Operational
Methyl Bromide Recapture Systems

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Summary – Emission Reduction

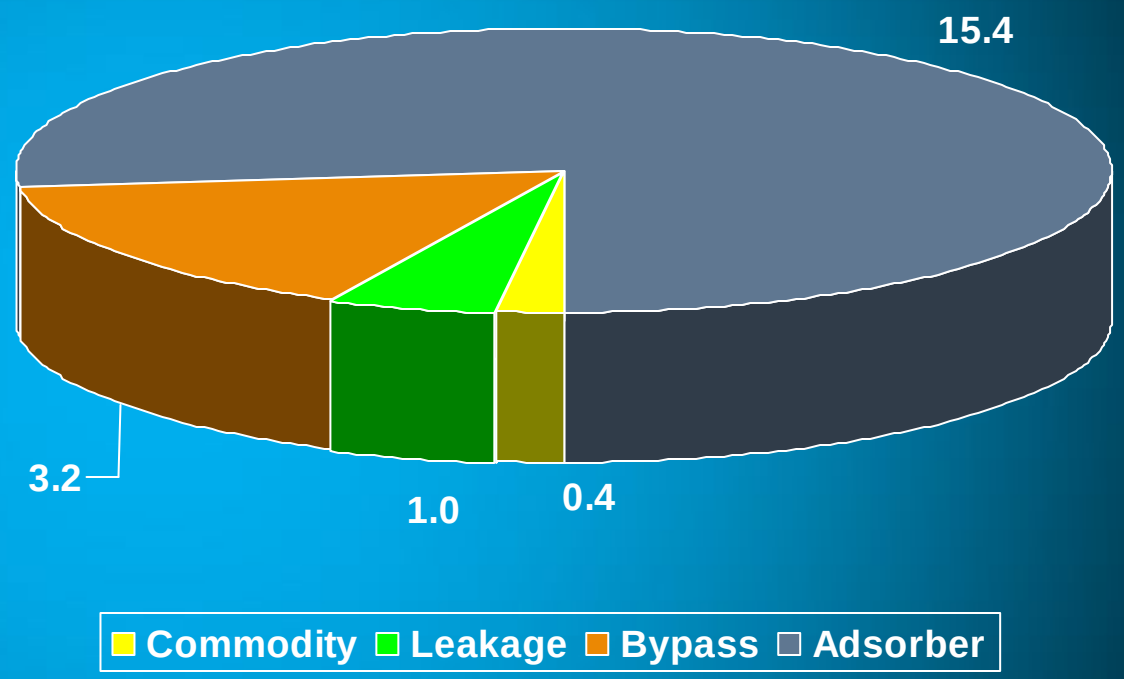
Mass Emitted	
Without Recapture	19.6 lbs
With Recapture	4.2 lbs
=79% Reduction	

Maximum Concentration	
Without Recapture	16,000 ppm
With Recapture	500 ppm
=97% Reduction	

Estimated Emissions

Assumptions:

- 40 ft. container with 40,000 lbs commodity
- 5,000 cubic feet fumigated space
- MeBr concentration of 4 lb/1000 cubic feet
- 20 lbs methyl bromide applied



Total Emission 4.2 lbs over 3-4 hours

D/FW International Perishable Treatment Center

D/FW International Perishable Treatment Center

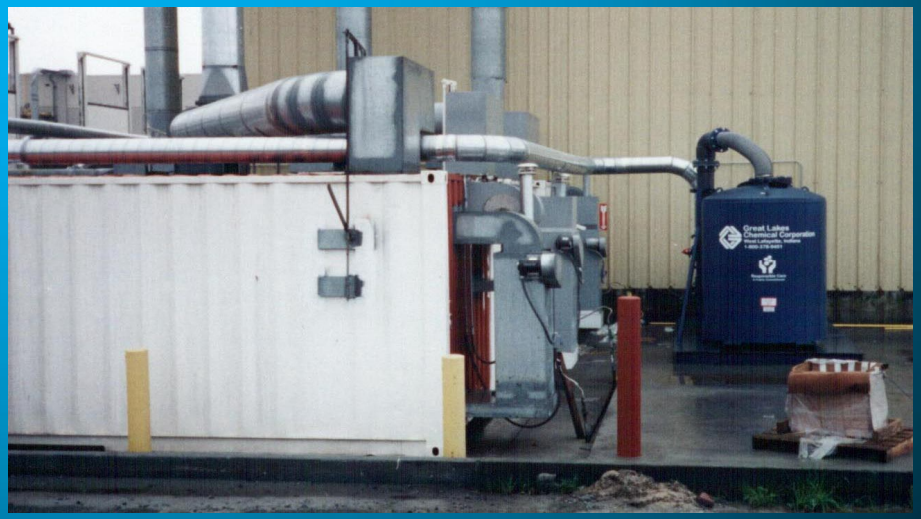
Recapture system - left view

Recapture system - right view

Well-Pict Strawberries Watsonville, CA

Fumigation chambers

Fumigation chambers and
Great Lakes Recapture System



Well-Pict Strawberries Watsonville, CA

Recapture system showing carbon canister, blower, and exhaust stack

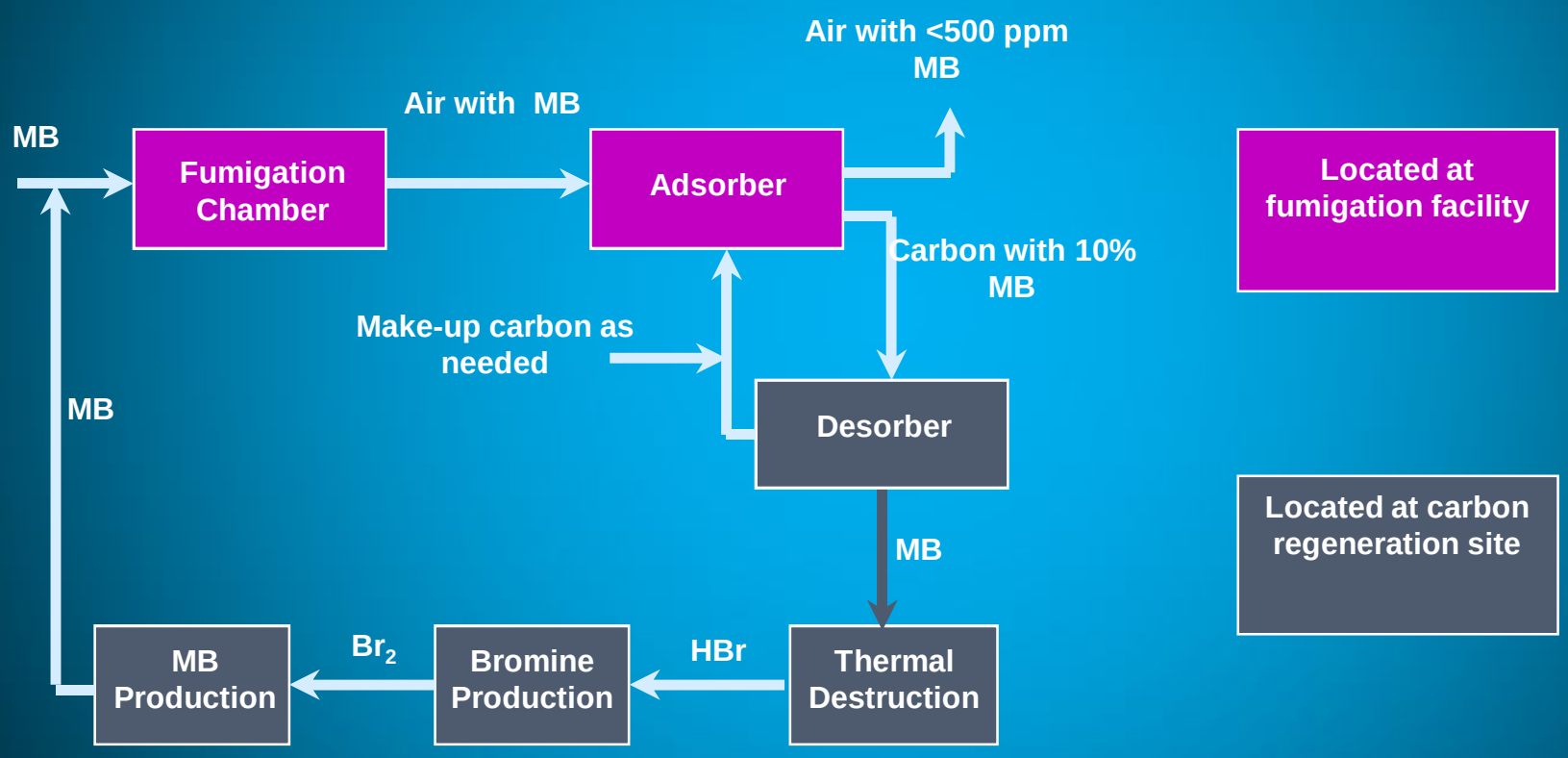
Carbon adsorber canister containing 2,500 lb. activated carbon

George Bush International Airport, Houston

Treatment and Inspection building

Methyl Bromide Recapture System

System Schematic



Recapture System Development

Conducted under a Cooperative Research and Development Agreement with USDA-ARS and GFK Consulting, 1995-99

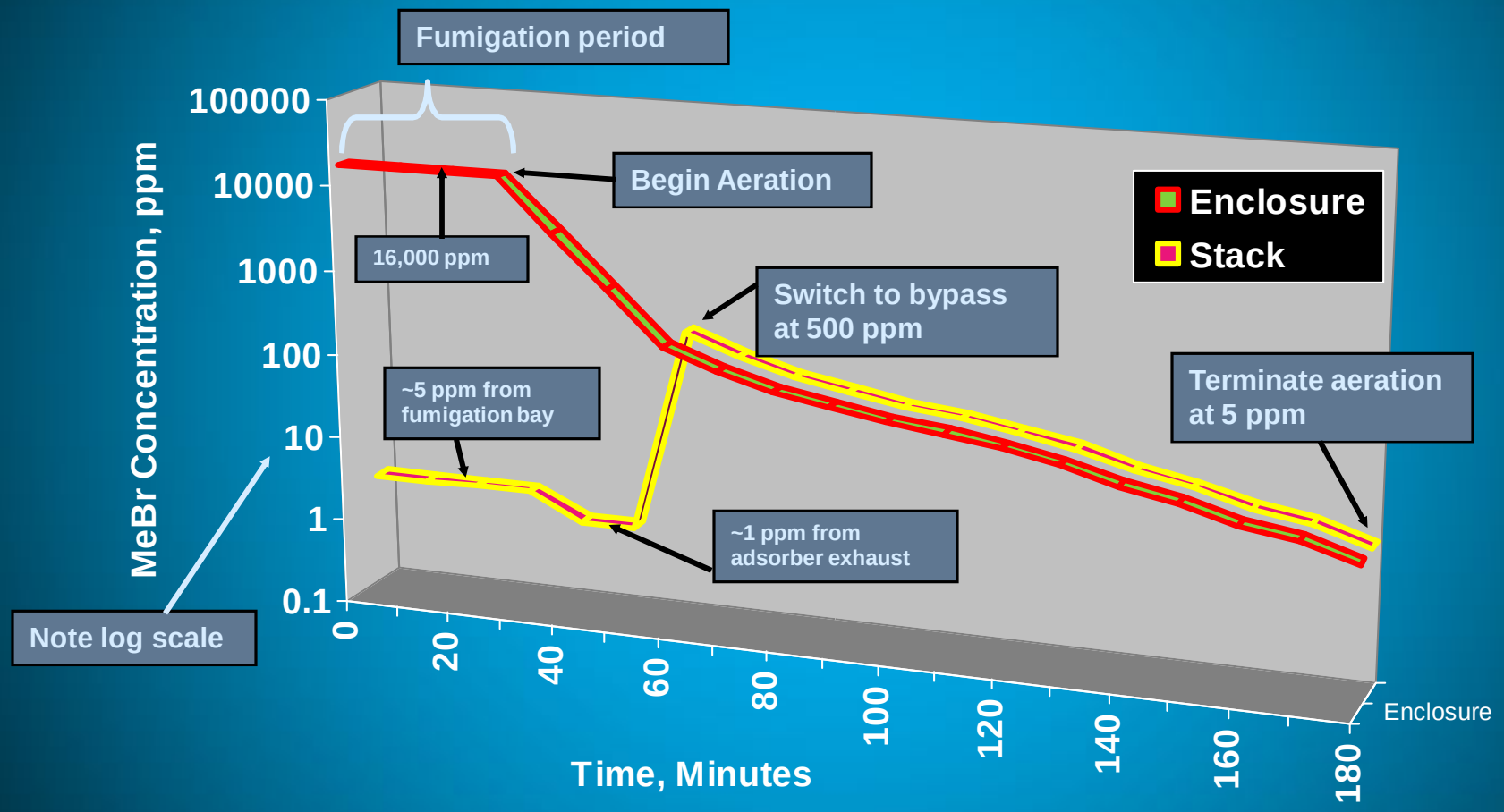
Lab and Pilot Work at ARS Lab in Fresno, CA with Dr. James Leesch

Mobile unit built by Tigg Engnieering and tested at fumigation facilities on the East and West Coasts

Fumigation Procedure

- Container is in place and covered with tarp
- Introduce fumigant into tarped space, monitor concentration
- At the end of the fumigation period, open the tarp and begin recovery ventilation
- When concentration reaches target concentration (250-500 ppm) as indicated by detectors, switch to bypass ventilation
- When concentration reaches 5 ppm, cease ventilation and remove tarp and commodity

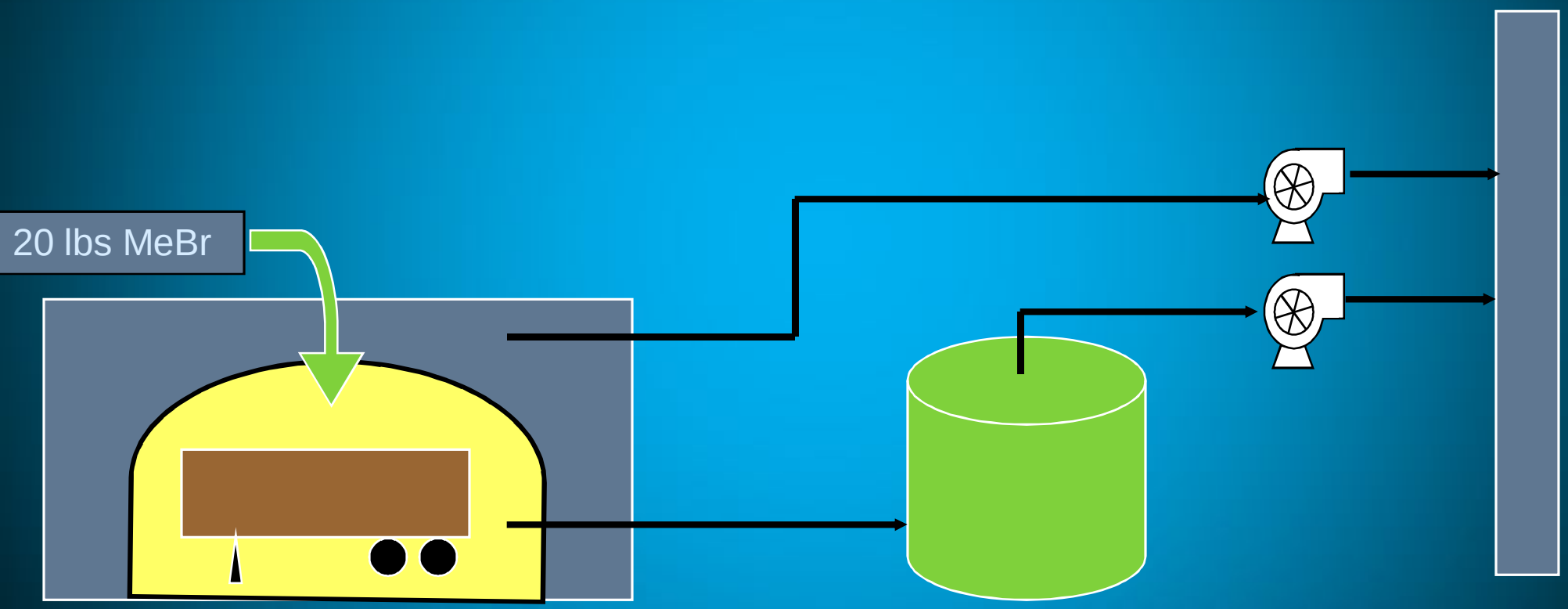
Concentration Profiles



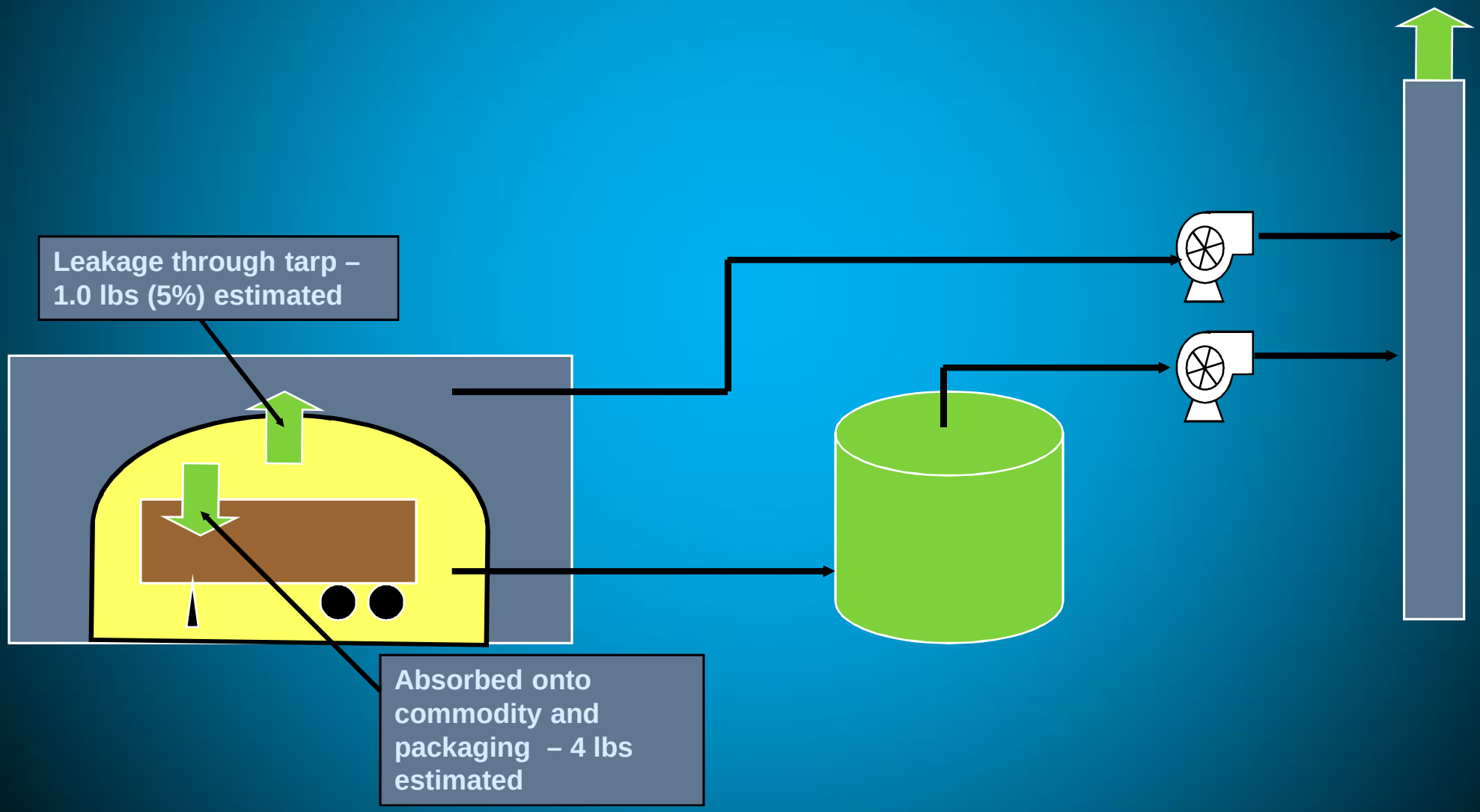
Typical Fumigation - *Assumptions*

- **40 ft. container with 40,000 lbs commodity**
- **5,000 cubic feet fumigated space**
- **MeBr concentration of 4 lb/1000 cubic feet**
- **20 lbs methyl bromide applied**

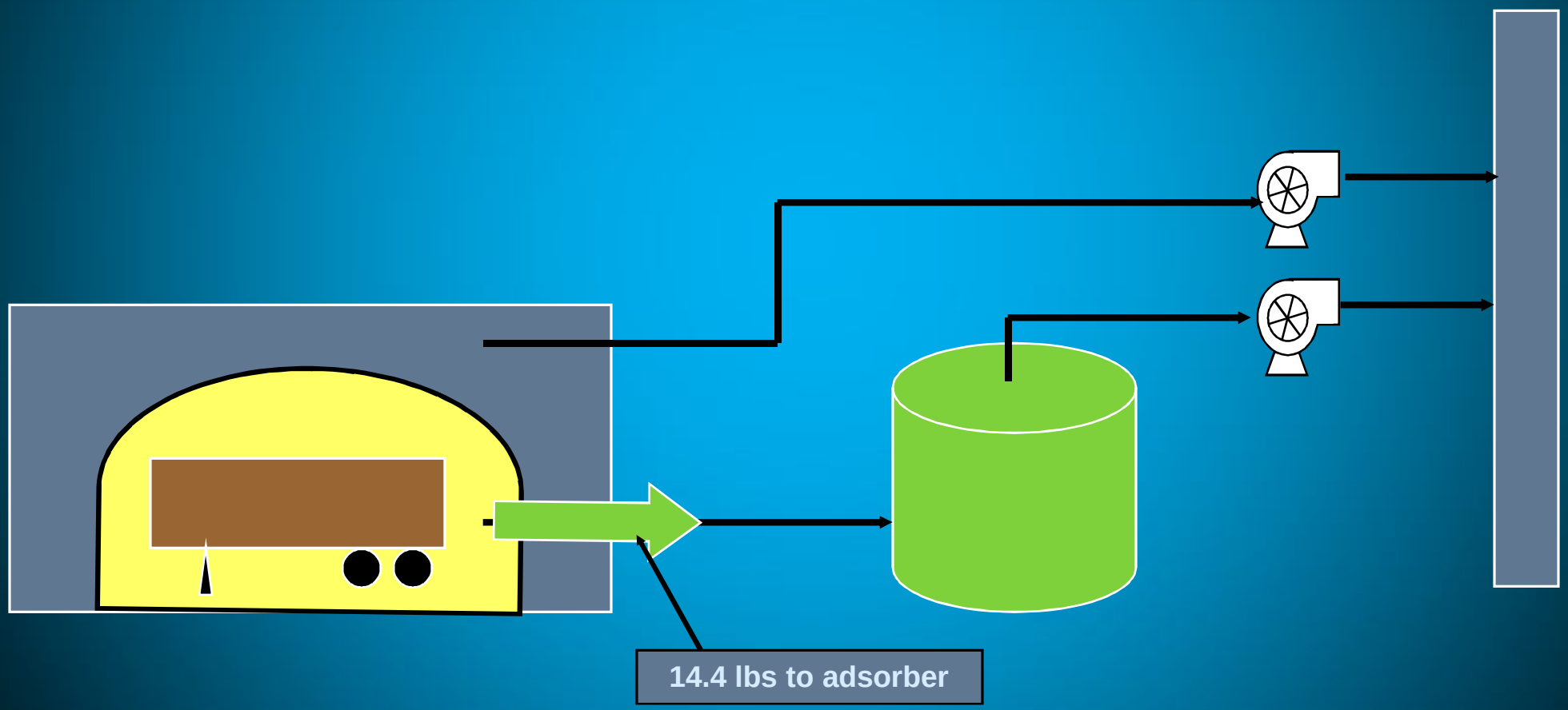
Fumigation - *Initiation*



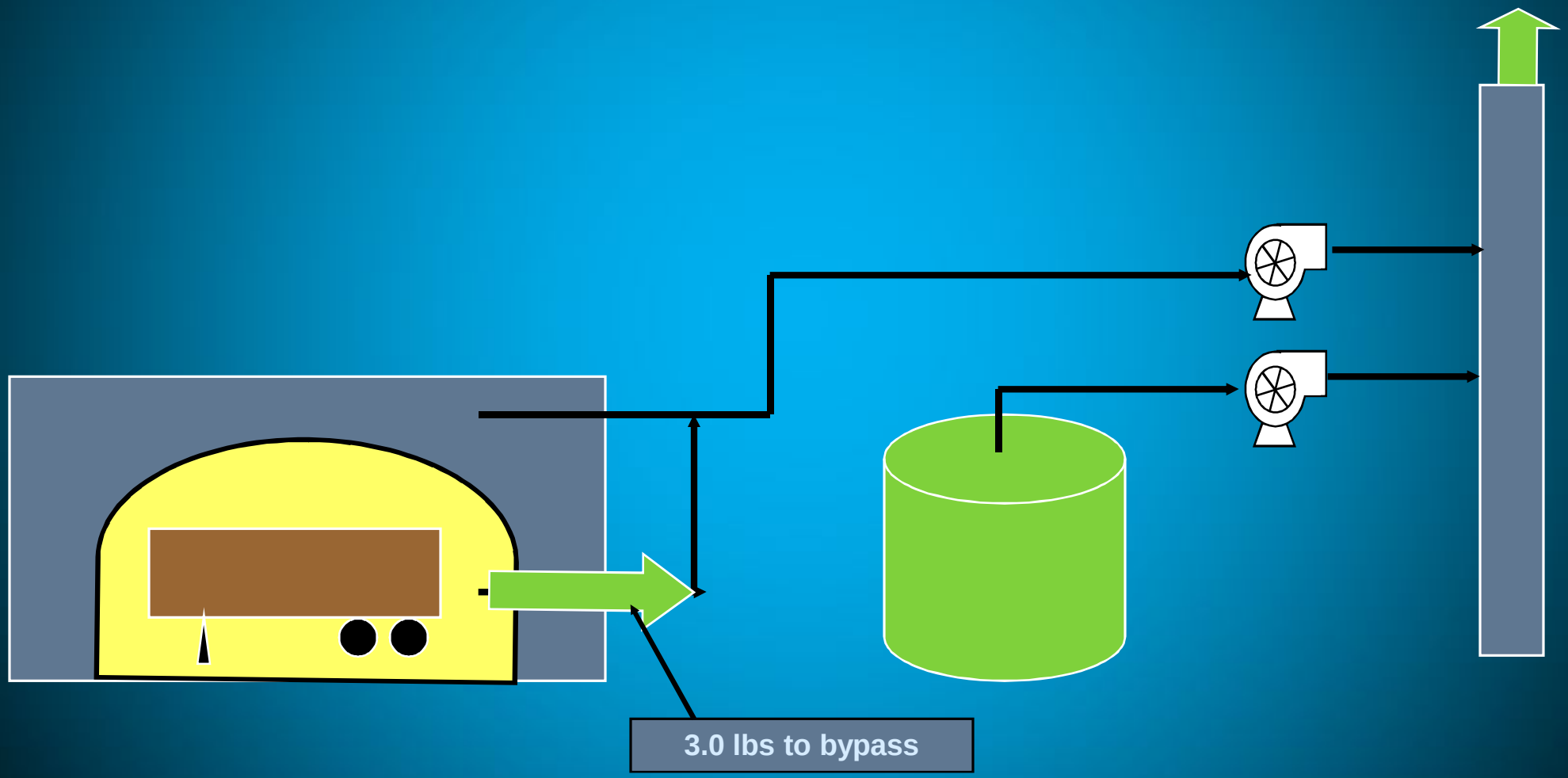
Estimated Emissions - *Fumigation*



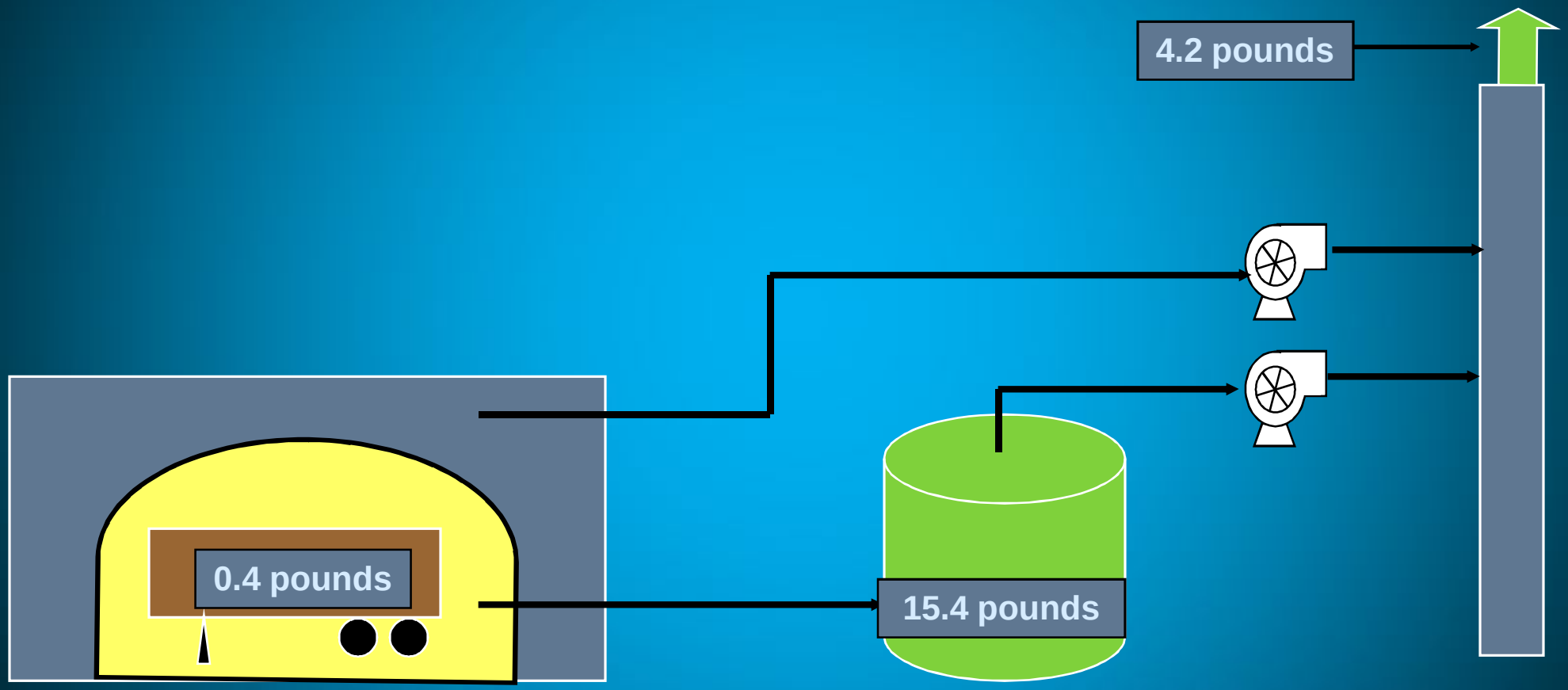
Estimated Emissions - *Aeration (Recapture)*



Estimated Emissions - *Aeration (Bypass)*



Material Balance



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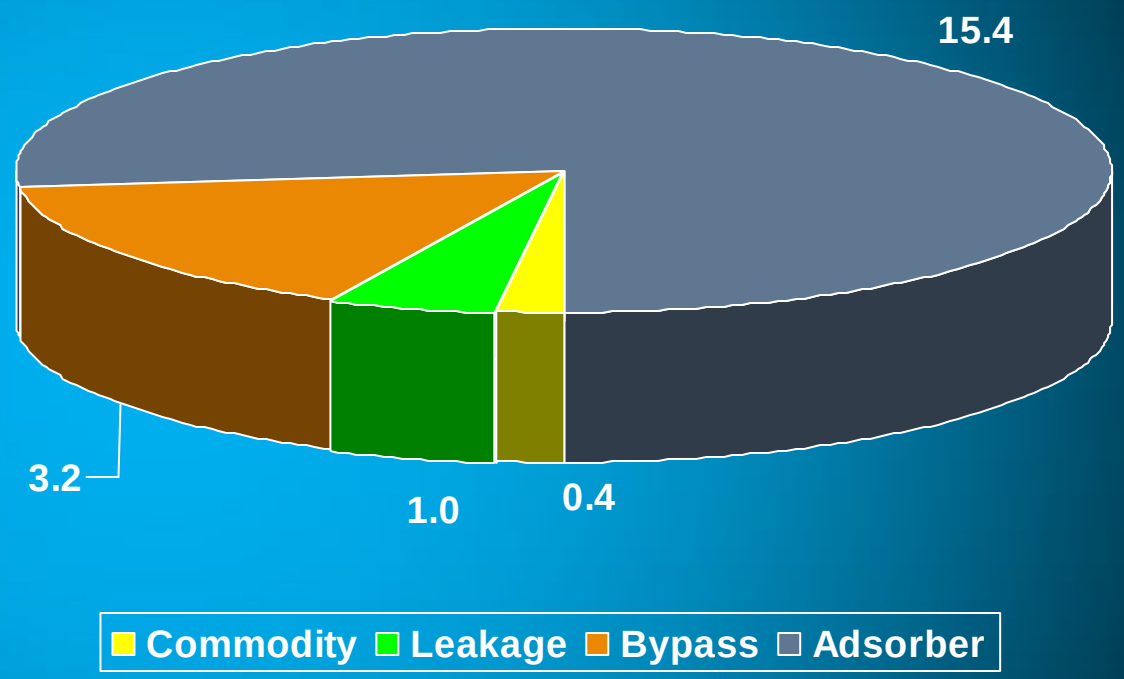

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