

Occupational Fatalities in the Oil and Gas Industry (AB & SK)

2001 to 2021

Data Source: WCB Alberta, Saskatchewan WCB, AWCBC, data as of Q4 2021

Report Date: Aug. 2, 2022

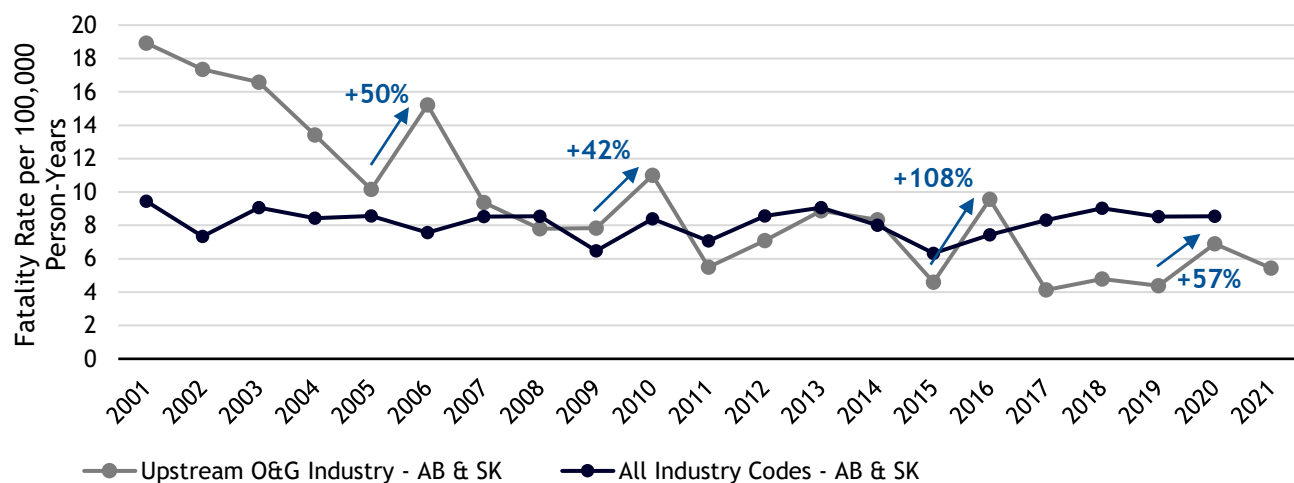
This report analyses occupational fatalities within Energy Safety Canada’s funding sectors in the provinces of Alberta and Saskatchewan, including a year-over-year comparison of the fatality rate (number of fatalities per 100,000 person-years). This report addresses all categories of occupational fatalities including workplace incidents, work-related transportation accidents and chronic occupational diseases from exposure to harmful substances.

1.0 OCCUPATIONAL FATALITY RATE AND TREND

In the oil and gas industry in Alberta and Saskatchewan, 320 people died on the job over a 21-year period. As Figure 1 illustrates, there is a significant decline in the fatality rate of almost 90% since 2001. It also highlights a significant increase in the fatality rate during periods of industry growth.

Figure 1 also compares the oil and gas Fatality Rate to the overall Fatality Rate for all industry codes within Alberta and Saskatchewan. Between 2001 and 2010, the Fatality Rate for the oil and gas industry was higher than the combined provincial average. In 2011, the oil and gas fatality rate was lower than the average for the first time, and the downward trend continues.

FIG 1: OCCUPATIONAL FATALITY RATE TREND IN ALBERTA AND SASKATCHEWAN

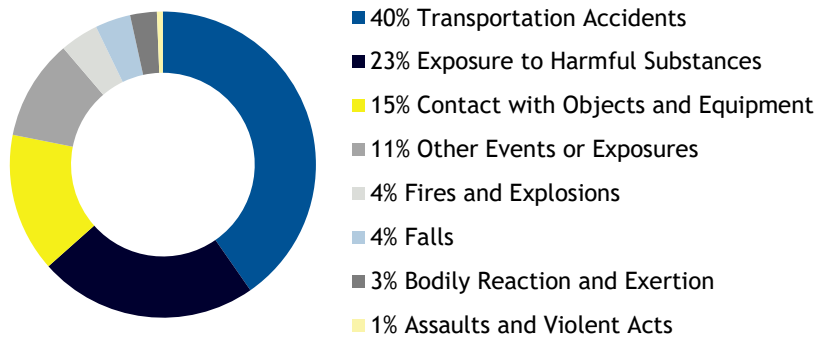


“All Industry Codes” data retrieved from AWCBC. 2021 data unavailable.

2.0 EVENT OR EXPOSURE TYPES

Occupational injuries are classified based on a standardized set of definitions. In Figure 2, fatalities are grouped by category of accident type. Transportation Accidents accounts for 40% of the total occupational fatalities, followed by Exposure to Harmful Substances (23%) and then Contact with Objects and Equipment (15%).

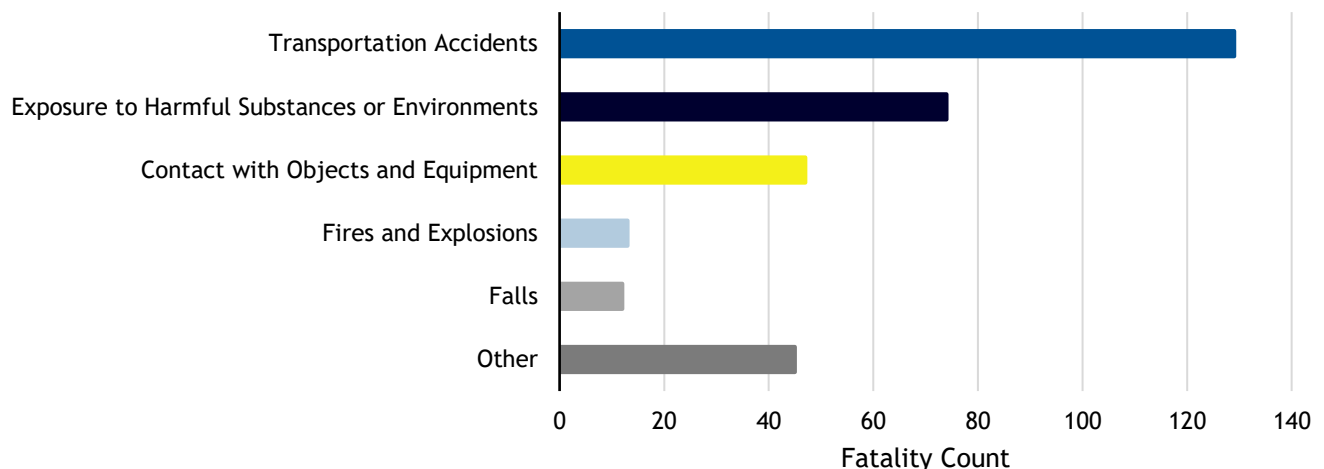
FIG 2: EVENT OR EXPOSURE TYPE (BY FATALITY COUNT)



3.0 EVENT OR EXPOSURE TYPE TREND - TOP FIVE ACCIDENT TYPES

Figure 3 below presents the fatality count trend for the five most common fatalities in the oil and gas industry. These accidents account for 86% of all fatalities. Transportation Accidents are the largest cause of death for most years.

FIG 3: TOP FIVE EVENT OR EXPOSURE TYPES, BY NUMBER OF FATALITIES



4.0 TOP FIVE EVENT OR EXPOSURES - SUB-CATEGORIES

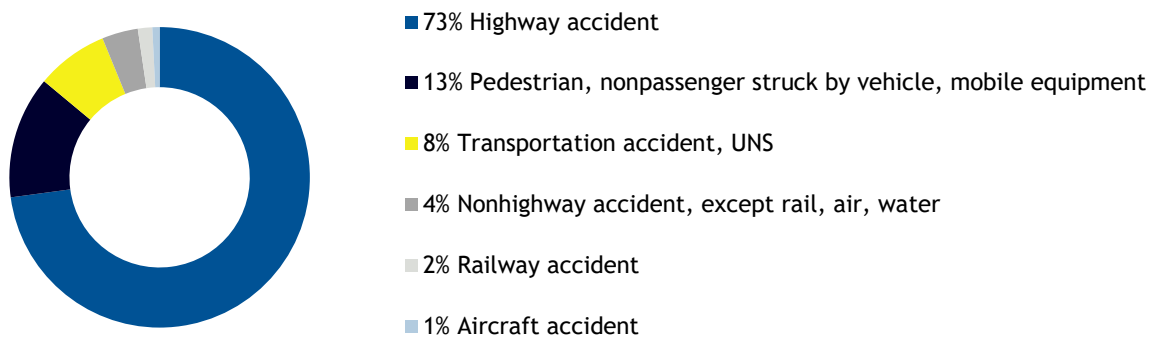
The five largest accident types are broken into more specific sub-categories.

4.1 TRANSPORTATION ACCIDENTS (40% OF TOTAL OCCUPATIONAL FATALITIES):

This division covers events involving transportation vehicles, powered industrial vehicles, or powered mobile industrial equipment in which at least one vehicle (or mobile equipment) is in normal operation, and the injury or illness is due to a collision or other type of traffic accident, a loss of control, or a sudden stop, start, or jolting of a vehicle, regardless of the location where the event occurred. Cases classified in this division include pedestrians, roadway workers, and other non-passengers struck by vehicles or powered industrial equipment, on or off the roadway, when at least one vehicle was in regular operation and the impact was caused by a traffic accident or forward/backward travel of the vehicle.*

Within this category, Highway Accidents account for 73% of total occupational fatalities.

FIG 4: TRANSPORTATION ACCIDENTS SUB-CATEGORIES

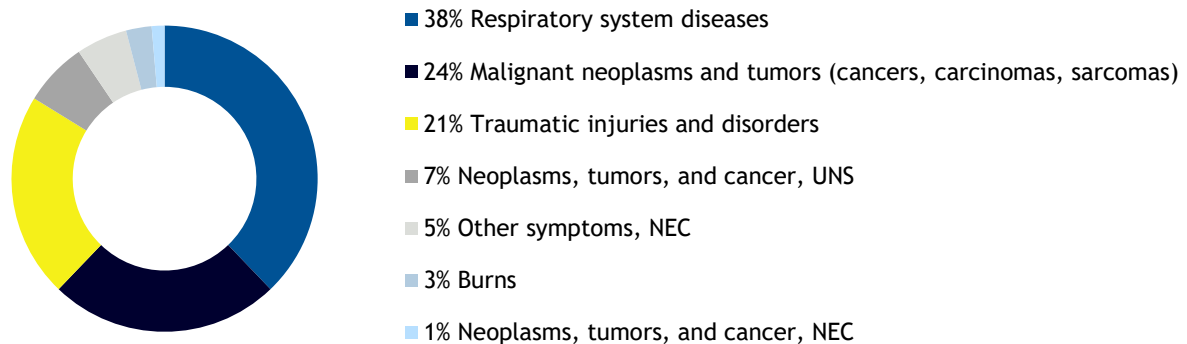


4.2 EXPOSURE TO HARMFUL SUBSTANCES (23% OF TOTAL OCCUPATIONAL FATALITIES):

[This category applies] to cases in which the fatality results from contact with, or exposure to, a condition or substance in the environment.*

Occupational diseases, like asbestosis, mesothelioma or other systemic disorders, resulted in 76% of these fatalities. The remainder were mostly chemical and electrical burns.

FIG 5: EXPOSURE TO HARMFUL SUBSTANCES, NATURE OF INJURY

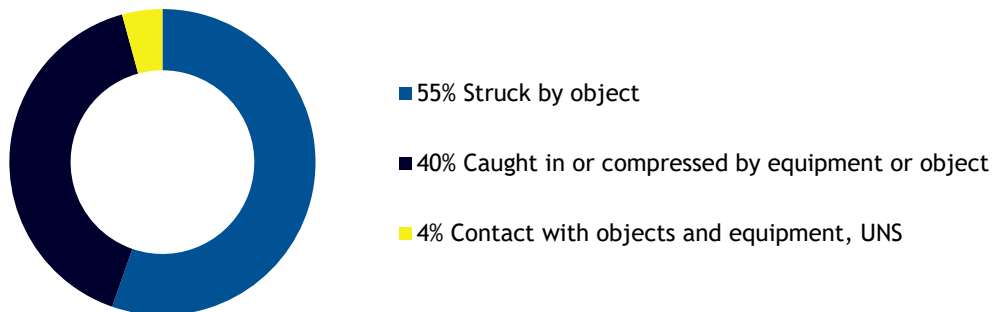


4.3 CONTACT WITH OBJECTS AND EQUIPMENT (15% OF TOTAL OCCUPATIONAL FATALITIES):

[This category applies] to occupational fatalities caused by contact between the injured person and the source of injury, except when contact was due to a fall, transportation accident, fire, explosion, assault, or violent act.*

Within this category, 55% of fatalities resulted from the worker being struck by an object, most often a falling object.

FIG 6: CONTACT WITH OBJECTS SUB-CATEGORIES

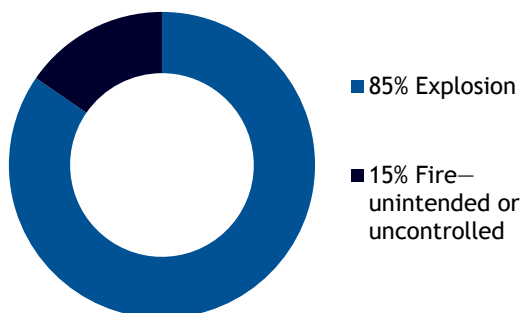


4.4 FIRES & EXPLOSIONS (4% OF OCCUPATIONAL FATALITIES):

Cases in which the injury or illness resulted from an explosion or fire. Included are cases in which the person fell, jumped, inhaled a harmful substance, or struck or was struck by an object as a result of an explosion or fire.*

Explosions caused 85% of these fatalities.

FIG 7: FIRES & EXPLOSIONS SUB-CATEGORIES

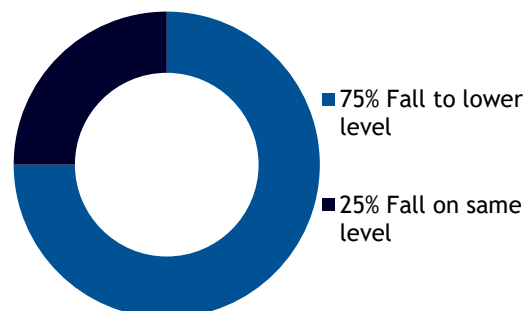


4.5 FALLS (4% OF OCCUPATIONAL FATALITIES):

Falls are events in which the injury is produced by impact between the injured person and the source of injury when the motion producing contact was generated by gravity.*

75% of these fatalities were due to a fall from height.

FIG 8: FALLS SUB-CATEGORIES



* Source: CSA Standard Z795

DEFINITIONS

Fatality: An occupational fatality is defined as the death of a worker resulting from a work-related incident or exposure that is accepted by the WCB for compensation.

Fatality Rate: The measure of frequency with which fatalities occur. It represents the count of occupational fatalities per one hundred thousand person-years.

Fatality Rate - All Industry Codes: The Fatality Rate for all industry codes within Western Canada were obtained from the Association of Workers' Compensation Boards of Canada (AWCBC) (<http://awcbc.org/>)

Fatality Type: The type of accident, also called event or exposure, as per *CSA Standard Z795 - Coding of Work Injury or Disease Information*. It defines the way an injury or disease was caused or inflicted.

NEC: Acronym for "Not Elsewhere Classified". This code is used when the type of fatality doesn't match any other defined sub-type.

Person-Years (PY): Estimated number of full-time equivalent workers (2,000 work hours). It is derived from the employer's reported insurable earnings (assessable payroll) and the industry's average wage.

UNS: Abbreviation for "Unspecified". This code is used when there is insufficient information about the fatality type to assign a more detailed description.

Energy Safety Canada's Funding Sectors: The fatality claims data for the following oil and gas industry codes within two provinces (Alberta and Saskatchewan) is aggregated for the report analysis:

ALBERTA

#	Industry Code Description	Industry Code
1	Drilling-Oil/Gas Wells	9600
2	Drilling-Rathole/Rig Anchor	9904
3	Drilling-Shot Hole	9201
4	Field Production Operations	6305
5	Mud Logging Services	9900
6	NDT Testing Including Visual Inspect	51502
7	Oil & Gas-Upstream	6300
8	Oil Field Maintenance/Construction	6304
9	Oilfield Downhole Services	9911
10	Oilfield Services-Christmas Tree	9921
11	Oilfield Services-Sump Pit	9927
12	Oilsands Operation	6600
13	Pipeline Transmission-Oil/Gas	51501
14	Refine-Crude/Used Oil	36500
15	Remove/Treat-Hazardous Waste	36502
16	Seismic Survey	9200
17	Sulphur Process	6501

18	Trucking Service-Oilfield	50720
19	Vacuum Removal-Wet/Dry Waste	6306
20	Well Casting Services	9915
21	Well Servicing with Service Rigs	9903

SASKATCHEWAN

#	Rate Code Name	Rate Code
1	Operation of Oilwells	D32
2	Oilwell Servicing	D41
3	Service Rigs and Water Well Drilling	D51
4	Seismic Drilling	D52

Data Disclaimer: While every reasonable effort has been made to ensure the accuracy of the data used in this report, data should be read as indicative of scope rather than exact figures. The variable nature of WCB claims management may be reflected in the data shown. Please contact PMetrics@EnergySafetyCanada.com for any concerns or questions regarding this report.