Meter Training Seminar

Arkansas Bureau of Standards

2026

Objectives

- Know and locate all applicable laws that pertain to registered servicepersons
- Seal and Decal Policies
- NTEP Requirement and Certificate of Conformance
- Official Annual Test Reports
- Requirement to adjust device as close as practicable to zero
- Rejected Reports
- Proper Completion of Placed in Service Report (Form 1822)
- What to do if a device is rejected

Laws pertaining to Registered Service Agencies and Persons
Arkansas Title 4 – Business and Commercial Law

- ***AR Code § 4-18-308***
- ***AR Code § 4-18-322*** **(Prohibited acts)**
- ***AR Code § 4-18-323*** **(Civil Penalties)**
- ***AR Code § 4-18-324*** **(Criminal Penalties)**
- ***AR Code § 4-18-344***

AR Code § 4-18-344

- (c) A registered service agent shall perform the recalibration if the inspection or test indicates the bulk meter or liquefied petroleum gas metering device, pump, or scale needs to be recalibrated.
- (d)
  - (1) After the approval of a decal by the Arkansas Bureau of Standards, a registered service agent shall place an approved decal conspicuously on the bulk meter or liquefied petroleum gas metering device, pump, or scale which indicates that it is suitable for trade in accordance with the National Institute of Standards and Technology Handbooks 44 and 112, as adopted by the bureau.
  - (3) A registered technician shall place an approved security seal on the device to prevent any unauthorized access to the adjusting mechanism unless otherwise authorized by the bureau.

AR Code § 4-18-344

- (e) The registered service agent shall provide a copy of all bureau-approved inspection and test reports to the bulk meter or liquefied petroleum gas metering device, pump, or scale owner and to the director.

Note : A copy of the test report **MUST** be left on site at the time of the inspection

- (f)
  - (1) The registered service agent shall retain a copy of all inspection and test reports for a period of three (3) years.
  - (2) The owner of the device shall retain a copy of all inspection and test reports at the device location for a period of three (3) years.

Voluntary Registration

- Officially Place into Service new, used, or rejected devices
- Conduct Calibration (Annual Calibration)
- Remove or Add State Approved Decals
- Authorizes Servicepersons to remove red tags and seals and place rejected devices back into service
- Service person acknowledges that they have in possession and will use all necessary testing equipment and standards; has full knowledge of Arkansas Weight & Measures laws and NIST Handbooks 44, 112, & 130 regulations.

- Director is authorized to suspend or revoke a certificate of registration for:
  -found taking unfair advantage of an owner of a device
  -failure to have test equipment or standards certified: Return to Redo
  -failure to use adequate testing equipment
  -failure to adjust commercial devices to comply with NIST Handbook 44 following a service or repair
  -Repeated Offenses

Voluntary Registration of Servicepersons and Service Agencies NIST Handbook 130

- Section IV. Uniform Regulation
- Subsection D. Uniform Regulation for the Voluntary Registration of Servicepersons and Service Agencies for Commercial Weighing and Measuring Devices

Security Seals

- Devices requiring a physical seal must have one (Red Tag/Rejection)
- Seals must be properly affixed to prevent tampering and adjustments. No loose wire.
- Apply seals only if you need to calibrate a device
- Lead seals must be replaced with state approved seals (Red Tag/Rejection)
- Must be stamped with ARWM one side/Registration number on other side
- NTEP Certificate of Conformance describes the sealing required on each device
- Testing Equipment/Standards Must be Sealed (Red Tag/Rejection)

- The Bureau of Standards DOES NOT provide decals or seals:

  -Decal and seal ordering information found on our website

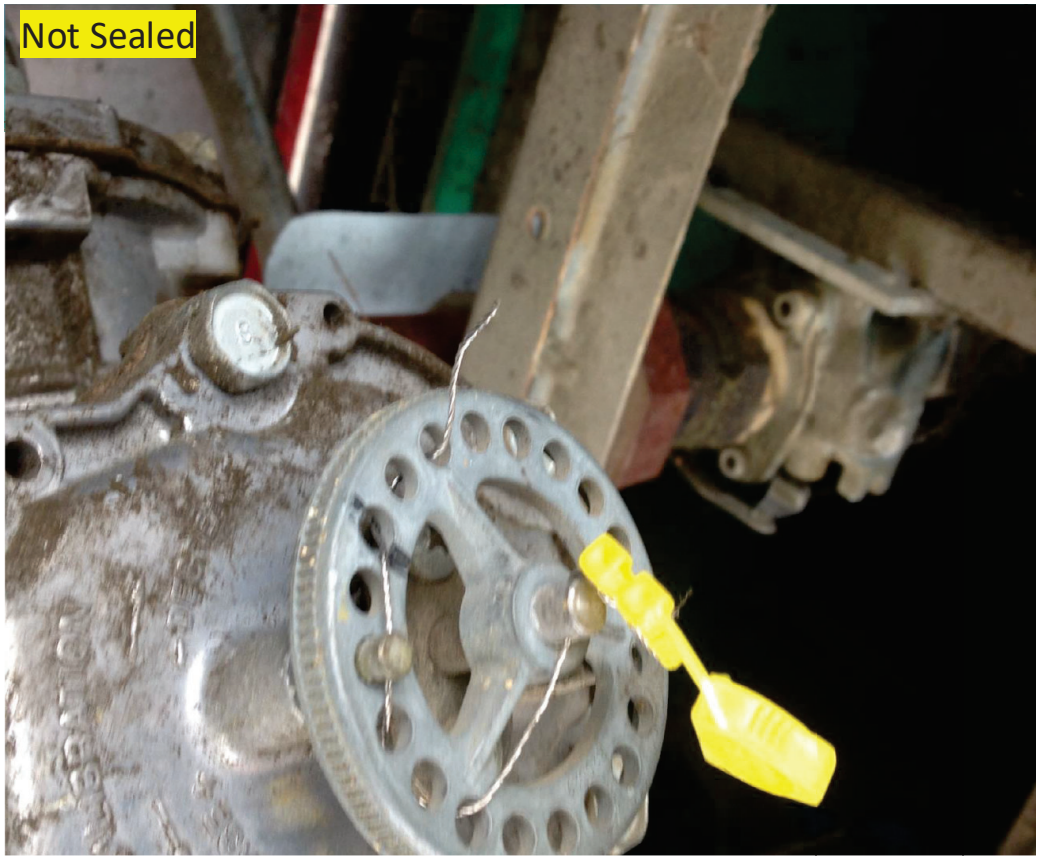
ORDERING-INFORMATION-FOR-SECURITY-PRODUCTS.pdf

Security Seals

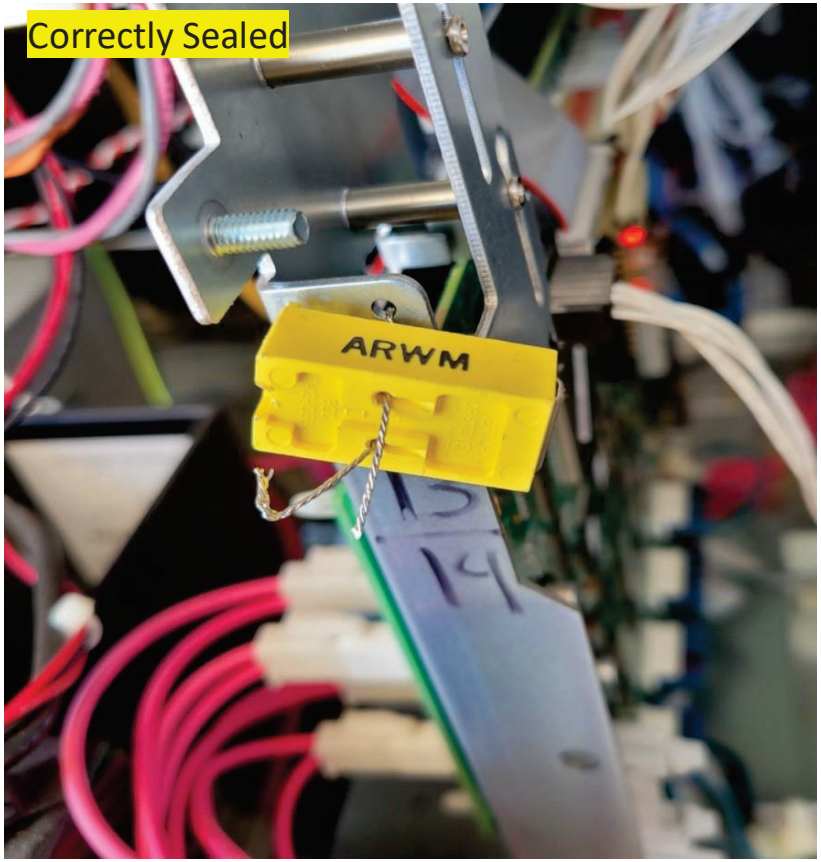
No Seal

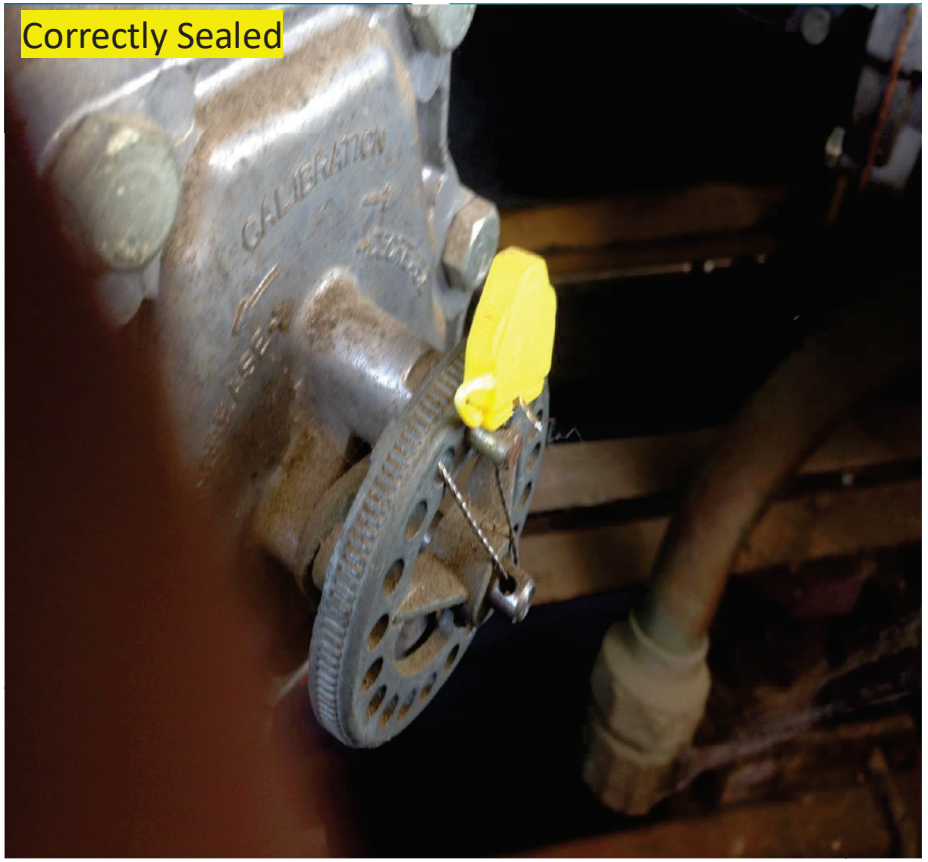
Lead Seal – Must be removed and replaced with state approved seal

Security Seals

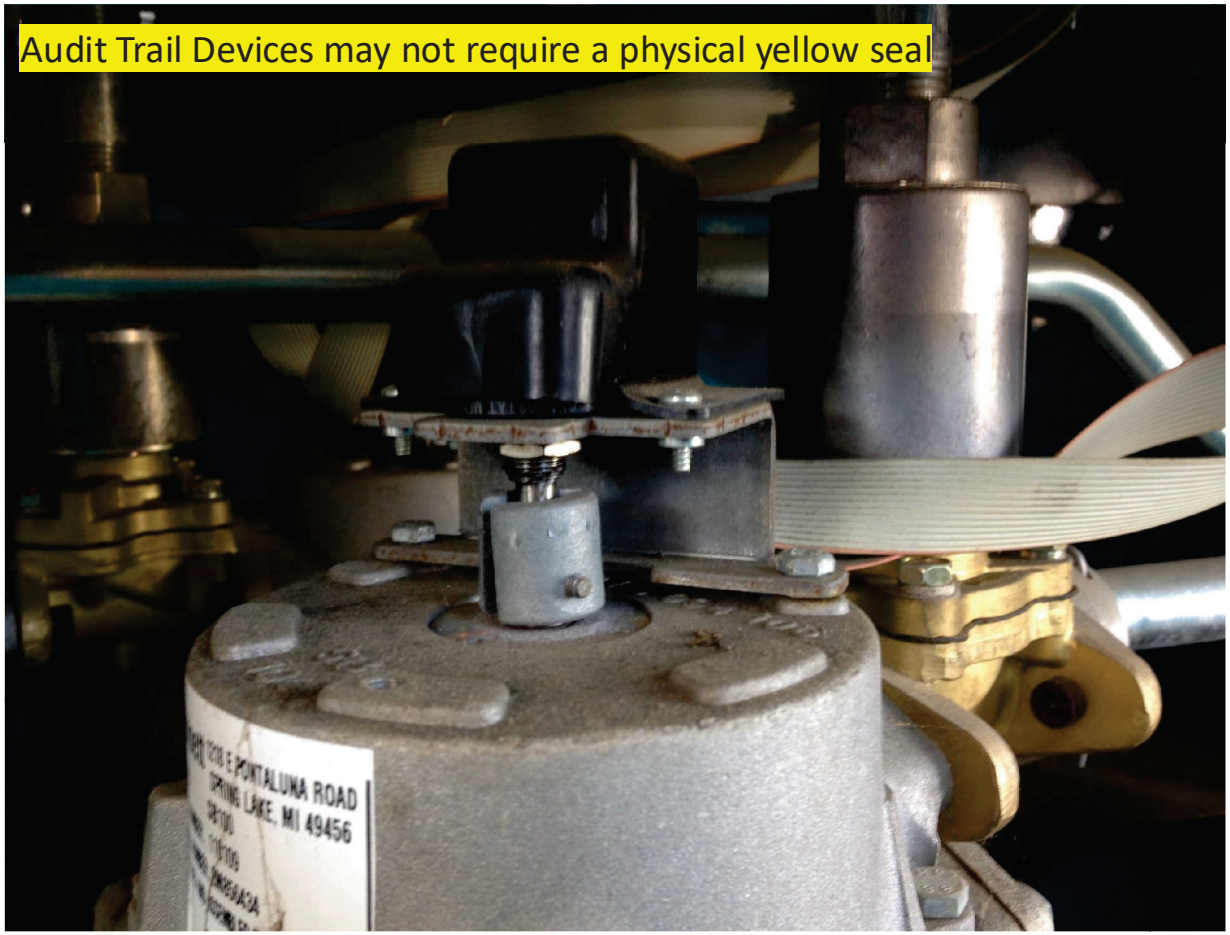


Security Seals





Security Seals



Sealing of Test Measure or Prover

Sealing of test measure or prover is required and subject to being red tagged and rejected if found without seal.

Decals

- Apply current annual (GREEN) decal only after testing and approving the device.
- Each Grade will Require an annual Decal
- Remove all old decals before applying a new decal. No stacking decals.
- Decals shall be affixed as close as possible to the customer indication as possible
- Punch hole in decal for year of test.
- You will be required to return to the facility to correct any issues

https://www.agriculture.arkansas.gov/wp-content/uploads/2020/08/New-Approval-Decal-Memo-and-Requirement.pdf

Decals

No Stacking Decals

No Yellow Decals Allowed

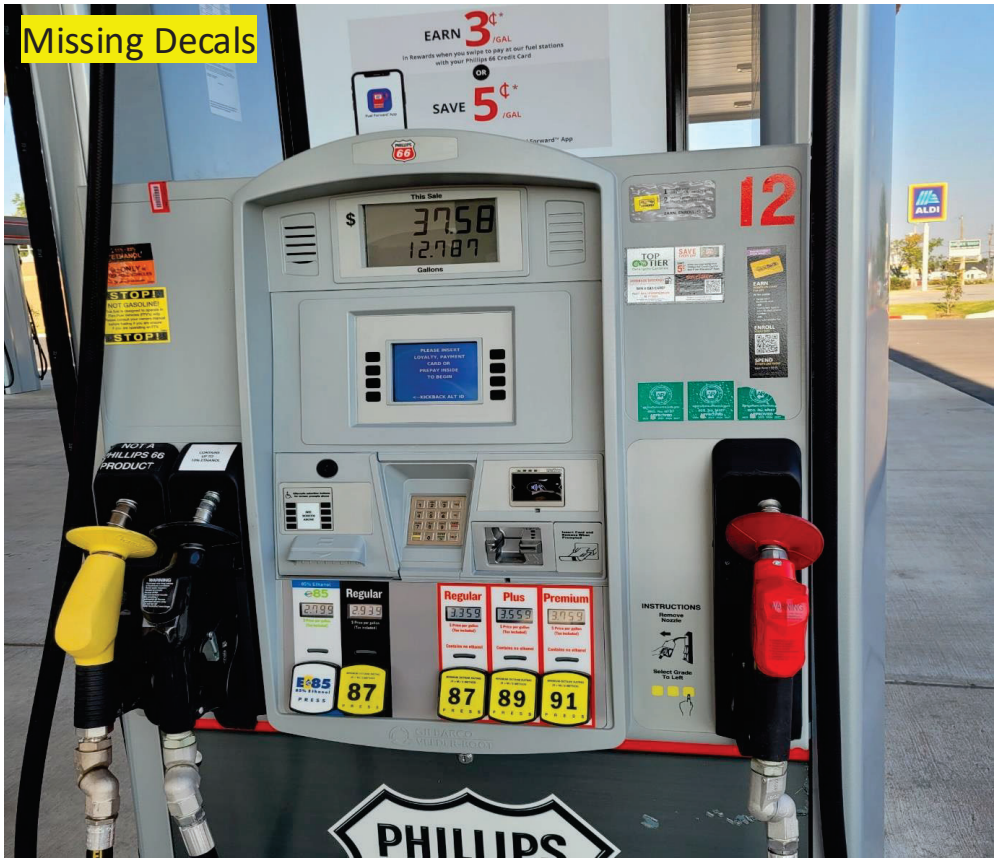
Decals


Remove all old decals
CONTAINS
UP TO 10% ETHANOL
Regular
Plus
Premium
$ Price per gallon (including tax)
$ Price per gallon (including tax)
$ Price per gallon (including tax)
MINIMUM OCTANE RATING
89
PUSH HERE
MINIMUM OCTANE RATING
91
PUSH HERE
APPROVED

Decals

No Damaged Decals

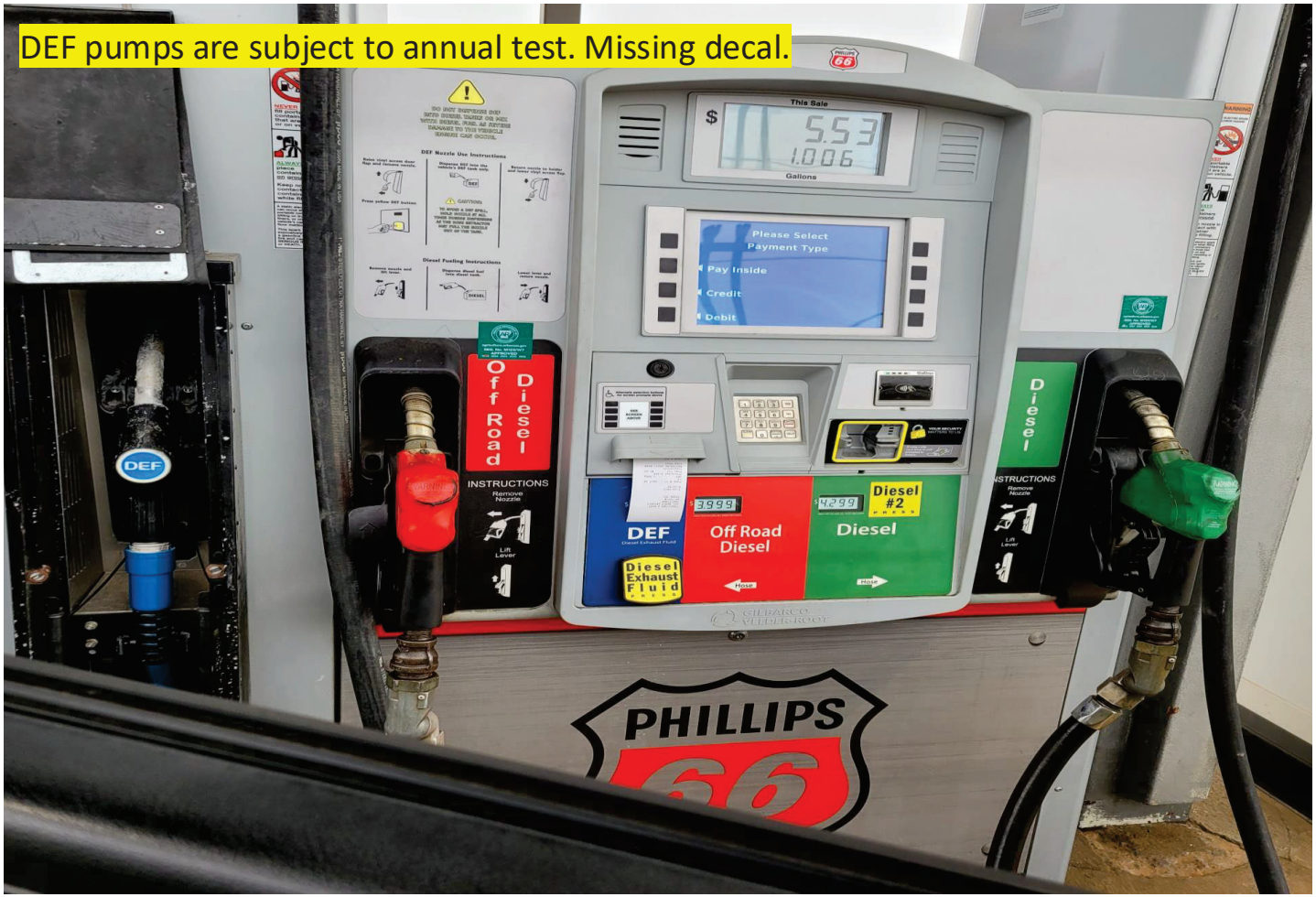
Missing Decals



Decals

Punch a hole into year of annual test

Decals


DEF pumps are subject to annual test. Missing decal.
This Sale
$
5.53
1.006
Gallons
Please Select
Payment Type
Pay Inside
Credit
Debit
Off Road
Diesel
INSTRUCTIONS
Remove
Nozzle
Lift
Lever
DEF
Diesel
Exhaust
Fluid
Off Road
Diesel
Diesel
#2
Diesel
PHILLIPS
66

National Type Evaluation Program

Locating the Devices
National Type Evaluation Program (NTEP)
Certificate of Conformance (CC)

- Open Link - https://www.ncwm.com/ntep-certificates

- Enter in Devices NTEP # located on data plate:

  -Example NTEP CC No. 02-136

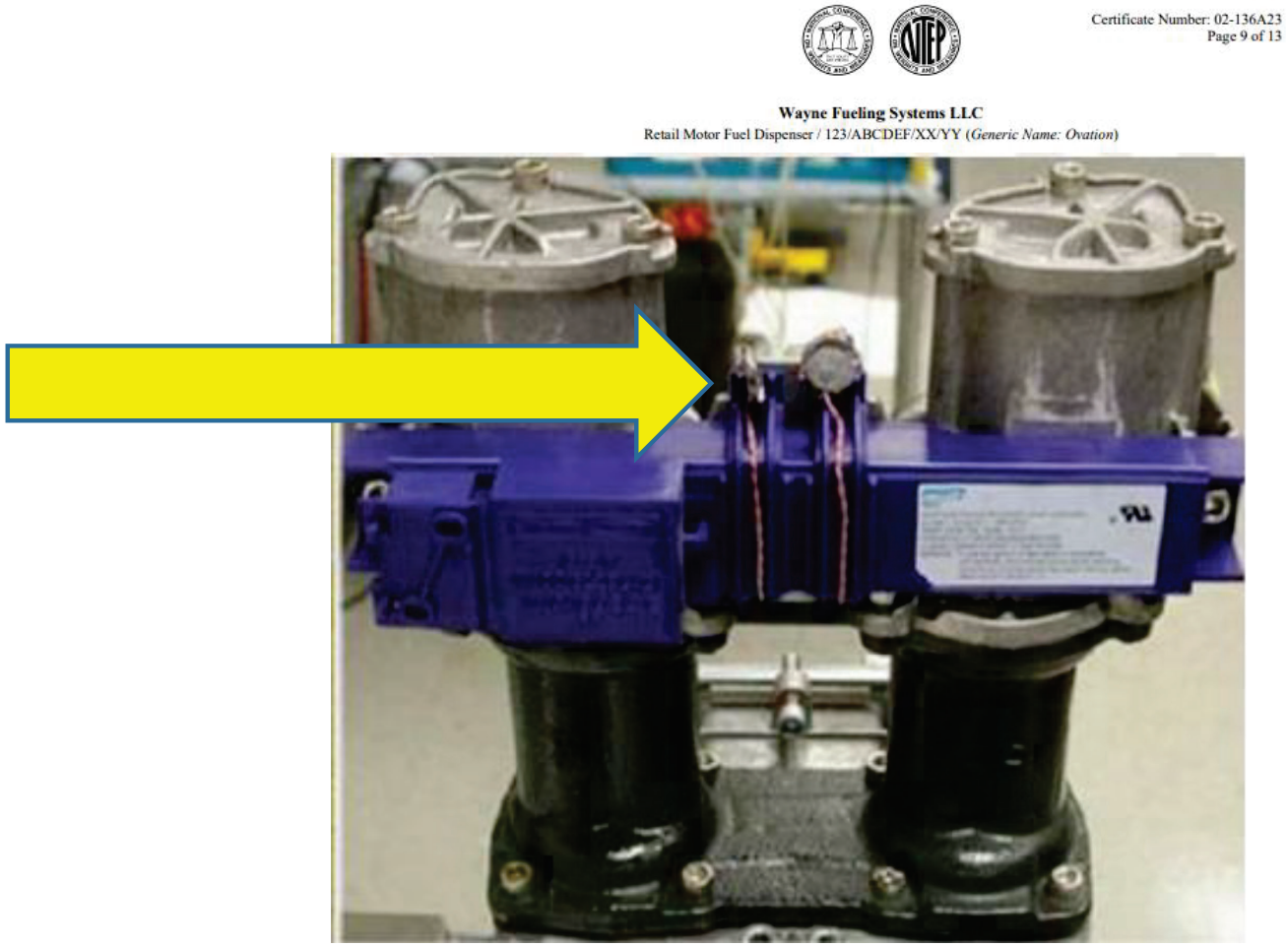
21

NIST Handbook 130 – Regulation for National Type Evaluation

- Section IV. Uniform Regulation
- Subsection E. Uniform Regulation for National Type Evaluation

NTEP CC

- Certificate Provides example of where to locate the physical security seal



National Type Evaluation Program

- Devices used for trade can have either INACTIVE or ACTIVE status through NCWM

- Any device found to be pre NTEP must obtain an exemption from the director to be used commercially.

OFFICAL ANNUAL GAS STATION TEST REPORTS

2026

Official Annual Test Reports

- When to Perform Annual Tests
- Improper Testing-Adjustments-Calibrations
- Gas Station Test Report and Examples (Report Revised 2023)
- When a report is rejected

When to Perform an Annual Test

- When hired to do by an Arkansas business.
- When installing new or used devices at a location.
- Complete one Official Annual Test Report per year (when placing decals)
  -unless told otherwise by our office

Improper Testing

- Tests should be performed in accordance with the prescribed Examination Procedure Outline (EPO) as written in NIST Handbook 112. EPO's No. 21 and No. 22.

- Test should be performed as delivered to the consumer.

  -Pump is operating under normal service conditions

  -NIST procedure is to test to the device, not to the test measure

  -5 Gallons delivered as shown by the device

- Do not test in stand-alone or calibration mode, this is obvious on reports and will be rejected.

- If a device is adjusted, it must be retested as delivered to the customer.

- Service agencies are subject to having registration revoked as well as civil/criminal penalties if repeated offenses occur.

P:\NTP\EPOS\EPOs -NISTHB 112 2002\EPOCoverPage4-02.wpd

EXAMPLE

PLANT INDUSTRIES DIVISION

OFFICIAL ANNUAL TEST REPORT FOR GAS STATIONS

Bureau of Standards
4608 West 61st Street
Little Rock, Arkansas 72209
bureau@agriculture.arkansas.gov
501.570.1159

DATE: 01/01/2024	LOCATION NAME: Johns Gas Station #55		EMAIL: john@somewhere.com		PHONE: 501-555-5555
COUNTY: Garland	PHYSICAL ADDRESS: 123 Main Street		CITY: Hot Springs	STATE: AR	ZIP: 71901
MAILING ADDRESS: PO Box 123 or write SAME if mailing address is not different from physical			CITY: Hot Springs	STATE: AR	ZIP: 71913
NO. PUMPS: 26	NO. PUMPS ADJUSTED: 1	BLEND PUMPS: YES [X] NO [X]		NO. TANKS BELOW GROUND: 3	
SERVICE AGENCY: John's Testing Service LLC		REG. NO: M0/W0	PHONE: 501-333-333	NO. TANKS ABOVE GROUND: 0	

IDENTIFY PRODUCTS BY CODE, IF OTHER SPECIFY: UNLEADED-U, MIDGRADE-M, PREMIUM-P, DIESEL-D, OFF-ROAD DIESEL-OD
*If completing this form electronically select the product tested from the available drop down menu choices below.

						RECORD ERROR IN CUBIC INCHES (in^3) + or – AS LEFT			PRICE COMPUTATION = GALLONS DELIVERED X UNIT PRICE		
PRODUCT	PUMP #	MAKE	MODEL	SERIAL #	NTEP CC #	NORMAL TEST	SPECIAL TEST	AS LEFT	GALLONS DELIVERED	UNIT PRICE	PRICE COMPUTATION
Unleaded	1	Wayne	B23	12176D	02-136	-1	-2	-1	10.002	2.599	26.00
Premium						+3	+6	+1	25.003	2.999	74.99
Plus							0	0	5.001	2.799	13.99
Diesel						-1	-2	-1	10.002	3.599	36.00

REMARKS: *Pump #3 Out of Order, Pump #1 Hose needs replaced*

By signing this form, the Servicing Agent states; (1) the devices above were inspected and tested in accordance with the current Examination Procedure Outline (EPO) as found in the National Institute of Standards and Technology's Handbook 112 and Handbook 44; (2) the devices above comply with all applicable requirements as specified in Handbook 44.

Service Agent Signature	Service Agent Printed Name	Owner / Operator Signature	Owner / Operator Printed Name
John James	John James	John Doe	John Doe

Form G-1A Revised 4-21-2023

Gas Station Test Report arkansas.gov

Number reports there are multiple pages. EXAMPLE Page 1 of 1

How many pumps are in this picture?

Products?

Prohibited Product Names

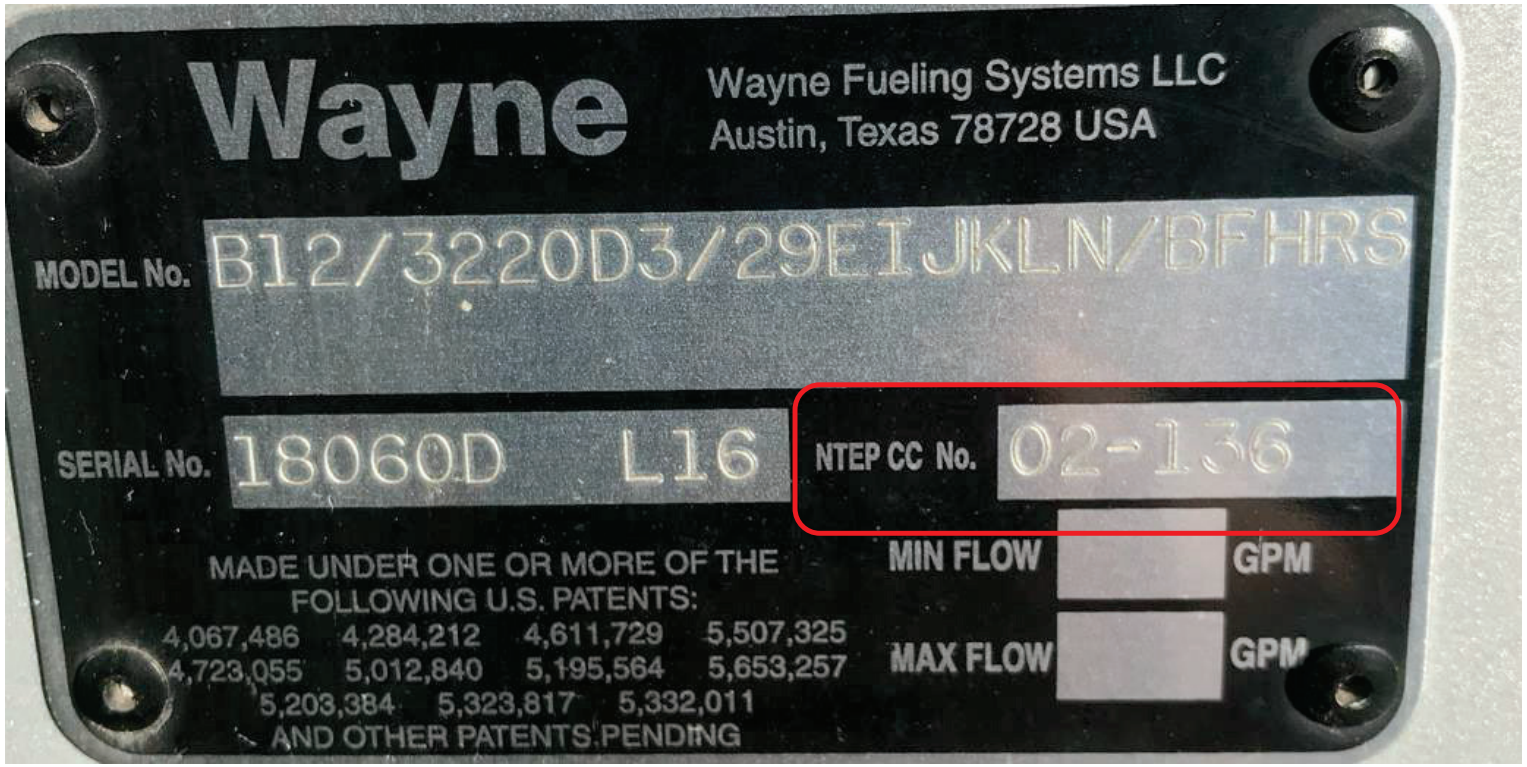
Product- Identifying terms that are unacceptable on report:

Examples: Real Gas, Hy-Test, Low-Test, Blended 87, 89, 92, Pump #1, Pump #2, Pump #3, etc. Brand Names

Note: Brand Names are allowed on a case-by-case basis. Contact the Bureau with any questions.

Gas Station Test Report

NTEP CC Number – Must have NTEP CC # on marking information if installed after January 1st 2003



PLANT INDUSTRIES DIVISION

OFFICIAL ANNUAL TEST REPORT FOR GAS STATIONS

INCOMPLETE REPORT

Bureau of Standards
4608 West 61st Street
Little Rock, Arkansas 72209
bureau@agriculture.arkansas.gov
501.570.1159

Mailing Address Missing

DATE: 01/01/2024	LOCATION NAME: Johns Gas Station #55	EMAIL: john@somewhere.com	PHONE: 501-555-5555
COUNTY: [illegible]	PHYSICAL ADDRESS: 123 Main Street	CITY: Hot Springs	STATE: [illegible] ZIP: 71901
MAILING ADDRESS:		CITY:	STATE: ZIP:
NO. PUMPS: 26	NO. PUMPS ADJUSTED: 1	BLEND PUMP: YES [X] NO [X]	NO. TANKS BELOW GROUND: 3
SERVICE AGENCY: John's Testing Service LLC	REG. NO: M0/W0	PHONE: 501-333-333	NO. TANKS ABOVE GROUND: 0

IDENTIFY PRODUCTS BY CODE, IF OTHER SPECIFY: UNLEADED-U, MIDGRADE-M, PREMIUM-P, DIESEL-D, OFF-ROAD DIESEL-OD
*If completing this form electronically select the product tested from the available drop down menu choices below.

						RECORD ERROR IN CUBIC INCHES (in^3) + or – AS LEFT			PRICE COMPUTATION = GALLONS DELIVERED X UNIT PRICE		
PRODUCT	PUMP #	MAKE	MODEL	SERIAL #	NTEP CC #	NORMAL TEST	SPECIAL TEST	AS LEFT	GALLONS DELIVERED	UNIT PRICE	PRICE COMPUTATION
Unleaded	1	Wayne	B23	12176D	02-136	-1	-2	-1	10.002	2.599	26.00
Premium						+3	+6	+1	25.003	2.999	74.99
Plus							0	0	5.001	2.799	13.99
Diesel						-1	-2	-1	10.002	3.599	36.00

REMARKS: *Pump #3 Out of Order*

By signing this form, the Servicing Agent states; (1) the devices above were inspected and tested in accordance with the current Examination Procedure Outline (EPO) as found in the National Institute of Standards and Technology's Handbook 112 and Handbook 44; (2) the devices above comply with all applicable requirements as specified in Handbook 44.

Service Agent Signature	Service Agent Printed Name	Owner / Operator Signature	Owner / Operator Printed Name
John James	John James	John Doe	John Doe

Form G-1A Revised 4-21-2023

PLANT INDUSTRIES DIVISION

INCORRECT REPORT

Bureau of Standards
4608 West 61st Street
Little Rock, Arkansas 72209
bureau@agriculture.arkansas.gov
501.570.1159

OFFICIAL ANNUAL TEST REPORT FOR GAS STATIONS

Number of Pumps Adjusted Incorrect

DATE: 01/01/2024	LOCATION NAME: Johns Gas Station #55	EMAIL: john@somewhere.com	PHONE: 501-555-5555
COUNTY: Garland	PHYSICAL ADDRESS: 123 Main Street	CITY: Hot Springs	STATE: AR ZIP: 71901
MAILING ADDRESS:	SAME	CITY:	STATE: ZIP:
NO. PUMPS: 2[illegible]	NO. PUMPS ADJUSTED: 0	BLEND PUMPS: YES [X] NO [X]	NO. TANKS BELOW GROUND: 3
SERVICE AGENCY: John's [illegible] Service LLC	REG. NO: M0/W0	PHONE: 501-333-333	NO. TANKS ABOVE GROUND: 0

IDENTIFY PRODUCTS BY CODE, IF OTHER SPECIFY: UNLEADED-U, MIDGRADE-M, PREMIUM-P, DIESEL-D, OFF-ROAD DIESEL-OD
*If completing this form electronically select the product tested from the available drop down menu choices below.

						RECORD ERROR IN CUBIC INCHES (in^3) + or – AS LEFT			PRICE COMPUTATION = GALLONS DELIVERED X UNIT PRICE		
PRODUCT	PUMP #	MAKE	MODEL	SERIAL #	NTEP CC #	NORMAL TEST	SPECIAL TEST	AS LEFT	GALLONS DELIVERED	UNIT PRICE	PRICE COMPUTATION
Unleaded	1	Wayne	B23	12176D	02-136	-1	-2	-1	10.002	2.599	26.00
Premium						+4	+6	+1	25.003	2.999	74.99
Plus							0	0	5.001	2.799	13.99
Diesel						-1	-2	-1	10.002	3.599	36.00

REMARKS: *Pump #3 Out of Order*

By signing this form, the Servicing Agent states; (1) the devices above were inspected and tested in accordance with the current Examination Procedure Outline (EPO) as found in the National Institute of Standards and Technology's Handbook 112 and Handbook 44; (2) the devices above comply with all applicable requirements as specified in Handbook 44.

Service Agent Signature	Service Agent Printed Name	Owner / Operator Signature	Owner / Operator Printed Name
John James	John James	John Doe	John Doe

Form G-1A Revised 4-21-2023

PLANT INDUSTRIES DIVISION

INCORRECT REPORT

Bureau of Standards
4608 West 61st Street
Little Rock, Arkansas 72209
bureau@agriculture.arkansas.gov
501.570.1159

OFFICIAL ANNUAL TEST REPORT FOR GAS STATIONS

Gallons Delivered Error

DATE: 01/01/2024	LOCATION NAME: Johns Gas Station #55	EMAIL: john@somewhere.com	PHONE: *501-555-5555*
COUNTY: Garland	PHYSICAL ADDRESS: 123 Main Street	CITY: Hot Springs	STATE: AR ZIP: 71901
MAILING ADDRESS: SAME		CITY:	STATE: ZIP:
NO. PUMPS: 26	NO. PUMPS ADJUSTED: 1	BLEND PUMPS: YES [X] NO [X]	NO. TANKS BELOW GROUND: 3
SERVICE AGENCY: John's Testing Service LLC	REG. NO: M0/W0	PHONE: 501-333-333	NO. TANKS ABOVE GROUND: 0

IDENTIFY PRODUCTS BY CODE, IF OTHER SPECIFY: UNLEADED-U, MIDGRADE-M, PREMIUM-P, DIESEL-D, OFF-ROAD DIESEL-OD
*If completing this form electronically select the product tested from the available drop down menu choices below.

RECORD ERROR IN CUBIC INCHES (in^3) + or – AS LEFT

PRICE COMPUTATION = GALLONS DELIVERED X UNIT PRICE

PRODUCT	PUMP #	MAKE	MODEL	SERIAL #	NTEP CC #	NORMAL TEST	SPECIAL TEST	AS LEFT	GALLONS DELIVERED	UNIT PRICE	PRICE COMPUTATION
Unleaded	1	Wayne	B23	12176D	02-136	-1	-2	-1	10.002	2.599	26.00
Premium	|	|	|	|	|	+4	+6	+1	10.003	2.999	74.99
Plus	|	|	|	|	|		0	0	5.001	2.799	13.99
Diesel	|	|	|	|	|	-1	-2	-1	10.002	3.599	36.00

REMARKS: *Pump #3 Out of Order*

By signing this form, the Servicing Agent states; (1) the devices above were inspected and tested in accordance with the current Examination Procedure Outline (EPO) as found in the National Institute of Standards and Technology's Handbook 112 and Handbook 44; (2) the devices above comply with all applicable requirements as specified in Handbook 44.

Service Agent Signature	Service Agent Printed Name	Owner / Operator Signature	Owner / Operator Printed Name
John James	John James	*John Doe*	John Doe

Form G-1A Revised 4-21-2023

INCORRECT REPORT

PLANT INDUSTRIES DIVISION

OFFICIAL ANNUAL TEST REPORT FOR GAS STATIONS

Incorrect Test Procedure

Bureau of Standards
4608 West 61st Street
Little Rock, Arkansas 72209
bureau@agriculture.arkansas.gov
501.570.1159

DATE: 01/01/2024	LOCATION NAME: Johns Gas Station #55	EMAIL: john@somewhere.com	PHONE: *501-555-5555*
COUNTY: Garland	PHYSICAL ADDRESS: 123 Main Street	CITY: Hot Springs	STATE: AR ZIP: 71901
MAILING ADDRESS: SAME		CITY:	STATE: ZIP:
NO. PUMPS: 26	NO. PUMPS ADJUSTED: 1	BLEND PUMPS: YES [X] NO [X]	NO. TANKS BELOW GROUND: 3
SERVICE AGENCY: John's Testing Service LLC	REG. NO: M0/W0	PHONE: 501-333-333	NO. TANKS ABOVE GROUND: 0

IDENTIFY PRODUCTS BY CODE, IF OTHER SPECIFY: UNLEADED-U, MIDGRADE-M, PREMIUM-P, DIESEL-D, OFF-ROAD DIESEL-OD
*If completing this form electronically select the product tested from the available drop down menu choices below.

						RECORD ERROR IN CUBIC INCHES (in^3) + or – AS LEFT			PRICE COMPUTATION = GALLONS DELIVERED X UNIT PRICE		
PRODUCT	PUMP #	MAKE	MODEL	SERIAL #	NTEP CC #	NORMAL TEST	SPECIAL TEST	AS LEFT	GALLONS DELIVERED	UNIT PRICE	PRICE COMPUTATION
Unleaded	1	Wayne	B23	12176D	02-136	-1	-2	-1	10.002	2.599	26.00
Premium						+4	+6	+1	25.003	2.999	74.99
Plus							0	0	5.001	2.799	13.99
Diesel						-1		-1	5.002	3.599	18.00

REMARKS: *Pump #3 Out of Order*

By signing this form, the Servicing Agent states; (1) the devices above were inspected and tested in accordance with the current Examination Procedure Outline (EPO) as found in the National Institute of Standards and Technology's Handbook 112 and Handbook 44; (2) the devices above comply with all applicable requirements as specified in Handbook 44.

Service Agent Signature	Service Agent Printed Name	Owner / Operator Signature	Owner / Operator Printed Name
John James	John James	*John Doe*	John Doe

Form G-1A Revised 4-21-2023

INCORRECT REPORT

PLANT INDUSTRIES DIVISION

Bureau of Standards
4608 West 61st Street
Little Rock, Arkansas 72209
bureau@agriculture.arkansas.gov
501.570.1159

OFFICIAL ANNUAL TEST REPORT FOR GAS STATIONS

Incorrect Test Procedure – AS LEFT

DATE: 01/01/2024	LOCATION NAME: Johns Gas Station #55	EMAIL: john@somewhere.com	PHONE: *501-555-5555*
COUNTY: Garland	PHYSICAL ADDRESS: 123 Main Street	CITY: Hot Springs	STATE: AR ZIP: 71901
MAILING ADDRESS: SAME		CITY:	STATE: ZIP:
NO. PUMPS: 26	NO. PUMPS ADJUSTED: 26	BLEND PUMPS: YES [X] NO [X]	NO. TANKS BELOW GROUND: 3
SERVICE AGENCY: John's Testing Service LLC	REG. NO: M0/W0	PHONE: 501-333-333	NO. TANKS ABOVE GROUND: 0

IDENTIFY PRODUCTS BY CODE, IF OTHER SPECIFY: UNLEADED-U, MIDGRADE-M, PREMIUM-P, DIESEL-D, OFF-ROAD DIESEL-OD
*If completing this form electronically select the product tested from the available drop down menu choices below.

RECORD ERROR IN CUBIC INCHES (in^3) + or – AS LEFT

PRICE COMPUTATION = GALLONS DELIVERED X UNIT PRICE

PRODUCT	PUMP #	MAKE	MODEL	SERIAL #	NTEP CC #	NORMAL TEST	SPECIAL TEST	AS LEFT	GALLONS DELIVERED	UNIT PRICE	PRICE COMPUTATION
Unleaded	1	Wayne	B23	12176D	02-136	-1	-2	0	10.002	2.599	26.00
Premium	|	|	|	|	|	+4	+6	0	15.003	2.999	74.99
Plus	|	|	|	|	|		0	0	5.001	2.799	27.99
Diesel	|	|	|	|	|	-1	-2	0	10.002	3.599	36.00
								0			
								0			
								0			
								0			
								0			
								0			
								0			
								0			

REMARKS: *Pump #3 Out of Order*

By signing this form, the Servicing Agent states; (1) the devices above were inspected and tested in accordance with the current Examination Procedure Outline (EPO) as found in the National Institute of Standards and Technology's Handbook 112 and Handbook 44; (2) the devices above comply with all applicable requirements as specified in Handbook 44.

Service Agent Signature	Service Agent Printed Name	Owner / Operator Signature	Owner / Operator Printed Name
John James	John James	*John Doe*	John Doe

Form G-1A Revised 4-21-2023

A Report is Rejected if…

- The test results indicate the possibility the devices were not tested in accordance with the applicable Handbook 112 Examination Procedures Outline (EPO)
- Not Legible
- Not Complete
- Not Correct
- Purpose of the annual test is to ensure the business is compliance with all applicable state laws and regulations.

P:\NTP\EPOS\EPOs -NISTHB 112 2002\EPOCoverPage4-02.wpd

Failure to complete the required information will result in rejection of the report.

PLANT INDUSTRIES DIVISION

OFFICIAL ANNUAL TEST REPORT FOR GAS STATIONS

Bureau of Standards
4608 West 61st Street
Little Rock, Arkansas 72209
bureau@agriculture.arkansas.gov
501.570.1159

DATE:	LOCATION NAME:	EMAIL:	PHONE:	
COUNTY:	PHYSICAL ADDRESS:	CITY:	STATE:	ZIP:
MAILING ADDRESS:		CITY:	STATE:	ZIP:
NO. PUMPS:	NO. PUMPS ADJUSTED:	BLEND PUMPS: YES ☐ NO ☐	NO. TANKS BELOW GROUND:	
SERVICE AGENCY:	REG. NO:	PHONE:	NO. TANKS ABOVE GROUND:	

IDENTIFY PRODUCTS BY CODE, IF OTHER SPECIFY: UNLEADED-U, MIDGRADE-M, PREMIUM-P, DIESEL-D, OFF-ROAD DIESEL-OD
*If completing this form electronically select the product tested from the available drop down menu choices below.

						RECORD ERROR IN CUBIC INCHES (in^3) + or – AS LEFT			PRICE COMPUTATION = GALLONS DELIVERED X UNIT PRICE		
PRODUCT	PUMP #	MAKE	MODEL	SERIAL #	NTEP CC #	NORMAL TEST	SPECIAL TEST	AS LEFT	GALLONS DELIVERED	UNIT PRICE	PRICE COMPUTATION

REMARKS:

By signing this form, the Servicing Agent states; (1) the devices above were inspected and tested in accordance with the current Examination Procedure Outline (EPO) as found in the National Institute of Standards and Technology's Handbook 112 and Handbook 44; (2) the devices above comply with all applicable requirements as specified in Handbook 44.

Service Agent Signature	Service Agent Printed Name	Owner / Operator Signature	Owner / Operator Printed Name

Form G-1A Revised 4-21-2023

Failure to complete and correctly report this required information will result in the rejection of the report and retesting of the site.

PLANT INDUSTRIES DIVISION

OFFICIAL ANNUAL TEST REPORT FOR GAS STATIONS

Bureau of Standards
4608 West 61st Street
Little Rock, Arkansas 72209
bureau@agriculture.arkansas.gov
501.570.1159

DATE:	LOCATION NAME:	EMAIL:	PHONE:	
COUNTY:	PHYSICAL ADDRESS:	CITY:	STATE:	ZIP:
MAILING ADDRESS:		CITY:	STATE:	ZIP:
NO. PUMPS:	NO. PUMPS ADJUSTED:	BLEND PUMPS: YES ☐ NO ☐	NO. TANKS BELOW GROUND:	
SERVICE AGENCY:	REG. NO:	PHONE:	NO. TANKS ABOVE GROUND:	
IDENTIFY PRODUCTS BY CODE, IF OTHER SPECIFY: UNLEADED-U, MIDGRADE-M, PREMIUM-P, DIESEL-D, OFF-ROAD DIESEL-OD *If completing this form electronically select the product tested from the available drop down menu choices below		RECORD ERROR IN CUBIC INCHES (in^3) + or – AS LEFT	PRICE COMPUTATION = GALLONS DELIVERED X UNIT PRICE	

PRODUCT	PUMP #	MAKE	MODEL	SERIAL #	NTEP CC #	NORMAL TEST	SPECIAL TEST	AS LEFT	GALLONS DELIVERED	UNIT PRICE	PRICE COMPUTATION

REMARKS:

By signing this form, the Servicing Agent states; (1) the devices above were inspected and tested in accordance with the current Examination Procedure Outline (EPO) as found in the National Institute of Standards and Technology's Handbook 112 and Handbook 44; (2) the devices above comply with all applicable requirements as specified in Handbook 44.

Service Agent Signature	Service Agent Printed Name	Owner / Operator Signature	Owner / Operator Printed Name

Form G-1A Revised 4-21-2023

Acknowledging Compliance

PLANT INDUSTRIES DIVISION

OFFICIAL ANNUAL TEST REPORT FOR GAS STATIONS

Bureau of Standards
4608 West 61st Street
Little Rock, Arkansas 72209
bureau@agriculture.arkansas.gov
501.570.1159

DATE:	LOCATION NAME:		EMAIL:		PHONE:
COUNTY:	PHYSICAL ADDRESS:		CITY:	STATE:	ZIP:
MAILING ADDRESS:			CITY:	STATE:	ZIP:
NO. PUMPS:	NO. PUMPS ADJUSTED:	BLEND PUMPS: YES ☐ NO ☐		NO. TANKS BELOW GROUND:	
SERVICE AGENCY:		REG. NO:	PHONE:	NO. TANKS ABOVE GROUND:	

IDENTIFY PRODUCTS BY CODE, IF OTHER SPECIFY: UNLEADED-U, MIDGRADE-M, PREMIUM-P, DIESEL-D, OFF-ROAD DIESEL-OD
*If completing this form electronically select the product tested from the available drop down menu choices below.

						RECORD ERROR IN CUBIC INCHES (in^3) + or – AS LEFT			PRICE COMPUTATION = GALLONS DELIVERED X UNIT PRICE		
PRODUCT	PUMP #	MAKE	MODEL	SERIAL #	NTEP CC #	NORMAL TEST	SPECIAL TEST	AS LEFT	GALLONS DELIVERED	UNIT PRICE	PRICE COMPUTATION

REMARKS:

By signing this form, the Servicing Agent states; (1) the devices above were inspected and tested in accordance with the current Examination Procedure Outline (EPO) as found in the National Institute of Standards and Technology's Handbook 112 and Handbook 44; (2) the devices above comply with all applicable requirements as specified in Handbook 44.

Service Agent Signature	Service Agent Printed Name	Owner / Operator Signature	Owner / Operator Printed Name

Form G-1A Revised 4-21-2023

TEST REPORT MUST BE LEFT ON SITE AFTER APPROVAL

AR Code § 4-18-344 (c)

-Two Weeks to Turn In

AR Code § 4-18-344 (f)(1)&(2) - 3 Years

Place in Service Reports (Form 1822)

2026

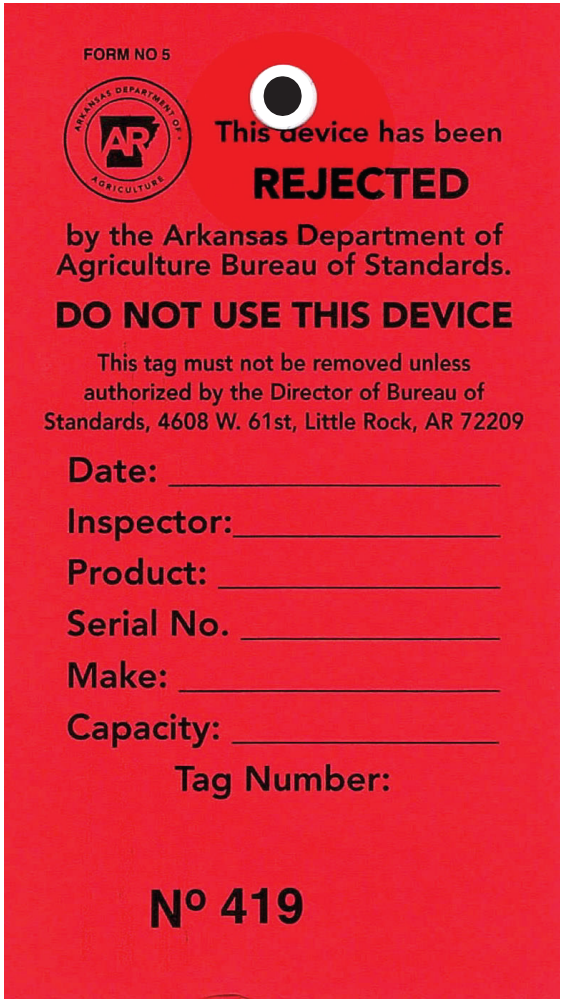
When to complete a Form 1822

- A device being placed into service for the first time. Ex. EVSE
- When a new or used device is being installed at a location in the state
- Any device is that is moved and reinstalled anywhere in the state
- When a device has been rejected by the state

FORM1822 arkansas.gov

When to complete Form 1822

- If a device is restored to service after official rejection by the Bureau of Standards (Red Tagged)
- Form shall be emailed to the Bureau of Standards within 24 hours of a device being returned to service
- Email: *bureau@agriculture.arkansas.gov*



FORM1822 arkansas.gov

Rejection Red Tags and Seals

If a device has been officially rejected:

- Servicepersons are authorized to remove Bureau applied tags and seals to repair devices

- If device is not restored to FULL compliance (HB 44 Requirements)
  - Device is NOT to be returned to service
  - Serviceperson shall reattach the original Bureau applied red tag with serviceperson's properly attached security seal

PLANT INDUSTRIES DIVISION

OFFICIAL PLACED IN SERVICE REPORT FOR METERS

Bureau of Standards
4608 West 61st Street
Little Rock, Arkansas 72209
bureau@agriculture.arkansas.gov
501.570.1159

Officially Rejected Device [X] Newly Installed Device [ ] Used Device at a New Location [ ] Device Calibration [ ]

Name of Owner: John Johnson Phone: (501)-555-5555
Name of Facility: Johns Test Site Phone: (501)-555-3333
Email Address: john@somewhere.com
Mailing Address: PO Box 123 or SAME (Street) Hot Springs (City) AR (State) 71901 (Zip)
Physical Address: 123 Main Street (Street) Hot Springs (City) Garland (County) 71913 (Zip)

TYPE OF METER		METER DESIGN	STORAGE TANK
Truck Meter	[ ]	Make: Wayne	[X] Below Ground
Dock Meter	[ ]	Model: B23	
Diesel Pump	[ ]	Serial #: 12176D	[ ] Above Ground
Gas Pump	[X]	Flow Rate: 12gpm	
Mass Flow Meter	[ ]	National Type Evaluation Program (NTEP) Certificate of Conformance Number: 02-136	
Agri-Meter	[ ]		
Other Meter	[ ]	*(Serial numbers of the same Make and Model may be recorded on the reverse side.)*	
(Specify):			

This Official Placed in Service Report, and the appropriate Official test report, must be mailed within 24 hours to the Bureau of Standards executed by a Serviceperson representing a Registered Service Agency or a Registered Self-employed Serviceperson for each device calibrated, used device reinstalled at a new location, newly installed device, or an officially rejected device restored to service. You must include the original rejection tag.

This is to certify that I have repaired and/or installed and left as correct in accordance with the current version of the National Institute of Standards and Technology (NIST) Handbook 44, the equipment described above.

Service Agency: Jacks Meter Service LLC (please print) Registration # M0/W0
Serviceperson: Jack Dirt (please print) Date of Service: 01/01/2024
Signature: Jack Dirt
Remarks: Owner John Johnson John Johnson

Form # 1822-M Revised 4-21-2023

FORM1822 arkansas.gov

Meter Testing Seminar

Arkansas Bureau of Standards

2026

Objectives

- Upon completion of this presentation, you will be able to
  - Understand and describe
  - Inspection for *correctness* & Testing for *accuracy*
  - Referencing Handbook 44 using Handbook 112 (EP0 21&22)
    - General Code Requirements
    - Safety
    - Indicating and Recording Element
    - Marking Requirements
    - Discharge Hose-retail
    - Totalizer
    - Filters (NIST Handbook 130)
    - Testing
    - Sealing

Handbook 112

Examination Procedure Outline (EPO) for Retail Motor-Fuel Dispensers (RMFDs)

EPO No. 21 Non-Blended Product

EPO No. 22 Blended Product

Handbook 44

Device Requirements found in Two Sections

Section 1.10. General Code

Section 3.30. Liquid-Measuring Devices

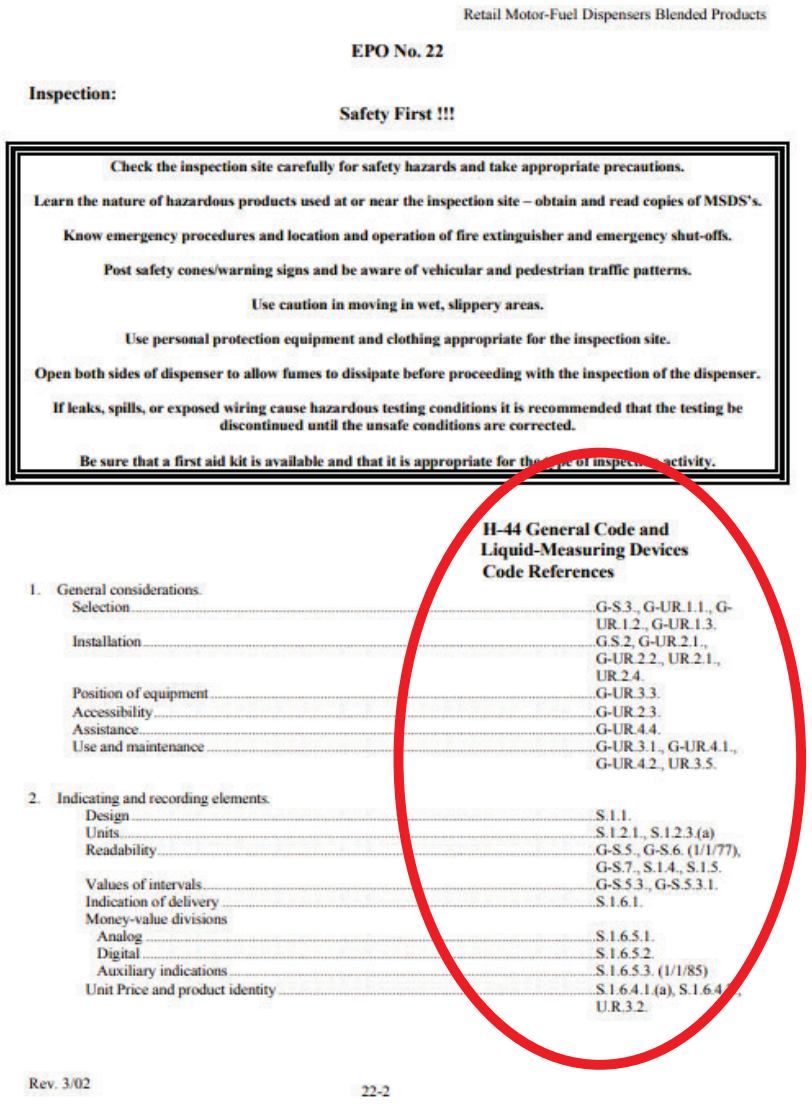
P:\NTP\EPOS\EPOs -NISTHB 112 2002\EPOCoverPage4-02.wpd

NIST HB44: Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices, 2025

Handbook 44 Key

- Handbook Key
- Any G- prefix

- General code – Applies to all devices in HB 44
  - G-A – Application
  - G-S – Specifications
  - G-N – Notes
  - G-T – Tolerances
  - G-UR – User Requirements



Retail Motor-Fuel Dispensers Blended Products

EPO No. 22

Inspection:

Safety First !!!

Check the inspection site carefully for safety hazards and take appropriate precautions.

Learn the nature of hazardous products used at or near the inspection site – obtain and read copies of MSDS's.

Know emergency procedures and location and operation of fire extinguisher and emergency shut-offs.

Post safety cones/warning signs and be aware of vehicular and pedestrian traffic patterns.

Use caution in moving in wet, slippery areas.

Use personal protection equipment and clothing appropriate for the inspection site.

Open both sides of dispenser to allow fumes to dissipate before proceeding with the inspection of the dispenser.

If leaks, spills, or exposed wiring cause hazardous testing conditions it is recommended that the testing be discontinued until the unsafe conditions are corrected.

Be sure that a first aid kit is available and that it is appropriate for the type of inspection activity.

H-44 General Code and Liquid-Measuring Devices Code References

1. General considerations.	
Selection	G-S.3., G-UR.1.1., G-UR.1.2., G-UR.1.3.
Installation	G.S.2, G-UR.2.1., G-UR.2.2., UR.2.1., UR.2.4.
Position of equipment	G-UR.3.3.
Accessibility	G-UR.2.3.
Assistance	G-UR.4.4.
Use and maintenance	G-UR.3.1., G-UR.4.1., G-UR.4.2., UR.3.5.
2. Indicating and recording elements.	
Design	S.1.1.
Units	S.1.2.1., S.1.2.3.(a)
Readability	G-S.5., G-S.6. (1/1/77), G-S.7., S.1.4., S.1.5.
Values of intervals	G-S.5.3., G-S.5.3.1.
Indication of delivery	S.1.6.1.
Money-value divisions	
Analog	S.1.6.5.1.
Digital	S.1.6.5.2.
Auxiliary indications	S.1.6.5.3. (1/1/85)
Unit Price and product identity	S.1.6.4.1.(a), S.1.6.4.2., U.R.3.2.

Rev. 3/02 22-2

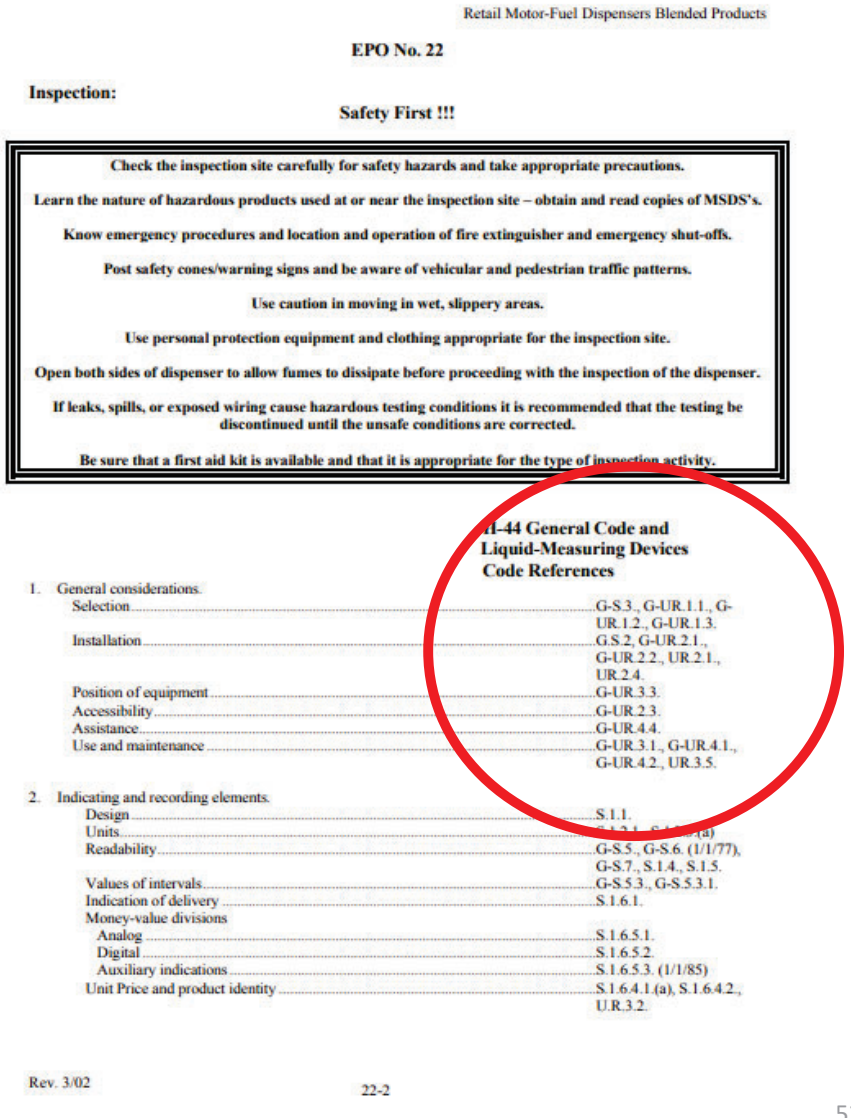
Handbook 112: P:\NTP\EPOS\EPOs -NISTHB 112 2002\EPOCoverPage4-02.wpd

Handbook 44 Key

- Handbook Key
- Any code with no G prefix
  - Applies to only –

Liquid-Measuring Devices (Section 3.30)

  - A. – Application
  - S. – Specifications
  - N. – Notes
  - T. – Tolerances
  - UR. – User Requirements



Retail Motor-Fuel Dispensers Blended Products

EPO No. 22

Inspection:

Safety First !!!

Check the inspection site carefully for safety hazards and take appropriate precautions.

Learn the nature of hazardous products used at or near the inspection site – obtain and read copies of MSDS's.

Know emergency procedures and location and operation of fire extinguisher and emergency shut-offs.

Post safety cones/warning signs and be aware of vehicular and pedestrian traffic patterns.

Use caution in moving in wet, slippery areas.

Use personal protection equipment and clothing appropriate for the inspection site.

Open both sides of dispenser to allow fumes to dissipate before proceeding with the inspection of the dispenser.

If leaks, spills, or exposed wiring cause hazardous testing conditions it is recommended that the testing be discontinued until the unsafe conditions are corrected.

Be sure that a first aid kit is available and that it is appropriate for the type of inspection activity.

H-44 General Code and Liquid-Measuring Devices Code References

1. General considerations.	
Selection	G-S.3., G-UR.1.1., G-UR.1.2., G-UR.1.3.
Installation	G.S.2, G-UR.2.1., G-UR.2.2., UR.2.1., UR.2.4.
Position of equipment	G-UR.3.3.
Accessibility	G-UR.2.3.
Assistance	G-UR.4.4.
Use and maintenance	G-UR.3.1., G-UR.4.1., G-UR.4.2., UR.3.5.
2. Indicating and recording elements.	
Design	S.1.1.
Units	[illegible]
Readability	G-S.5., G-S.6. (1/1/77), G-S.7., S.1.4., S.1.5.
Values of intervals	G-S.5.3., G-S.5.3.1.
Indication of delivery	S.1.6.1.
Money-value divisions	
Analog	S.1.6.5.1.
Digital	S.1.6.5.2.
Auxiliary indications	S.1.6.5.3. (1/1/85)
Unit Price and product identity	S.1.6.4.1.(a), S.1.6.4.2., U.R.3.2.

Rev. 3/02 22-2

Handbook 112: P:\NTP\EPOS\EPOs -NISTHB 112 2002\EPOCoverPage4-02.wpd

General Code Definitions

- Retroactive Requirements
  - Enforceable on ALL EQUIPMENT
  - Printed in Upright Roman Type in Handbook 44
  - Example – Manufacturer marking requirement.

- Nonretroactive Requirements
  - Printed in *Italics Type* in Handbook 44
  - Enforceable on or after effective date.
  - Example – NTEP CC # marking requirement.

EPO No. 21 & No. 22
Safety

2026

Safety

- Ensure grounded contact of
  - Test Measure to Funnel to Storage
  - Prover Line to Storage
  - Nozzle/Handle to Test Measure
- Avoid Wearing Synthetic Clothing
- Steel/Composite Boots
- Avoid "Switch Loading"
- DO NOT USE A PLASTIC CONE AS A FUNNEL

Fuel in Cabinet

Active Fuel Leak - DO NOT LEAVE A DISPENSER LIKE THIS

Fire Marshall & DEQ

Active Fuel Leak

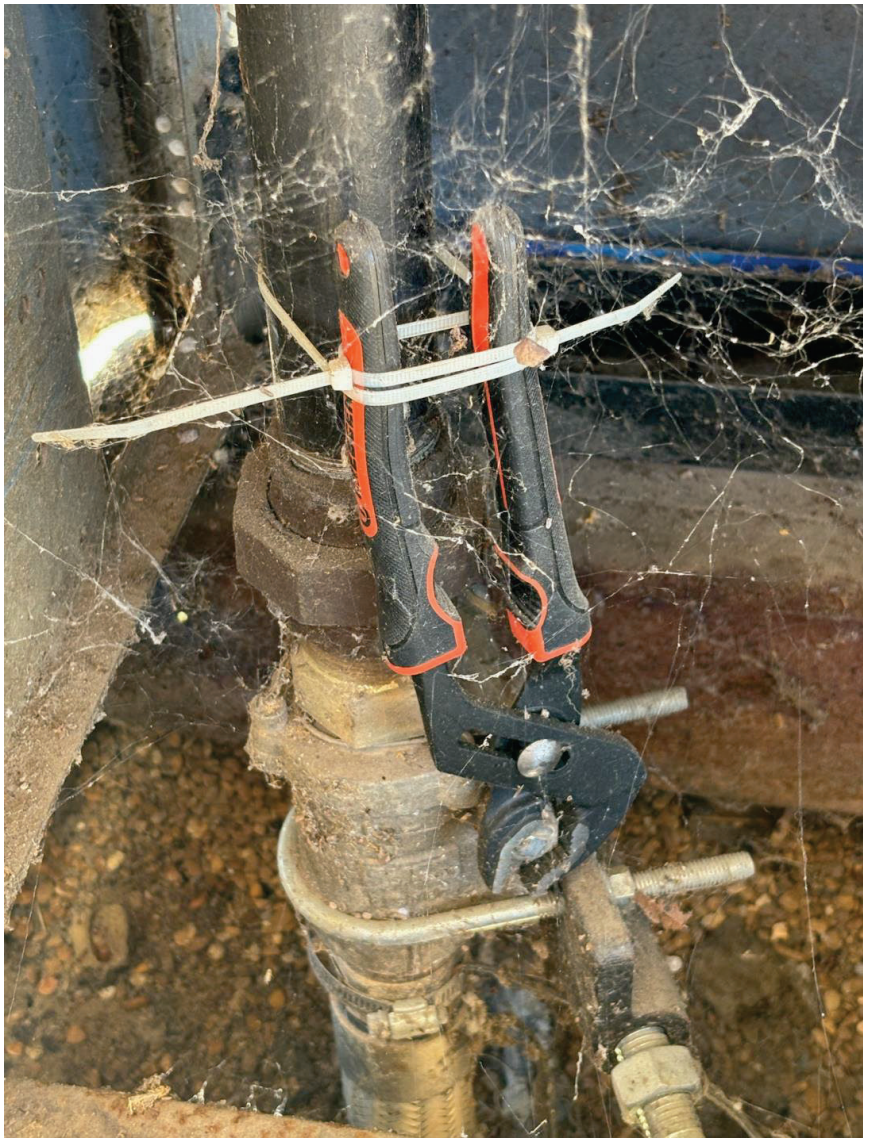
Handle is leaking when hose is pressurized

Fire Marshall
DEQ

Safety Hazard

Shear Valve Pried Open

Fire Marshall
DEQ



EPO No. 21 & No. 22
General Consideration Requirements

2026

General Consideration Requirements

- **Requirements that Must be observed when**
  - Purchasing, Installing, and Inspecting Devices on behalf of device owner
- **Selection**
  - **G-UR.1.1.** - Selection of Equipment – Is the device suitable for the service to which it will be used. Rate of flow, character number and size and location of its indicating and recording elements. DEF Tubs with Non NTEP meters
  - **G-UR.1.2.** - Environment – Equipment should be suitable for the environment its to be installed in. Wind, Weather RFI

Handbook 44: Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices as adopted by the 108th National Conference on Weights and Measures | NIST

General Consideration Requirements

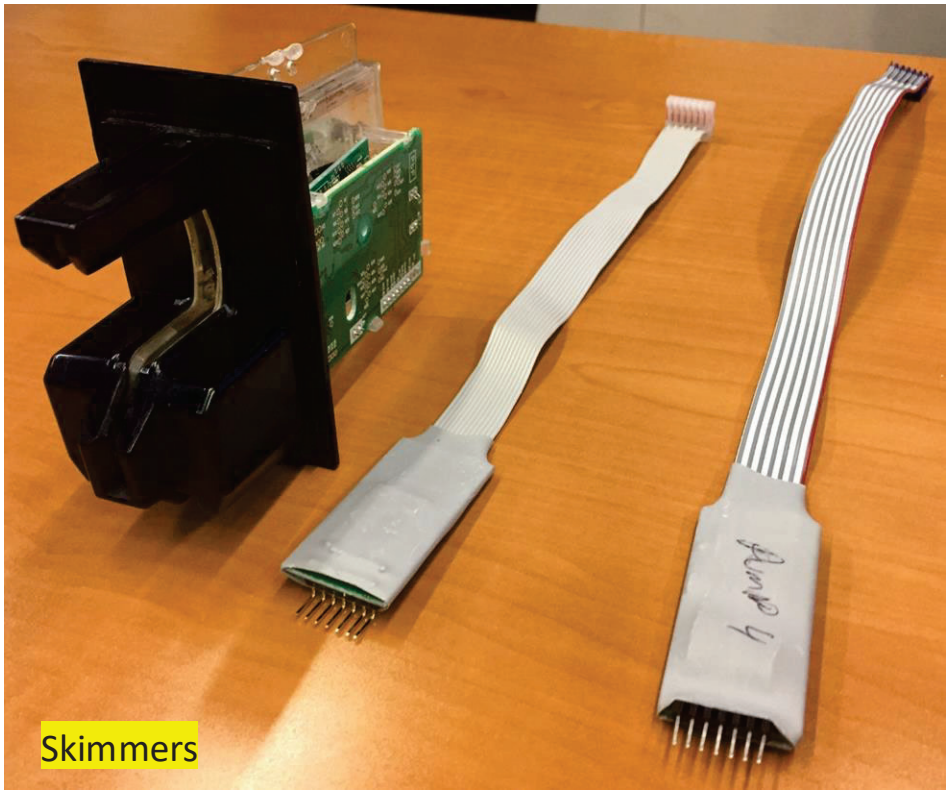
- **Installation Requirements**
  - **G-S.2.** - Facilitation of fraud - All equipment attached to shall be design to not facilitate fraud.
  - **G-UR.2.1., G-UR.2.2., & UR.2.1.** - Installation of devices, indicating and recording elements shall be installed according to manufacturer instructions. Shall be secure and rigid.
  - **UR.2.4.** - Diversion of liquid flow for trucks must have deterrents installed to prevent other vehicles other than the receiving vehicle from getting fuel.
- **Position of Equipment**
  - **G-UR.3.3.** - Indication shall be observed from some reasonable position.

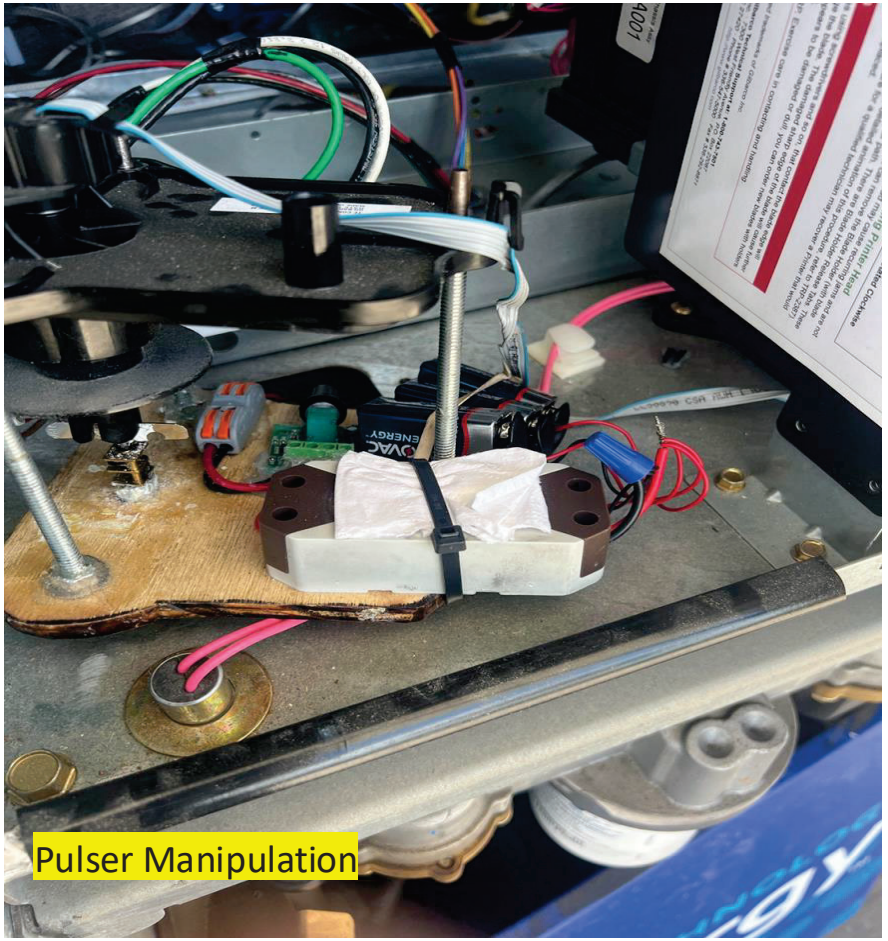
Fraudulent/Unapproved Equipment

Magnet


3rd Party WIFI Router

Fraudulent/Unapproved Equipment


Skimmers


Pulser Manipulation

General Consideration Requirements

- **G-UR.2.3.** Accessibility - Owners shall provide access for inspecting, testing, sealing of a device.
- **G-UR.4.4.** Assistance in Testing Operations - Must be supplied by owner or operator
  - Special Equipment -Provide Keys, remote, keypads, tools to enter cabinets
  - Accessories
  - Abnormal Labor (Marinas)

General Consideration Requirements

- **Use of Device**
  - **G-UR.3.1. Method of Operation**
    - Only be operated in a manner that is obviously indicated by construction or indicated by instructions on the equipment

  - **UR.3.5. Steps after Dispensing –** After the delivery to a customer
    - The starting lever shall be returned to shutoff position and zero setback interlock engaged
    - The discharge nozzle returned to designed hanging position
      - Unless indicating and recording elements, if equipped and activated to record, have been returned to a definite zero

General Consideration Requirements

Maintenance Requirements

- **G-UR.4.2. Abnormal Performance**
  - Unstable Indications
  - Abnormal Equipment Performance
  - Examples - Abnormal flow rates (slow), Unusual noises during operation, Vibrations or shaking

Official Rejection for Abnormal Performance: Flow Rate too Slow

Performing Normal Test
Found Releasing ~3GPM

Max Flow Rate 12 GPM
Min Flow Rate 0.5 GPM

Rejected for dispensing too slow. Consumer Complaint.

Press Play ->

General Consideration Requirements

Maintenance Requirements- Predominance

- **G-UR.4.1. Maintenance of Equipment**
  - Equipment in service at a single place of business shall not be considered "maintained in a proper operating condition" if
    - Predominantly, equipment ***of all types or applications*** are found to be in error or direction favorable to the device user (ex. Scales and Pumps)
    - Predominantly, equipment ***of the same type*** or application is found to be in error in a direction favorable to the device user (ex. Pumps)

  These sites were found to have errors favorable to one user over another.

  - Devices must be maintained in proper operating condition and adjusted as close to zero as possible. There must not be a bias in one direction that is favorable to the device owner
  - Sites found to have predominance are subject to entire retest

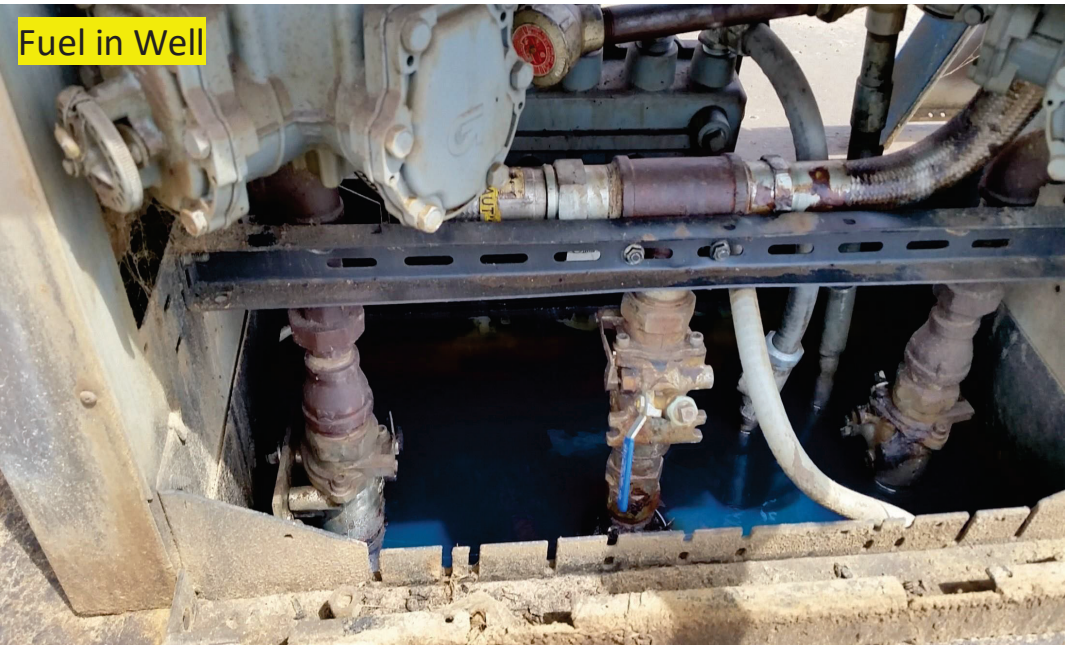
General Consideration Requirements

Maintenance Requirements – Any attached equipment.

- **G-UR.4.1. Maintenance of Equipment**
  - All equipment in service and all mechanisms and devices attached thereto or used in connection therewith shall be continuously maintained in proper operating condition throughout the period of such service.
  - Most common violation for devices.
  - The following slides provide examples of devices not properly maintained...

Official Rejection for Maintenance of Equipment: Leaking

Fuel in Well

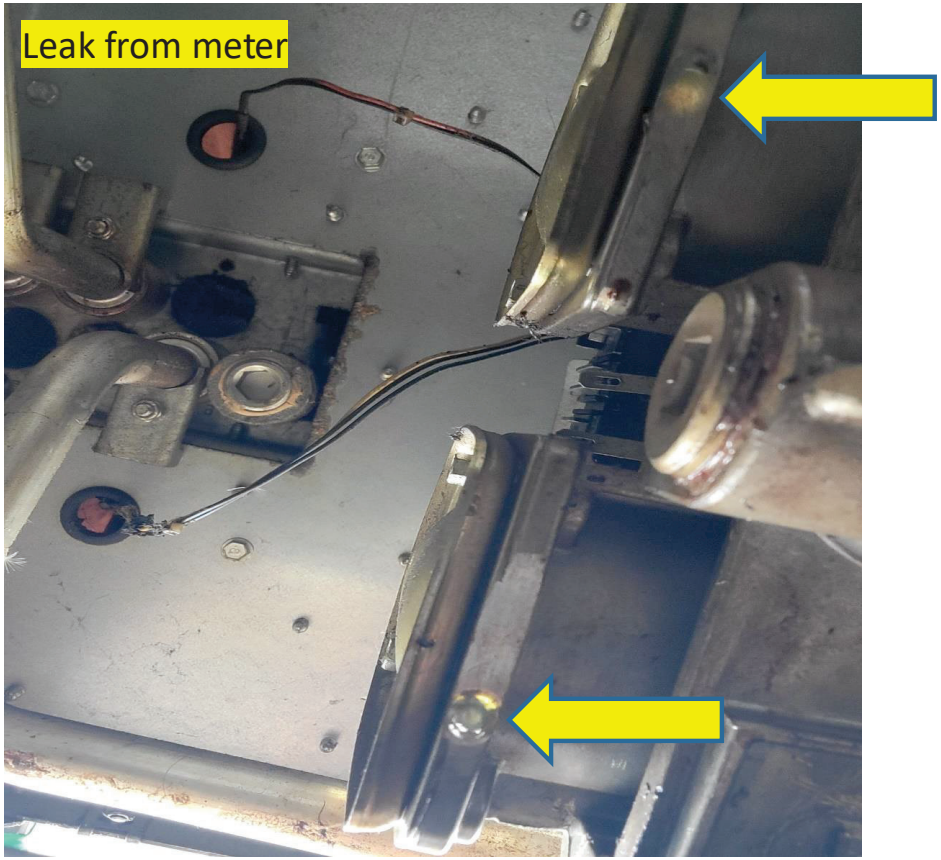


Active Leak/Gasoline

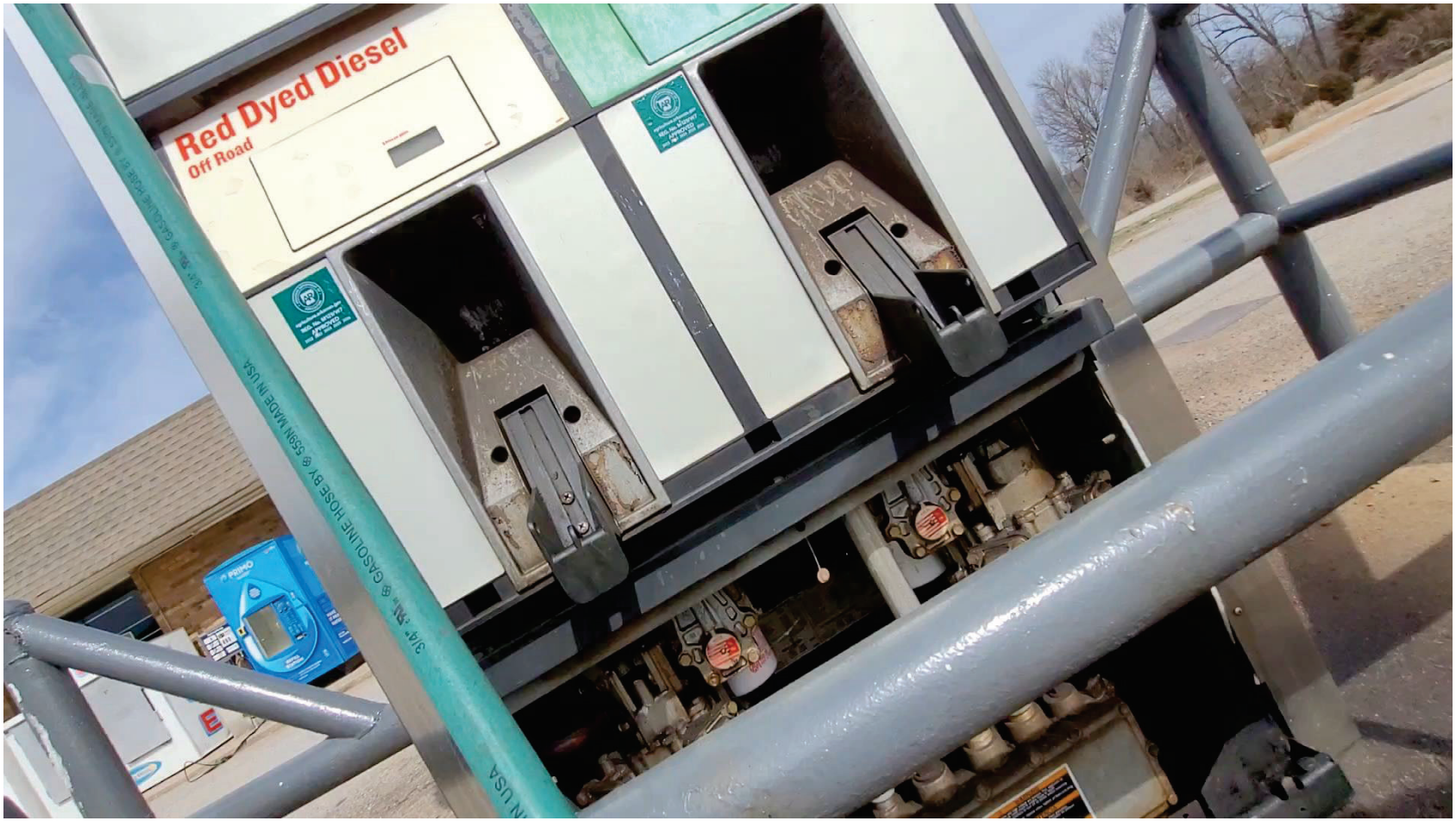
Official Rejection for Maintenance of Equipment: Leaking

Official Rejection for Maintenance of Equipment: Leaking

Check Bottom of Filter

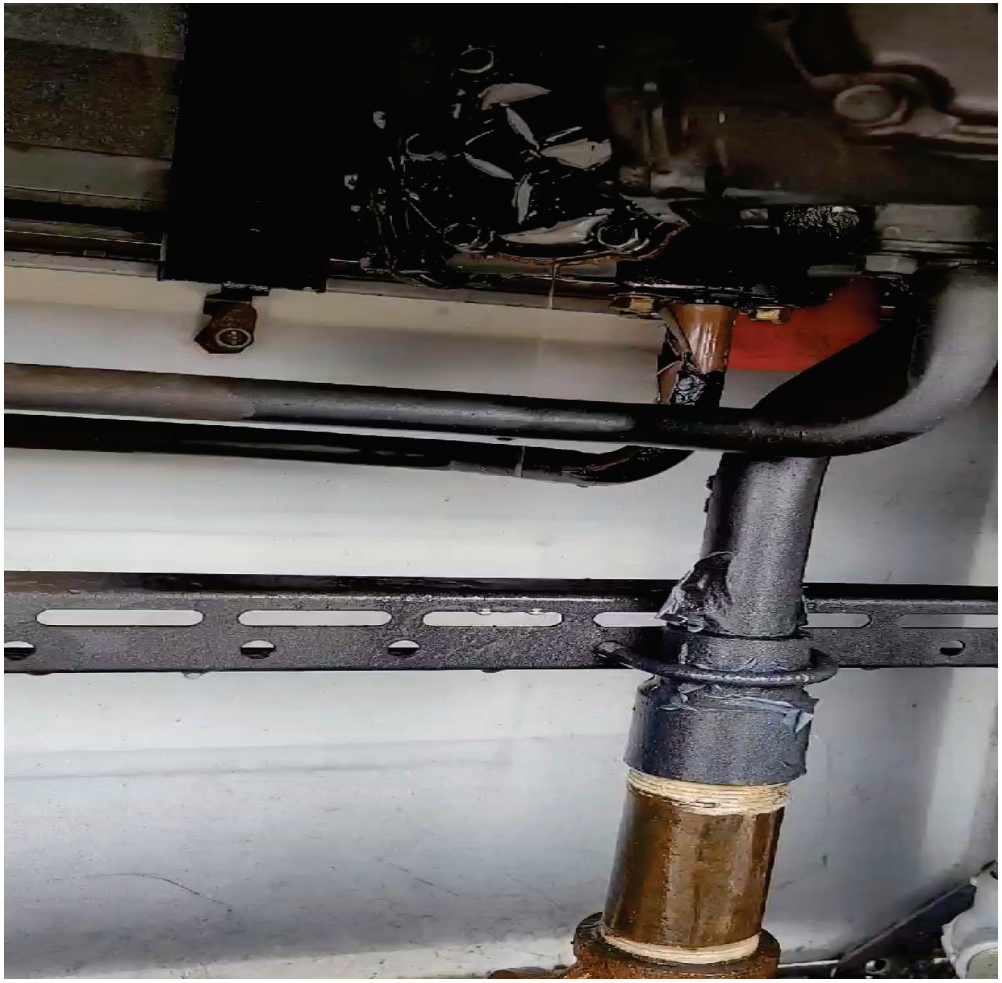


Official Rejection for Maintenance of Equipment: Leaking from filter



Press Play

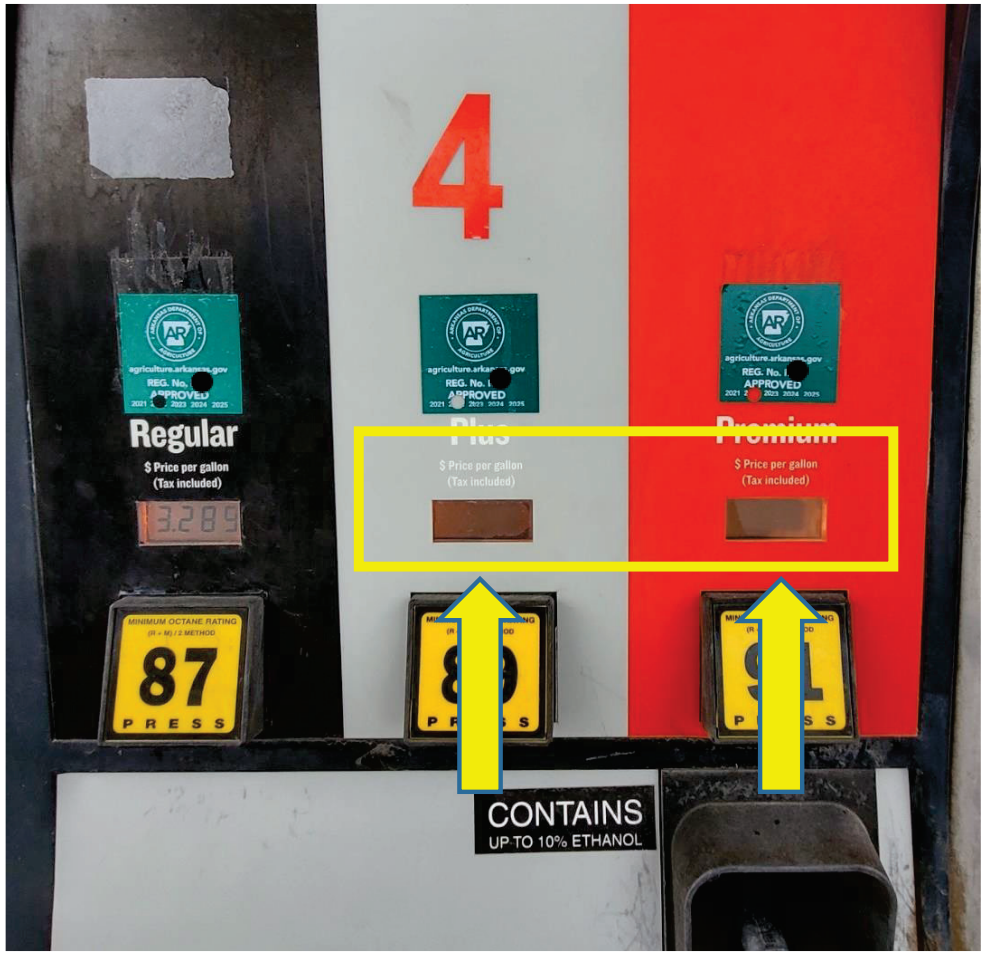
Official Rejection for Maintenance of Equipment: Leaking from Meter



Press Play ->

Official Rejection for Maintenance of Equipment: Display not Working

Official Rejection for Maintenance of Equipment: Price Per Gallon Display not Working



Official Rejection for Maintenance of Equipment: Displays not readable

Sun Damage

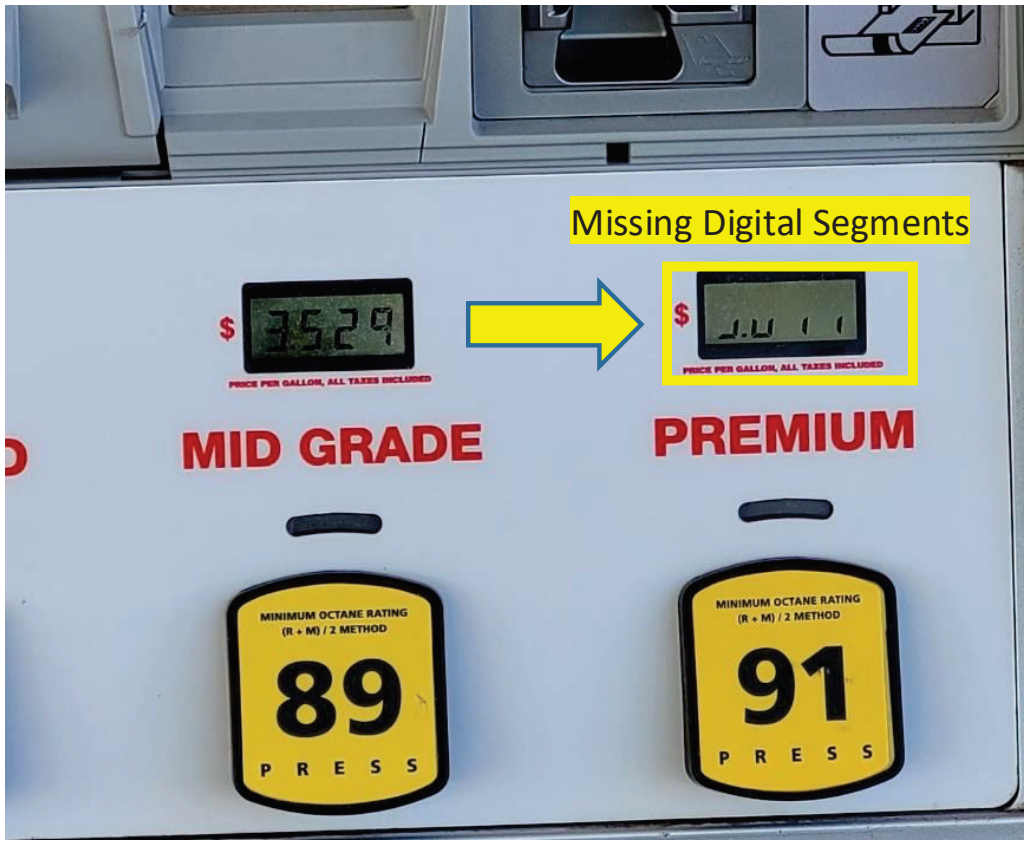
Sun Damage

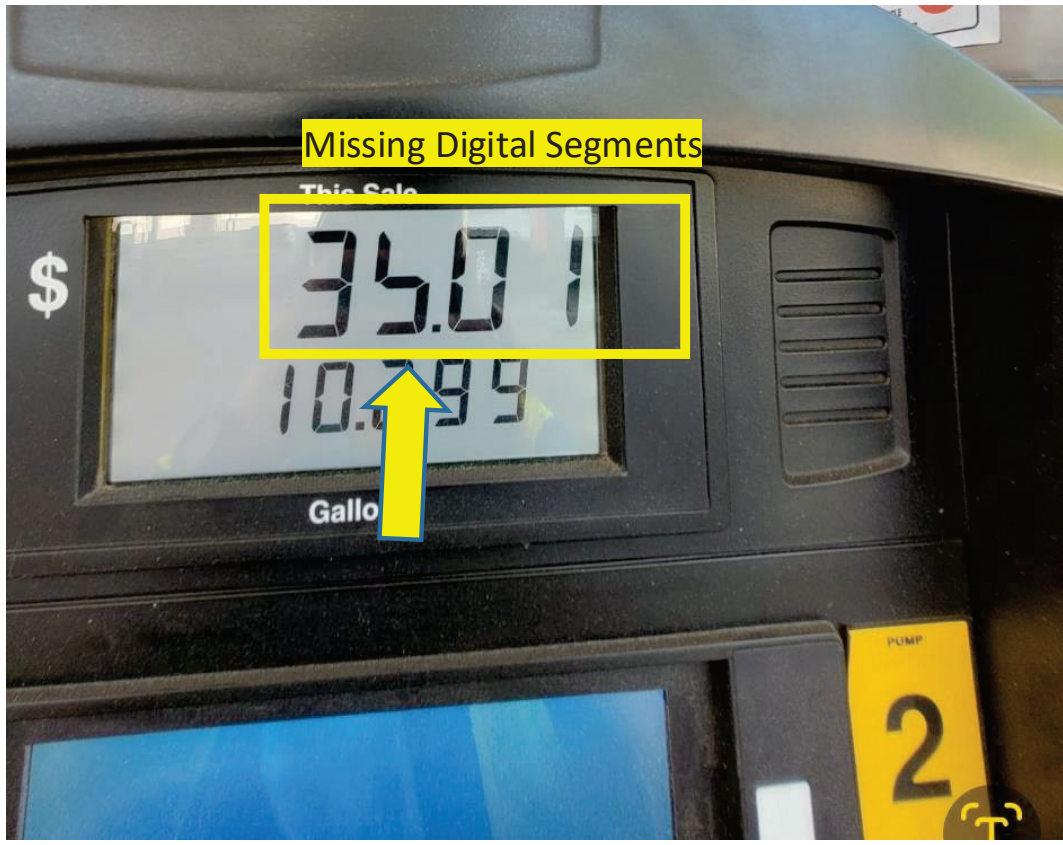
Official Rejection for Maintenance of Equipment: Lights Out in ANY Displays

Light Out in PPG Display

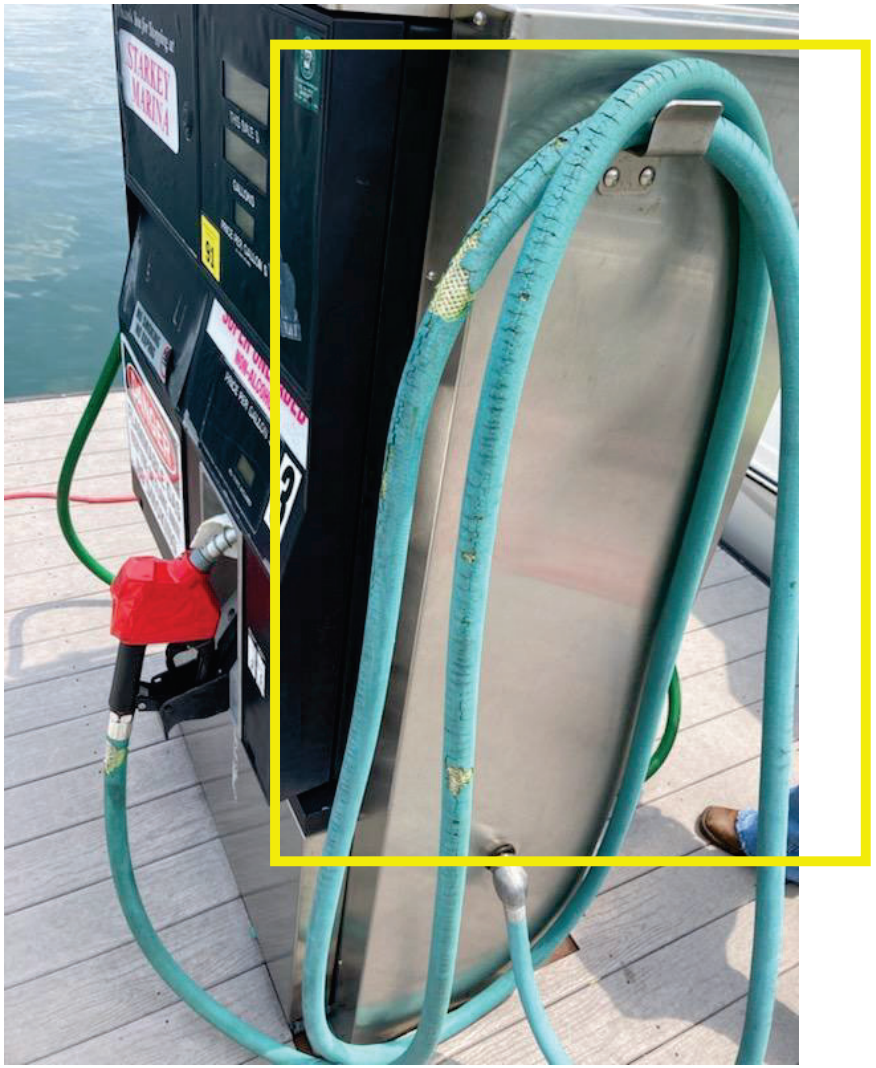
Light Out in PPG Display

Official Rejection for Maintenance of Equipment: Segments missing from digital information on Indicators/Displays





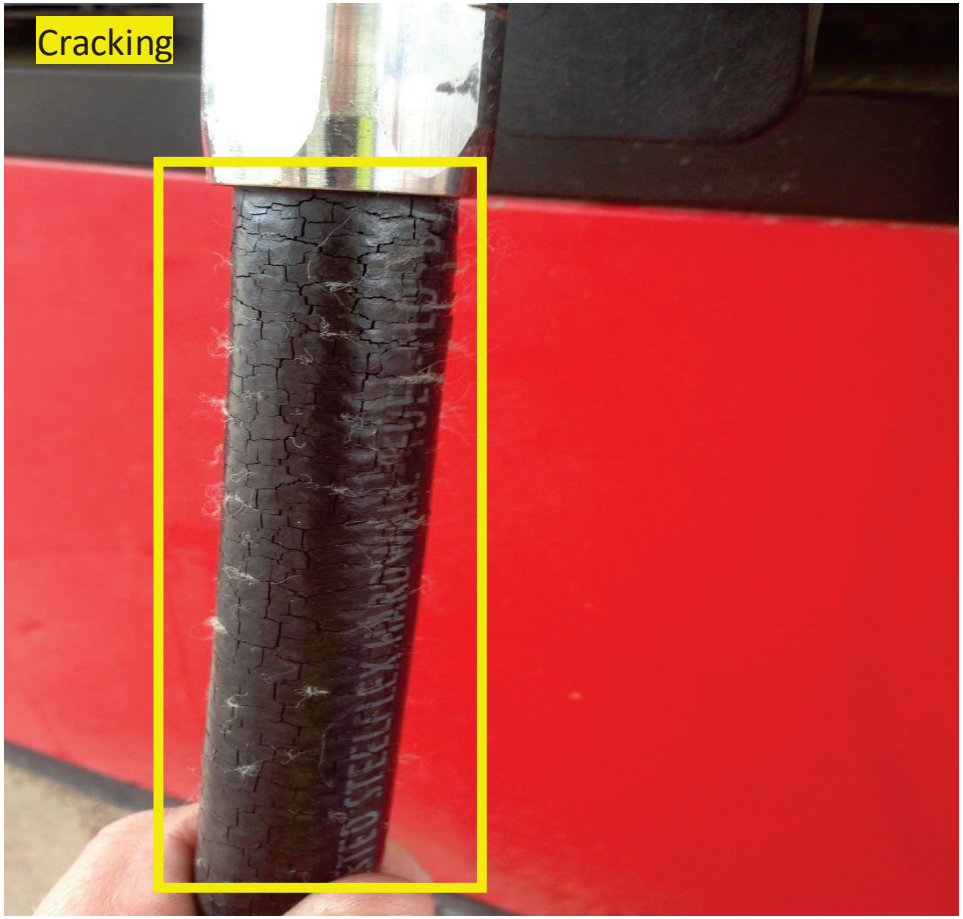
Official Rejection for Maintenance of Equipment: Hose Damage



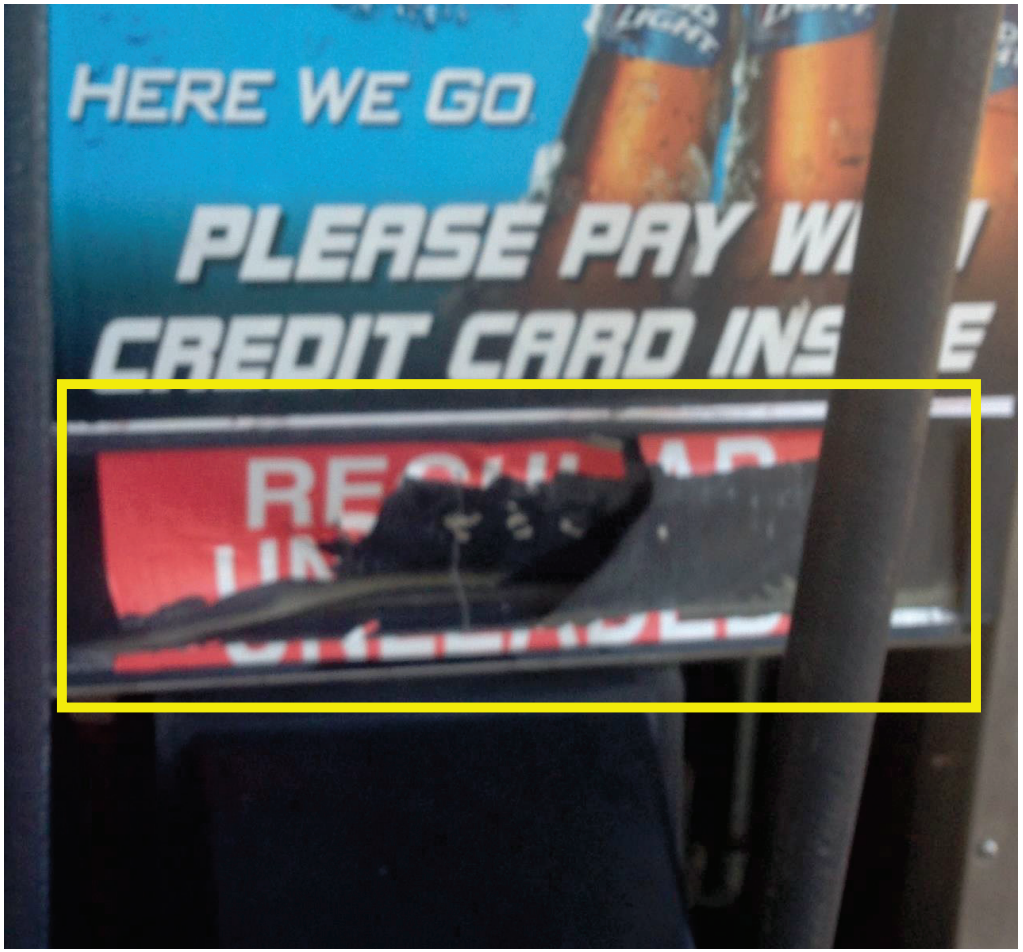
Official Rejection for Maintenance of Equipment: Hose Damage

Split

Cracking



Official Rejection for Maintenance of Equipment: Damage to Product Identity



Official Rejection for Maintenance of Equipment: Damage to Octane Rating

EPO No. 21 & No. 22
Indicating and Recording Element Requirement

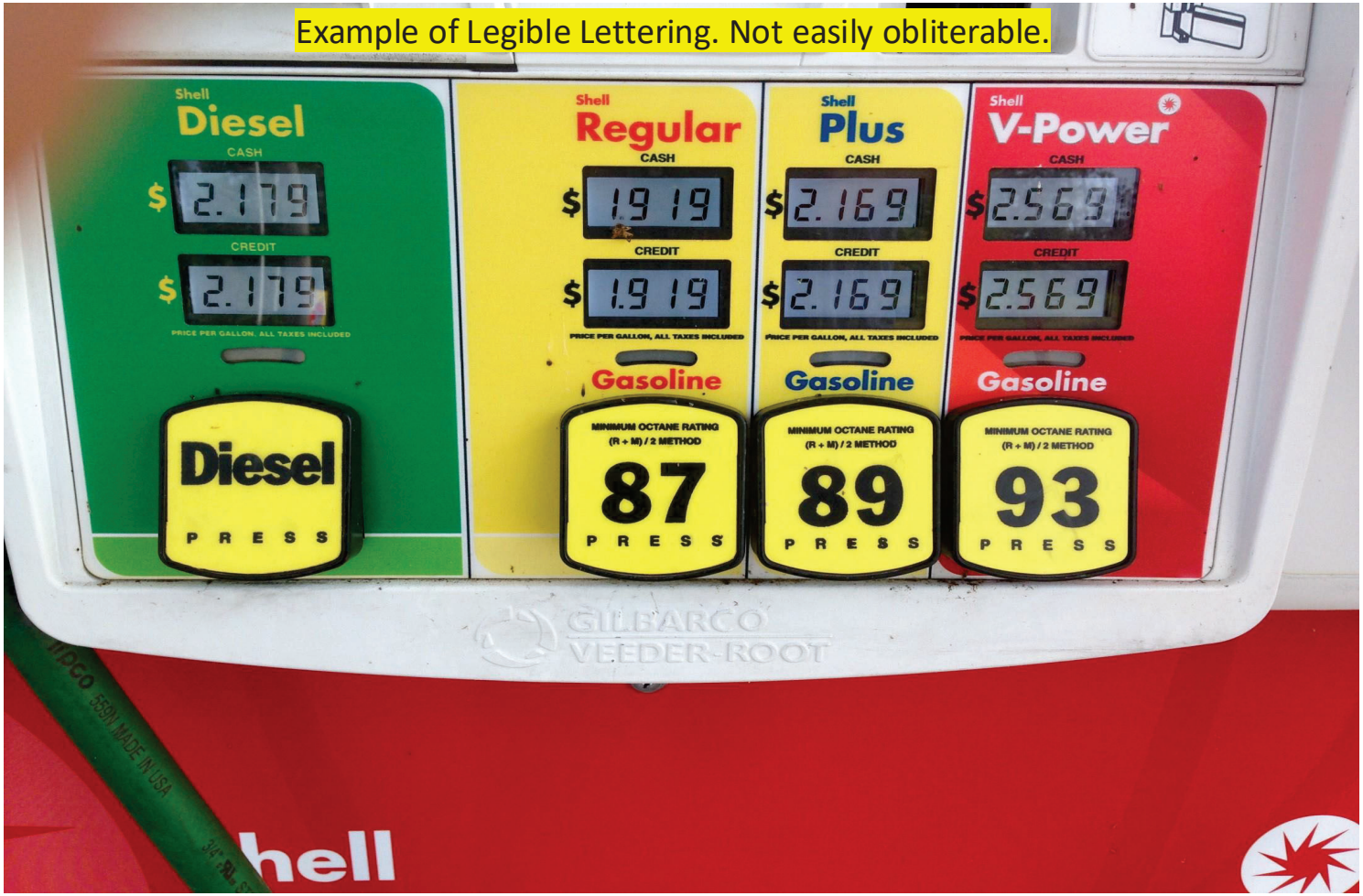
2026

Indicating and Recording Elements

- **Readability Requirements**
  - **G-S.7. Lettering**
    - All required markings and instructions shall be distinct and easily readable and shall be of such character that they will not tend to become obliterated or illegible.

All lettering associated with Indicators and Displays shall be readable and not become easily obliterated

Example of Legible Lettering. Not easily obliterable.



\All lettering associated with Indicators and Displays shall be readable and not become easily obliterated

Indicating and Recording Elements

- **Money Value Division**
  - **S.1.6.5.1** Analog Devices–

  See the MAV (Tolerance) Table for computed sales when conducting field tests on analog devices. MAV is based on the unit price at the location.

  Example – The Unit Price is $2.50 a gallon at a site. Then the allowable error in total sale can be (+/–) 2 cents when conducting field tests.

Table 1. Money-Value Divisions and Maximum Allowable Variations for Money-Value Computations on Mechanical Analog Computers

Unit Price		Money-Value Division	Maximum Allowable Variation	
From	To and Including		Design Test	Field Test
0	$0.25/liter or $1.00/gallon	1¢	± 1¢	± 1¢
$0.25/liter or $1.00/gallon	$0.75/liter or $3.00/gallon	1¢ or 2¢	± 1¢	± 2¢
$0.75/liter or $3.00/gallon	$2.50/liter or $10.00/gallon	1¢ or 2¢	± 1¢	± 2¢
		5¢	± 2½¢	± 5¢

Handbook 44: Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices as adopted by the 108th National Conference on Weights and Measures | NIST

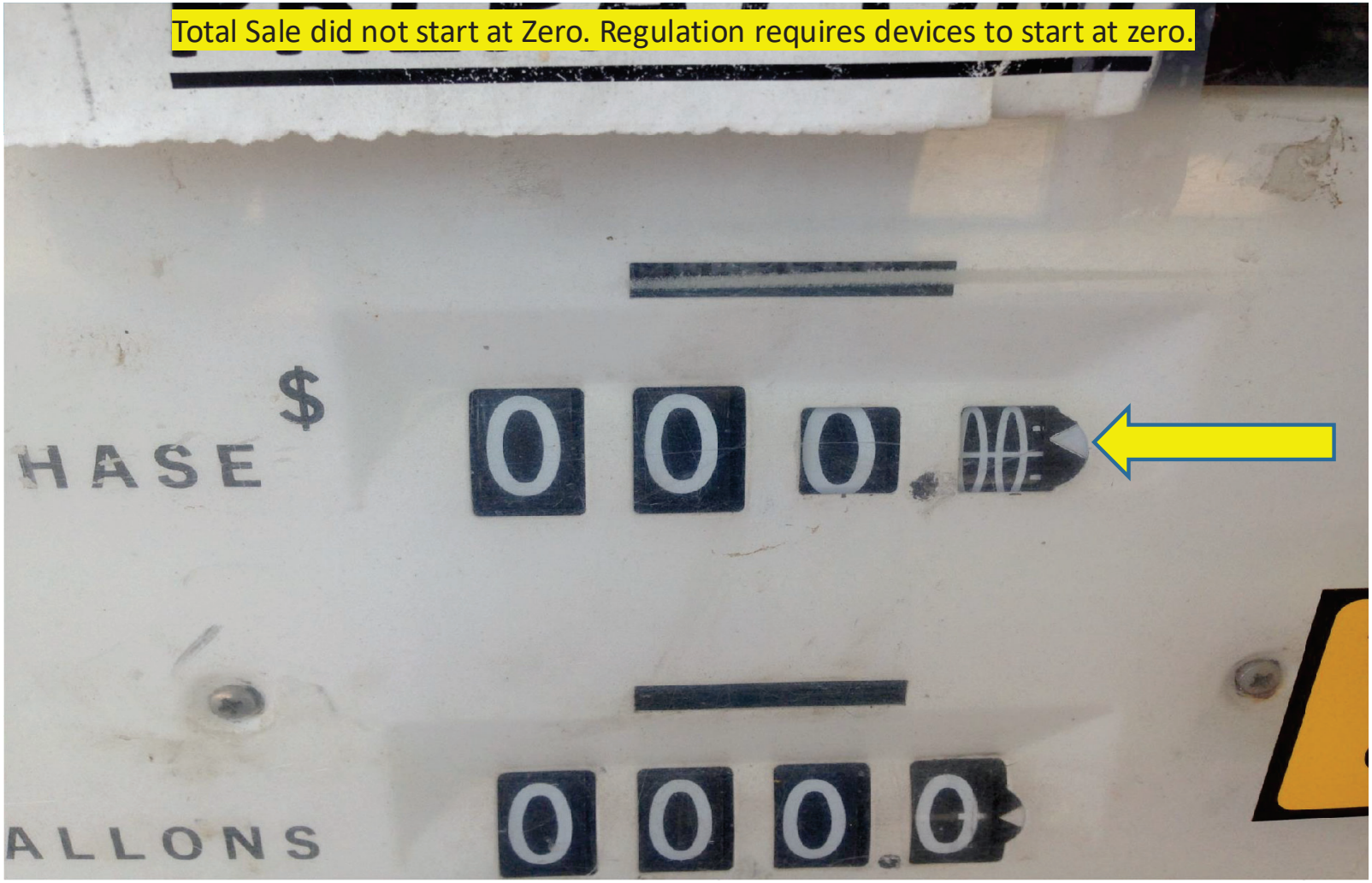
Indicating and Recording Elements

- **Money Value Divisions**
  - **S.1.6.5.3** Auxiliary Elements – AKA Secondary Indicators
  - If a system is equipped with auxiliary indications (Secondary Indicator at POS), all indicated money-value divisions of the auxiliary element shall be identical to those in the primary element (Pump)
  - Simply put, the total sale and unit price at the primary indicator (pump) shall be identical to the secondary indicator at the point-of-sale
  - Common complaint regarding analog devices

Indicating and Recording Elements

- **UR.3.1. Return of Indicating and Recording Elements to Zero**
  - On any dispenser in making retail deliveries, the primary indicating element, and recording element if so equipped, shall be returned to zero before each delivery.
  - Exception – totalizers on key lock operated or other self-operated dispensers

Official Rejection for Primary Indicator not Readily Returning to Zero



Primary Indicator Readily Returned to Zero

Primary Indicator Readily Returned to Zero

Indicating and Recording Elements

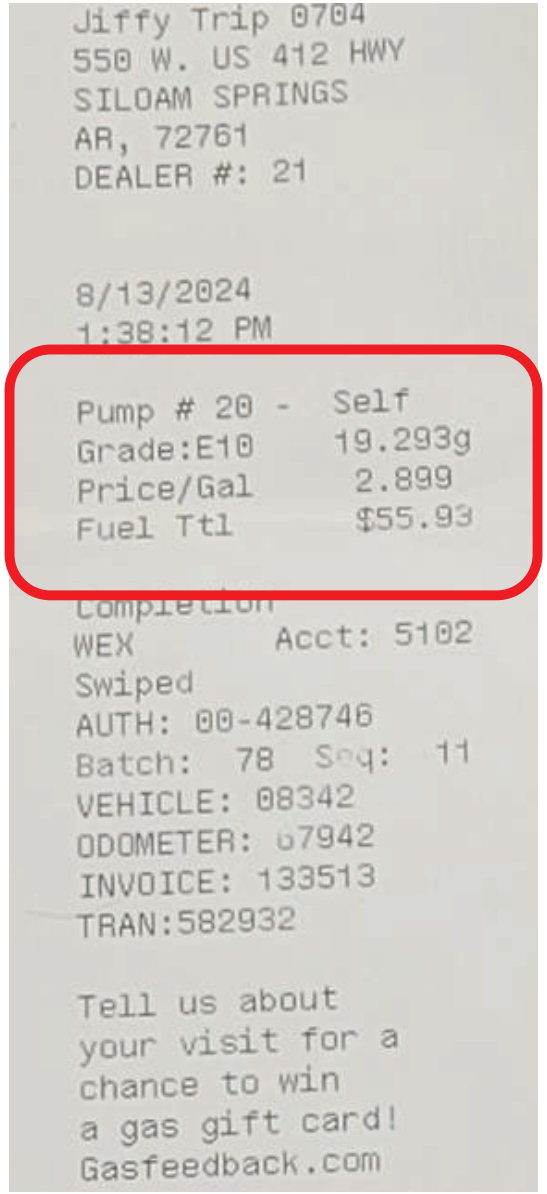
- **S.1.6.7 Recorded Representations**
  - A receipt providing the following information shall be available through ***built-in*** or ***separate recording element*** for all transactions conducted with a Point-of-Sale or devices activated by debit cards, credit cards, and/or cash:

    1. Total Volume
    2. Unit Price
    3. Total Computed Price
    4. Product identified by - Name, Symbol, Abbreviation, Code Number
    5. Dispenser Designation – Alphabetical or Numerical

Required Information on Recorded Representation

5 Requirements

1. Total Volume
2. Unit Price
3. Total Computed Price
4. Product identified by - Name, Symbol, Abbreviation, Code Number
5. Dispenser Designation - Alphabetical or Numerical



EPO No. 21 & No. 22
Marking Requirements

2026

Marking Requirements

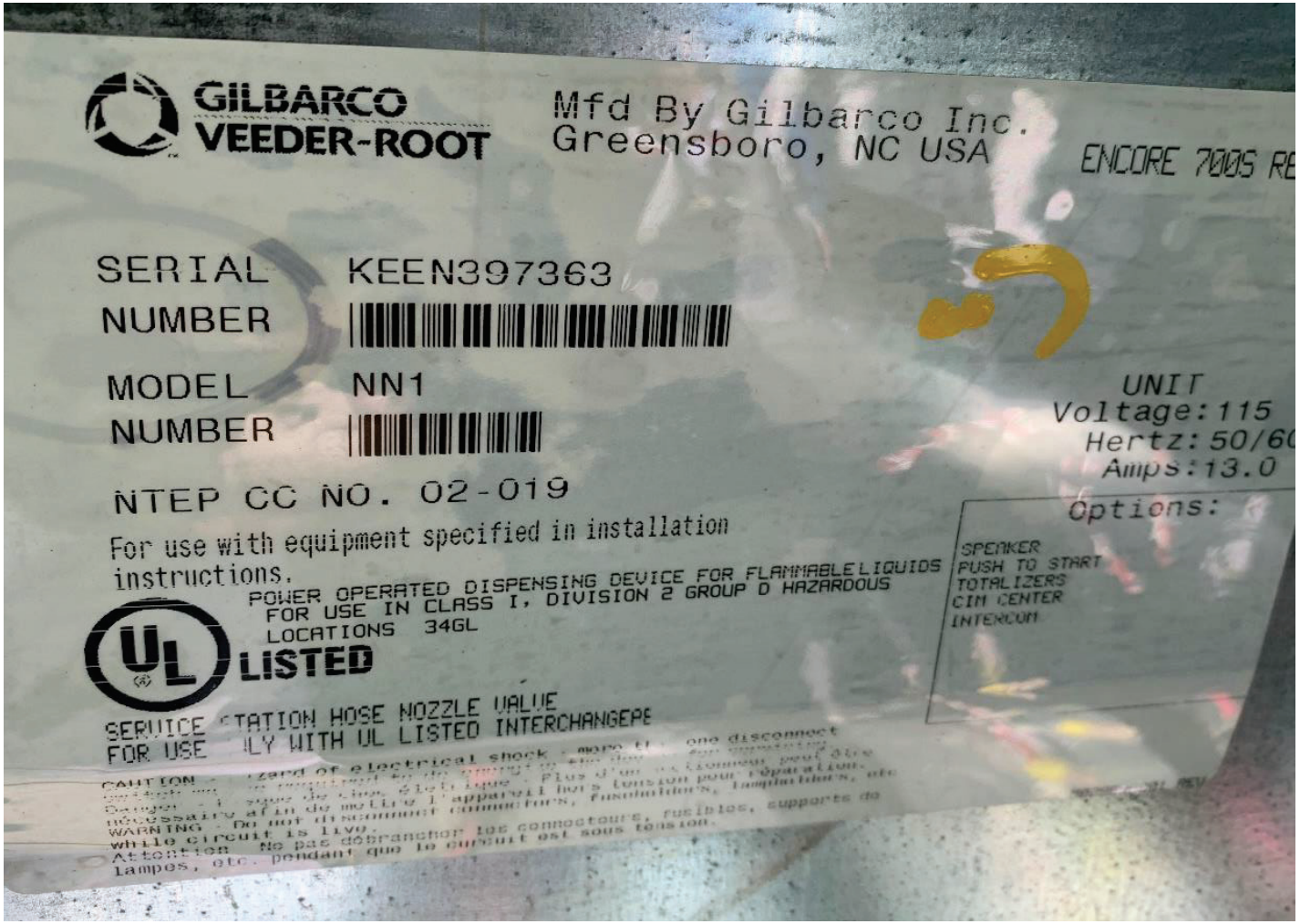
- **G-S.1. Identification shall be clearly and permanently marked with -**
  - (a) Manufacturer by name, initials, trademark
  - (b) Model identifier
  - *(c)* Nonrepetitive Serial Number
  - (d) Current Software Version
  - *(e)* NTEPCC #

Official Rejection: Required Marking Information Not Readable

Marking Requirements

- **S.4.4.2. Location of Marking Information Shall:**
  - Appear within 24 inches to 60 inches from the base of device
  - Internally or externally provided its permanent and easily readable
  - On a portion that is not easily removed or interchangeable
  - Servicepersons can create nameplates for devices that have missing or damaged marking information. So long as the data plate is accurate and correct.
  - *Nonretroactive January 1, 2003*

Required Marking Information Easily Readable



Marking Requirements

- **G-UR.3.4 Responsibility, Money Operated Device -** where employees are not present must clearly and conspicuously display information detailing method for return of monies paid if product or service is not obtained. ie...Name, address and phone number of the local responsible party for the device.

- **S.4.4.1. Discharge Rates must be marked on the device if:**
  - The devices discharge rate is 30 gallons per minute or greater (high flow devices). Maximum and minimum discharge rate shall be marked in accordance with **S.4.4.2. -** 2-5ft from base.
  - Marked Minimum Discharge Rate shall not exceed 20% of marked Maximum Discharge Rate.
  - [*Nonretroactive as of January 1, 1985*]

EPO No. 21 & No. 22
Discharge Hose-Retail Requirements

2026

Discharge Hose Requirements

- **S.3.1. Diversion of Measured Liquid –** There should be no way to divert measured liquid from measuring chamber or the discharge line other than how the device was initially designed.
  - However, two or more delivery ***outlets*** are permitted if there are means to ensure:
    -Liquid can flow from only one such outlet at a time (multiproduct dispensers)
    -Direction of flow is clearly indicated

- **S.3.2. Exceptions to the diversion of measured liquid include:**
  - Truck refueling devices. Satellite pumps. So long as deterrents are installed to prevent other vehicles, other than the receiving vehicle, from getting fuel.

Discharge Hose Requirements

- **S.3.3. Pump -Discharge Unit -** On a pump-discharge unit (RMFD), equipped with a discharge hose, the discharge hose shall be of the wet-hose type.

- **S.3.5. Discharge Hose, Reinforcement -** Discharge hose shall be reinforced so that the performance (measurement) is not affected by expansion or contraction

- **S.3.6. Discharge Valve (Nozzle) -** Discharge valves (nozzles) may be installed in discharge lines only if the device is of the wet-hose type.

- **S.3.7. Anti-drain Means -** In a wet-hose, pressure-type device, means shall be incorporated to prevent the drainage of the discharge hose.

Discharge Hose Requirements

- **UR.1.1. Discharge Hose.**

  UR.1.1.1. Length- the length of a discharge hose on an RMFD hose;

  (a) Shall be measure from its housing or outlet of the discharge line to the inlet of the discharge nozzle;

  (b) Shall be measured with the hose fully extended if it is coiled, retained, or connected inside a housing and;

  (c) Shall not exceed 18 feet unless a need is demonstrated

Discharge Hose Requirements

- **UR.1.1.2. Marinas and Airports**
  - **UR.1.1.2.1. Length**
    - Length shall be short as practicable, shall not exceed 50 feet unless a need is demonstrated
  - **UR.1.1.2.2. Protection**
    - Hoses exceeding 26 feet shall be adequately protected from weather and other environmental factors when not in use

EPO No. 21 & No. 22
Totalizers

2026

Totalizers

- **S.5. Totalizers for Retail Dispensers**
  - Shall be equipped with a non-resettable totalizer for the quantity delivered through the metering device
  - *Nonretroactive January 1, 1995*

NIST Handbook 130
Filter Requirements

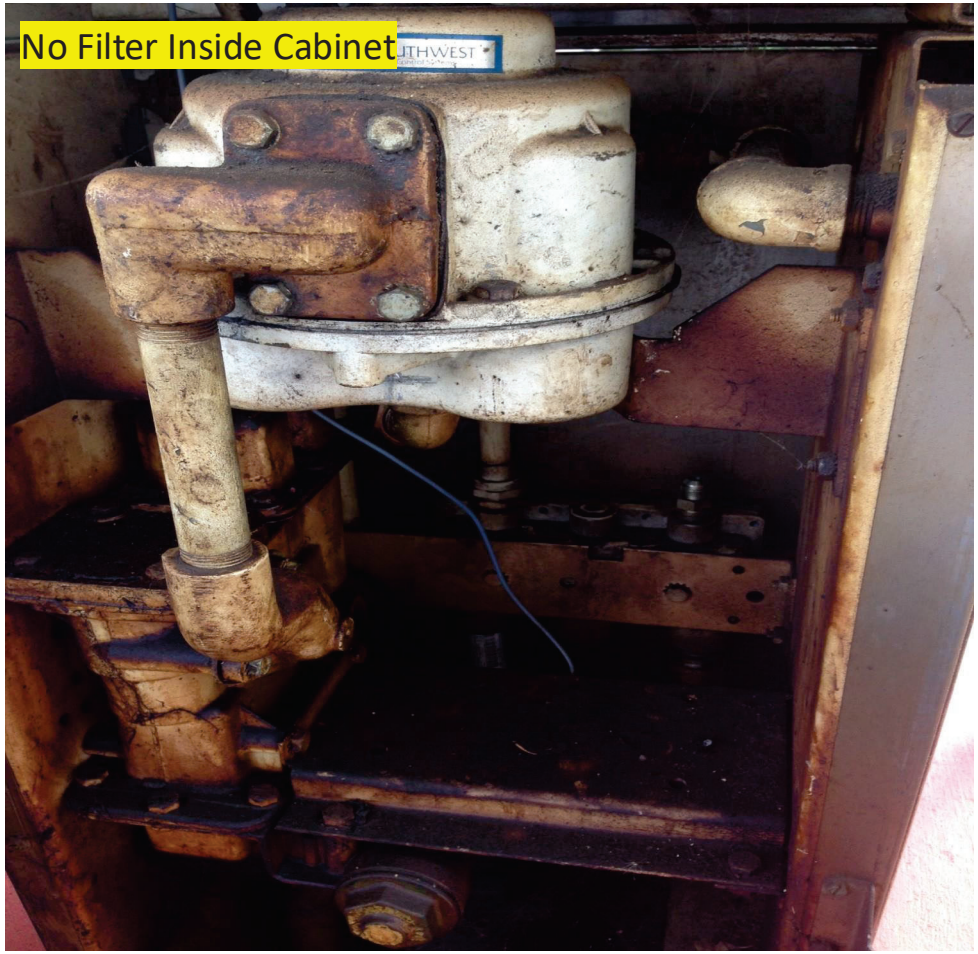
2026

Filters

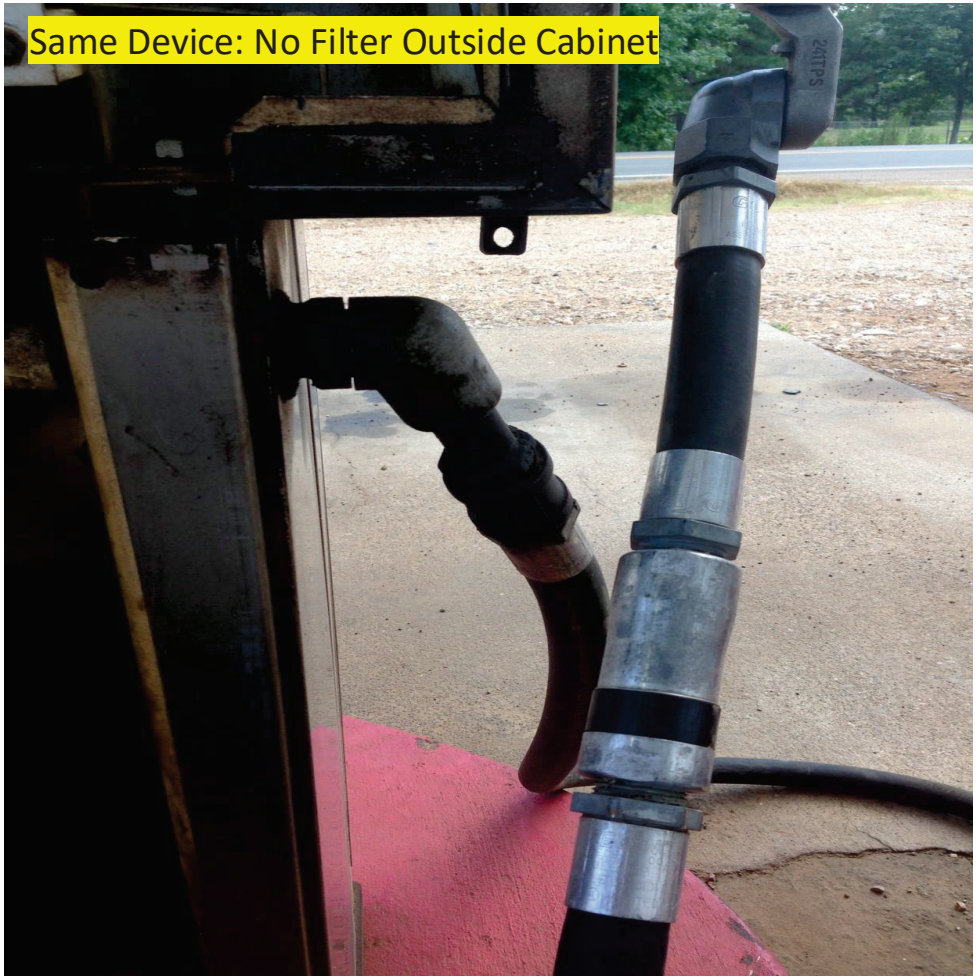
- **NIST Handbook 130 – Section IV. (F)**
- **4.3. Dispenser Filters**
- **4.3.1. Engine Fuel Dispensers.**
  - All gasoline, gasoline-alcohol blends, gasoline-ether blends, ethanol flew fuel, and M85 methanol dispensers shall have a 10 micron or smaller nominal pore-sized filter.
  - All biodiesel, biodiesel blends, diesel, and kerosene dispensers shall have a 30 micron or smaller pore-sized filter.
  - RMFDs **MUST** have filters and **MUST** have the correct size.

Official Rejection for No Filters. RMFDs MUST HAVE FILTERS

No Filter Inside Cabinet



Same Device: No Filter Outside Cabinet



Official Rejection for Incorrect Filter Size

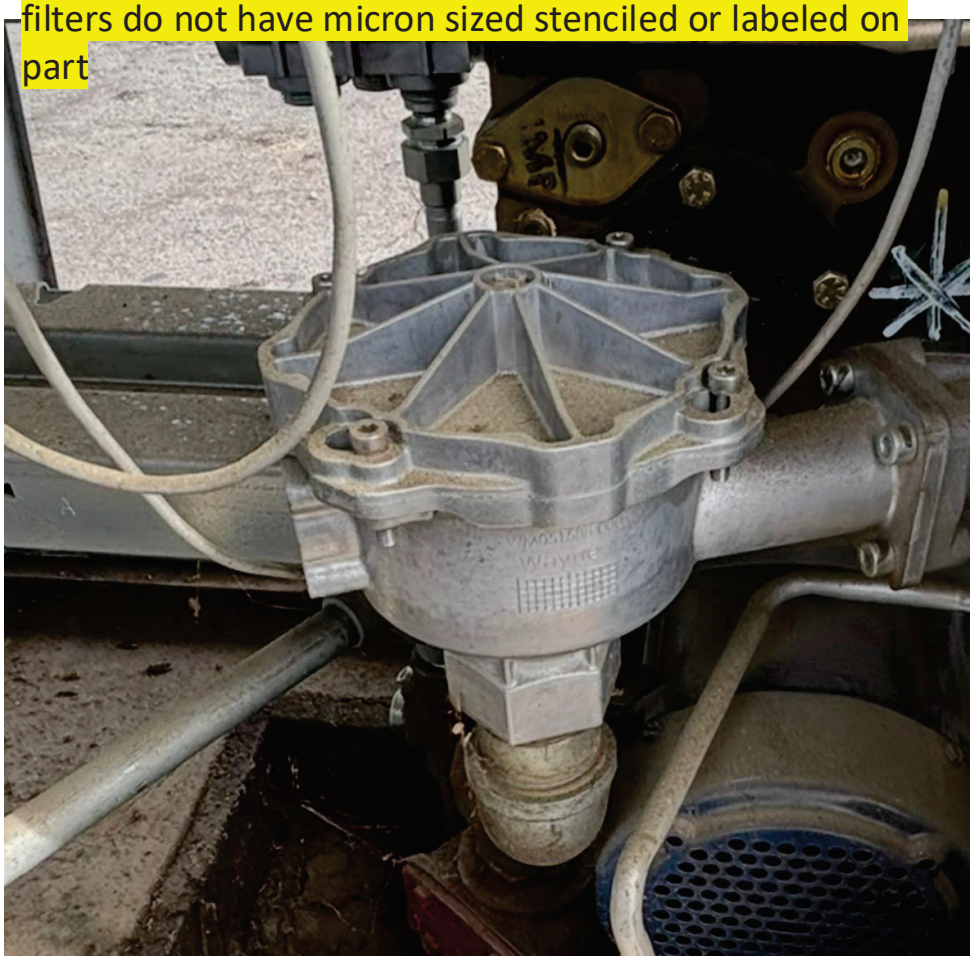
30 Micron Filter on Gasoline Dispenser

Only up to 10-micron pore-sized filters allowed on gasoline dispensers

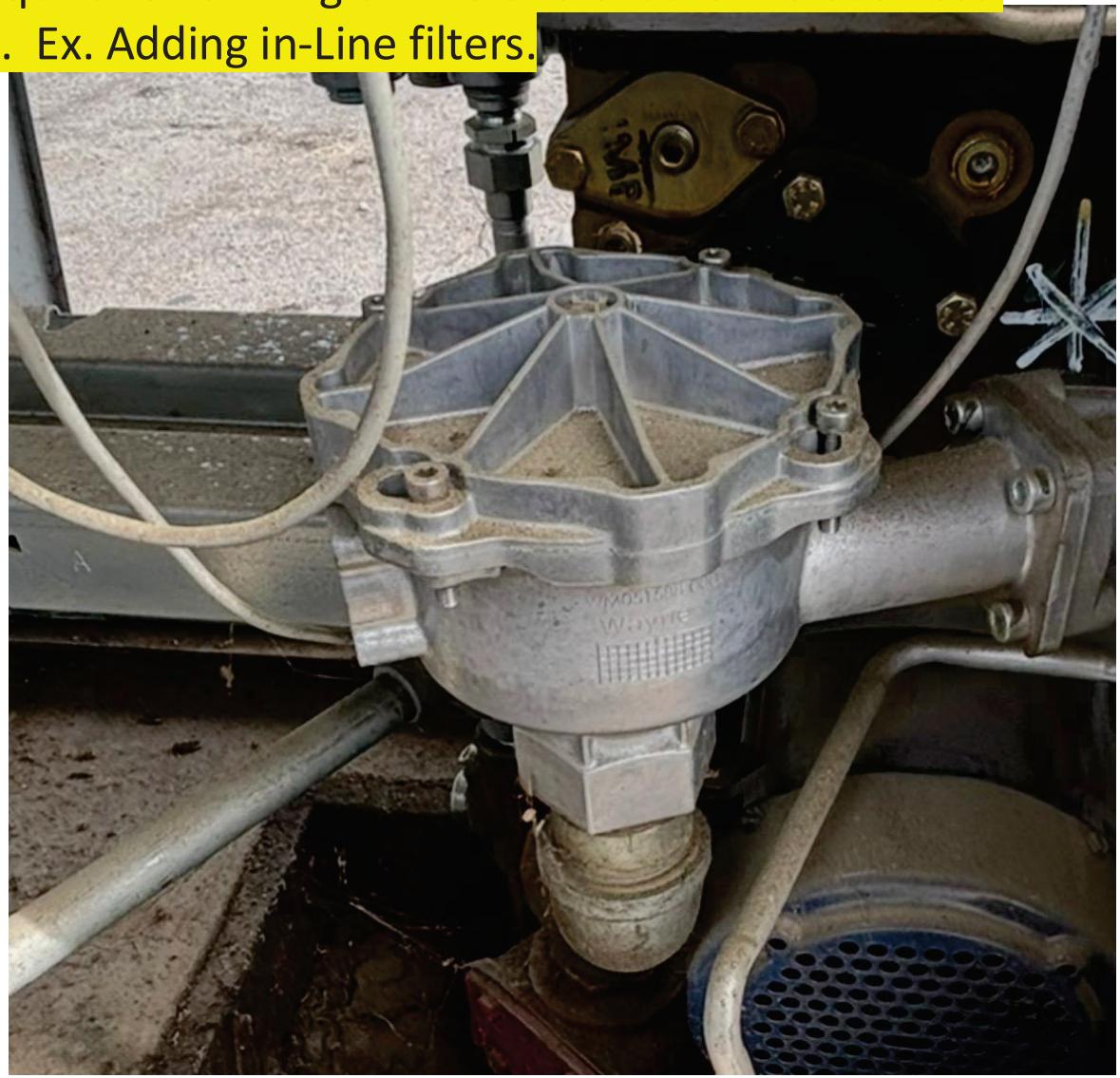
Official Rejection for Non-Compliant Filter Types

Example of a device that has only mesh wire type cloth basket – Micron Pore Size is 120

Example of a device where the filter can only be accessed by shutting down the pump and by use of a tool. These filters do not have micron sized stenciled or labeled on part



In both examples BOS office will require retrofitting of filters to ensure the business is compliant. Ex. Adding in-Line filters.



EPO No. 21 & No. 22
Pretest Determinations and Notes

2026

Pretest Determinations and Notes

Test Draft Size

- The size of a test draft will depend on the devices Designed Maximum Discharge (Flow) Rate

- If the flow rate is Less than 20 GPM
    - Tests shall include drafts of one or more amounts, including a test draft of at least 5 gallons

- If the flow rate is Greater than or equal to 20 GPM
    - Tests shall include drafts of one or more amounts, including a test draft of at least the amount delivered in one minute (gpm) at the max flow rate of the installation.
    - Example – if listed maximum flow rate 60 GPM, test draft must be at least 60 gallons, preferably larger (100 gallon). Considering if the device under registers.

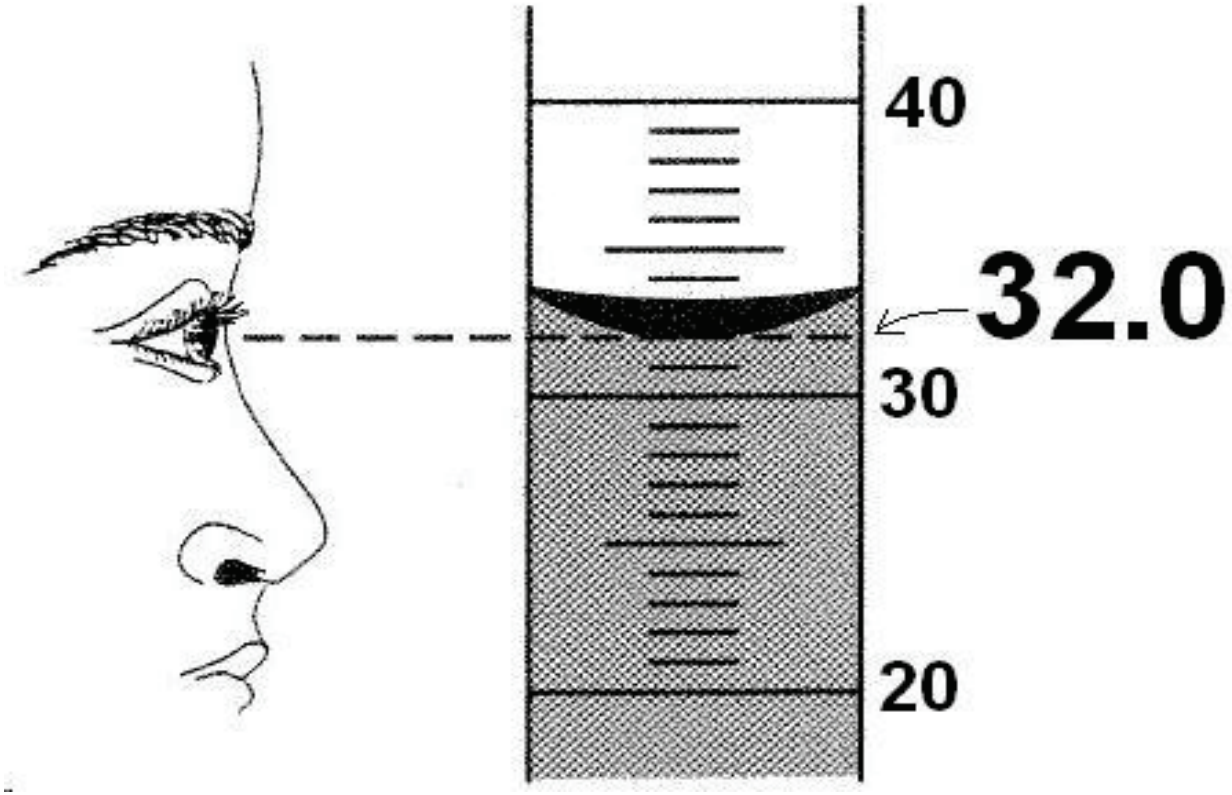
Pretest Determinations and Notes

Test Measures & Provers

- Reading the Test Standard
  - Standard must be level
  - Leveled by “plumbing the neck”
  - Allow all foam to settle before taking measurement - Diesel
  - Read measurement before fuel evaporates - Gasoline
  - Read the meniscus at eye level.
  - Avoid parallax – Taking readings at different positions from different points

Pretest Determinations and Notes

Reading the Meniscus



https://calaski.files.wordpress.com/2015/09/meniscus.jpg

Pretest Determinations and Notes

Adjustments/Calibration -

"The Registered Serviceperson or Service Agency is responsible for installing, repairing, and adjusting devices such that the devices are adjusted as closely as practicable to zero error."

Use the applicable tolerances to confirm device compliance after adjusting/calibrating.

Handbook 44: Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices as adopted by the 108th National Conference on Weights and Measures | NIST

NIST HB130 - 2024 IV Uniform Regulations - D Uniform Regulation for the Voluntary Registration

Pretest Determinations and Notes

- **Know the applicable tolerances...**
- **G-T. Tolerances**
  - **G-T.1. Acceptance Tolerances –** These tolerances shall apply to equipment;
    - To be put into commercial use for the first time
    - That has been placed in commercial service within the preceding 30 days and is being officially tested for the first time
    - That has been returned to commercial service following official rejection for failure to conform to performance requirements and is being officially tested for the first time within 30 days after corrective service
    - Being officially tested for the first time within 30 days after major reconditioning or overhaul and
    - Undergoing type evaluation

NOTE – annual tests are not included in the definition for acceptance tolerance. However, any commercial device undergoing an annual test in Arkansas is to have acceptance tolerances applied.

Handbook 44: Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices as adopted by the 108th National Conference on Weights and Measures | NIST

Pretest Determinations and Notes

Tolerance Values Continued…

- **G-T.2. Maintenance Tolerances –** These tolerances shall apply to equipment in use, except as provided in T.1. Acceptance Tolerances

- **T.2. Tolerance Values –** The RMFD specific applicable maintenance, acceptance, and special test tolerances shall be shown in the NIST Handbook 44 – 2025 edition (3.30 section) Liquid-Measuring Device Table T.2. page 3-21

See the table on the following Slide...

Tolerance Table T.2.

1st Row in Table -
Applies to High Flow meters. Meters that have the potential to deliver greater than 30gpm will have the following tolerances:
Acceptance Tolerances – 0.2%
Maintenance Tolerances – 0.3%
Special Test Tolerances – 0.5%

% in allowable error is based on test draft size
Example – a meter with a max flow rate of 30 gpm or greater can have an acceptance tolerance of + or – 0.2%. If the test draft is 100 gallons, the tolerance is 0.2 gallons.
0.2 gallons = 46.2 cubic inches
231 cubic inches =1 gallon

Table T.2.
Accuracy Classes and Tolerances for Liquid Measuring Devices Covered in NIST Handbook 44, Section 3.30.

Accuracy Class	Application	Acceptance Tolerance	Maintenance Tolerance	Special Test Tolerance[1]
0.3	- Petroleum products delivered from large capacity (flow rates greater than 115 L/min or 30 gpm)** devices, including motor-fuel devices - Heated products (other than asphalt) at temperatures greater than 50 °C (122 °F) - Asphalt at temperatures equal to or below 50 °C (122 °F) - All other liquids not shown in the table where the typical delivery is over 200 L (50 gal)	0.2 %	0.3 %	0.5 %
0.3A	- Asphalt at temperatures greater than 50 °C (122 °F)	0.3 %	0.3 %	0.5 %
0.5*	- Petroleum products delivered from small capacity (at 4 L/min (1 gpm) through 115 L/min or 30 gpm)** motor-fuel devices - Agri-chemical liquids - All other applications not shown in the table where the typical delivery is ≤ 200 L (50 gal)	0.3 %	0.5 %	0.5 %
1.1	- Petroleum products and other normal liquids from devices with flow rates** less than 1 gpm. - Devices designed to deliver less than 1 gal	0.75 %	1.0 %	1.25 %

* For test drafts ≤ 40 L or 10 gal, the tolerances specified for Accuracy Class 0.5 in the table above do not apply. For these test drafts, the following applies:

(a) Maintenance tolerances on normal and special tests shall be 20 mL plus 4 mL per indicated liter or 1 in^3 plus 1 in^3 per indicated gallon.

(b) Acceptance tolerances on normal and special tests shall be one-half the maintenance tolerance values.

[1] Special test tolerances are not applicable to retail motor fuel and retail Diesel Exhaust Fluid (DEF) dispensers.
** Flow rate refers to designed or marked maximum flow rate.

(Added 2002) (Amended 2006, 2013, and 2022)

Tolerance Table T.2.

3rd Row in Table -
Applies to small capacity meters or meters that deliver 30 gpm or less will have the following tolerances:

If using a test draft of 10 gallons or less follow the astric * to the bottom of the table

(a) Maintenance tolerances are 1 cubic inch plus 1 cubic inch for every gallon in the test draft

Example: 5-gallon test draft maintenance tolerance is + or – 6 cubic inches

(b) acceptance tolerances are one-half maintenance Using the above example, acceptance tolerance is + or – 3 cubic inches on 5-gallon test draft

Table T.2.
Accuracy Classes and Tolerances for Liquid Measuring Devices Covered in NIST Handbook 44, Section 3.30.

Accuracy Class	Application	Acceptance Tolerance	Maintenance Tolerance	Special Test Tolerance[1]
0.3	- Petroleum products delivered from large capacity (flow rates greater than 115 L/min or 30 gpm)** devices, including motor-fuel devices - Heated products (other than asphalt) at temperatures greater than 50 °C (122 °F) - Asphalt at temperatures equal to or below 50 °C (122 °F) - All other liquids not shown in the table where the typical delivery is over 200 L (50 gal)	0.2 %	0.3 %	0.5 %
0.3A	- Asphalt at temperatures greater than 50 °C (122 °F)	0.3 %	0.3 %	0.5 %
0.5*	- Petroleum products delivered from small capacity (at 4 L/min (1 gpm) through 115 L/min or 30 gpm)** motor-fuel devices - Agri-chemical liquids - All other applications not shown in the table where the typical delivery is ≤ 200 L (50 gal)	0.3 %	0.5 %	0.5 %
1.1	- Petroleum products and other normal liquids from devices with flow rates** less than 1 gpm. - Devices designed to deliver less than 1 gal	0.75 %	1.0 %	1.25 %

* For test drafts ≤ 40 L or 10 gal, the tolerances specified for Accuracy Class 0.5 in the table above do not apply. For these test drafts, the following applies:
(a) Maintenance tolerances on normal and special tests shall be 20 mL plus 4 mL per indicated liter or 1 in^3 plus 1 in^3 per indicated gallon.
(b) Acceptance tolerances on normal and special tests shall be one-half the maintenance tolerance values.
Special test tolerances are not applicable to retail motor fuel and retail Diesel Exhaust Fluid (DEF) dispensers.
** Flow rate refers to designed or marked maximum flow rate.

(Added 2002) (Amended 2006, 2013, and 2022)

Pretest Determinations and Notes

UR.2.5. Product Storage Identification

- The fill Connection for any petroleum product storage tank or vessel shall be permanently, plainly, and visibly marked as to product contained

- When the fill connection is marked by means of a color code, the color code key shall be conspicuously displayed at the place of business

Product Storage: if tanks are marked by color location MUST have a Color Code Posted Inside Business identifying product.

Pretest Determinations and Notes

If the test measure is dry, add 1 in^3 to gauge reading to allow for amount of liquid required to "wet" measure

- **N.4.4.1 Pour and Drain Times for Hand-Held Test Measures[1]**
  - Handheld Test measures require 30 second (± 5 s) followed by a 10 second drain, with measure held at a 10-15 degree angle from vertical

- **N.4.4.2 Drain Times for Bottom Drain Test Measures or Provers[2]**
  - Bottom Drain provers require a 30 second drain after main flow ceases

Handbook 112: P:\NTP\EPOS\EPOs -NISTHB 112 2002\EPOCoverPage4-02.wpd

Handbook 44: Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices as adopted by the 108th National Conference on Weights and Measures | NISTc

Pretest Determinations and Notes

- Record totalizer indication before each test draft
- After each test print and check receipts for accuracy
- Throughout the test be sure to check for mathematical agreement in computations and between primary and secondary indicators
- Check display of quantity and total price – must display for minimum of five minutes

Pretest Determinations and Notes

Definitions

- Under-registration
- Meter indicates less product than delivered
- Buyers favor
- (+) Reading

- Over-registration
- Meter indicates more product than delivered
- Sellers Favor
- (-) Reading

Pretest Determinations and Notes

Definition continued...

Normal Flow Test

- **N.4.1. Normal Test[1]**
  - Also called a Full Flow Test
  - These tests are conducted at the maximum flow rate of the device (handle on nozzle fully compressed).

  Or down to any rate of flow that is half the sum of the max and min flow rate. Within that range.

Special Flow Test

- **N.4.2. Special Test**
  - Also called a Slow Flow Test
  - Any test except as set forth in N.4.1. Normal Test. Below the range defined in normal test.

Pretest Determinations and Notes

Definition continued…

Special Flow Test shall be conducted as follows:

- On RMFDs without a marked minimum flow rate, test conducted at the lesser of the two:
  - At 5 gallons per minute or
  - At the minimum rate when the automatic nozzle is at its lowest setting

- On RMFDs with a marked minimum flow rate, test shall be conducted either
  - At or near marked minimum flow rate

What devices are required to have a marked flow rate?

EPO No. 21
Testing Non-Blend Devices

2026

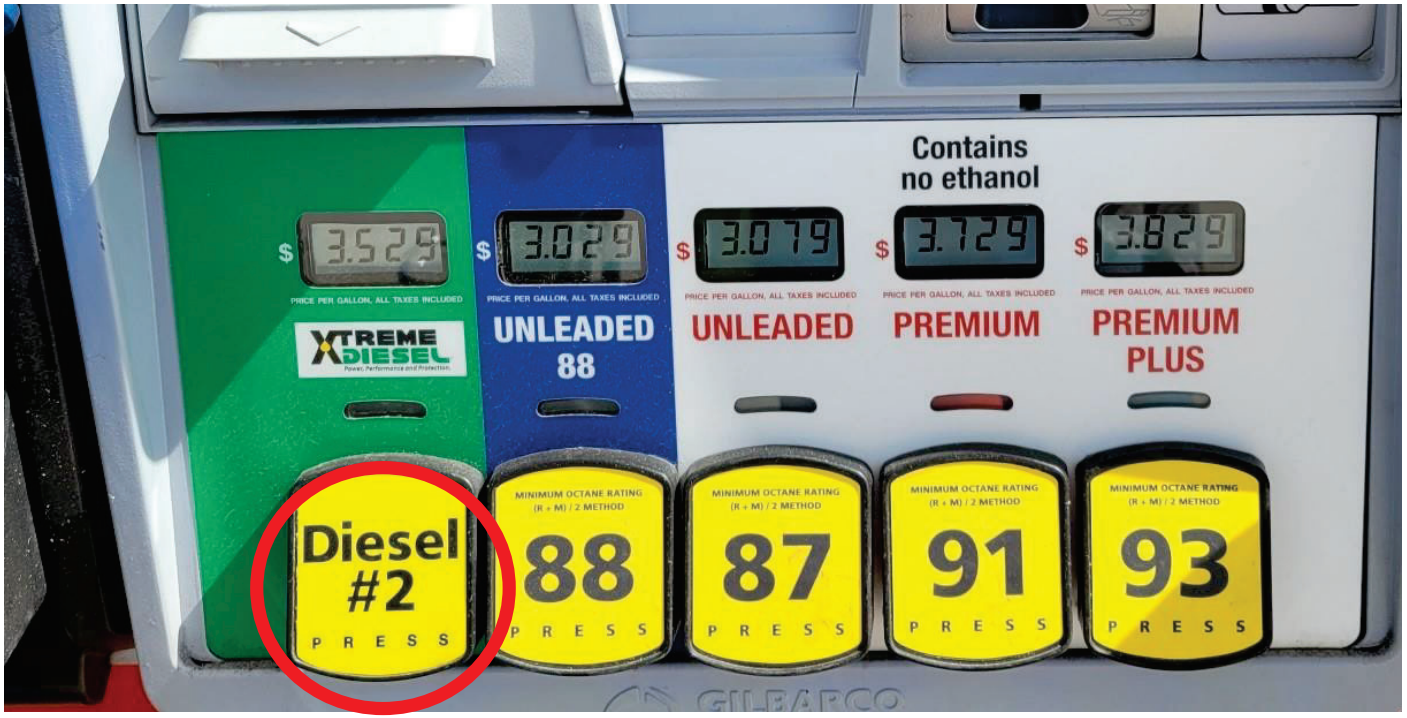
Testing Non-Blend Devices

Non-Blend Devices (Non-Blend Products) will require

- One Normal Test – Full flow test
- One Special Test – Slow flow test

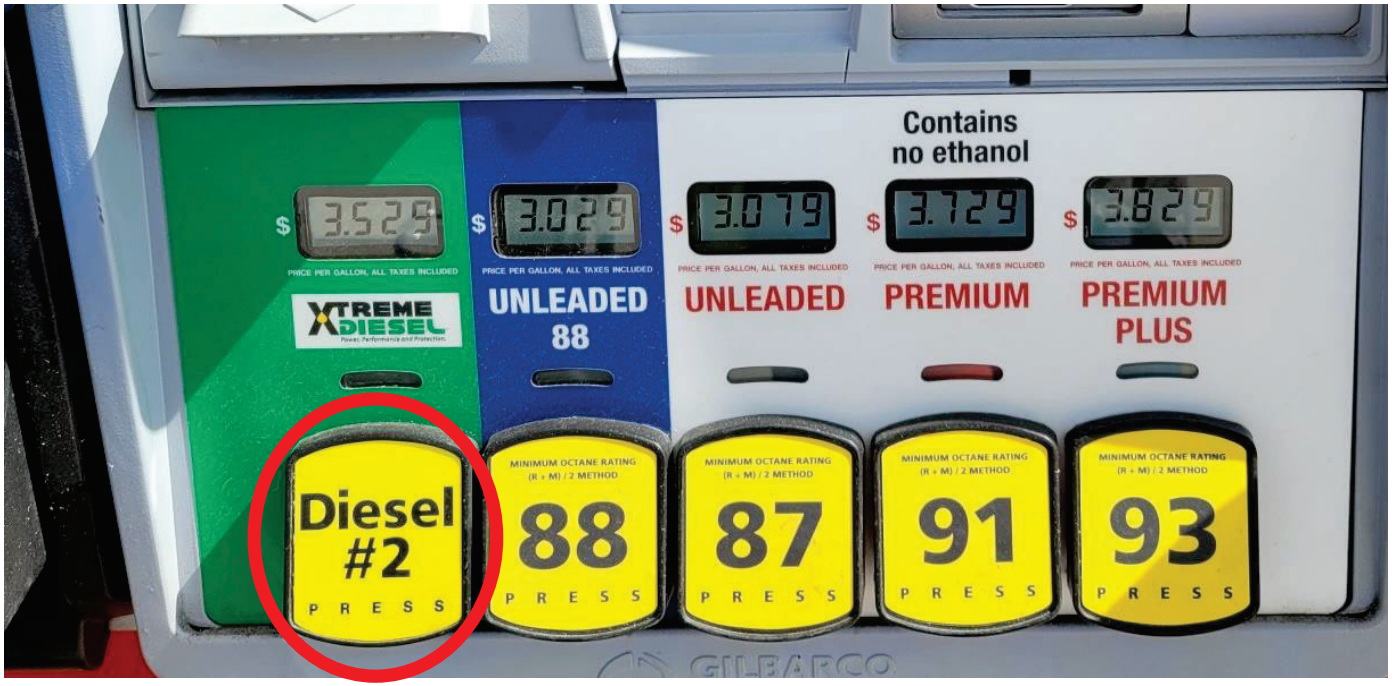
Example - if using 5-gallon test measure, this would require at minimum, 10 gallons of fuel to be dispensed.

Testing Non-Blend Devices



How would you test this product?

Test Non-Blend Devices



Non-Blend Devices (products) will require both a normal (full flow) and special test (slow flow).

EPO No. 22
Testing Blend Devices

2026

Testing Blend Devices

Blend devices (Products) will require testing in this order:

1. A Normal Test & Special Test on the **lowest-grade product** that makes up the blend
2. A Normal Test & Special Test on the **highest-grade product** that makes up the blend
3. A Special Test or Slow flow test on the **blend** product

Example - if using a 5-gallon test measure, at minimum 15 gallons of fuel to be dispensed

Testing Blend Devices

In what order would you test these products and what type of test would you perform on each grade?

Testing Blend Devices

Order: 87 Normal Test & Special Test, 91 Normal Test Special Test, 89 Special Test

Testing Blend Devices

If a device contains more than one blended product, after first testing all the non-blended products test the blends in this order :

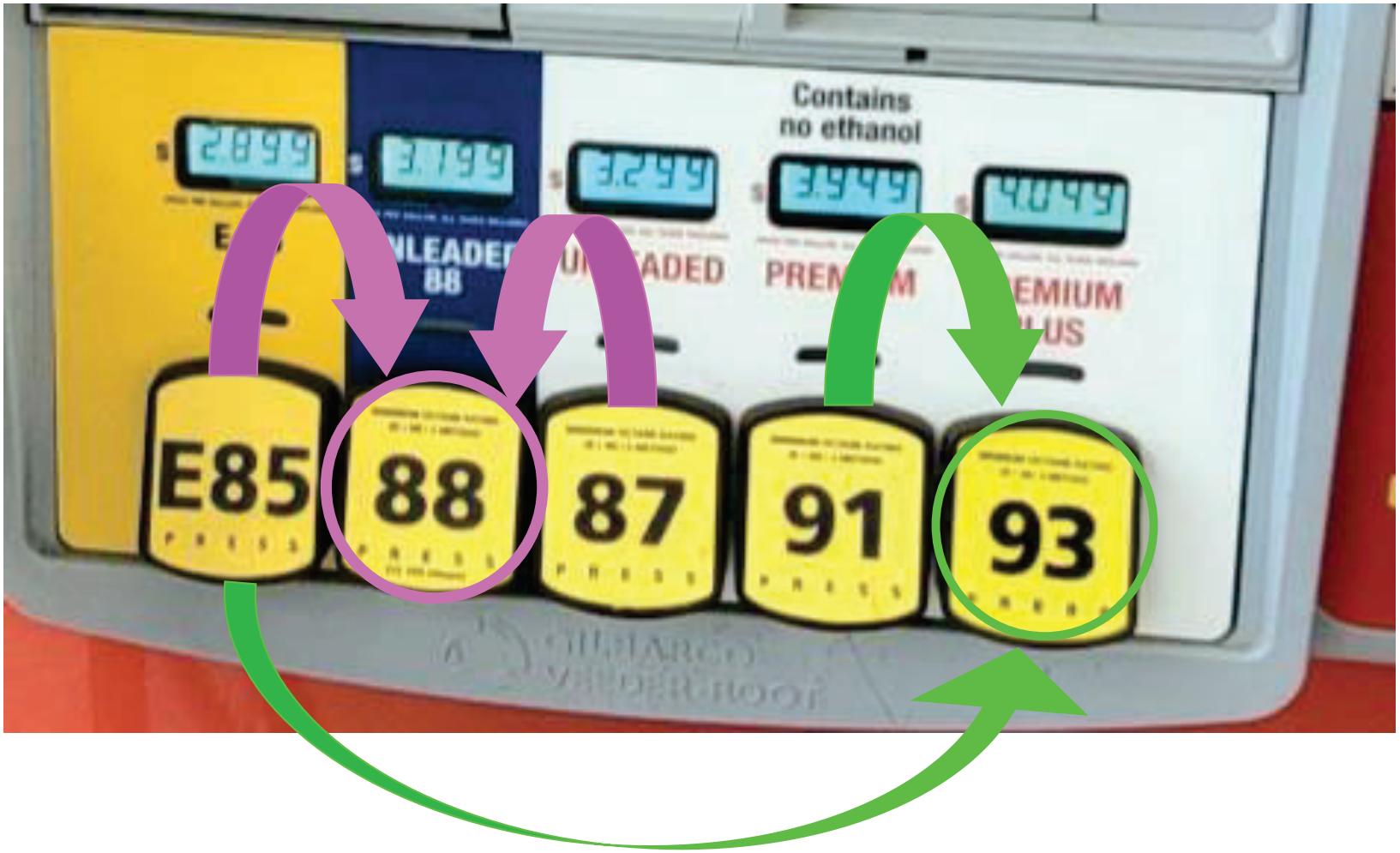
1. Test the first blend above the lowest grade
2. Then test the blend below the highest grade

Always return blended product to the storage tank containing the lowest octane

Testing Blend Devices

If the circled grades are the blends, in what order would you test these products, and what type of tests would your perform?

E85 Normal Test & Special Test, 87 Normal Test & Special Test, 91Normal Test & Special Test, 88 Special Test, 93 Special Test



Testing Blend Devices

Revisions to EPO No. 22 test procedure implemented in 2025

ANY product not blended, will require a normal and special test

Testing Devices Continued...

After test on both non-blend and blend devices, check for the following:

- **S.3.7. Check for effectiveness of anti-drain means**
  - Wet-hose pressure type device
  - Means incorporated to prevent drainage of discharge hose

- **G-UR.4.5. Ensure a Security Seal is affixed**
  - A security seal shall be appropriately affixed to any adjustment mechanism designed to be sealed.

Other Information

Arkansas Bureau of Standards may require Handbook 44 Certification

Certification exam is available on the National Council on Weights and Measures (NCWM) website and recognized by this state.

NIST Retail Motor Fuel Dispenser (RMFD) TEST VIDEO

https://www.youtube.com/watch?v=m9HG_3SIsEM

Summary

- Our goal is to follow up, determine compliance, and exit.
- We perform inspections first and then check pump accuracy.
- Affix Seals and Decals properly.
- Leave a copy of Test Report at the site.
- Email one copy to Bureau@agriculture.arkansas.gov within two weeks of service.
- Once the reports are signed, your agency could be held accountable for non-compliance
- We require your full cooperation when necessary
- Do not work in the State if your Registration has expired.

-Extension on Registration will not be granted if your Registration has expired

-If your calibration certification date is over six-months-old, you may not apply for registration with our office

- Your work represents our office and the State of Arkansas.