

2008 Motor Fuel Quality Program Report



Washington State Department of Agriculture
Weights & Measures



2008 Motor Fuel Quality Program Report
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Weights and Measures Program
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Photo on cover taken by Rebecca McAferty

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Mission Statement & Goals

WSDA Agency Mission Statement

WSDA serves the people of Washington State by supporting the agricultural community and promoting consumer and environmental protection.

Weights & Measures Mission Statement

The WSDA Weights and Measures Program promotes marketplace equity in commercial transactions through testing and inspecting commercial devices, price verification, package inspection, public education, monitoring fuel quality and investigating complaints.

Consumer Confidence

The quality of fuel in Washington State is regulated by the Motor Fuel Quality Act (19.112 RCW) which places an obligation on the fuel industry (producers, distributors, and retailer) and Washington State Department of Agriculture (WSDA) to ensure the consumer gets the quality and quantity of fuel they pay for. We do this by verifying fuel prices, testing and inspecting commercial dispensing devices, and investigating complaints.

The Weights and Measures Program protects consumers from misleading marketing or retailing of fuels that do not measure up to state and federal quality standards. The program also promotes marketplace equality and confidence in motor fuel transactions for consumers and businesses.

Regulatory Rules

RCW 19.112 Motor Fuel Quality Act

<http://apps.leg.wa.gov/RCW/default.aspx?cite=19.112>

RCW 19.94 Weights and Measures

<http://apps.leg.wa.gov/RCW/default.aspx?cite=19.94>

WAC 16-657 Retail Pricing of Motor and Heating Fuel

<http://apps.leg.wa.gov/WAC/default.aspx?cite=16-657>

WAC 16-662 Weights and Measures – National Handbooks

<http://apps.leg.wa.gov/WAC/default.aspx?cite=16-662>

WAC 16-663 Service Agents

<http://apps.leg.wa.gov/WAC/default.aspx?cite=16-663>

WAC 16-664 National Type Evaluation Program

<http://apps.leg.wa.gov/WAC/default.aspx?cite=16.664>

Motor Fuel Quality Definitions

Biodiesel

Means the monoalkyl esters of long chain fatty acids derived from plant or animal matter that meet the registration requirements for fuels and fuel additives established by the federal environmental protection agency and standards established by the American Society of Testing and Materials (ASTM). [RCW 19.112, ASTM D6751]

Most common feedstocks in Washington used to make biodiesel are Soy, Canola/Rapeseed, Camelina, Mustards, and Tallow.

Renewable Fuels

A renewable fuel is any motor vehicle fuel that is used to replace or reduce the quantity of fossil fuel present in a fuel mixture used to fuel a motor vehicle, and is produced from any of the following: [40CFR80.1101]

- Grain;
- Starch;
- Oilseeds;
- Vegetable, animal, or fish materials including fats, greases and oils;
- Sugarcane;
- Sugar beets;
- Sugar components;
- Tobacco;
- Potatoes;
- Other biomass;
- Natural gas produced from a biogas source (landfill, sewage waste treatment plant, feedlot, or other places of decaying organic material.)



Renewable fuel includes cellulosic biomass ethanol, waste derived ethanol, biodiesel (mono-alkyl ester), non-ester renewable diesel, and blending components derived from renewable fuels.

Renewable Diesel

Renewable Diesel also known as Hydrogenation-Derived Renewable Diesel (HDRD). Non-ester renewable diesel means a motor vehicle fuel or fuel additive that is:

[40CFR80.1101, ASTM D975]

- Registered as a motor vehicle fuel or fuel additive under 40CFR part 79;
- Not a mono-alkyl ester;
- Intended for use in engines that are designed to run on conventional diesel fuel;
- Derived from nonpetroleum renewable resources.

Nonpetroleum Renewable Resources

Nonpetroleum renewable resources include, but are not limited to the following:

[40CFR80.1101]

- Plant oils;
- Animal fats, and animal wastes, including poultry fats and poultry wastes, and other waste materials;
- Municipal solid waste and sludges and oil derived from wastewater and the treatment of wastewater.

Overview of Motor Fuel Sampling

WSDA recently drafted new policies and procedures for motor fuel sampling to serve as documentation for our program as well as instructional procedures for performing motor fuel sampling.

Weights and Measures inspectors perform several different types of motor fuel inspections.

Fuel Quality Inspection

- **Fuel Labeling.** Inspectors ensure that specific fuel types mixed with alternative fuels are labeled according to federal and state standards.
- **Record water in fuel tank.** Inspectors measure and record water level in fuel tank using a 16 ft tank stick with water detecting paste, national standard levels are set for specific fuel types.
- **Field test kits and equipment.** Inspectors use a quick and accurate ethanol detecting kit, and an ethanol percentage/octane detecting equipment (Wilks and Zeltex).
- **Samples of fuel.** Inspectors sample gasoline, gasoline with ethanol (E10), gasoline with ethanol (E85), diesel, diesel with biodiesel (B5), diesel with biodiesel (B6-B99) and biodiesel and take samples at the nozzle from retailers sent to the lab for complete fuel analysis.

Fuel Device Inspections

- **Unit Price.** Display of unit price and product identity. Advertised price must match unit price and must be calculated correctly for product dispensed.
- **Device registration.** Check to see that the device is annually registered with the Department of Licensing.
- **Calibration.** Check to see that the device is working properly and calibrated correctly.
- **Condition.** Inspecting for leaks, defects or faulty condition of the device.
- **Compatibility.** Check to see that the components are suitable and compatible with the specific fuel being dispensed.

Overview Summary of 2008 Motor Fuel Sampling Results

Gasoline and Gasoline with Ethanol

Out of 452 gasoline samples taken in 2008, there were two major issues with gasoline:

- Gas with 10% ethanol (E10) was either not labeled or incorrectly labeled at the pump;
- High amounts of entrained water were detected or water mixed with the fuel.
 - 25.8% of all gasoline samples had amounts of entrained water mixed with fuel over 500 parts per million (ppm).

In 2008, the average ethanol percentage being sold in Washington State is 4.77% ethanol.

Ethanol retailers can receive free ethanol labels that are compliant with WSDA labeling requirements (WAC 16-662-115) by contacting the following web address.

http://www.drivingethanol.org/promotions/state_washington.aspx.

Diesel and Biodiesel

Out of 313 diesel and biodiesel samples taken in 2008, there were two major issues with diesel and biodiesel:

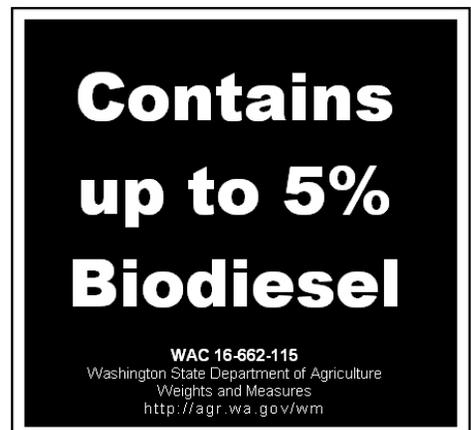
- The biodiesel blend was incorrectly labeled at the pump;
 - 38.9% of all biodiesel samples failed to accurately post biodiesel blend at the pump.
- High amounts of entrained water were detected or water mixed with fuel.
 - 14.5 % of all biodiesel samples had amounts of entrained water mixed with fuel over 500 ppm.

Three samples had minor issues:

- One sample that had sulfur above 15 ppm;
- One sample that had Acid number over 0.50; and
- One 5% Renewable Diesel that tested positive at 4.7% biodiesel.

Early program concerns regarding glycerin, acid, cloud point, were proved to be non-issues through the program's fuel test results.

WSDA took a proactive step in designing and distributing biodiesel labels for the B2-B5 biodiesel retailers. The program provided these labels free of charge to help mitigate the non-compliance with WAC 16-662-115 requiring all dispensing devices to label the product for consumer awareness. By providing a label at the time of inspection, the inspectors are able to make a positive and educational approach with retailers.



Numbers, Locations, and Samples

Washington State Motor Fuel Distributors/Suppliers and Retailers

Number	Type
112-125	All fuel distributors/suppliers
30	Of all fuel distributors that are biodiesel distributors/suppliers
73	Biodiesel retail locations (does not include DOT locations and Ports)
10	Biodiesel producers
26	Terminal racks that load fuel trucks
7	E85 pump locations
2,837	Number of locations with registered - gas and diesel devices

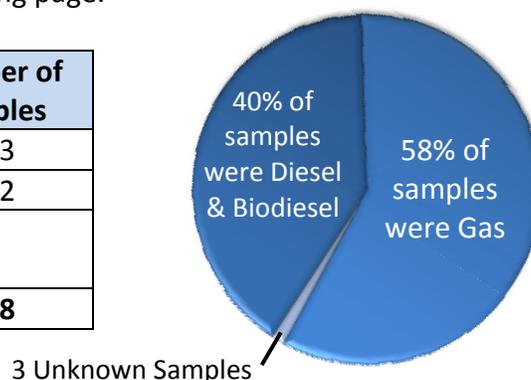
The following companies have a Blender License registered with the Department of Licensing- this license allows businesses to produce and distribute biodiesel.

General Biodiesel, Inc (Seattle, WA)
 Columbia BioEnergy, LLC (Moses Lake, WA)
 Standard Biodiesel USA, Inc (Arlington, WA)
 Imperium Grays Harbor LLC (Seattle, WA)
 Gen X Energy Group, Inc (Burbank, WA)
 Mansfield Oil Company of Gainesville (Gainesville, GA)
 Natural Selection Farms, Inc (Sunnyside, WA)
 Seattle Biodiesel, LLC (Seattle, WA)
 Whole Energy Fuel (Bellingham, WA)
 Bunge North America, Inc (St. Louis, MO)

Motor Fuel Samples

See overview of motor fuel sample report on the following page.

Fuel Type	Number of Samples
Biodiesel	313
Gasoline	452
Unknown & Renewable Diesel (R5) <i>Unknown fuel type due to unlabeled product.</i>	3
Total Number of 2008 Fuel Samples	768

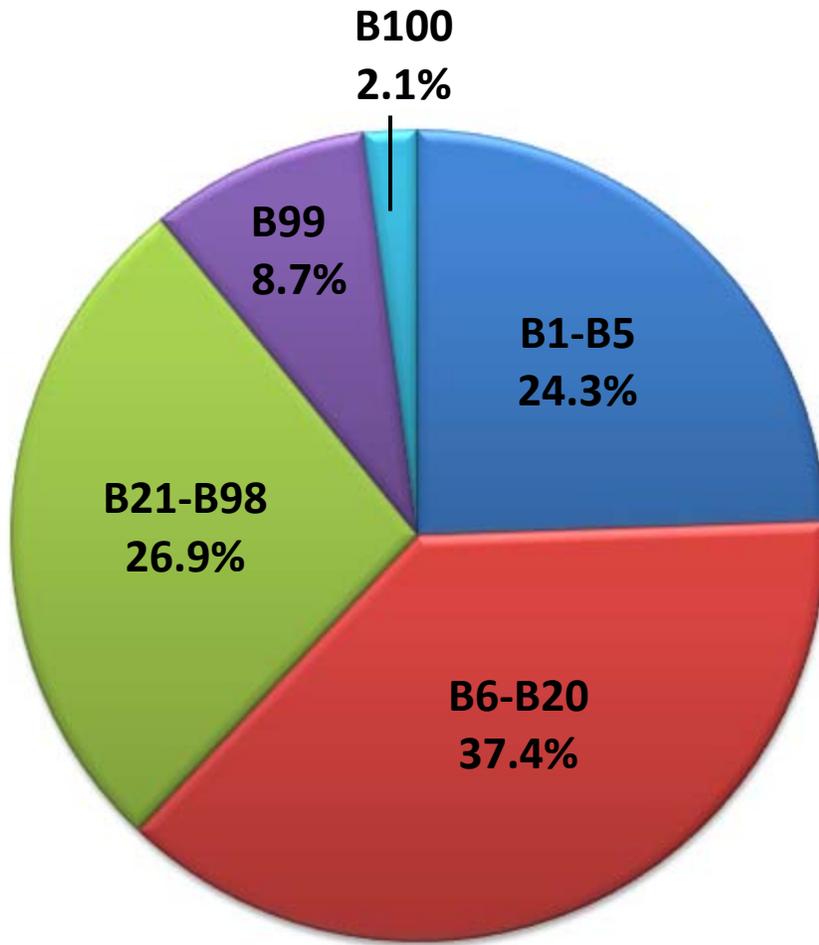


Overview of Motor Fuel Sampling Results for 2008

	Totals 2008	1/2008	2/2008	3/2008	4/2008	5/2008	6/2008	7/2008	8/2008	9/2008	10/2008	11/2008	12/2008
Gas/Ethanol Gas													
Total # of Gas/EGas Samples	452	60	61	9	74	5	39	109	37	1	17	0	40
Total # Gas/Egas samples sent to lab	243	6	16	0	40	5	31	79	22	1	3	0	40
Average Ethanol Percentage	4.77	5.26	6.14	0.00	5.90	0.01	4.69	5.27	6.00	10.41	6.58	0.00	7.01
Total # Samples over E10	50	2	20	0	7	0	0	11	3	1	0	0	6
Total # Samples that failed octane labeling	26	1	11	0	6	0	0	6	0	0	0	0	2
Total # Zetex Samples	252	56	0	8	70	12	12	59	21	0	14	0	0
Water measured at the bottom of Ethanol/Gas fuel tanks over 1/4"	8	1	0	0	0	0	0	5	0	0	0	0	2
Total # of samples that failed water & sediment	1	0	0	0	0	0	0	0	0	0	0	0	1
Total # of samples that failed Water by Karl Fischer (Entrained)	117	3	1	0	26	1	18	41	1	1	2	0	23
Diesel/Biodiesel													
Total # Diesel/Biodiesel Samples	313	12	6	77	15	5	58	3	1	55	9	28	44
Other Samples	3	0	0	1	1	0	1	0	0	0	0	0	0
Total # Diesel/Biodiesel samples sent to lab	301	6	6	73	13	5	58	3	1	55	9	28	44
Total # of samples that failed Water by Karl Fischer (Entrained)	46	2	0	17	4	0	7	0	0	5	4	2	5
Total # Samples that failed biodiesel labeling	123	2	2	18	4	1	24	3	0	28	1	14	26
Total # Samples that failed Biodiesel Determination	181	4	3	30	9	2	34	3	0	37	16	16	27
Total # Samples that failed Water & Sediment	1	0	0	0	0	0	1	0	0	0	0	0	0
Failed Other Specification	2	1	Sulfur	0	1 R5	0	0	0	0	1 Acid	0	0	0
Water measured at the bottom of Gas, Diesel, Biodiesel fuel tanks over 2"	0	0	0	0	0	0	0	0	0	0	0	0	0
Total fuel samples taken in 2008.	768												

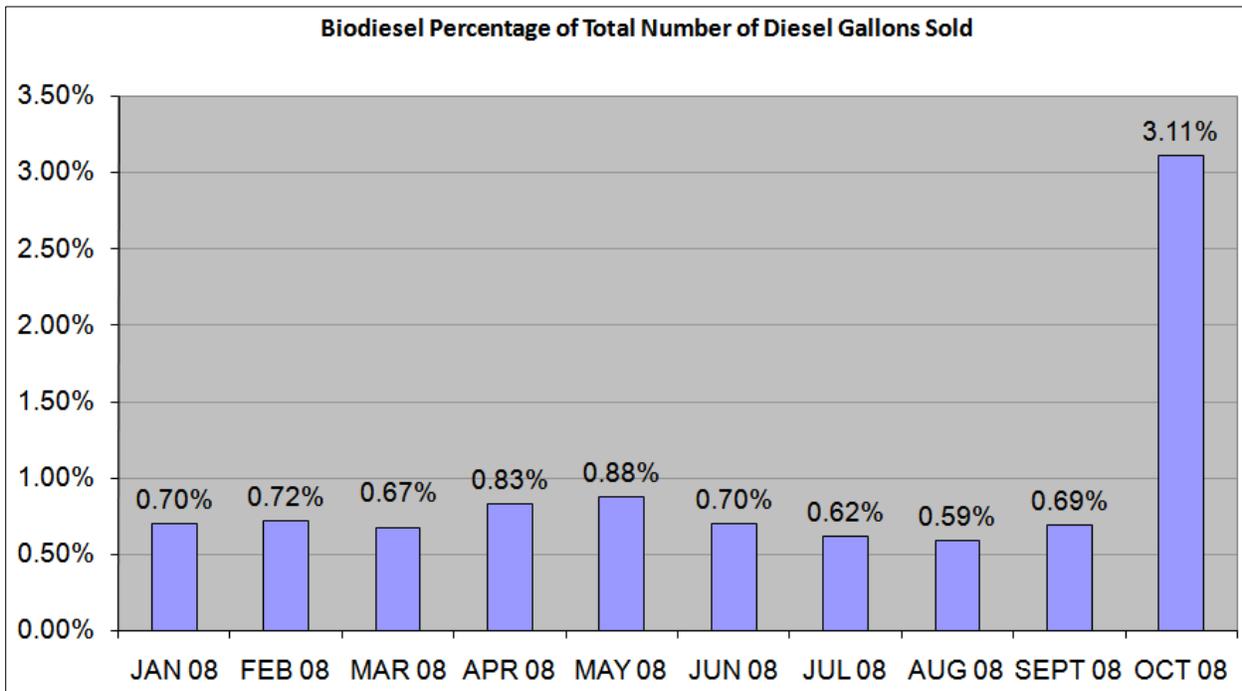
Most Common Biodiesel Blends by Percentage Sold in 2008

Out of 313 diesel and biodiesel samples taken, 24.3% tested as B1-B5, 37.4% tested as B6-B20, 26.9% tested as B21-B98, 8.7% tested as B99, and 2.1% tested as B100.

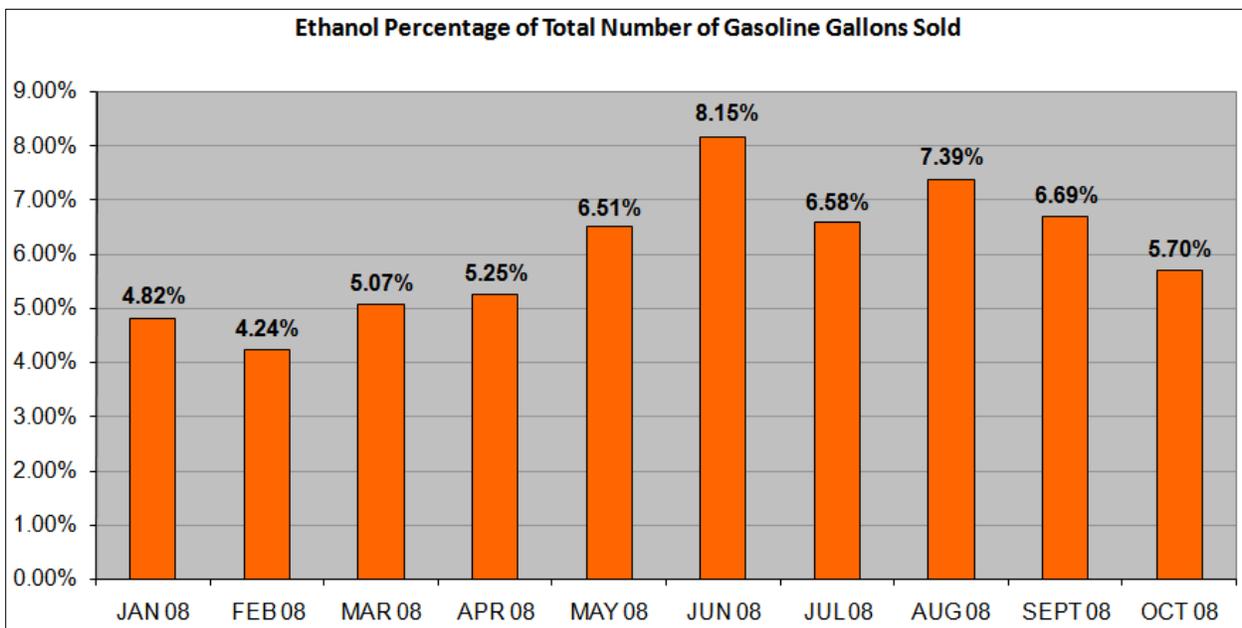


2% Mandate for Ethanol & Biodiesel

As of October 31, 2008 out of all the gallons of diesel sold annually (aggregate amount) the average percentage of biodiesel sold with diesel is 0.95%.



As of October 31, 2008 out of all the gallons of gasoline sold annually (aggregate amount) the average percentage of ethanol sold with gasoline is 6.79%.



Program Progress Overview

- WSDA is developing a new fuel analysis contract to include all of the fuel types that are currently available and test all of these fuels against ASTM International standards that apply to different fuel types.
- WSDA mails or emails quarterly fuel analysis lab reports to retailers, producers, and distributors.
- WSDA is developing motor fuel sampling policies and procedures.
- WSDA established a significant presence by attending and presenting the Motor Fuel Quality Program at several organized fuel industry events.
 - National Biodiesel Organization Annual Biodiesel Conference in Florida February 2008
 - Fleet Manager Association
 - Washington Oil Marketers Association June 2008
 - GA Washington State Annual Training Conference & Tradeshow
 - NW Biodiesel Network monthly meetings
 - Puget Sound Clean Cities Organization Conference
- WSDA conducts quarterly Biofuels Technical Workgroup meetings to refine standards, develop testing methods and state quality standards.
- WSDA is developing a new web site for the Weights & Measures Program that will effectively deliver information to stakeholders, other state agencies, and other states.
<http://www.agr.wa.gov/wm>
- Media coverage of fuel testing
<http://www.theolympian.com/business/story/573489.html>
<http://www.komonews.com/news/local/31140014.html>
<http://www.komonews.com/news/18157479.html>
- WSDA joined forces with other state agencies that have similar interest in fuel quality and coordinating efforts for emergency response, education and outreach.
 - Department of Ecology
 - Washington State Fire Marshall
 - Department of Transportation

Fuel Tax & Program Budget

State fuel
tax
37.5¢/G

State Fuel Tax

Washington State fuel tax (Motor Vehicle Fund) \$.375 per gallon or 37.5 ¢ per gallon goes to the Department of Licensing for constructing and maintenance of state, city and county roads, bridges and ferries, purchasing rights of way, installing maintaining and operating traffic and signal lights, policing state public highways, operation of movable span bridges.

Federal fuel
tax on
Gasoline
18.4¢/G

Federal Fuel Tax

In addition to the state fuel tax, there is a federal tax on gasoline at 18.4 ¢ per gallon and federal tax on diesel at 24.0 ¢ per gallon.

55.9 ¢ of every gallon of gasoline goes towards state and federal fuel tax.
61.5 ¢ of every gallon of diesel goes towards state and federal fuel tax.

Federal
fuel tax on
Diesel
24¢/G

Program Budget

Weights & Measures Budget Overview (July 1, 2007 – June 30, 2009)

Funding Category	Description of Uses	Funding
General Fund	Package checking, scanning, portion of inspector salary and portion of truck purchases.	\$340,000
General Fund	Biofuels Standards Coordinator position, fuel sampling and membership & subscription.	\$201,000
Fuel Tax	Portion fuel sampling, 2 FTEs and 15% of inspector salary.	\$939,000
Fuel Tax	Portion of fuel sampling.	\$323,000
Energy Freedom	Purchase equipment, portion of sampling supplies, portion of trucks, and portion of fuel sampling.	\$500,000
Device Registration Fees	65% inspector salary, inspector travel, office staffing, program supplies and services, and fuel for trucks.	\$2,053,513
Metrology Lab	Metrology lab service fees.	\$271,952

DOT Fuel Locations

The Washington State Department of Transportation (WSDOT) operates 131 fuel sites statewide, including Washington State Patrol (WSP) fuel sites. November 2008, DOT reported 35 of 131 DOT fuel sites currently supplies biodiesel up to B20. WSDOT plans to expand their biodiesel supply as biodiesel becomes more widely available. WSDOT fuel sites are available to other state agencies, higher education and co-op members including city, county, school districts and some non-profit organizations throughout Washington. 87 fuel samples were taken at WSDOT fuel sites in 2008. WSDOT has their fueling sites posted on their webpage at <http://www.wsdot.wa.gov/publications/manuals/fulltext/M53-55/FuelStations.pdf>.

The Department of General Administration (GA) reports biannually on biofuels use by state agencies. The 2008 GA report "Biodiesel Adoption in Washington" is available at <http://www.ga.wa.gov/News/BiodieselReport.pdf>.

Washington State Ferries and Biodiesel

WSDA has taken fuel samples from vendors that also provide fuel to the Washington State Ferries (WSF) although WSDA does not monitor fuel quality for marine or aviation fuel. The EPA or Department of Ecology monitors fuel quality at marinas, docks and airports. <http://www.localmarina.com/washington-marinas/>.

The WSF, a division of the Department of Transportation (DOT), is currently testing the use of biodiesel in the marine environment. More information about the WSF Biodiesel Research and Demonstration Project is available at <http://www.wsdot.wa.gov/Ferries/Environment/biodiesel.htm>.

School Districts Using Biodiesel

There are 300 school districts in the State of Washington, 54 have reported their fuel usage and only 2 out of 54 districts have reported using biodiesel. The biodiesel usage is significantly less from the 7 reported last year.

Reduction in biodiesel usage may be attributed to fuel prices, mechanic issues and availability.



City Transit Organizations Using Biodiesel

There are 24 major transit organizations in the State of Washington, 5 transit organizations have reported using biodiesel in their fleets. The biodiesel usage is down from 9 reported last year.

Reduction in biodiesel usage may be attributed directly to fuel prices.



Constituent Inquiries

Weights & Measures Program Manager

100-200 inquiries (phone calls and emails) from stakeholders, consumers, or businesses.

Biofuels Standards Coordinator

Over 170 inquiries (phone calls and emails) from stakeholders, consumers, or businesses (retailer, distributor, refiner, supplier, cooperative businesses)

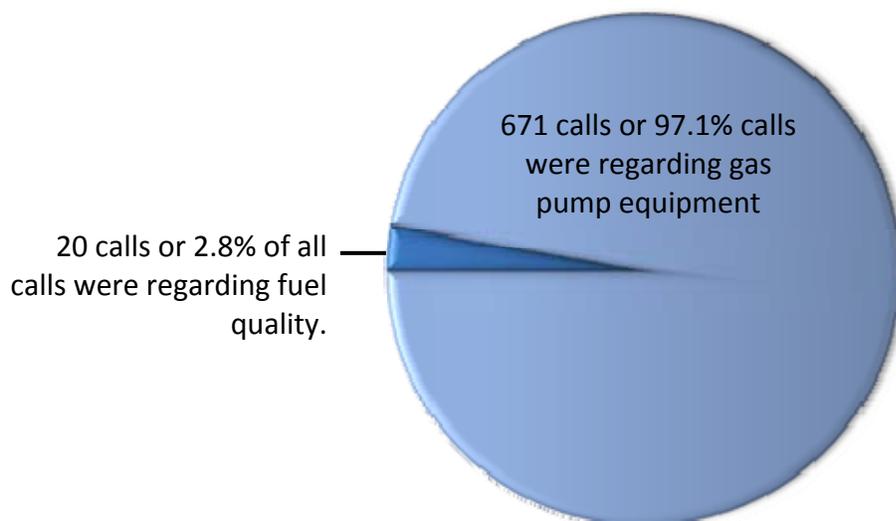
Inquiries include state and federal labeling requirements, RCW 19.112 2% mandate, fuel tank maintenance, fuel quality complaints, ASTM standards, licensing requirements, state regulatory rules, availability of non-ethanol gasoline, fuel tanks, and water in fuel.

Complaints

Weights & Measures Complaint Line

20 complaints received regarding motor fuel quality for 2008. The average number of days the inspectors take to respond and close a motor fuel quality complaint is 5 days.

671 complaints received regarding gas pump or device for 2008 (pump, equipment, signage, labeling, meter, price calculation, hose). The average number of days the inspectors take to respond and close a motor fuel device complaint is 14 days.



Greener and Leaner

Steps WSDA Weights & Measures are doing to be greener and fiscally leaner. We have made several process improvements on how we ship or transport fuel samples and have changed fuel sample containers to a reusable and recyclable container.

- Gas & Gas with Ethanol fuel shipping for Western Washington

The program partnered with another state agency mail service and have joined efforts with Department of General Administration to pick up our gas samples and deliver to contracted fuel analysis lab.

Instead of an inspector traveling from Bellingham or Vancouver to Tukwila, they now take their samples less than 20 miles to their nearest designated DOT fuel location. From there, GA's Consolidated Mail Service picks up the samples and delivers them to Tukwila. This one measure is expected to save the program up to \$95,000 annually in inspector time and travel costs.

- Gas & Gas with Ethanol fuel shipping for Eastern Washington

The program selected one inspector on the east side of Washington to be certified to handle, package and ship dangerous goods and be a certified hazardous shipper. The samples are collected once a week or as needed, delivered to a certified hazardous shipper who ships samples from multiple locations in eastern Washington. This one measure is expected to save the program up to \$295,000 annually in inspector time and travel costs.

- One green step the program made is changing the fuel sample containers to 1 liter aluminum container that can be reused up to 5 times and then recycled, thus reducing the amount of waste from our fuel sampling program. Aluminum is one of the most recyclable materials available, has good durability properties, is chemically compatible with all of our fuel types, and is easy to clean and sanitize.



E85 Fueling Locations

There are currently 7 public locations and 4 private or government locations.

Airport Depot Texaco

1400 NW Louisiana Ave
Chehalis WA 98532
(360) 767-0570

US Ethanol

416 Oregon Way
Longview WA 98632
(360) 423-2486

Seaview One Stop

4105 Pacific Hwy
Seaview WA 98644
(360) 642-4223

Bingen Pacific Pride

117 E Steuben
Bingen WA 98605
(509) 493-1276

Grocery Boys

3430 N Crestline
Spokane WA 99207
(509) 487-7897

Pacific Pride

1980 Terminal Dr.
Richland WA 99352
(509) 547-3326

Portside Conoco

1829 First St.
Sunnyside WA 98944
(509) 837-9066

Fort Lewis

Fort Lewis WA 98433
Private facility. No public access.

McChord Air Force Base

Tacoma WA 98439
Private facility. No public access

Bonneville Power Administration

Vancouver WA 98666
Government owned vehicles only.

Richland Hanford Site

Hanford WA 99352
Private facility. No public access.

E85 Dispensing Guidelines

There currently is not an NTEP approved device for dispensing E85, WSDA has made a limited time exception for retailers to dispense E85. These E85 guidelines will remain in effect until there is an E85 NTEP approved device. Excerpt from WSDA E85 Dispensing Guidelines, read the full document at <http://agr.wa.gov/bioenergy/BiofuelStandards/docs/E85EthanolGuidelines.pdf>

Device owners that sell E85 must meet the following in order to dispense E85 fuel in Washington State:

- The device must be National Type Evaluation Program (NTEP) approved for gasoline. <http://www.ncwm.net/ntep/index.cfm?fuseaction=search>
- The device must be retrofitted with ethanol compatible components.
- The device must have a 1-micro ethanol filter mounted downstream of the dispenser's meter and prior to the delivery hose. See next page for ethanol filter location.
- The device must be properly labeled for E85 according to the following:
 - WSDA E85 labeling requirements as outlined in [WAC 16-662-115](#).
 - National Institute of Standards & Technology (NIST) Handbook 130, Method of Sale Regulation, Section 2.30 E85 Fuel Ethanol, a **"For Use in Flexible Fuel Vehicles (FFV) Only"** label must be posted on all E85 pumps. Size and placement are described in detail in [WAC 16-662-115](#).
 - Federal Trade Commission (FTC) labeling requirements for E85, contact nevc@e85fuel.com or call (877) 485-8595 for FTC compliant labels.
- Device owners have made retrofits according the U.S. DOE, E85 Toolkit.
- Device owners must check their device for leaks or corrosion, inspect hoses and swivels for damage once a month and provide documentation of inspection for their local fire jurisdiction.

Note: Your local fire department contact information is available in the Government Listing (County or City) section of your local phone book.
- Device owners must upgrade their device according to NTEP specifications once those standard specifications have been issued and components are available in the marketplace, not to exceed 2 years from date of availability. <http://www.ul.com/regulators/e85.cfm>
- 15 days prior to use, device owners must notify WSDA Weights and Measures when a non-ethanol approved dispenser is converted to dispensing E85.

WSDA will inspect E85 pumps on a more frequent basis than gasoline pumps for component damage and will verify monthly inspection documentation.

Fire Safety: An E85 fire should be handled like a gasoline fire. Use a CO₂, halon, or dry chemical extinguisher that is marked B, C, BC, or ABC. An alcohol-type or alcohol-resistant (ARF) foam may be used to effectively combat fuel ethanol fires. **Never use water** to control a fire involving high-concentration fuel ethanol such as E85.

The device must have a 1-micro ethanol filter mounted downstream of the dispenser's meter and prior to the delivery hose, see orange circle in picture below indicating proper location.

Fuel Specifications

WSDA uses national and state standards and policies to determine if fuel samples are within or not within quality specifications. Fuel samples taken and sent to laboratory analysis are tested against the most current and nationally approved fuel standards as listed below. The standards are a collective package of individual tests to represent the fuel type

Fuel Type	ASTM* Standards
Gasoline	ASTM D4814
Gasoline with E10	ASTM D4806
Gasoline with E75-E85	ASTM D5798
Diesel with B5	ASTM D975
Biodiesel B6-B20	ASTM D7467
Biodiesel B100	ASTM D6751

*ASTM International formerly known as American Society of Testing and Materials.

In addition to the required ASTM methods listed above, WSDA is requiring all fuel samples to be tested for water content (entrained water) and a biodiesel content to be run on all diesel samples.

- Water suspended by Karl Fischer or water content EN ISO* 12937
- Determination of Biodiesel Content ASTM D7371

*EN is the European Committee for Standardization test method WSDA is using for determining the amount of water entrained in the fuel, 500 ppm is the set maximum amount and is considered an industry standard.

Octane Requirement

There are three octane ratings approved for sale in Washington State, this applies to gasoline and gasoline with ethanol.

Minimum Octane Ratings

Minimum Octane Rating	Minimum Octane Tolerance (0.6)
87	86.4
89	88.4
91	90.4

Minimum of Octane Rating is the amount posted at the pump, the amount approved by WSDA as the Minimum Octane Tolerance or the amount of variance that the retailer can sell at the pump.

Equipment

WSDA Vehicles Powered by Biodiesel

As part of WSDA's commitment to use alternative fuels and to comply with the RCW 43.19.642, WSDA replaced gasoline trucks that were needed to be replaced, with five new Ford F250 diesel trucks for our Weights & Measures inspectors. This allows the inspectors to be consumers of the biodiesel that they analyze, currently powered by up to B20 biodiesel from the Department of Transportation fueling locations.



WSDA also purchased two large capacity scale trucks that have Cummins engines that are powered by biodiesel up to B20.



Fuel Trailers

WSDA currently has two fuel trailers with three 5 Gallon provers. The fuel trailers allow the inspectors to check the device flow meters, calibration of devices, test all three gasoline grades of fuel and collect fuel samples in one inspection.

WSDA has a program goal to check all devices once every 28 months.

WSDA has ordered two fuel trailers that have a combination of three 5 Gallon provers and one 50 Gallon prover to calibrate the accuracy of high flow devices. The program expects to receive equipment by April 2009.



Field Equipment

Zeltex ZX-101 XL Portable Octane Fuel Analyzer V5.2

The Zeltex analyzer detects octane levels and ethanol volume percentages. The program has been using these devices since 2007 and continues to evaluate their reliability and accuracy based on comparison to lab results using ASTM methodology.

In 2008, Zeltex analysis yielded higher than octane results on 61 of 84 fuel samples (72.6%) tested. Zeltex analysis yielded lower octane results than the lab on 19 of 84 samples (22.6%) tested. The remaining samples (4.7%) were identical to the octane results from lab analysis.



The program recently calibrated and upgraded its Zeltex analyzers and these four machines are distributed throughout the state on a rotating basis.

Wilks InfraCal Biodiesel Analyzer Model HATR-T2B

The Wilks device detects biodiesel volume percentages between B5 – B20. The program has used the Wilks since 2006 and is still evaluating its reliability and accuracy based on samples that were analyzed by the Wilks and sent to a fuel analysis laboratory for evaluation. The program is still in the collection phase and will update this report once sufficient data is collected.

The program recently calibrated its Wilks and distributes its two Wilks machines throughout the state on a rotating basis.



Other State Agencies with Biofuel Programs or Interests

WSDA	CTED	DOL	GA	WSU	ORA
Washington State Department of Agriculture	Department of Community Trade & Economic Development	Department of Licensing	Department of General Administration	Washington State University	The Governor's Office of Regulatory Assistance (ORA)
<ul style="list-style-type: none"> • Biofuel Standard for Quality 	<ul style="list-style-type: none"> • Current Energy Freedom Loans 	<ul style="list-style-type: none"> • Reporting of Biofuel Sales 	<ul style="list-style-type: none"> • Purchases of Biofuel for State Contract 	<ul style="list-style-type: none"> • Education • Research 	<ul style="list-style-type: none"> • Education/ Publications
<ul style="list-style-type: none"> • Biofuel Standards for Labeling 	<ul style="list-style-type: none"> • Green Highways 			www.bioenergy.wa.gov	
<ul style="list-style-type: none"> • Monitoring Biofuel Quality 	<ul style="list-style-type: none"> • Promoting Biofuel Use and Production 				
<ul style="list-style-type: none"> • Bio Dispensing Devices 	<ul style="list-style-type: none"> • State Agencies Coordination 				
<ul style="list-style-type: none"> • Initial Energy Freedom Loans 					
<ul style="list-style-type: none"> • Education Outreach to Farmers 					
<ul style="list-style-type: none"> • Interagency Coordination 					
<ul style="list-style-type: none"> • Monitoring Renewable Fuel Standards 					