

Alternative Fuel Conversions, Dispenser Blending, and New Installations

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Question/Issue

What must the inspector do when notified of a storage tank conversion to alternative fuel, an installation of dispensers that will blend an alternative fuel, or a new installation of alternative fuel storage tanks?

 [ATCP 93](#)
 [Alternative Fuel Installation/Conversion Application TR-WM-132](#)

Background

The owner of a new alternative fuel storage tank, a storage tank that is being converted from a conventional fuel to an alternative fuel, or dispensers that will blend alternative fuel must obtain a conditional approval from plan review before commencing fueling operations.

The local state inspector will be notified in writing at least five days in advance of the “pre-operational” inspection of an alternative fuel storage tank installation, storage tank conversion, or an alternative fuel blending dispenser by delivery of the TR-WM-121 ATCP 93 Notification Record.

If an alternative fuel tank installation is inspected by an LPO, both the LPO and the local state inspector will be notified of the “final installation” inspection request date. The LPO is responsible for the tank installation inspection (TR-WM-138), and the state inspector is responsible for the fuel quality and dispenser labeling requirements in Part II of the Alternative Fuel Storage Tank form (TR-WM-132).

If a state inspector is conducting the alternative fuel tank final installation, they will also inspect the fuel quality and dispenser labeling requirements in Part II of the Alternative Fuel Tank form.

Different situations require different actions from the owner, contractor, and the inspector. This document is intended to give the state inspector guidance about their inspection responsibilities for an alternative fuel tank conversion or new installation.

Procedure

Alternative fuel conversions/installations have been divided into six general categories:

- 0-10% ethanol blends of gasoline converting to 11-15% ethanol
- 0-10% ethanol blends of gasoline converting to 16-50% ethanol
- 0-10% ethanol blends of gasoline converting to 51-85% ethanol
- 0-5% diesel and diesel-biodiesel blends converting to greater than 5% biodiesel
- Converting a tank system to a lower ethanol/bio content than currently stored.
- Blending alternative fuels at the dispenser.

Each of these conversions require different areas of scrutiny and sampling from the inspector.

The pre-operational inspection will be the responsibility of the state inspector, or LPO and state inspector, as described above.

The responsible inspector/LPO will receive a copy of Part “I” of the alternative fuel conversion plan conditional approval (TR-WM-132) from plan review when the plan is approved. Part “I” of the form is the same for all installations and conversions.

The owner or contractor must notify the parties responsible for the inspections at least five business days before the day of the pre-operational inspection date requested. Inspectors will, whenever possible, be available on the requested date and time.

Pre-Operational Inspection – All Alternative Fuel Tank Conversions/Installations.

1. Contact the owner/contractor to verify the day and time after receiving the notification for the pre-operational inspection. Also discuss the expectations for the inspection. The inspector should not have to wait for work to be done when they arrive. The appropriate Part “II” of the form TR-WM-132 should be available on site and should be completed. Dispenser (meter) calibration should at least be in progress using the new alternative fuel product when you arrive. If applicable, the tightness test (tank and line) should have been conducted, and the final results may not be available, but the specialty firm’s field notes should be.
2. Pre-operational Inspection. Material and equipment compatibility will be verified by plan review on Part “I” of the form. Before you arrive, all of the applicable check boxes on Part “II” of the form should be “checked off” by the owner/contractor with the exception of the “Submit Tank Registration” check box that cannot be checked off without your inspection report.
 - a. Verify that the delivery manifest shows a delivery of the correct product.
 - b. Check the ATG for product and water levels and alarms (if equipped). No level of water is acceptable.
 - c. Verify that the tank fill pipes are marked in accordance with API RP 1637
 - d. Verify that the dispensers are labeled in accordance with ATCP 94.300 (Alternative Fuel Fact Sheets can be found under “Fuel Quality” at: <https://datcp.wi.gov/Pages/Publications/WeightsAndMeasuresBureauFactSheets.aspx>)
 - e. Verify that a precision tightness test has been conducted on the system (tank and line if applicable) although the results may not yet be available.
 - f. Verify that the piping to the dispensers has been flushed if the tank has not been emptied and physically cleaned.
 - g. Verify that the dispenser filters have been replaced (if applicable).
 - h. Verify that the meters have been calibrated (may still be in progress and the results may not be available).
 - i. Use water finding paste to verify that there is no water in the tank. No level of water is acceptable. Use paste in accordance with the manufacturer’s instructions.
 - j. Collect a sample from the dispenser nozzle to verify that the product is “clear and bright” with no suspended material, sediment, or undissolved water.
 - k. If the dispensers are blending alternative fuels, verify the blend ratios of **all** dispensers.
 - l. Sampling for screening and laboratory evaluation is covered later.

3. If the alternative storage tank is new, sales cannot commence without financial responsibility.
4. For deficiencies, write a 10 day order for correction. This could include, but is not limited to tightness test and meter calibration test results. Red tag (dispensers) for lack of financial responsibility, under stating ethanol/bio percentage or for over stating octane.
5. Use “Alt. Fuel Conversion” for WinWam inspection report “Reason” Code.
6. Provide the owner with a copy of your inspection report and discuss the next steps to complete the conversion (The owner must resolve any orders or red tags written and submit all documents listed on Part “II” of TR-WM-132 and Installation Checklist if applicable, to the department).

Pre-Operational Inspection – Blending Alternative Fuels at the Dispenser (With or Without Tank Conversion).

1. Verify that the delivery manifest shows a delivery of the correct product.
2. Check the ATG for water levels and alarms (if equipped). No level of water is acceptable.
3. Verify that the dispensers are labeled in accordance with ATCP 94.300 (Alternative Fuel Fact Sheets can be found under “Fuel Quality” at: <https://datcp.wi.gov/Pages/Publications/WeightsAndMeasuresBureauFactSheets.aspx>)
4. Use water finding paste to verify that there is no water in the tank. Use paste in accordance with the manufacturer’s instructions. No level of water is acceptable.
5. Collect a sample from the dispenser nozzle to verify that the product is “clear and bright” with no suspended material, sediment, or undissolved water.
6. If the dispensers are blending alternative fuels, verify the blend ratios of **all** dispensers.
7. For any deficiencies, write a 10 day order for correction or red tag (dispensers) for under stating ethanol/bio or over stating octane.
8. Use “Alt. Fuel Conversion” for WinWam inspection “Reason” Code.
9. Provide the owner with a copy of your inspection report and discuss the next steps to complete the conversion (The owner must resolve any orders or red tags written and submit all documents listed on Part “II” of TR-WM-132 to the department).
10. Sampling for screening and laboratory evaluation is covered for various blends below.

Screening and Sampling

0-10% Ethanol Blend Conversion or Dispenser Blending to 11-15% Ethanol Blend.

1. Conduct a water extraction field screening test to evaluate the ethanol percentage of the product being dispensed.
2. Collect a sample for laboratory testing following the standard protocol for laboratory evaluation. Use “Alt. Fuel Conversion” for the WinWam “Inspection Reason Code”.
3. Record the % of ethanol from the water extraction test in the notes section of the appropriate fuel sampling / testing questionnaire. Conduct a visual clear and bright inspection.
4. Sales may begin if the sample passes field screening. Result of the water extraction test must be less than 22 ml of water to be considered a passing screening for E-15.
5. Ship sample to fuel lab via routine Speedee Delivery.

0-10% Ethanol Blend Conversion or Dispenser Blending to >15-50% Ethanol Blend

1. Conduct a visual clear and bright inspection.
2. Collect a sample for Laboratory testing following the standard protocol for laboratory evaluation. Use “Alt. Fuel Conversion” for the WinWam “Inspection Reason Code”.
3. Ship sample to fuel lab via routine SpeedDee Delivery.
4. If the product passes visual screening, sales may begin.

0-10% Ethanol Blend Conversion or Dispenser Blending to >50-100% Ethanol Blend

1. Visual clear and bright only.
2. Use “Alt. Fuel Conversion” for the WinWam “Inspection Reason Code”.
3. If the product passes visual screening, sales may begin.
4. No sample to lab.

0-5% Biodiesel Blend Conversion to >5% Biodiesel Blend

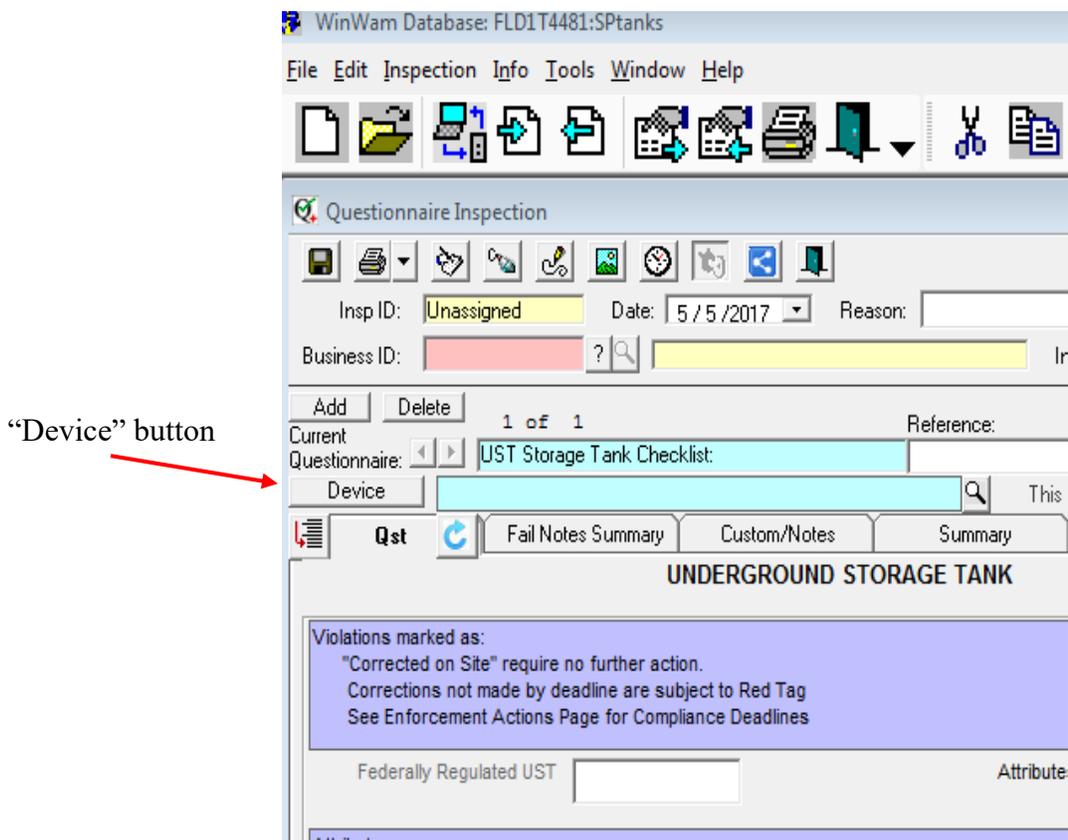
1. Conduct standard LEL screening of the product.
2. If tanks previously held a product with a flash point below 100 degrees F., perform an LEL screening on each converted tank. Collect the lab sample from the tank with the highest LEL reading.
3. Collect a sample for Laboratory testing following the standard protocol for laboratory evaluation. Use “Alt. Fuel Conversion” for the WinWam “Inspection Reason Code”.
4. If the product passes LEL and visual screening, sales may begin.
5. Ship sample to fuel lab via routine SpeedDee Delivery.

Before commencing fueling operations at a new installation, the tanks must have financial responsibility (USTs Only). Permits to operate must be obtained within 10 days of the pre-operational inspection.

Sales may begin if all inspection requirements are met including installation requirements, field screening tests, and dispenser labeling requirements.

WinWam Data Entry

1. Select Storage Tank questionnaire for existing tank conversions and Facility questionnaire for New Tank Installations
For New Tanks, use "Unlisted ATCP 93" for any violations on the Facility questionnaire
For Existing Tank Conversions, use the appropriate checkboxes on the Storage Tank questionnaire
2. Use "Alt Fuel Conversion" for reason
3. Click on "Device" button above the Questionnaire tab



4. Select correct tank or tanks (from Part I of TR-WM-132)
5. Edit the Fuel Grade Attribute in the attributes tab
6. Click "Attributes Verified" for all affected tanks
7. Add all notes covered by this checklist in the "Inspection Notes" (top bar of the window) including the type of paste used.
8. Write 10 day orders for any deficiencies (add enforcement questionnaire)
9. Provide report to the owner (be sure that the notes are printed).
10. Record sample as "Alt Fuel Conversion" following standard protocol
 - a. For >E10 – E15 conversions, also include the screening % ethanol amount

Effective Date: January 17, 2018