

2.1.1.1 Open Burning: Physical and Process Description

Open burning (OB) is used primarily to destroy propellants, and is generally conducted on engineered structures such as concrete pads, or metal pans to avoid contact with the soil surface. Such structures may range in size from 3 to 5 feet wide by 5 to 20 feet long, and are 1 to 2 feet deep. OB pans should be made of a material sufficient to

withstand the burning process, and should be of sufficient depth and size to contain treatment residues. The pans may be elevated slightly above the ground to enhance cooling and to allow inspections for leaks. The pans should be covered when they are not in use to prevent precipitation from entering them. Pans may be equipped with ports for draining collected precipitation or cleaning solutions. Collected precipitation should not be discharged onto the ground unless the pan was decontaminated after its last use, or unless the precipitation is sampled and analyzed and determined not to contain hazardous constituents. A metal cage placed over the burn unit during treatment may be helpful to minimize the ejection of residues from the unit.

The ground beneath the trays or pans may be surrounded by berms to prevent runoff from the area; however, a well-designed and operated burn pan may not require berms. Ground cover around and beneath the pans should be prepared for ease of recovery of ejected treatment residues and for prevention of fire hazards that such residues may pose. Maintenance of a packed soil surface is the minimum preparation sufficient to accomplish those goals.

To prevent propagation of an accidental detonation from one device to another, DoD regulations require containment devices, trenches, and individual ground treatment units be spaced at least 150 feet apart. Detailed design specifications for containment devices, whether trenches, pans or other types of containment, should be included in the permit application.

Waste propellant to be treated is often contained in bags, which are placed directly into the unit. The waste may be primed (that is, an initiating device is placed in the waste material) either electrically or non-electrically with black powder squibs. The waste is then ignited and the established wait time is observed. If explosives are treated, a wait time of at least 12 hours typically is observed before site workers inspect the unit. A 24-hour wait time typically is observed between OB events to allow



Closeup view of burning pans on concrete slab. Note the white covers in the background which can be rolled over the pans to prevent precipitation from entering them.



To view a video of an open burning operation, double click on the image above.

the surface to cool. After the OB treatment, containment devices are cleaned of any residues. OB operations generally are restricted to daylight hours, and usually are not conducted during inclement weather.

