



United States Department of the Interior
BUREAU OF LAND MANAGEMENT
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In Reply Refer to:
9210 (CON03)

Memorandum

To: Colorado State Director
From: Wayne Werkmeister
Acting Field Manager
Subject: 72-Hour Report

THE FOLLOWING INFORMATION IS PRELIMINARY AND SUBJECT TO CHANGE

Location: Dry Creek Fire, near De Beque, CO

Date of Occurrence: June 9, 2015

Time of Occurrence: Approximately 1730 Hrs MDT

Activity: Wildland Fire Suppression

Number of Injuries: 0

Number of Fatalities: 0

Property Damage (such as vessels, equipment, and structures): Partial damage to a chainsaw

Narrative:

On the afternoon of June 9, 2015 a fire crew member from the Upper Colorado River Fire Management Unit (UCR) experienced a safety issue with a MS 460 Stihl chainsaw while responding to the Dry Creek Fire near De Beque, CO. The fire was a single tree juniper with no containment issues.

After hiking approximately 30 minutes into the fire, the sawyer attempted to start the chainsaw. The saw sputtered a couple times but did not stay running. The sawyer turned the saw upright to check the fuel level in the saw. He was standing an estimated 11-12 feet below the fire. When the sawyer opened the cap a half turn, an immediate burst of fuel sprayed out of the tank under

pressure. The sawyer was able to deflect some of the spraying fuel with his gloved hand; however, a significant amount of fuel was sprayed on the sawyer's chaps, pants and Nomex shirt.

The sawyer tossed the saw forward as he stepped back from the saw and the fire. The saw landed downslope of the fire's smoldering edge (approximately 9 feet away). Within seconds, the vapor around the saw ignited. Firefighters quickly extinguished the flames on and around the saw. The chainsaw experience damage to the fuel tank, handle, and trigger. The fuel cap was later found; it was partially melted.

The chainsaw in this incident was a Stihl MS460 which had been placed in service and used extensively in August of 2014 for two weeks on a saw project. The saw had the newer style toolless fuel and oil caps. The gasoline used in the chainsaw mix did contain some ethanol. The chainsaw had been readied for the season in April prior to a prescribed fire assignment. The chainsaw had not been started earlier in the day and was "cold" when this incident occurred. Ambient air temperatures were estimated to be 80-85 degrees Fahrenheit

This incident is deemed a "Near-miss" as defined by the Interagency Standards for Fire and Fire Aviation Operations (the Red Book) Chapter 18-7. A Lessons Learned Review Team from outside the UCR is assembled to further investigate this incident and will produce Lessons Learned Review (LLR) report.

Initial findings from the team include the following recommendations:

All chainsaw operators should:

- Assume the potential exists for chainsaw fuel tanks to be under pressure upon opening. Only open the fuel cap a safe distance (at least 20 feet recommended) from an open flame or other sources of ignition preferably down slope and downwind of any flame or embers.
- For toolless fuel caps, open the saw cap a ¼- turn, allowing the vapor pressure to release prior to fully opening the fuel cap. Apply downward pressure and maintain control of the cap during the opening sequence.
- When checking fuel levels around sources of ignition, look at the fuel level through the semi-translucent fuel tank without opening the fuel cap.
- Follow manufacturer's recommendation for types, mix and age of fuel. The [Stihl MS 460 Manual](#) and [Gasoline Guidelines](#) recommend -
 - Stihl brand two-stroke engine oil at a mix ratio of 50:1
 - Only mix sufficient fuel for a few days' work
 - Do not exceed 3 months of storage for fuel
 - Use unleaded gasoline with a minimum octane rating of 89
 - Gasoline should not exceed 10% Ethanol

The LLR team recommends the NWCG Risk Management Committee issue a Safety Alert with this information to ensure wide interagency distribution.

Discussion/Background:

At least two incidents have been documented during the spring of 2015 in which wildland firefighters have experienced pressurized chainsaw fuel tanks spraying fuel on the operators when the saw fuel caps were opened. Both incidents occurred during wildland fire operations and the sprayed fuel was ignited by the fire.

Additional Information:

[Dry Creek Fire 24 Report](#)

[Wildland Fire Lessons Learned Center Flammable Liquid Ignitions](#)

Attachment:

[Stihl MS 460 Instruction Manual](#)

[Stihl Gasoline Guidelines](#)

/s/ Wayne Werkmeister, Acting Field Manager

cc:

Northwest Colorado District Manager

BLM Colorado Safety Manager

BLM Colorado State Fire Management Officer