

## What is a Wellhead?

A component at the surface of an oil or gas well that provides a structural and pressure-containing interface for the drilling and production equipment.



Surface wellhead

Subsea wellhead

### Well Fluids

Gas-oil ratio (GOR) or the amount of gas dissolved in oil.



Image credit: Washington State Department of Natural Resources

### What is a blowout?

Uncontrolled release of crude oil and/or natural gas from an oil well or gas well after pressure control systems have failed. An accidental spark during a blowout can lead to a catastrophic oil or gas fire.



Image credit: Wild Well Control, Inc

### Mitigation strategies – Intentional Wellhead Ignition

Intentionally igniting wellhead to manage and contain the environmental impact of wellhead spills.

### Intentional Wellhead Ignition Concerns

Minimal scientific literature to have full understanding of wellhead fires. Worst case discharge is not the worst-case scenario for a wellhead ignition. Every wellhead is different and every blow out is different.

### Considerations for Intentional Wellhead Ignition Decision-makers:

Hydrogen Sulfide (H <sub>2</sub> S)	Water sources
Weather Conditions	Ground fire possibility
Unexploded ordinance	Formation of oil lakes
Infrastructure availability	Downwind pollution
Equipment available	Slugging of water

### State of Alaska Regulations – 18AAC 75.434(g)

If an operator proposes the planned voluntary ignition of a well blowout, the operator shall submit data, analyses, and supporting documentation that:

- API gravity of 35 or greater
- GOR in excess of 2,000
- Anticipated combustion efficiency  $\geq 90\%$
- Ignition not to exceed National Ambient Air Quality Standards (42USC7409)
- Protective of human health, safety, and environment
- Reduces amount of oil to be recovered

### Federal Regulations – 40CFR300.910(d)

“The OSC may authorize the use of any dispersant, surface washing agent, surface collecting agent, other chemical agent, **burning agent**, bioremediation agent, or miscellaneous oil spill control agent, including products not listed on the NCP Product Schedule, without obtaining the concurrence of the EPA representative to the RRT and, as appropriate, the RRT representatives from the states with jurisdiction over the navigable waters threatened by the release or discharge, when, in the judgment of the OSC, the use of the product is necessary to prevent or substantially reduce a hazard to human life. Whenever the OSC authorizes the use of a product pursuant to this paragraph, the OSC is to inform the EPA RRT representative and, as appropriate, the RRT representatives from the affected states and, when practicable, the DOC/DOI natural resources trustees of the use of a product, including products not on the Schedule, as soon as possible.”

### Arctic and Western Alaska Area Contingency Plan

Intentional Wellhead Ignition may be considered as a source control strategy by the responsible party in consultation with the FOSC, SOSC, and ARRT concurrence. The responsible party does not have pre-approved authority to conduct IWI. Approval will be provided by the FOSC, SOSC, and ARRT on a case-by-case basis based upon responsible party's plan and current information provided during an incident. Process of approval for evaluating conditions will follow steps provided in the [Area Contingency Plan](#).