



PROSPECTORS &
DEVELOPERS
ASSOCIATION
OF CANADA

ASSOCIATION
CANADIENNE DES
PROSPECTEURS ET
ENTREPRENEURS

A person wearing a bright yellow jacket and dark pants is standing in a snowy mountain landscape. They are holding a large coil of blue rope. The background shows rugged, snow-covered mountains under a cloudy sky.

TOWARD A SAFE DAY EVERY DAY

The Canadian Mineral Exploration
Health & Safety Annual Report

2014

Photo credits:

Matt Fraser – cover, p. 7, p. 16;

David Thompson – p. 5, p. 15;

Jay Fredericks – p. 10;

Boart Longyear – p. 13 (top);

Major Drilling Group International Inc. – p. 13 (bottom).

The **Association for Mineral Exploration British Columbia (AME BC)** and the **Prospectors & Developers Association of Canada (PDAC)** are pleased to present their annual industry environment, health and safety survey report. Here are some of the findings from the 2014 survey. There were **179 companies** that participated; of these **99 filled out a full survey**; this represents the second highest participation in the survey.

Although the survey is voluntary, it represents a cross-section of the health and safety performance of government geological surveys and companies active in, and supporting, exploration for precious and base metals, uranium, diamonds, coal and potash.

THE GOOD...

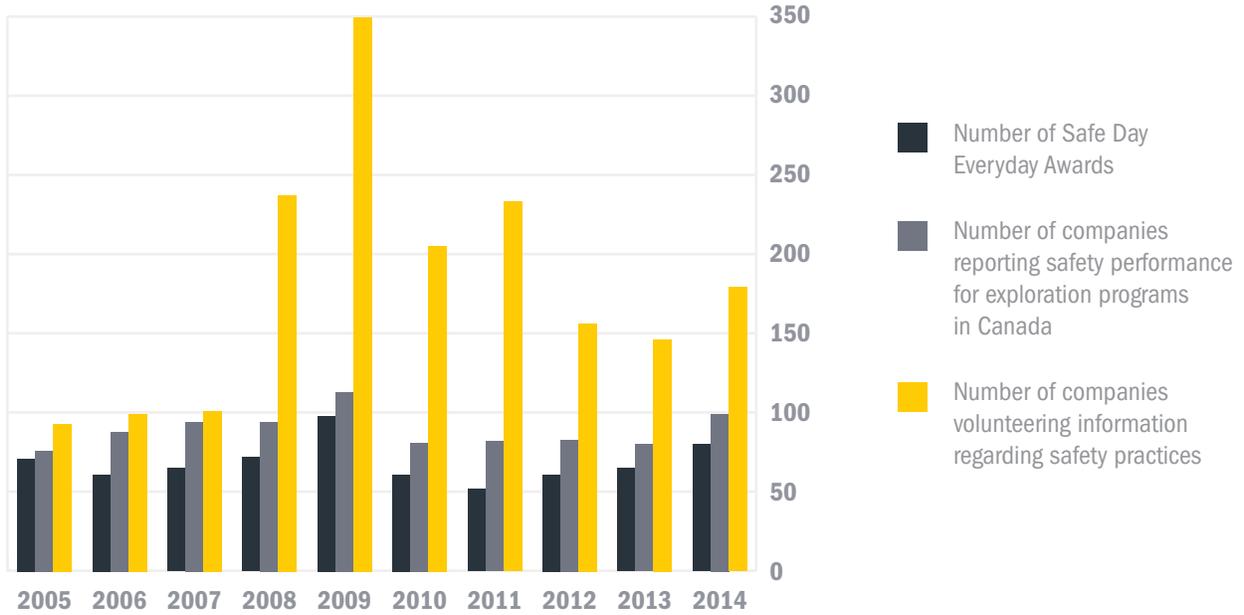
- ▶ **95%** of respondents reporting having a health and safety program in 2014, a new record up from **93%** of respondents in 2013 and a substantial increase from 2005 when only **49%** reported having such a program.
- ▶ The lost-time incident frequency reached a record low of **0.65 per 200,000 hours** in 2014, down from **1.09 per 200,000 hours** in 2013. The rate for all Canadian industries as reported by the Association of Workers Compensation Boards of Canada, by comparison, reached a record low of **1.60 in 2013** (*2014 data will be available in mid-2016*).
- ▶ The vast majority of organizations responding to the survey have emergency response plans in place (**98%** at least some of the time and **85%** always), conduct simulations (**77%**), conduct task risk analyses (**95%**), discuss safety at worker meetings (**98%**), and have a spill response plan in place (**82%**).

BUT...

- ▶ Although **95%** of organizations discuss safety at Board of Directors meetings, **28%** only discuss safety if there is an incident. And although **98%** discuss safety at worker meetings, only **70%** always do so. Discussing safety at all Board of Directors and worker meetings is an important leading indicator of a commitment to a culture of safety within a company.

SAFETY REPORTING

REPORTING SUMMARY



SAFETY PROGRAMS



LEADING INDICATORS IN ORDER OF INDUSTRY PERFORMANCE

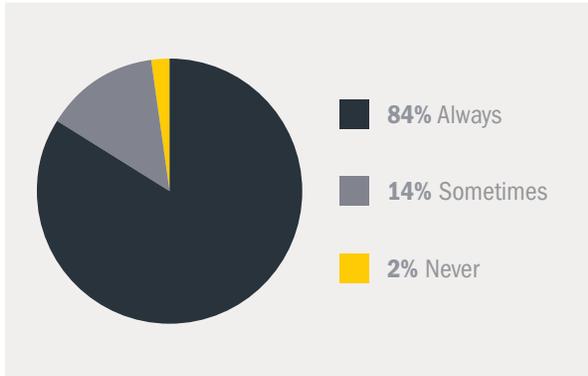
WHAT ARE LEADING AND LAGGING INDICATORS?

Leading indicators are measures of actions taken prior to incidents happening. These are proactive measures such as safety meetings that people do each day to prevent incidents.

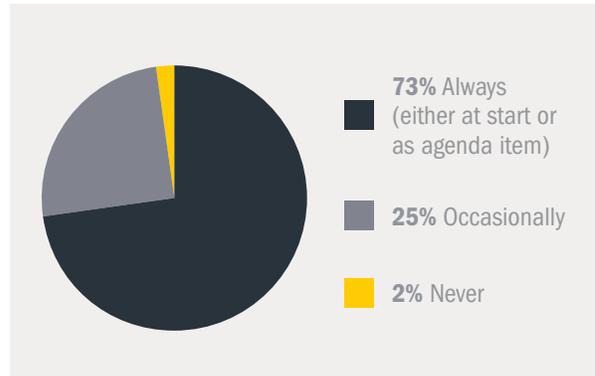
Lagging indicators are measures of actions taken after incidents happened. Although there are lessons learned in figures such as lost-time incidents, these are reactive in nature. However, incidents in the past – whether serious incidents or near-misses – should be treated as learning opportunities.



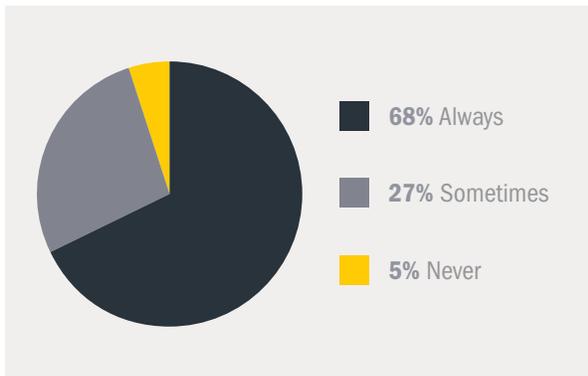
EMERGENCY RESPONSE PLAN AT EACH SITE



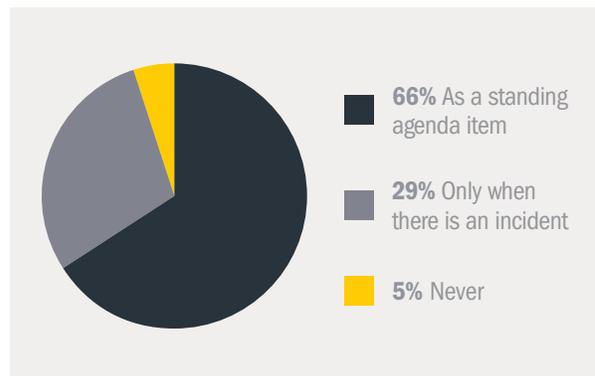
HEALTH AND SAFETY DISCUSSED AT STAFF, WORKSITE AND OFFICE MEETINGS



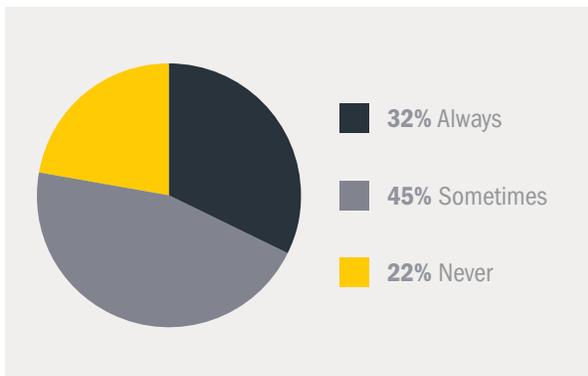
HAZARD IDENTIFICATION AND ANALYSIS AT EACH SITE



HEALTH AND SAFETY DISCUSSED AT BOARD OF DIRECTORS' MEETINGS



EMERGENCY SIMULATION EXERCISES



ENVIRONMENTAL INDICATORS

Organizations were surveyed for the following environmental indicators in 2014.

DOES YOUR ORGANIZATION...

▶ Have a spill response plan?	82% Yes	18% No
▶ Conduct environmental monitoring?	61% Yes	39% No
▶ Have a designated environmental monitor?	64% Yes	36% No



LAGGING INDICATORS

The statistics below are based on descriptions of 545 incidents – including 287 that did not result in injuries – reported by 39 companies that occurred in 2014.

CAUSE OF INCIDENT

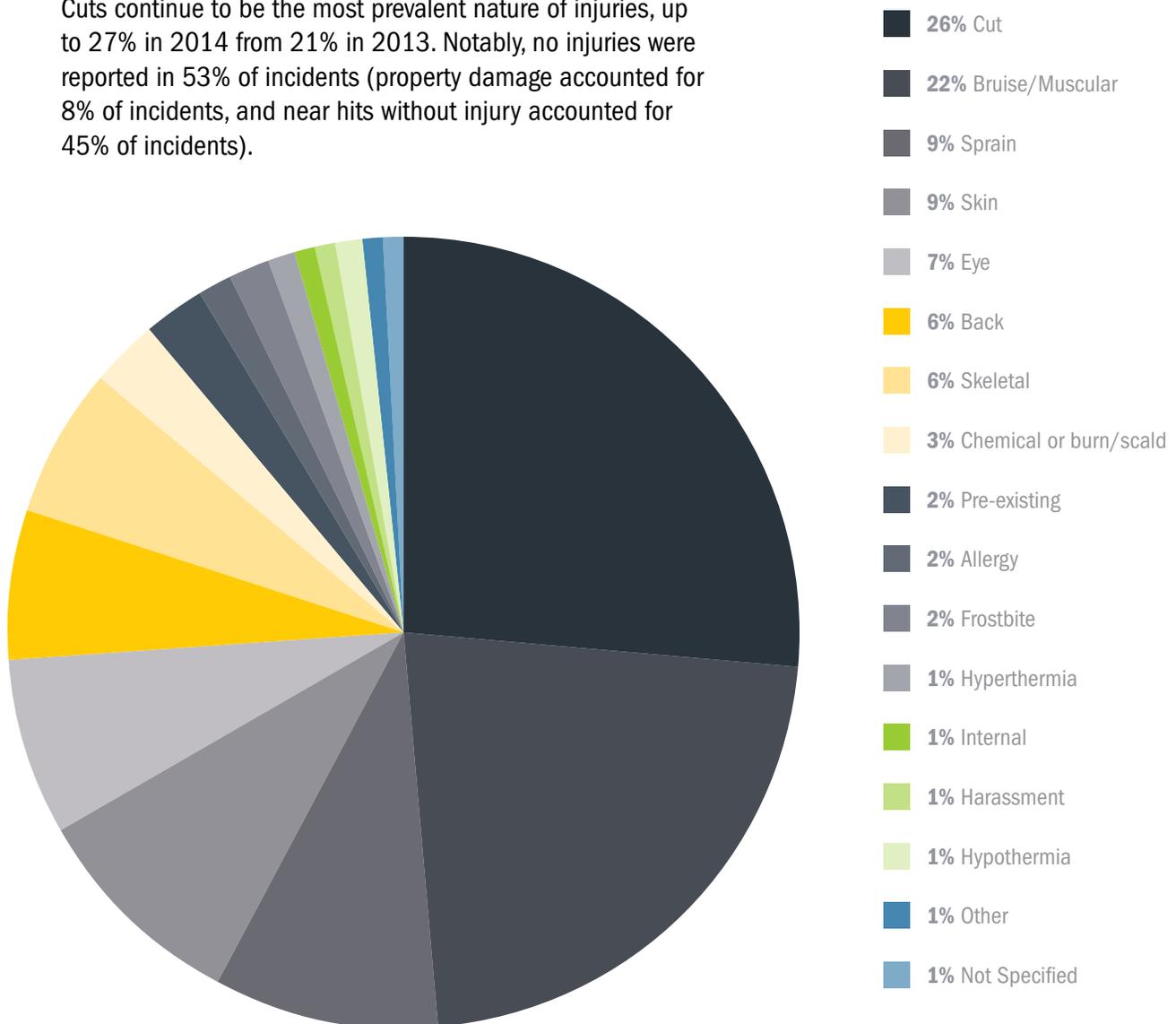
ATV-related incidents accounted for 9% of all incidents in 2014, up from 1% in 2012 and 2013. Slips/falls and drilling machinery continued to be the most prevalent causes. However, the proportion of incidents relating to drilling is higher than the single category of drilling machinery.

- 12% Slip/Fall
- 12% Drilling machinery related
- 9% Field work
- 9% ATV
- 7% Tool use
- 6% Automobile
- 6% Helicopter
- 6% Improper operation
- 5% Object related
- 5% Camp equipment related
- 4% Vehicle - other
- 4% Improper lifting
- 4% Weather
- 3% Snowmobile
- 2% Animal
- 2% Falling object
- 2% Medical condition
- 1% Chemical
- <1% Airplane
- <1% Boat
- <1% Other



NATURE OF INJURY

Cuts continue to be the most prevalent nature of injuries, up to 27% in 2014 from 21% in 2013. Notably, no injuries were reported in 53% of incidents (property damage accounted for 8% of incidents, and near hits without injury accounted for 45% of incidents).





FATALITIES 2014

There were two fatalities in 2014 – both involving additional people on single-seat vehicles near drill sites.

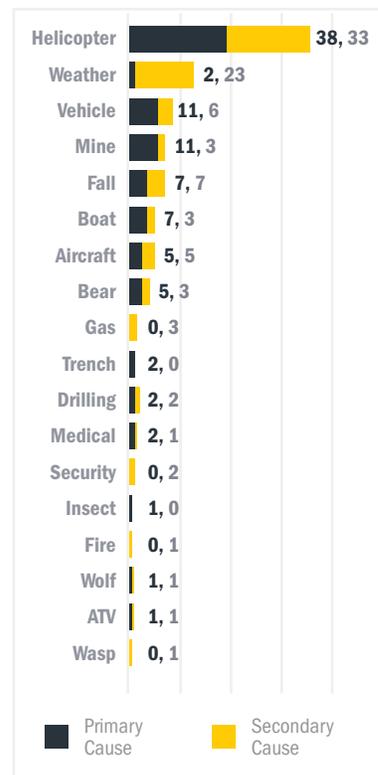
On February 22, in Quebec, a driller and driller helper climbed aboard a single-seat snowmobile to travel to the drill site. While the snowmobile was driving on the left side of a logging road to avoid a supply hose, the left ski came into contact with a tree branch. The impact lifted the end of the branch, penetrating the helper’s thigh and perforating his femoral artery. The helper was then ejected, and the driver lost control of the snowmobile. The helper was pronounced dead at hospital.

Four months later, on June 25, in Ontario, two contract workers with a drilling company were leaving a mineral exploration site on a bulldozer. The bulldozer struck a tree, which fell on the passenger. He was pinned by tree and later succumbed to injuries.

Overall, there have been 95 fatalities in mineral exploration since 1980, an average of nearly three per year although there have been several fatality-free years, most recently in 2010. Reported causes of fatalities, both primary and secondary, are listed below.

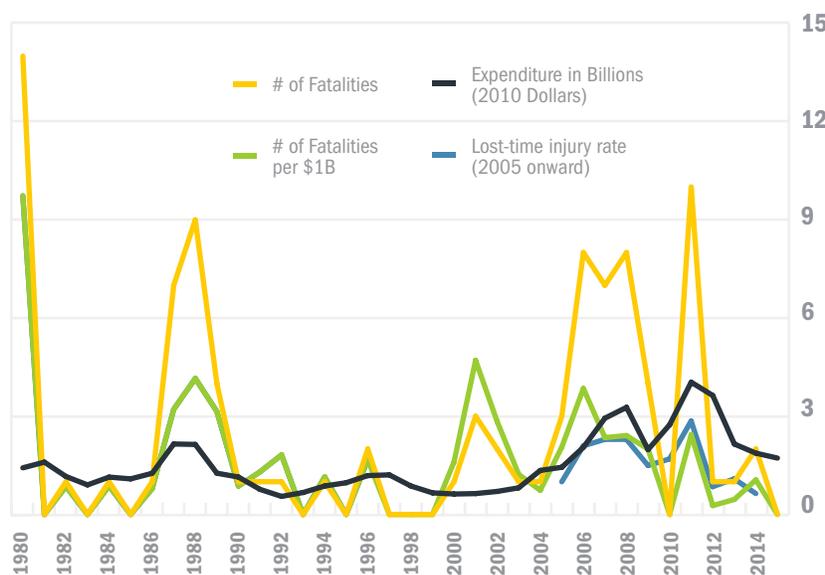
Recent data suggest that increased numbers of fatalities and injuries have generally corresponded with peaks of activity in the industry. AME BC and the PDAC hope that industry can learn from this trend to prevent any further fatalities in Canada’s dynamic mineral exploration industry.

CAUSE OF FATALITIES 1980-2014



FATALITIES IN MINERAL EXPLORATION IN CANADA 1980 – 2015*

*Note: 2015 data is preliminary.



WHAT YOU CAN DO

- ▶ Ask your employer or client questions about health and safety.
- ▶ If you are concerned, do not accept the status quo.
- ▶ It is every worker's right to refuse unsafe work.
- ▶ Before going in the field, take responsibility to seek out information - including resources from the PDAC and AME BC – available online free of charge.

RESOURCES

SAFETY GUIDELINES AND MANUALS

The PDAC Field Safety Pocket Guide is available in English, French and Spanish. The guide includes a variety of safe fieldwork practices that will increase one's awareness of the risks, hazards and dangerous situations inherent in exploration work. The pocket guide is available from the PDAC; it can also be downloaded at www.pdac.ca/policy/health-safety/policy/2011/01/06/health-safety-field-guide.

A comprehensive source of safety information for mineral exploration focused on Western Canada is AME BC's Safety Guidelines for Mineral Exploration in Western Canada. The guidelines are available online at www.amebc.ca/policy/health-safety/safety-guidelines/safety-guidelines-for-mineral-exploration-in-western-canada and from the AME BC office.

More detailed information is available in the e3 Plus Health & Safety in Exploration Toolkit developed by the Health & Safety Committee of the PDAC. This toolkit is available online at www.pdac.ca/e3plus.

REPORTING

Download the 2015 Canadian Mineral Exploration Environment, Health & Safety Survey incident reporting form at www.explorationsurvey.ca, and complete the 2015 survey online. The annual report is also available here.

OUR 2014 AWARD RECIPIENTS

SAFE DAY EVERYDAY GOLD AWARD

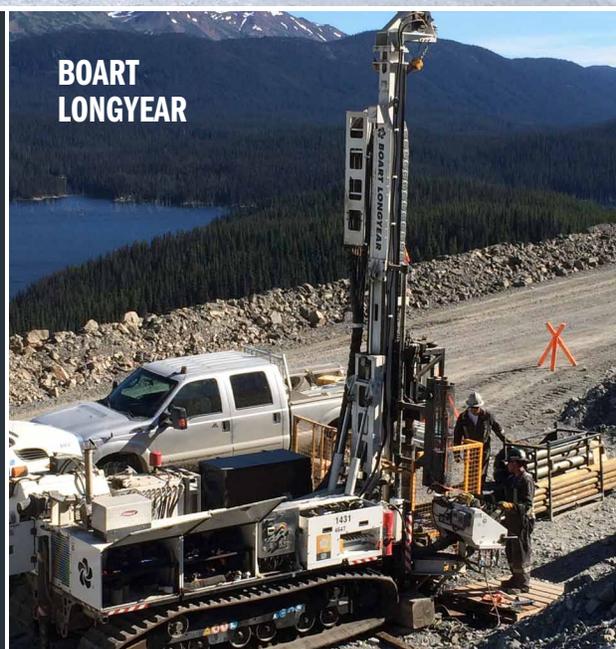
Congratulations to Boart Longyear for achieving 1,073,607 hours without a lost-time incident, and Dominion Diamond Corporation for achieving 298,000 hours without a reportable injury. Both companies are awarded the Safe Day Everyday Gold Award for 2014.



**DOMINION
DIAMOND
CORPORATION**

“Dominion Diamond is proud of its safety record at the Ekati mine. This commitment to safety was demonstrated during the winter drilling program at the Jay Project in 2014, which was completed without a single recordable injury during almost 300,000 hours worked. This successful safety record was due in large part to the exceptional safety processes demonstrated by our contractors, key risk assessments and job hazard analysis, daily safety inspections, and regular leadership presence.”

**- Brendan Bell, Chief Executive Officer,
Dominion Diamond Corporation**



**BOART
LONGYEAR**

SAFE DAY EVERYDAY SILVER AWARD

Thirty-six organizations are presented with the Safe Day Everyday Silver Award. This award is presented to organizations reporting more than 10,000 hours throughout a calendar year without a reportable injury.

1984 Group of Companies	Carmax Mining Corp	Knight Piésold Ltd.
Amarc Resources Ltd	Constantia Resources Ltd.	Manitoba Geological Survey
Anglo American Exploration (Canada) Ltd.	De Beers Canada Inc. Exploration	New Gold Inc
AuRico Gold Inc	Denison Mines Corp	Precision GeoSurveys Inc.
Avalon Rare Metals Inc	Detour Gold Corporation	Sabina Gold and Silver
Barkerville Gold Mines Ltd	DGI Geoscience	Silver Standard Resources Inc
Benton Resources Corp	Eastfield Resources Ltd	TECH Directional Services
BHP Billiton Canada Inc.	Foran Mining Corp	Teck Resources Limited
Cameco Corp.	Forum Uranium Corp	Transition Metals Corp.
Canada Zinc Metals Corp	IAMGOLD Corporation	Trevali Mining Corporation
Caracle Creek Intl Consulting Inc.	KGHM International	Vale Exploration Canada
Cariboo Rose Resources Ltd	Kiska Metals Corporation	Western Protection Alliance Inc

SAFE DAY EVERYDAY BRONZE AWARD

AME BC and the PDAC have awarded 43 organizations this award for reporting a calendar year without lost time.

Altius Resources Inc.	Equity Exploration Consultants Ltd	Morecore Drilling
AREVA Resources Canada Inc.	FB Drilling Ltd	Northern Abitibi Mining
Auracle Remote Sensing	Finlay Minerals Ltd.	Richmond Minerals
Aurum Geological Consultants Inc.	Foraco Canada Ltd.	Rockhaven Resources Ltd
Axe Exploration	Foundex Explorations Ltd.	San Gold Corp
Aztec Geoscience Inc.	Geological Survey of Newfoundland and Labrador	Saskatchewan Geological Survey
Burton Consulting Inc	Geotech Drilling Services Ltd	ScoZinc Ltd.
Canadian Royalties Inc.	Glencore	SLAM Exploration Ltd
CanAus Coal Ltd.	Golden Valley Mines Ltd	Team Drilling
Canstar Resources Inc	Good Earth Drilling Services Ltd.	Tri Origin Exploration Ltd
Canterra Mineral Corp	Independence Gold Corp	Triton Environmental Consultants
Castle Resources Inc	Klondike Silver Corp	Wallbridge Mining Co Ltd
Clifton Star Resources Inc	Mammoth Geological Ltd.	Watts, Griffis and McOuat
Coast Mountain Geological Ltd.	Minfocus International Inc.	Yukon Geological Survey
Copper Mountain Mining Corp.		



SAFE DAY EVERYDAY PARTICIPATION AWARD

Six companies are recognized for participating in the Canadian Mineral Exploration Health & Safety Survey for ten consecutive years since the national survey's inception.

Amarc Resources Ltd.

De Beers Canada Inc. Exploration

Hard Creek Nickel Corporation

Kiska Metals Corporation

Teck Resources Limited

TerraLogic Exploration Inc.



TOWARD A SAFE DAY EVERY DAY: *The Canadian Mineral Exploration Health & Safety Annual Report 2014* is jointly produced by the Association for Mineral Exploration British Columbia and the Prospectors & Developers Association of Canada.

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For more information or to acquire full survey data (confidential data removed) to help plan your own exploration program, AME BC and PDAC members are welcome to contact Jonathan Buchanan at 604.630.3923 or jbuchanan@amebc.ca.