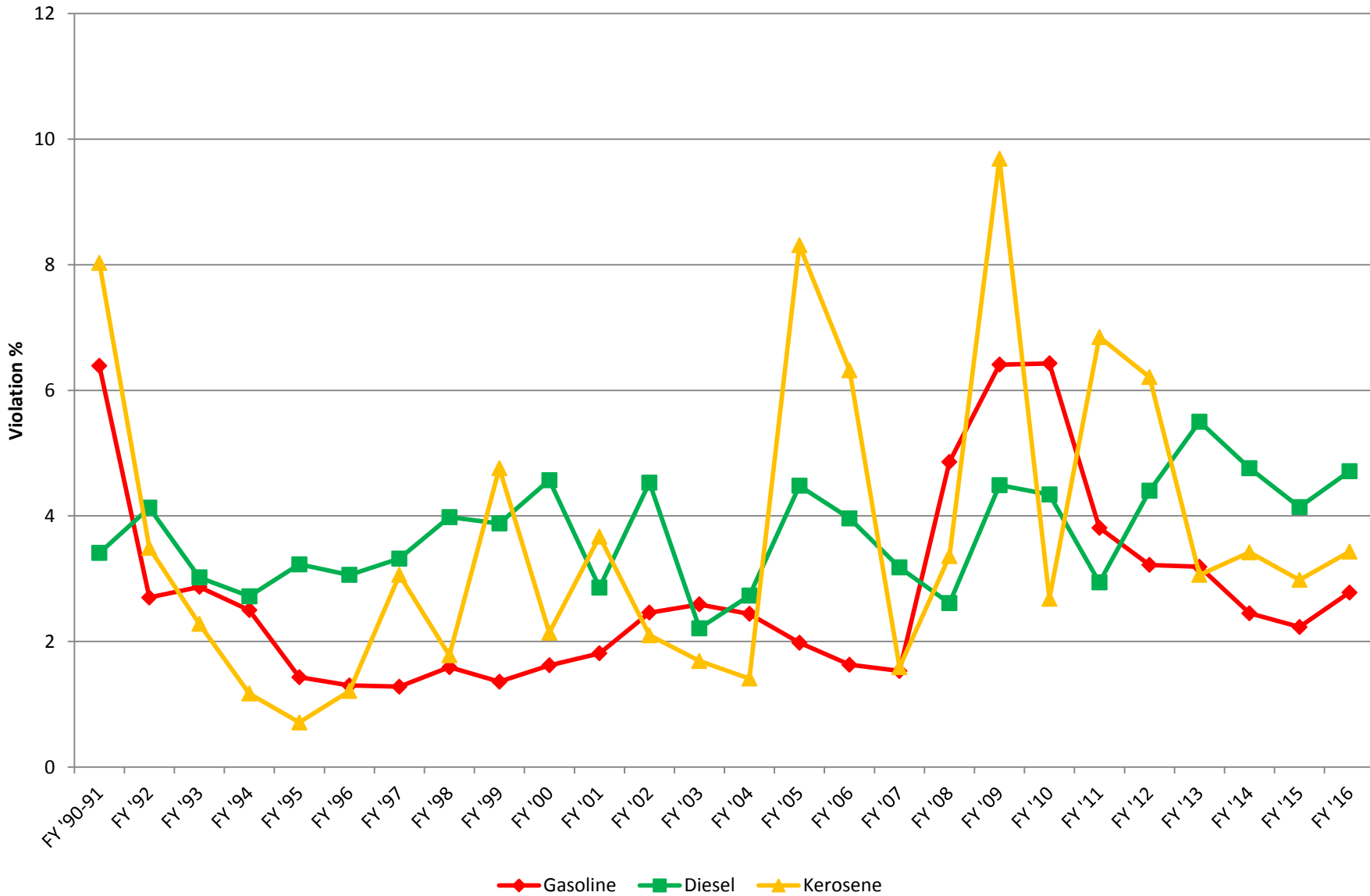
### Violation Breakdown

July 1, 2015 – June 30, 2016



# TENNESSEE DEPARTMENT OF AGRICULTURE

## Gasoline, Diesel, Kerosene Breakout





**MOTOR FUEL QUALITY PROGRAM  
SUMMARY OF CONSUMER COMPLAINTS  
Received from 7/1/2015 to 6/30/2016**

**TOTAL # OF COMPLAINTS EVALUATED IN TIME FRAME: 274**

**Category Breakdown of Complaints:**

<b>Contamination</b>	<b>236</b>
<b>Water</b>	<b>33</b>
<b>Alcohols</b>	<b>2</b>
<b>Octane</b>	<b>1</b>
<b>Labeling</b>	<b>1</b>
<b>Misc.</b>	<b>1</b>

**The Department maintains a 24 hour toll free line (1-800-OCTANE1) for Consumer Complaints. It is promoted through media publicity and dispenser decals applied by inspectors performing Weights and Measures activities.**



## Tennessee Department Of Agriculture State Wide Violation Analysis Report

Collected from 7/1/2015 to 6/30/2016

Product	Grade	Total Sample	Samples In Violation	%	Test Violation Total	Total Volume (Gallons)	Total In Violation
Aviation Gasoline							
	100LL	50	0	0.00%	0	742,935.30	0.00
	<b>Subtotal:</b>	50	0	0.00%	0	742,935.30	0.00
Biodiesel							
	1 BD Blendstock S15	2	0	0.00%	0	55,511.00	0.00
	2 BD Blend Stock S15	4	0	0.00%	0	195,572.00	0.00
	<b>Subtotal:</b>	6	0	0.00%	0	251,083.00	0.00
Biodiesel Blend							
	B20 S15	3	1	33.33%	1	5,172.00	2,576.00
	B6-20 S15	15	5	33.33%	5	171,372.40	68,353.00
	B6-20 S500	1	1	100.00%	1	8,083.00	8,083.00
	<b>Subtotal:</b>	19	7	36.84%	7	184,627.40	79,012.00
Denat. Fuel EtOH							
	E100	58	1	1.72%	1	41,526,363.00	256,399.00
	<b>Subtotal:</b>	58	1	1.72%	1	41,526,363.00	256,399.00
Diesel							
	No. 2D S15	1747	83	4.75%	84	48,669,844.00	207,861.00
	No. 2-D S500	14	0	0.00%	0	831,983.00	0.00
	<b>Subtotal:</b>	1761	83	4.71%	84	49,501,827.00	207,861.00
Ethanol Flex Fuel							
	E-85	58	4	6.90%	5	222,294.00	17,505.00
	<b>Subtotal:</b>	58	4	6.90%	5	222,294.00	17,505.00
Gasoline							
	Mid Grade Unleaded	960	29	3.02%	45	2,616,565.74	93,202.80
	Premium Blend Stock	14	0	0.00%	0	3,563,010.00	0.00
	Premium	1226	52	4.24%	86	13,058,796.13	742,584.00



Unleaded							
Regular Blend Stock	49	1	2.04%	4	33,566,851.00	616,000.00	
Regular Unleaded	2325	45	1.94%	87	49,216,452.40	493,909.00	
<b>Subtotal:</b>	<b>4574</b>	<b>127</b>	<b>2.78%</b>	<b>223</b>	<b>102,021,675.26</b>	<b>1,945,695.80</b>	
Jet Fuel							
Jet A	4	0	0.00%	0	3,233,091.00	0.00	
<b>Subtotal:</b>	<b>4</b>	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>3,233,091.00</b>	<b>0.00</b>	
Kerosene							
No. 1 K	175	6	3.43%	8	549,188.00	3,423.00	
<b>Subtotal:</b>	<b>175</b>	<b>6</b>	<b>3.43%</b>	<b>8</b>	<b>549,188.00</b>	<b>3,423.00</b>	
<b>Grand Total:</b>	<b>6705</b>	<b>228</b>	<b>3.40%</b>	<b>327</b>	<b>198,233,083.96</b>	<b>2,509,895.80</b>	

Test Violation Detail Listing		
80	Flash Point	24.46 %
46	Workmanship	14.07 %
43	Phase Separation	13.15 %
33	Antiknock Index	10.09 %
28	Vapor Pressure	8.56 %
21	Total Oxygen	6.42 %
16	Ethanol	4.89 %
13	Distillation E.P.	3.98 %
8	Distillation 10%	2.45 %
6	Distillation 50%	1.83 %
6	Distillation 90%	1.83 %
4	Oxidation Stability	1.22 %
4	Saybolt Color	1.22 %
3	Biodiesel Content	0.92 %
3	Sulfur	0.92 %
3	Vapor-Liquid Ratio	0.92 %
2	Distillation Residue	0.61 %
2	Lubricity	0.61 %
2	Motor Octane Number	0.61 %
2	Water	0.61 %
1	Methanol	0.31 %
1	Water & Sediment	0.31 %
327	Total	100.00 %