

Potentially Serious Incidents Summary

2019 Q1 - 2024 Q2 DATA

October 2024 (Updated February 2025)

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EXECUTIVE SUMMARY

This report presents insights from potentially serious incident (PSI) data in Alberta's oil and gas industry between Q1 2019 and Q2 2024. The analysis highlights key trends and opportunities for learning within the industry, particularly in relation to falls and vehicle-related incidents, where continued focus can help improve safety performance over time.

Industry Reporting

The number of companies reporting PSIs has increased from 216 to 271* since 2023. This is a positive increase; however, work remains as only 8 per cent* of active oil and gas companies, representing one-third of industry activity based on person-years, submit PSI reports. This suggests a significant opportunity to increase potential industry learnings.

Key Learnings and Insights

1. Falls and Vehicle Incidents

ESC analyzed 33 falls and 47 vehicle-related PSIs. Falls were frequently linked to fixed work platforms, step ladders and scaffolding, with half of these incidents tied to equipment design issues. Vehicle incidents primarily involved heavy construction equipment and light-duty trucks, with driver competency cited as a leading cause. Notably, preventive controls commonly used in light-duty vehicles—such as backup cameras and auto-park brakes—were absent in heavy equipment.

2. Safety Clutter

Approximately 20 per cent of PSI follow-up actions create safety clutter, offering minimal improvement to safety performance. This clutter creates a false sense of security, disenfranchises workers and diverts resources away from effectively controlling hazardous energy. A focus on eliminating clutter can enhance the effectiveness of safety interventions.

3. Proactive Safety Measures

To improve safety, the industry must treat PSIs as opportunities for learning and implement follow-up actions that address the hazardous energy involved, as they would with an actual serious incident. Beyond luck, there is no difference between actual and potentially serious incidents, and safety measures should reflect this.

To enhance health and safety performance across the industry, consider the following:

- Is there a system in place for non-punitive PSI reporting (not tied to scorecard)?
- Are we setting aside time for learning and improvement with every PSI?
- Do follow-up actions address the systemic causes of each PSI?
- Are we inadvertently creating safety clutter with our follow-up actions?
- Would we take stronger action if the incident was actually serious? If so, why not now?

Conclusion

By addressing these critical questions, the industry can shift from merely preventing incidents to predicting and mitigating them before they occur. ESC remains committed to providing the necessary tools and resources, including the [Oilfield Drivers Awareness Course](#), [Fall Protection Course](#) and [Life Saving Rules](#), to support these efforts.

* Values corrected February 2025.

PSI DEFINITION

According to Alberta OH&S, “a PSI is reportable when the incident had a likelihood of causing a serious injury or illness, and there is reasonable cause to believe that corrective action may need to be taken to prevent recurrence.”

Employers can [report PSIs online](#) and must include a description of the event, the number of people involved and/or injured, and any follow-up actions they implemented.

The definition of PSI was significantly revised at the end of 2018 by Alberta OH&S. Therefore, only data from 2019 onwards is included in this report. COVID-19 data has been removed from this report as it is no longer relevant.

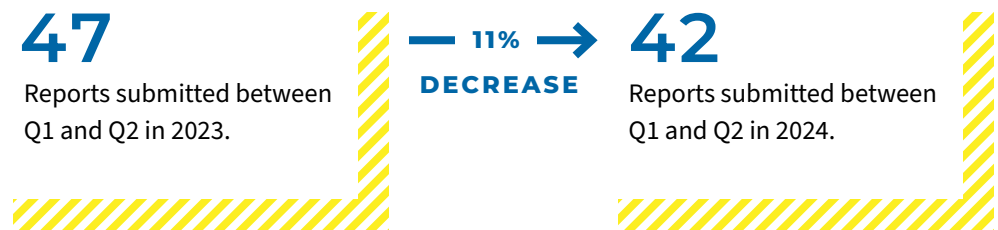
1.0 INTRODUCTION

In 2018, it became mandatory for Alberta employers to report potentially serious incidents (PSIs) to Alberta Occupational Health and Safety (OH&S). OH&S has provided some of the resulting data to Energy Safety Canada (ESC), for ESC’s funding industry codes.

This report provides a summary of PSI data from the Alberta energy industry for the purposes of understanding common trends and encouraging broader conversations around industry prevention efforts.

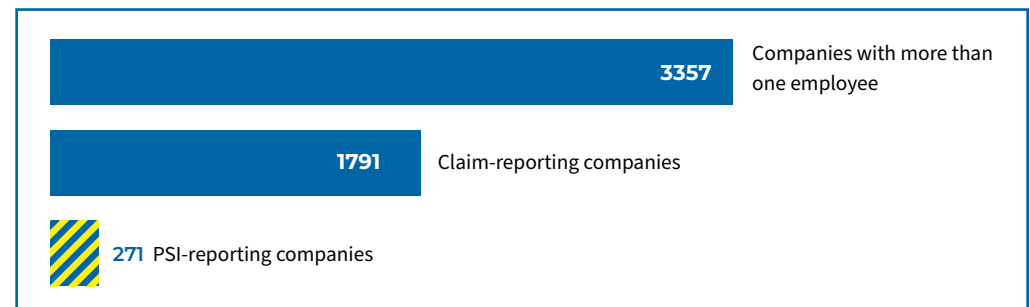
Data represents the time period of Q1 2019 to Q2 2024, and COVID-19 data has been removed from this report as it is no longer relevant.

2.0 REPORTING RATES & TRENDS OVER TIME



Since 2019, there are approximately 3,350 registered companies in Alberta’s oil and gas industry with more than one employee. Only a small portion of active oil and gas companies (8 per cent) have submitted PSI reports since the program began. For comparison, around half (1,800 companies) had an incident that became an injury claim with the Workers’ Compensation Board (WCB).

COMPANY COUNTS IN ALBERTA O&G



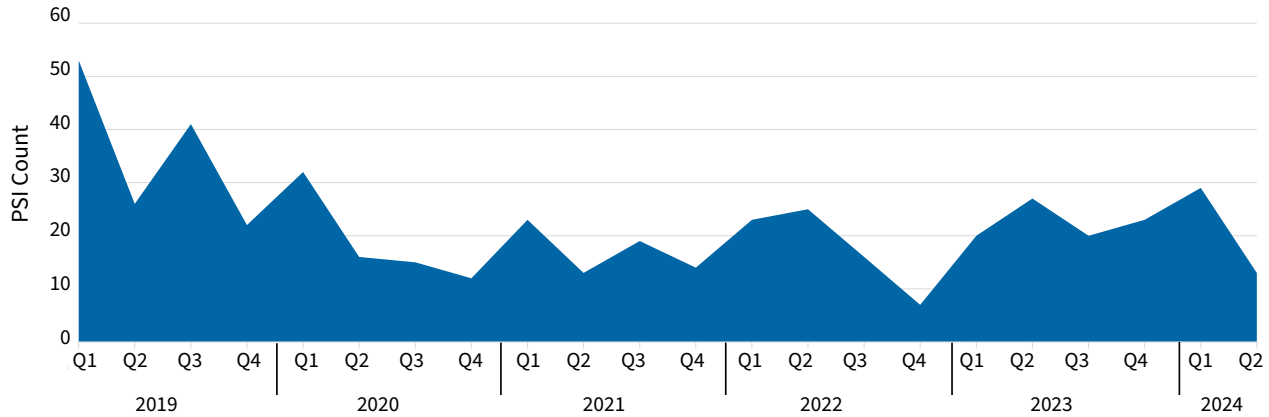
ACTIVITY IN ALBERTA O&G (PERSON YEARS)



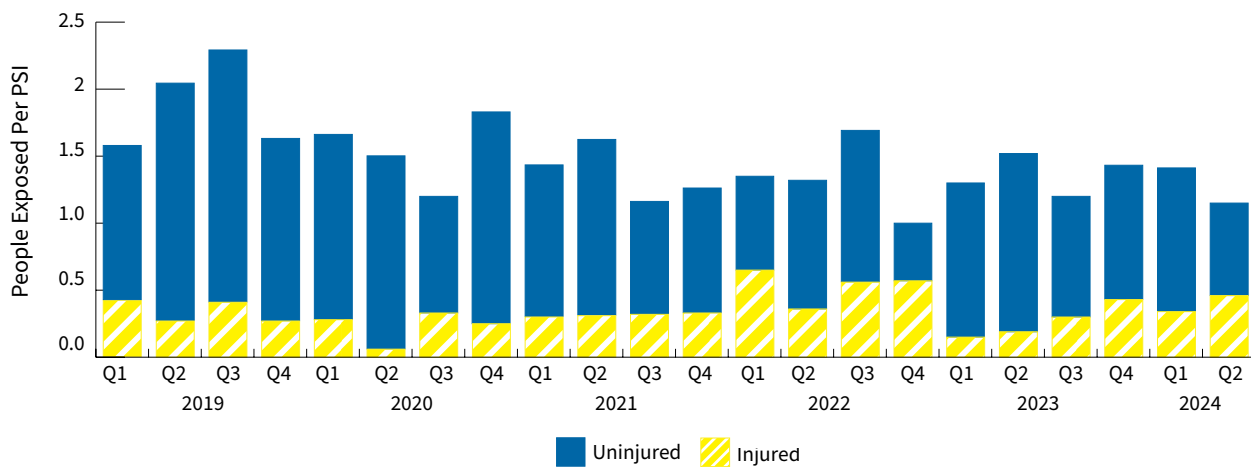
2.0 REPORTING RATES & TRENDS OVER TIME

Opportunities exist to encourage more reporting across the entire industry.

REPORTED POTENTIALLY SERIOUS INCIDENTS, BY QUARTER



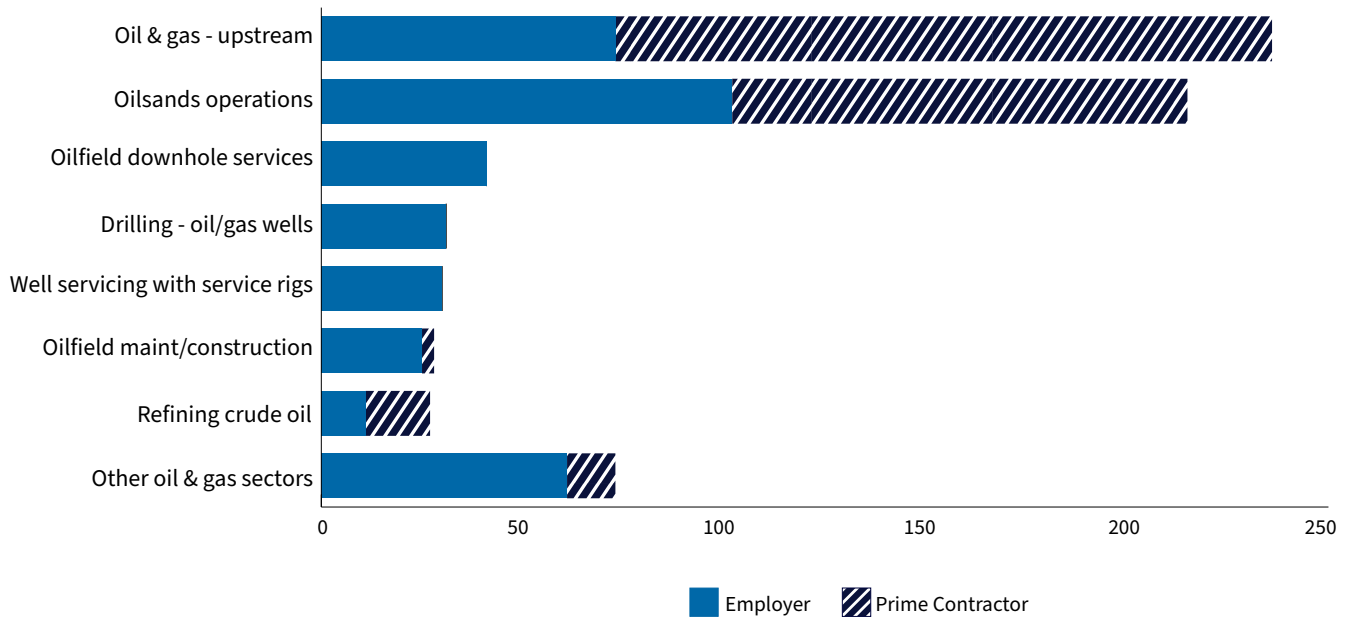
PEOPLE AT RISK PER INCIDENT



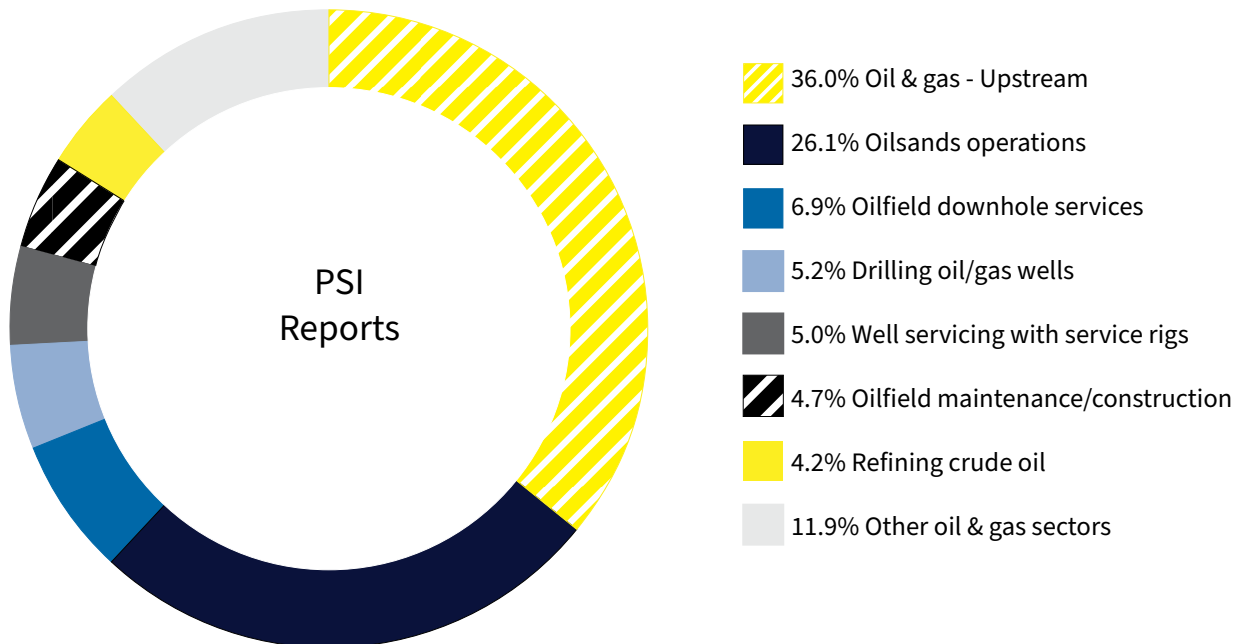
YEAR	2019	2020	2021	2022	2023	2024 Q1-Q2	TOTAL
Participating Companies	83	59	63	67	63	37	271
PSI Report Count	142	75	70	71	90	44	492
People Exposed	266	117	95	98	124	59	759
People Injured	52	18	22	37	24	16	169
Average Exposed per PSI	1.87	1.56	1.36	1.38	1.38	1.34	1.54
% Injured per Exposed	20%	15%	23%	38%	19%	27%	22%

3.0 REPORTS PER INDUSTRY SECTOR

PSI REPORTS (INCIDENT RELATIONSHIP BY SECTOR)



Reports where both a prime contractor and the employer were involved are counted twice.



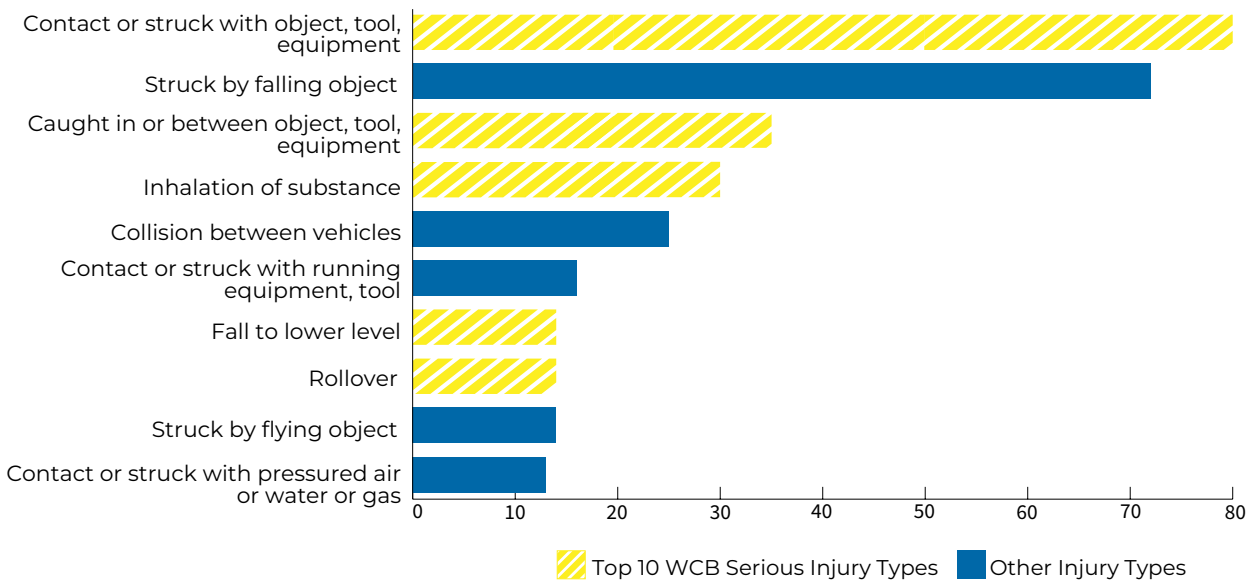
4.0 INCIDENT CLASSIFICATIONS

The graphs below show the most commonly reported incident types and sources among PSIs.

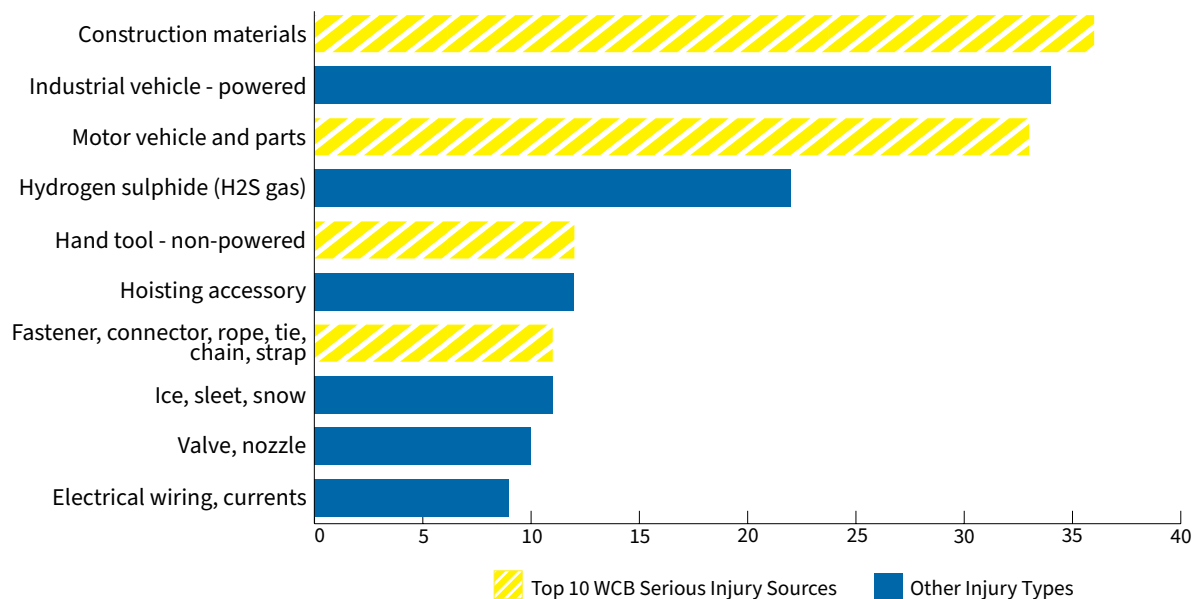
The top 10 PSI list shares only five entries with the top 10 types of actual serious injury (according to WCB injury claims). The top three types of serious injury are Overexertion, Fall on same level, and Bodily reaction, and are almost never reported as PSIs.



TOP TEN INCIDENT TYPES (INCIDENT COUNT)



TOP TEN SOURCES OF INCIDENT (INCIDENT COUNT)

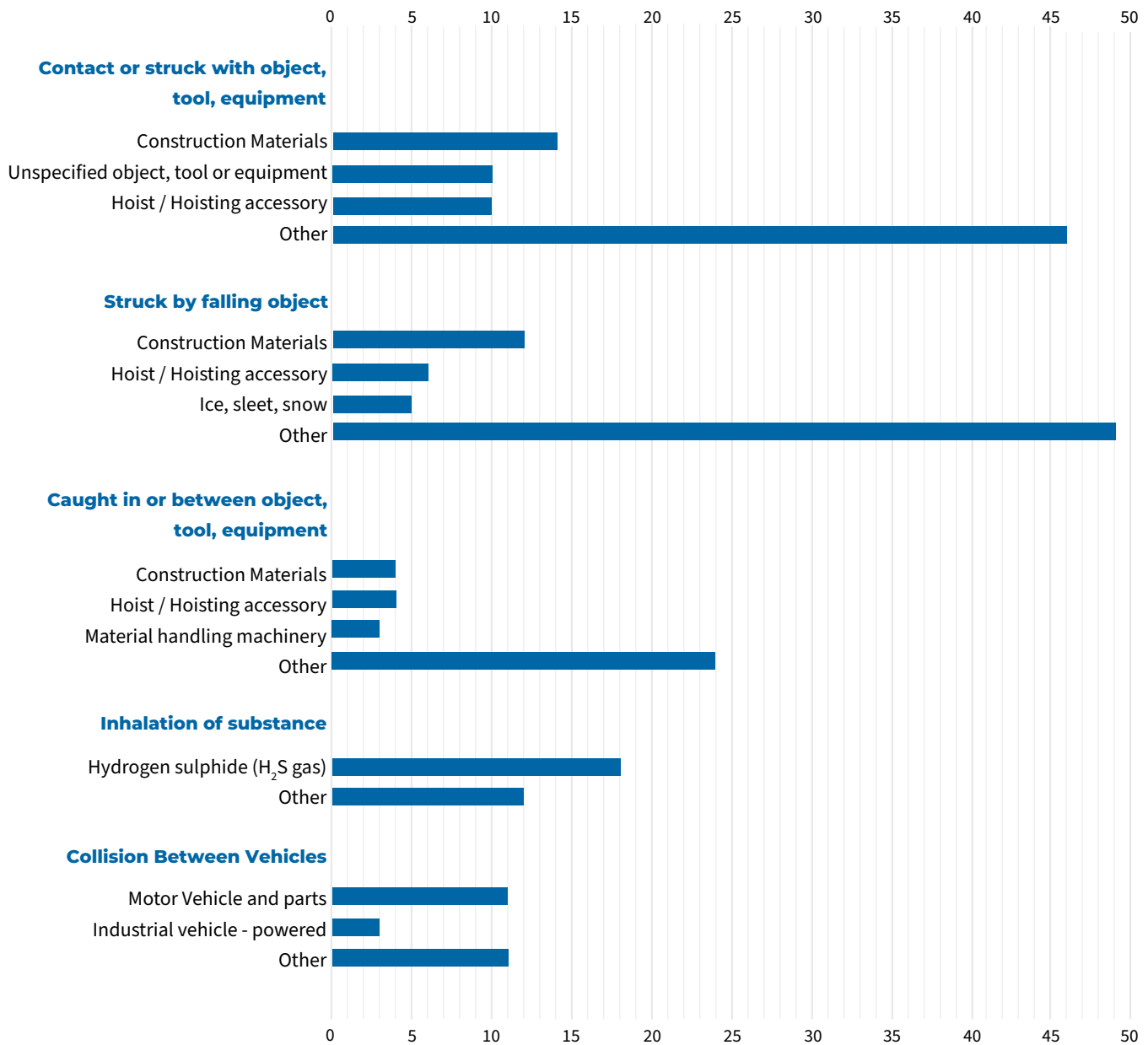


4.0 INCIDENT CLASSIFICATIONS

The main sources of the top five incident types are listed below.

Certain PSIs have a large “Other” category for the incident source due to the numerous potential sources such as hoists, machinery, ice, and fasteners. There is no major source of incident that is not shown.

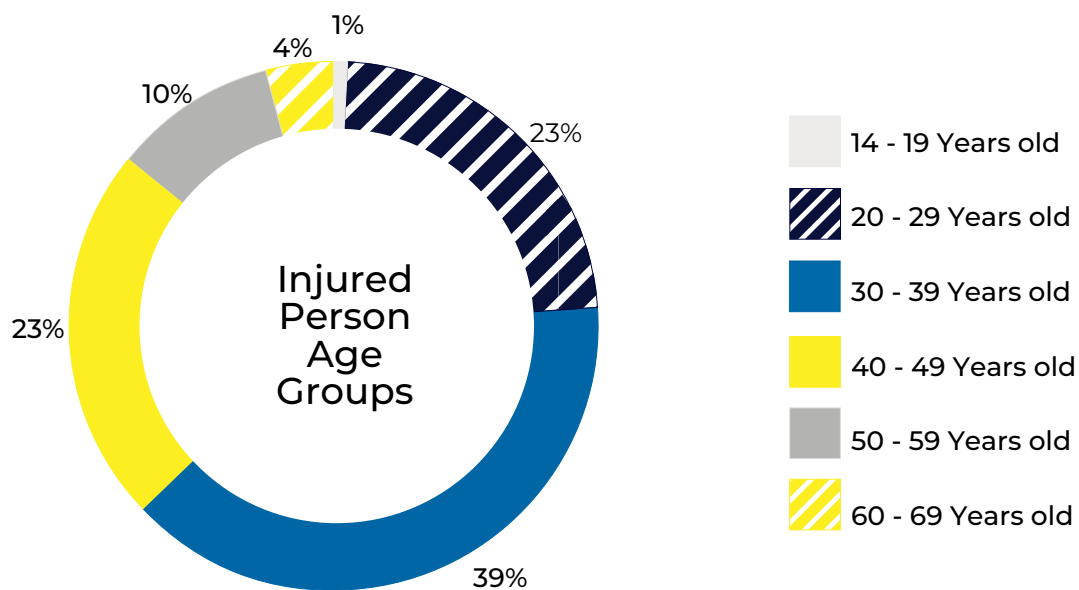
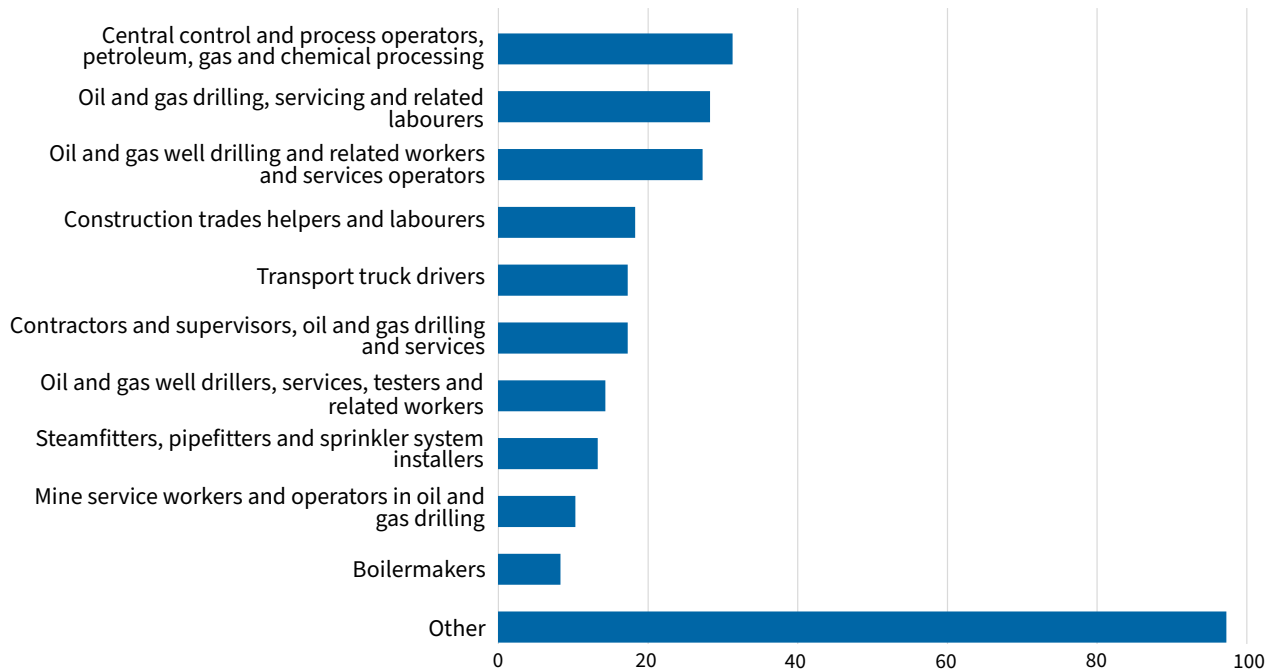
SOURCES OF THE TOP FIVE INCIDENT TYPES (INCIDENT COUNT)



5.0 INJURED PERSON DEMOGRAPHICS

The graphs below show the demographics of people who were injured during a PSI. PSIs where no people were injured are not accounted for. Note that these are only injuries related to reported PSIs. For information about all injuries in the energy industry, visit Energy Safety Canada’s Performance Metrics Program [webpage](#).

INJURED PERSON OCCUPATIONS



6.0 INCIDENT FOLLOW-UP

On average, two follow-up actions are implemented after a potentially serious incident is reported.

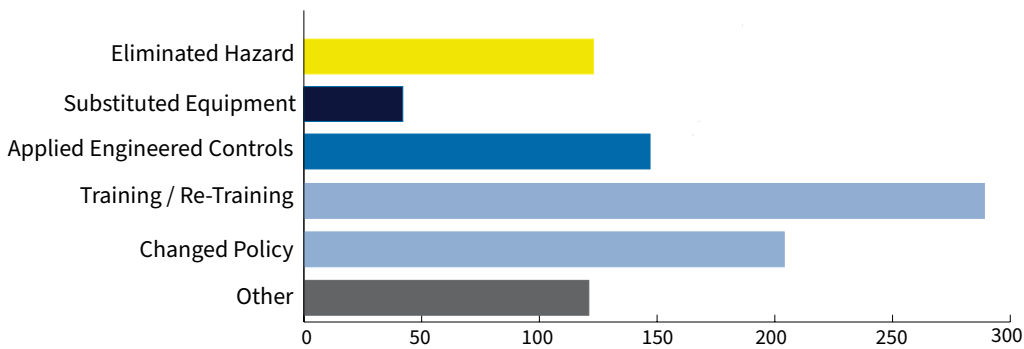
Training and Changed Policy are the most common follow-up actions.

A stronger focus on elimination, substitution and engineering controls should be considered.

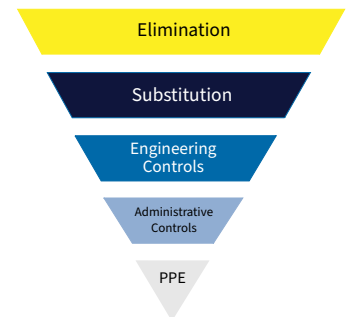


FOLLOW-UP CONTROLS IMPLEMENTED

This graph shows that administrative and engineering controls have been the most common reaction to PSIs, while the hierarchy highlights that elimination and substitution should be prioritized for greater safety.



Hierarchy of Controls



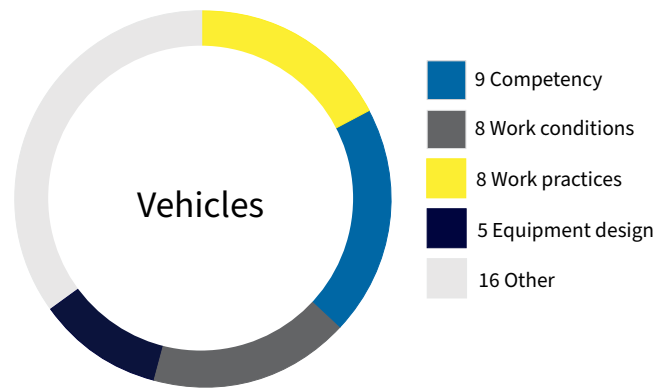
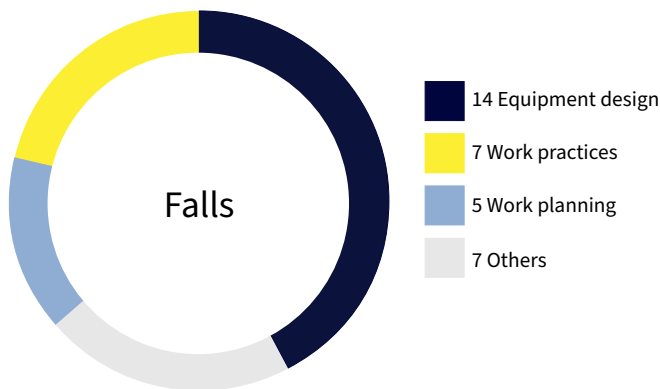
YEAR	2019	2020	2021	2022	2023	2024 Q1-Q2	Total
Controls per PSI	1.5	2.2	2.2	2.3	1.7	1.8	1.9
Training / Re-Training	55	48	51	55	53	27	289
Changed Policy	56	35	38	26	35	14	204
Applied Engineered Controls	26	33	25	31	19	13	147
Eliminated Hazard	36	21	14	20	21	11	123
Substituted Equipment	11	6	2	11	6	6	42
Other	26	21	23	20	22	9	121
All Controls	210	164	153	163	156	80	926
Total PSI Count	142	75	70	71	90	44	492

APPENDIX

Additional Analysis: Fall and Vehicle PSIs

The ESC team analyzed fall and vehicle PSIs and grouped the data into classification categories: Energy Type, Life Saving Rules, Proximal Factors, Capacity to Fail Safely, Prediction or Prevention and Safety Clutter.

Proximal factors, which are those closest to the incident, were assessed for both fall and vehicle PSIs. Slightly less than half of the falls were associated with equipment design issues. Half of the equipment design issues were related to equipment/worker interface problems (designing for human factors). The remaining proximal factors for fall incidents included work practices and work planning. For vehicle incidents, the most common proximal factor was driver competency, followed by work practices and work conditions.



Approximately **1/5**

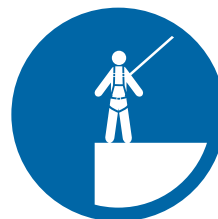
of the PSIs involved follow-up actions that did not meaningfully contribute to the safety of work. This clutter disenfranchises workers, creates a false paradigm of safety within management and redirects safety resources away from the meaningful control of hazardous energy. Safety clutter was assessed across the follow-up actions of both fall and vehicle PSIs.

Approximately **1/4**

of the PSI follow-up actions built capacity to fail safely if an error or mistake was made.

Approximately **1/4**

of both fall and vehicle PSIs involved [Life Saving Rules](#) such as Working at Height and Driving. These primarily consisted of the proper use of fall protection while outside a protected area and fitness for work.



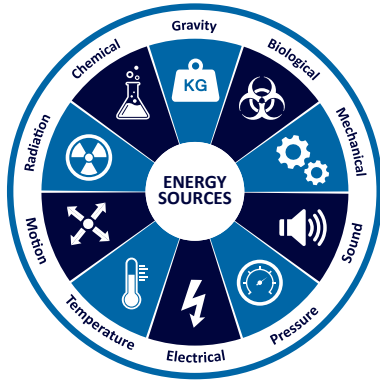
WORKING AT HEIGHT



Driving

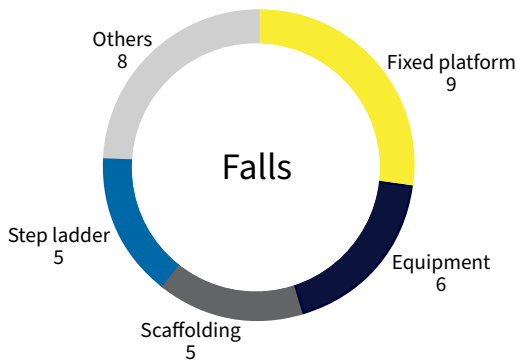
APPENDIX

The two dominant energy types for PSIs are gravity with falls and motion with vehicles.

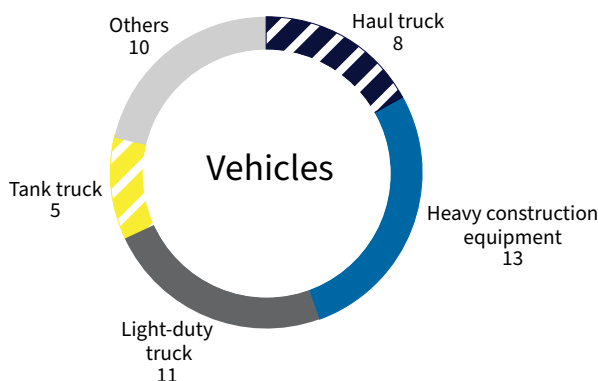


SURFACE AND VEHICLE TYPES

PSIs associated with falls predominately involved fixed work platforms, equipment, step ladders and scaffolding.



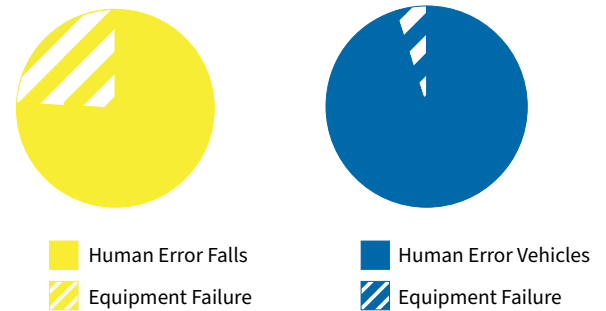
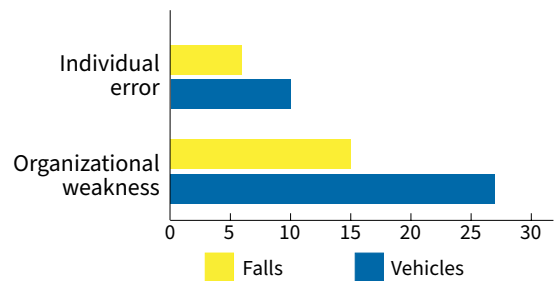
PSIs associated with vehicles predominately involved heavy construction equipment, light-duty trucks, haul trucks and tank trucks.



CONTRIBUTING FACTORS: FALLS VS. VEHICLE

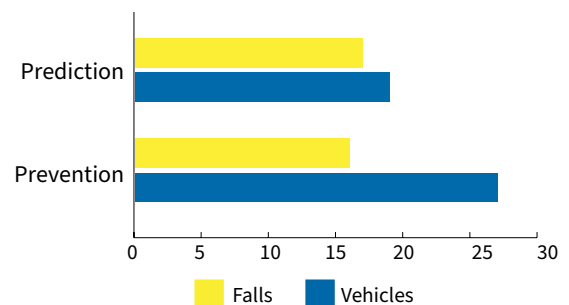
With both falls and vehicle PSIs approximately one quarter were at the individual level while three quarters had weaknesses at the organizational level. Human error was more significant in vehicle PSIs than in falls, where approximately a quarter of PSIs were equipment failure or a combination.

ERROR SOURCE DISTRIBUTION



PREDICTION AND PREVENTION: FALLS VS. VEHICLE PSIS

Prevention problems are more significant than prediction problems for vehicle PSIs in comparison to fall PSIs. When evaluating follow-up actions for vehicles it became apparent that the controls commonly associated with light-duty vehicles such as back-up cameras and sensors, auto-park brake, collision avoidance etc. are not in use on mobile equipment.



RESOURCES

[Energy Safety Canada PSI Program](#)

[Energy Safety Canada PSI Guideline](#)

[Potentially serious incident reporting: legislation updates](#)

[List of oil and gas industry sectors](#)

GLOSSARY

Industry Sector

Groupings of employers who have similar businesses and risks as one another. Defined by WCB Alberta. This report contains data from all Alberta oil and gas industry sectors.

Person

A PSI is not limited to workers. If it involves someone who is not a worker, it is still considered a PSI if it resulted from work activities at the work site or could have happened to a worker.

PSI

Potentially serious incident. A PSI is reportable when the incident had a likelihood of causing a serious injury or illness, and there is reasonable cause to believe that corrective action may need to be taken to prevent recurrence.

Safety Clutter

The accumulation of safety procedures, documents, roles and activities performed in the name of safety but do not contribute to the safety of operational work.

WCB

Workers' Compensation Board. The mandate of the WCB is to provide compensation to workers who are injured on the job, and help them recover and return to work.

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