

FY 2017

**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

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Fy 16-17 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.

Under authority of the Clean Air Act, the U.S. Environmental Protection Agency (EPA), in 1992, issued vapor pressure control standards for gasoline and gasoline-oxygenate blends. Included in the regulation is a provision to allow an additional 1.0 psi above the applicable standard during the summer months for gasoline-oxygenate blends containing 9 to 10 volume percent ethanol. In 2014, Tennessee regulation extended the provisions to incorporate allowances for fuels containing one or more volume percent ethanol from September 16 through May 31.

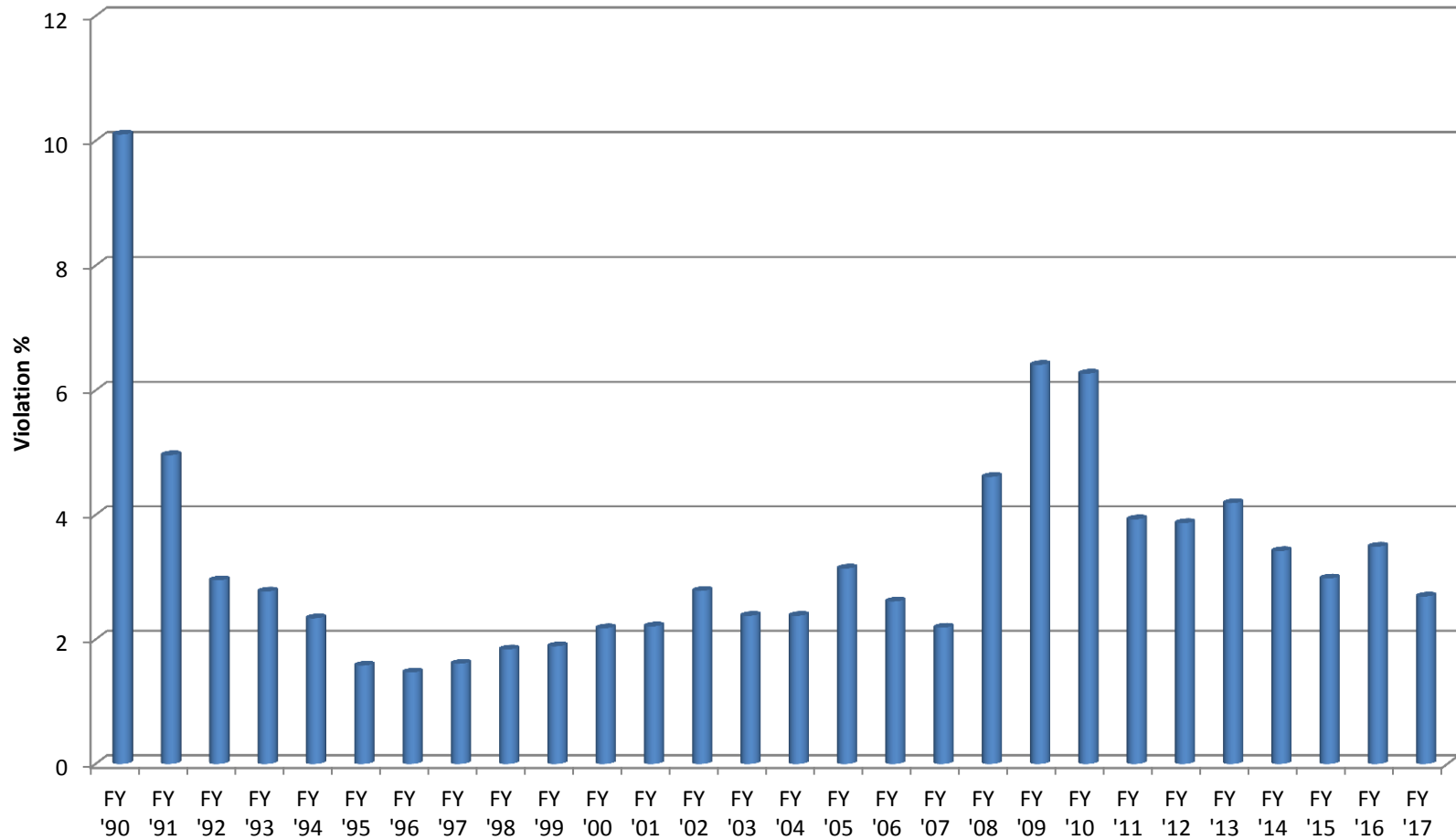
The Tennessee regulations were scheduled effective until May 1, 2016 and were then extended for an additional year by order of the Commissioner of Agriculture. This year, the legislature voted to incorporate these vapor pressure exceptions into the Kerosene and Motor Fuel Quality Inspection Act effective until which point ASTM incorporates changes to the vapor pressure maximums for ethanol blends.

The Kerosene and Motor Fuels Quality Inspection Act continues to ensure that Tennesseans have access to fuels that are fit-for-purpose and satisfy the requirements of their equipment.

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ANNUAL SAMPLE VIOLATION SUMMARY

All Regulated Products Tested



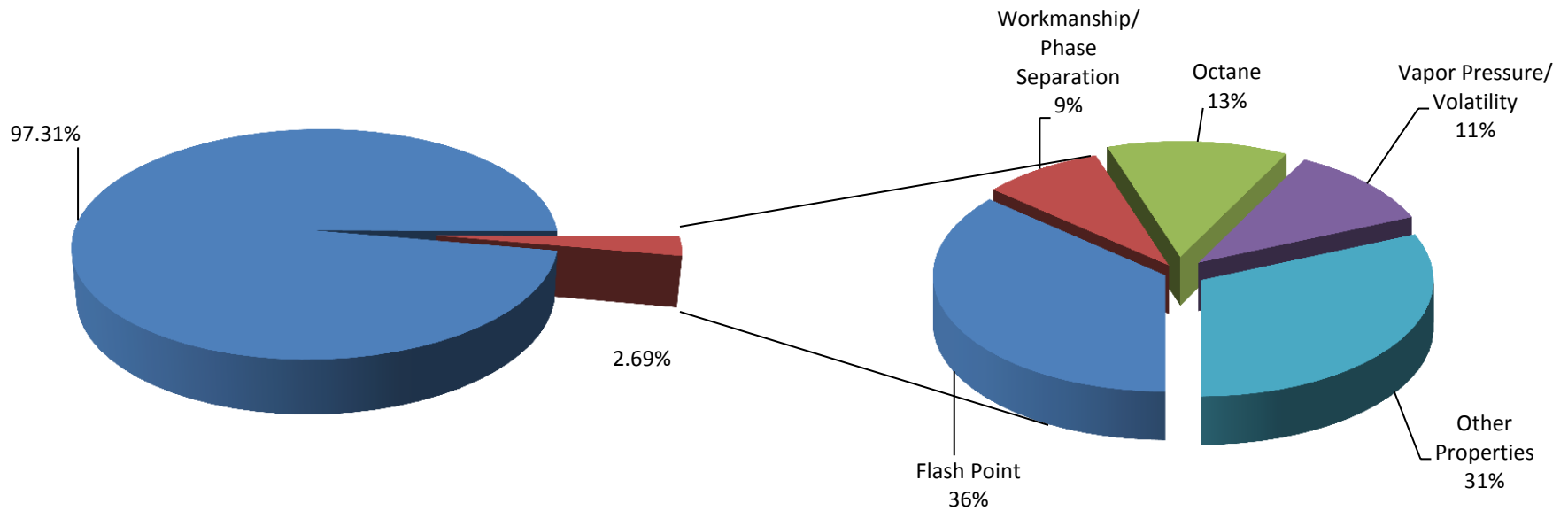
EFFECTIVENESS OF PROGRAM
Consumer & Industry Services

TENNESSEE DEPARTMENT OF AGRICULTURE

State Wide Violation Summary

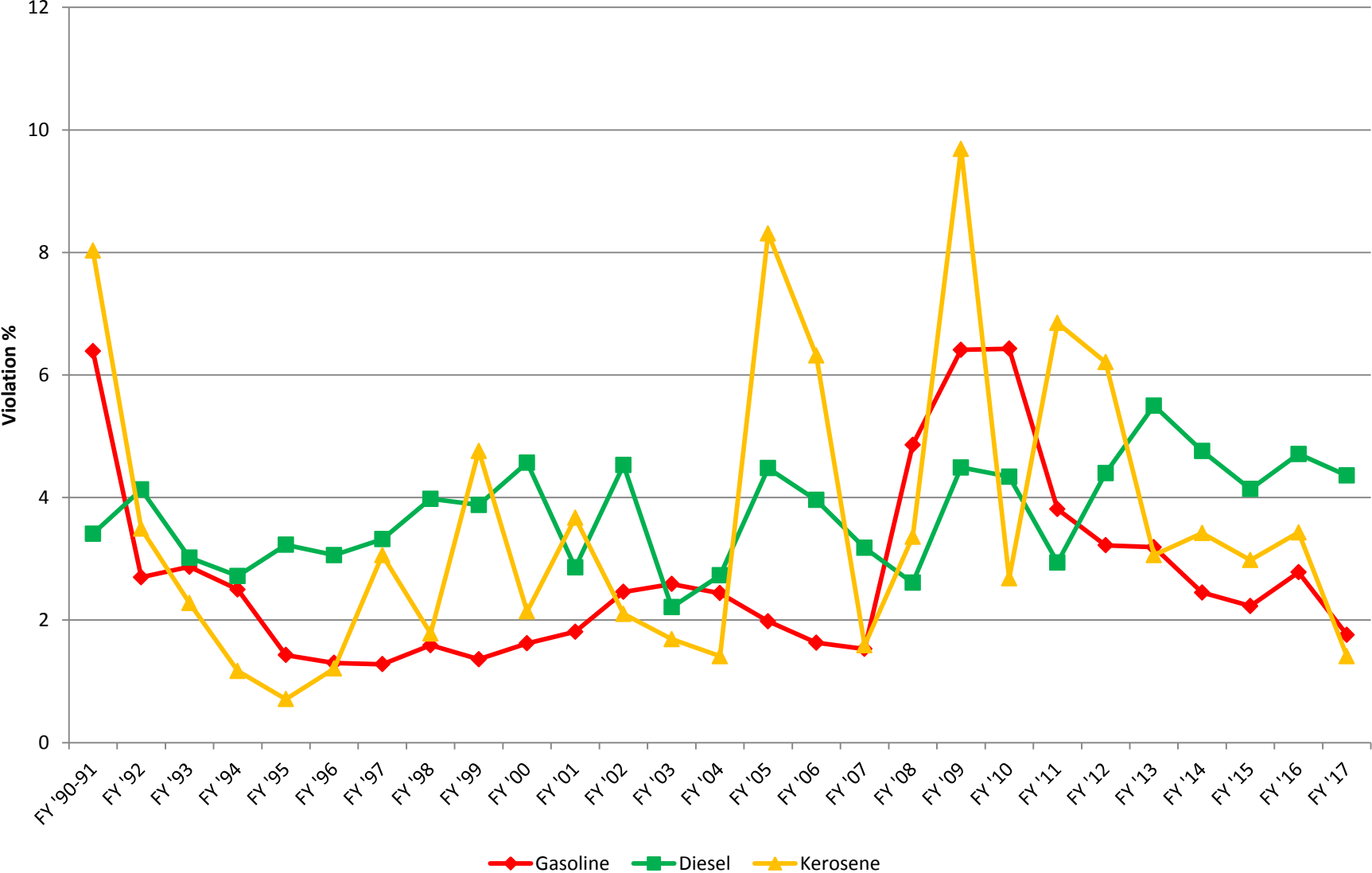
Violation Breakdown

July 1, 2016 – June 30, 2017



TENNESSEE DEPARTMENT OF AGRICULTURE

Gasoline, Diesel, Kerosene Breakout





**MOTOR FUEL QUALITY PROGRAM
SUMMARY OF CONSUMER COMPLAINTS
Received from 7/1/2016 to 6/30/2017**

TOTAL # OF COMPLAINTS EVALUATED IN TIME FRAME: 102

Category Breakdown of Complaints:

Fuel – Engine Failure – Complete	27
Fuel – Engine Stall	25
Fuel – Engine Hesitation	21
Fuel – Engine Knock	19
Fuel – Engine Start	7
Fuel – Engine Economy/Mileage	3

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 7/1/2016 to 6/30/2017

Product	Grade	Total Sample	Samples In Violation	%	Test Violation Total	Total Volume (Gallons)	Total In Violation
Aviation Gasoline							
	100LL	63	2	3.17%	2	618,074.80	4,641.00
	Subtotal:	63	2	3.17%	2	618,074.80	4,641.00
Biodiesel							
	1 BDBS S15	5	0	0.00%	0	4,866,521.00	0.00
	2 BDBS S15	2	0	0.00%	0	321,424.00	0.00
	Subtotal:	7	0	0.00%	0	5,187,945.00	0.00
Biodiesel Blend							
	B20 S15	8	3	37.50%	5	18,833.00	11,755.00
	B6-20 S15	32	7	21.88%	7	494,799.00	113,804.00
	Subtotal:	40	10	25.00%	12	513,632.00	125,559.00
Denat. Fuel EtOH							
	E100	30	0	0.00%	0	34,054,146.00	0.00
	Subtotal:	30	0	0.00%	0	34,054,146.00	0.00
Diesel							
	No. 2D S15	2348	101	4.30%	101	28,215,933.27	324,824.00
	No. 2D S15, Biodiesel <6%	1	1	100.00%	1	1,482.00	1,482.00
	No. 2D S15, Biodiesel 6-20%	1	0	0.00%	0	1,520.00	0.00
	No. 2-D S500	11	1	9.09%	1	31,005.00	330.00
	Subtotal:	2361	103	4.36%	103	28,249,940.27	326,636.00
Ethanol Flex Fuel							
	E-85	125	3	2.40%	4	467,724.00	7,495.00
	Subtotal:	125	3	2.40%	4	467,724.00	7,495.00
Gasoline							
	Mid Grade Unleaded	980	23	2.35%	30	2,809,043.35	46,131.00
	Premium Blend Stock	42	0	0.00%	0	9,325,487.00	0.00

Premium Unleaded	1225	35	2.86%	50	6,816,925.74	77,846.00
Regular Blend Stock	54	0	0.00%	0	20,454,320.00	0.00
Regular Unleaded	2517	27	1.07%	39	16,548,798.89	133,447.80
Subtotal:	4818	85	1.76%	119	55,954,574.97	257,424.80
Jet Fuel						
JA	3	0	0.00%	0	3,096,285.00	0.00
Subtotal:	3	0	0.00%	0	3,096,285.00	0.00
Kerosene						
No. 1 K	283	4	1.41%	5	1,020,474.00	9,148.00
Subtotal:	283	4	1.41%	5	1,020,474.00	9,148.00
Grand Total:	7730	207	2.68%	245	129,162,796.04	730,903.80

Test Violation Detail Listing		
89	Flash Point	36.33 %
31	Antiknock Index	12.65 %
27	Vapor Pressure	11.02 %
18	Biodiesel Content	7.35 %
15	Total Oxygen	6.12 %
12	Workmanship	4.9 %
9	Phase Separation	3.67 %
6	Distillation E.P.	2.45 %
5	Distillation 10%	2.04 %
4	Distillation 90%	1.63 %
4	Sulfur	1.63 %
4	Water & Sediment	1.63 %
3	Distillation 50%	1.22 %
3	Ethanol	1.22 %
3	Motor Octane Number	1.22 %
3	Water	1.22 %
2	Oxidation Stability	0.82 %
2	Saybolt Color	0.82 %
2	Vapor-Liquid Ratio	0.82 %
1	Distillation IBP	0.41 %
1	Distillation Residue	0.41 %
1	Lubricity	0.41 %
245	Total	100 %