Flaring Vapor: Water Application

The application of water on a propane tank to “warm up” the liquid propane is a response tactic that may or may not help speed up the process of vapor flaring.

Before applying water to the surface of the propane tank, you should take a reading of the tank’s surface temperature using an IR thermometer or thermal imaging camera to measure the tank's surface temperature in both the vapor and liquid spaces of the tank.

If the water that you will be applying is cooler than what the sun can do to warm the tank, do not apply water yet.

Once vapor flaring has begun, take the temperature in the vapor and liquid spaces of the tank again.

If the tank’s surface temperature is cooler than the water that you will be applying, you should start the water application process.

Applying warm water will provide the best heat transfer speeding up vapor production. Fire engines can produce cavitation (warmer water) when pumping at lower volumes.

NOTE:

Putting water on a propane tank that is already covered in ice does very little good. The Ice insulates the steel surface of the tank preventing the full temperature of your water from reaching the liquid propane in the tank.

If the water is colder than the tank’s surface, you may actually slow the process down.

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Propane Response Equipment and Training Since 1989

Quick Action Guide: Propane Vapor Flaring

Tactical Water Application to Speed Up Vapor Production

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1. Initial Size-Up

- **Assess Heat Sources:** If the sun is actively warming the tank, check your water temperature first.
- **The "Sun" Rule:** If your water is **colder** than the heat the sun is already providing, **DO NOT** apply water. Let the sun do the work.

2. Temperature Checks

- **Equipment:** Use an **IR Thermometer** or **Thermal Imaging Camera (TIC)**.
- **Action:** Take surface temperature readings of both the **vapor space** (top) and **liquid space** (bottom) of the tank.
- **Timing:** Once flaring begins, re-check these temperatures immediately.

3. When to Start Applying Water

- **Decision Point:** Only start water application if the **tank's surface is cooler than the water** in your line.
- **Best Results:** Use **warm water** to maximize heat transfer.
    - *Pro-Tip:* Fire engines can produce cavitation (warmer water) when pumping at lower volumes.

4. Critical "Stop" Factors

- **Ice Coverage:** If the tank is already iced over, water is ineffective. The ice acts as an insulator, blocking heat from reaching the liquid propane.
- **Temperature Mismatch:** If your water is colder than the tank surface, you will **slow down** the flaring process.

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