

Fact Sheet – Umatilla Chemical Agent Disposal Facility



State of Oregon
Department of
Environmental
Quality

Eastern Region Chemical Demilitarization Program

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Bulk Item Processing

Background

In February 1997, the Oregon Environmental Quality Commission, the Department of Environmental Quality's governing body, issued environmental permits to the U.S. Army to build and operate the Umatilla Chemical Agent Disposal Facility (UMCDF). The purpose of this facility is to destroy the chemical weapons stockpile stored at the Umatilla Chemical Depot (UMCD) near Hermiston, Oregon.

Originally the Umatilla Chemical Depot stored nerve agents and blister (called "mustard") agents in liquid form. All of the chemical warfare agents are highly toxic. Before disposal operations began in September 2004, the stockpile at the Umatilla depot consisted of nerve agents stored in munitions such as rockets, projectiles and land mines, and in large containers such as spray tanks, bombs and "ton containers." Blister agent has been stored in ton containers. As disposal continues, the Umatilla depot is steadily eliminating various types of agents and munitions.

How much agent is in the bulk items?

As chemical agent disposal began in 2004, the UMCD's original stockpile consisted of three types of bulk items: bombs, ton containers, and spray tanks. There were two types of bombs, both of which were completely eliminated as of June 2006. Ton containers each hold 1,776 pounds of mustard agent, while spray tanks stow 1,356 pounds of VX nerve agent. The UMCD's original stockpile consisted of approximately 2,400 750-lb bombs and 27 500-lb bombs, over 150 spray tanks, and slightly more than 2,600 ton containers of mustard agent.

How are bulk items stored?

All bulk items are stored in earth-covered concrete buildings called "igloos" or bunkers. Ton containers storing mustard agent are also located in igloos.

Are there guidelines for munitions transportation?

Yes. The UMCD has strict guidelines that must be followed prior to and during transportation of all munitions. The guidelines were established to prevent transportation accidents and to ensure that if an incident occurs, chemical agent will not travel beyond the UMCD boundaries.

The UMCDF Permit requires that weather conditions be evaluated daily prior to any loading or transporting of munitions. Transportation of munitions is not allowed under certain weather conditions, such as heavy fog or icy roads. The DEQ also requires a Transportation Contingency Plan to be in place prior to the movement of any munitions, and that all munitions (except for spray tanks) be transported from the igloos to UMCDF inside an "Enhanced On-Site Container" (EONC).

What is an EONC?

An EONC is a cylindrical transport container, about 12 feet long by 8 feet high, that is specifically designed to withstand impacts, fire, crushing and leaks. There is a maximum number of munitions or containers that may be loaded into an EONC. The load limit varies for each type of munition. The EONC has a hydraulically sealed door with a locking ring mechanism. After the EONC is loaded, the door is closed and the seal checked for tightness before it is moved by truck to the UMCDF.

How are bulk items transported to UMCDF?

Prior to entry into the storage igloos the workers sample the air on the inside of the igloos to make sure no vapor leaks have occurred. If the sample shows it is safe to enter the building, the workers open the door. A forklift is then used to carefully pick up the pallets (one at a time) and transfer the munitions to the EONC.

An EONC can hold either two ton containers, or five 500-lb bombs, or four 750-lb bombs. Once the EONC is loaded, the door is closed and sealed. Spray tanks are not loaded into EONCs because they are already packaged in a shipping and transport container. Both types of containers are transported to the Container Handling Building (CHB) by truck. At the CHB, custody of the containers is transferred to UMCDF personnel.

Because the loading and transportation of the munitions from the igloos may be prohibited under certain conditions, the CHB is permitted to store up to 48 EONCs at a time. This provides enough storage capacity to continue agent processing when additional munitions cannot be moved into the building.

What happens to the EONCs once inside the Container Handling Building?

The EONCs or spray tank containers are unloaded from the truck with an overhead crane and placed on a conveyor for transfer to the unpack area via an elevator (or lift) to the second floor. There are two lifts between the unloading area and the unpack area, one for full containers coming up and one for empty containers going down. The lifts are sealed to make sure air from the Munitions Demilitarization Building (MDB) is contained within the filtered area of the MDB. In the Unpack Area the interior of the EONC or spray tank container is monitored for signs of chemical agent before the door is opened. If agent is detected the transport container remains sealed, and is sent back down the elevator and routed to the Toxic Maintenance Area for special handling. If no agent is detected, the transport container is opened and the bulk items are removed.

The bulk items are placed in steel cradles, then loaded into trays, placed on conveyors, and transported through the Explosion Containment Vestibule to the Munitions Corridor. From this point on the process is remotely controlled.

How are bulk items prepared for processing?

Bulk items are moved from the Munitions Corridor to the Bulk Drain Station in the Munitions Processing Bay. At the Bulk Drain Station the bulk article is transferred onto load cells that weigh the container prior to agent

removal.

How are bulk items processed?

Once the bulk item has been weighed the item is then punched and a probe is lowered into the hole to drain the container of chemical agent. The agent is pumped into holding tanks where it is stored before being treated in one of the Liquid Incinerators (LIC). Some of the items are punched twice to improve venting of the container when it is in the furnace.

After the item has been drained of the chemical agent, it is weighed. The ending weight of the container is used to calculate the amount of agent that has been drained out of the container. The operator is alerted if the software calculates that the container has not been fully drained and the process may be repeated if necessary. At least 95% of the original contents must be drained before the item is processed in the Metal Parts Furnace (MPF).

An item that cannot be fully drained may not be processed through the furnace, unless a special procedure is developed for that purpose. Facility personnel must also obtain DEQ approval of this process before the item that was not fully drained can be processed.

Where to get more information

Contact the DEQ office in Hermiston, 256 East Hurlburt (Suite 105) or call (541) 567-8297 (toll-free in Oregon 1-800-452-4011).

Alternative formats

Alternative formats of this document can be made available. Contact DEQ at (541) 567-8297. People with hearing impairment may call DEQ's TTY at (503) 229-6993.

