

LABORATORY DIVISION 2020 ANNUAL REPORT

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The Animal Disease Testing program provides testing in support of the Michigan Department of Agriculture and Rural Development's (MDARD) efforts to monitor and eradicate livestock disease so Michigan animals can be moved and sold throughout the U.S. and internationally.

The Animal Disease Testing program provides Equine Infectious Anemia (EIA) testing to certify equines traveling in Michigan and throughout the United States are EIA-free and controlling the spread of the disease.

IMPACT FOR MICHIGAN:

This program helps protect the livestock industry from economic losses due to animal disease transmission.

It ensures Michigan livestock are free of specific diseases before entering the food chain to protect people, the food supply and animals. Ensuring animals are free of disease, helps facilitate the free and legal import and export of livestock in Michigan.

- Met 100% of all sample analysis turnaround times. The timely analysis allows for the early detection of animal diseases affecting livestock and public health.
- Certified an analyst for animal disease testing. Cross-training staff leverages internal talent, increases program productivity and reduces costs.
- Program analysts achieved 100% re-certification rate for disease testing, supporting MDARD's key goal of protecting human and animal health.
- Disease free status maintained for Brucellosis, Pseudorabies and Johne's, which is critical for agricultural livestock business growth.



Metric	FY2019	FY2020
Equine Infectious Anemia Testing	15,937	12,709
Other Animal Disease Testing	1,499	636
Proficiency Tests	100%	100%
Turn Around Time Met or Exceeded	100%	100%

PROGRAM GOALS:

- One new analyst trained and certified for EIA testing and Brucellosis testing
- 100% re-certification for current analysts
- Meeting 100% of sample turnaround times
- Achieving membership into the National Animal Health Laboratory Network



KEY STAKEHOLDERS

- Michigan residents
- MDARD's Animal Industry Division
- Private Veterinarians
- United States Department of Agriculture
- Michigan State University Veterinary Diagnostic Laboratory

- Public Heath Code, Public Act 368 of 1978
- Part 124, as amended



Food, Feed, Fertilizer, Industrial Hemp, and Hand Sanitizer Testing

PROGRAM MANAGER: Gina DeWitt| 517-284-0507 | dewittg@michigan.gov

The Food, Feed, Fertilizer Industrial Hemp, and Hand Sanitizer Testing programs, support animal and human food safety/security, consumer protection, and economic development by providing analytical data and technical expertise to document the safety, legality, authenticity, identity and quality of human food, animal feed, fertilizers, industrial hemp, alcoholic and non-alcoholic beverages offered for sale in the State of Michigan. This program also provides analytical data to the Michigan Liquor Control Commission (MLCC) for enforcement of under-age drinking laws and detection of adulteration of distilled liquor.

IMPACT FOR MICHIGAN:

- Drugs and other additives, when misapplied, can negatively impact animal and human health, livestock animal productivity and marketability of food products by businesses.
- The data generated assists Michigan
 Department of Agriculture of Rural
 Development, Food and Drug Administration and the MLCC with monitoring and enforcement activities related to food and feed safety.
- Laboratory test data is required to establish and maintain an integrated food safety system.
- Consumer, livestock and pet health are directly impacted by the safety of the food supply.
- The food supply is vulnerable to intentional tampering and adulteration and testing can identify those issues to minimize impacts and provide evidence.

- In 2020, MDARD's Geagley Lab launched a program to screen Hand Sanitizers For Regulatory Compliance. Due to the COVID-19 crisis, crucial attention has been focused on the use of hand sanitizers to safeguard health. As a result, the quality of these products is of paramount concern to consumers.
- Developed and validated new testing procedures for fish speciation analysis to determine the accuracy of labeling. This helps ensure that inexpensive species, or species with potential safety concerns, are not being intentionally mislabeled for sale as a higher valued species or to avoid import restrictions
- Added Industrial Hemp and Fertilizer to the Lab's ISO17025 scope of accreditation. This demonstrates the program's technical competency and ensures the accuracy of the test results.



Metric	FY2019	FY2020
Samples Tested	2,086	2,148
Number of Tests performed	4,756	4,015
% of Proficiency Tests completed successfully	100%	100%
# of Analytes Tested	10,122	9,369

PROGRAM GOALS:

- Meeting 100% of sample turnaround times
- Obtain 100% on all proficiency tests
- Increase accreditation to include metals in fertilizer
- Add allergen testing to lab capabilities



KEY STAKEHOLDERS

- Michigan consumers
- MDARD's Food and Dairy Division
- MDARD's Pesticide and Plant Pest Management Division
- Hemp growers and industry
- Michigan Liquor Control Commission



PROGRAM MANAGER: Gina DeWitt| 517-284-0507 | dewittg@michigan.gov

The Motor Fuels Quality Testing Program tests gasoline and diesel fuel to ensure product description accuracy, quality, and adherence to state quality standards. This program works in cooperation with the Consumer Protection Section to protect consumers from substandard gasoline. In addition, gasoline sold in certain high population/automobile use areas of the state is monitored for its evaporative properties by the Lab to prevent over 28 tons of pollutants per day from being released into the atmosphere. This program benefits plants and people living in these areas by reducing health risks caused by the inhalation of gasoline vapors and/or smog created from the vapors.

IMPACT FOR MICHIGAN:

 The Motor Fuels Quality Testing program monitors and verifies the standards all gasoline must meet to protect businesses and consumers from economic harm caused by costly engine repairs from substandard gasoline.

- Renewal of accreditation to ISO 17025:2017 ensuring results are viable and defendable Increased capacity in MDARD's Motor Fuels Testing Lab.
- Analyzing more samples than ever before meeting 100% of sample turnaround goal, ensuring inspectors have timely data needed to complete thorough and efficient misuse investigations
- Cross-trained additional staff to perform data analysis during off-season, improving turnaround times and accommodate an increase in sample volume.



Metric	FY2019	FY2020
Gasoline Samples Tested	4,545	4,472
Diesel & Kerosene & E-85 Samples Tested	720	685
Proficiency Test	100%	100%
Turn Around Time met or exceeded	100%	100%

PROGRAM GOALS:

- Achieving 100% on all proficiency check samples
- Meeting 100% of sample turnaround times
- Maintain ISO 17025 Accreditation for the Motor Fuel Quality Testing Program



KEY STAKEHOLDERS

- Michigan residents
- Michigan Fuel Businesses
- MDARD's Consumer Protection Program

LEGAL AUTHORITY:

• Public Act 44 of 1984, as amended, Michigan Motor Fuels Quality Act



PROGRAM MANAGER: Jessica Pruett | 517-284-0475 | pruettj@michigan.gov

The Pesticide Data Program (PDP) collects high-quality, statistically-based, pesticide residue data from a variety of food products destined for grocery store shelves throughout the United States. The data provides the U.S. Environmental Protection Agency (EPA) with information to help determine which pesticides may be registered for use on food products and to set tolerance levels of these pesticides. Findings of tolerance violations are reported to the U.S. Food and Drug Administration (FDA) to aid them in making programmatic plans for future years of testing imported products. The data produced by PDP are available to the general public in a web-based database and in an annual summary.

IMPACT FOR MICHIGAN:

The PDP provides reliable data to help assure consumers that food they feed their families is safe. The data published each year provide regulators, scientists, registrants, farmers, processors and consumers with important insights into the actual pesticide residue levels in a variety of widely consumed foods. PDP data have been helpful in identifying crops where alternative pest management practices are needed to increase yield and quality of the produce. PDP data are also useful in promoting export of U.S. commodities in a competitive global market and addressing food safety issues helping Michigan farmers market their products world-wide.

- Validated extraction and analysis methodologies on carrots and eggplant as new commodities. Validation proves effectiveness for providing accurate data for each commodity assigned by United States Department of Agriculture (USDA).
- Renewal of accreditation to ISO 17025:2017 which ensures results are viable and defendable.
- Increased pesticide screens by adding 28 new commodity specific compounds during validation. This additional data is valuable to ensure public safety and aid in global marketing of domestic food products.



Metric	2019	2020
Number of Samples	1,014	986
Average turnaround	74	79
Satisfactory proficiency testing	100%	100%

PROGRAM GOALS:

- Increase pesticide screens by adding requested commodity specific compounds during validation
- Validate next assigned commodities
- Cross-training of newer staff to improve turnaround times



KEY STAKEHOLDERS

- USDA
- U.S. EPA
- U.S. FDA
- Agriculture industry
- Consumers of agricultural products

- Agricultural Marketing Act of 1946
- US Food Quality Protection Act of 1996



PROGRAM MANAGER: Jessica Pruett | 517-284-0475 | pruettj@michigan.gov

Michigan Department of Agriculture and Rural Development (MDARD) is responsible for regulating the safe use of pesticides and is supported by the Laboratory's Pesticide and Environment program through both residue and formulations testing. Formulations testing verifies label claims on commercial pesticide products to prevent consumer fraud and/or misuse of pesticides. Residue testing includes testing of soil, foliage, water and swab wipes for evidence of the misuse of pesticides in samples collected while investigating citizen complaints. This program is also called upon for testing of food products and animal feeds for pesticides and other toxins in conjunction with investigations into human and animal illnesses or deaths.

IMPACT FOR MICHIGAN:

Pesticides are needed by the agricultural industry for higher yield of crops that are healthier and more desirable to the consumer and to control pests in structures that can carry disease or do extensive damage to the structure. Misuse of pesticides poses a health risk to citizens and animals and can cause environmental damage.

- Met turnaround goals in 100% of samples, ensuring inspectors have timely data needed to complete thorough and efficient misuse investigations.
- Renewal of accreditation to ISO 17025:2017 which ensures results are viable and defendable.
- Cross-trained additional staff to perform data analysis during off-season, this improved turn-around times and helped accommodate an increase in sample volume.



Metric	2019	2020
Number of misuse samples received	429	502
Average turnaround for misuse samples	33	32
% Misuse samples reported on time (60 days)	100%	100%
Number of formulation samples received	11	8
% Satisfactory proficiency testing	100%	100%

PROGRAM GOALS:

- Cross-train additional analysts to improve turnaround times for samples.
- Research and development of non-derivatized glyphosate extraction method to improve service efficiencies.
- Transition program to paperless data analysis and review.



KEY STAKEHOLDERS

- Michigan residents
- Agriculture industry
- U.S. Environmental Protection Agency
- Consumers of agricultural products
- Michigan Department of Natural Resources
- Michigan Department of Environment, Great Lakes & Energy

- Federal Insecticide, Fungicide and Rodenticide Act, 7 U.S.C s/s 136 et seq (1996)
- Natural Resources and Environmental Protection Act, Public Act 451 of 1994, Part 83



PROGRAM MANAGER: Jordan Polaskey | 517-284-0462 | polaskey | @michigan.gov

The Microbiology Section tests Grade "A" Dairy Products, Manufactured Dairy Products and Glycol Waters to provide analytical data to Michigan Department of Agriculture and Rural Developmen's Food and Dairy Division to enforce the Michigan Grade "A" Milk Law of 2001 and Manufacturing Milk Law of 2001. The Grade "A" Pasteurized Milk Ordinance is designed to protect and improve the nation's milk supply through continued monitoring from production through distribution, including laboratory testing for bacterial counts, somatic cell counts, phosphatase enzyme production and antibiotics. Food Pathogen Programs, including testing for pathogens in ready to eat foods, fresh produce through Michigan's Food Assurance Program, and environmental samples from production and retail facilities provide analytical data to the Food and Dairy Division in support of its enforcement of the Michigan Food Law.

IMPACT FOR MICHIGAN:

Food safety and protecting human and animal health is one of MDARD's key goals. Detection of pathogens in food is an important step in removal of contaminated products from commerce and consequently eliminates sources of potential illnesses. These programs help to ensure production of safe food and dairy products by Michigan manufacturers and will ensure continued sales of Michigan agricultural products within the state, across the nation and through exports.

- Food Microbiology staff were awarded a Governor's Leadership Recognition Coin for their outstanding efforts to support the people of the State of Michigan during the response to the Coronavirus pandemic. Their deployment to the MDHHS State Health Lab supported the state's Coronavirus testing response and provided an important contribution to public health.
- Validated new test methods for Campylobacter spp. and Cyclospora cayetanensis. We also serve as a mentor to help train other state lab partners on this methodology. This helps provide an improved approach in removal of contaminated products from commerce and consequently eliminate sources of potential illnesses. These programs help to ensure production of safe food for the public by increasing the overall ability to detect and deter foodborne illnesses



Metric	2019	2020
Number of food related samples tested for pathogens	2,854	2,580
Number of dairy samples tested	4,792	4,181
Average turnaround time	4 days	4 days
Proficiency test results	100%	100%

PROGRAM GOALS

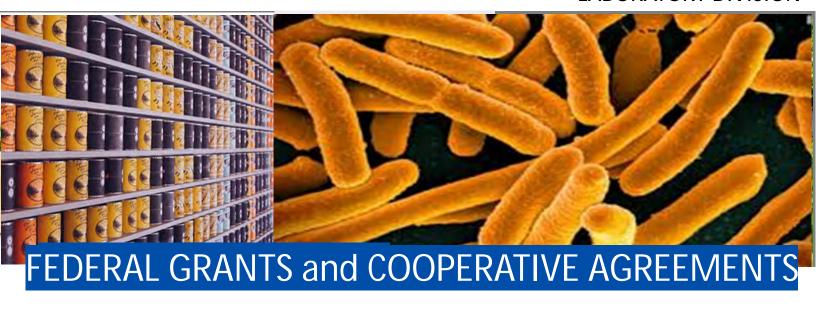
- Continue mentoring and training other state lab partners on Campylobacter spp. and Cyclospora cayetanensis testing methodology
- Become certified by the Center for Disease Control and Prevention (CDC) PulseNet in Whole **Genome Sequencing**
- Validate test method for Added Water in Milk



KEY STAKEHOLDERS:

- Dairy and food farmers and growers, producers, manufacturers, distributors and retail food and dairy establishments.
- Residents of and visitors to the State of Michigan.
- FDA and USDA Food Safety and Inspection Service
- MDARD's Food and Dairy Division and Plant and Plant Pest Management Division

- PA 92 of 2000, as Amended, Michigan Food Law
- PA 266 of 2000, as Amended, Grade "A" Milk Law of 2001 and the Michigan Manufacturing Milk Law of 200



PROGRAM MANAGER: Jordan Polaskey | 517-284-0462 | polaskey | @michigan.gov

The Food and Drug Administration (FDA), United States Department of Agriculture (USDA), Food Safety and Inspection Service (FSIS), and Food Emergency Response Network is supported by a collaboration of federal, state and local regulatory laboratories. This program expands and improves lab capacity for surveillance and outbreak investigations of foodborne pathogen and threat agent testing. The Michigan Department of Agriculture and Rural Development (MDARD) and Michigan Department of Health & Human Services' Microbiology Lab partnered to provide this capability to the State of Michigan. Through a Food and Dairy Division contract, MDARD's Microbiology Lab provides pathogen FDA testing for environmental samples from food production facilities. MDARD's Microbiology Lab is the recipient of the FDA Laboratory Flexible Funding Model grant, the FDA Genome Trakr Grant for Whole Genome Sequencing, and the FDA Animal Feed Regulatory Program Standards Grant.

IMPACT FOR MICHIGAN:

Food safety and protecting human and animal health is one of MDARD's key goals. Detection of food pathogens is an important step in removal of contaminated products from commerce. These programs help to ensure production of safe food and dairy products by Michigan manufacturers and help continued sales of Michigan agricultural products. Accreditation of laboratories helps to ensure proper test methods are performed by qualified, trained personnel, producing accurate and timely results.

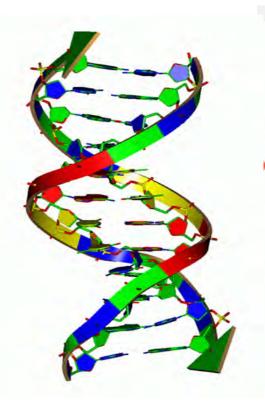
- The Microbiology program was nominated for its collaborative work with the FDA, CDC and other state and local partners investigating a multistate outbreak of Listeria monocytogenes infections linked to enoki mushrooms. These recalls protect public health by removing products from commerce that have been determined to be unsafe for consumption.
- The Microbiology program was awarded an FDA Group Recognition Award for their outstanding work with the Pig Ear Salmonellosis Outbreak Investigation. Fourteen different serotypes of Salmonella were recovered by MDARD from pig ear pet treats which lead to a nationwide FDA warning not to purchase or sell pig ears to protect human and animal health. Aided by the FDA ISO 17025 Grant, the microbiology section added two test methods to their scope of accreditation.



Metric	2019	2020
FDA FERN Proficiency Test (PT) Results	100%	100%
FDA Environmental samples Proficiency Test results	100%	100%
Average Turnaround Time	6 days	6 days
FDA FERN Surveillance samples/environmental samples tested	426 / 646	348/746

PROGRAM GOALS:

- To sequence a minimum of 400 food-related isolates for the FDA program through the FDA WGS grant and attain CDC PulseNet analysis certification.
- Maintain and enhance ISO 17025 accreditation.
- Sample and analyze 200 cut fruit, 200 tahini, and 250 pet food samples for pathogens; and 50 leafy green samples for Cyclospora in FY21 as foodborne surveillance projects for the FDA as part of the Lab Flexible Funding Model grant. This surveillance sampling provides for an early means of detecting threat agents in the U.S. food supply.



KEY STAKEHOLDERS:

- Residents of and visitors to the State of Michigan.
- FDA and USDA Food Safety and Inspection Service
- MDARD's Food and Dairy Division

- PA 92 of 2000, as Amended, Michigan Food Law
- PA 266 of 2000, as Amended, Grade "A" Milk Law of 2001 and the Michigan Manufacturing Milk Law of 2000



PROGRAM MANAGER: Craig VanBuren | 517-655-7223 | vanburenc9@michigan.gov

The E.C. Heffron Metrology Laboratory directly supports all legal metrology activities of the weights and measures programs. The \(\frac{1}{2} \) ab houses Michigan's primary standards for weight, measure, and temperature, and is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) to conduct Echelon I mass calibrations. The Lab supports state, county, city, and highway weight limit enforcement programs by certifying vehicle axle scales (wheel load weighers). The Lab also provides traceability to national standards for Michigan's wide variety of high-tech, manufacturing, and heavy industries by offering fee-based testing and calibration services. The Lab's high level of accreditation, expertise, and accessibility makes it one of the busiest precision mass laboratories in the nation.

IMPACT FOR MICHIGAN:

Benefits of the Lab include - ensuring accuracy and stability in the commercial measurement system; technical support of other state agencies; the facilitation of high tech and precision manufacturing; protecting Michigan's roads from overweight vehicles through the use of portable wheel load scales; and the promotion of safety.

ACCOMPLISHMENTS:

- NIST Certificate of Measurement Traceability renewed
- National Voluntary Laboratory Accreditation
- Conformance with the International Organization for Standardization (ISO) and International Electrotechnical Commission (IEC), including ISO/IEC 17025 and Guide 58

All three of the above allow the Lab to support many Michigan industries and businesses. Without the accomplishments above, many businesses would be forced to look for the Lab's services out of state, which would increase their down-time and cost the businesses significantly more.



Mass Standard Testi	ng		Echelon 1	Echelon 2	Echelon 3
Internal			45	90	118
External			-	1,939	7,021
Volumetric Standards	GravImetric	LP Gas	Small Volume Provers	= 5<br Gallon	> 5 Gallon
Internal	12	4	-	19	2
External	48	8	7	156	32
Other Wheel Load Weighers					
External	360				

PROGRAM GOALS:

- Renew NIST Certificate of Traceability
- Maintain NVLAP Accreditation
- Retain ISO and IEC conformance
- Calibration of State Field Standards
- Calibration of Registered Service Agency EquipmentSupport Michigan's Manufacturing Industry



KEY STAKEHOLDERS

- Michigan Public (ensuring correct weights and measures in the marketplace)
- Weights & Measures/Motor Fuel Quality Programs
 Multiple Michigan industries



WEIGHTS AND MEASURES PROGRAM

PROGRAM MANAGER: ROBERT DERUBEIS | 517-655-7227 | derubeisr@michigan.gov

Michigan Department of Agriculture and Rural Development 's Weights and Measures Program is the only agency charged with protecting both consumers and industry from economic harm caused by unfair, unscrupulous, or fraudulent business practices for goods and services based on weight, measure, or count. The program enforces well-established, uniform weights and measures practices; investigates complaints; ensures the proper operation of commercial weighing and measuring devices; determines the accuracy of the net content of packaged commodities of packaged commodities; conducts undercover investigations; is responsible for the quality and quantity of motor oils; and initiates civil or criminal actions when necessary. The Weights & Measures Program registers agencies and servicepersons ensuring industry "best practices" are used and provides trade assistance when exporters require state weight, measure, or device certification for export.

IMPACT FOR MICHIGAN:

It is estimated the sales of products and services impacted by weights and measures represents approximately 50 percent of Michigan's Gross Domestic Product. The Weights and Measures Program ensures equity and a level playing field within the market between both business to business transactions and the business to consumer transactions. The program works closely with the Michigan State Police, Federal Bureau of Investigations and the United States Secret Service to protect consumers from electronic credit card fraud as a result of credit card skimming devices.

- Performed 83,317 tests on 24,399 unique devices while conducting 3,738 commercial devices inspections.
- 6,678 total packages checked
- Registered 128 service agencies and 511 servicepersons



Inspections	Approved	Condemned	Compliance*
Net Content Inspections	7,650	2,255	77.23%
Retail Motor Fuel Dispensers**	60,639	3,983	93.84%
Non-Gas Weighing and Measuring Devices	1,233	102	92.36%

^{*} Does not include re-inspection of condemned devices

Complaints	Investigations	
Gasoline Short Measure**	314	
Other Weights and Measures	33	
Item Pricing / Shopping Reform	52	
** Motor fuel complaints were jointly investigated with MDARD's Motor Fuels Quality Program		

PROGRAM GOALS:

- Continue providing oversight of Michigan's \$700 billion weights and measures commerce at a rate of about 15 cents per Michigan resident.
- Serve as a deterrent to potential violators through the use of warning letters and civil penalties.
- Test 25% of all retail gasoline dispensers annually while maintaining a 97% compliance rate.
- Test 12,000 packages every year for accuracy to protect consumers from economic harm by monitoring compliance with net content requirements for packaged commodities
- Conduct audits of work performed by service persons and agencies who work on installing and maintaining weights and measures commercial devices.
- Ensure credit card readers are secure at retail motor fuel devices, in order to prevent the theft of personal information.
- Investigate consumer complaints related to motor oils at Michigan oil change facilities, including car dealerships, involving misbranding and quality.



KEY STAKEHOLDERS

- Consumers and producers in Michigan
- Michigan Independent Retailers Association
- Michigan Grocers Association
- Michigan Agri-business Association
- Michigan Propane Gas Association
- Michigan Petroleum Association/Michigan Association of Convenience Stores
- Michigan Oil Change Association



PROGRAM MANAGER: TIM WHITE 517-655-7226 | whitet@michigan.gov

The Motor Fuels Quality Program ensures Michigan's motoring public can be confident they are receiving quality gasoline and diesel fuel that meet minimum state standards. Further, the Motor Fuels Quality Program ensures gasoline sold in the eight county Southeast Michigan Region meets the low vapor pressure requirement for summertime gasoline helping the region to maintain compliance with the Federal Clean Air Act. The Motor Fuels Quality Program investigates complaints related to motor fuel quality, randomly samples retailers to ensure motor fuels meet state standards, monitors the entire motor fuel distribution chain from refinery to distributor/wholesaler to retail, provides technical guidance and assistance to motor fuel retailers as necessary, and licenses approximately 4,700 motor fuel retailers.

IMPACT FOR MICHIGAN:

Michigan's motoring public purchases more than 5 billion gallons of motor fuel annually, sight unseen. Receiving sub-standard motor fuel can damage automobile engines resulting in significant repair costs. The low vapor pressure program assists the Southeast Michigan region in maintaining compliance with the Clean Air Act; enabling people in Southeast Michigan to breathe clean air.

- Maintained a 98.1 percent compliance rate for gasoline sold throughout Michigan; and a 96.2 percent compliance rate for gasoline meeting the low vapor pressure standard in Southeast Michigan. This ensured those purchasing fuels were getting the product they paid for and helped reduce smog producing emissions by 28 tons per day, respectively.
- Maintained a 95.1% compliance rate for diesel fuel.
- Through testing and sampling of product, embargoed 119,000 gallons of substandard or contaminated motor fuels with a value of over \$344,400. This prevented the product from being used in vehicles and potentially causing both vehicle and monetary damage.



Metric	2019	2020
Official Samples Procured	5,333	5,076
Vapor Recovery Samples*	753	558
Field Octane Audits	2,346	2,377
1-800-MDA-Fuel Complaints**	1,119	826

PROGRAM GOALS:

- Obtain motor fuel samples at 75% of motor fuel retailers annually.
- Conduct low vapor pressure testing at 20% of the retailers in the Southeast Michigan region.
- Obtain 5,000 motor fuel samples annually.



KEY STAKEHOLDERS

- Michigan Consumers and producers of fuel
- Associated Food and Petroleum Dealers-Michigan
- Michigan Petroleum Association/Michigan Association of Convenience Stores
- Associated Petroleum Industries of Michigan
- Michigan Retailers Association

- The Motor Fuels Quality Act, Public Act 44 of 1984, as amended and applicable regulations
- ** Motor fuels quantity complaints were jointly investigated with the Michigan Department of Agriculture and Rural Development's Weights and Measures Program.