

Hazardous Material Applications



In contrast to other processes, DryVac's ability to remove liquid in an enclosed environment is of special interest to Hazardous Waste generators. Waste generators know that most disposal companies are "paid to haul it". By using DryVac at the generating location, we are creating a **dry** waste material. This means less liquid, less weight, less trips, less man-hours and less cost for you.

Irradiated materials

Although DryVac can dewater and dry these wastes, we are a strong producer as well. Mini units like this one have not only treated radiated materials but have been used in forming "yellow cake" type materials as well. Units of various sizes from .5 cubic feet to 5 cubic meters are available.



Case study

Metal Hydroxides

DryVac has installed many facilities for drying metal hydroxides. One forty foot unit takes 2,500 gallons @2-3% solids and, in less than 2 1/2 hours, creates material at 50% solids for transport, thus **reducing their previous disposal costs by two thirds**. Silicone and other hazardous metals are dried in many other current DryVac sites.



Tank Wastes

Wastes produced in Oil refining, Chemical Production and other Industrial Applications in which a company is able to treat the water but must haul the sludge are our favorite challenge. We simply mobilize a DryVac and return the liquid to the plant to reuse, leaving dry solids in a roll off bin to be hauled away. It dramatically reduces your transportation, labor and disposal costs. **Why haul a liquid?**



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DryVac in Hazardous Waste Applications

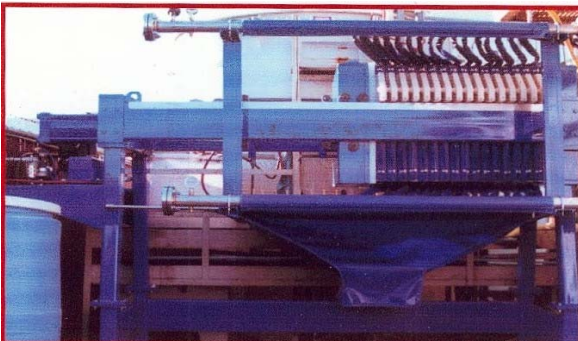
There are DryVac installations worldwide processing municipal and industrial bio-solids. In most of these applications, plants are typically fed with sludge ranging from 0.5% to 7% solids. Using additional chemical treatment can enhance the dewatering process.

During the first stage of the DryVac process, the sludge is dewatered over 45 minutes to one-hour, which usually achieves a dryness of between 20-40% solids, depending on materials and chemical pre-treatment. The Low-pressure steam (less than 1 bar) is then applied to the DEEM's{patent pending} as a vacuum is applied to the filtrate ports, and the drying phase proceeds.

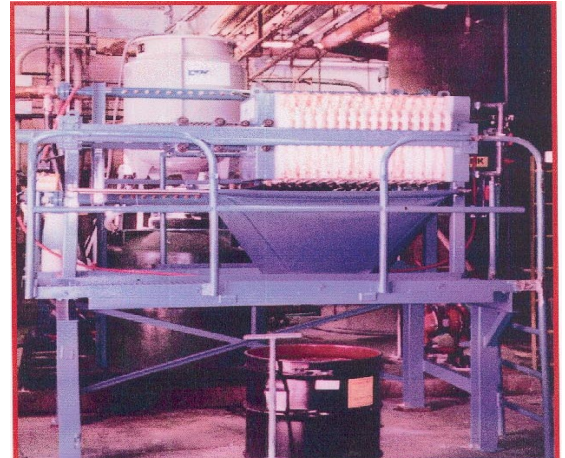
The remaining moisture is vaporized in a process that can be halted at any time to achieve the desired moisture level. At the conclusion of the drying phase, the DryVac plates open up and the dried sludge drops to a conveyor or auger below.

Summary of DryVac Advantages

- Relatively simple process with minimal health and safety risks
- Drier solids means less transport and disposal costs
- Enhanced treatment of bio-material is achieved
- Processes irradiated materials without contact or atmospheric exposure
- Eliminates the need to dispose of a Liquid Hazardous Waste
- Has no inert explosive content
- Mobile, Modular, or Permanent units
- Real time computer uplink via satellite is available
- Replaces the typical combination dewatering and drying steps below with one process
 - Belt Press and Thermal Dryer
 - Centrifuge and Drying ponds
 - Solar Evaporation Systems
- ***Dramatically reduces labor and equipment handling expenses***



SILICONE DRIVE AND CHIP WASTES



CORE BOARD PROCESS WASTE



METAL HYDROXIDES FROM ALUMINUM

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Dehydration & Environmental Systems, Inc.

Dehydration & Environmental Systems

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