

Contaminated Fuels and Fuel Samples that Fail Lab Testing

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Background

What should an inspector do when they come across a known or unknown contaminated fuel situation or receives an email from the lab notifying them of a failed test?

Fuels can become contaminated in many ways. The most common are from water being introduced into the storage tank system. There could be a misdelivery of a fuel type, such as gasoline being delivered into diesel tank, off specification fuel for known or unknown reasons, or fuel being misidentified by the seller, shipper, or supplier.

-  [ATCP 94.100\(8\)\(b\)](#)
-  [ATCP 94.200](#)
-  [ATCP 94.320](#)
-  [Tank Pump Out Fact Sheet](#)
-  [Clear and Bright Examples](#)

Procedure

Requirements for All Water Contamination Pump Outs and Fuel Contaminations of an Unknown Source

The business is required to shut down the affected dispensers immediately to prevent sale of the contaminated fuel and contact DATCP: If water at the bottom of a tank exceeds the requirements of ATCP 94.320, or phase separation has occurred in an ethanol gasoline blend tank, or there is an unknown source of contaminated fuel, a DATCP Weights and Measure official must:

- Directly supervise the pump out
- Sample and test fuel before fuel sales can resume after a pump out.
- Investigate and ensure elimination of the source of water or other contaminate.

Requirements for Pump Outs of Misdelsiveries or a Known Source of Off Spec Fuel

The business is required to shut down the affected dispensers immediately to prevent sale of the contaminated fuel and contact DATCP: The assigned inspector will visit the site as soon as possible.

Pump outs must be performed according to the procedures listed below with the oversight of a qualified tank specialty firm. A list of certified tank specialty firms is here:

https://mydatcp.wi.gov/documents/dtcp/List_of_Tank_Specialty_Firm_Registrations.pdf

Contaminated Fuel Pump Out Procedures

- Drain the piping back to the tank before pumping out to save time and reduce the number of gallons that need to be flushed through the system
- Completely remove all contaminated fuel from the affected tanks and lines and perform a flush so that no contaminated fuel remains in the system
- If possible, remove filters for the affected lines on all dispensers and replace with filter blinds for the system flush in order to reduce the number of gallons that need to be flushed through the system

- Install new filters upon completion of the tank system flush

Resuming Fuel Sales After a Contaminated Fuel Pump Out

- Fuel sales after pump outs for *water and unknown contaminate sources* cannot be resumed without DATCP authorization
- Fuel Sales after pump outs for *misd deliveries and known sources of off spec fuel* can be resumed if the pump out follows all listed requirements and procedures
- Product that was used to refill the tank is visually inspected at the dispenser and must appear clear, bright and free of sediment. Example of clear and bright:
<https://datcp.wi.gov/Documents/PhaseSeparateGasSampleWithText.pdf>
- For misd deliveries and known sources of off spec fuel pump outs *only*, the facility does not have to wait for the fuel to be tested by DATCP to re-open, but is responsible for any off-spec fuel sold

Fuels Samples That Failed Lab Testing

When an inspector receives an email from the lab with a failed fuel sample below are the possible reasons for a failure and how the inspector should follow-up on the failure. The inspector should obtain as much information as possible during re-inspection including delivery tickets or shipping manifests and inventory records of gallons sold of possibly off spec fuel.

If the failed sample is gas due to:

- DVPE: Return to site, investigate what caused failure, Red tag fill, collect another sample
- Clear and Bright - Fail: Return to site, collect another sample, and Red Tag dispensers
- API Gravity: Return to site, collect another sample, investigate what caused failure
- Distillation: Return to site, investigate what caused failure, Red Tag fill, and resample product
- IBP: Return to site, investigate what caused failure, Red Tag fill, and resample product
- 10%: Return to site, investigate what caused failure, Red Tag fill, and resample product
- 50%: Return to site, investigate what caused failure, Red Tag fill, and resample product
- 90%: Return to site, investigate what caused failure, Red Tag fill, and resample product
- FBP: Return to site, collect another sample, and Red Tag dispensers
- Residue Failure: Return to site, collect another sample, and Red Tag dispensers
- Ethanol Content: Return to site, collect another sample, and Red Tag dispensers
- AKI (Octane) Screening: Return to site, collect samples to be shipped to Intertek and the State fuel lab. If the Intertek results are fail, return to site and Red Tag dispensers

If the failed sample is an oil due to:

- API Gravity: Return to site, collect another sample, investigate what caused failure
- IBP: Return to site, investigate what caused failure, Red Tag fill, and resample product
- 10%: Return to site, investigate what caused failure, Red Tag fill, and resample product
- 50%: Return to site, investigate what caused failure, Red Tag fill, and resample product
- 90%: Return to site, investigate what caused failure, Red Tag fill, and resample product
- FBP: Return to site, collect another sample, and Red Tag dispensers
- Calculated Cetane Index: Return to site, collect another sample, investigate what caused failure
- Flash Point: Return to site, collect another sample, and Red Tag dispensers
- Residue Failure: Return to site, collect another sample, and Red Tag dispensers
- Sulfur Content: Return to site, collect another sample, and Red Tag dispensers

If the product needs to be pumped out, the inspector shall supervise a qualified tank specialty firm as directed above. Please provide station owner with the tank pump out fact sheet:
<https://datcp.wi.gov/Documents/ContaminatedFuel-PumpOuts.pdf>

Notify the Owner of Prohibited Practices

- Pumping out suspected contaminated fuel without DATCP supervision is a violation of Wis. Admin. Code § ATCP 94.100(8)(b)
- Sale of fuels in Wisconsin that do not meet national fuel quality specifications as required by Wis. Admin. Code ATCP 94 Subchapter II are prohibited

Blending Contaminated Fuel

- Blending of contaminated fuel can only be performed under the direct supervision of a DATCP weights and measure official
- Ethanol Fuel Blends with water contamination cannot be blended

Disposal of Contaminated Fuel by the Fuel/Site Owner

- Fuel that does not meet the minimum required specification in Wis. Admin. Code ATCP 94 cannot be sold to anyone for vehicle use, and must be disposed of in a manner approved by the department
- The sale of the fuel as waste or for recycling is acceptable

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