

Preliminary Report: Occupational Fatalities in the Oil & Gas Industry in Western Canada (AB, BC & SK) - 2001 to 2019 YTD

Data Source: WCB Alberta, WorkSafeBC and Saskatchewan WCB, data as of Q4 2019
 Data Type: Fatalities including Workplace Incidents, Transportation Accidents and Diseases
 Report Date: February 5, 2020

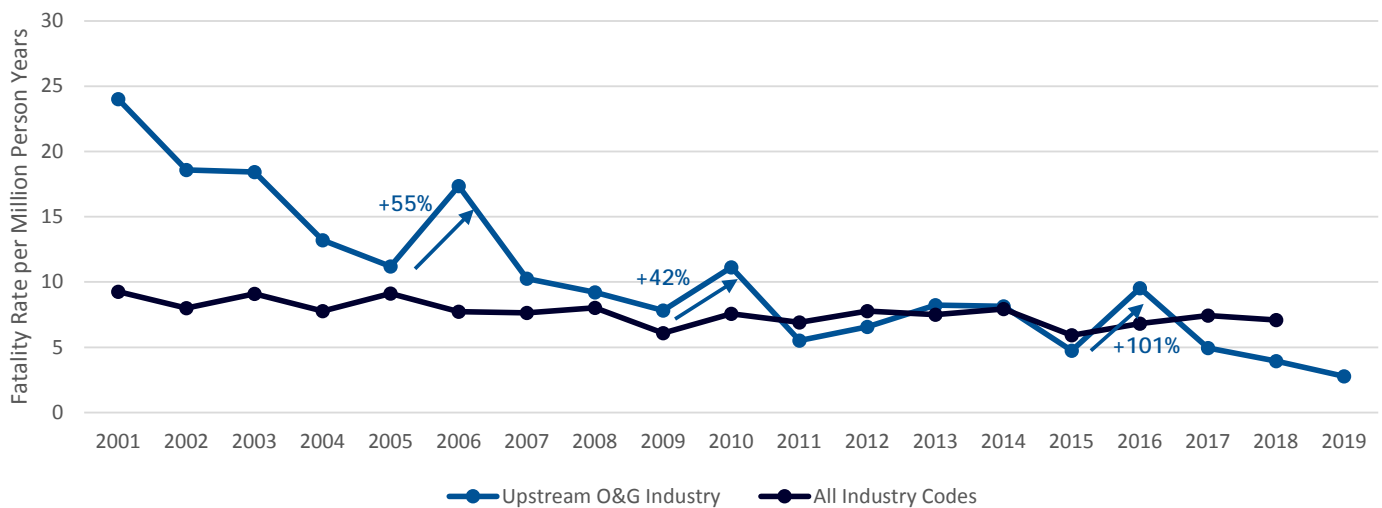
This report presents an analysis of occupational fatalities occurring within Energy Safety Canada's funding sectors in the provinces of AB, BC and SK. A year-over-year comparison is done on the Fatality Rate (number of fatalities per 100,000 person years). All categories of the occupational fatalities are included in this report; workplace incidents, work related transportation accidents and chronic occupational diseases from exposure to harmful substances.

1.0 Occupational Fatality Rate & Trend

In the oil and gas industry in Western Canada, 341 people died on the job over a 19-year period. There has been a significant decline in the fatality rate since 2001—the rate has dropped by almost 90% by 2019. The trend graph also highlights a significant increase in the fatality rate during periods of industry growth.

The graph below also benchmarks the oil and gas Fatality Rate to the overall Fatality Rate for all industry codes within B.C., 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

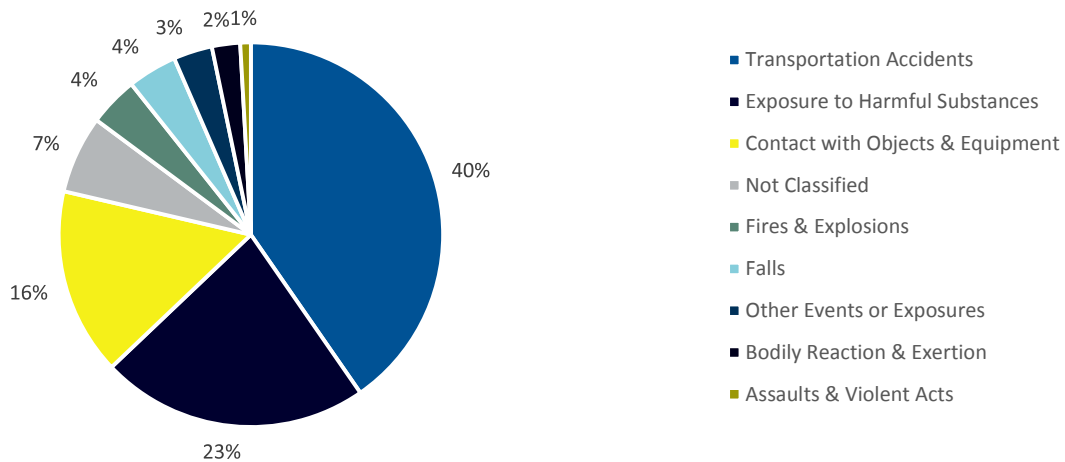


Preliminary Report: Occupational Fatalities in the Oil & Gas Industry in Western Canada (AB, BC & SK) - 2001 to 2019 YTD

2.0 Event or Exposure Types

Occupational injuries are classified based on a standardized set of definitions. In the pie chart below, each fatality was grouped by various categories of accident types. Transportation Accidents accounts for 40% of the total occupational fatalities; followed by Exposure to Harmful Substances (23%) and then Contact with Objects & Equipment (16%).

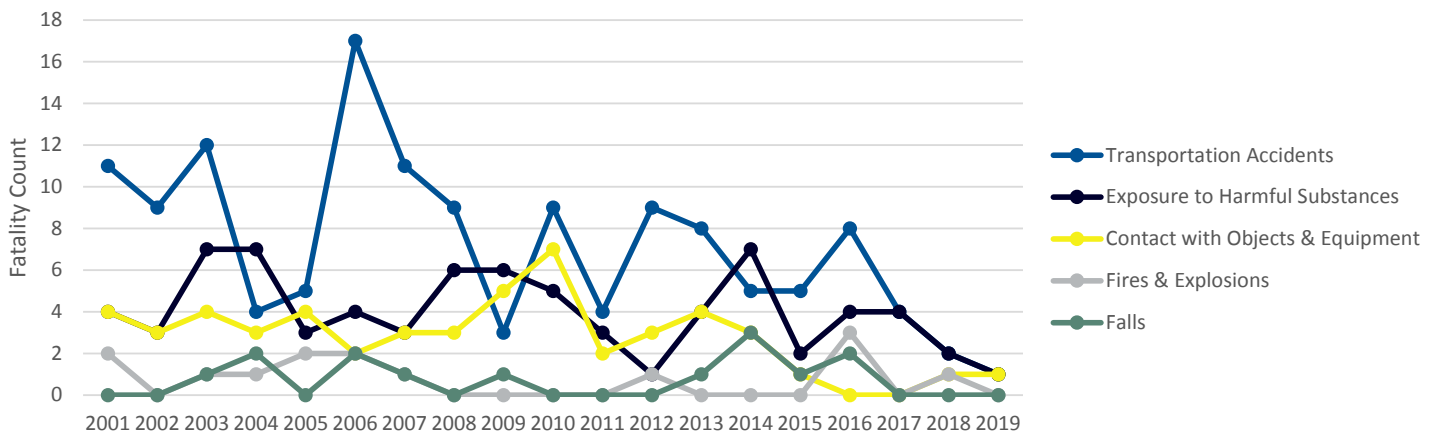
Fig 2: Event or Exposure Type (by Fatality Count)



3.0 Event or Exposure Type Trend - Top Five Accident Types

The chart below presents the fatality count trend for the five most common fatalities in the oil and gas industry. These accidents account for 87% of all fatalities. Transportation Accidents have been the largest cause of death for most years.

Fig 3: Top Five Event or Exposure Types, by Number of Fatalities



Preliminary Report: Occupational Fatalities in the Oil & Gas Industry in Western Canada (AB, BC & SK) - 2001 to 2019 YTD

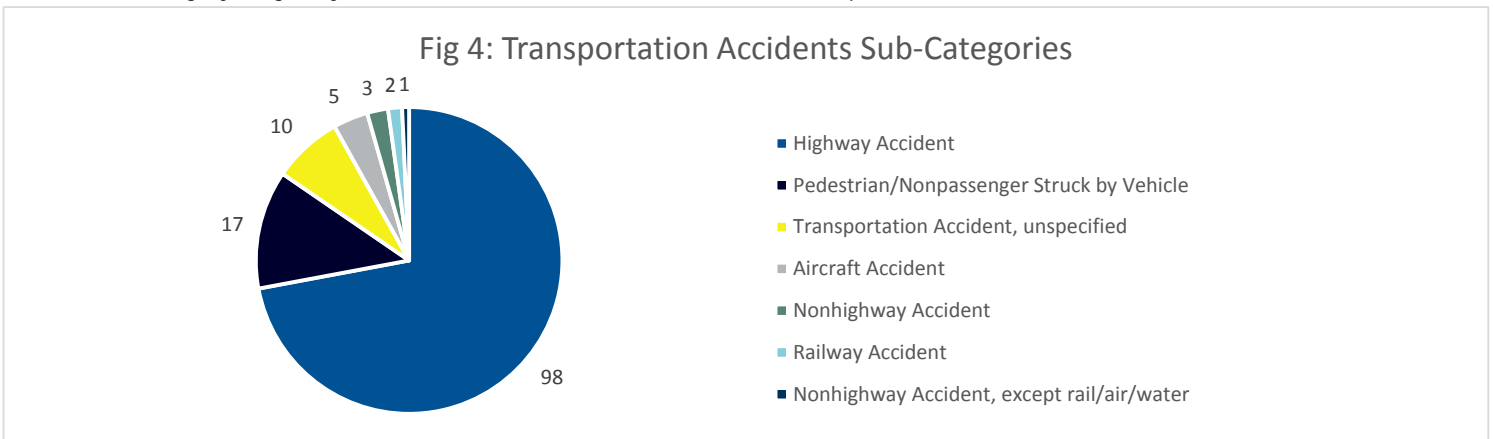
4.0 Top Five Event or Exposures - Sub Categories

In the pie charts below, 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." (source: CSA Standard Z795)

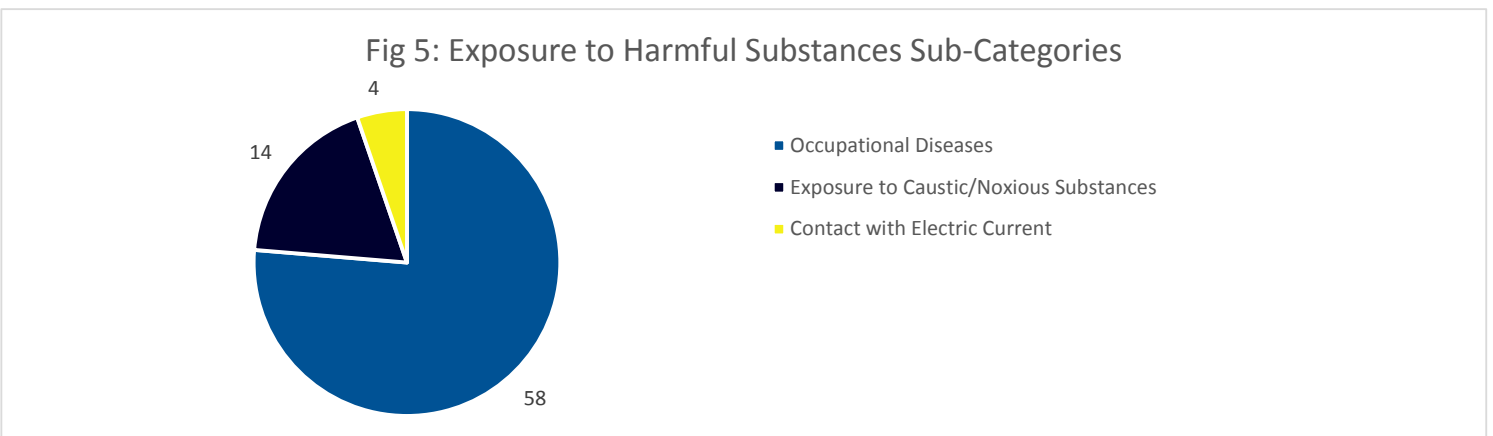
Within this category, Highway Accidents accounts for 72% of the total occupational fatalities.



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." (source: CSA Standard Z795)

Occupational diseases, like asbestosis, mesothelioma or other systemic disorders, were the fatal result of 76% of these accidents.

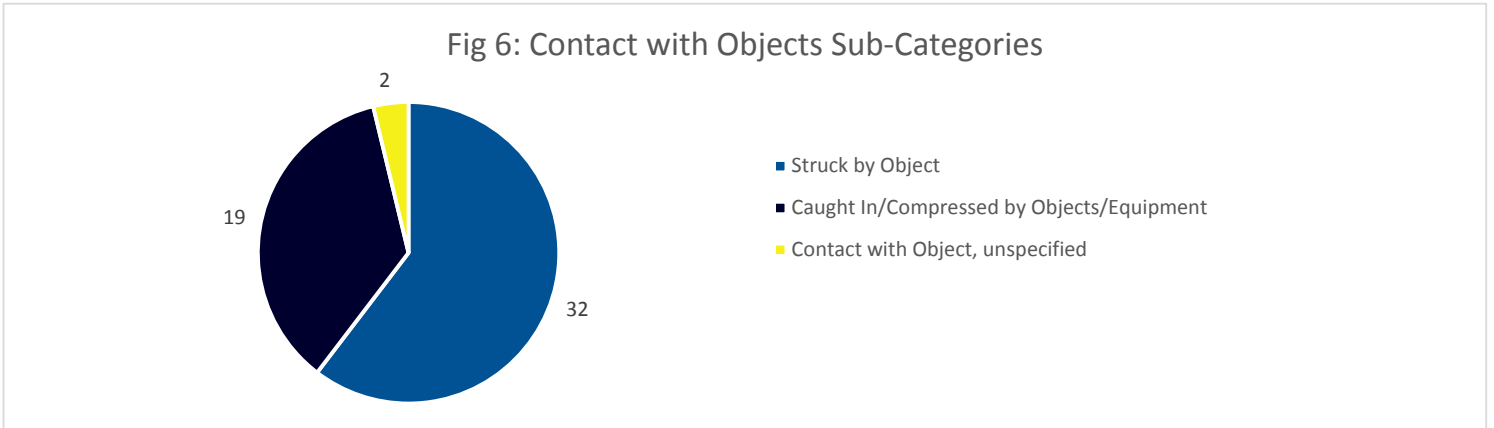


Preliminary Report: Occupational Fatalities in the Oil & Gas Industry in Western Canada (AB, BC & SK) - 2001 to 2019 YTD

4.3 Contact with Objects and Equipment (16% 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." (source: CSA Standard Z795)

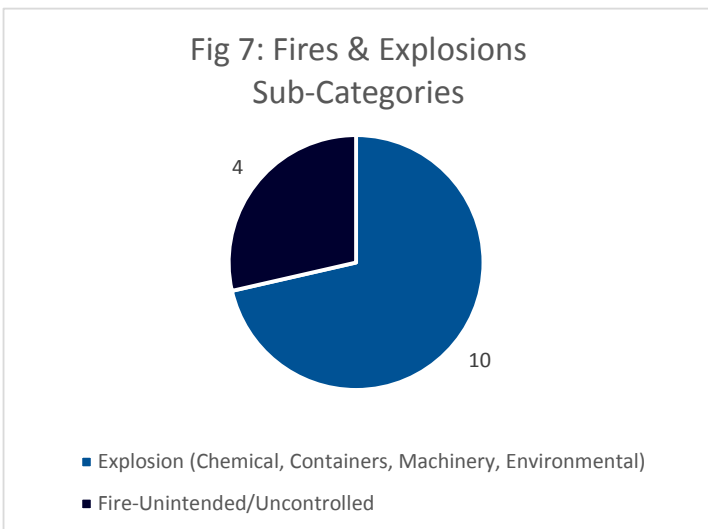
Within this category, 60% of the fatalities resulted from the worker being struck by an object (most often a falling object).



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."

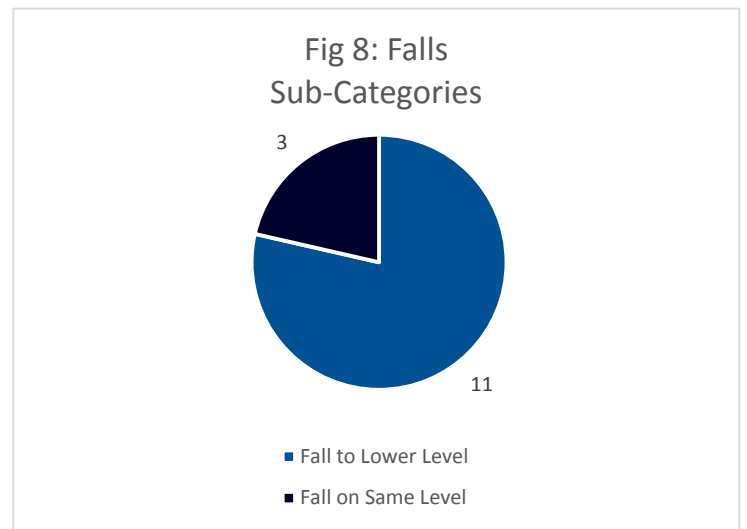
Explosions caused 71% of these fatalities.



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."

79% of these fatalities were due to a fall from height.



Preliminary Report: Occupational Fatalities in the Oil & Gas Industry in Western Canada (AB, BC & SK) - 2001 to 2019 YTD

Definitions:

Fatality: A WCB accepted occupational fatality is defined as the death of a worker, resulting from a work-related incident or exposure, which has been accepted by the WCB for compensation.

Fatality Rate: The Fatality Rate is 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 Association Of Workers Compensation Boards of Canada (AWCBC). http://awcbc.org/?page_id=9755

Fatality Type: The type of accident (also called event or exposure) as per CSA standard Z795 - Coding of Work Injury or Disease Information. It is the manner in which injury or disease was caused or inflicted.

Person Years: PY is estimated number of full-time equivalent workers (2000 person hours). It is derived from the employer's reported insurable earnings (assessable payroll) and the industry's average wage.

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

1. 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 Operators	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 Casing Services	9915
21	Well Servicing with Service Rigs	9903

2. British Columbia:

#	Classification Unit (CU) Name	CU Code
1	Diamond, Seismic, Shot Hole Drilling	704010
2	Oil or Gas Drilling	704002
3	Oil or Gas Field Servicing	704003
4	Oil or Gas Production	713018
5	Oil or Gas Transmission (pipeline)	767005
6	Seismic Exploration	704009

3. 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.