

# Summary of Spill Events in Canada, 1984-1995

## Environmental Emergencies Branch, Environment Canada

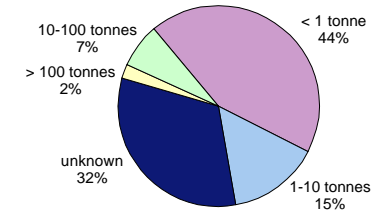
### Introduction

- The report provides a statistical summary of reported spill incidents in Canada, 1984-1995.
- Data used for the report were either reported directly to Environment Canada or through provincial/territorial spill reporting.
- The data are stored in the National Analysis of Trends in Emergencies System (NATES) database, established in 1973 to record information on voluntary reporting of pollution incidents.

### National Trends

- The number of reported spills increased in the late 1980s and has remained relatively constant since that time.
- A single major spill can have a significant impact on the total tonnes spilled during a given year.
- Of the total number of reported spills, oils account for 58%, non-oils 24% and the wastes and effluents category account for 18%.

Distribution of Frequency of Spill Size (tonnes), 1984-1995



An increased awareness of spill-reporting requirements have contributed to better spill reporting. A higher number of smaller size spills are being reported.

### Reported Spills by Sector

Chemical
Government
Metallurgy
Mining
Petroleum
Pulp & Paper
Service Industry



Seven sectors are examined

#### Findings

- The seven sectors represent 65% of the total number of reported spills and 93% of the volume.
- Spill reporting has improved over time.
- The petroleum and government sectors have the greatest number of reported spills over the 12 year period examined.
- Spill quantity either decreases or remains constant for most of the sectors.

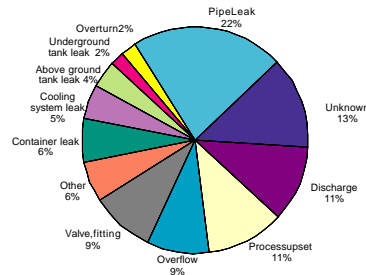
### Causes of Spills

#### WHAT went wrong ?



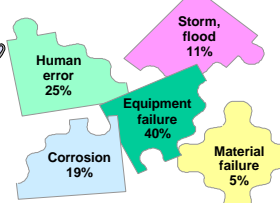
- Pipe leaks account for the majority of causes of spills in the seven sectors examined
- Other significant known causes: discharge, process upset and overflow

#### Causes of Spills in Seven Sectors



### Reasons for Spills

#### WHY it went wrong ?

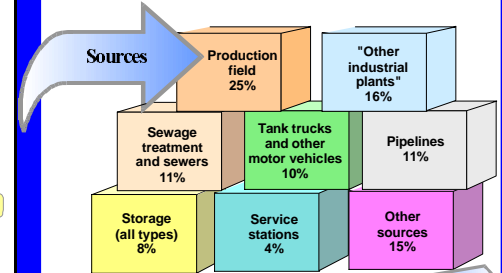


#### Top 5 Reasons

#### Findings

- In all seven sectors, equipment failure and human error are included among the top three reasons (sometimes referred to as 'root causes') of spills.
- Equipment failure, human error, corrosion, storm, flood and material failure account for 62% of all reasons.
- 71% percent of spills attributable to a storm or flood are sewage spills.

### Sources of Spills



#### Findings

- By examining the source or specific type of installation or vehicle that failed for the top five reasons, we can focus on the 'root cause', as it provides a view of the relative importance of each source.
- Spills that result from equipment failure occur most frequently in the production field and in other industrial plants.
- Pipeline spills and spills occurring in the production field together account for 87% of the spills resulting from corrosion.

### The Path Ahead

- Use data to target specific problem areas to assist in prevention efforts.
- Ongoing harmonization initiatives and better follow up for reporting strategies will ensure improved data capture in the future.
- Continue dialogue and information sharing with partners and clients.

