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## 2007 SPILLS SUMMARY REPORT



### Introduction

The Ministry of the Environment is committed to keeping the public informed about environmental events and activities under its jurisdiction. This summary report provides information about the number of reported spills recorded by the ministry's Spills Action Centre (SAC) during 2007.

Provincial law requires that all pollutants spilled into the natural environment must be reported forthwith to the Ministry. This requirement applies to both the person who causes or permits a spill and the person who has control of the pollutant immediately before the discharge. In addition a member of a public agency must report a spill if they have reason to believe that the spill has not already been reported to the Ministry.

SAC provides a province-wide toll-free number – 1-800-268-6060 – which is answered by environmental officers 24 hours a day, seven days a week.

The primary role of SAC is to receive reports of spills and other environmental matters. When spills do happen, the consequences can be serious, threatening or potentially threatening to the health and safety of people, as well as the environment. All reports of spills and any other reported events are assessed by SAC's environmental officers who then determine what, if any, further response should be taken by the ministry.

Supporting other agencies in the discharge of their responsibilities is another aspect of SAC's work. SAC serves as a reporting conduit for Environment Canada (Ontario Regional Office) and Ontario's Technical Standards and Safety Authority (TSSA), among others.

### About the Information

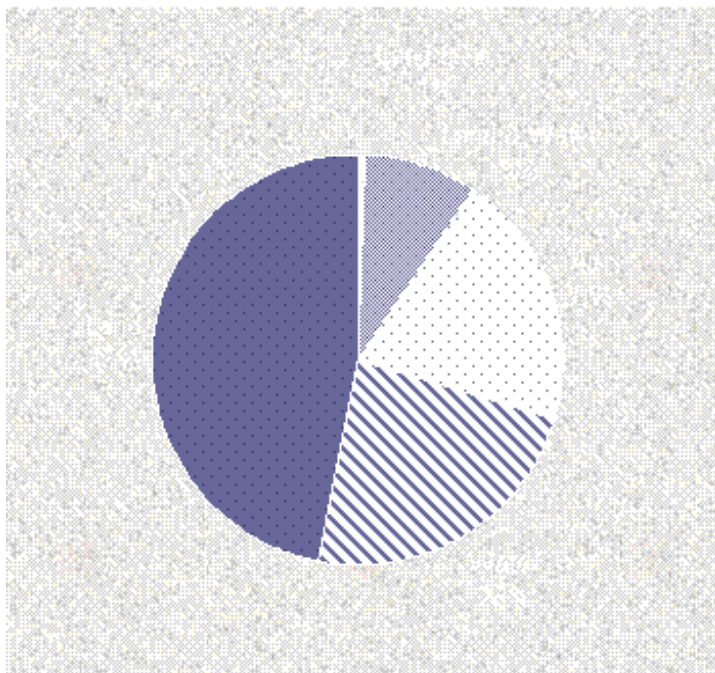
The information found in this report is taken from the reports made to SAC and the documentation that resulted from the initial point of contact between the person reporting the spill and SAC. As a result, the 2007 Spills Summary should be viewed as a "snapshot" of the data as first reported and documented in the ministry's database.

All spills reported to SAC are recorded in the ministry's database, regardless of whether or not the ministry becomes directly involved. For example, the database captures fuel related spills that fall under the mandate of the Technical Standards and Safety Authority (TSSA).

### Overview: 2007 Spills

The Spills Action Centre documented 4,450 spills during 2007. Nearly half – 2,078 or 47% – were spills to land. Spills to water numbered 1,039 (23%) and spills to air 893 (20%). The remaining spills affected more than one media: 392 were to land and water; 27 were to land and air; 12 were to land, water and air (not reflected in chart) and water and air received 9 spills (not reflected in chart). Figure 1 shows the relative proportions of spills to the various media and combinations thereof.

### Figure 1 - Spills by Receiving Media for 2007



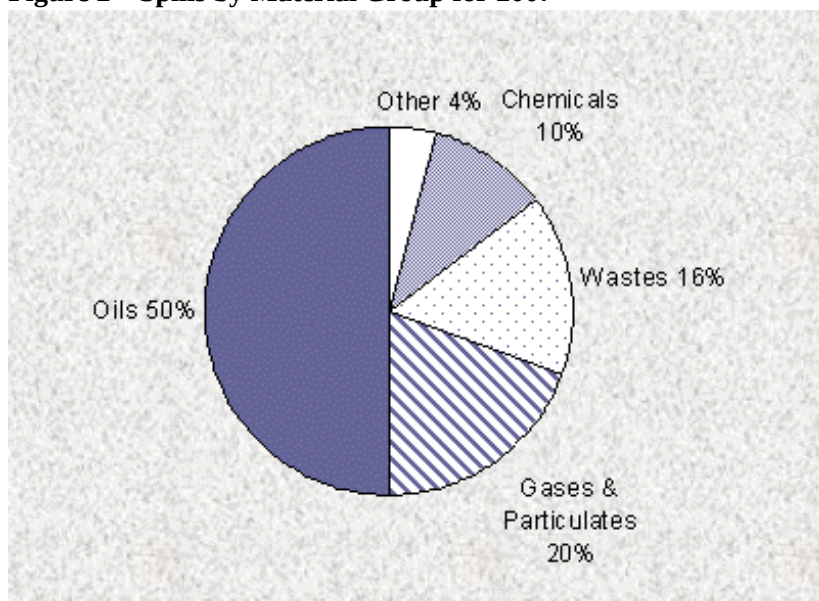
## Types of Materials Spilled

SAC records only the primary material involved in a spill, though a few spills will involve more than one material. The categories used to group the materials spilled are:

- Oils: includes crude, gasoline, jet fuel, kerosene, and all light and heavy petroleum oils.
- Chemicals: includes acids, bases, solvents, pesticides and other organic and inorganic chemicals.
- Gases and Particulates: includes smoke, dust/particulates, nitrous oxide, natural gas, etc.
- Wastes: includes liquid industrial, liquid hazardous, sewage, agricultural and other wastes.
- Other: includes feed and foodstuffs and other substances.

In descending order, for 2007, the number of spills by material is as follows: oils (2, 219); gases and particulates (877); wastes (699); chemicals (465); other (190). As shown in Figure 2 below, spills of “oil” made up the majority of spills in 2007.

**Figure 2 – Spills by Material Group for 2007**

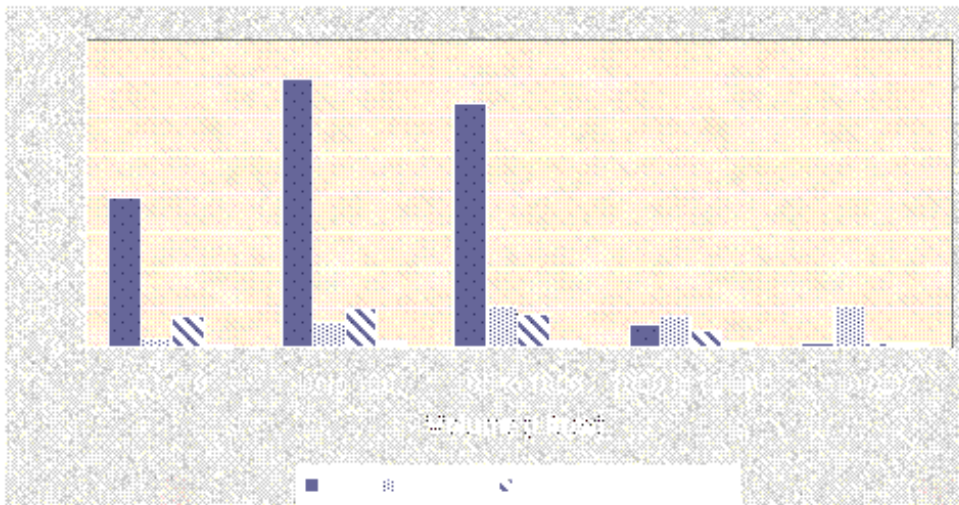


Other - includes Feed and Foodstuff, Not Applicable, Miscellaneous and Unknown substances

## Volumes of Materials Spilled

SAC documents the volume of a spill **if** it is known and, if known, is reported. Also, SAC documents the information available when the report is first made. Information on volume, for example, that becomes available later is not necessarily included in this summary data. Note also that volume is not related to toxicity or environmental threat. A small, highly concentrated spill may be more serious than a larger spill of a highly diluted substance. In 2007, of the 4, 450 spills reported, there were volumes (litres) associated with 2, 551 spills (57%).

**Figure 3 - Spills by Volume for 2007**



For reporting on this aspect of spills, they are grouped into one of four categories: oils, wastes, chemicals and other. As Figure 3 shows, most of the smaller spills (<1,000 litres) are spills of oil, though the number of them is quite large – 2, 216 in 2007. The largest spills (>10,000 litres) where volume was reported are of wastes, though they are much fewer in number – 105 in 2007.

Many oil spills are related to the loss of fuels and cargo in transportation accidents. The 2007 data that shows that, where volumes were known and reported, the number of oil spills with between 10 to 100 litres was the single largest grouping of any material spilled, and accounted for almost 27% of all spilled materials with known volume.

Spills of waste reported to SAC in 2007 normally involves unintended wastewater discharges where the material of concern likely constitutes a relatively small proportion of the total volume spilled (e.g. abnormal bypass or wastewater treatment processes resulting in the discharge of raw or partially treated sewage).

## Environmental Impact

Spills are reported to the Ministry of the Environment, through SAC, because of the potential for environmental impacts. When a spill is first reported, an environmental officer makes an assessment of the seriousness of the spill, including the likelihood that an environmental impact may result. This is only a preliminary assessment, in order to identify those spills that require a priority field response. In categorizing reports of spills by seriousness, SAC uses a framework consistent with the Environmental Protection Act that places spills into one of three categories:

- Environmental Impact Not Anticipated (e.g. small spill to concrete)
- Environmental Impact Possible but Not Confirmed (e.g. spill to catch basin)
- Environmental Impact Confirmed (e.g. confirmed by the ministry or another agency)

During 2007, 34% of spills reported to SAC were categorized as “environmental impact not anticipated”. Spills in the category of “environmental impact possible but not confirmed” accounted for 20% of the total spills reported to SAC in 2007. This category includes spills reported not because they were known to cause an adverse effect, but because the spills “may cause an adverse effect” as this phrase is defined in the Environmental Protection Act. An environmental impact was confirmed for 47% of spills reported to SAC in 2007.

The table below shows the distribution of 2007 spills by environmental medium and impact.

**Table 1 – 2007 Spills by Environmental Medium and Impact**

| MEDIUM                       | IMPACT          |            |             | Total       |
|------------------------------|-----------------|------------|-------------|-------------|
|                              | Not Anticipated | Possible   | Confirmed   |             |
| Air                          | 165             | 171        | 557         | 893         |
| Land                         | 863             | 384        | 831         | 2078        |
| Water                        | 334             | 238        | 467         | 1039        |
| Multiple Media               | 133             | 90         | 217         | 440         |
| <i>Air &amp; Land</i>        | 7               | 4          | 16          | 27          |
| <i>Land &amp; Water</i>      | 120             | 85         | 187         | 392         |
| <i>Land, Water &amp; Air</i> | 4               | 1          | 7           | 12          |
| <i>Water &amp; Air</i>       | 2               | 0          | 7           | 9           |
| <b>Total</b>                 | <b>1495</b>     | <b>883</b> | <b>2072</b> | <b>4450</b> |
| <b>Percentage</b>            | <b>34%</b>      | <b>20%</b> | <b>47%</b>  |             |

The information in the ministry's database related to environmental impact can also be organized by types of material spilled as demonstrated in the following table.

**Table 2 – 2007 Spills by Material Group and Environmental Impact**

| Material Group         | Environmental Impact |            |             | Total       |
|------------------------|----------------------|------------|-------------|-------------|
|                        | Not Anticipated      | Possible   | Confirmed   |             |
| Oils                   | 843                  | 421        | 955         | 2219        |
| Chemicals              | 201                  | 87         | 177         | 465         |
| Gases and Particulates | 162                  | 170        | 545         | 877         |
| Wastes                 | 221                  | 166        | 312         | 699         |
| Other                  | 68                   | 39         | 83          | 190         |
| <b>Total</b>           | <b>1495</b>          | <b>883</b> | <b>2072</b> | <b>4450</b> |

## Sources of Spills

Identifying the predominant sources of spills assists the ministry in achieving its environmental protection mandate. The ministry's database records the "sources" or "sectors" of the spills, as applicable and to the extent possible, based on the information in the reports. The data for 2007 shows that, when aggregated, transportation-related spills (motor vehicles, transport trucks and tank trucks) are the single largest group of spills reported to SAC, accounting for 1055 or 24% of spills.

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