Rapid Lesson Sharing

Event Type: Gas Polyurethane Line Ignited by Wildfire

Date: July 17, 2025

Location: Colorado

The Story and Lessons from this Oil and Gas Infrastructure Incident

On July 17, 2025, at 1445, the Upper Colorado River Interagency Central Zone Fire resources were dispatched to Initial Attack 227 in Cottonwood Flats. This was a rapidly expanding brush and grass fire on a steep slope near the community of Rulison.

This is an area with known oil and gas infrastructure and wells. Local and hosted fire resources are aware of and briefed on these activities in this area. There have historically been minimal issues with oil and gas infrastructure or pipelines rupturing during wildfire response here.

Figure 1 – Fire activity during initial attack.

The photo above (Figure 1) was taken on the fire's east side, or left flank, where most of the growth occurred. The majority of the oil and gas infrastructure is located on the fire's northwest (right) flank. This area received primarily lower-intensity backing and flanking fire.

Two above-ground natural gas lines were located near the heel of the fire, one steel and the other a "FlexSteel" pipe (Figure 2 & 3). According to local fire department and oil and gas employees, most gas lines are buried below ground. Figure 2 shows lines that remained intact and the line that breached and burned during the Initial Attack response to the fire.

Figure 2 – The FlexSteel pipes that remained intact and the line that breached and burned during the initial attack response to the fire. This burned and ruptured pipe was moved to be compared to the new FlexSteel pipes.

Figure 3 shows the FlexSteel pipe that caused the gas line fire. These are commonly used in petroleum transportation and have a good safety record. However, the maximum heat threshold they are designed for is 185 F.

Figure 3 – The FlexSteel pipe that caused the gas line fire.

Once this pipe was exposed to the high temperatures of the passing wildfire, the outer polyurethane melted away, exposing the steel middle section. This resulted in a natural gas leak and subsequent gas line fire. (See Figure 4 on next page.)

On public land there are regulations requiring oil and gas lines to be buried. The same rules do not apply on private land.

Lessons

Surface pipes present several safety problems for wildland firefighters:

Figure 4 – The natural gas line fire caused by the wildfire.

- If they are identified above ground in the fire area, notify IC; request assistance from READs (Resource Advisor) and oil and gas personnel; close off area; call local emergency gas phone number; disengage from the area.
- Train and brief fire personnel on the dangers of working on wildfires where oil and gas infrastructure is present.
- Pipes are often hidden under overgrown vegetation and can be poorly marked.
- Many surface pipelines run adjacent to roads and are exposed to vehicle collisions. Surface piping may be used in short term until below ground lines can be installed.
- Pipes can be exposed to direct flames from burning vegetation if above ground.
- Pipes may have high pressure flammable gas.
- Pipes for fracking operations have liquids under very high pressure.
- The contents of the pipe may contain poisonous gases, liquids and solids.
- The burning pipe produces hazardous fumes.
- Don't engage this type of fire
- Refer to page 26 in IRPG: Oil and Gas Site Safety.

This RLS was submitted by:

Incident Overhead

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