

**NSW
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Regulator**

Mine safety performance report

2017 - 2018



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Disclaimer: The data in this report was extracted from the NSW Resources Regulator's compliance database on 6 August 2018. Apart from serious injury classification data that was updated on 18 November 2018 and fatality data that was updated on 15 February 2019, all data analysis was performed on data as it was at the time of data extraction on 6 August 2018. However, because of receipt of new information, users are reminded of the need to ensure that information upon which they rely is up to date. If you are concerned about the currency of any of the information in the report, please check with the appropriate officer of the NSW Department of Planning and Environment.



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Executive summary

This report provides an overview of the health and safety performance of the NSW mining and petroleum industry as reported to the NSW Resources Regulator, in conjunction with selected regulatory activities over that same period. The report is for the financial year 2017-18, and comparisons are made with certain indicators over a ten year period from 2008-09.

While the report does not tell of the breadth of innovative and proactive risk management by the industry's duty holders or detail the many activities of the Regulator, it does feature an important suite of measures to help guide future actions to improve health and safety performance and to allow industry to benchmark their performance against others in their sector.

Work health and safety regulatory intervention has been in place in the Australian mining industry for more than a century. While the NSW mining industry has continued to minimise the risk to health and safety of workers with zero fatalities in 2017-18, there were still 82 serious injuries, 239 lost time injuries, 226 injury outcomes (lost time and restricted duty) of seven days or more and 920 total recordable injuries reported to the NSW Resources Regulator in that period.

There has been a long term decrease in fatal injuries in the NSW mining coal, metalliferous and extractives sectors recorded since 1900. Since 2008-09, the rolling five year average frequency rate of fatal injuries ranged from a low of 0.014 to a high of 0.035 injuries per million hours worked. This is likely due to the small numbers of fatalities.

The rolling five year average frequency rate of serious injuries (per million hours worked) showed a decreasing trend over time until 2014-15 where the rate sharply rose. This is due to the introduction of the Work Health and Safety (Mining & Petroleum Sites) Regulation 2014 on 1 February 2015 which broadened the legislated definition of serious injury to now also include additional injury types, as well as any injury irrespective of its nature that results in immediate treatment as an in-patient in a hospital. Since the introduction of this new definition, the number of serious injuries reported has effectively doubled. This provides a valuable source of information on the types of injuries occurring in order to guide regulatory activity.

The most common serious injury hazard for coal mines, metalliferous and extractives mines in the period 2008-09 to 2017-18 is being hit by a moving object, followed by slips, trips and falls. Together those two mechanisms accounted for around three quarters of the serious injuries in 2017-18 (62 from 82).

Since 2008-09, the rolling five year average lost time injury frequency rate (LTIFR) has steadily declined from 10.865 to 4.631 in 2017-18, a reduction of around 57%. This rate was down 3% from 4.774 in 2016-17 to 4.631 in 2017-18.

Improved safety practices certainly have contributed to this result. In addition, other factors, including injury under reporting by industry and improved return to work and injury management practices would have also contributed to a smaller extent.

As always, it is important to caution against overreliance on failure (lag) data to monitor safety performance as that means that improvement or changes are only determined after something has gone wrong. While lag indicators like those in this report have a place in understanding control failure, our [proactive safety assessment program](#) is focused on checking whether critical controls are effective and operating as intended. Both are needed to provide a full and complete picture.

In a high hazard industry, a concerted and sustained effort is required by both industry and the Regulator to maintain a dedicated focus on preventing catastrophic events. Our [Incident Prevention Strategy](#) shifts the focus of its compliance activity from incident investigation (reactive) to preventing incidents through planned, risk-based interventions (preventative).

During 2017-18, we embarked on significant activity through our compliance and enforcement strategy. Sixty one planned Targeted Assessment Programs (TAPs) were undertaken in order to assess the efficacy of a mining operation in controlling its most significant risks – or principal hazards. We also undertook seven reactive Targeted Intervention Programs (TIPs) which aim to maximise voluntary compliance to prevent multiple fatality and single fatality events, and serious injury, following an identified safety issue. See the [Annual Business Activity Report 2017-18](#) for more details.

In addition, as part of the targeted assessments, interventions and investigations conducted during the year, we issued 1,385 mine safety notices including 244 prohibition notices in 2017-18. A similar amount of mine safety notices have been issued over the past four years (2014-15 to 2017-18). The opal sector saw a marked increase in safety notices in the last two years because more safety notices were issued in that sector in response to our targeted safety operation.

Between 2014-15 and 2017-18, the proportion of improvement notices relative to notices of concern (advice) continued to increase. There was also an increase in the number of prohibition notices in that time. This reflected our renewed focus on incident prevention where we sought to clearly identify matters that necessitate the issue of an improvement notice as compared to a written notice of concern.

Finally, the NSW mining industry is on track to contribute toward the Australian Work Health and Safety Strategy 2012–2022 targets of a 20% reduction in fatalities, a 30% reduction in the incidence rate of claims resulting in one or more weeks off work, and a 30 % reduction in the incidence rate of claims resulting in one or more weeks off work due to musculoskeletal disorders. Similar measures in this report are showing favourable trends in line with the national targets.

Since 2008-09, the rolling five year average frequency rate of fatal injuries has ranged from a low of 0.014 to a high of 0.035 injuries per million hours worked.

Key performance measures - summary

Fatal injuries

Zero mining fatalities occurred during 2017-18.

In 2017-18, the rolling five year average fatal injury frequency rate (FIFR) decreased by 6% compared to 2016-17 (from 0.035 to 0.033).

Note, the FIFR has ranged from a low of 0.014 to a high of 0.035 injuries per million hours worked in the ten years since 2008-09, showing an overall steady trend as the relatively small numbers can cause fluctuation. Since 1900, there has been a long term decrease over time in mining fatality numbers.

Serious injuries

In the full three year period since the commencement of the Work Health and Safety (Mining & Petroleum Sites) Regulation 2014 (it commenced 1 February 2015), the number of serious injuries reported to the Regulator by the coal, metalliferous and extractives sector increased year on year. Under the new regulation, the definition of serious injury was expanded, contributing to the increases observed.

In 2017-18, the serious injury frequency rate (SIFR) for the coal, metalliferous and extractives sector was up to 1.116 from 1.012. Compared to the previous year, this represents an increase of approximately 10%. Over the ten year reporting period, the SIFR decreased by almost 6%.

The most common serious injury hazard for coal mines and metalliferous and extractives mines in the reporting period is being hit by a moving object, followed by slips, trips and falls. Together those two mechanisms accounted for three quarters of all serious injuries (62 of the 82) in 2017-18.

Lost time injuries

Since 2008-09, the rolling five year average lost time injury frequency rates (LTIFR) has steadily declined from 10.865 to 4.631 in 2017-18, a reduction of around 57%.

Improved safety practices contributed to this result. In addition, other factors, including injury under reporting by industry and improved return to work and injury management practices could have also contributed.

Injury outcomes of seven days or more

In 2017-18, there were 226 lost time or restricted duty injuries of seven days or more (LTI/RDI \geq 7 days or more). This is up 29 compared to the previous year. Whilst this number has shown a small increase since the previous year, in the ten years since 2008-09, the number of injuries of this type has almost halved, from 413 in 2008-09 to 226 in 2017-18. The rolling five year average frequency rate of LTI/RDI \geq 7 days or more has decreased by almost 40% when compared to 2012-13.

Total recordable incidents

Though a small increase in total recordable injuries (TRI) was recorded in 2017-18 compared to 2016-17, the number of total recordable incidents has shown an overall declining trend since 2008-09. The rolling five year average total recordable injuries frequency rate (TRIFR) decreased by approximately 3% from 2016-17 to 2017-18. Since 2012-13, an overall steady downward trend in TRIFR was observed for coal, metalliferous and extractives sectors.

Notified safety incidents

In 2017-18, the number of safety incident notifications to the Regulator were similar to those recorded in the previous year (1986 in 2017-18 and 1971 in 2016-17). Across the reporting decade, the coal sector accounted for almost 84% of all notified safety incidents, in 2017-18, 82% of safety incidents notified were from the coal sector.

Complaints

In 2016, we streamlined and centralised our complaints reporting and incident notification processes. We also changed the way we recorded complaints. As a result, the number of complaints showed a marked increase in 2016-17 and 2017-18 when compared to previous years. In 2017-18, the number of complaints were similar to those in 2016-17 (from 117 to 106 respectively). This provides a rich source of intelligence in order to guide regulatory activity.

Safety notices

In 2017-18, we issued 1,385 safety notices which is a similar result when comparing the past four years (2014-15 to 2017-18).

The opal sector saw the biggest change in the last two years where more safety notices were issued in that sector in response to our targeted safety operation.

From 2016, the proportion of improvement notices relative to notices of concern (advice) increased. There was also an increase in the number of prohibition notices. This reflects our renewed focus on incident prevention where we sought to clearly identify matters that necessitated the issue of an improvement notice as compared to a written notice of concern.



EXECUTIVE SUMMARY

TABLE 1. NSW COAL, METALLIFEROUS AND EXTRACTIVES COMPARISON OF KEY PERFORMANCE INDICATORS 2016-17 AND 2017-18

Key Performance Indicators	Coal Underground		Coal Surface		Coal Total		Metalliferous Underground		Metalliferous Surface		Metalliferous Total		Extractives		Coal, Metalliferous and Extractives Total		
	2017-18	2016-17	2017-18	2016-17	2017-18	2016-17	2017-18	2016-17	2017-18	2016-17	2017-18	2016-17	2017-18	2016-17	2017-18	2016-17	2017-18
	2016-17	2017-18	2016-17	2017-18	2016-17	2017-18	2016-17	2017-18	2016-17	2017-18	2016-17	2017-18	2016-17	2017-18	2016-17	2017-18	2016-17
Million hours worked	13,384,078	28,069,253	28,545,203	41,127,729	41,929,281	6,817,788	6,495,549	5,310,540	5,547,652	12,128,328	12,042,601	5,334,385	5,191,623	58,590,442	59,163,505		
Full time equivalent employees	6,529	14,035	14,273	20,564	20,965	3,409	3,248	2,655	2,774	6,064	6,022	2,667	2,596	29,295	29,583		
Fatal injuries (FI)	0	1	0	1	0	1	0	0	0	1	0	0	0	2	0		
FIFR 5 year average	0.024	0.021	0.021	0.022	0.023	0.083	0.067	0.000	0.000	0.060	0.047	0.083	0.081	0.035	0.033		
Lost time injuries (LTI)	123	53	60	176	169	24	12	19	21	43	33	46	37	265	239		
LTI/FR 5 year average	8.740	2.338	2.220	4.668	4.467	3.497	3.418	2.839	3.045	3.334	3.393	10.040	9.609	4.774	4.631		
Restricted duty injuries (RDI)	187	68	69	255	326	87	67	24	25	111	92	17	52	383	470		
Medical treatment injuries (MTI)	73	52	38	125	118	40	24	21	11	61	35	49	57	235	210		
Total recordable injuries (TRI)	383	174	168	557	614	152	103	64	57	216	160	112	146	885	920		
TRIFR 5 year average	31.179	6.479	6.267	15.471	15.134	22.031	20.466	11.428	11.743	19.050	17.831	27.974	26.633	17.189	16.643		
Serious injuries (SI)	48	21	26	69	55	17	6	4	6	21	12	12	13	102	80		
SIFR 5 year average	1.854	0.452	0.540	0.942	1.047	1.080	1.115	0.922	0.961	0.986	1.026	1.741	1.975	1.012	1.116		
LTI/FR 5 year average	147	38	48	185	214	7	3	1	3	8	6	4	6	197	226		
LTI/RDI → 7 days FR 5 year average	12.772	1.609	1.522	5.673	5.249	0.661	0.645	1.010	0.931	0.759	0.731	1.865	1.751	4.338	4.005		
Safety Incident notifications	1,133	1,047	456	1,589	1,620	168	191	78	52	246	243	135	120	1,970	1,983		
Safety Complaint notifications	21	31	41	52	62	11	5	3	7	14	12	17	20	83	94		
Safety Notices issued	413	368	207	547	575	143	184	38	77	181	261	429	462	1,157	1,298		

Explanatory Notes

NSW mining industry data was extracted from Resources Regulator's database in 2018

This report presents health and safety performance data on injuries (fatal, serious injuries, lost time and lost time or restricted duty with outcomes of seven days or more), notified safety incidents, complaints and hours worked. All information presented was either reported to the NSW Resources Regulator within the Department of Planning and Environment (the Regulator) by the NSW mining and extractives industry through quarterly work health and safety reporting or through incident notification, or was information obtained from safety (enforcement and advice) notices issued by the Regulator. See Appendix 1 for definitions.

Sector based chapters in the report have been included for the following mining operation types: coal, metalliferous, extractives, petroleum, opal sectors. While exploration sites are included within each relevant operation type, a stand-alone sector has also been included. Appendix 2 lists further details about operation types.

Data in this report was extracted from the Regulator's compliance database on 6 August 2018. Apart from serious injury classification data that was updated on 18 November 2018 and fatality data that was updated on 15 February 2019, all data analysis was performed on data as it was at the time of data extraction on 6 August 2018. The reporting period is for ten years, from 2008-09 to 2017-18.

Rate based frequency measures are calculated using quarterly report data

In NSW, coal, metalliferous and extractives mining operations are required to submit quarterly work health and safety forms with lost time and restricted duty injury information as well as hours worked. This information was used to generate frequency rates.

It is worth noting that mandatory quarterly reporting commenced as follows for the:

- coal sector - beginning of 2007-08
- metalliferous and extractives - second quarter of 2008-09
- coal exploration sites - 1 February 2015.

Until the beginning of 2007-08, hours worked, and lost time injury data for the coal sector were sourced from Coal Services Pty Ltd. Until quarter two 2008-09, metalliferous and extractives hours worked, and lost time injuries were compiled from several sources and included some estimation.

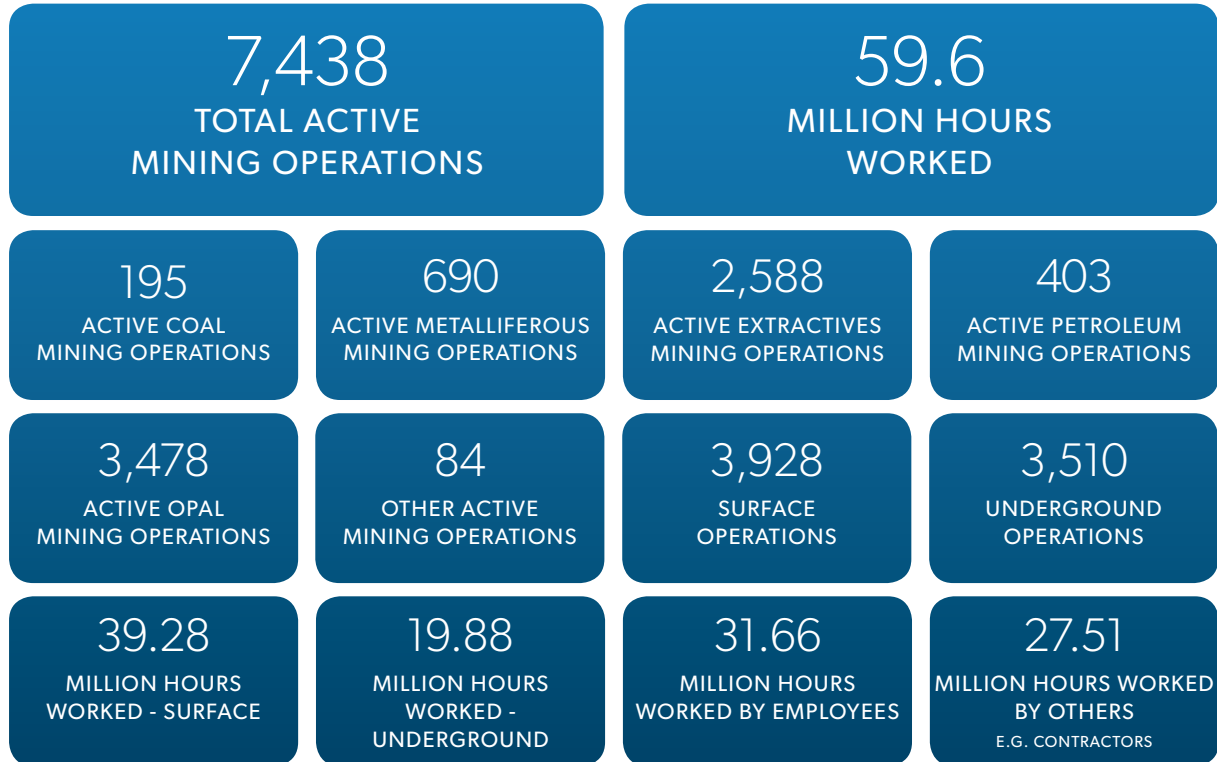
Frequency rates (per million hours worked) have been calculated for each injury measure. Rates were based on hours worked data submitted by the coal, metalliferous and extractives sectors as part of the quarterly reporting requirements listed above. Petroleum sites, underground small gemstone mines, opal mines and tourist mines are not required to submit quarterly reports. Frequency rates are therefore not available for the non-coal other (such as opal mines) and petroleum (onshore) sectors.

Wherever possible, a rolling five year average was calculated for rate based measures. This statistical smoothing technique charts the average annual value for the past five years enabling a long-term trend to be produced directly from raw data. It is particularly useful where values may vary widely from year to year.

All data is subject to continuous improvement due to internal audit and validation processes and updates from external sources. Incorrectly classified information from past years is sometimes found and reclassified in source databases. The Regulator's reporting employs the best available data at the time of data extraction, which may differ from previously published figures.

Industry overview

Industry overview statistics and performance measures 2017-18



- Zero fatal injuries recorded in 2017-18
- Rolling five year average fatal injury frequency rate (per million hours worked) was down almost 6% from 0.035 in 2016-17 to 0.033 in 2017-18. Note, relatively small numbers can cause fluctuation
- 82 serious injuries – most common mechanism is being hit by moving object
- Rolling five year average serious injury frequency rate (per million hours worked) up 10% from 1.012 in 2016-17 to 1.116 in 2017-18
- 239 lost time injuries – a decrease of almost 10% compared to the previous year
- Rolling five year average lost time injury frequency rate (per million hours worked) down 3% from 4.774 in 2016-17 to 4.631 in 2017-18
- Together, being hit by a moving object, followed by slips, trips and falls, accounted for 62 of the 82 of serious injuries (76%) in 2017-18
- 226 injury (lost time or restricted duty) outcomes of seven days or more. Since 2008-09, the number of injuries of this type has fallen by 45%
- Rolling five year average (lost time or restricted duty) outcomes of seven days or more rate (per million hours worked) down almost 8% from 4.338 in 2016-17 to 4.005 in 2017-18
- 920 total recordable injuries
- Rolling five year average total recordable injuries rate (per million hours worked) down 3% from 17.189 in 2016-17 to 16.643 in 2017-18
- 1,986 safety incidents notified to the Regulator
- 117 complaints
- 1,385 safety notices – 244 were prohibition notices

Industry statistics

Mines by sector

During the twelve months covered by this report; a total of 7,438 mining operations were reported as 'active' (open mines, open mines that operate intermittently, mines that are under care and maintenance and open tourist mines) to the Regulator. Breakdown by sector includes: 195 coal, 690 metalliferous, 2,588 extractives, 403 petroleum, 3,478 opal and 84 other (e.g. coal handling preparation plants and workshops).

Hours worked

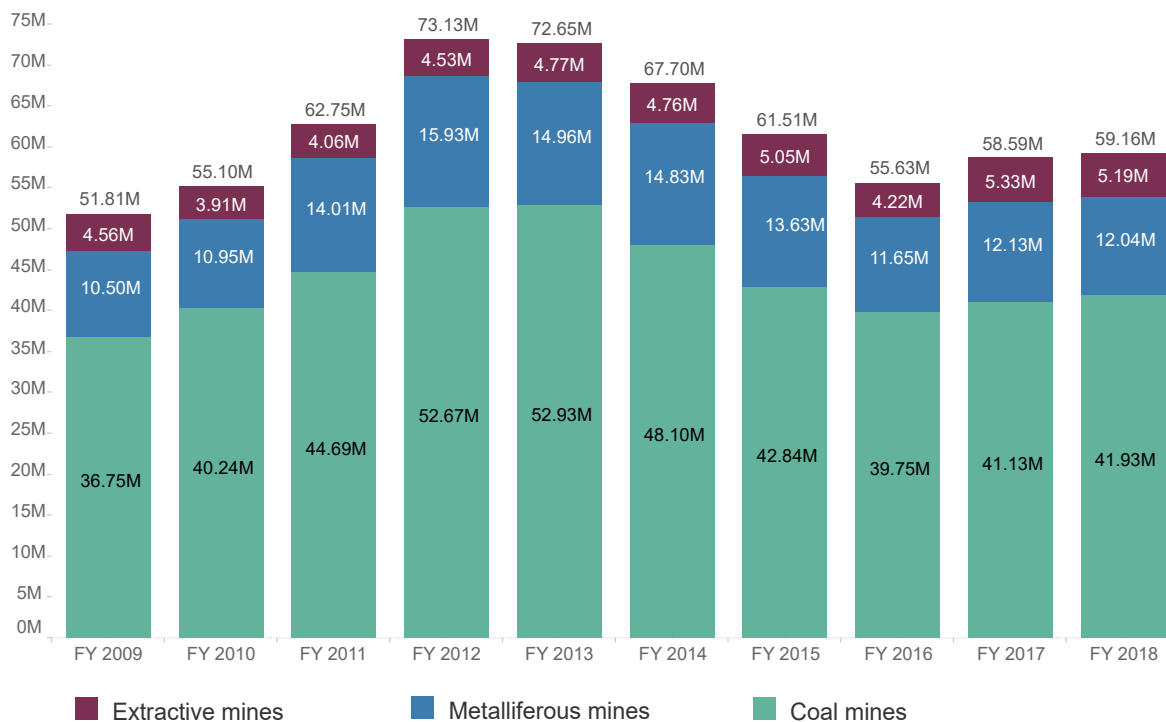
From 2016-17 to 2017-18, work activity in the NSW mining industry increased overall by 1% from 58.59 to 59.16 million hours. The vast majority of hours were worked in the coal sector (71%, or 41.93 million of the total 59.16 million).

The number of hours worked in the coal sector in 2017-18 increased by 2% when compared to 2016-17. However, the number of hours worked in the extractive and metalliferous sectors decreased by almost 3% and 1% respectively in that same time.

At the close of the ten year reporting period, the number of hours worked had also increased by 14% from 51.81 million hours worked in 2008-09 to 59.16 million hours worked in 2017-18. For the coal sector, hours worked increased by 14%, metalliferous by 15%, and the extractives sector increased its hours worked by 14%.

The opal and petroleum sectors are not represented in NSW hours worked figures because mining operators in these sectors are not required to submit quarterly reporting data to the Regulator.

FIGURE 1. COAL, METALLIFEROUS AND EXTRACTIVES HOURS WORKED BY SECTOR 2008-09 TO 2017-18



Fatal injuries

Fatal injuries during 2017-18

In 2017-18 there were zero mining fatalities recorded in NSW. There was one non-work-related death reported at an open cut coal mine.



Spotlight: Non-work-related death: Worker at an open cut coal mine in Glendell, 17 January 2018

The worker was driving an articulated dump truck as part of rehabilitation activities at the mine. After being loaded with topsoil, the dump truck was seen to veer off the haul road and come to a stop about 250 metres away. The driver was found unresponsive and attempts to resuscitate the worker were unsuccessful.

NSW Police, NSW Ambulance Service and the NSW Resources Regulator responded to the incident.

The NSW Resources Regulator conducted an investigation into the circumstances of the worker's death. As a result of the information obtained during the investigation, the NSW Resources Regulator does not consider the worker's death to be work-related.

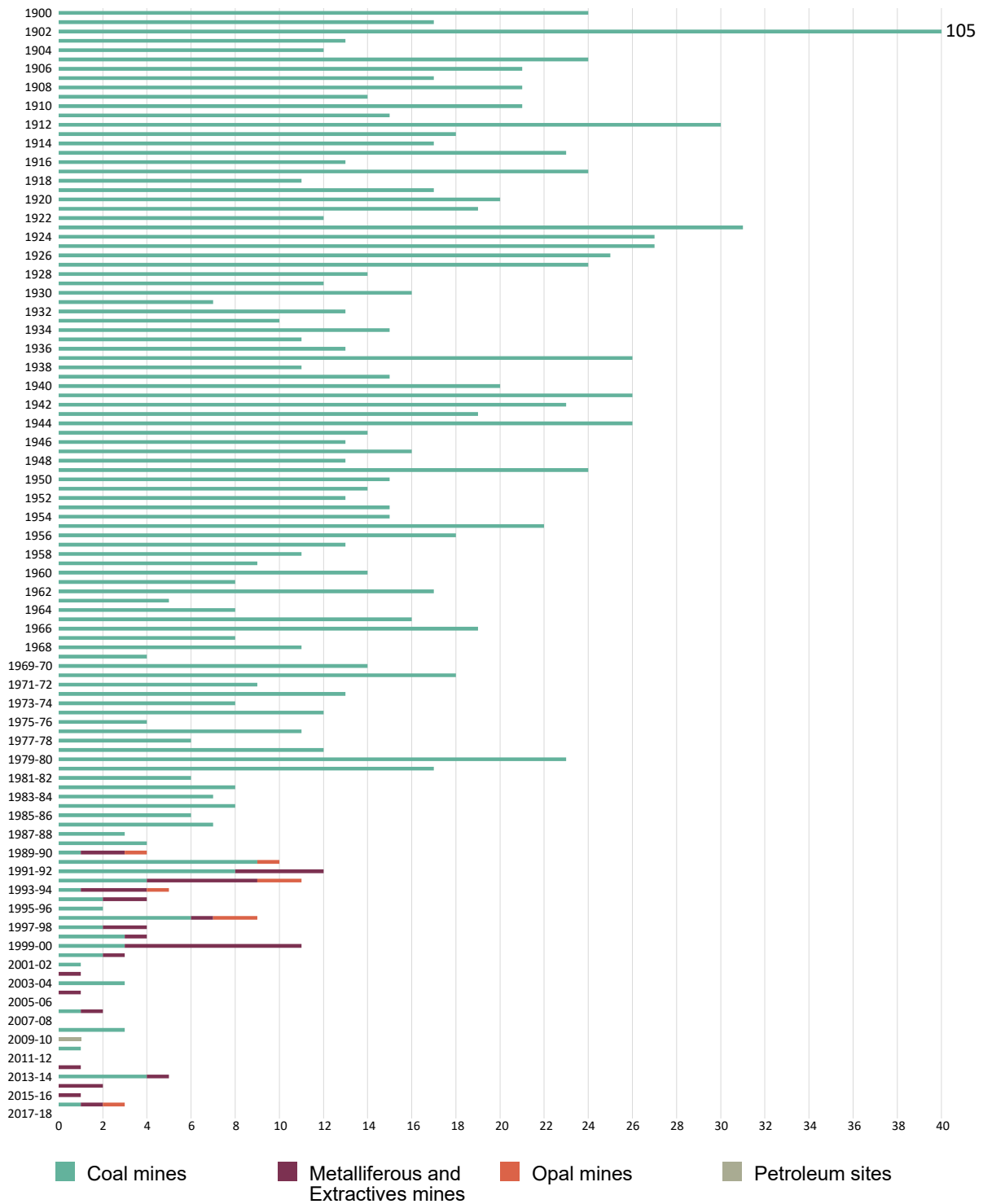
See Incident Information Release - [IIR18-01](#) and [IIR18-13](#).



Fatal injuries in NSW mining since 1900

There has been a long term overall decrease in the number of NSW mining fatal injuries in the coal, metalliferous and extractives sectors. It is important to note that from 1989, fatal injury data for all sectors became available.

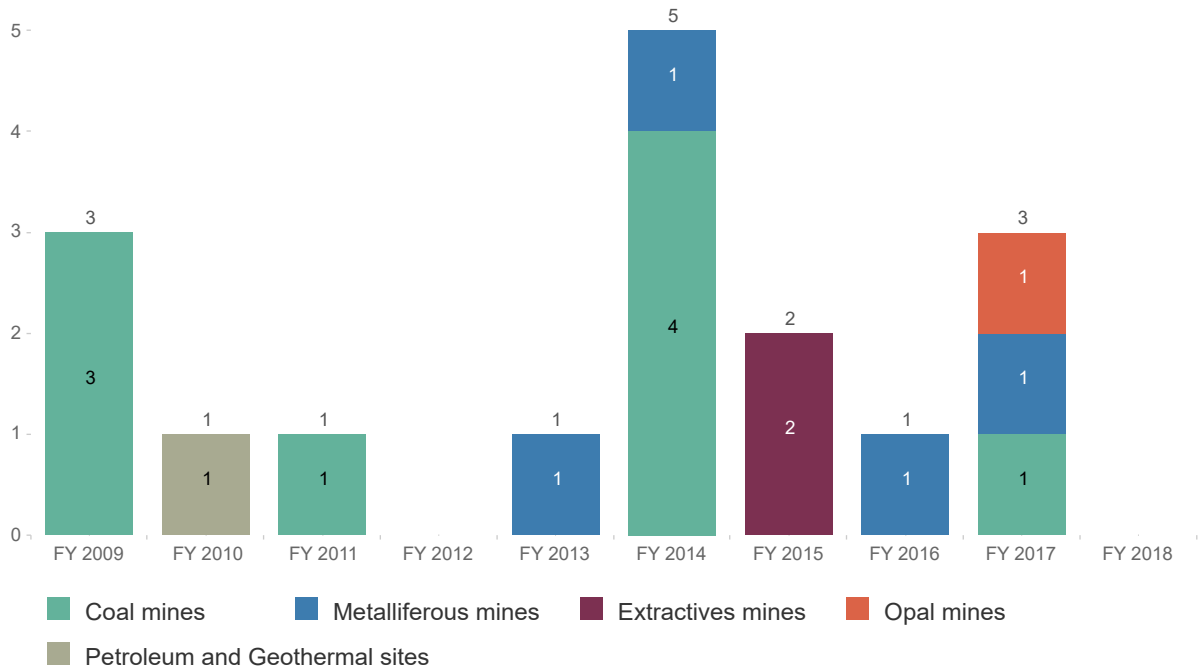
FIGURE 2. FATAL INJURIES BY SECTOR 1900 TO 2017-18



Fatal injuries by sector

Fatal injuries in the coal sector represent just over half (53%) of all fatal injuries that occurred in the ten year period since 2008-09, accounting for nine out of the 17 fatal injuries in the period.

FIGURE 3. FATAL INJURIES BY SECTOR 2008-09 TO 2017-18

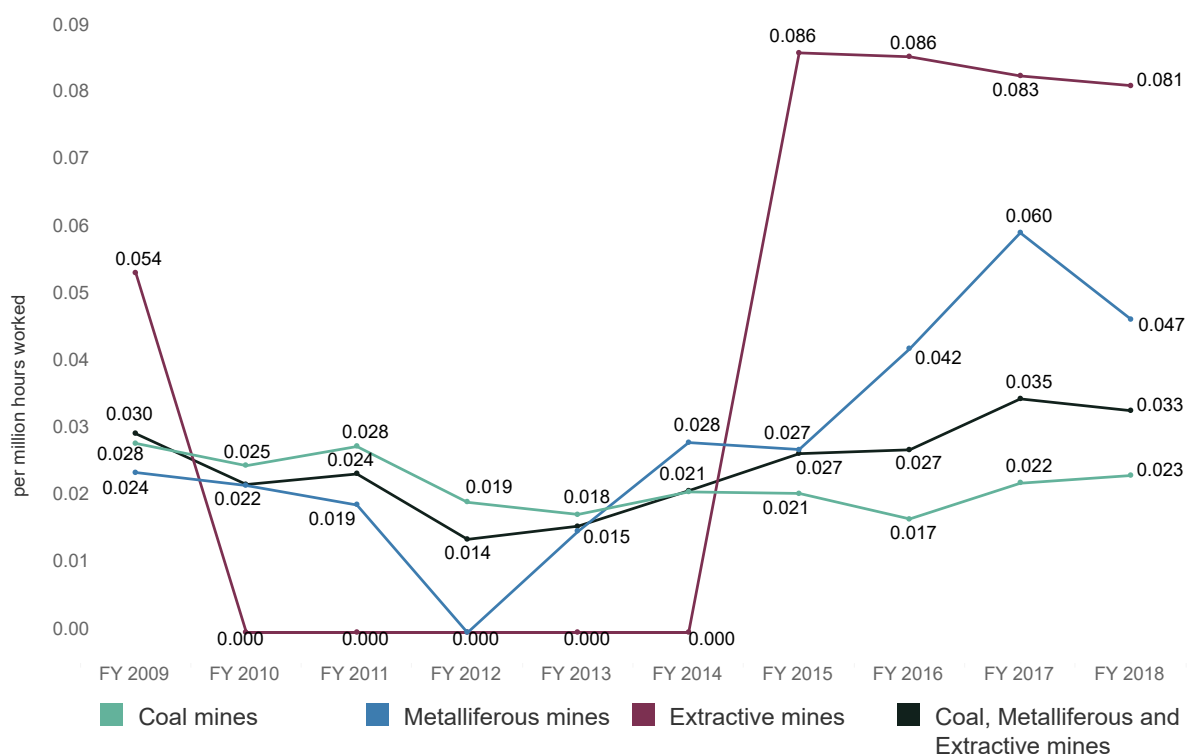


Fatal injury frequency rate

There has been a long term decrease in the number of NSW mining fatal injuries since 1900 in the coal, metalliferous and extractives sector. Further, the rolling five year average (per million hours worked) is down almost 6% from 0.035 in 2016-17 to 0.033 in 2017-18.

It is worthwhile noting that relatively small numbers of fatalities recorded can cause fluctuating frequency rates. The rolling five year average fatal injury frequency rate (FIFR) has ranged from a low of 0.014 to a high of 0.035 injuries per million hours worked in the ten years since 2008-09 showing an overall fairly steady trend over time.

FIGURE 4. COAL, METALLIFEROUS AND EXTRACTIVES FIVE YEAR AVERAGE FIFR 2008-09 TO 2017-18

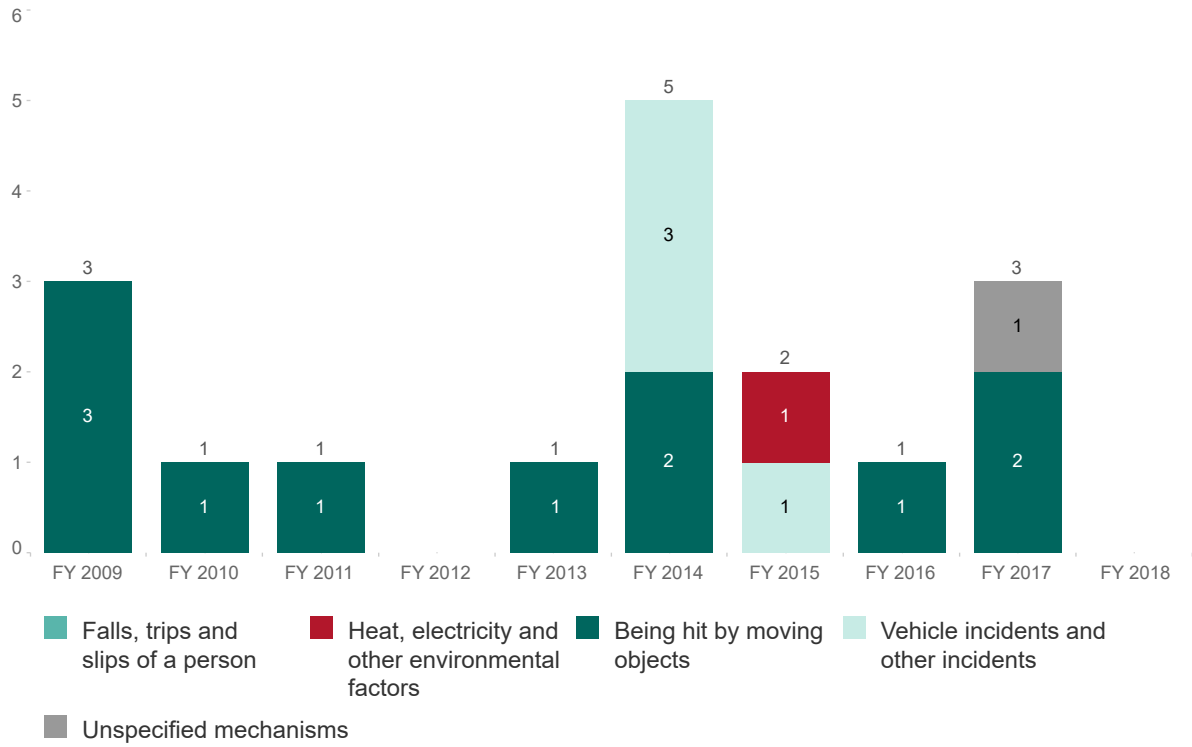


The rolling five year average fatal injury frequency rate (per million hours worked) is down almost 6% from 0.035 in 2016-17 to 0.033 in 2017-18.

Fatal hazards

The most common fatal hazard in the period 2008-09 to 2017-18 is being hit by a moving object (11 from a total of 17 fatalities or 65%) followed by vehicle incidents (4 from a total of 17 fatalities).

FIGURE 5. FATAL INJURIES BY HAZARD MECHANISM 2008-09 TO 2017-18

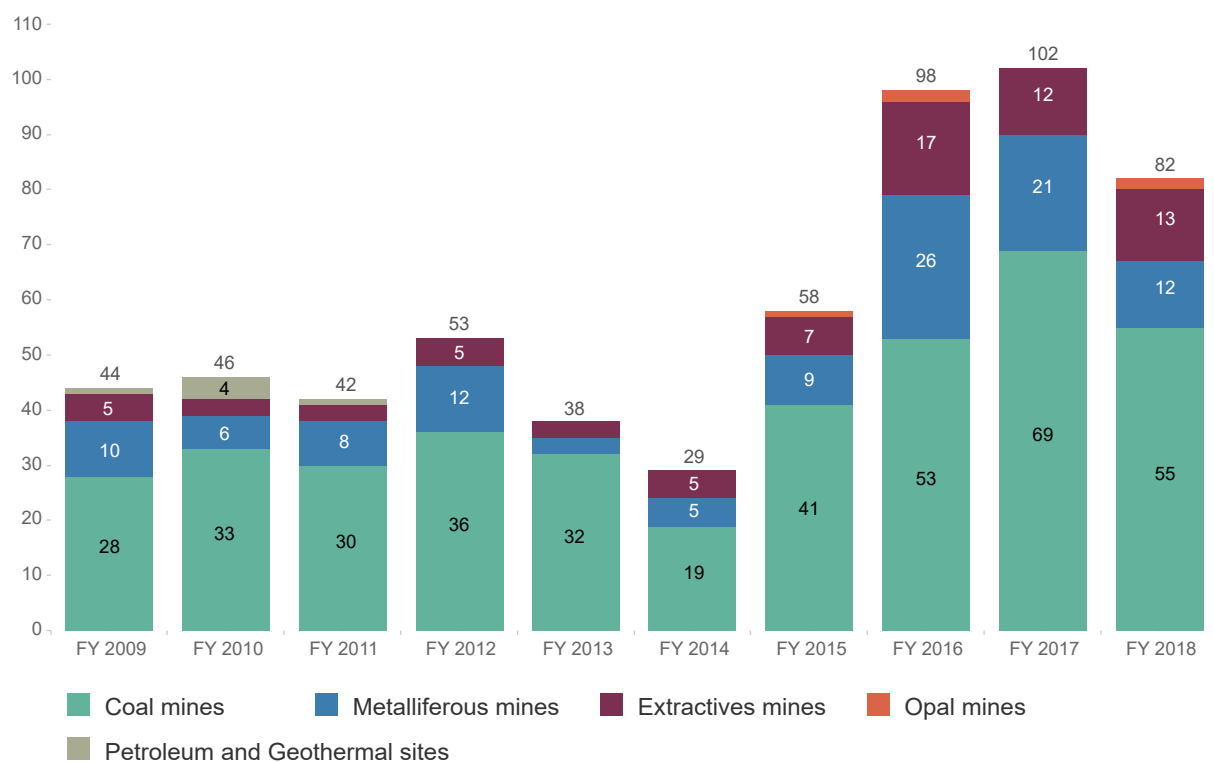


Serious injuries

Serious injuries by sector

There were 82 serious injuries reported in the mining industry during 2017-18. Since the Work Health and Safety (Mining & Petroleum Sites) Regulation 2014 commenced in February 2015, the number of serious injuries reported to the Regulator has more than doubled. The new regulation broadened the legislated definition of serious injury to also include additional injury types, as well as any injury irrespective of its nature that results in immediate treatment as an in-patient in a hospital. This has contributed to the observed increase.

FIGURE 6. SERIOUS INJURIES BY SECTOR 2008-09 TO 2017-18



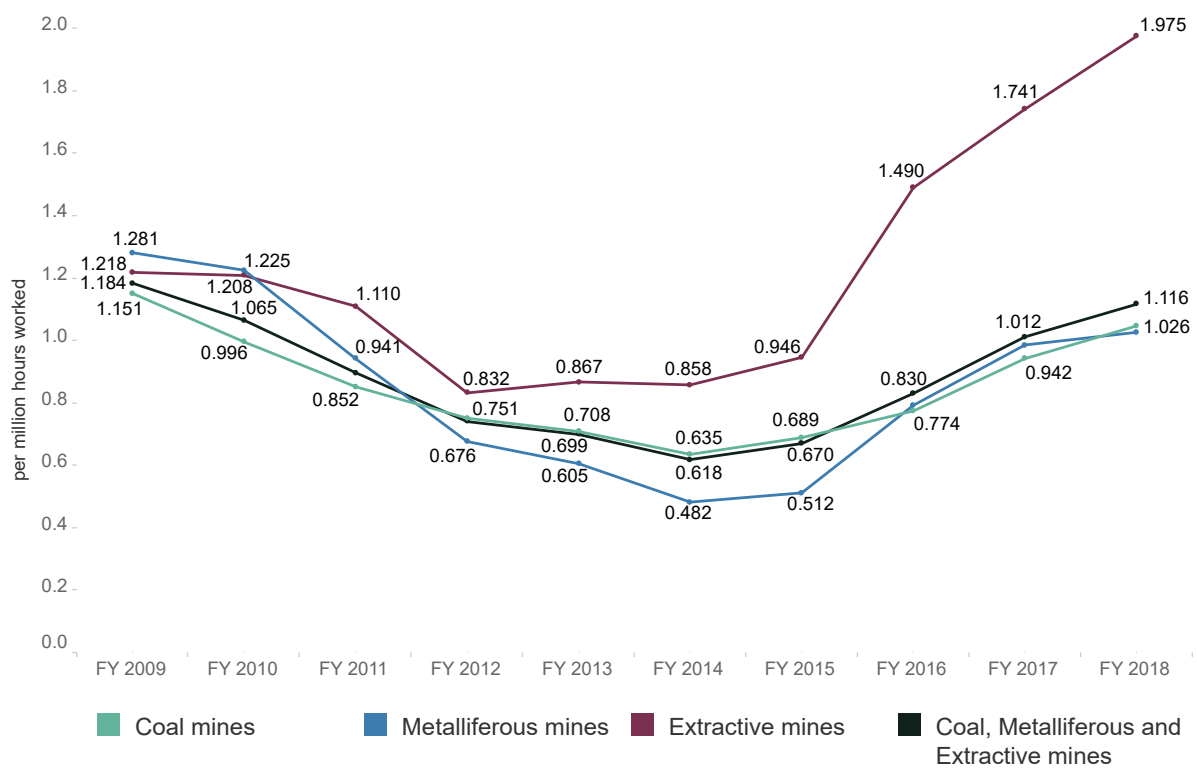
Since February 2015, the definition of a serious injury was expanded and includes any injury that results in immediate treatment as an in-patient at a hospital.

Serious injury frequency rates

For the coal, metalliferous and extractives sectors, the rolling five year average serious injury frequency rate (SIFR) to 2017-18 was 1.116. Compared to the previous year, this represents an increase of approximately 10%.

It is important to note that in the ten years since 2008-09, despite the recent increases, the industry has experienced a 6% decrease in the rolling five year average frequency rate of serious injuries. Again, it should be noted that the legislated definition of serious injury was expanded in early 2015 to now also include additional injury types, as well as any injury irrespective of its nature that results in immediate treatment as an in-patient in a hospital. This will have contributed to the observed increase.

FIGURE 7. COAL, METALLIFEROUS AND EXTRACTIVES FIVE YEAR AVERAGE SIFR 2008-09 TO 2017-18

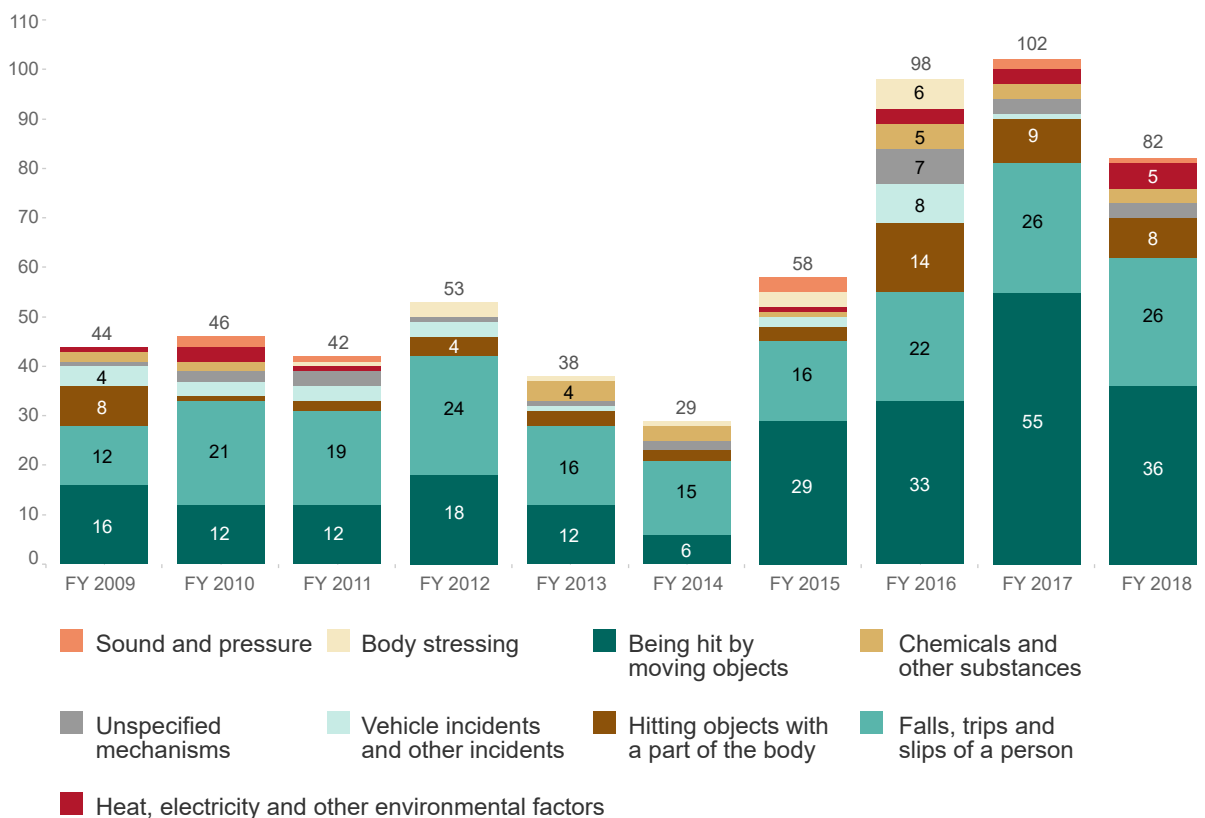


Serious injuries hazards

The total number of serious injuries reduced from 102 in 2016-17 to 82 in 2017-18 which represents a decrease of almost 20%. The total number of serious injuries has increased by 86% when comparing 2008-09 to 2017-18.

The most common serious injury hazard for coal mines and metalliferous and extractives mines in the period 2008-09 to 2017-18 is being hit by a moving object, followed by slips, trips and falls. Together those two mechanisms accounted for 62 of the 82 of serious injuries (76%) in 2017-18.

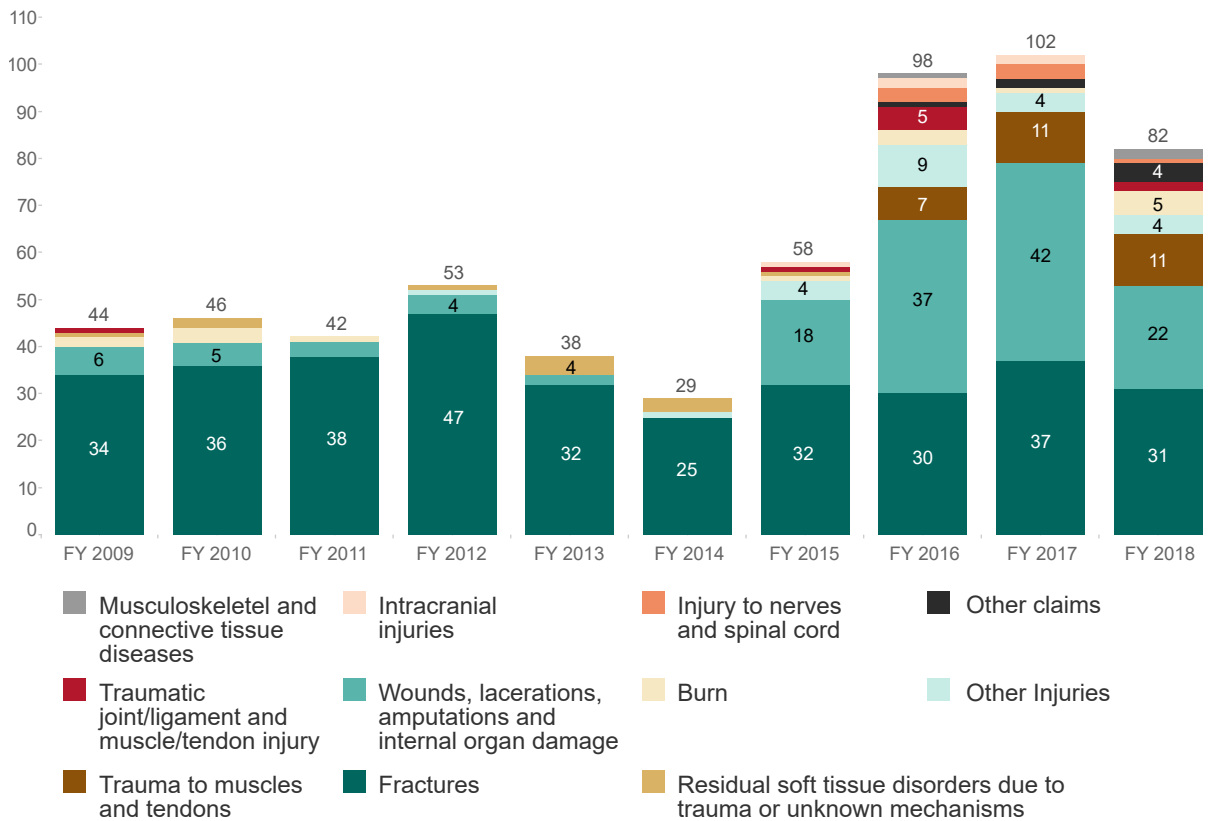
FIGURE 8. SERIOUS INJURIES BY HAZARD MECHANISM OF INJURY 2008-09 TO 2017-18



The total number of serious injuries reduced by almost 20% from 2016-17 to 2017-18.

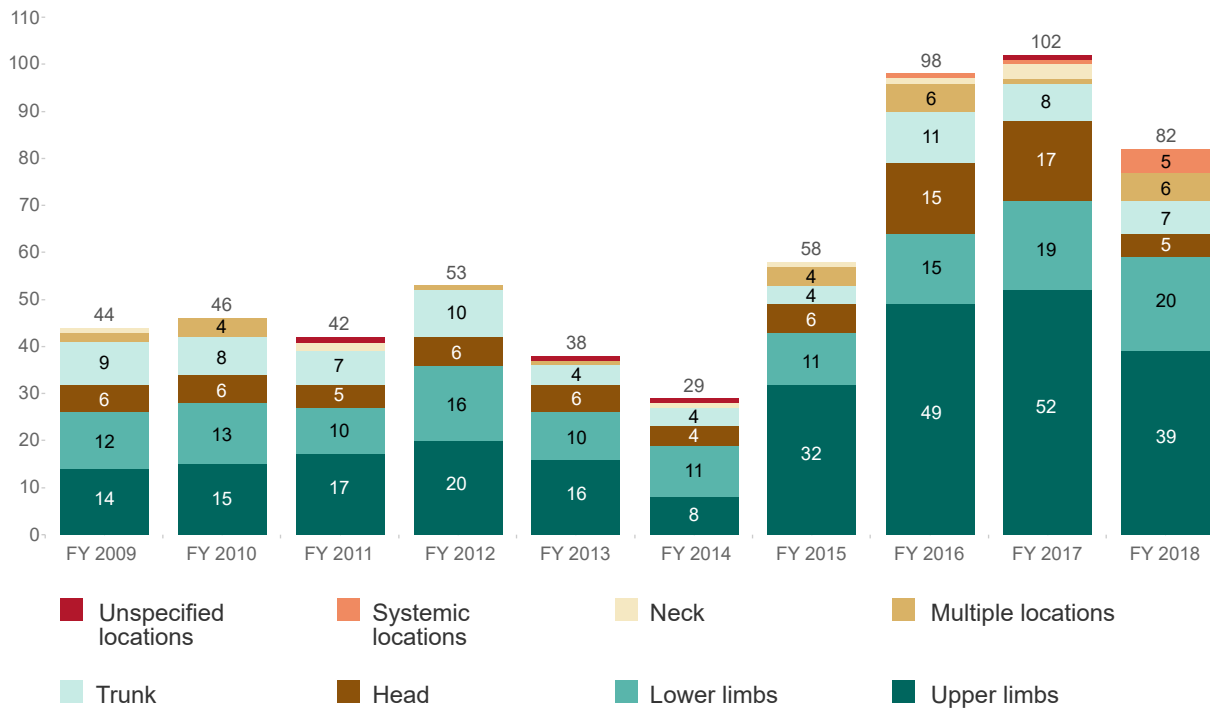
During the 2008-09 to 2017-18 period, the most common nature of serious injury was fractures, followed by wounds, lacerations, amputations and internal organ damage. Together those two natures accounted for 53 of the 82 of serious injuries (65%) in 2017-18.

FIGURE 9. SERIOUS INJURIES BY NATURE OF INJURY 2008-09 TO 2017-18



The most frequent body location for serious injuries during the 2008-09 to 2017-18 period were upper limbs, followed by lower limbs. Together those two body locations accounted for 59 of the 82 of serious injuries (72%) in 2017-18.

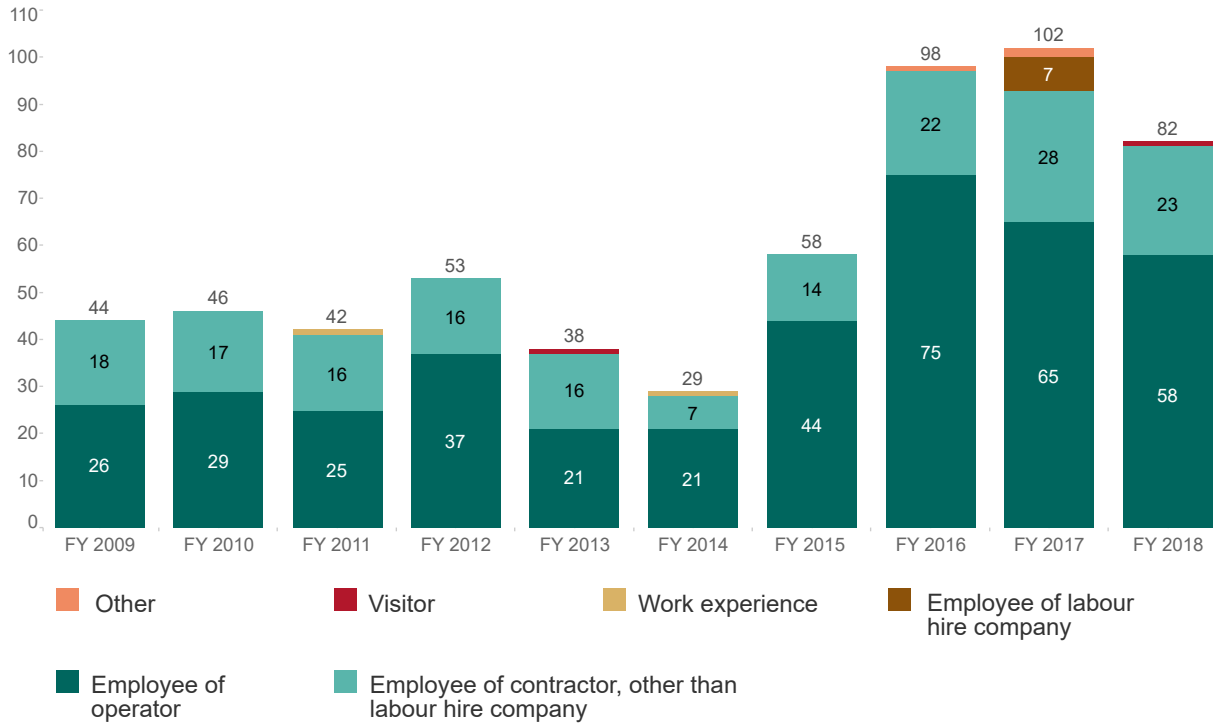
FIGURE 10. SERIOUS INJURIES BY BODILY LOCATION 2008-09 TO 2017-18



The most frequent body location for serious injuries during the 2008-09 to 2017-18 period were upper limbs, followed by lower limbs.

In 2017-18, the highest proportion of serious injuries (71%) were experienced by employees of the operator. As compared to contractors, employees of mining operators accounted for the vast majority of serious injuries over the ten year period.

FIGURE 11. SERIOUS INJURIES BY EMPLOYMENT TYPE 2008-09 TO 2017-18



Lost time injuries

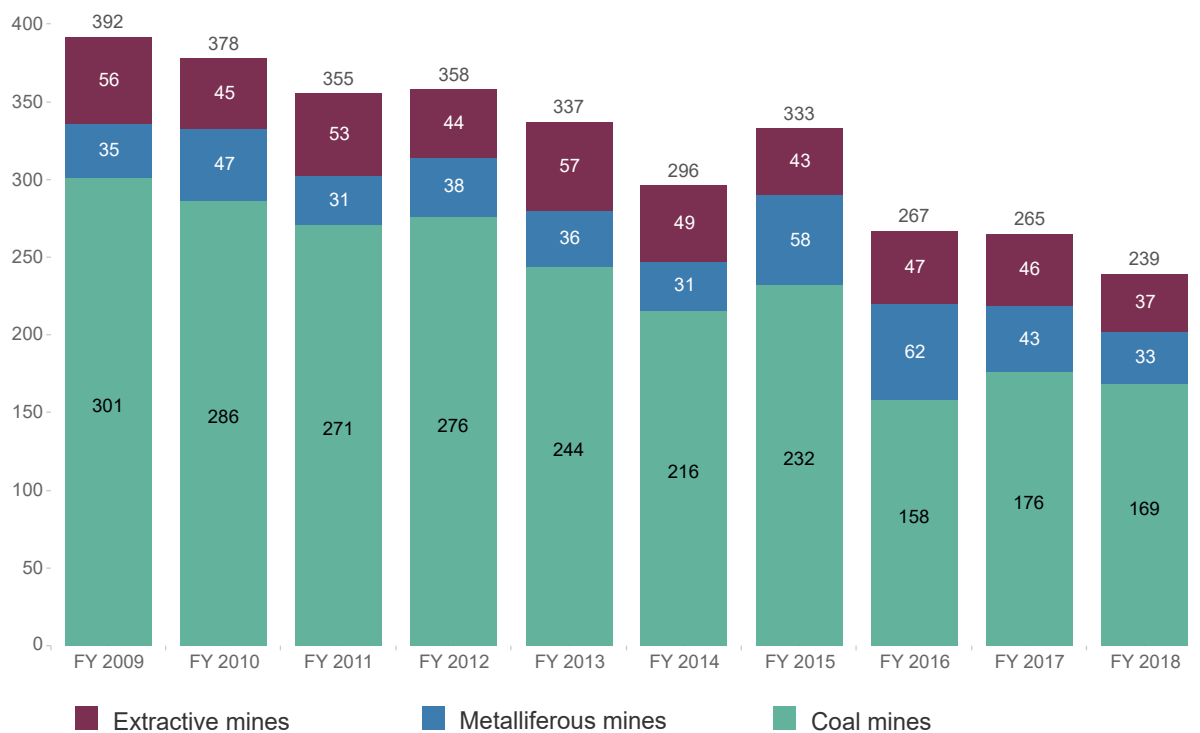
Lost time injuries by sector

The number of lost time injuries has decreased to 239 in 2017-18. This was a decrease of almost 10% compared to the previous year.

The majority of lost time injuries in 2017-18 occurred in the coal sector (169 of 239, or 71%). Again, this is likely due to the fact that the coal sector accounted for 71% of all hours worked in the mining sector in 2017-18.

Over the ten year reporting period, the total number of lost time injuries has dropped by almost 40%.

FIGURE 12. COAL, METALLIFEROUS AND EXTRACTIVES LOST TIME INJURIES BY SECTOR 2008-09 TO 2017-18



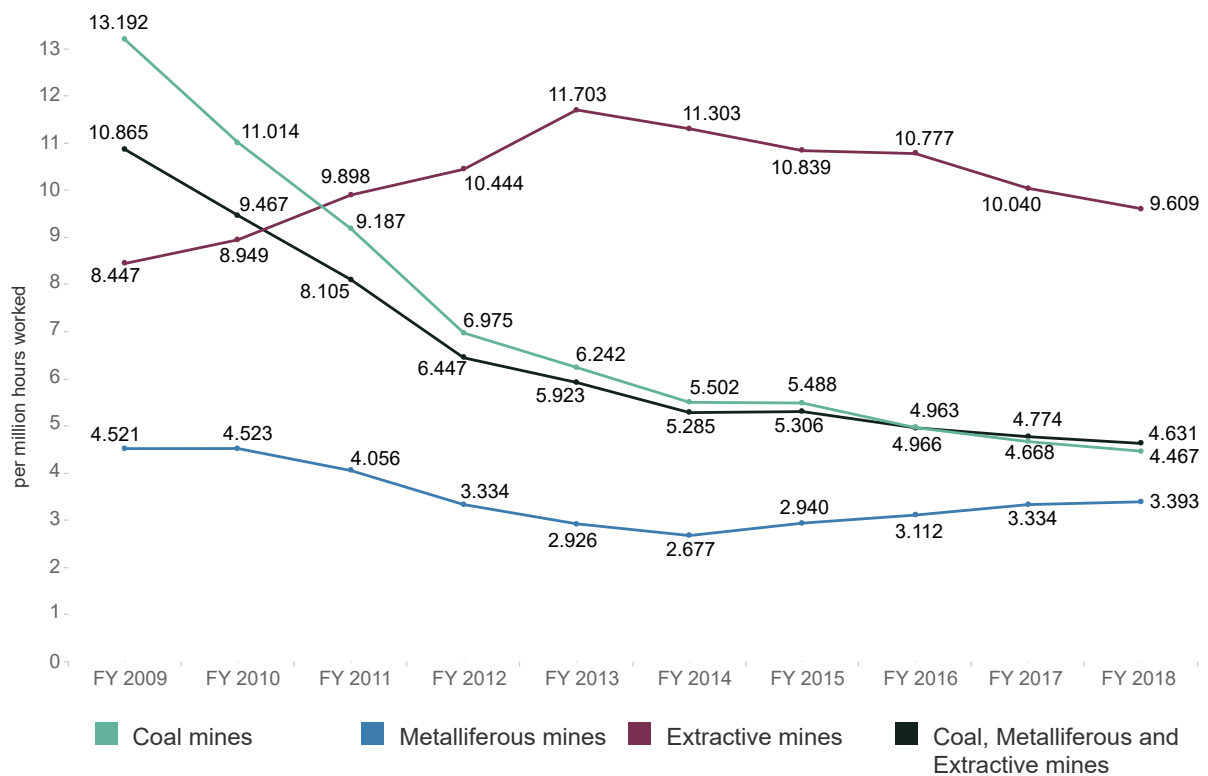
Over the ten year reporting period, the total number of lost time injuries has dropped by almost 40%.

Lost time injury frequency rates

The rolling five year average lost time injury frequency rate (LTIFR) has continued to decrease. For the coal, metalliferous and extractives sectors, the rolling five year average LTIFR in 2017-18 was 4.631, down 3% compared to the previous year.

There has been a steady downward trend in the rolling five year average LTIFR for coal, metalliferous and extractives over the ten years since 2008-09, decreasing from 10.865 in 2008-09 to 4.631 in 2017-18, an overall reduction of around 57%.

FIGURE 13. COAL, METALLIFEROUS AND EXTRACTIVES FIVE YEAR AVERAGE LTIFR 2008-09 TO 2017-18



Injury outcomes of seven days or more

Injury outcomes of seven days or more by sector

In 2017-18, there were 226 injury outcomes (lost time or restricted duty injuries) of seven days or more (LTI/RDI \geq 7 days). Whilst this number has shown a small increase since the previous year (from 197 to 226, or an increase of 15%), the overall trend in absolute numbers is downward.

In the ten years since 2008-09, the number of injuries of this type has fallen from 413 in 2008-09 to 226 in 2017-18, a reduction of 45%.

FIGURE 14. LTI / RDI \geq 7 DAYS 2008-09 TO 2017-18



In 2017-18, there were 226 injury outcomes (lost time or restricted duty injuries) of one week or more.

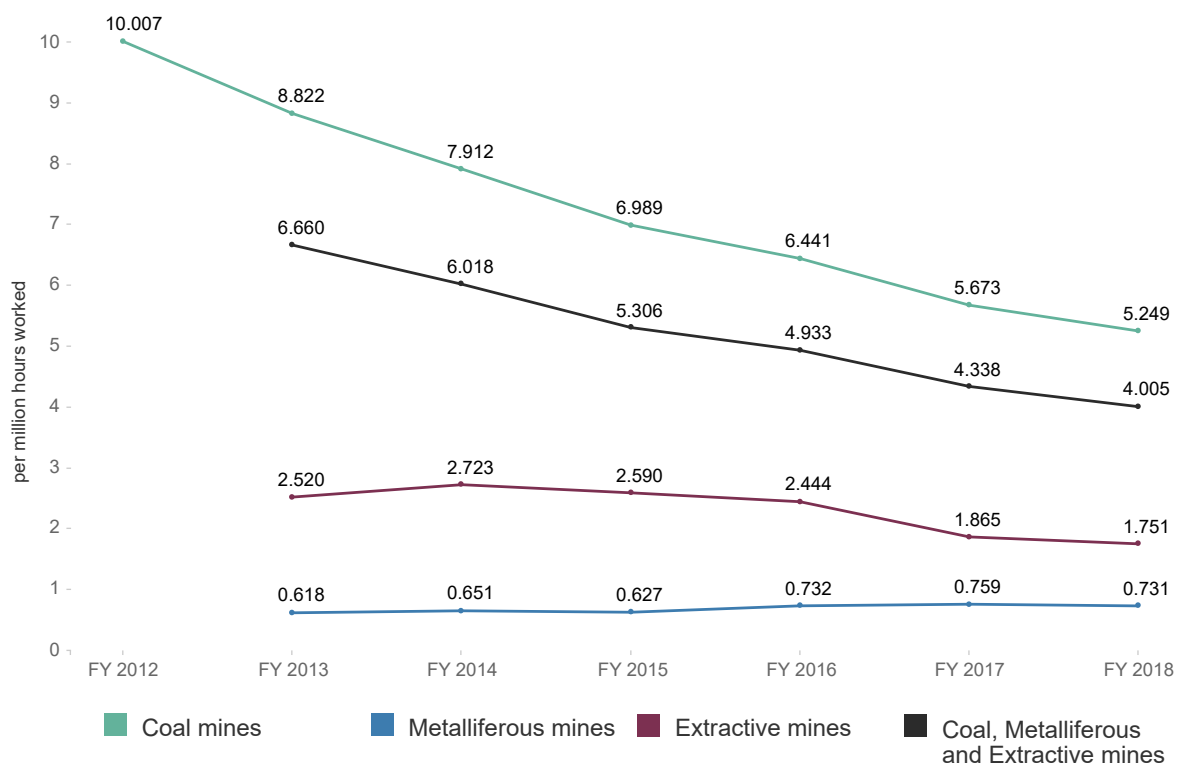
Injury outcomes of seven days or more frequency rates

For the coal, metalliferous and extractives sectors, the rolling five year average injury outcomes (lost time or restricted duty injuries) of seven days or more (LTI/RDI \geq 7days) frequency rate in 2017-18 was 4.005 down almost 8% compared to the previous year.

Since 2012-13, an overall steady downward trend for rolling five year average LTI/RDI \geq 7days was observed across each of the sectors. In 2017-18, the rate was around 40% less than the rate in 2012-13.

Note, a rolling five year average LTI/RDI \geq 7days frequency rate was unable to be calculated for the whole ten year period as this information was only included in coal incident notification requirements from the beginning of 2007 and metalliferous and extractives incident notification requirements from the second quarter of 2008-09.

FIGURE 15. COAL, METALLIFEROUS AND EXTRACTIVES FIVE YEAR AVERAGE LTI/RDI \geq 7DAY FR 2011-12 TO 2017-18

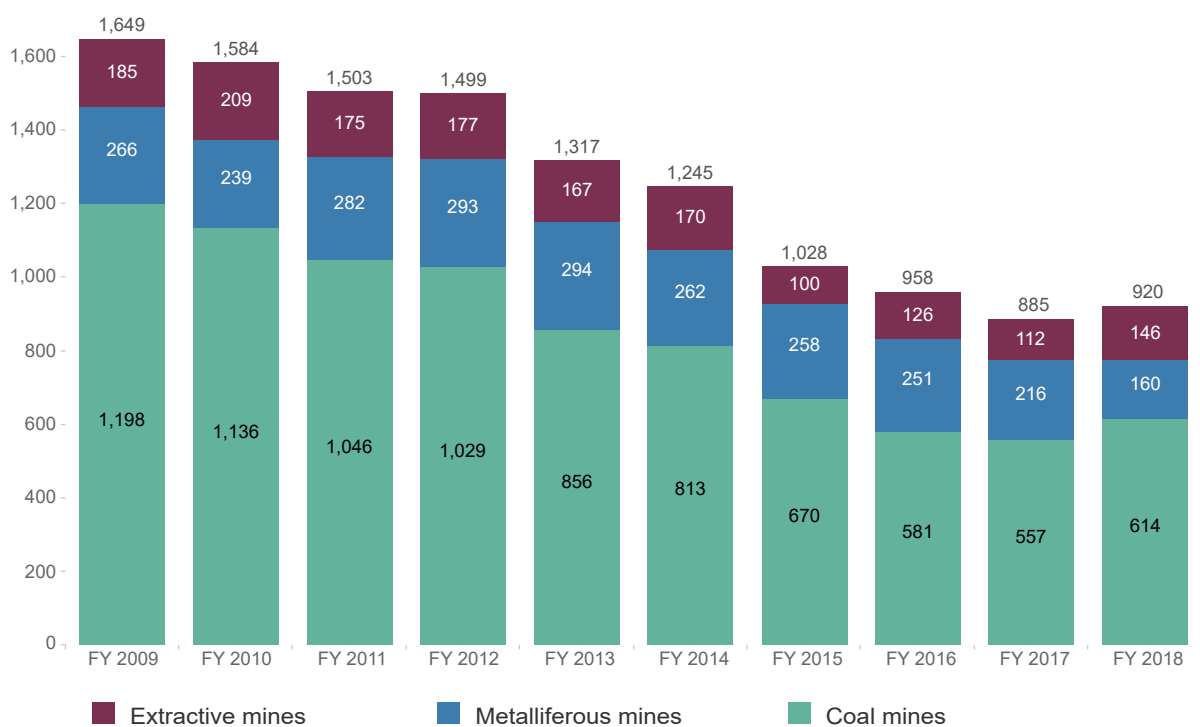


Total recordable injuries

Total recordable injuries by sector

A small increase in total recordable injuries (TRI) was recorded in 2017-18 compared to 2016-17. The figures rose from 885 in 2016-17 to 920 in 2017-18, or an increase of almost 4%. However, since 2008-09, total recordable injuries is showing a total general trend downward for the coal, metalliferous and extractives sectors.

FIGURE 16. COAL, METALLIFEROUS AND EXTRACTIVES TOTAL RECORDABLE INJURY AND HOURS WORKED 2008-09 TO 2017-18



A small increase in total recordable injuries (TRI) was recorded in 2017-18 compared to 2016-17.

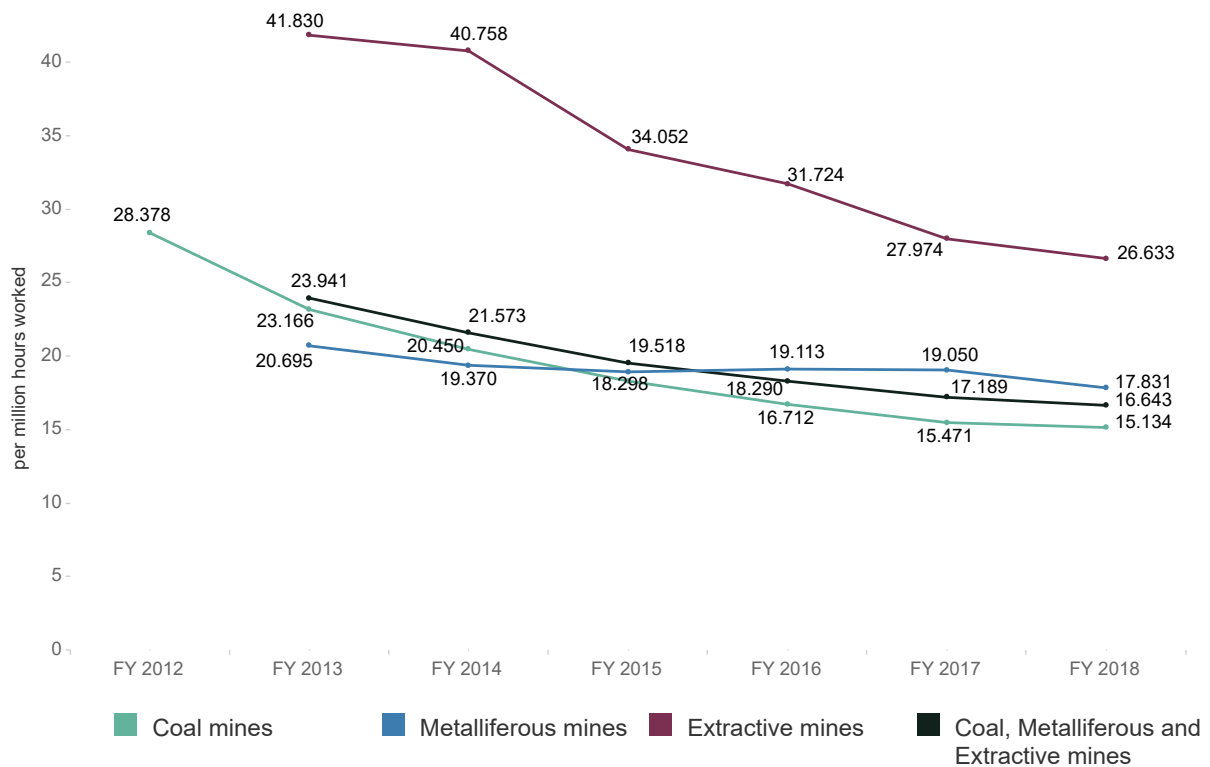
Total recordable injury frequency rates

For the coal, metalliferous and extractives sectors, the rolling five year average total recordable injury frequency rate (TRIFR) to 2017-18 was 16.643, down 3% on the previous year.

Since 2012-13, an overall steady downward trend in the rolling five year average TRIFR was observed for coal, metalliferous and extractives sectors.

Note, a rolling five year average TRIFR frequency rate was unable to be calculated for the whole ten year period as this information was only included in coal quarterly reporting requirements from the beginning of 2007-08 and metalliferous and extractives quarterly reporting requirements from the second quarter of 2008-09.

FIGURE 17. COAL, METALLIFEROUS AND EXTRACTIVES FIVE YEAR AVERAGE TRIFR 2011-12 TO 2017-18

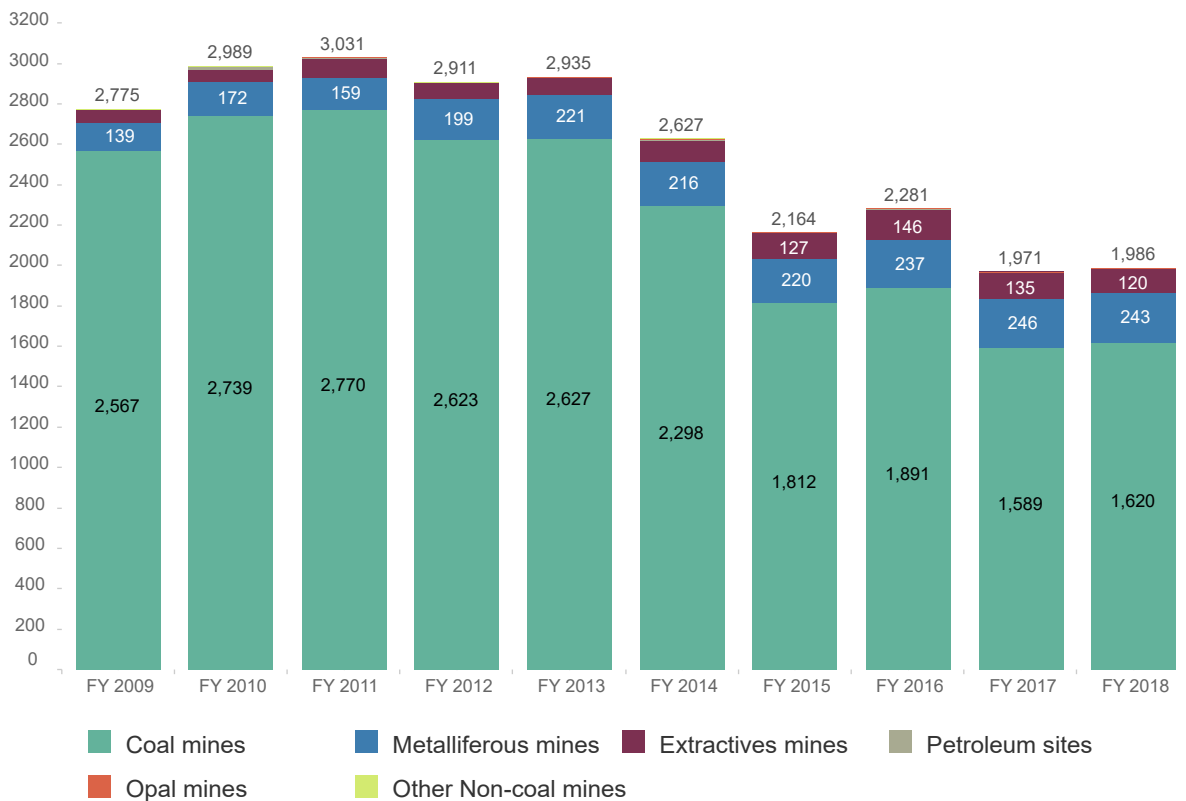


Notified safety incidents

In 2017-18, the number of safety incident notifications were similar to those recorded in the previous year (1,986 in 2017-18 and 1,971 in 2016-17). Across the reporting decade, the coal sector accounts for almost 84% of all notified safety incidents. In 2017-18, 82% of safety incidents notified were from the coal sector.

Note that any multiple gas trips that were reported to the Regulator in a single incident notification have been included as individual incident notifications in this report. See the [Annual Business Activity Report 2017-18](#) for more details about the safety incident notifications received by the regulator in 2017-18.

FIGURE 18. NOTIFIED SAFETY INCIDENTS BY SECTOR 2008-09 TO 2017-18



Across the reporting decade, the coal sector accounts for almost 84% of all notified safety incidents.

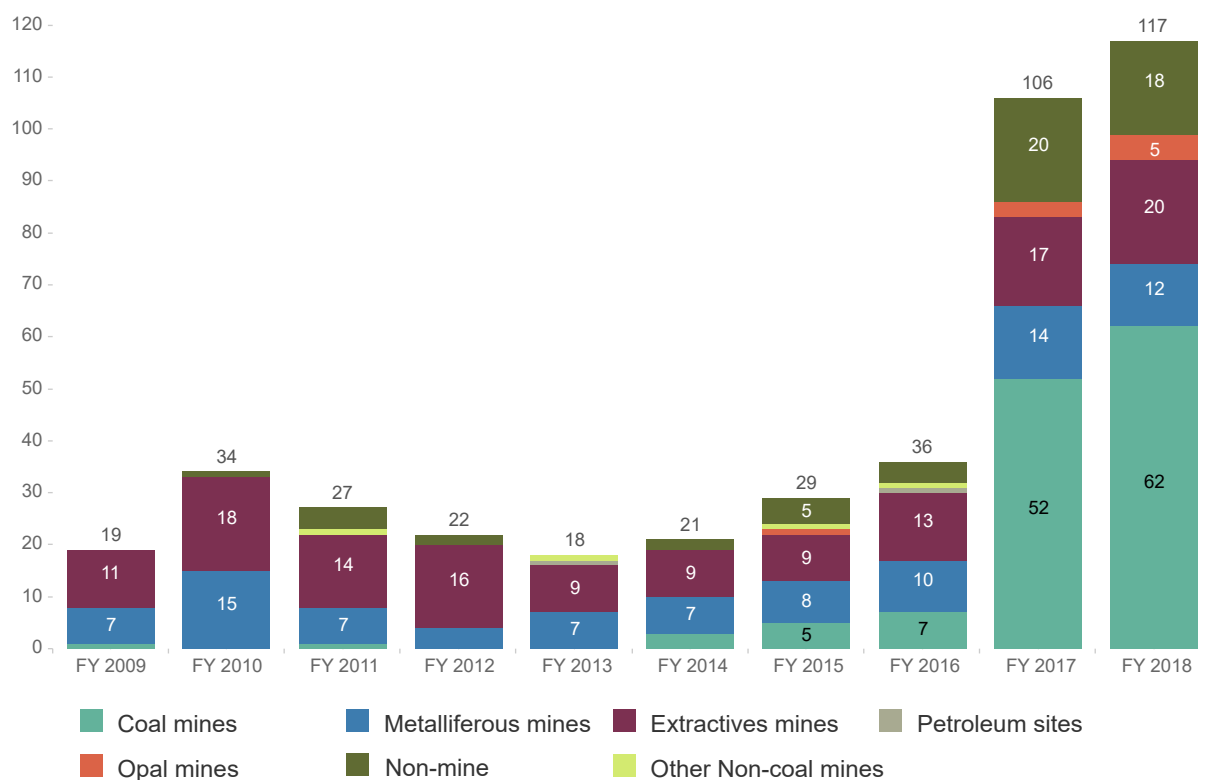
Complaints

In 2016, the Regulator streamlined and centralised its complaints reporting and notifications processes. The Regulator also changed the way it recorded complaints. As a result, the number of complaints showed a marked increase in 2016-17 and 2017-18 when compared to previous years, though both years show similar numbers (106 in 2016-17 and 117 in 2017-18).

The increase in complaint notifications was more evident in the coal and non-mine sectors.

Complaints represent a valuable source of information that is now being better captured in order to guide the Regulator’s activities.

FIGURE 19. COMPLAINTS BY SECTOR 2008-09 TO 2017-18



Safety notices

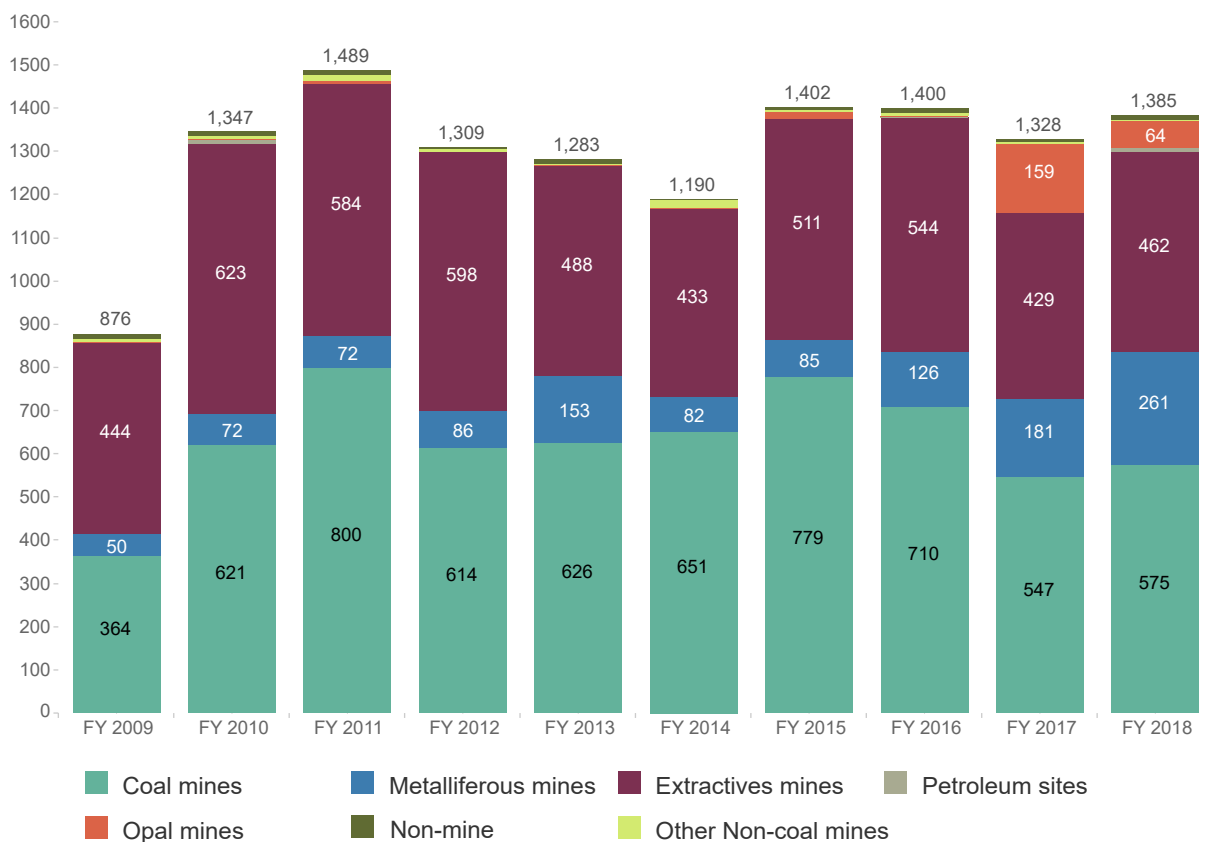
Safety notices by sector

Notices issued by the Regulator include notices of concern (advice notices), improvement, prohibition, investigation and explosives enforcement notices.

In 2017-18, the Regulator issued 1,385 safety notices which is a similar result when comparing the past four years (2014-15 to 2017-18).

The increase in safety notices seen in the opal sector in the past two years is because more safety notices were issued in that sector in response to our targeted safety operation.

FIGURE 20. SAFETY NOTICES BY SECTOR 2008-09 TO 2017-18

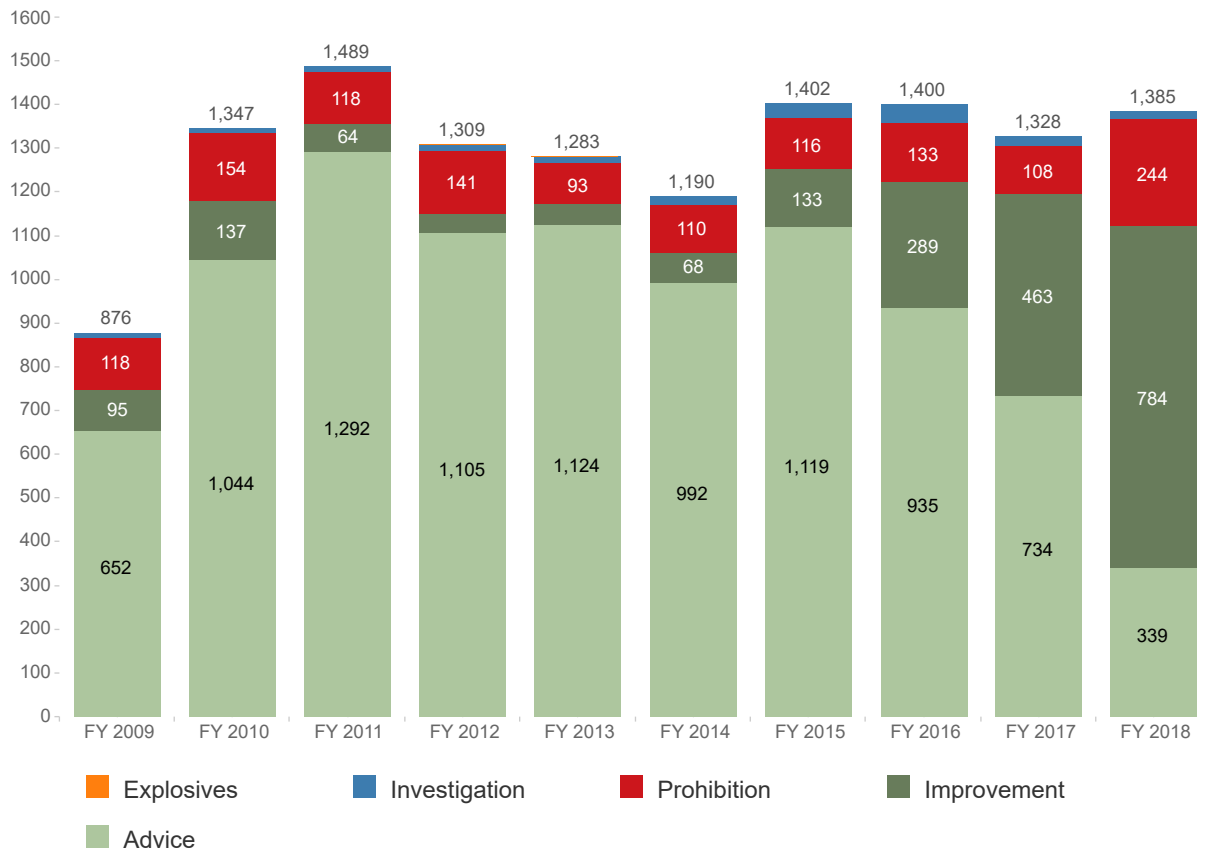


The increase in safety notices seen in the opal sector in the past two years is because more safety notices were issued in that sector in response to our targeted safety operation.

Safety notices by notice type

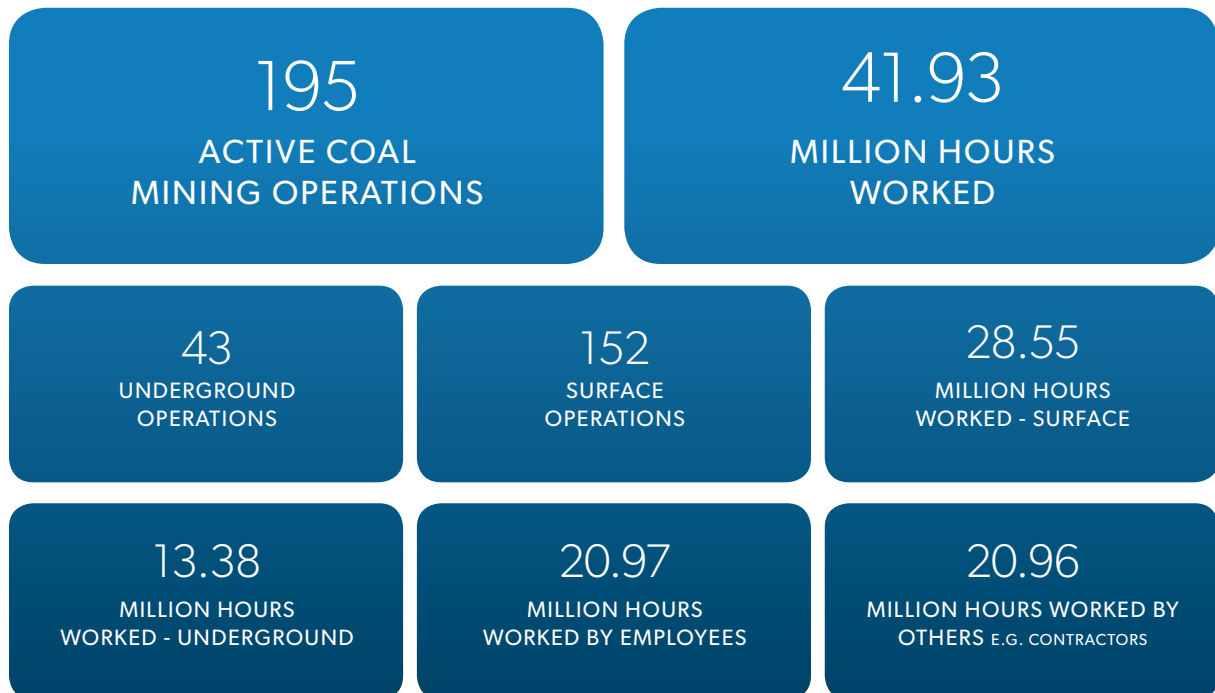
Between 2014-15 and 2017-18, the proportion of improvement notices relative to notices of concern (advice) continued to increase. There was also an increase in the number of prohibition notices. This reflected the Regulator’s renewed focus on incident prevention where it sought to clearly identify matters that necessitate the issue of an improvement notice as compared to a written notice of concern.

FIGURE 21. NOTICES BY NOTICE TYPE 2008-09 TO 2017-18



Coal sector

Statistics and performance measures 2017-18



- Zero fatal injuries in the coal sector
- Rolling five year average fatal injury frequency rate (FIFR, per million hours worked) down 5% from 0.022 in 2016-17 to 0.023 in 2017-18. Since 2008-09, the rolling five year average FIFR has ranged from a low of 0.017 to a high of 0.028 injuries per million hours worked showing an overall steady trend
- 55 serious injuries – most common mechanism is being hit by moving object
- Rolling five year average serious injury frequency rate (per million hours worked) up 11% from 0.942 in 2016-17 to 1.047 in 2017-18. However, this rate decreased by approximately 9% overall compared to 2008-09
- 169 lost time injuries
- Rolling five year average lost time injury rate (per million hours worked) down 4% from 4.668 in 2016-17 to 4.467 in 2017-18
- 214 injury outcomes (lost time or restricted duty seven days or more)
- Rolling five year average injury outcome rate (lost time or restricted duty of seven days or more) (per million hours worked) down 7% from 5.673 in 2016-17 to 5.249 in 2017-18
- 614 total recordable injuries
- Rolling five year average total recordable injury rate (per million hours worked) down 2% from 15.471 in 2016-17 to 15.134 in 2017-18
- 1,620 notifiable safety incidents
- 62 complaints – 41 complaints lodged by surface coal operations
- 575 safety notices issued – 116 prohibition notices

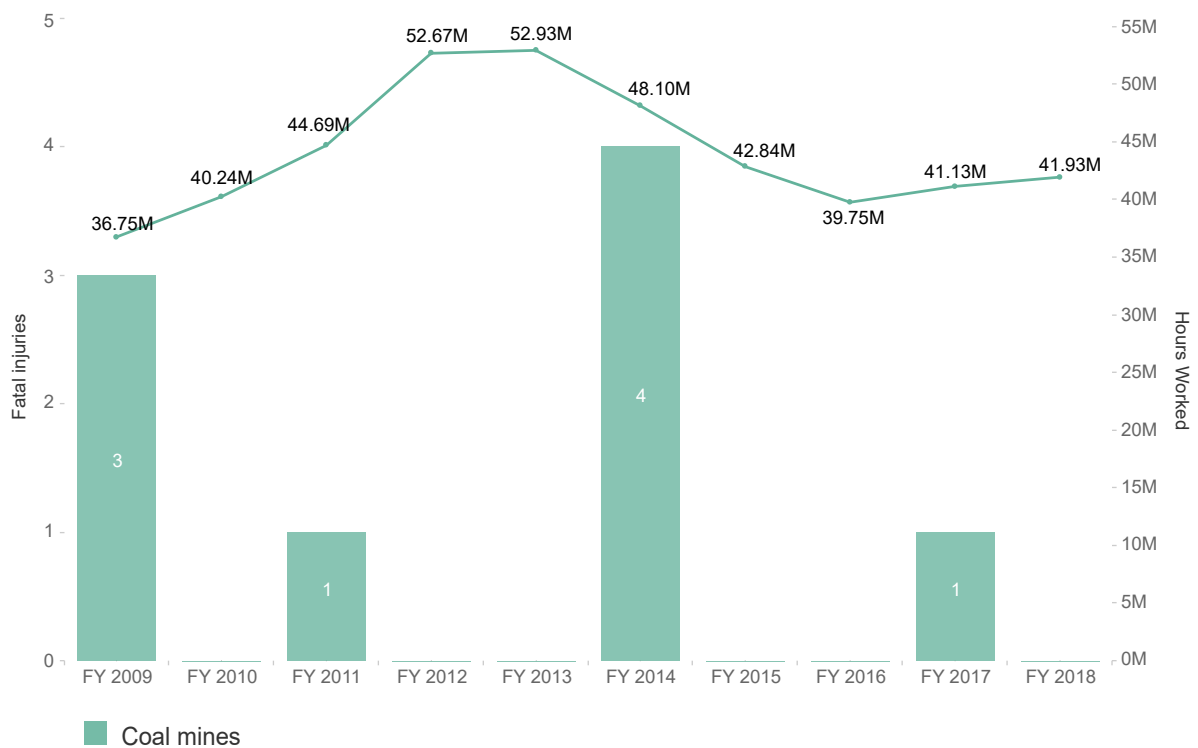
Fatal injuries

Fatal injuries and hours worked

In 2017-18 zero mining fatalities occurred in the coal sector.

Figure 2, on page 14, presents fatal injuries in NSW mines from 1900 to 2017-18 and shows the sustained long term decrease in coal mining fatal injuries in NSW.

FIGURE 22. COAL FATAL INJURIES AND HOURS WORKED 2008-09 TO 2017-18

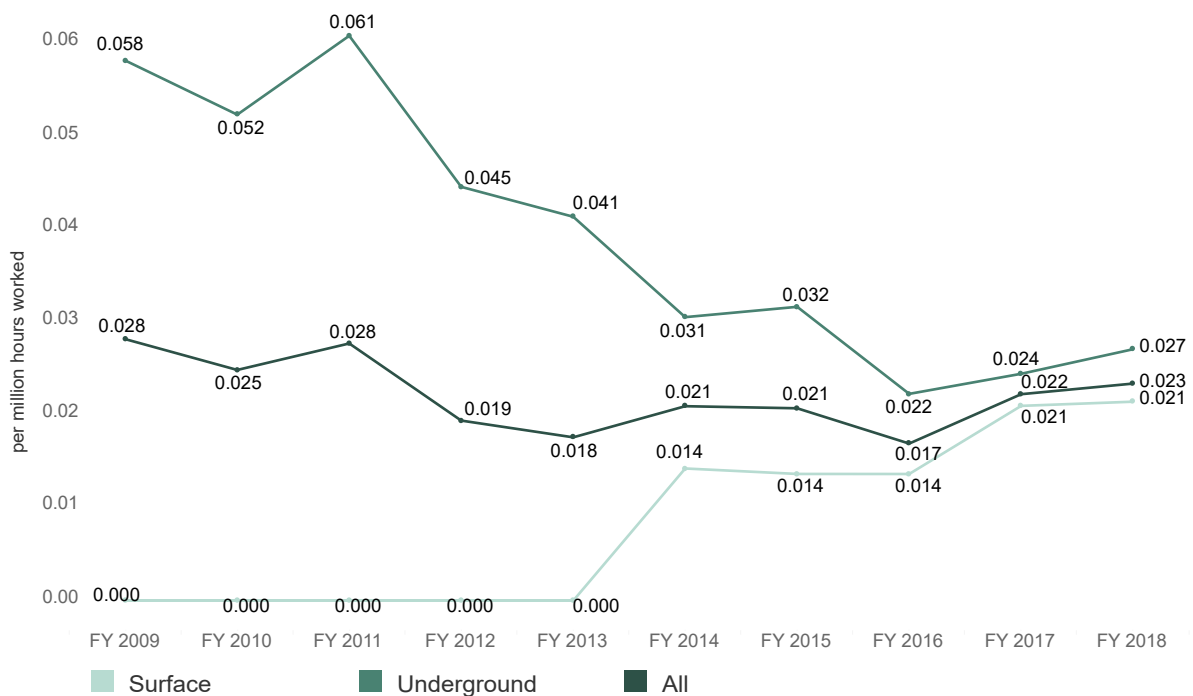


Fatal injury frequency rates

In the coal sector, the rolling five year average fatal injury frequency rate (FIFR) to 2017-18 was down 5% compared to previous year (from 0.022 in 2016-17 to 0.023 in 2017-18). It is worthwhile noting that relatively small numbers of fatalities recorded can cause fluctuating frequency rates.

Since 2008-09, the rolling five year average fatal injury frequency rate (FIFR) has ranged from a low of 0.017 to a high of 0.028 injuries per million hours worked, showing an overall steady trend.

FIGURE 23. COAL FIVE YEAR AVERAGE FIFR 2008-09 TO 2017-18



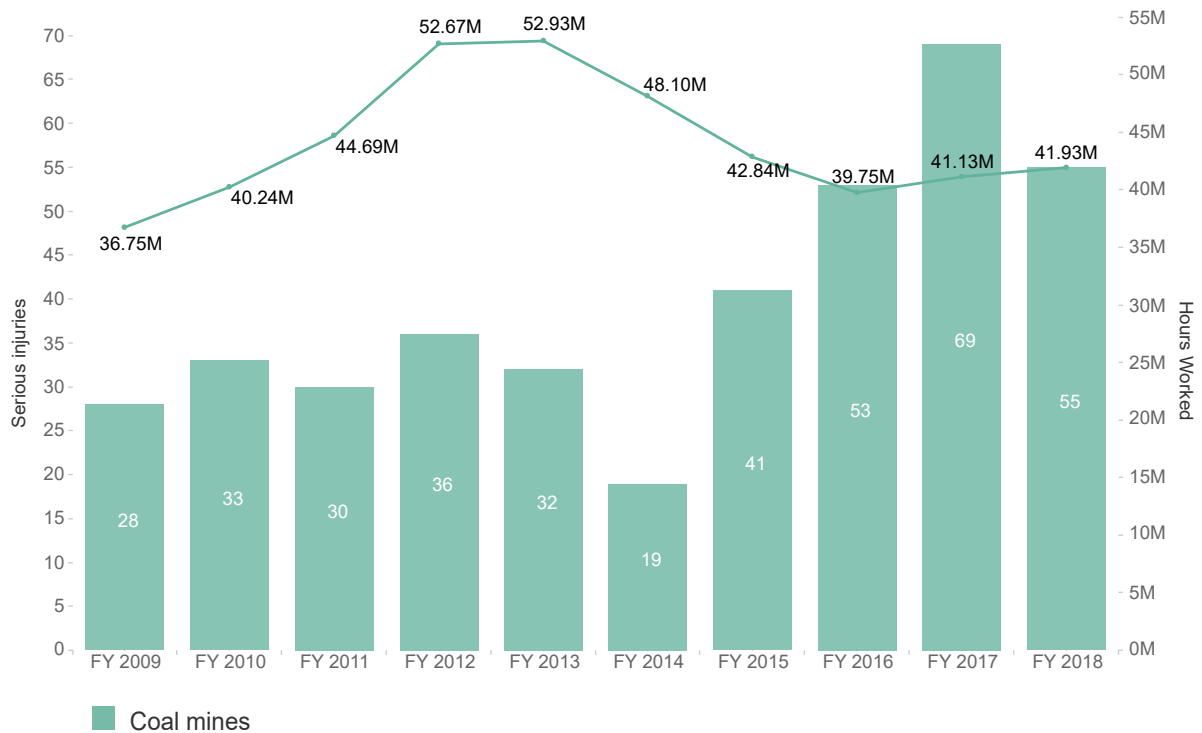
Since 2008-09, the rolling five year average fatal injury frequency rate (FIFR) has shown an overall steady trend.

Serious injuries

Serious injuries and hours worked

There were 55 serious injuries reported in the coal sector during 2017-18, this is down 14 compared to the previous year. In the full three year period since the Work Health and Safety (Mining & Petroleum Sites) Regulation 2014 commenced, the number of serious injuries reported to the Regulator by the coal sector has increased year on year. The broadened definition of serious injuries in 2015 (as previously noted) has contributed to the observed increase.

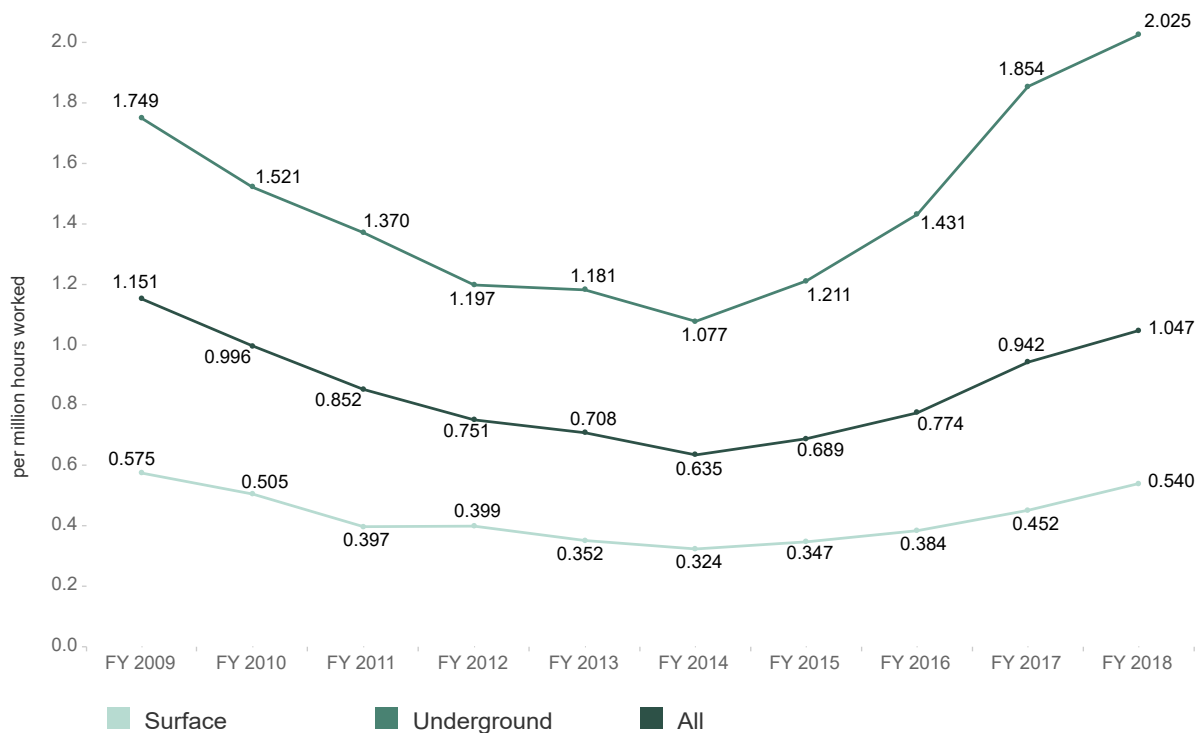
FIGURE 24. COAL SERIOUS INJURIES AND HOURS WORKED 2008-09 TO 2017-18



Serious injury frequency rates

For the coal sector, the rolling five year average serious injury frequency rate (SIFR) was up approximately 11% from 0.942 in 2016-17 to 1.047 in 2017-18. The recent amendment to the definition of serious injury in 2015 has contributed to this increase. However, in the ten years since 2008-09, the coal industry rolling five year average SIFR decreased by approximately 9% overall.

FIGURE 25. COAL FIVE YEAR AVERAGE SERIOUS INJURY FREQUENCY RATE (SIFR) 2008-09 TO 2017-18



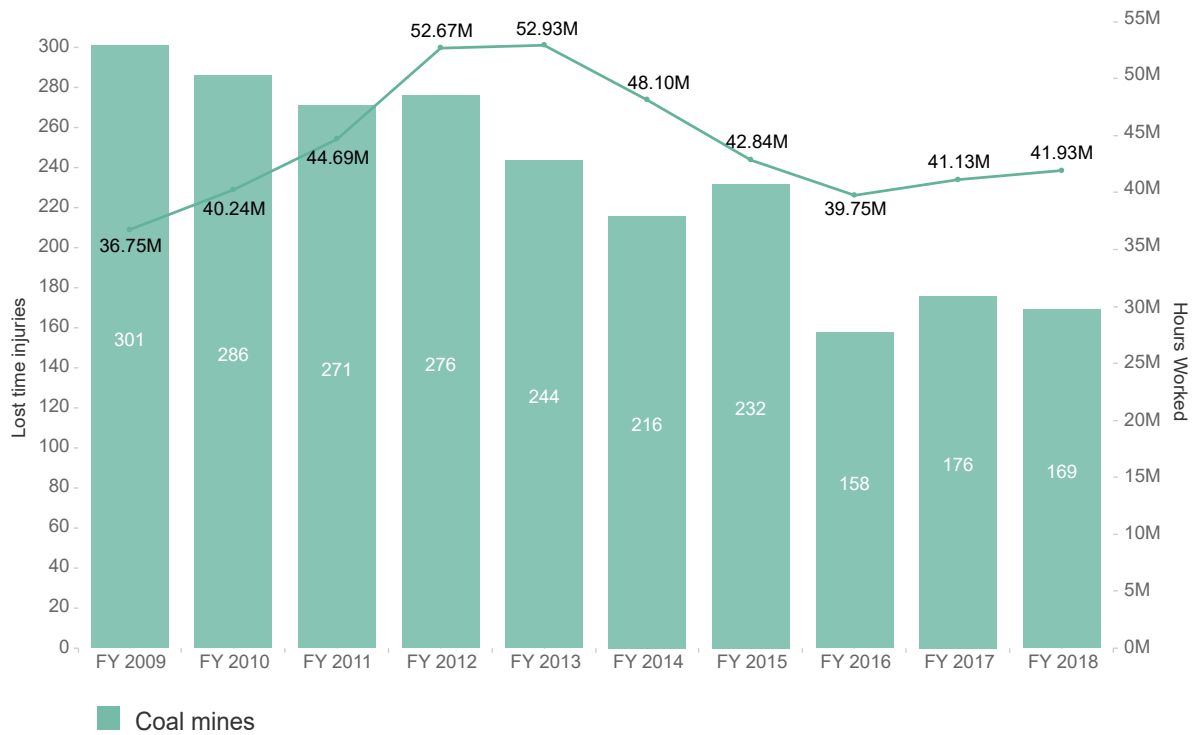
For the coal sector, the rolling five year average serious injury frequency rate was up approximately 11% from 0.942 in 2016-17 to 1.047 in 2017-18.

Lost time injuries

Lost time injuries and hours worked

In 2017-18, the number of lost time injuries reported to the Regulator was 169, down 7 compared to the previous year. In the ten years since 2008-09, lost time injuries decreased by approximately 44%.

FIGURE 26. COAL LOST TIME INJURIES AND HOURS WORKED 2008-09 TO 2017-18

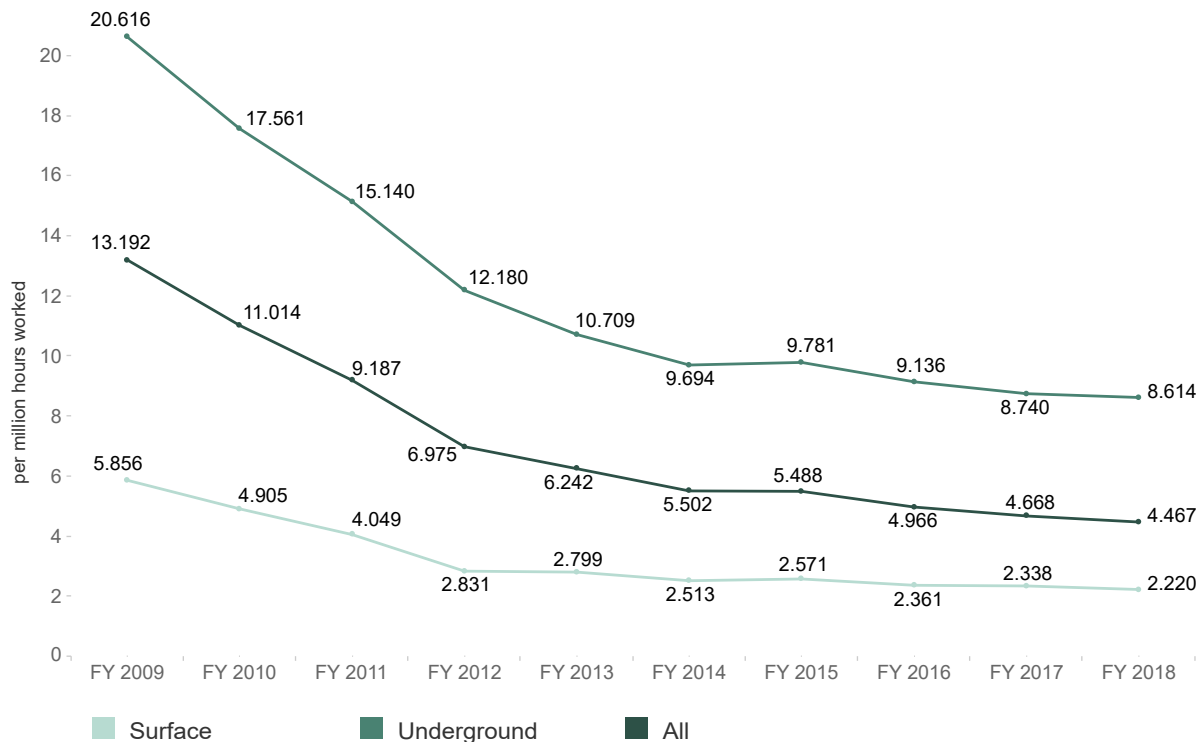


Lost time injury frequency rates

The rolling five year average lost time injury frequency rate (LTIFR) for the coal sector has continued to decrease. The rolling five year average LTIFR in 2017-18 was 4.467 compared to 4.668 in 2016-17. This represented a 4% decrease.

Over the ten years since 2008-09, the coal sector experienced a decrease in the rolling five year average LTIFR by approximately 66%.

FIGURE 27. COAL FIVE YEAR AVERAGE LTIFR 2008-09 TO 2017-18



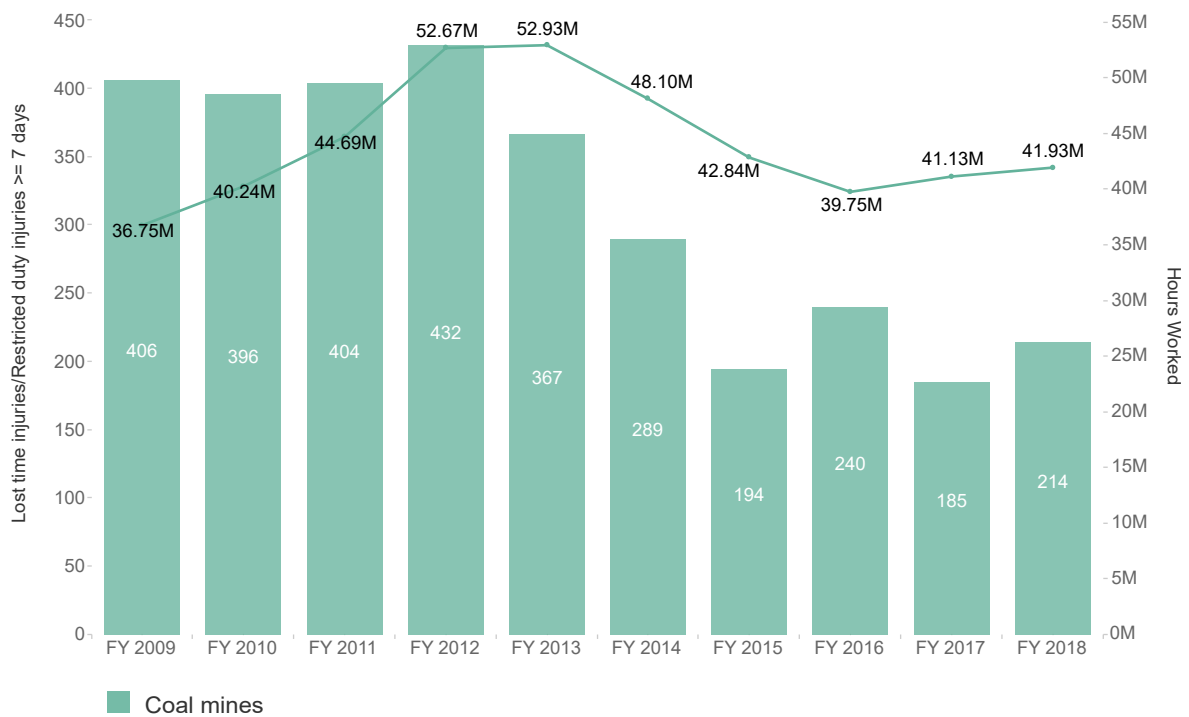
Over the ten years since 2008-09, the coal sector experienced a decrease in the rolling five year average LTIFR by approximately 66%.

Injury outcomes of seven days or more

Injury outcomes of seven days or more and hours worked

In 2017-18, there were 214 coal injury outcomes (lost time or and restricted duty injuries) of seven days or more (LTI/RDI \geq 7days). This is up to 29 compared to the previous year. Over the ten year reporting period, the number of injuries of this type has almost halved, from 406 in 2008-09 to 214 in 2017-18.

FIGURE 28. COAL LTI/RDI \geq 7 DAYS AND HOURS WORKED 2008-09 TO 2017-18



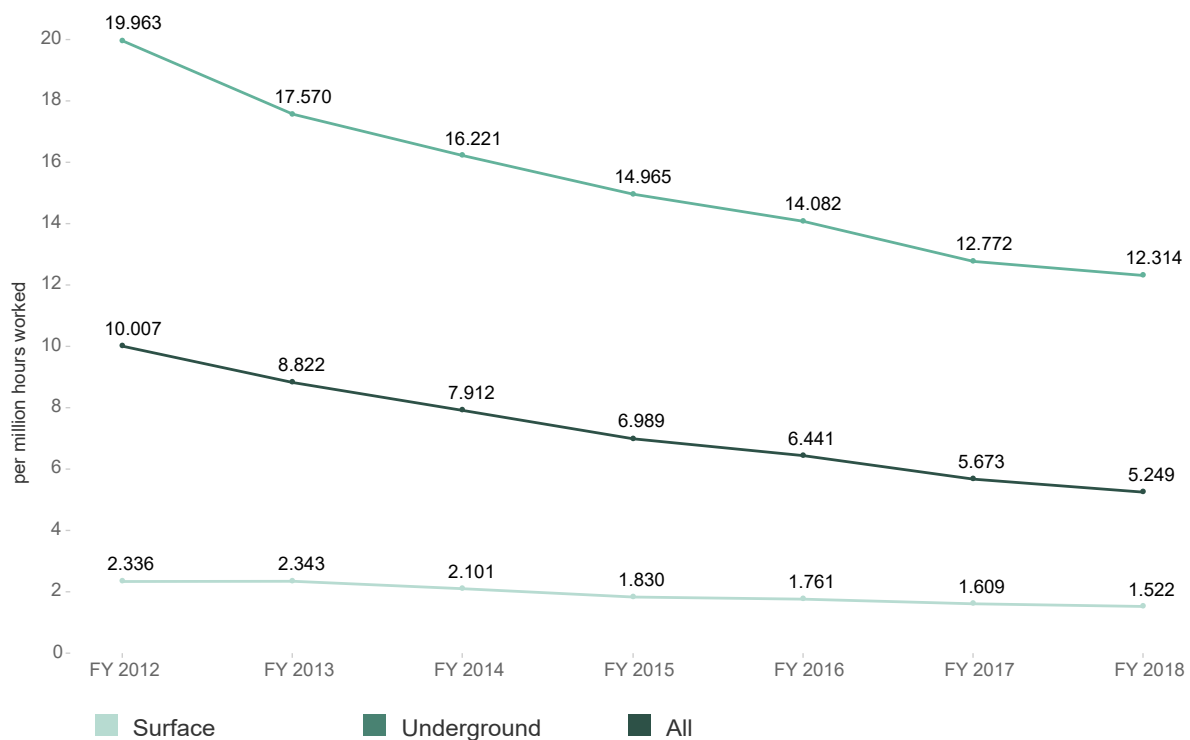
Injury outcomes of seven days or more frequency rates

For the coal sector, the rolling five year average injury outcome (lost time or restricted duty injuries) of seven days or more (LTI/RDI \geq 7days) frequency rate to 2017-18 was 5.249, down 7% on the previous year.

Since 2011-12, an overall steady downward trend for the rolling five year average LTI/RDI \geq 7days frequency rates was observed for underground coal. In 2017-18, coal rolling five year average LTI/RDI \geq 7days frequency rates were around 48% less than the 2012-13 rate.

Note, a rolling five year average LTI/RDI \geq 7days frequency rate was unable to be calculated for the whole ten year period as this information was only included in coal incident notification requirements from the beginning of 2007.

FIGURE 29. COAL FIVE YEAR AVERAGE LTI / RDI \geq 7 DAYS FREQUENCY RATES 2011-12 TO 2017-18



Since 2011-12, an overall steady downward trend for LTI/RDI \geq 7days frequency rates was observed for underground coal.

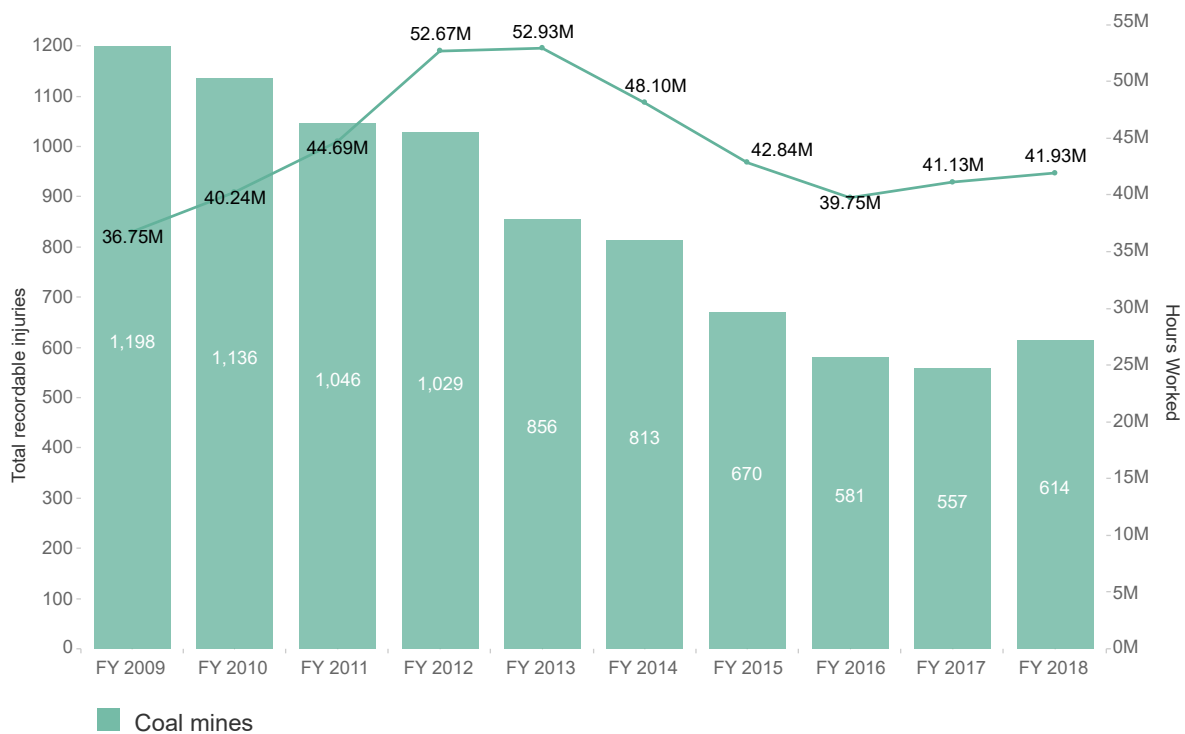
Total recordable injuries

Total recordable injuries by hours worked

Between 2008-09 and 2017-18, total recordable injuries (the total number of fatal injuries and injuries resulting in lost time, restricted duty or medical treatment) has shown a decreasing trend overall.

In 2017-18, the number of total recordable injuries was up 10% on the previous year, from 557 in 2016-17 to 614 in 2017-18.

FIGURE 30. COAL TOTAL RECORDABLE INJURY AND HOURS WORKED 2008-09 TO 2017-18

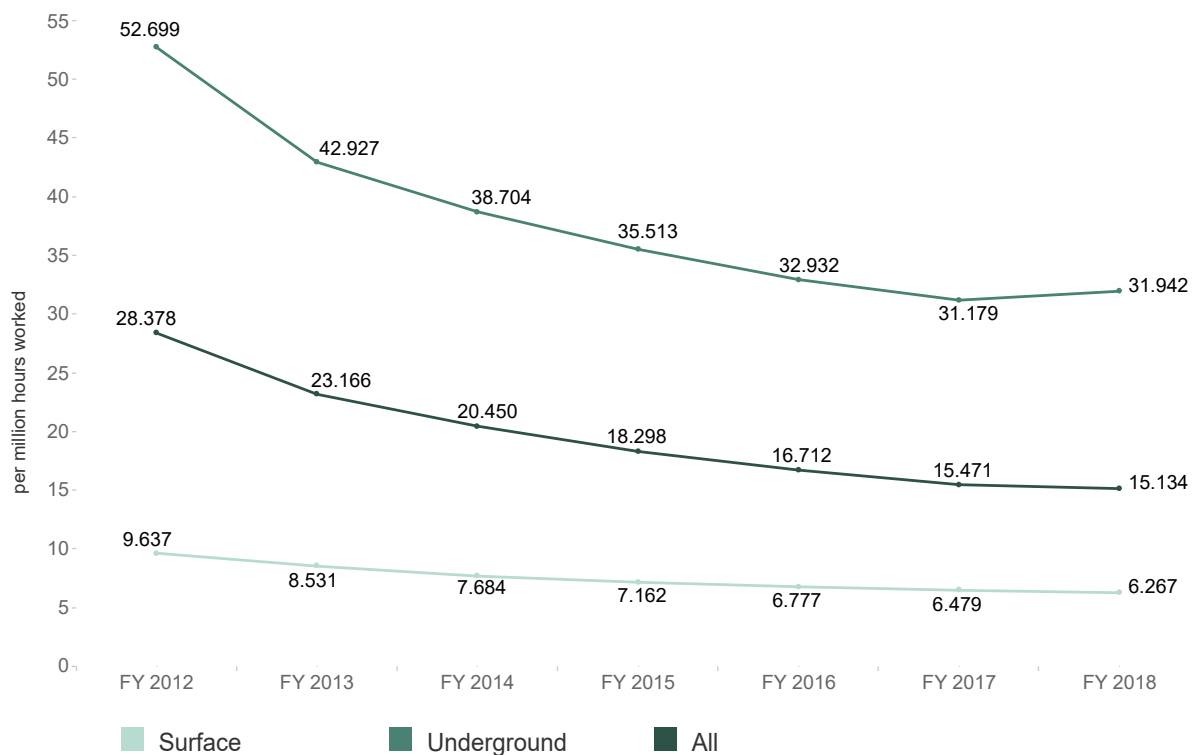


Total recordable injuries frequency rates

In 2017-18, the rolling five year average total recordable injury frequency rate (TRIFR) was down approximately 2% compared to the previous year, from 15.471 to 15.134. From 2011-12, a steady decrease in the TRIFR has also been observed.

Note, a rolling five year average TRIFR frequency rate was unable to be calculated for the whole ten year period as this information was only included in coal quarterly reporting requirements from the beginning of 2007-08.

FIGURE 31. COAL FIVE YEAR AVERAGE TRIFR 2011-12 TO 2017-18

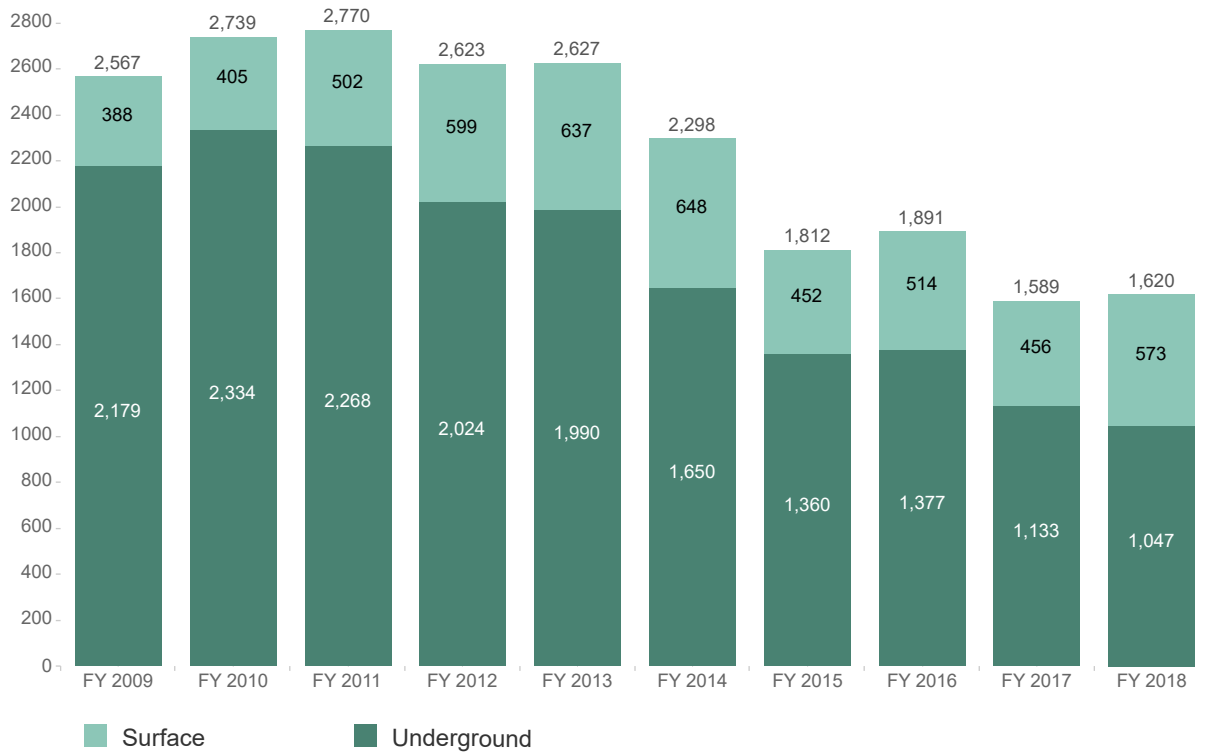


In 2017-18, the rolling five year average total recordable injury frequency rate (TRIFR) was down approximately 2% compared to the previous year.

Notified safety incidents

In 2017-18 compared to 2016-17, notified safety incidents for the coal sector increased by almost 2%. The greatest proportion of notified safety incidents were reported by underground coal sector. Note that any multiple gas trips that were reported to the Regulator in a single incident notification have been included as individual incident notifications in this report.

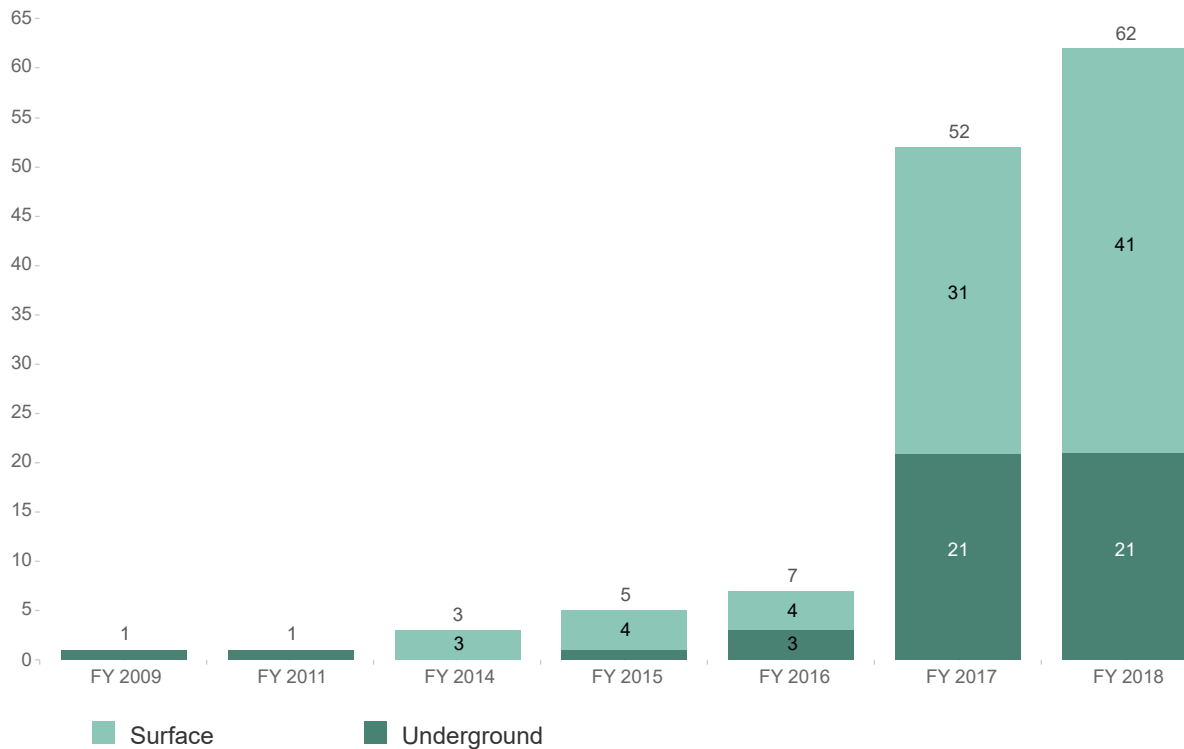
FIGURE 32. COAL NOTIFIABLE INCIDENTS BY OPERATION TYPE 2008-09 TO 2017-18



Complaints

In 2017-18, coal sector complaints increased to 62, up ten complaints compared to the previous year. Improvements to the Regulator's complaints notification processes contributed to this increase.

FIGURE 33. COAL COMPLAINTS RECEIVED BY OPERATION TYPE 2008-09 TO 2017-18



In 2017-18, coal sector complaints increased to 62, up 10 complaints compared to the previous year.

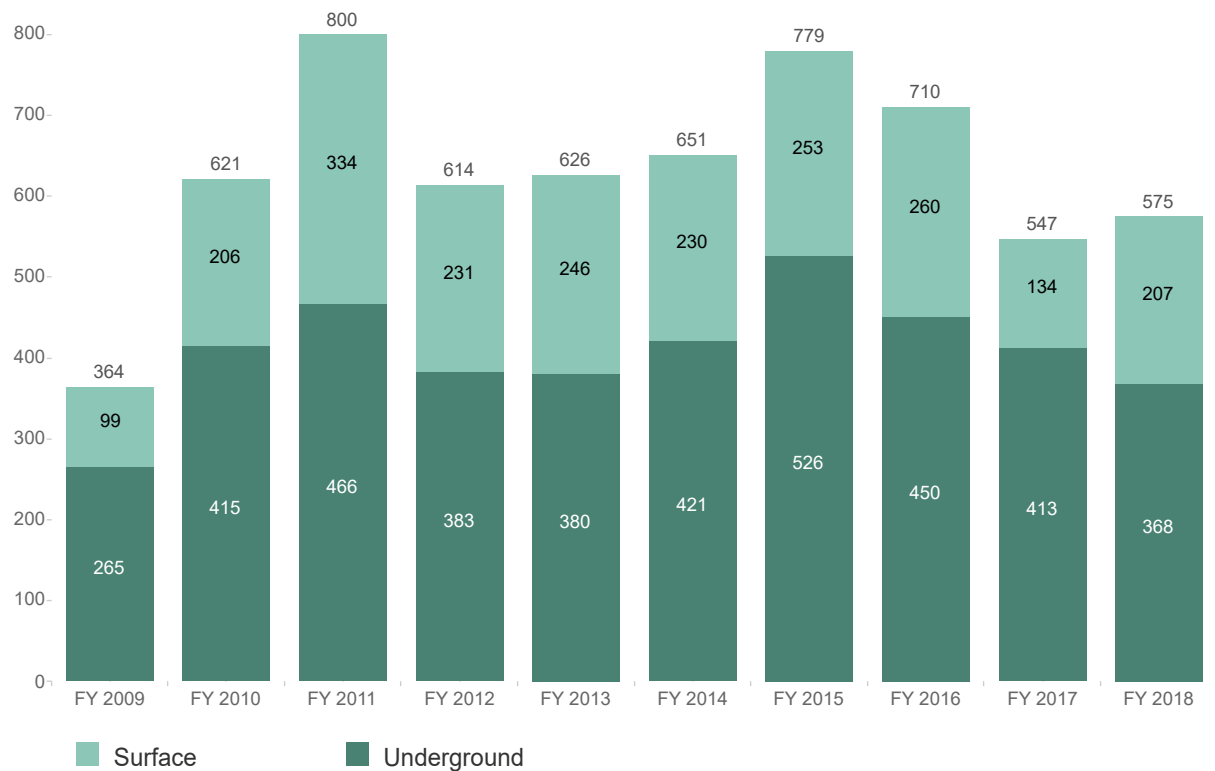
Safety notices

Safety notices by operation type

In 2017-18, the Regulator issued 575 safety notices (notices of concern, improvement, prohibition, investigation and explosives enforcement notices) in the coal sector, an increase of almost 5% compared to the previous year.

There are no clear increasing or decreasing trends in the number of notices issued over the ten years since 2008-09.

FIGURE 34. COAL NOTICES BY OPERATION TYPE 2008-09 TO 2017-18

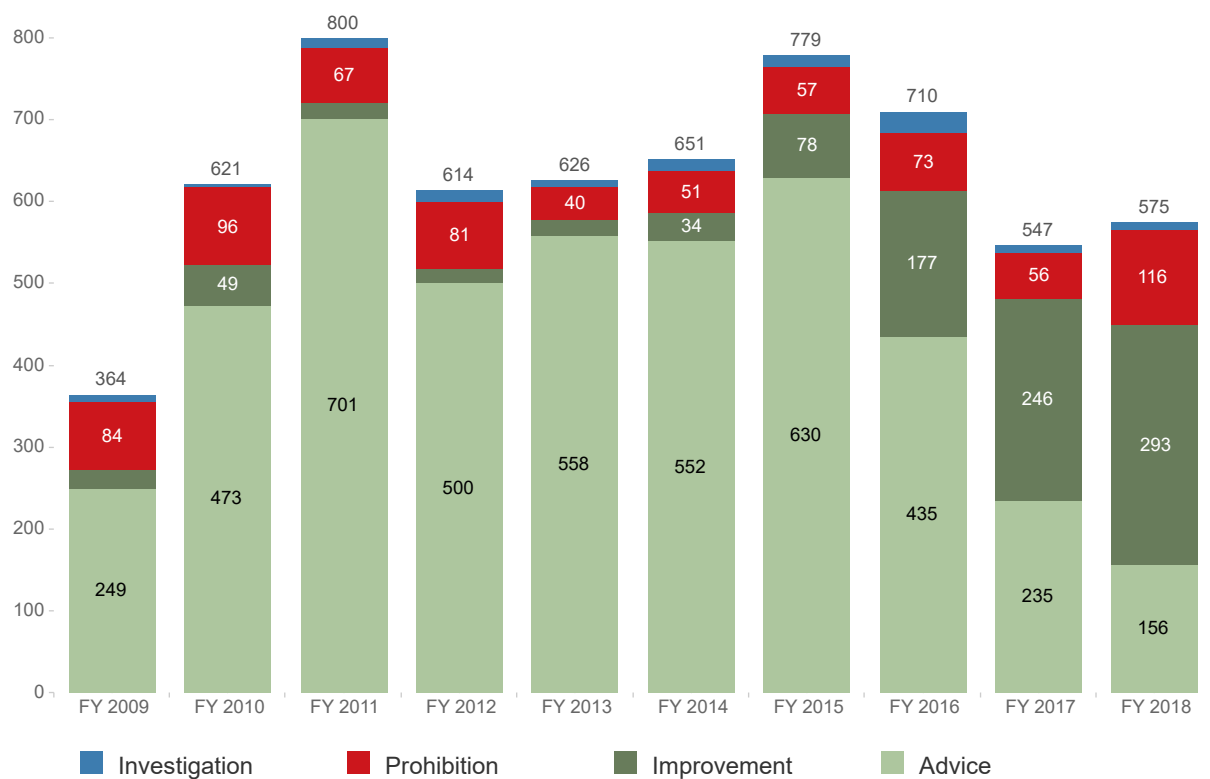


Safety notices by notice type

From 2017-18, the proportion of improvement notices relative to notices of concern (advice) continued to increase. This reflected the Regulator’s renewed focus on incident prevention where it sought to clearly identify matters that necessitate the issue of an improvement notice as compared to a written notice of concern.

Also of note in 2017-18, the proportion of all notices that were prohibition notices was 20% (116 of 575 total). This has increased as compared to 2016-17 where prohibition notices accounted for 10% of all notices in the coal sector.

FIGURE 35. COAL NOTICES BY NOTICE TYPE 2008-09 TO 2017-18



In 2017-18, the proportion of all notices that were prohibition notices was 20% (116 of 575)

Metalliferous sector

Statistics and performance measures for 2017-18



- There were no fatal injuries in the metalliferous sector in 2017-18
- Rolling five year average fatal injury frequency rate (per million hours worked) down around 22% from 0.060 in 2016-17 to 0.047 in 2017-18
- 12 serious injuries
- Rolling five year average serious injury frequency rate (per million hours worked) up 4% from 0.986 in 2016-17 to 1.026 in 2017-18
- 33 lost time injuries
- Rolling five year average lost time injury rate (per million hours worked) up almost 2% from 3.334 in 2016-17 to 3.393 in 2017-18
- Six injury outcome (lost time or restricted duty) of seven days or more
- Rolling five year average lost outcome rate (lost time or restricted duty of seven days or more) (per million hours worked) down around 4% from 0.759 in 2016-17 to 0.731 in 2017-18
- 160 total recordable injuries
- Rolling five year average total recordable injury rate (per million hours worked) down 6% from 19.050 in 2016-17 to 17.831 in 2017-18
- 243 notifiable safety incidents notified to the Regulator
- 12 complaints – five complaints lodged in relation to underground metalliferous operations
- 261 safety notices issued – 184 issued in underground operations, 35 were prohibition

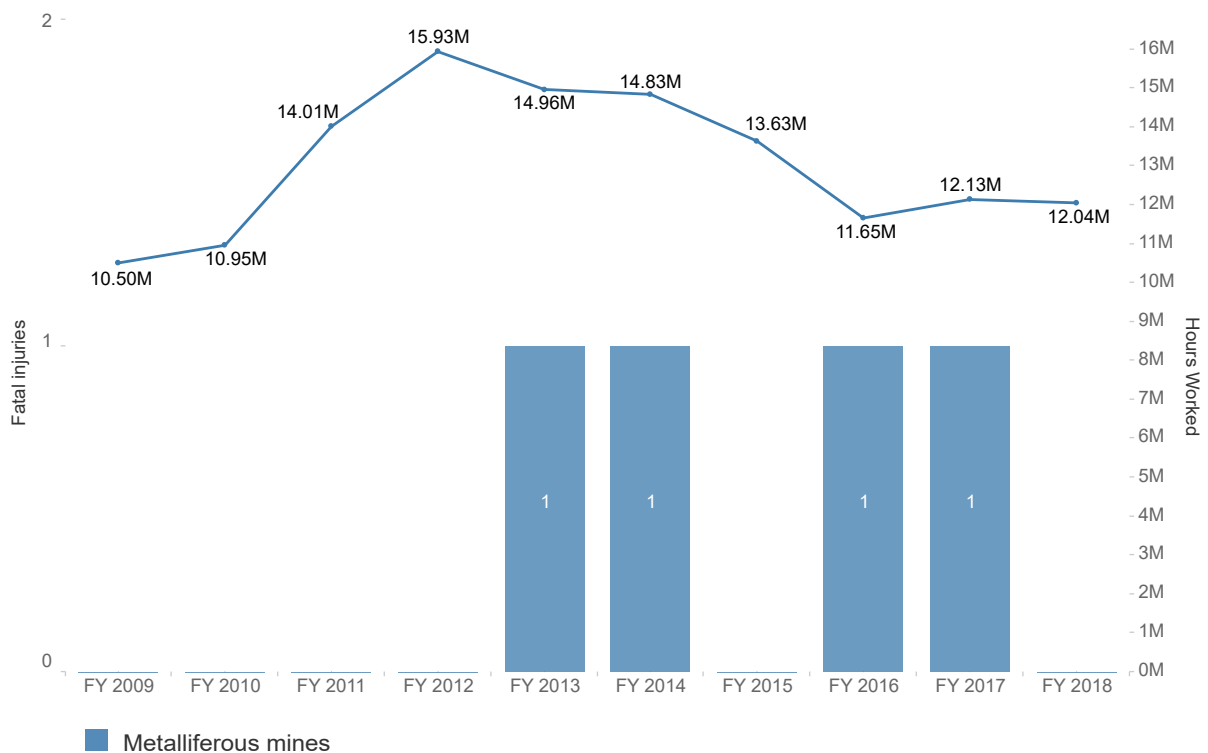
Fatal injuries

Fatal injuries and hours worked

While there were no fatal injuries in the metalliferous sector in 2017-18, in the ten years since 2008-09, there have been a total of four fatal injuries, all of which occurred in underground operations.

Figure 2, on page 14, presenting fatal injuries in NSW mines from 1900 to 2017-18, shows the sustained decrease in fatal injuries occurring in metalliferous mining operations from 1989-90. The year 1999-2000 was a notable exception.

FIGURE 36. METALLIFEROUS FATAL INJURIES AND HOURS WORKED 2008-09 TO 2017-18

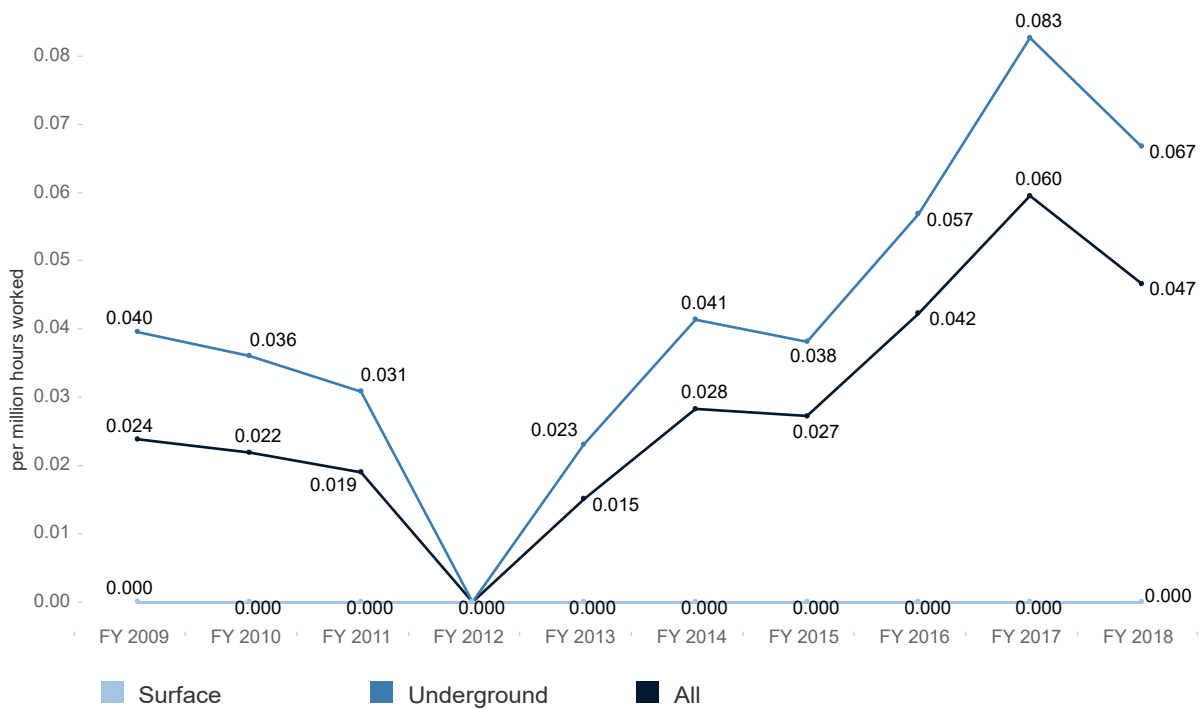


Fatal injury frequency rates

For the metalliferous mining sector, the rolling five year average fatal injury frequency rate (FIFR) to 2017-18 was down around 22% compared to the previous year (from 0.060 in 2016-17 to 0.047 in 2017-18).

From 2011-12 onwards, a small steady overall increase in the rolling five year average FIFR has been observed for underground metalliferous mining operations. It is worthwhile noting that relatively small numbers of fatalities recorded can cause fluctuating frequency rates.

FIGURE 37. METALLIFEROUS FIVE YEAR AVERAGE FIFR 2008-09 TO 2017-18



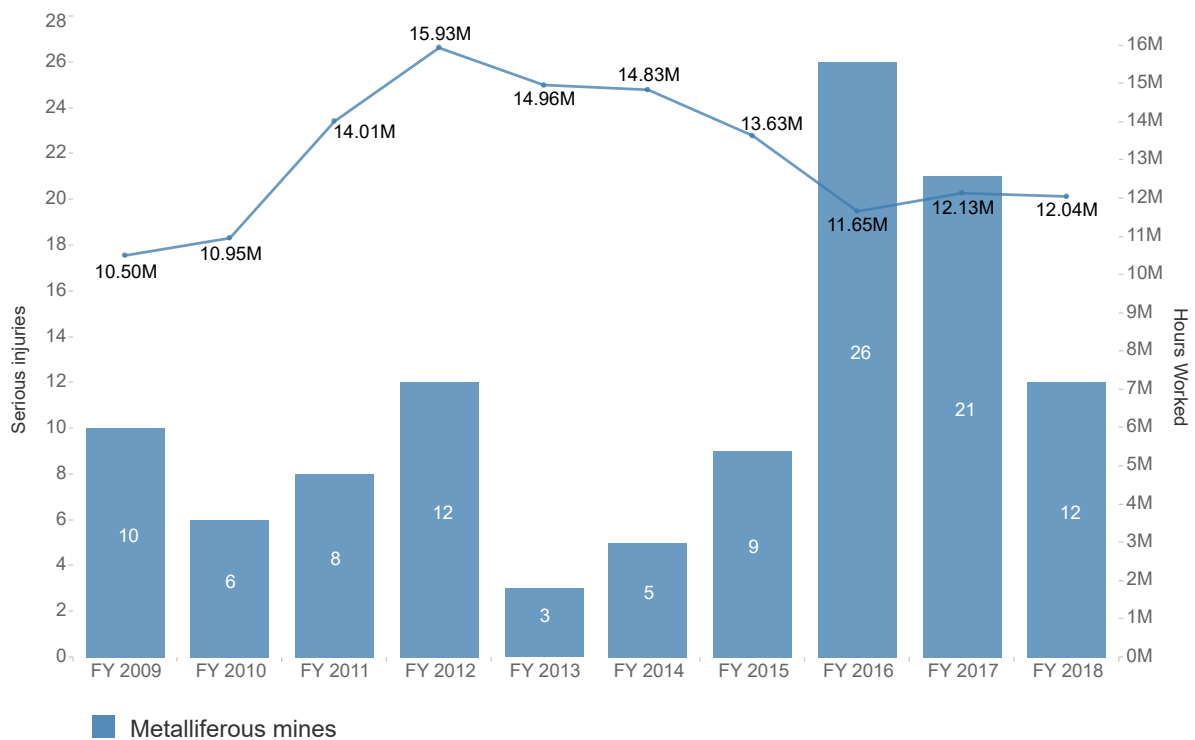
From 2011-12 onwards, a small steady overall increase in the rolling five year average FIFR has been observed.

Serious injuries

Serious injuries and hours worked

In 2017-18 there were 12 serious injuries reported in the metalliferous sector this was down nine from the previous year. The number of serious injuries reported to the Regulator since the Work Health and Safety (Mining and Petroleum Sites) Regulation 2014 commenced has increased. The previously noted broadened definition of serious injury introduced by this regulation in 2015 has contributed to this increase.

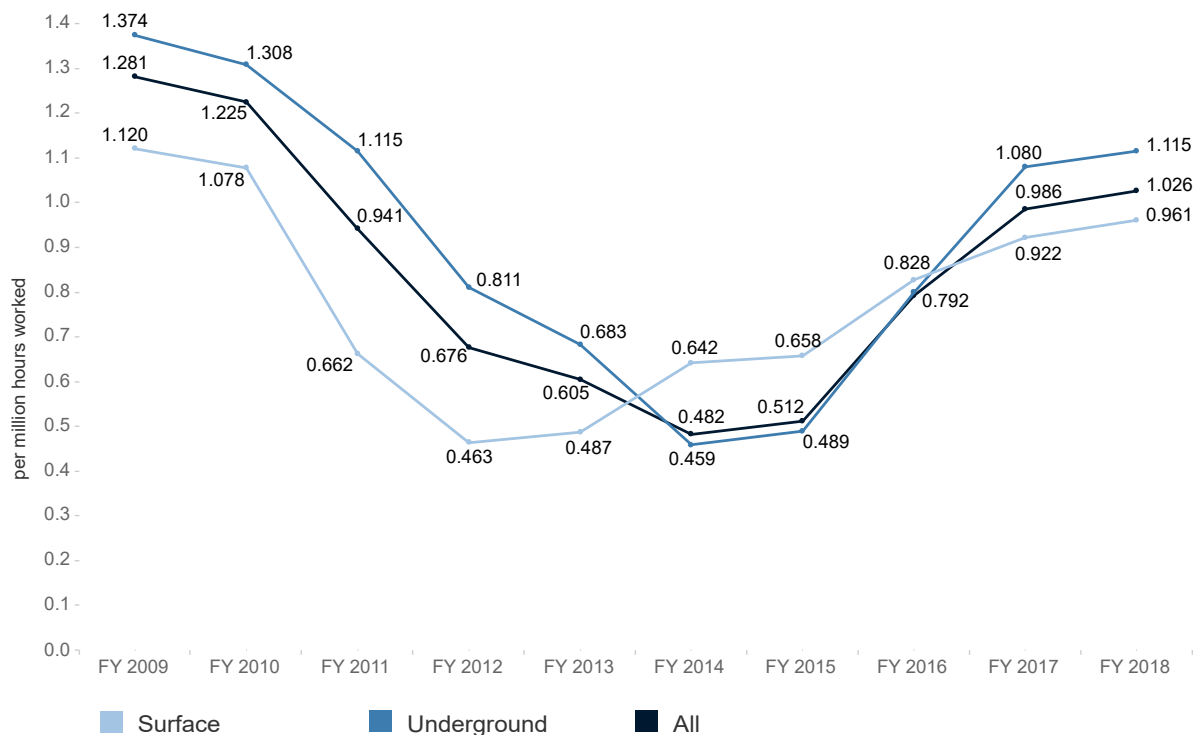
FIGURE 38. METALLIFEROUS SERIOUS INJURIES AND HOURS WORKED 2008-09 TO 2017-18



Serious injury frequency rates

For the metalliferous sector, the rolling five year average serious injury frequency rate (SIFR) was up approximately 4% from 0.986 in 2016-17 to 1.026 in 2017-18. By operation type, the underground and surface rolling five year average SIFRs increased by almost 4% and just over 3% respectively. The expanded definition of serious injury introduced in 2015 has contributed to this observed increase.

FIGURE 39. METALLIFEROUS FIVE YEAR AVERAGE SIFR 2008-09 TO 2017-18



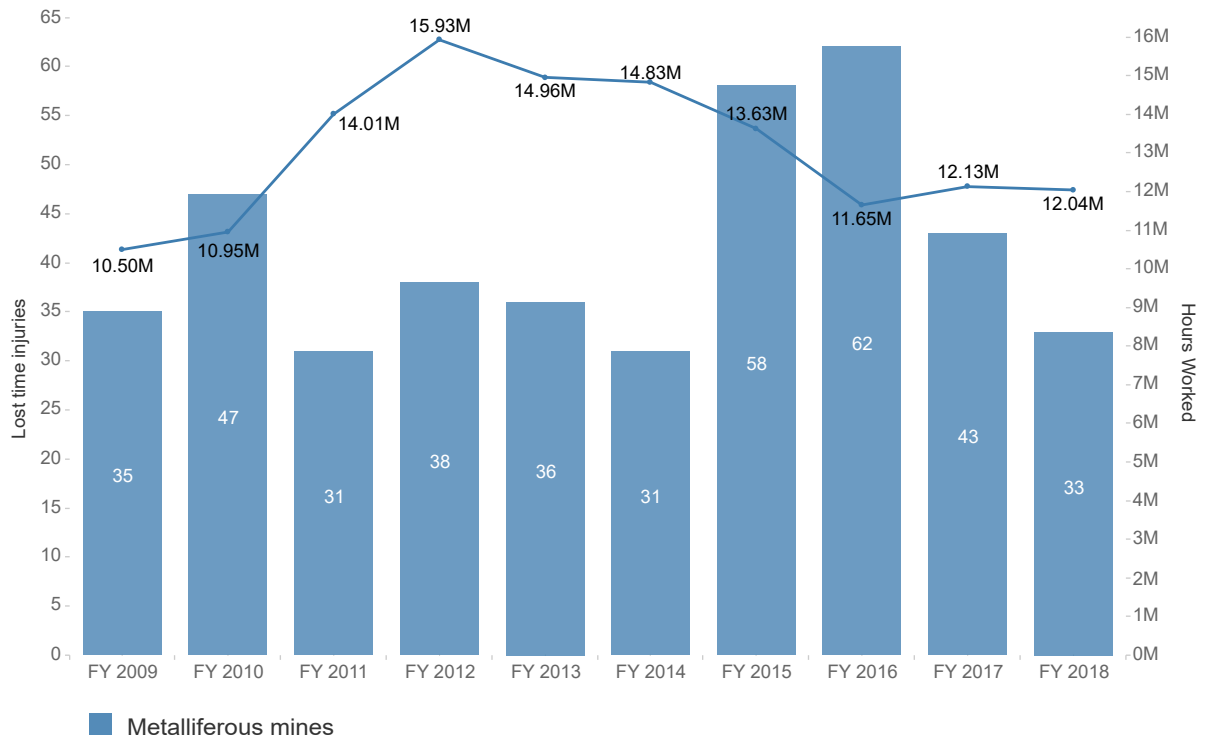
For the metalliferous sector, the rolling five year average serious injury frequency rate was up approximately 4% from 0.986 in 2016-17 to 1.026 in 2017-18.

Lost time injuries

Lost time injuries and hours worked

In 2017-18, the number of lost time injuries reported to the Regulator was 33, down ten compared to the previous year.

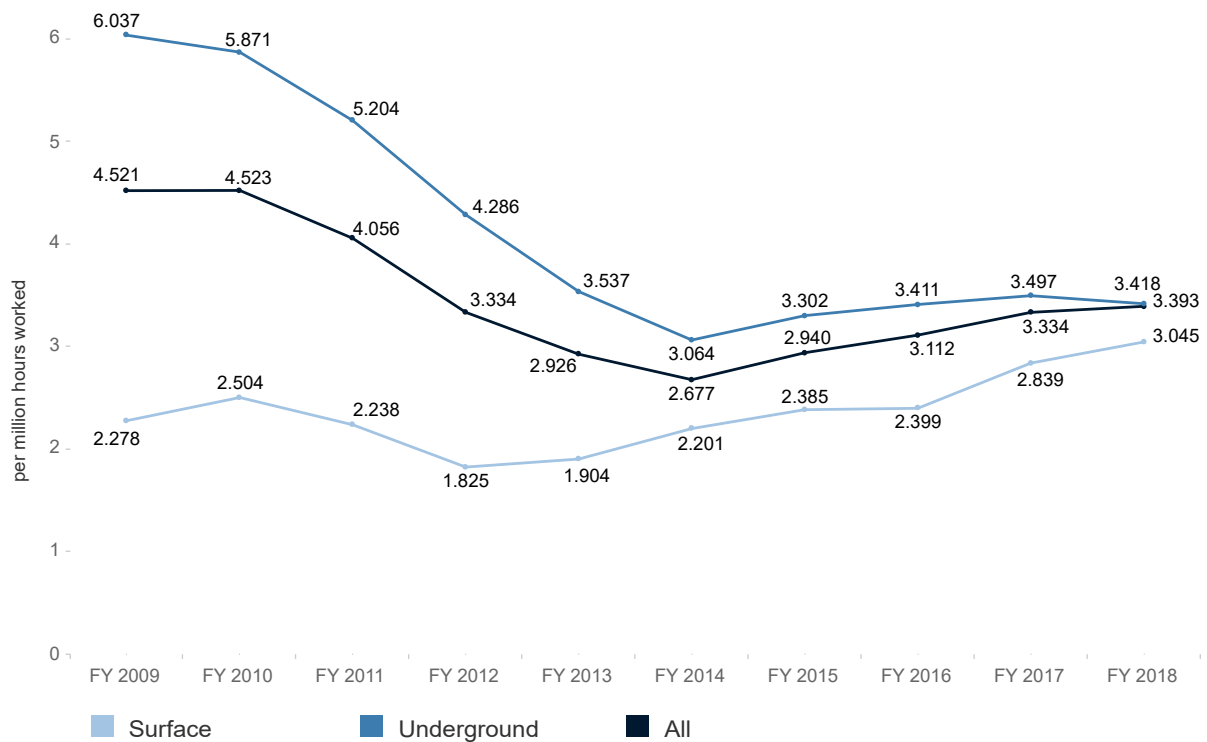
FIGURE 40. METALLIFEROUS LOST TIME INJURIES AND HOURS WORKED 2008-09 TO 2017-18



Lost time injury frequency rates

In the ten years since 2008-09 the metalliferous rolling five year average LTIFR has decreased by approximately 25%. However, over the ten year reporting period, a steady increase in the rolling five year average LTIFR for surface metalliferous operations was observed.

FIGURE 41. METALLIFEROUS FIVE YEAR AVERAGE LTIFR 2008-09 TO 2017-18



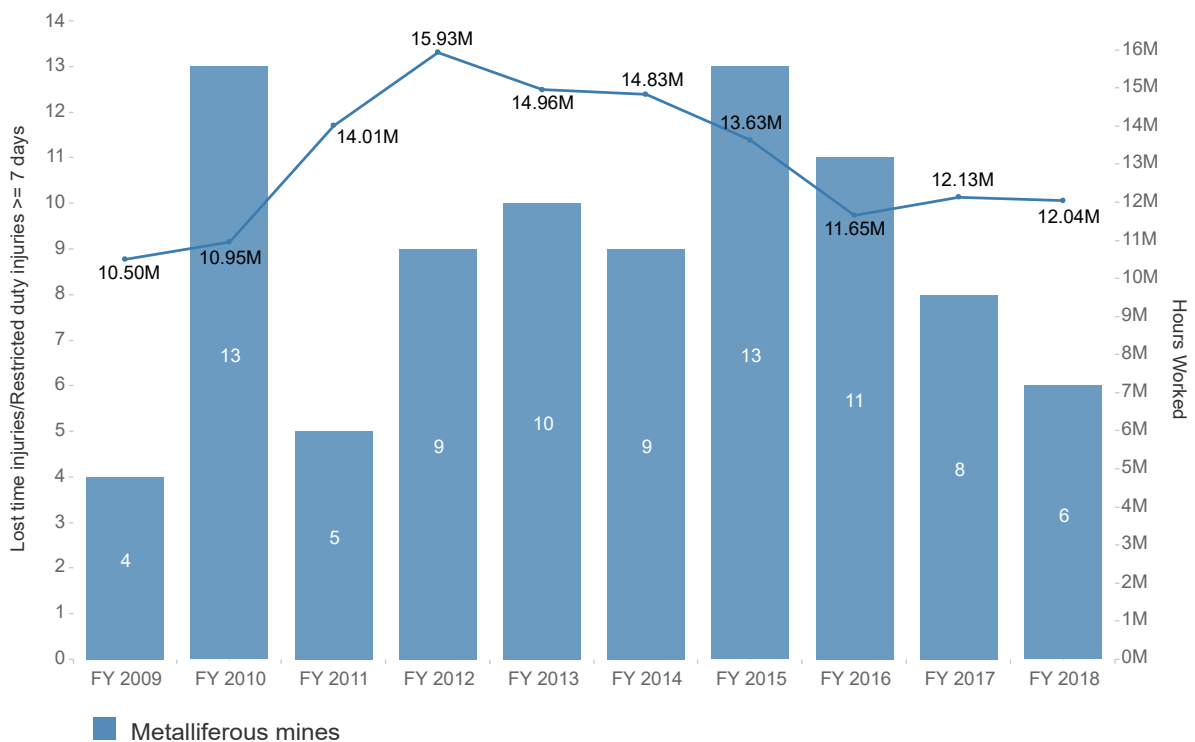
The rolling five year average lost time injury frequency rate to 2017-18, compared to 2016-17, increased by almost 2%.

Injury outcomes of seven days or more

Injury outcomes of seven days or more and hours worked

In 2017-18, there were six metalliferous injury outcomes (lost time or restricted duty injuries) of seven days or more (LTI/RDI \geq 7 days). This is down from the eight recorded in the previous year. In the ten years since 2008-09, the number of severe injuries of this type has increased, from four in 2008-09 to six in 2017-18.

FIGURE 42. METALLIFEROUS LTI/RDI \geq 7 DAYS AND HOURS WORKED 2008-09 TO 2017-18

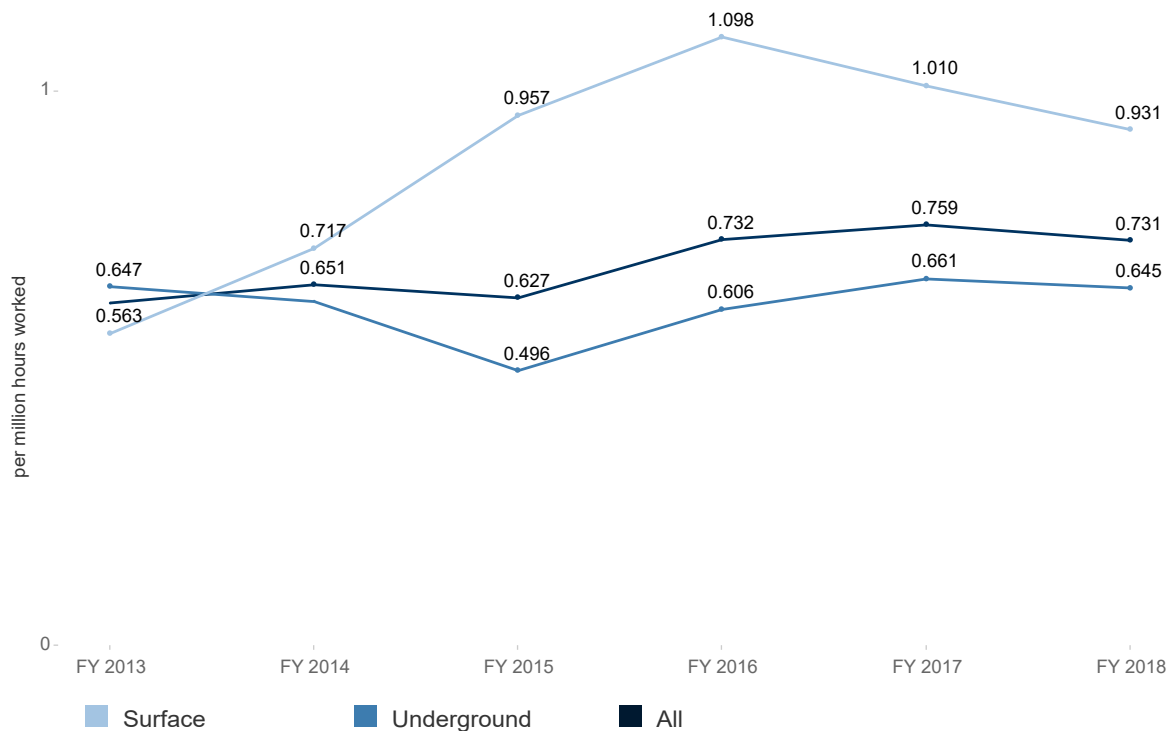


Injury outcomes of seven days or more frequency rates

For the metalliferous sector, the rolling five year average injury outcome (lost time or restricted duty injuries) of seven days or more (LTI/RDI \geq 7 days) frequency rate in 2017-18 was 0.731, down around 4% on the previous year. Since 2012-13, an increasing trend for the rolling five year average LTI/RDI \geq 7 days frequency rates was observed for surface metalliferous.

Note, a rolling five year average LTI/RDI \geq 7days frequency rate was unable to be calculated for the whole ten year period as this information was only included in metalliferous incident notification requirements from the second quarter of 2008-09.

FIGURE 43. METALLIFEROUS LTI/RDI \geq 7 DAYS FREQUENCY RATES 2012-13 TO 2017-18



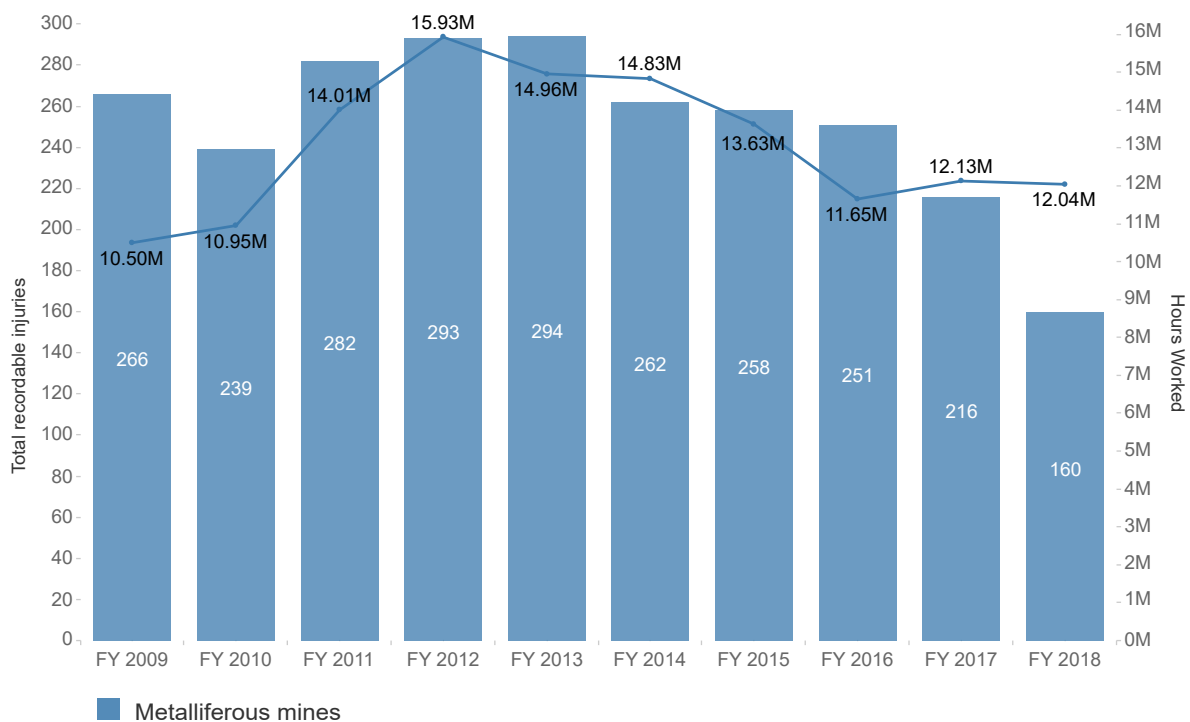
Since 2012-13, an increasing trend for the rolling five year average LTI/RDI \geq 7 days frequency rates was observed for surface metalliferous.

Total recordable injuries

Total recordable injuries and hours worked

In 2017-18, the number of total recordable injuries (the total number of fatal injuries and injuries resulting in lost time, restricted duty or medical treatment) was down 26% on the previous year from 216 to 160. From 2012-13, a year on year decrease in the number of total recordable injuries was observed for the metalliferous sector.

FIGURE 44. METALLIFEROUS TOTAL RECORDABLE INJURY AND HOURS WORKED 2008-09 TO 2017-18



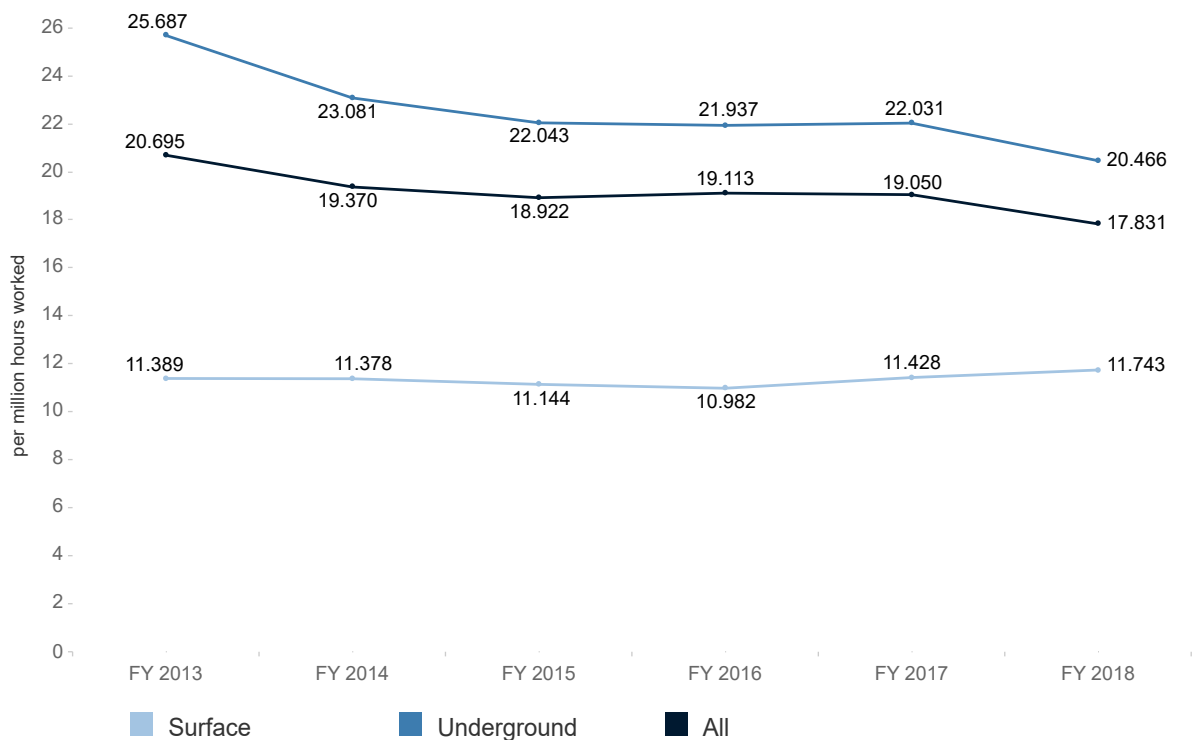
Total recordable injuries frequency rates

The rolling five year average total recordable injury frequency rate (TRIFR, per million hours worked) was down 6% from 19.050 in 2016-17 to 17.831 in 2017-18.

Since 2012-13, the rolling five year average TRIFR for the metalliferous sector has remained overall fairly steady.

Note, a rolling five year average TRIFR frequency rate was unable to be calculated for the whole ten year period as this information was only included in metalliferous quarterly reporting requirements from the second quarter of 2008-09.

FIGURE 45. METALLIFEROUS FIVE YEAR AVERAGE TRIFR 2012-13 TO 2017-18

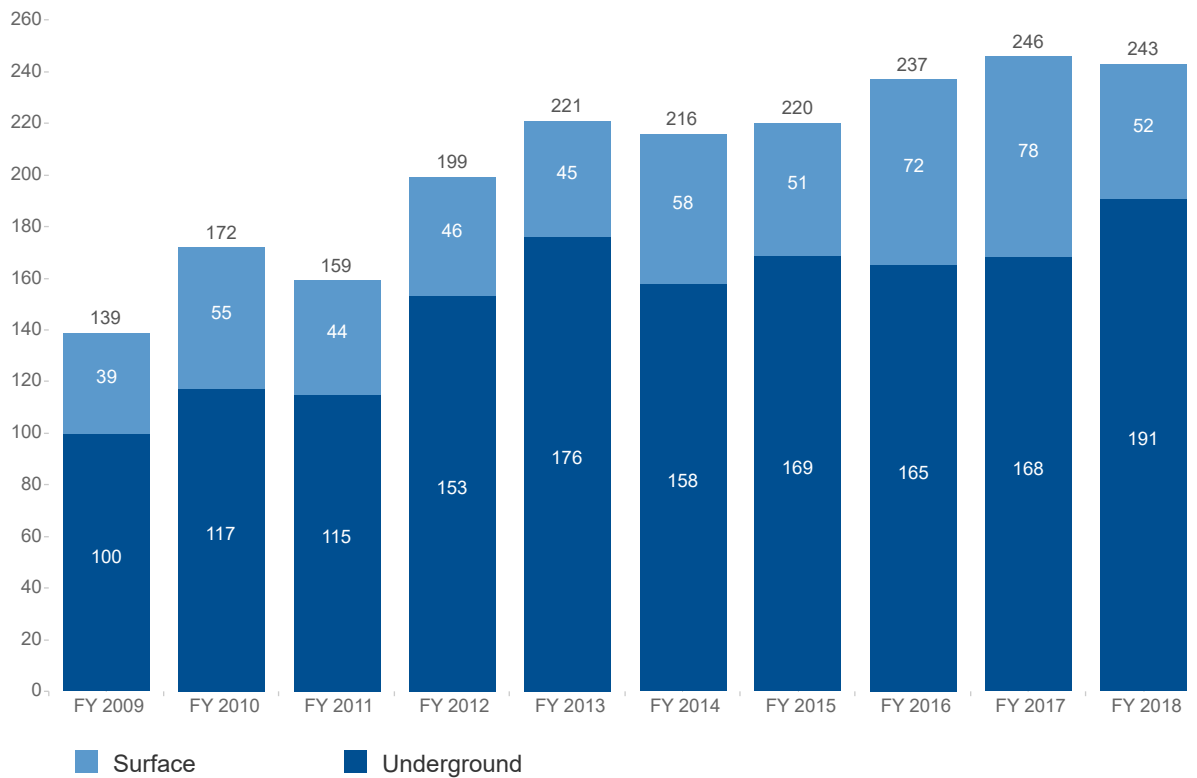


Since 2012-13, the rolling five year average TRIFR for the metalliferous sector has remained overall fairly steady.

Notified safety incidents

In 2017-18, notified safety incidents in the metalliferous sector was down three compared to 2016-17, from 246 to 243. In the ten years since 2008-09 a steady overall increase in the number of notified safety incidents was observed. Improved industry reporting practices has contributed to this increase.

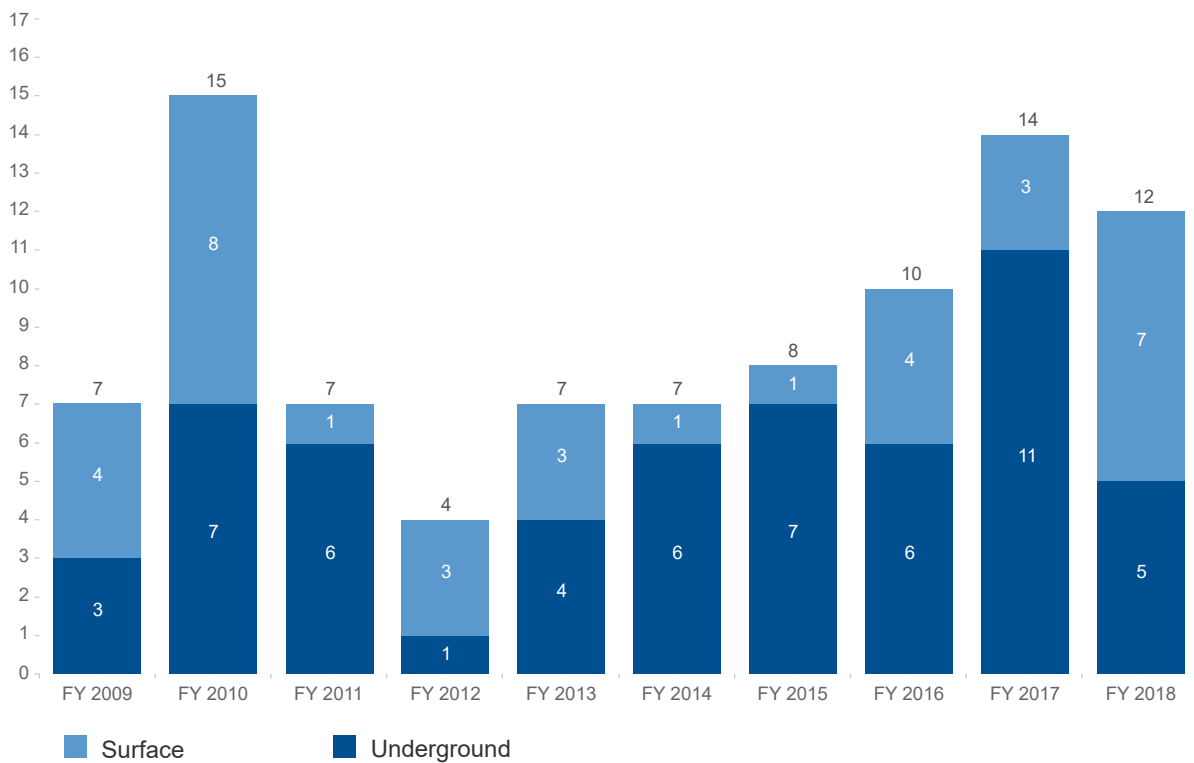
**FIGURE 46. METALLIFEROUS NOTIFIABLE INCIDENTS BY OPERATION TYPE
 2008-09 TO 2017-18**



Complaints

In 2017-18, there were 12 complaints made to the Regulator about safety in the metalliferous sector complaints, down two compared to the previous year.

**FIGURE 47. METALLIFEROUS COMPLAINTS RECEIVED BY OPERATION TYPE
 2008-09 TO 2017-18**



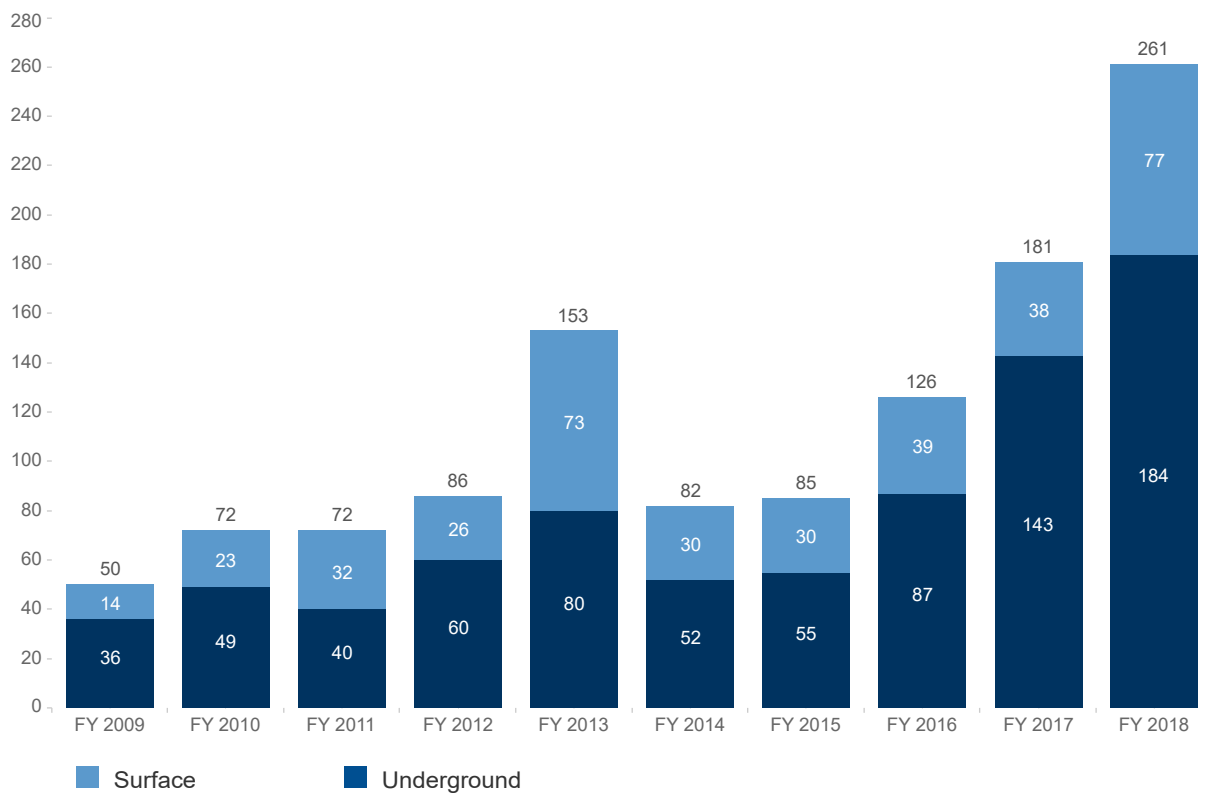
In 2017-18, there were 12 complaints made about safety in the metalliferous sector complaints.

Safety notices

Safety notices by operation type

In 2017-18, the number of safety notices (notices of concern, improvement, prohibition, investigation and explosives enforcement notices) issued by the Regulator in the metalliferous sector was up 80 compared to the previous year, from 181 to 261. There has been an upward trend in notices in the ten years since 2008-09. In 2017-18 the number of safety notices had risen over 420% from 50 in 2008-09 to 261.

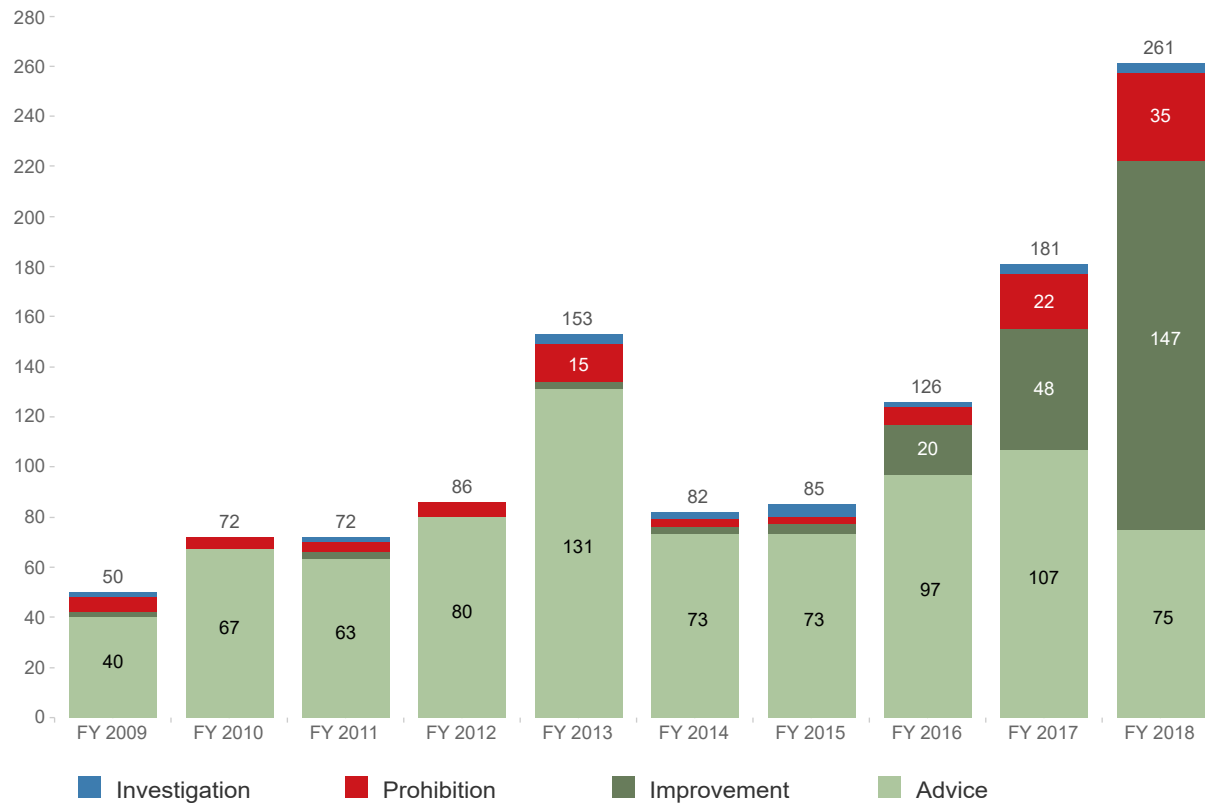
FIGURE 48. METALLIFEROUS NOTICES BY OPERATION TYPE 2008-09 TO 2017-18



Safety notices by notice type

From 2017-18, the proportion of improvement notices relative to notices of concern (advice) continued to increase. The number of prohibition notices increased also. This reflected the Regulator’s renewed focus on incident prevention where it sought to clearly identify matters that necessitate the issue of an improvement notice as compared to a written notice of concern.

FIGURE 49. METALLIFEROUS NOTICES BY NOTICE TYPE 2008-09 TO 2017-18



In 2017-18 the number of prohibition notices was up 13 compared to the previous year, from 22 to 35.

Extractives sector

Statistics and performance measures for 2017-18



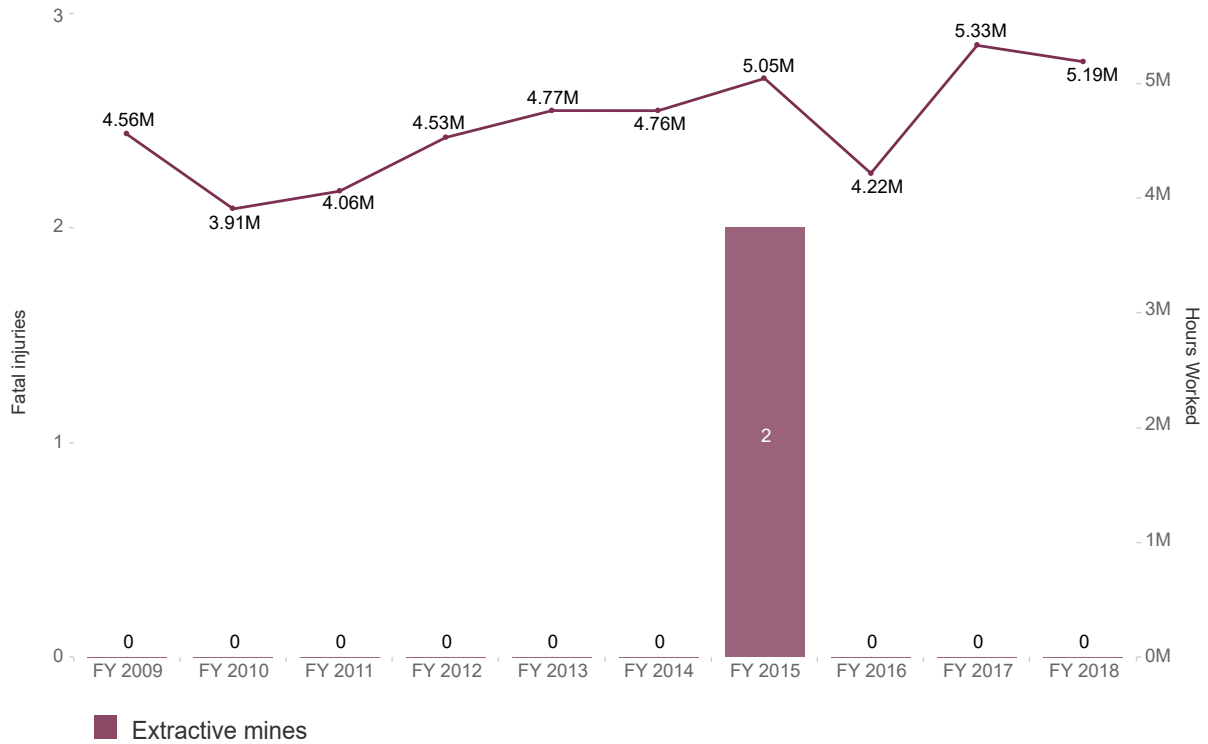
- Zero fatal injuries
- Rolling five year average fatal injury frequency rate (per million hours worked) down 2% from 0.083 in 2016-17 to 0.081 in 2017-18
- 13 serious injuries
- Rolling five year average serious injury frequency rate (per million hours worked) up 13% from 1.741 in 2016-17 to 1.975 in 2017-18
- 37 lost time injuries
- Rolling five year average lost time injury rate (per million hours worked) down 4% from 10.040 in 2016-17 to 9.609 in 2017-18
- Six injury outcomes (lost time or restricted duty injuries) of seven days or more
- Rolling five year average injury outcome rate (lost time or restricted duty) with outcomes of seven days or more (per million hours worked) down 6% from 1.865 in 2016-17 to 1.751 in 2017-18
- 146 total recordable injuries
- Rolling five year average total recordable injury rate (per million hours worked) down around 5%, from 27.974 in 2016-17 to 26.674 in 2017-18
- 120 safety incidents notified to the Regulator
- 20 complaints received in relation to the regulator – all 20 complaints lodged by surface operations
- 462 safety notices issued – 86 were prohibition notices

Fatal injuries

Fatal injuries and hours worked

There were no fatal injuries in the extractives sector in 2017-18 financial year. Over the ten year reporting period there were two fatal injuries in the extractives sector. Both occurred in 2014-15.

FIGURE 50. EXTRACTIVES FATAL INJURIES AND HOURS WORKED 2008-09 TO 2017-18

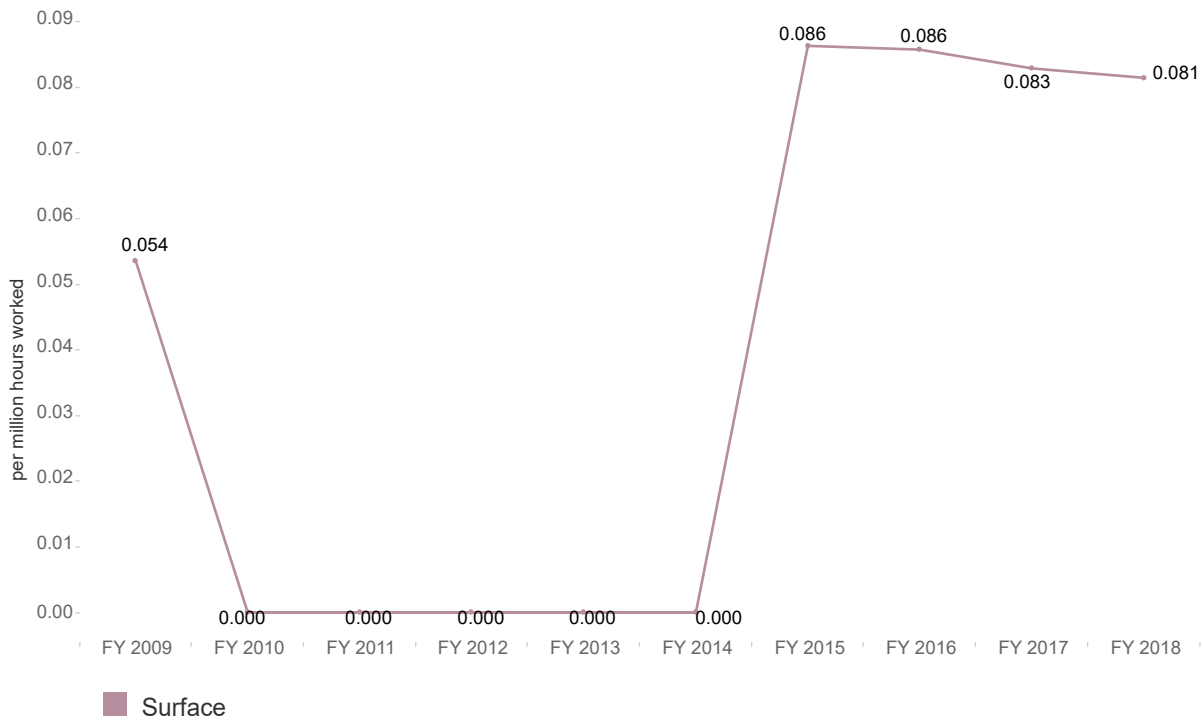


Fatal injury frequency rates

In the extractives mining sector, the rolling five year average fatal injury incident rate (FIFR) to 2017-18 was down by almost 3% compared to previous year (from 0.083 in 2016-17 to 0.081 in 2017-18).

It is worthwhile noting that relatively small numbers of fatalities recorded can cause fluctuating frequency rates.

FIGURE 51. EXTRACTIVES FIVE YEAR AVERAGE FIFR 2008-09 TO 2017-18



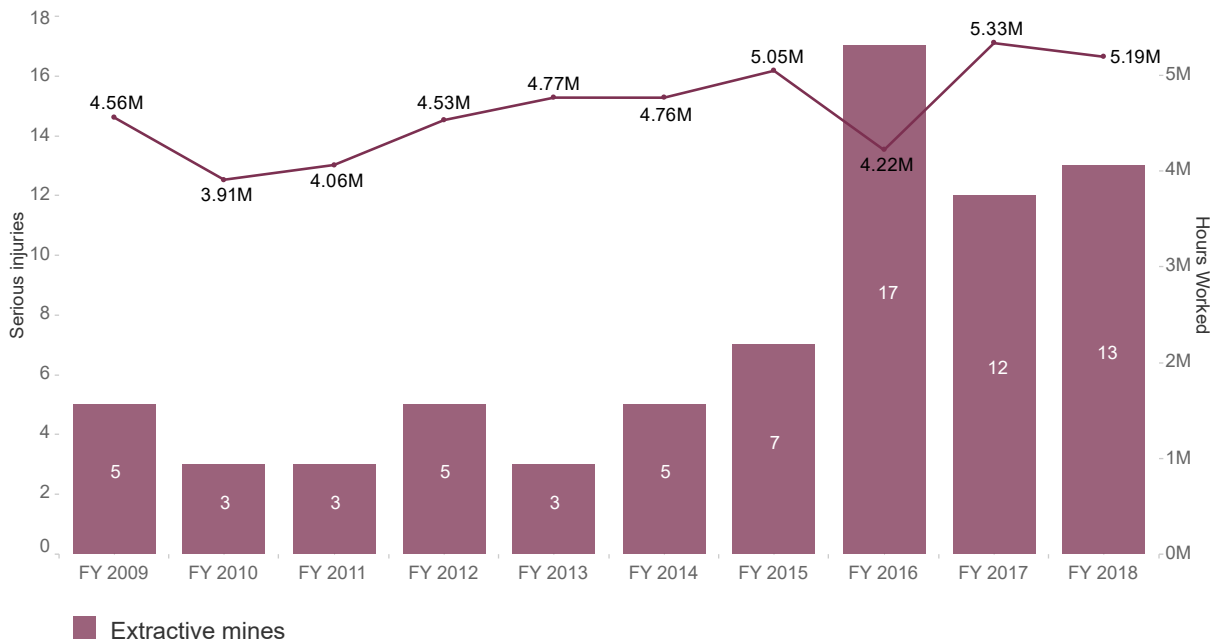
Fatal injury frequency rate (per million hours worked) down 3% from 0.083 in 2016-17 to 0.081 in 2017-18.

Serious injuries

Serious injuries and hours worked

There were 13 serious injuries reported in the extractives sector during 2017-18 this is up one compared to the previous year.

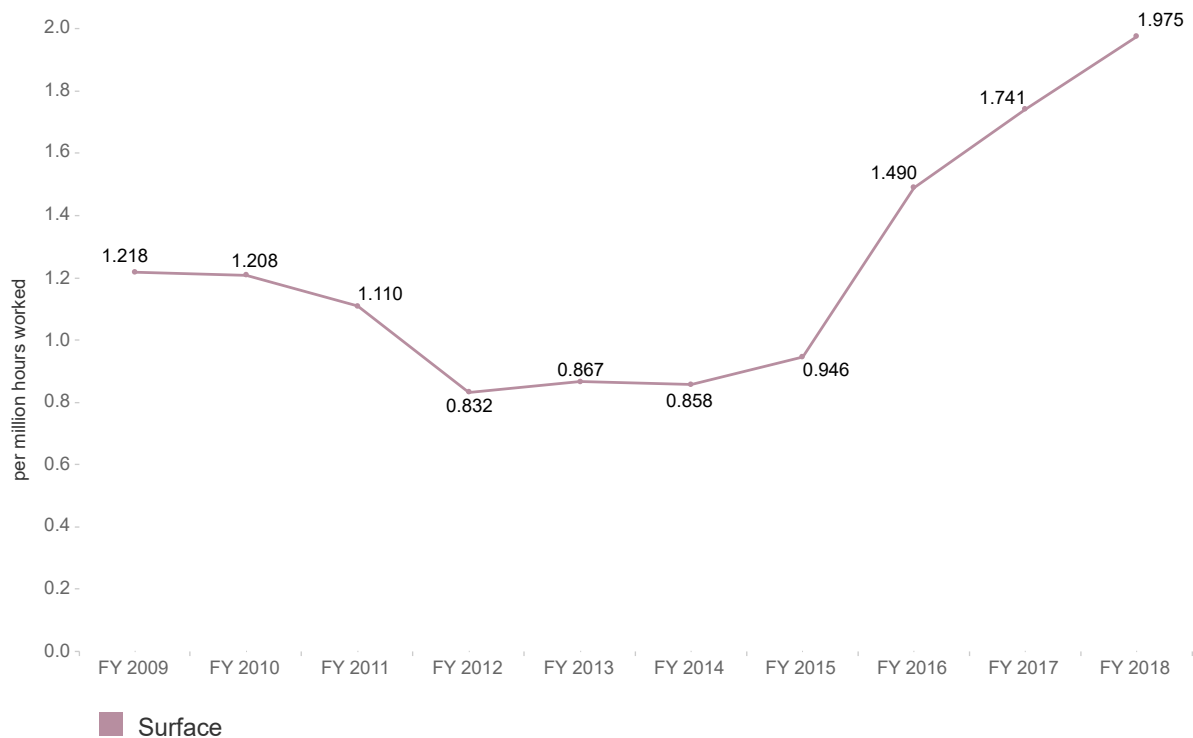
FIGURE 52. EXTRACTIVES SERIOUS INJURIES AND HOURS WORKED 2008-09 TO 2017-18



Serious injury frequency rates

For the extractives sector, the rolling five year average serious injury frequency rate (SIFR) was up 13% from 1.741 in 2016-17 to 1.975 in 2017-18. As noted, the Work Health and Safety (Mines and Petroleum Sites) Regulation 2014 introduced an expanded definition of serious injury. This has contributed to the observed increase since 2014-15.

FIGURE 53. EXTRACTIVES FIVE YEAR AVERAGE SIFR 2008-09 TO 2017-18



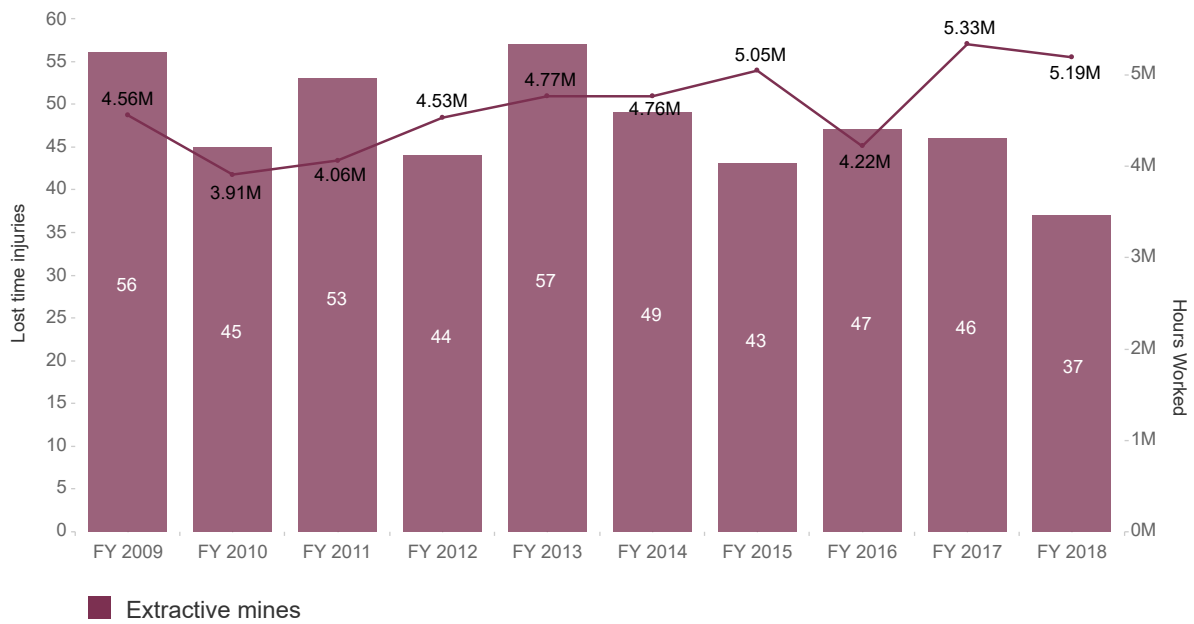
For the extractives sector, the rolling five year average serious injury frequency rate was up 13% from 1.741 in 2016-17 to 1.975 in 2017-18.

Lost time injuries

Lost time injuries and hours worked

In 2017-18, the number of lost time injuries was 37, down nine from the previous year. In the ten years since 2008-09, there has been no obvious trend in lost time injuries.

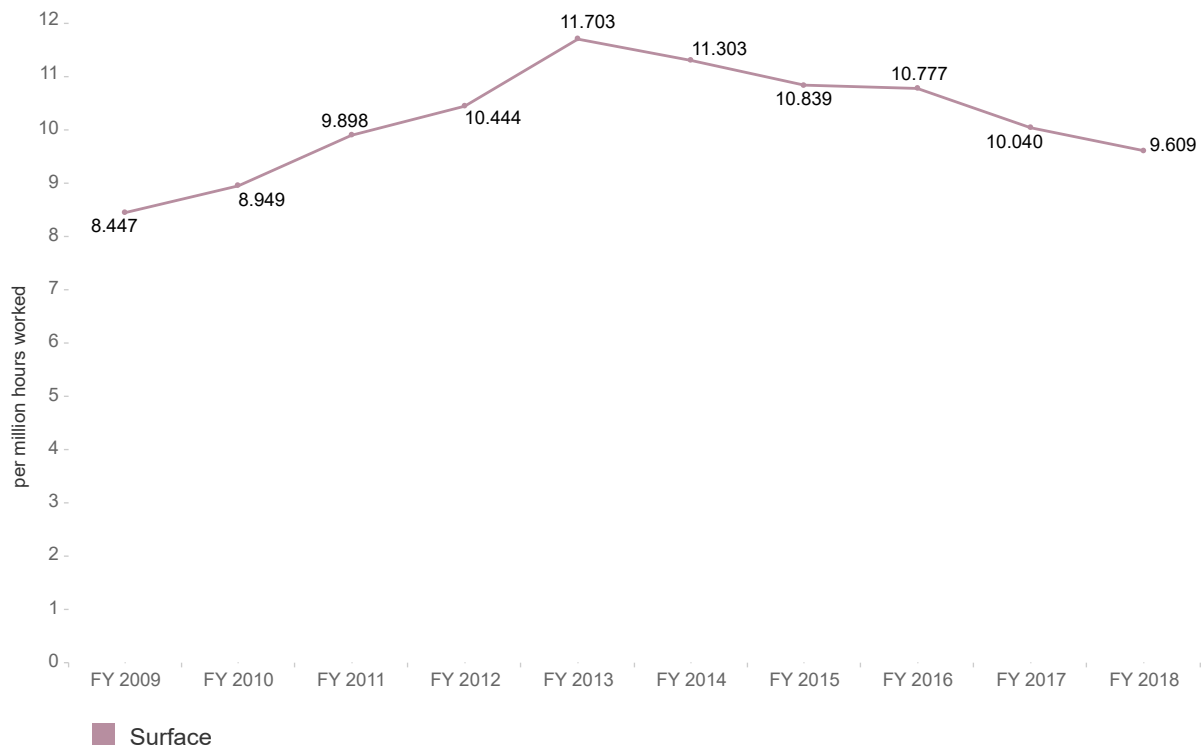
FIGURE 54. EXTRACTIVES LOST TIME INJURIES AND HOURS WORKED 2008-09 TO 2017-18



Lost time injury frequency rates

In 2017-18, rolling five year average lost time injury frequency rate (LTIFR) was down 4% on the previous year from 10.040 to 9.609. Over the ten year reporting period, there has been no obvious increasing or decreasing trend in the rate of lost time injuries in the extractives sector.

FIGURE 55. EXTRACTIVES FIVE YEAR AVERAGE LOST TIME INJURY FREQUENCY RATE (LTIFR) 2008-09 TO 2017-18



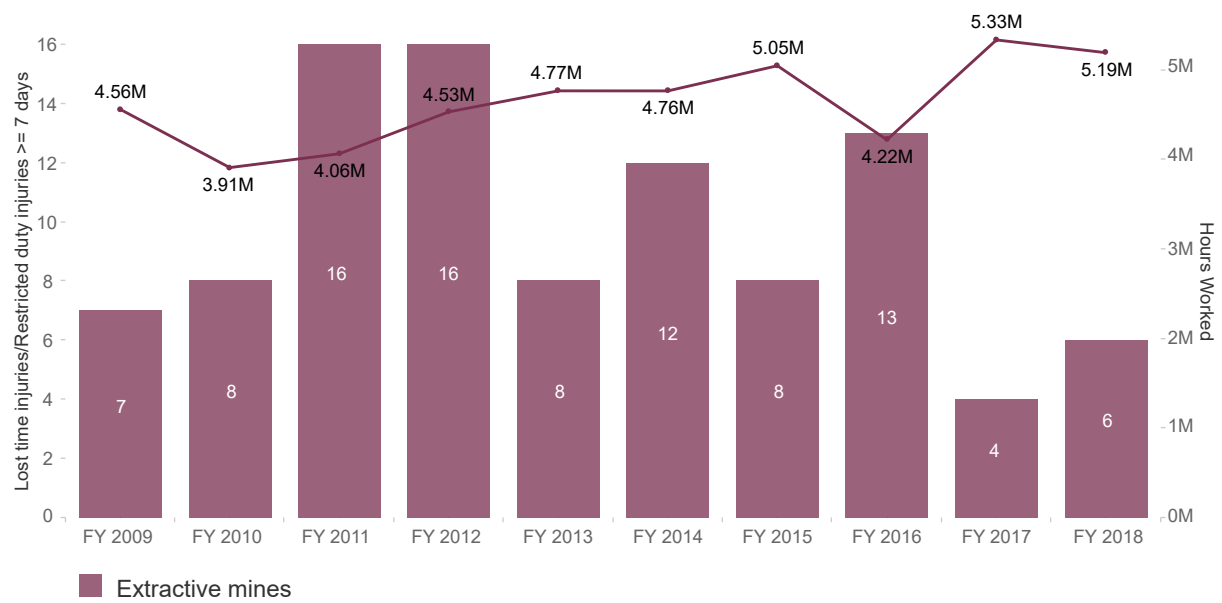
In 2016-17, rolling five year average lost time injury frequency rate was down 4% on the previous year from 10.040 to 9.609.

Injury outcomes of seven days or more

Injury outcomes of seven days or more and hours worked

In 2017-18, there were six metalliferous injury outcomes (lost time injuries or restricted duty injuries) seven days or more (LTI/RDI \geq 7 days), up two on the previous year. Overall, there has been no obvious increasing or decreasing trend for LTI/RDI \geq 7 days in the ten years since 2008-09.

FIGURE 56. EXTRACTIVES LTI/RDI \geq 7 DAYS AND HOURS WORKED 2008-09 TO 2017-18

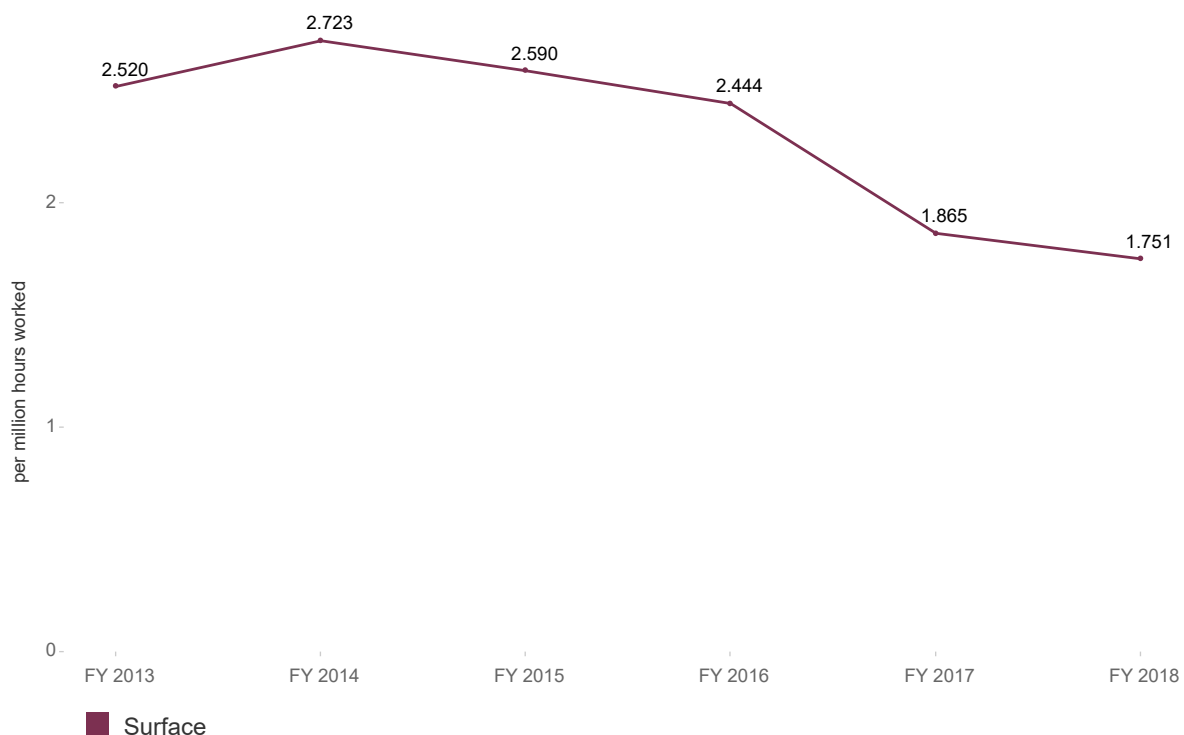


Injury outcomes of seven days or more frequency rates

For the extractives sector, the rolling five year average injury outcome (lost time or restricted duty of seven days or more) (LTI/RDI \geq 7 days) frequency rate to 2017-18 was 1.751, down 6% on the previous year. Since 2013-14, a downward trend for the rolling five year average LTI/RDI \geq 7 days frequency rates was observed for extractives and in 2017-18, the rate was about 31% less than the rate in 2012-13.

Note, a rolling five year average LTI/RDI \geq 7 days frequency rate was unable to be calculated for the whole ten year period as this information was only included in extractives incident notification requirements from the second quarter of 2008-09.

FIGURE 57. EXTRACTIVES FIVE YEAR AVERAGE LTI/RDI \geq 7 DAYS FREQUENCY RATES 2012-13 TO 2017-18



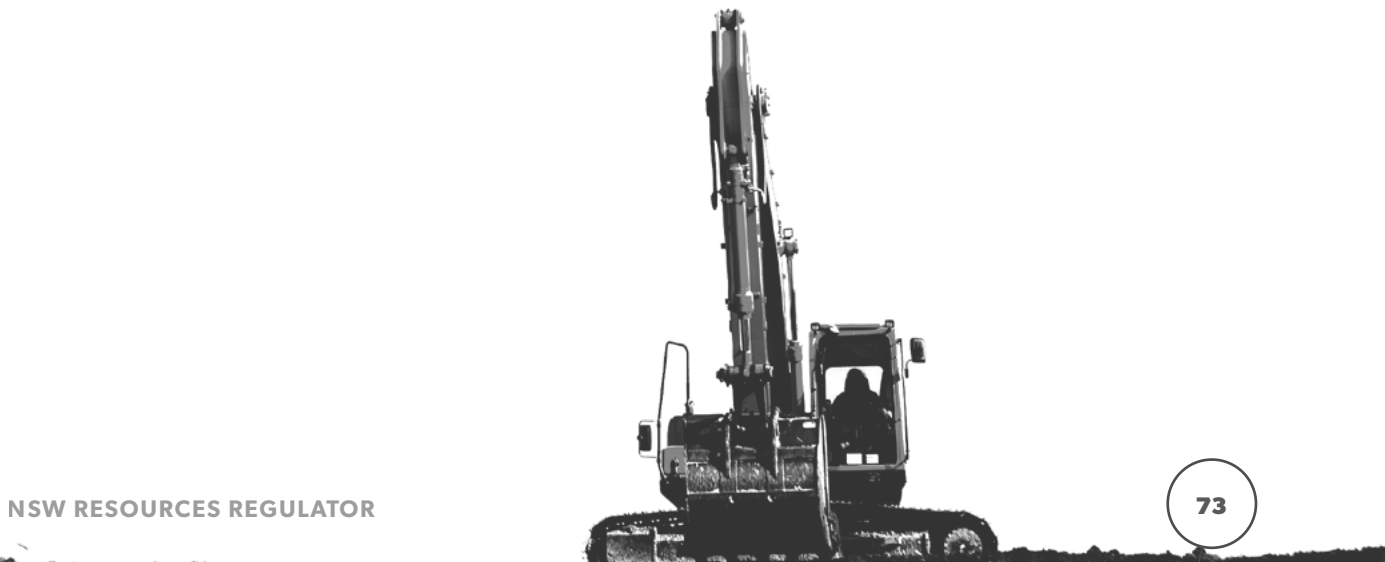
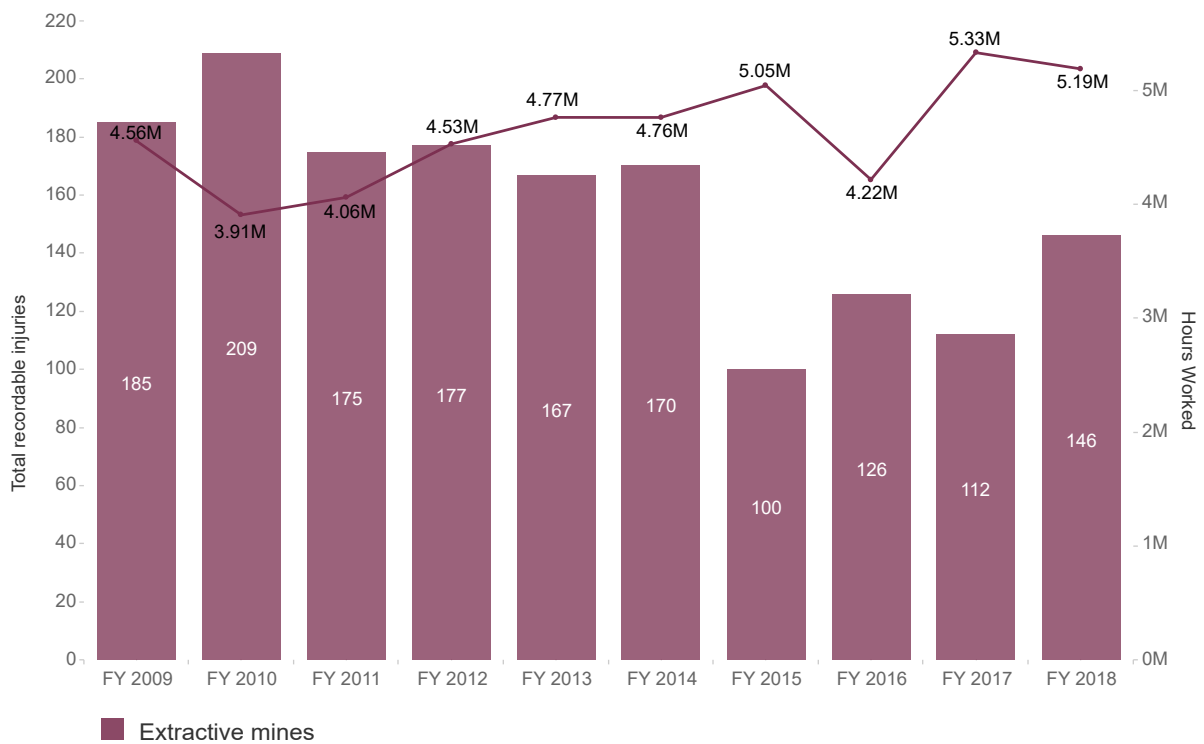
A downward trend for LTI/RDI \geq 7 days frequency rates was observed for extractives since 2013-14.

Total recordable injuries

Total recordable injuries and hours worked

In 2017-18, compared to 2016-17, total recordable injuries increased by approximately 30%, from 112 up to 146. In the ten year period since 2008-09, total recordable injuries (the total number of fatal injuries and injuries resulting in lost time, restricted duty or medical treatment) has decreased by almost 21%.

FIGURE 58. EXTRACTIVES TOTAL RECORDABLE INJURY AND HOURS WORKED 2008-09 TO 2017-18

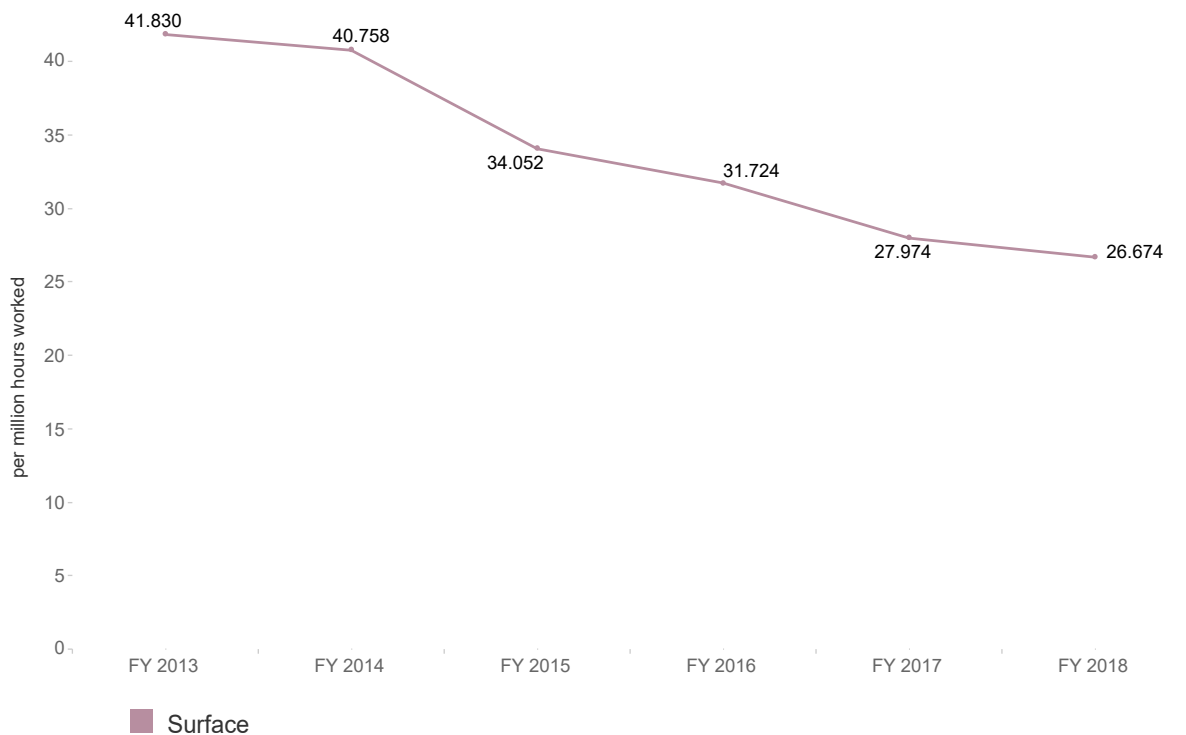


Total recordable injury frequency rates

In 2017-18, the five year rolling average total recordable injury frequency rate (TRIFR) for the extractives sector was down approximately 5% compared to the previous year, from 27.974 to 26.633. From 2012-13, a steady decrease in the rolling five year average TRIFR has also been observed.

Note, a rolling five year average TRIFR frequency rate was unable to be calculated for the whole ten year period as this information was only included in extractives quarterly reporting requirements from the second quarter of 2008-09.

FIGURE 59. EXTRACTIVES FIVE YEAR AVERAGE TRIFR 2012-13 TO 2017-18

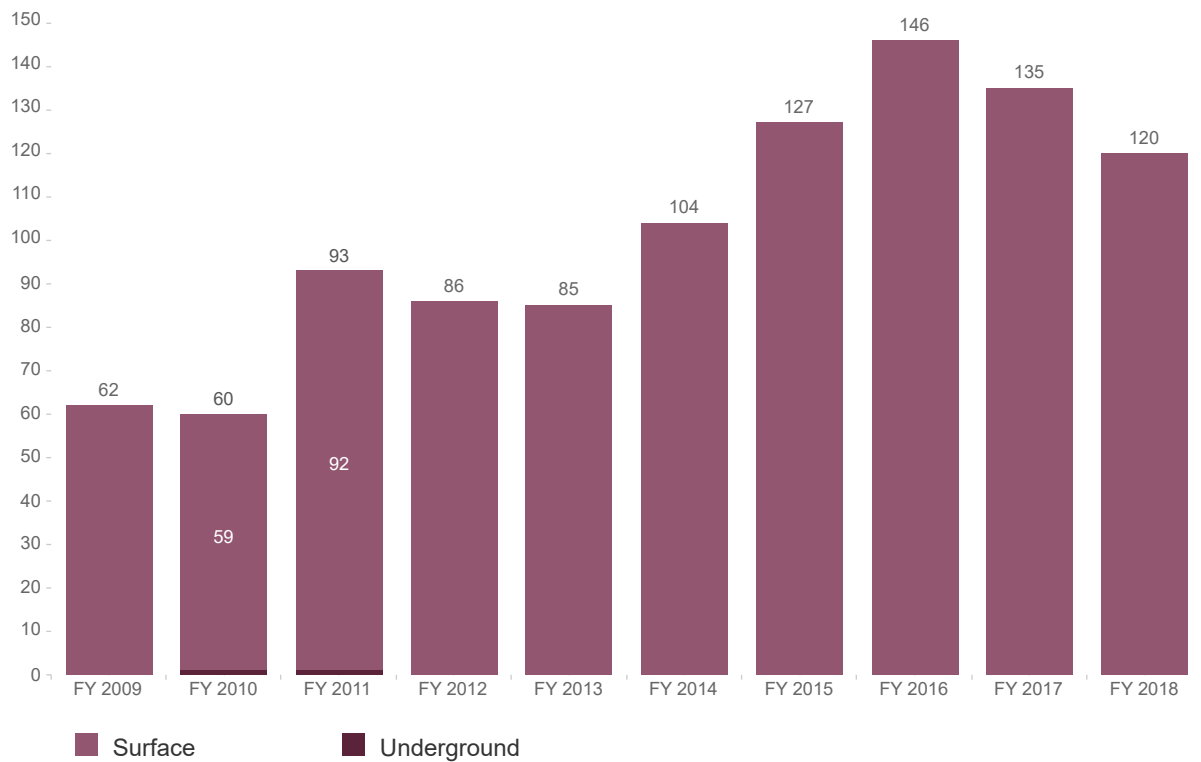


In 2017-18, the five year rolling average total recordable injury frequency rate for the extractives sector was down approximately 5% compared to the previous year.

Notified safety incidents

In 2017-18 compared to 2016-17, notified safety incidents for the extractives sector decreased by 15 from 135 to 120. There has been a steady upward trend in notified safety incidents over the ten years since 2008-09 so that they are currently almost two times higher than ten years ago.

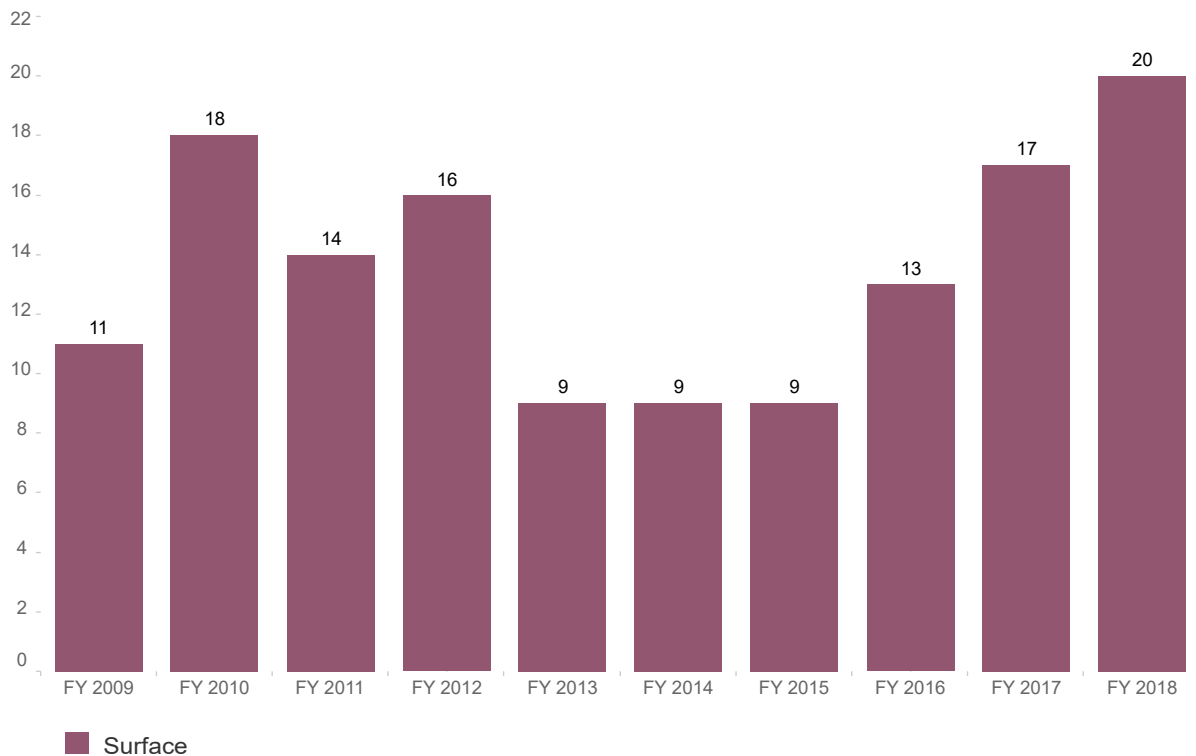
FIGURE 60. EXTRACTIVES NOTIFIABLE INCIDENTS BY OPERATION TYPE 2008-09 TO 2017-18



Complaints

In 2017-18, there were 20 complaints made to the Regulator about safety in extractives mines, up three on the previous year. There has been a fluctuating trend overall in the number of complaints about extractives mines in the ten years since 2008-09.

FIGURE 61. EXTRACTIVES COMPLAINTS RECEIVED BY OPERATION TYPE 2008-09 TO 2017-18



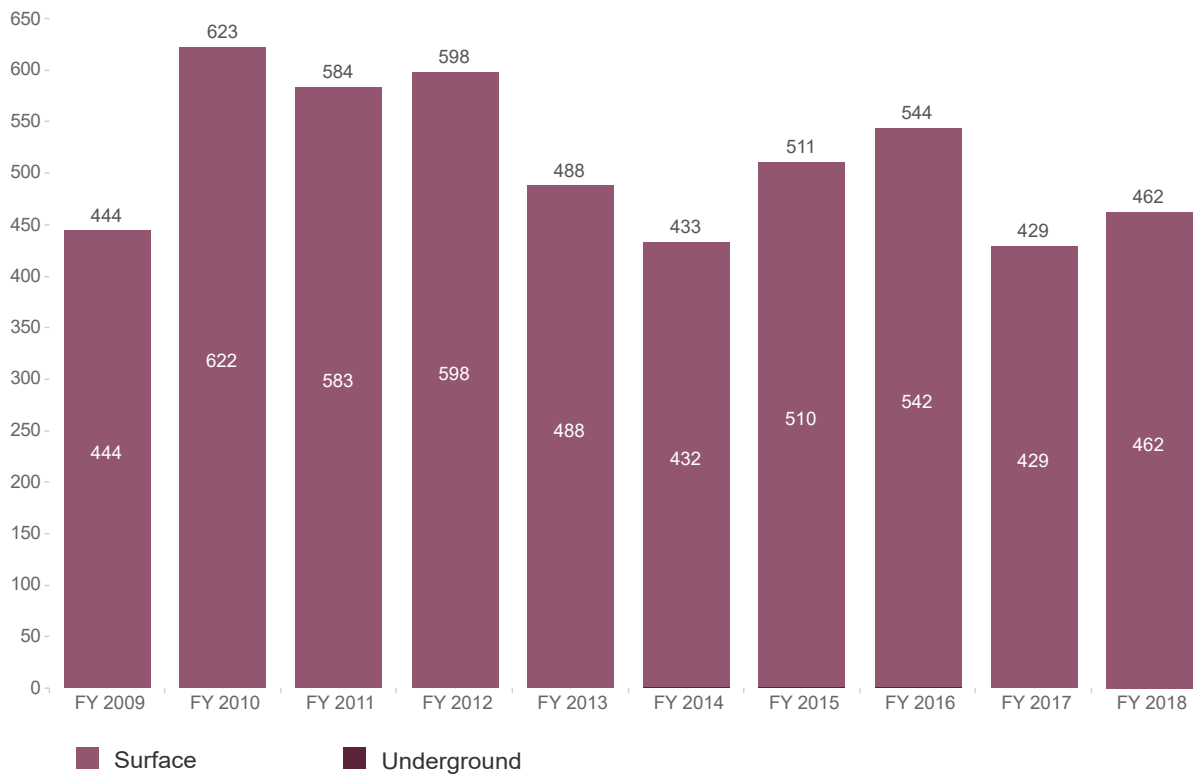
In 2017-18, there were 20 complaints made about safety in extractives mines, up three on the previous year.

Safety notices

Safety notices by operation type

In 2017-18, the Regulator issued more safety notices (notices of concern, improvement, prohibition, investigation and explosives enforcement notices) in the extractives sector, up 33 on the previous year, from 429 to 462. There has been no obvious upwards or downwards trend in the number of safety notices issued in the ten years since 2008-09.

FIGURE 62. EXTRACTIVES SAFETY NOTICES BY OPERATION TYPE 2008-09 TO 2017-18

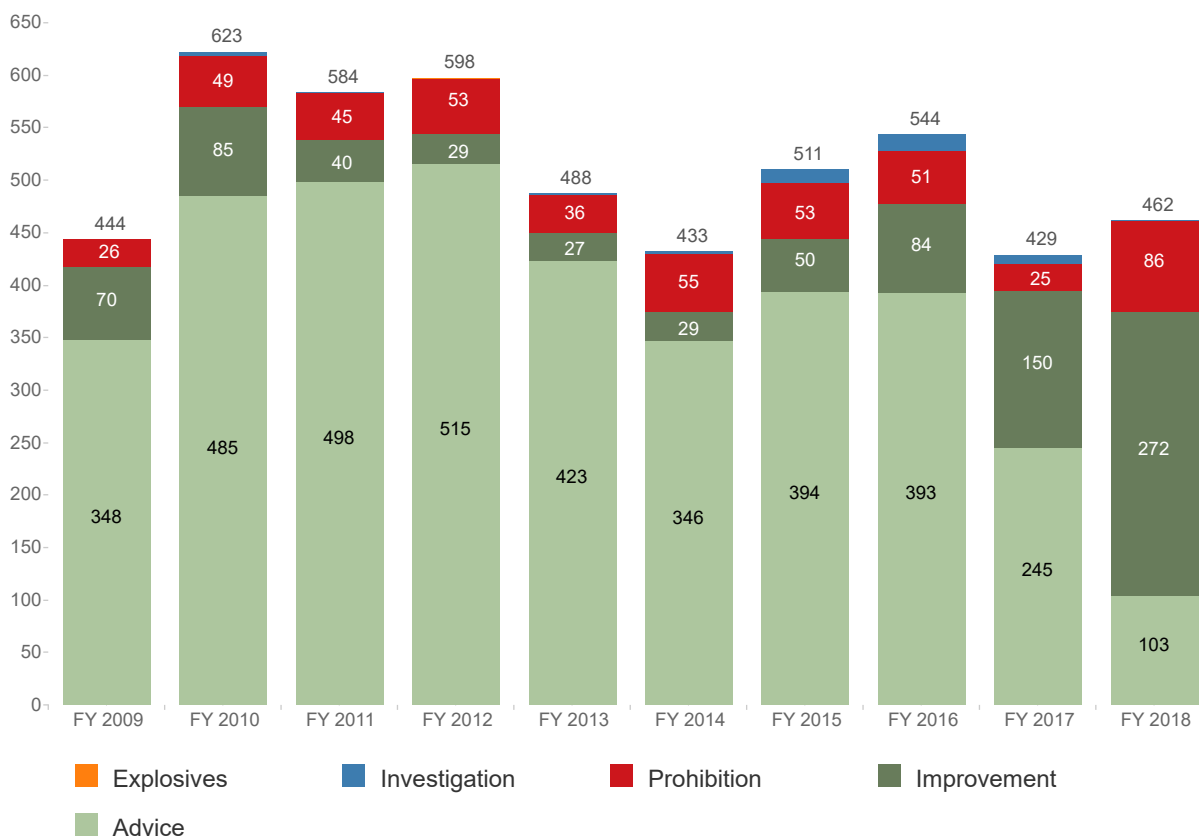


Safety notices by notice type

In 2017-18, the number of improvement notices issued rose sharply compared to the previous year from 150 in 2016-17 to 272 in 2017-18. The proportion of improvement notices relative to notices of concern (advice) also continued to increase. The Regulator’s renewed focus on incident prevention has contributed to this result where it sought to clearly identify matters that necessitate the issue of an improvement notices as compared with a written notice of concern.

Also of note, in 2017-18, the proportion of all notices that were prohibition notices was around 19% (86 of 462 total). This has increased as compared to 2016-17 where prohibition notices accounted for roughly 6% of all notices in the extractives sector.

FIGURE 63. EXTRACTIVES SAFETY NOTICES BY NOTICE TYPE 2008-09 TO 2017-18



In 2017-18, the proportion of all notices that were prohibition notices was around 19% (86 of 462 total).

Opal sector

In 2017-18, there were 3,478 open opal mines, 98% of which (3,416) were underground operations.

Fatal injuries, serious injuries and notified incidents

In 2017-18 there were no fatal injuries, two serious injuries and three notified incidents.

In the ten years since 2008-09 there has been one fatal injury, six serious injuries and 18 notified incidents reported in the opal sector.

Note, the opal mining sector is not required to submit quarterly reports detailing hours worked or lost time injuries and therefore frequency rates for these measures have not been calculated.

TABLE 2. OPAL FATAL INJURIES, SERIOUS INJURIES AND NOTIFIED INCIDENTS 2008-09 TO 2017-18

MEASURE	OPERATION TYPE	2008 2009	2009 2010	2010 2011	2011 2012	2012 2013	2013 2014	2014 2015	2015 2016	2016 2017	2017 2018	TOTAL
Fatal injuries	Surface	0	0	0	0	0	0	0	0	0	0	0
	Underground	0	0	0	0	0	0	0	0	1	0	1
Serious injuries	Surface	0	0	0	0	0	0	0	1	0	0	1
	Underground	0	0	0	0	0	0	1	2	0	2	5
Notified incidents	Surface	1	1	1	0	0	2	0	2	0	0	7
	Underground	0	1	0	0	1	2	1	2	1	3	11

Complaints and safety notices

Complaints are received from mine workers, members of the public, trade union representatives or are submitted anonymously. In ten years reporting period, there were nine complaints made to the Regulator about safety in the opal sector, five of those received in 2017-18.

In 2017-18, the Regulator issued 64 safety notices in the opal sector.

TABLE 3. OPAL COMPLAINTS AND SAFETY NOTICES 2008-09 TO 2017-18

ACTIVITY	2008 2009	2009 2010	2010 2011	2011 2012	2012 2013	2013 2014	2014 2015	2015 2016	2016 2017	2017 2018	TOTAL
Complaints received	0	0	0	0	0	0	1	0	3	5	9
Safety notices	1	2	6	0	1	3	16	1	159	64	253

Petroleum sector

In the 2017-18, there were 403 active petroleum mines. All of which were surface operations.

Fatal injuries, serious injuries and notified incidents

In 2017-18 there were no fatal injuries, serious injuries or notified incidents in the petroleum sector. In the ten years since 2008-09, there has been one fatal injury, six serious injuries and 40 notified incidents.

Note, the petroleum mining sector is not required to submit quarterly reports detailing hours worked or lost time injuries and therefore frequency rates for these measures have not been calculated.

TABLE 4. PETROLEUM FATAL INJURIES, SERIOUS INJURIES AND NOTIFIED INCIDENTS 2008-09 TO 2017-18

MEASURE	2008 2009	2009 2010	2010 2011	2011 2012	2012 2013	2013 2014	2014 2015	2015 2016	2016 2017	2017 2018	TOTAL
Fatal injuries	0	1	0	0	0	0	0	0	0	0	1
Serious injuries	1	4	1	0	0	0	0	0	0	0	6
Notified incidents	5	14	8	2	1	3	4	3	0	0	40

Complaints and safety notices

Complaints are received from mine workers, members of the public, trade union representatives or are submitted anonymously. In 2017-18 there were no complaints made to the Regulator about safety in the opal sector.

In 2017-18, the Regulator issued nine safety notices in the petroleum sector.

TABLE 5. PETROLEUM COMPLAINTS AND SAFETY NOTICES 2008-09 TO 2017-18

ACTIVITY	2008 2009	2009 2010	2010 2011	2011 2012	2012 2013	2013 2014	2014 2015	2015 2016	2016 2017	2017 2018	TOTAL
Complaints received	0	0	0	0	1	0	0	1	0	0	2
Safety notices	0	9	2	0	0	0	0	1	0	9	21

National targets 2012 – 2022

Australian Work Health and Safety Strategy 2012-2022

The [Australian Work Health and Safety Strategy 2012–2022](#) was launched by Safe Work Australia in October 2012. It is underpinned by two key principles:

- All workers regardless of their occupation or how they are engaged have the right to a healthy and safe working environment.
- Well-designed healthy and safe work will allow workers in Australia to have more productive working lives.

Three national targets

The Australian Work Health and Safety Strategy 2012-2022 sets three national targets to be achieved by 2022:

- A reduction in the number of worker fatalities due to injury of at least 20%.
- A reduction in the incidence rate of claims resulting in one or more weeks off work of at least 30%.
- A reduction in the incidence rate of claims for musculoskeletal disorders resulting in one or more weeks off work of at least 30%.

NSW Mining industry contributions to national targets

Fatal injuries

In the Industry Overview – Fatal Injuries section of this report, it was reported that in 2017-18, there were zero mining fatalities recorded in NSW. The very small numbers of fatalities recorded in recent years can cause fluctuating frequency rates, but overall there has been a long term decrease in NSW mining fatal injuries. The NSW mining industry is on track to contribute to national target 1.

Injury outcomes of seven days or more

In the *Industry Overview – Injury outcomes of seven days or more* section of this report, it was reported that in 2017-18, there were 226 injury outcomes (lost time or restricted duty injuries) of seven days or more (LTI/RDI \geq 7days). Whilst this number has shown a small increase since the previous year (from 197 to 226, or an increase of around 15%), the overall trend in absolute numbers is downward.

The rolling five year average injury outcomes (lost time or restricted duty injuries) of seven days or more (LTI/RDI \geq 7days) frequency rate in 2017-18 was 4.005, down roughly 8% compared to the previous year.

Since 2012-13, an overall steady downward trend for rolling five year average LTI/RDI \geq 7days was observed across each of the sectors. In 2017-18, the rate was around 40% less than the rate in 2012-13.

Whilst this report does not further separate out these injuries by type, it is clear that the lost time or restricted duty injuries of seven days or more (LTI/RDI \geq 7days) measure is showing a favourable downward trend and the NSW mining industry is on track to contribute to achievement of national target 2 (and by implication target 3).

Appendices

Appendix 1. Definitions

Injury classification

TERM	DEFINITION
Fatal injury (FI)	An injury that results in death.
Lost time injury (LTI)	An injury that results in a minimum of one full shift's absence (AS1885.1 – 1990).
Restricted duty injury (RDI)	An injury resulting in the injured person returning to alternative or restricted duties.
Medical treatment injury (MTI)	An injury requiring medical treatment.
Total recordable injuries (TRI)	The total number of fatal injuries, lost time injuries, restricted duty injuries and medical treatment injuries.
Serious injury (SI)	<p>An injury where the nature of injury is defined by the relevant legislation</p> <p>Note, with the commencement of the Work Health and Safety (Mines and Petroleum Sites) Regulation 2014 on 1 February 2015, the definition of a serious injury was expanded to now also include additional injury types, as well as any injury irrespective of its nature that results in immediate treatment as an in-patient in a hospital.</p> <p>Note:</p> <ol style="list-style-type: none"> Under the Petroleum (Onshore) Schedule 1992, 301(1), a serious injury in the Petroleum sector was defined as the need for immediate attention by a medical practitioner. This is a lower threshold than for the mining industry. In general, a serious injury under this definition is not directly comparable to definitions in other mining jurisdictions or SafeWork Australia.
Serious injury by outcome (LTI/RDI ≥ 7 days)	A lost time injury resulting in an absence of seven days or more, and / or a restricted duty injury resulting in alternative or restricted duties of seven days or more.

APPENDICES

Frequency rates

TERM	DEFINITION
Fatal injury frequency rate (FIFR)	The number of fatal injuries per million hours worked.
Lost time injury frequency rate (LITFR)	The number of lost time injuries per million hours worked.
Serious injury frequency rate (SIFR)	The number of serious injuries per million hours worked.
Total recordable injury frequency rate (TRIFR)	The total number of fatal, lost time, medical treatment and restricted duties injuries per million hours worked.
Injury outcome 7 days or more (LTI/RDI \geq 7daysFR)	The number of injuries (lost time and restricted duties) with an outcome of seven days or more per million hours worked.

Terminology

TERM	DEFINITION
Complaints	The Regulator records all mine work health and safety complaints or requests for service it receives. Complaints may be received from mine workers, members of the public, trade union representatives. Complaints may be submitted anonymously.
Notifiable safety incident	An incident where the cause of the incident, nature of the injury and/or injury outcome requires notification to the Regulator according to the relevant legislation. Note that any multiple gas trips that were reported to the Regulator in a single incident notification have been included as individual incident notifications in this report.
Quarterly workplace health and safety report	Quarterly workplace health and safety reports are required to be submitted by the mine operator to the Regulator, according to the relevant legislation, and contain information on injuries and illness occurring in the quarter, as well as other information such as the total number of hours worked at the mine. This information is used for preparing key statistical data for mining sectors including frequency rates.

Enforcement and advice notices

ENFORCEMENT AND ADVICE NOTICE CATEGORY	DEFINITION	LEGISLATION AND ENFORCEMENT AND ADVICE NOTICE TYPE		
Advice notice or notice of concern	Notice raising concerns regarding health, safety or welfare to the attention of operators.	<i>Coal Mine Health Safety Act 2002</i>	s 150	Bringing of concerns regarding health, safety or welfare to the attention of operators
		<i>Mine Health Safety Act 2004</i>	s 131	Bringing of concerns regarding health, safety or welfare to the attention of operators
		<i>Mines Inspection Act 1901</i>	s 36B	Inspector or mine safety officer to inform mine management of certain matters
		<i>Work Health and Safety (Mines and Petroleum Sites) Act 2013</i>	s 23	Notice of concern

APPENDICES

ENFORCEMENT AND ADVICE NOTICE CATEGORY	DEFINITION	LEGISLATION AND ENFORCEMENT AND ADVICE NOTICE TYPE		
Improvement notice	Notice directing remedy or prevention of a contravention or potential contravention.	<i>Occupational Health and Safety Act 2000</i>	s 91	Issue of improvement notices
		<i>Work Health and Safety Amendment Act 2011</i>	s 191	Issue of improvement notices
Prohibition notice	Notice prohibiting carrying on of an activity or carrying on of an activity in a way that involves or will involve serious risk to health and safety. In an underground mine this may require removal of workers from underground areas.	<i>Work Health and Safety Act 2011</i>	s 195	Power to issue prohibition notices
		<i>Occupational Health and Safety Act 2000</i>	s 93	Issue of prohibition notices
		<i>Mines Inspection Act 1901</i>	s 37	Notice to be given of cause of danger
			s 37A	Order to withdraw persons from mine
		Mine Health Safety Regulation 2007	cl 158	Chief Inspector may impose prohibitions or restrictions or direct evacuation or closure of mine
Coal Mine Health Safety Regulation 2006	cl 51	Chief Inspector may impose prohibitions or restrictions or direct evacuation or closure of coal operation		
Investigation notice	Notice requiring stoppage of plant, non-disturbance of premises or for an inspector obtain information/ documents/ evidence.	<i>Occupational Health and Safety Act 2000</i>	s 62	Power of Inspectors to obtain information, documents and evidence
			s 89	Investigation notice to stop plant or prevent disturbance of premises to allow investigation
		<i>Work Health and Safety Act 2011</i>	s 155	Powers of the Regulator to obtain information
			s 171	Power to require production of documents and answers to questions
				Issue of a non-disturbance notice
Explosive notice	Notice regarding certain powers of inspectors in relation to explosives.	Explosives Regulations 2005	cl 99	Certain powers of inspectors and police officers

APPENDICES

Appendix 2. Mine definitions

This appendix is included to help readers understand the different types of mines and how they are classified into mining sectors. In this report

- exploration is included in surface operations.
- both surface and underground activity occurring at an underground operation is considered as underground activity.

Mine Types

MINING SECTOR	MINE TYPE
Coal mines	<ul style="list-style-type: none"> • Coal • Declared plant - CPP
Metalliferous mines	<ul style="list-style-type: none"> • Metals • Mineral sands
Extractive mines	<ul style="list-style-type: none"> • Construction materials • Industrial minerals
Other Non-coal mines	<ul style="list-style-type: none"> • Gemstones or precious stones (excluding Operation type of Opal Mining (All Types)) • Readymix or bitumen • Ancillary to mining • Waste mining • Treatment plant • To be determined
Petroleum and Geothermal sites	<ul style="list-style-type: none"> • Petroleum • Geothermal
Opal mines	<ul style="list-style-type: none"> • Small Scale Titles • Opal claim • Gemstones or precious stones with Operation type of Opal Mining (All Types)

Active mines

Active mines include mines that are open, mines that operate intermittently, mines that are under care and maintenance, open tourist mines, planned mines and small-scale titles that are current or pending.

Mine operation types

MINING SECTOR OPERATION TYPE	MINE OPERATION TYPE
Underground	<ul style="list-style-type: none">• Underground
Surface	<ul style="list-style-type: none">• Open cut• Processing• Borrow pit• Dredging• Exploration• Exploration wells• Opal mining (All Types)• Production wells• To be determined

