



**CITY OF FORT BRAGG**

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**MEMO**

**MEETING DATE:** MARCH 25, 2015  
**TO:** Planning Commission  
**FROM:** Sean O'Rourke  
**AGENDA ITEM TITLE:** Design Review 1-15 (DR 1-15) – Eel River Fuels

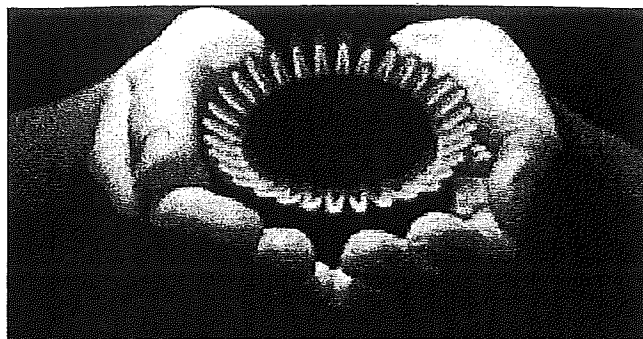
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Staff has prepared the following in response to the letter received on March 20, 2015:

1. The facility is currently being utilized by Eel River Fuels as office space and for delivery vehicle parking and storage.
2. While not currently in use, the seven (7) existing fuel storage tanks on-site have a total capacity of 132,000 gallons including six (6) tanks with 20,000 gallon capacity and one (1) 12,000 gallon tank. The proposed project will result in a total reduction in fuel storage capacity of 102,000 gallons at the site (30,000 gallons proposed project – 132,000 gallons of the removed tanks). The applicant has noted that while the existing fuel storage tanks have not been used in the last 12 to 14 months, these storage tanks could be utilized for fuel storage.
3. The proposed project has been reviewed by the Fort Bragg Fire Department and the Fire Department has not expressed concern about the proposed facility. Additionally, the new propane tank will need to be reviewed and approved by the State of California, Department of Industrial Relations, Division of Occupational Safety and Health and must comply with all state regulations related to this type of facility.

Staff recommends adding Special Condition 4, to clarify this additional review process:

**Special Condition 4:** Prior to issuance of the Building Permit, the applicant shall prepare and submit a Fire Safety Analysis as required by the State of California and/or the Fort Bragg Fire Department. Prior to issuance of the Building permit, the applicant shall provide evidence that this document has been submitted for review and received approval of all relevant agencies, such as: the Fort Bragg Fire Department, the State of California Department of Industrial Relations, and other regulatory agencies as needed.



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## Propane Safety

Many consumers believe that Propane is an unsafe fuel. Accidents can happen, but in reality, Liquid Propane Gas usage statistics combined with accident statistics tell a much different story. According to a report by the Department of Energy, the **individual risk of death caused by propane is about one in 37 million persons** - this is about the same risk of a person on the ground being killed by an airplane crash, and much less than the risk of death by lightning, car crashes or shark attacks.

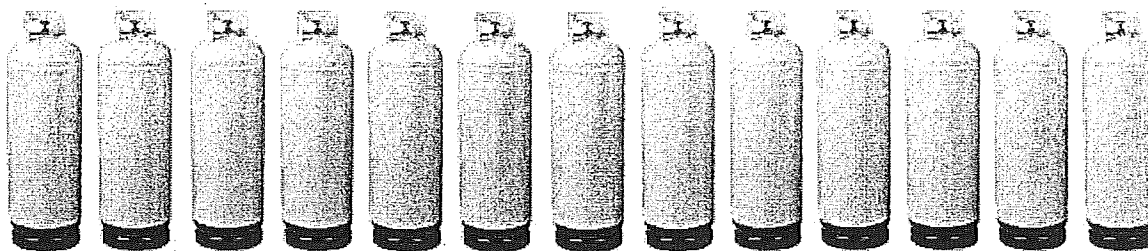
**Propane** is one of the safest fuels imaginable when it comes to the potential impact on our soil and water. It is non-toxic, non-caustic and will not create an environmental hazard if released as a liquid or vapor into water or soil. It does not damage freshwater or saltwater ecosystems, underwater plant or marine life. It will not harm drinking water supplies if spilled on the ground and leaves no residue.

**Propane** has a very high auto ignition temperature, (temperature at which a fuel will ignite without spark or flame) extremely higher than gasoline or diesel making it a much safer energy source. It is very unlikely that propane will randomly ignite.

Households that use electric ranges have a higher risk of fires and associated losses than those using gas ranges.

*Hollywood will also try to make us believe that propane tanks can **EASILY** explode and are very dangerous but that is not the case as the Myth Busters will disprove below.*

In the movie Casino Royale, James Bond shoots a 100lb propane tank with a 9mm handgun from 20 feet away and it explodes. [Click on the propane tanks below to see the Myth Busters disprove 007's theory that propane tanks can explode by shooting them with a hand gun... or a shotgun for that matter.](#)



[Click to see how 007 is BUSTED by the Myth Busters for shooting and exploding a propane tank with a hand gun.](#)

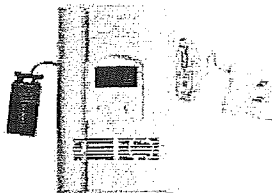
Most propane related accidents are caused by the improper installation of propane piping and appliances by unqualified persons. This is why it is imperative to your safety and the safety of your family and the people around you to **ONLY** have Professional Certified Propane Gas Installation Technicians install your propane piping and appliances.

The Professional Certified Propane Gas Installation Technicians at Go Gas Ltd. have **over 15 years training and experience** to ensure safe and proper installations that gives you peace of mind.

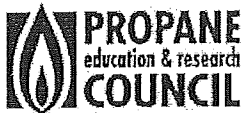
Go Gas Ltd. is committed to safety by keeping up-to-date employee training, following strict local and National Fire Protection Agency codes and educating consumers on the safe use of propane. The Kidde Carbon Monoxide and Explosive Gas Alarm is available through Go Gas Ltd., have one installed today and keep your family safe. For only **5 cents** per day you can have peace of mind by having a Go Gas Ltd. technician install a **Kidde Carbon Monoxide and Explosive Gas Alarm** in your home.

### PROPANE SAFETY TIPS

- Modifications or alterations to your propane system should be handled by Professional Certified Technicians only.
- If the scent of propane is detected, extinguish all open flames and immediately leave the area where fumes are present.
- Avoid touching electrical switches or appliances when a leak is suspected.
- Turn the valve of the propane tank off and call a qualified technician for service.
- **Never** tamper with your system's supply lines, safety devices, regulators, or storage tank fitting.
- **Never** use an open flame to test for propane leaks.



Carbon Monoxide and Explosive Gas Alarm w/Battery Back Up



National Fire Prevention Association

### Did you know?

One of the most common mis-perceptions about propane is that it causes and is responsible for the bulk of house fires. Statistics presented by the National Fire Protection Association (NFPA) do not list propane as a leading cause of fires. You are more likely to be struck by lightning than die in a fire caused by propane.

NFPA Fire Statistics: Major Causes of Fire

If propane were truly as unsafe as the public often believes it to be, it would be listed as a severe hazard by the authority on fire safety, by the NFPA.

- Propane tanks are 20 times more puncture-proof than conventional gasoline tanks, making leaks even less likely.
- Propane has a narrow range of flammability when compared with other petroleum products. In order to ignite, the propane/air mix must contain from 2.2 to 9.6 percent propane vapor. If above or below these percentages, it is either too lean or too rich to ignite.
- It has the lowest flammability rating of any alternative fuel. It will not ignite until it reaches 940 degrees F, compared to gasoline at 430 to 500 degrees F.
- Propane is easy to detect due to the strong pungent smell that imitates the scent of rotten eggs.

**Go Gas Ltd. PO Box 2259 Grand Cayman KY1-1107 Cayman Islands**  
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# PROPANE 101

## Promoting Propane Safety ...Through Better Understanding

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### Do Propane Tanks Explode?

## Poly Water Tanks For Sale

Prices On Steel & Fiberglass  
Tanks All Safe For Drinking  
Water Storage



☒ This question has been asked of many propane dealers and is also a topic discussed by people that are unfamiliar with propane, propane tanks, propane accidents and explosions involving any type of container storing flammable or combustible material. Propane tanks do not just explode if they fall over, are hit by the lawnmower or a car. In fact, it would be hard to say that a propane tank will explode if it were hit by an airplane or bullet. Many people mistakenly believe that propane tanks in any setting will explode if they are mishandled in some certain way. Let's explore and dispel this common myth.

#### Propane Explosions 101

Propane tanks do not explode. They do not implode and nor do they rupture or come apart on their own. In fact, bringing a propane tank to the point of "explosion" is a tremendously difficult and time

consuming task that's not as simple as most people think. Many people believe that a propane tank "explosion" can occur with the slightest of ease. This is not the case whatsoever and people should understand that a propane tank, operating under normal circumstances will not explode or rupture. Safety devices and mechanisms are in place to prevent explosions, accidents and propane tank ruptures or breaches. Just like any other hazardous material or activity, human error is a primary factor in preventing or contributing to any type of accident, however serious in nature.

#### BLEVE - Boiling Liquid Expanding Vapor Explosion

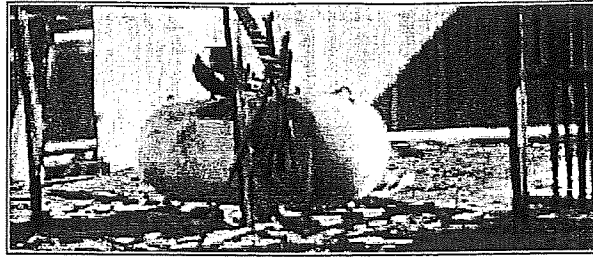
The term BLEVE is well known among firefighters and hazardous materials response teams and does not solely refer to propane tanks. A BLEVE occurs when the pressure in the tank exceeds that at which the safety relief valve can safely vent the excess pressure into the outside atmosphere. Relief valves are designed to vent tank pressure at a certain flow rate to the outside atmosphere once the pressure inside the propane tank reaches a certain level and will close once the pressure in the tank falls below that level.

Let's look at a simple example involving something we're all familiar with, a plastic 3 liter soft drink bottle. The soft drink bottle has a 1/4" hole drilled in its side (about the same diameter as the cord on your mouse). This hole functions as the safety relief valve. If you were to blow air into the bottle through the top after unscrewing the cap, the excess pressure in the bottle would be relieved through the opening in the bottle's side causing no damage to the bottle. Now, suppose you attached an air hose that screwed onto the bottle top forming a tight seal and the air hose was supplied by a large air compressor. Turning the air compressor on starts the flow of air into the bottle which in turn creates more pressure than the small hole (relief valve) in the side of the bottle can keep up with. The plastic bottle starts to expand and eventually ruptures. The reason the bottle ruptures is that the amount of increasing pressure inside the bottle is far greater and exceeds that at which the small hole allows to escape. The pressure in the bottle is increasing faster than it can escape through the "relief valve".

#### Propane BLEVE

A propane tank BLEVE will occur when the container is subject to extreme heat, such as in a fire. While the tank is being heated, the liquid propane inside is being heated causing it to expand. The safety relief valve will open allowing pressure to vent to the outside atmosphere. If the pressure inside the tank grows to a level exceeding that at which the safety relief valve can expel it from the tank, the propane tank may rupture. If flames or a source of ignition is present, the propane will ignite resulting in an explosion. It's important to know that a BLEVE will occur only if the conditions are right, such as being subject to continuous flame impingement over a period of time. The possibility of a propane tank explosion (BLEVE) is extremely remote.

Pictured left is a tank that was involved in a grass fire. The fence caught fire and burned



down around the tank. Although the tank is no longer serviceable, it is a testament to the strength propane tanks have as well as the manufacturing standards propane tanks are subject to. Many people believe that an LP Gas tank will explode easily if fire is present or near. This propane gas tank is an example of the rule, not the exception.

#### Propane Tank Strength

The pictures below are of propane bobtail tanks that were involved in accidents. Each of these 2,600 gallon tanks were involved in rollover accidents and were over 60% full. That means each tank contained over 1,500 gallons (~6,300 pounds) of propane. The tanks may be dented but the force of 10,000+ pounds coming down on the hard pavement is definitely a testament of strength in itself. You be the judge.

