



Impact of Fire on the Environment



Environmental Impact



- Air pollution
- Water pollution
- Global warming/ozone depletion



Air Pollution



Deepwater Oil Well,
2010



Dietz and Watson
Warehouse, 2013



Waldo Canyon
Wildfire, 2012



Water Pollution



- Sherwin Williams paint warehouse fire (Dayton, Ohio, 1987)
 - http://www.youtube.com/watch?v=yZ00C1nO_6s

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Water Pollution



- Sandoz Chemical Plant (Basel, Switzerland, 1986)
- Fire involved warehouse with 1,351 metric tons of pesticides and agrochemicals



<http://www.badsche-zeitung.de/fotos-25-jahre-sandoz-katastrophe?id=51220032>

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Sandoz Chemical Fire




- Air pollution
- Thousands of fish killed in Rhine River
- Covered building site with concrete slab (site remains contaminated in 2013)




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Extinguishing Agents



- 1987 – Montreal Protocol on Substances that Deplete Ozone Layer**


<http://fireandsecurity.com/halon-banking-recovery.php>


 - Discontinue production of substances which deplete ozone layer, e.g. halon extinguishing agents




<http://www.orrprotection.com/suppression/halon/>

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Extinguishing Agents




- Significant New Alternatives Policy (SNAP) Program (US EPA)**
 - Ozone depletion (ODP)
 - Global warming (GWP)
 - Atmospheric Lifetime (ALT)

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Summary



- Air pollution results from smoke from fires
- Water pollution may occur from runoff of extinguishing agents
- Acceptable extinguishing agents need to be environmentally friendly

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Discussion Topic



- Choose one of the following:
 - Review any one of the collapses listed by Beitel and Iwankiw. Describe why the collapse occurred and how it could have been prevented.
 - Structural fire protection is one of seven fire safety systems. For many years, the balance between 'passive' and 'active' systems have been debated. How would you propose to achieve the proper balance?

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