IN THE FAIR WORK COMMISSION

MATTER NO: **AM2014/190**

TITLE OF MATTER: **FOUR YEARLY REVIEW OF MODERN AWARDS – TRANSITIONAL PROVISIONS – ACCIDENT PAY PROVISIONS**

SUBMISSIONS OF THE COAL MINING INDUSTRY EMPLOYER GROUP (CMIEG)

INTRODUCTION

1. The application to vary clause 18 of the *Black Coal Mining Industry Award 2010* (**Award**) is made by the Coal Mining Industry Employer Group (**CMIEG**) as part of the four yearly reviews being conducted by the Fair Work Commission (**Commission**) pursuant to s 156 of the *Fair Work Act 2009* (Cth) (**FW Act**).

2. Clause 18(1) of the Award provides that:

> An employer must pay, or cause to be paid, accident pay during the incapacity of the employee, within the meaning of the applicable workers compensation legislation:
>
> (a) until such incapacity ceases; or
>
> (b) until the expiration of a period of 78 weeks from the date of injury;
>
> whichever event will first occur, even if the employer terminates the employee's employment within the period.

3. In summary, the application made by the CMIEG seeks a variation to clause 18 of the Award to reduce the period of accident pay (in clause 18(1)(b) of the Award) from 78 weeks to 52 weeks and consequential amendments to bring the Award in line with other modern awards containing similar accident pay provisions.

RELEVANT STATUTORY PROVISIONS

4. As part of the four yearly review process, the Commission has express power pursuant to s 156(2)(b)(i) to make *"one or more determinations varying modern awards"*. The power to vary a modern award involves the exercise of *"modern award powers"* as described in s 134(2)(a) of the FW Act: see *4 Yearly Review of Modern Awards: Preliminary Jurisdictional Issues* [2014] FWCFB 1788 (**Preliminary Jurisdictional Issues Decision**) at [17].

5. A variation must satisfy the modern awards objective enshrined in s 134 (1) of the FW Act: see also ***Shop, Distributive and Allied Employees Association v National Retail Association (No 2)*** **(*SDA v NRA (No 2)*)** (2012) 205 FCR 227. Relevantly, s 134(1) provides that the Commission must ensure that modern awards, together with the National Employment Standards, provide a *"fair and relevant minimum safety net"* taking into account the following criteria:

(a) relative living standards and the needs of the low paid; and

(b) the need to encourage collective bargaining; and

(c) the need to promote social inclusion through increased workforce participation; and

(d) the need to promote flexible modern work practices and the efficient and productive performance of work; and

(da) the need to provide additional remuneration for:

(i) employees working overtime; or

(ii) employees working unsocial, irregular or unpredictable hours; or

(iii) employees working on weekends or public holidays; or

(iv) employees working shifts; and

(e) the principle of equal remuneration for work of equal or comparable value; and

(f) the likely impact of any exercise of modern award powers on business, including on productivity, employment costs and the regulatory burden; and

(g) the need to ensure a simple, easy to understand, stable and sustainable modern award system for Australia that avoids unnecessary overlap of modern awards; and

(h) the likely impact of any exercise of modern award powers on employment growth, inflation and the sustainability, performance and competitiveness of the national economy.

6. Importantly, as noted above, s 134(2)(a) provides the modern award objectives apply to the performance or exercise of the Commission's functions or powers under Part 2-3 of the FW Act, which are described as the *"modern award powers"*.

7. Section 139 of the FW Act identifies the terms which may be included in modern awards. Accident pay is not one of the matters included in s 139.

8. Further, in the *Preliminary Jurisdiction Issues Decision* at [60], a Full Bench of the Commission conveniently set out the parameters as to the scope of a four yearly review, as follows:

> …
>
> 3. The Review is broader in scope than the Transitional Review of modern awards completed in 2013. **The Commission is obliged to ensure that modern awards, together with the NES, provide a fair and relevant minimum safety net taking into account, among other things, the need to ensure a 'stable' modern award system (s.134(1)(g))**. The need for a 'stable' modern award system suggests that a party seeking to vary a modern award in the context of the Review must advance a merit argument in support of the proposed variation. The extent of such an argument will depend on the circumstances. Some proposed changes may be self evident and can be determined with little formality. However, where a significant change is proposed it must be supported by a submission which addresses the relevant legislative provisions and be accompanied by probative evidence properly directed to demonstrating the facts supporting the proposed variation. In conducting the Review the Commission will also have regard to the historical context applicable to each modern award and will take into account previous decisions relevant to any contested issue. The particular context in which those decisions were made will also need to be considered. Previous Full Bench decisions should generally be followed, in the absence of cogent reasons for not doing so. The Commission will proceed on the basis that *prima facie* the modern award being reviewed achieved the modern awards objective at the time that it was made.
>
> 4. **The modern awards objective applies to the Review. The objective is very broadly expressed and is directed at ensuring that modern awards, together with the NES, provide a 'fair and relevant minimum safety net of terms and conditions'**.
>
> 5. In the Review the proponent of a variation to a modern award must demonstrate that if the modern award is varied in the manner proposed then it would only include terms to the extent necessary to achieve the modern awards objective (see s.138). What is 'necessary' in a particular case is a value judgment based on an assessment of the considerations in s.134(1)(a) to (h), having regard to the submissions and evidence directed to those considerations.
>
> …
>
> 8. Any variation to a modern award arising from the Review must comply with s.136 of the FW Act and the related provisions which deal with the content of modern awards. Depending on the terms of a variation arising from the Review, certain other provisions of the FW Act may be relevant. For example, Division 3 of Part 2-1 of the FW Act deals with, among other things, the interaction between the National Employment Standards (NES) and modern awards. These provisions will be relevant to any Review application which seeks to alter the relationship between a modern award and the NES. The Review will also consider whether any existing term of a

> modern award is detrimental to an employee in any respect, when compared to the NES (see s.55(4)). (emphasis added)

9. These principles are relevant to the discharge of the Commission's powers in the present matter.

CLAUSE 18 OF THE AWARD – HISTORICAL ORIGINS AND PURPOSE

10. Clause 18 of the Award sets out obligations and entitlements in respect of 'accident pay'.

11. An employee's entitlement to accident pay is closely aligned with the employee's entitlements under the relevant workers' compensation legislation. Indeed, the chapeau in clause 18 states that:

> An employee in receipt of weekly payments under the provisions of **applicable workers compensation legislation** will be entitled to receive accident pay from the employer subject to the following conditions and limitation… (emphasis added)

12. Clause 18(2) of the Award provides the following definition of 'accident pay':

> For the purposes of this clause accident pay means:
>
> (a) For the initial period of 39 weeks from the date of injury, a weekly payment representing the difference between the weekly amount of compensation paid to the employee under the applicable workers compensation legislation and the weekly amount that would have been received by virtue of this award had the employee been on paid personal leave at the date of the injury (provided the latter amount is greater than the former amount).
>
> (b) For a further period of 39 weeks a weekly payment representing the difference between the weekly amount of compensation paid to the employee under the applicable workers compensation legislation and the rate prescribed from time to time for the classification of the incapacitated employee at the date of the injury (provided the latter amount is greater than the former amount).

13. The effect of clause 18(1) read with clause 18(2) of the Award is to impose an obligation on an employer to bridge the gap or the shortfall between the payment that the employee receives pursuant to the relevant workers' compensation legislation, and the pay that the employee would have received if he or she were on paid personal leave (for the first 39 weeks) or the pay for the corresponding classification under the Award (for the remaining 39 weeks). In light of its purpose, accident pay is also commonly referred to as 'make up pay'.

The genesis of accident pay provisions in industrial awards

14. The accident pay provisions in industrial awards have as their starting point the workers' compensation schemes that have existed in Australia since the enactment of the applicable

statutes across all states and territories, starting with South Australia in 1900.[1] The coverage of these schemes was initially limited, but expanded, as discussed in the Industry Commission's Report (no. 36, 1994) titled *Workers' Compensation in Australia*:

> Over the years, coverage broadened, benefits were increased and more injuries and diseases became compensable. Coverage was broadened from injury 'arising out of and in the course of employment' to 'arising out of or in the course of employment'. Weekly benefits became more generous, and were offered for longer periods. These changes were a combination of legislative change, judicial interpretation, and administrative decisions.

15. The major reforms relating to workers' compensation occurred in the mid to late 1980s, in the move towards public underwriting of the schemes in most jurisdictions (noting that WA, Tasmania, ACT and NT still operate under a private market structure). During this time, there was also a greater push towards rehabilitation and an emphasis on occupational/work health and safety. These changes to workers' compensation legislation also occurred at a time when occupational/work health and safety laws were being substantially developed.

16. It is in this broader legislative context that accident or 'make up' pay was originally introduced at an award level in 1971 to cover any shortfall between the award rates and the compensation available under the relevant workers' compensation schemes.

17. The legislative framework of workers' compensation is directly relevant to accident pay. This was clarified in a broad description of accident pay given in 1973 by a Full Bench of the Conciliation and Arbitration Commission when it said (***Re Carpenters and Joiners Award*** (1973) 149 CAR 39 at 50-51):

> … an award of accident pay means that an employee is to receive during his disability a money payment by way of a prescribed superimposition upon the statutory rate of compensation enacted by State legislation Award prescription in this sphere does not supplant, nor is it intended as a substitute for, State legislation. It is awarded as a benefit which is supplemental to the rights and obligations existing under State legislation. The precise terms of that legislation are therefore of vital importance in deciding whether an award of accident pay is required at all, and if so, what is the extent of that requirement in terms of pecuniary benefit.

[1] South Australia was the first state to introduce workers' compensation legislation (1900), followed by Western Australia (1902), Queensland (1905), NSW (1910), Tasmania (1910), Victoria (1914), the Northern Territory (1920), and the ACT (1951). The Commonwealth's first Officers' Compensation Act was passed in 1908, and the Seamen's Compensation Act was passed in 1911.

18. The New South Wales Industrial Relations Commission introduced accident pay at an award level in 1971. In ***In re Dispute – Building Trade re Accident Pay*** [1971] IAR 241 (***Building Trade Dispute***), Sheehy J observed (at 242-243) that:

> In this industry the concept of a loading for lost time or intermittency of employment is not new and on the construction side the hourly rate is already loaded for this disability, also for sick pay and public holidays. I regard the loss of wages by employees incurred during periods when they are off duty and receiving workers' compensation as being only another instance of lost time in the industry and it seems from what has been put by the unions, that building workers are more prone to work accidents than employees in industry generally. In my opinion the disability complained of should be minimized so far as possible whether by legislation or award provision or perhaps both. In some cases at present a worker's compensation payment would be little more than half the award wage and this is difficult to countenance when one considers that the injury causing the man's absence from work must have been related to his employment.
>
> In my view the general merits of the application are overwhelmingly in favour of the unions.

19. In ***Building Trade Dispute***, Sheehy J proceeded to make the *Building Trade Dispute Award*, providing that employers of building tradesmen or labourers covered were to pay 80 cents per 40-hour week to the employee or to the union/nominee. This was considered an "additional lost time loading" rather than accident pay as it is understood today.

20. As a result of the decision in ***Building Trade Dispute***, an award was created to introduce accident 'make up' pay, and that decision was upheld on appeal (see ***Re Accident Pay – Building Trades Employees*** [1971] IAR 619 (***Re Accident Pay***) per Beattie J, President, and McKeon, Sheldon, Sheppard and Cahill JJ). However, the Commission in Court Session rescinded the award of Sheehy J and made another award, in order to clarify ambiguities relating to the operation of the award and due to changes in the positions of the parties. This is because, at the time of the decision, the unions and the Master Builders' Association (which included employers of the majority of the employees in the industry, but not all) had reached an agreement in relation to the amendments to the award prior to the decision on appeal. The clause in its final form was published as the ***Building Trades – Injuries Award*** [1971] 184 IG 480, and included:

(a) at clause 1, a lost time loading; and

(b) at clause 2, an accident 'make-up' pay clause and a statement that clause 1 will be deemed to have been complied with if clause 2 is implemented.

21. After the decision in ***Re Accident Pay***, accident pay clauses became a feature of various awards. These developments were discussed in the ***Accident Pay Case of 1978*** [1979] IAR

101 (***Accident Pay Case***) by the NSW Commission in Court Session (Beattie P, Cahill and Dey JJ) (at 103):

> The industrial community regarded the Commission's decision in the building workers' case as establishing that it was proper for some kind of provision for accident pay to be made in other industries. On 1 December 1971 the New South Wales Branch of the Metal Trade Industry Association of Australia entered into an industrial agreement with The Amalgamated Engineering Union, Australia Section, and other metal trades unions provision for the payment of make-up accident pay [185 IG 266]. A standard form of accident pay provisions was settled by the Commission and accepted by the parties in a case concerning the Electricians, &c. (State) Award [190 IG 674]. Thereafter accident pay clauses proliferated in New South Wales awards and, with only one or two exceptions, the awards were made by consent. Many industrial agreements including accident pay provisions were also made. We have been told that a similar course of events occurred in the jurisdiction of the Australian Conciliation and Arbitration Commission and in the industrial jurisdictions in other States.

22. In 1977, the *Workers' Compensation Act 1926* (NSW) was amended by the *Workers' Compensation (Rates) Amendment Act 1977* (NSW), in order to provide for workers' compensation to be payable at "*an incapacitated worker's current weekly wage rate for a period (or periods) of up to 26 weeks*".

23. Many awards with accident pay provision had the make-up pay entitlement of 26 weeks and, as such, the accident pay clauses became redundant.

24. In considering an application to remove the accident pay provisions in multiple awards, the NSW Commission in the ***Accident Pay Case*** found it unjust to require employers covered by the awards to pay a loading in addition to any amount they would be required to pay by statute. In doing so, the NSW Commission stated the following (at 101):

> The provisions of that Act had rendered nugatory all make-up accident pay provisions in awards which provided for a calculation to be made of the difference between compensation paid or payable and a rate of wage equated with "the current weekly wage rate" for the work as defined in s 9(8) of the *Workers' Compensation Act,* because, in such cases, there would be no difference and no make-up accident pay would be payable.

25. In ***Accident Pay Case***, the NSW Commission considered the fact that many of the awards varied substantially in the way in which accident pay was formulated. In discussing the variations in relation to quantum across awards, the NSW Commission stated (at 104) that the following periods of accident pay could be found in NSW awards:

(a) a period or aggregate of periods not exceeding 26 weeks for any incapacity in respect of and resulting from any particular injury;

(b) a period or aggregate of periods totalling 26 weeks in a year;

(c) a total of 39 weeks' payment in respect of any one injury;

(d) the period of an employee's absences not exceeding 12 months in total in respect of a particular injury;

(e) a period or aggregate of periods not exceeding two years in respect of and resulting from any one injury.

26. In relation to the amendments to the legislation, the NSW Commission stated the following (at 106):

> The *Workers' Compensation Act, 1926*, as it now stands, evinces an intention on the part of Parliament to lay down a minimum standard of compensation for all workers subject to the Act, whether employed in private industry or by the Crown or statutory authorities and whether remunerated under New South Wales or Commonwealth awards or agreements or by determinations made by the Crown or a statutory authority and also where there is no instrument regulating the worker's remuneration.

27. It should be noted that the decision in ***Accident Pay Case*** only affected awards that had an entitlement of accident pay of up to the 26 weeks.

28. For all awards that had more generous accident pay provisions, the employer remained to be liable for amounts that were above the 26 week entitlement under the amended legislation. The decision in ***Accident Pay Case*** provides no clarity or reasoning as to why certain other awards had, or would continue to have, a more generous accident pay provision.

29. Since the decisions in ***Re Accident Pay*** and ***Accident Pay Case***, there have been a number of tribunals that have considered the appropriate level of entitlement. Generally, these decisions do not provide substantive (or any) reasons for the setting of the relevant maximum entitlement. Originally it appears that the level was based on the statutory entitlement at the time.

30. The Full Bench decision in ***4 yearly review of modern awards—transitional provisions*** [2015] FWCFB 3523 (***2015 Accident Pay Decision***) set the safety net for accident pay at 26 weeks, based on pre-reform awards (at [211]).[2] This is consistent with various decisions that established that there was a community standard relating to 26 week.

[2] The Full Bench noted that this minimum safety net should apply *"unless there are special circumstances relating to particular awards which warrant a departure from this standard."*

31. This community standard was discussed in a decision (***Automotive, Food, Metals, Engineering, Printing and Kindred Industries Union re GRAPHIC ARTS - GENERAL - AWARD 2000*** [2002] PR914080) seeking to amend the *Graphic Arts - General - Award 2000* to create a 39 week entitlement (at [35]):

> At the time of the making of the [Metals, Engineering and Associated Industries (Accident Pay, Victoria) Award 1998 [AW789881]] there were approximately 1,500 Federal awards and accident make-up pay of 26 weeks was the community standard. A survey of workers compensation statutory entitlements also indicate that 26 weeks is a common standard for workers to receive normal weekly earnings or almost 100 per cent of pre-injury earnings.

32. The prevalence of awards with accident pay at 26 weeks was also discussed (at [14]) in ***Automotive, Food, Metals, Engineering, Printing and Kindred Industries Union v Australian Industry Group*** [1999] AIRC 6 (Print R0483).

33. Although accident pay in the coal mining industry was originally developed on the basis of the 1971 decision in ***Re Accident Pay***, it appears that accident pay in the coal industry was set at a different level because, inter alia:

(a) the coal mining industry was subject to the jurisdiction of the Coal Industry Tribunal (rather than the state-based industrial relations commission or the Australian Industrial Relations Commission or its predecessor);

(b) the coal mining industry had its own separate insurance scheme; and

(c) the mining industry had been treated differently by the legislature in relation to both workers' compensation and occupational/work health and safety.

Accident pay provisions in coal industry awards

34. Accident pay was extended to the black coal mining industry in NSW in 1973, as a result of the decision of the Coal Industry Tribunal (**CIT**) being *The Australian Coal and Shale Employees Federation and others v New South, Wales Combined Colliery Proprietors Association* [1973] CR 2183 (16 February 1973) (***1973 CIT Decision***), which considered a raft of other claims as well.

35. The ***1973 CIT Decision*** established an accident pay provision in the black coal mining industry in NSW of 26 weeks based upon the decision in ***Re Accident Pay*** by inserting an accident pay clause into the *Coal Mining Industry (Miners) Award, 1973, New South Wales* (the provisions of the amended award are set out in *The Australian Coal and Shale Employees*

Federation and ors v New South Wales Combined Colliery Proprietors Association [1973] CR 2184 (16 February 1973)).

36. In referring to the decision in ***Re Accident Pay***, the CIT (at 4) stated the following:

> Subsequently to the above case, there appears to have been a widespread application of the principle upon which the benefit is based, not only in New South Wales but in other States. The 'Building Workers' decision limited the make-up to award rates but the industry-wide agreements reached in the metal trades extended the benefit to cover over-award payments, subject to the qualification that payments for overtime, shift penalties, disabilities and the like were not included. **The agreement provided for a limitation of six months and in that and certain other respects was consistent with the** '**Building Workers**' **case**. (emphasis added)

37. The CIT then stated (at 4-5):

> In relation to workers' compensation there is **no evidence which would enable me to make a proper comparison between employment in the metal trades and employment in the coal mining industry** and because of this special circumstance I am not prepared to hold as at present advised that since over-award payments have been taken into account in the metal trades there should be a similar approach in the coal mining industry. (emphasis added)

38. Despite these reasons, the CIT went on to state the following (at 5):

> However, I have decided as a matter of my own responsibility that the inclusion of bonus payments in the 'make-up' payment sought is fair, reasonable and proper.
>
> Under present circumstances weekly payments under the Workers' Compensation Act fall short of average earnings in the coal mining industry made up of award payments and bonuses. This is a weakness which could cause serious hardship not only to an employee but to his dependent family. It may be argued with some logic that when regard is had to other available benefits under the Workers' Compensation Act what the employee loses on the swings he gains on the merry-go-round. But this would not necessarily follow and even if it were the position there would still exist the immediate problem brought about by a sudden drop in income.
>
> The order giving effect to this decision will have regard to the terms of the ruling of the Full Bench of the Industrial Commission of New South Wales in the Building Workers' case to which reference has already been made **and it will contain amongst other conditions the limitation of six months, which is also a feature of the metal trades agreements**. (emphasis added)

39. Clauses in (almost) identical terms were also inserted into the following awards on 26 June 1973 (see *The Australian Coal and Shale Employees Federation and ors v Queensland Coal Owners Association* [1973] CR 2234 (26 June 1973)):

    (a) the *Coal Mining Industry (Miners) Award, 1973, Queensland*;

(b) the *Coal Mining Industry (Electrical and Engineering Trades) Award, 1973, Queensland*; and

(c) the *Coal Mining Industry (Engine Drivers' and Firemen's) Award, 1973, Queensland*.

40. The CIT decision in *The Australian Coal and Shale Employees' Federation and others v New South Wales Combined Colliery Proprietors Association and others* [1980] CR 2766 (14 January 1980) (***January 1980 CIT decision***) and the CIT decision in *The Federated Engine Drivers and Firemen's Association of Australasia and others v New South Wales Combined Colliery Proprietors Association* [1980] CR 2807 (19 February 1980) (***February 1980 CIT decision***), led to the extension of accident pay in the coal mining industry from a maximum period of 26 weeks to 78 weeks.

41. The ***January 1980 CIT decision*** dealt with an application by coal industry unions to remove the 26 week limit on accident pay (i.e. to introduce an uncapped entitlement) in which the CIT then determined to extend the entitlement and set out principles for the parties to further confer about the terms of an extension (at 12-14).

42. Following the ***January 1980 CIT decision***, the CIT allowed parties to consider the principles set out in the ***January 1980 CIT decision*** and the parties subsequently applied to the CIT for arbitration with a view to CIT making a final determination regarding variation of the awards. In considering the oral submissions relating to the established principles, the CIT in the ***February 1980 CIT decision*** extended the accident pay entitlement to 78 weeks (paid at the 'sick leave rate', being inclusive of bonuses, for the first 39 weeks).

43. In the ***January 1980 CIT decision*** (which dealt with a range of different claims, one of which related to accident pay), the CIT considered evidence providing an overview of the industry at the time. There was evidence providing a snapshot of the industry as at 1977-1978, which seem to indicate that the industry grew (in terms of production and value) substantially in the decade leading up to the decision, and that a major factor relating to this change related to the development of open cut mines. Furthermore, it was accepted that open cut was growing at that time, and that there were lower levels of incidents (or men on compensation) in open cut mines as compared to underground mines (at 3-4).

44. The unions' case in the ***January 1980 CIT decision*** in relation to accident pay was summarised as follows (at 12-13):

(1) **Community standards have moved upwards**.
(2) Witnesses have shown hardships do exist.

(3) There are now **more accidents in the industry**.
(4) There are **more serious accidents extending beyond 26 weeks**.
(5) There is **an increase in production and an increase in the demand for coal.**
(6) There has been upward movement in the value of coal.
(7) There are **more open cut mines with lesser men by comparison with underground mines which are getting larger production and on a lesser premium rate**.
(8) That just as an employee is entitled to look at his place of employment as a means of reasonable income so he should be entitled, if disabled in that industry, to be not disadvantaged by such disablement.
(9) That the mine worker himself recognises the hardship experienced by his less fortunate workmate and does something about it.
(10) That the mine worker places great importance on the union's claim.
(11) The former Minister for Mines and Energy (New South Wales), as a responsible Minister in the government has supported the principles that we have espoused.

> 'We say further we have never attempted in this industry to set up any general new standards in the community. History has proved the 35-hour week was never used as a yardstick in outside industry nor any other portions of the award that is in excess of community standards.'

(emphasis added)

45. The CIT accepted the unions' submissions, *"having regard to the unique character of the industry with which it is concerned"*. The CIT (at 13) also set out the guidelines on which the order would be made, namely:

(i) The **unusual nature of the industry** justifies provisions in advance of community standard.
(ii) The provision **must of necessity be governed by the employer/employee relationship**.
(iii) There **must be a termination point** to the provision.
(iv) **Cost cannot be ignored**…
(v) An **extension to 39 weeks is not sufficient satisfaction of the case that has been accepted**.
(vi) Date if operation of any variation is specifically reserved. (emphasis added)

46. A 78 week accident pay entitlement was then set by the CIT in the ***February 1980 decision*** (see 2), however, **critically**, the decision discloses no reasoning as to why 78 weeks (as opposed to some other period in excess of 39 weeks) is the appropriate maximum entitlement for the coal industry.

47. Following the ***February 1980 decision***, multiple awards were amended on 26 February 1980 (see *The Federated Engine Drivers and Firemen's Association of Australasia and others v New South Wales Combined Colliery Proprietors Association and another* [1980] CR 2808), with the effect that the variation applied to miners, engine drivers, tradesmen awards in New South Wales and Queensland and the awards for Deputies in New South Wales.

48. The coal mining industry awards were consolidated in 1990 (see the *Coal Mining Industry (Production and Engineering) Interim Consent Award 1990*) and again in 1997 (see *Coal Mining Industry (Production and Engineering) Consolidated Award 1997*) (***1997 Consolidated Award***). Both consolidated awards retained the accident pay provisions, with a maximum entitlement of 78 weeks' accident make-up pay.

49. In 2005, the CFMEU sought a new award in NSW with coverage to apply to employees not covered by the 1997 consolidated award (i.e. primarily contractors not expressly named in the Federal award) who were at the time only eligible to receive a six month entitlement to statutory accident pay in the event of a work-related injury. The application was successful and the *Coal Mining Industry (Accident Pay) Interim Award 2004* was created. Apart from the extended coverage, the award effectively replicated the accident pay provisions from the Federal coal mining awards.

50. The decision in ***Coal Industry (Accident Pay) Interim Award 2004*** [2005] NSWIRComm 119 (***2005 decision***) reiterated various principles that had been established by the CIT, including the following:

(a) "coal mining **is an inherently dangerous occupation** requiring careful risk management strategies" (see paragraphs [22] and [48]):

> [48] I am comfortably satisfied, as Mr Slevin submits, that the very nature of the coal mining industry in terms of industrial regulation and the regulation of occupational health and safety and workers compensation carries with it a range of special attributes as follows: -
>
> (a) …
>
> (b) The **coal mining industry is afforded special treatment** in terms of occupational health and safety and workers compensation. This treatment includes:
>
> i. Industry specific health and safety legislation;
>
> ii. Industry specific legislation providing for a monopoly workers compensation insurer;
>
> iii. Exemptions from the general workers compensation scheme including greater entitlements for injured workers.
>
> (c) …

(b) the approach to managing workers compensation and injured workers **is historically unique to the industry** (see paragraphs [23] and [48]). (emphasis added)

51. In the ***2005 decision***, the NSW Commission also noted that (at [53]):

> As to the general standard of accident pay beyond the coal mining industry, I agree with Mr Slevin that it is no response to the case presented by the CFMEU to point, as the respondents have done, to employees in other industries who may receive less and

> in so doing, to assert unfairness as a consequence of granting the CFMEU application. The CFMEU application is brought on the basis that **in the coal mining industry there is a higher standard and that higher standard is not being applied uniformly due to changing employment relationships**. **The issue of standards outside the coal mining industry does not arise unless the respondents seek a finding that the industry standard is too generous.** The respondents have not put their case on that basis. The evidence of Mr Turner was that it was his view that the provision is too generous but that the members of the Minerals Council had not asked the Council to raise with the union that accident pay is too generous. (emphasis added)

CLAUSE 18 DOES NOT MEET THE MODERN AWARDS OBJECTIVE

52. As noted above, the Commission is required to ensure that the Award, together with the NES, provides a fair and relevant minimum safety net. The CMIEG contends that clause 18 of the Award does not meet the modern awards objective for the reasons set out below.

Inconsistent with other Modern Awards despite no material distinguishing features of the black coal mining industry

53. In its present form, the entitlements contained in clause 18 of the Award are more generous than those contained in any other modern award. **Schedule A** to these submissions sets out the quantum of accident pay included in other modern awards.

54. As part of the four yearly review process the Full Bench of the Commission has been able to examine the accident pay in the modern awards (including those listed in Schedule A along with other modern awards). Following an extensive review in the ***2015 Accident Pay Decision*** the Commission found that:

    (a) a safety net accident pay entitlement should only apply for a period 26 weeks from the time of incapacity for work (at [211]); and

    (b) for seven particular awards[3] for industries in which there were pre-reform instruments that provided for an accident pay entitlement of 39, 52 or 104 weeks, that the accident pay entitlement should apply for a period of 52 weeks from the time of incapacity for work (at [212]).

[3] Hydrocarbons Industry (Upstream) Award 2010; Labour Market Assistance Industry Award 2010; Marine Towage Award 2010; Mobile Crane Hiring Award 2010; Oil Refining and Manufacturing Award 2010; Professional Diving Industry (Industrial) Award 2010; Stevedoring Industry Award 2010 (see [168] of the ***2015 Accident Pay Decision***).

55. In respect of the reasoning for those seven particular awards, the Commission stated the following (at [212]):

> We recognise that there are special circumstances relating to the awards in the first category listed earlier in this decision [being the seven relevant awards]. The pre-reform instruments in these industries provided a generally applicable accident pay entitlement of 39, 52 or 104 weeks. The accident pay provisions in those awards provided what might be considered to be a clear national standard for the particular industries as described in the *Award Modernisation Decision 2008* [2008] AIRCFB 1000 at [88]. For similar reasons as were given in relation to the *Black Coal Mining Industry Award 2010* (see [2015] FWCFB 644 at [65]-[72]) we have decided that the previous accident pay entitlements in these award areas should be maintained as part of the minimum safety net. However, having regard to the evidence and submissions in the present proceedings, and **given the purpose of modern awards in setting minimum terms and conditions for employees in particular industries or occupations consistent with the statutory objectives, we do not consider that the accident pay entitlement in any of the awards should exceed 52 weeks**. We consider that there is a difference in inserting such provisions in awards by arbitral determination at this time and in the context of the present proceedings and a decision to maintain provisions which were still in operation in an award (*ibid*). **We do not consider that it is necessary for the minimum award safety net to provide for a period beyond 52 weeks**. In so deciding, we note that the evidence presented suggests that **there is considerable scope in some of the industries for the safety net entitlement to be supplemented through collective bargaining**. (emphasis added).

56. The above approach and safety net accident pay entitlement should equally be applied in relation to the black coal mining industry. It would be expected that had the Award been considered as part of the proceedings relating to the ***2015 Accident Pay Decision*** that a maximum accident pay entitlement of 52 week would have been applied in respect of the Award.[4]

57. In any event, irrespective of the historical justification for the entitlement, the contemporary evidence provides no warrant to distinguish the black coal mining industry from any other industry so as to justify the retention of the 78 week accident pay entitlement in clause 18 of the Award as a fair and relevant minimum standard. Relevantly, the evidence discloses that:

(a) The rate/frequency or incidence of lost time injuries in the coal mining industry is on a significant downward trend.

[4] The background as to why the Award was not considered as part of the proceedings relating to ***2015 Accident Pay Decision*** is set out in the decision of ***Four yearly review of modern awards – Accident pay – Transitional provisions*** [2016] FWCFB 6841. See also the submissions of the CMIEG in AM2014/67 filed on 4 August 2016: https://www.fwc.gov.au/documents/sites/awardsmodernfouryr/am2014190-sub-cmieg-040816.pdf

(b) The rate/frequency or incidence of injuries for the coal mining industry as recorded by SafeWork Australia for serious injuries[5] is ranked at 67 out of 190 industries when the industries are sorted from highest average incidence rate to lowest average incidence rate.

(c) The average time lost to serious injuries in the coal mining industry is no worse and is in fact better than other industries.

(d) Whilst the coal mining industry has specific legislation that imposes additional duties on mine operators,[6] the coal mining industry is nevertheless regulated as to occupational/work health and safety in the same or similar ways to other industries. To the extent that additional duties are imposed on mine operators, these are factors that are directed to ensuring measures are in place to eliminate or control risk to health or safety of workers.

(e) There are other industries like coal mining that are hazardous by their nature without having warranted differential treatment as to accident pay provisions.

(f) To the extent that there is any relevance to the existence of a 'monopoly' insurer or underwriter in relation to workers' compensation, that only exists in respect of the coal mining industry in NSW.

(g) The methods and processes for rehabilitation and return to work of injured workers has improved substantially over time since the introduction of accident pay.

58. In light of the above, the alleged rationale underpinning the ***January 1980 CIT decision*** and reflected in the ***2005 decision*** no longer prevails.

The Commission has failed to discharge its statutory task

59. In creating the Award, the Full Bench of the Australia Industrial Relations Commission (**AIRC**) adopted the current clause 18 and took the approach of inserting a sunset provision (see ***Award Modernisation*** [2008] AIRCFB 1000 (at [83]-[88], [164]). There appears to have been no analysis of the rationale for the quantum of accident pay and it is plain that the inclusion of clause 18 into the Award reflected a consent position.

---

5 "Serious injury" is defined by SafeWork Australia to mean an accepted workers' compensation claim that involves one or more weeks away from work and excludes all fatalities, and all injuries and diseases experienced while travelling to or from work or while on a break away from the workplace

6 See generally the *Work Health Safety (Mines and Petroleum Sites) Act 2013* (NSW), *Coal Mining Safety and Health Act 1999* (Qld) and *Mines Safety and Inspection Act 1994* (WA).

60. Similarly, in the Full Bench of the Commission's decision ***4 yearly review of modern awards - transitional provisions*** [2015] FWCFB 644 concerning the removal of the sunset provision in clause 18 of the Award, there was no consideration of the quantum of accident pay (at [65]-[72]).[7]

61. In taking that approach, for the reasons set out below, the Commission's predecessor failed discharge its statutory duty under s 134(1) of the FW Act to ensure that the Award contains a *"fair and relevant minimum safety net"* taking into account the criteria in s 134 of the FW Act.

62. ***First***, the decisions of the Full Bench of the AIRC do not disclose any consideration being given as to whether clause 18 in the Award is a *"fair and relevant minimum safety net"*.

63. ***Second***, as to the specific criteria prescribed by s 134(1)(a) to (h), the CMIEG submits that:

(a) **Relative living standards of the low paid**: This factor does not arise.

(b) **The need to encourage collective bargaining**: The entitlements contained in clause 18 of the Award do not encourage collective bargaining. On any objective view, the entitlements are not a "minimum" safety net standard and do not thereby encourage bargaining as to their terms. The entitlements, in fact, erect an overly generous high threshold which discourages any genuine bargaining.

(c) **The need to promote flexible modern work practices and the efficient and productive performance of work**: As the clause does not encourage collective bargaining, it discourages any genuine productivity trade-offs.

(d) **The need to provide additional remuneration for penalties**: This factor does not arise.

(e) **Equal remuneration for work of equal or comparable value**: This factor does not arise, other than that the entitlements conferred by clause 18 of the Award have no parallel in any other modern award including those applicable in the general mining and associated industries.

(f) **Likely impact on productivity, employment costs and regulatory burden**: The CMIEG repeats subparagraphs (b) and (c) above.

---

[7] See also the decision of the Full Bench of the Commission ***4 yearly review of modern awards—transitional provisions*** [2014] FWCFB 7767 at [7].

(g) **The need to ensure a simple easy to understand, stable and sustainable modern award system**: As noted above, clause 18 of the Award provides an entitlement which is inconsistent with every other modern award.

(h) **Likely impact of any exercise of modern award powers on employment growth,** etc: The CMIEG repeats subparagraphs (b) and (c) above.

64. ***Third***, unlike industry-specific redundancy schemes (which are dealt with in s 141 of the FW Act), the FW Act does not contemplate industry-specific provisions that deal with accident pay. As such, there is no statutory justification for preserving historical industry-specific accident pay. This is a marked difference to the questions of Parliamentary intention and like submissions advanced by the CFMEU and Professionals Australia in the recent redundancy pay case.[8]

THE DRAFT VARIATION SATISFIES THE MODERN AWARDS OBJECTIVE

65. The draft variation proposed by the CMIEG seeks to vary clause 18 of the Award. The effect of the variation is to reduce the entitlement to accident pay from 78 weeks to 52 weeks. The CMIEG contends that a maximum entitlement of 52 weeks is generous and provides for a fair and relevant minimum safety net for the reasons set out below.

66. ***First***, the draft variation provides a benefit which is consistent with the purpose of accident pay provisions.

67. ***Second*,** as to the specific criteria prescribed by s 134(1)(a) to (h), the CMIEG submits that:

(a) **Relative living standards of the low paid**: This factor does not arise.

(b) **The need to encourage collective bargaining**: The draft variation would encourage collective bargaining as it will impose a more relevant safety net as a platform for enterprise bargaining.

(c) **The need to promote flexible modern work practices and the efficient and productive performance of work**: The imposition of a more relevant safety net will encourage genuine collective bargaining and associated productivity trade-offs.

(d) **The need to provide additional remuneration for penalties**: This factor does not arise.

[8] APESMA Submissions (at [26]-[28]) filed in AM2014/67 on 24 June 2016: https://www.fwc.gov.au/documents/sites/awardsmodernfouryr/am201467-sub-apesma-240616.pdf.

(e) **Equal remuneration for work of equal or comparable value**: The draft variation would bring the Award closer in line with other modern awards for similar industries.

(f) **Likely impact on productivity, employment costs and regulatory burden**: The CMIEG repeats subparagraphs (b) and (c) above.

(g) **The need to ensure a simple easy to understand, stable and sustainable modern award system***:* The CMIEG repeats subparagraph (e) above.

(h) **Likely impact of any exercise of modern award powers on employment growth, etc:** The CMIEG repeats subparagraphs (b) and (c) above.

CONCLUSION

68. The CMIEG submits that the draft variation satisfies the modern awards objective and should be made.

Yaseen Shariff **Ashurst Australia**
Counsel for the CMIEG

24 February 2017

SCHEDULE A – MODERN AWARDS INCLUDING ACCIDENT PAY CLAUSES

Modern Award	Maximum Quantum of Accident Pay
Airline Operations – Ground Staff Award 2010 –	26 weeks (clause 23.2(c)(i))
Building and Construction General On-Site Award 2010	26 weeks (clause 27.3)
Business Equipment Award 2010	26 weeks (clause 24.2)
Concrete Products Award 2010	26 weeks (clause 18.2)
Dry Cleaning and Laundry Industry Award 2010	26 weeks (clause 17.2)
Fast Food Industry Award 2010	26 weeks (clause 20.2(a))
Horticulture Award 2010	26 weeks (clause 20.2)
Joinery and Building Trades Award 2010	26 weeks (clause 24.7(c))
Mannequins and Models Award 2010	26 weeks (clause 16.2)
Storage Services and Wholesale Award 2010	26 weeks (clause 18.2)
Textile, Clothing Footwear and Associated Industries Award 2010	26 weeks (clause 24.2(b))
Vehicle Manufacturing, Repair, Service and Retail Award 2010	26 weeks (clause 22.4)
Wine Industry Award 2010	26 weeks (clause 24.8(b))
Labour Market Assistance Industry Award 2010	39 weeks (clause 18.2)
Timber Industry Award 2010	39 weeks - employee in the General Timber Stream 52 weeks - employee in the Pulp and Paper Stream (clause 23.2)

Modern Award	Maximum Quantum of Accident Pay
Hydrocarbons Industry (Upstream) Award 2010	52 weeks (clause 15.6(b))
Marine Towage Award 2010	52 weeks (clause 17.2)
Mobile Crane Hiring Award 2010	52 weeks (clause 14.5(c))
Oil Refining and Manufacturing Award 2010	52 weeks (clause 17.2)
Professional Diving Industry (Industrial) Award 2010	52 weeks (clause 17.2)
Stevedoring Industry Award 2010	52 weeks (clause 15.2)

IN THE FAIR WORK COMMISSION

Matter No.: **AM2014/190**

Title of Matter: **Four yearly review of modern awards — Black Coal Mining Industry Award 2010 — Clause 18 — Accident Pay**

STATEMENT OF DAVID GUNZBURG

On 24 February 2017, I, David Gunzburg, of 370 Highett Street, Richmond, Victoria, Consultant, say:

Background

1. I am the principal and Managing Director of DGHR Services Pty Ltd (**DGHR Services**). I have held this position since 2001.

2. DGHR Services provides human resources services and advice to a range of businesses across various industries, including mining, engineering, major projects, oil and gas, health and financial services, and recently to the NSW Minerals Council.

3. I have worked in the field of human resources for more than 30 years. Prior to starting DGHR Services in 2001, I was employed in senior human resources roles in several large Australian organisations including the Australian Mines and Metals Association, BHP Billiton and Orica.

4. I previously held the position of Director on the Board of Coal Services Pty Ltd (**Coal Services**), from September 2012 to November 2014.

5. As a result of my work with DGHR Services and my previous experience within the coal mining industry (including work performed for the NSW Minerals Council and on the Board of Coal Services), I have gained experience in, and an understanding of, the black coal mining industry in Australia.

6. I have been engaged by the Coal Mining Industry Employer Group (**CMIEG**) to provide advice and assistance in relation to the four yearly review process conducted by the Fair Work Commission, including in relation to the *Black Coal Mining Industry Award 2010*.

Coal Services and the coal mining industry in New South Wales

7. Coal Services is jointly owned, in equal shares, by the NSW Minerals Council and the Construction, Forestry, Mining and Energy Union. Coal Services is one of the "approved companies" under the *Coal Industry Act 2001* (NSW) (**Coal Industry Act**), which is required to exercise certain functions set out in the statute within the state of NSW, including "monitoring workers' health and investigating related health matters";

"promoting the welfare of workers and former workers in the coal industry"; "providing work health and rehabilitation services for workers engaged in the coal industry"; "collecting, collating and disseminating other statistics related to the coal industry" and "administering (or establishing and administering), or providing, workers compensation insurance schemes in relation to workers engaged in the coal industry" (section 10 of the Coal Industry Act).

8. Coal Services operates the three separate business units of CS Health (with has responsibility for health monitoring), Coal Mines Insurance (the compulsory workers' compensation insurer for "employers in the coal industry" in NSW under section 9A of the *Workplace Injury Management and Workers Compensation Act 1998* (NSW) and section 31 of the Coal Industry Act) and NSW Mines Rescue Service. These business units are also separate corporate entities, respectively CS Health Pty Ltd, Coal Mines Insurance Pty Ltd (**CMI**) and Mines Rescue Pty Limited, each of which are wholly owned subsidiaries of Coal Services and are "approved companies" under the Coal Industry Act.

9. CMI is funded by past and current premiums from employers in the coal industry and earnings from investment of those premiums, and such employers are required to make up any deficit in funds (under sections 24, 30 and 31 of the Coal Industry Act).

Data relating to accident pay and the coal mining industry

10. For the purposes of the application of the CMIEG in these proceedings, I have undertaken a review of publicly available information (some requiring payment) providing data on employment, safety and injuries to workers in the black coal mining industry. Where information and data is not available for the black coal mining industry, I have included relevant information for the coal mining industry or mining industry. Details of that information is set out below.

Australian Black Coal Mining Summary 2011-12

11. I have purchased from Coal Services a publication entitled the *Australian Black Coal Mining Summary 2011-12*. Annexed to this statement and marked as Annexure **"DG-1"** is a copy of the *Australian Black Coal Mining Summary 2011-12*.

12. Page 10 of Annexure DG-1 states that:

> *At 30 June 2012, there were 124 black coal mines in operating in Australia, 81 open cut mines and 43 underground mines (including 29 longwall operations).*

13. Page 10 also includes a table showing the number of black coal mines in Australia as at 30 June 2012. This table is included as Figure 1 below.

TABLE 3 - NUMBER OF AUSTRALIAN BLACK COAL MINES, at 30 June 2012						
	New South Wales	Queensland	South Australia	Western Australia	Tasmania	Australia
Underground	30	11	-	-	2	43
Open Cut	32	44	1	2	2	81
Total	62	55	1	2	4	124

Please note that there are some mining operations where there is more than one area being mined on a lease that count as a single mine.

Table 1
Source: Annexure DG-1, Table 3.

14. Table 17 of Annexure DG-1 shows numbers of employees engaged in underground and open cut mines. Taking the data from Table 17, I have prepared a graph showing the percentage of employment in underground and open cut mines in the years 2003 to 2012. The graph is set out at Figure 1 below. The graph shows that over that time approximately 65% to 70% of the total number of employees in the black coal mining industry have been employed in open cut mines, and the balance of 30% to 35% in underground mines.

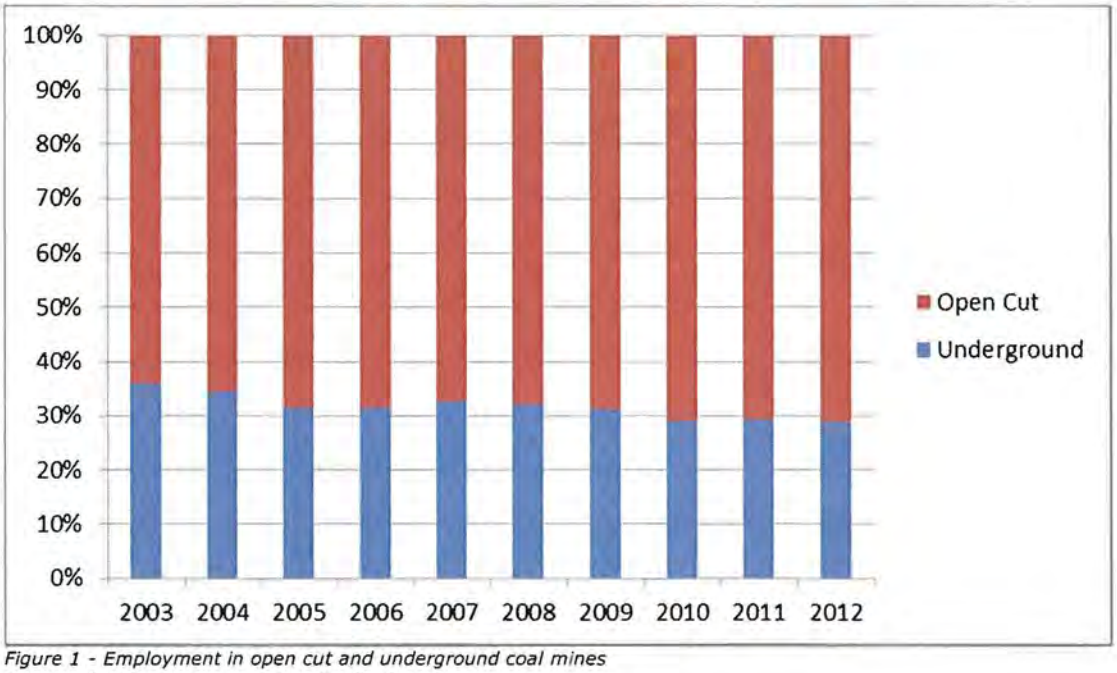


Figure 1 - Employment in open cut and underground coal mines
Source of Data: Annexure DG-1, Table 17.

Coal Services Annual Report 2015–2016

15. I have downloaded the *Coal Services Annual Report 2015–2016* (**2016 Annual Report**) from the website for Coal Services.[1] Annexed to this statement and marked as Annexure **"DG-2"** is a copy of the 2016 Annual Report (excluding the sections relating to governance and the financial report).

[1] See the Annual Reports available here: http://www.coalservices.com.au/annualreports.aspx

16. Page 22 of the 2016 Annual Report contains a graph showing the mechanism of injury (all claims received in 2015–16, being claims received by CMI in NSW). A copy of that graph is included as Figure 2.

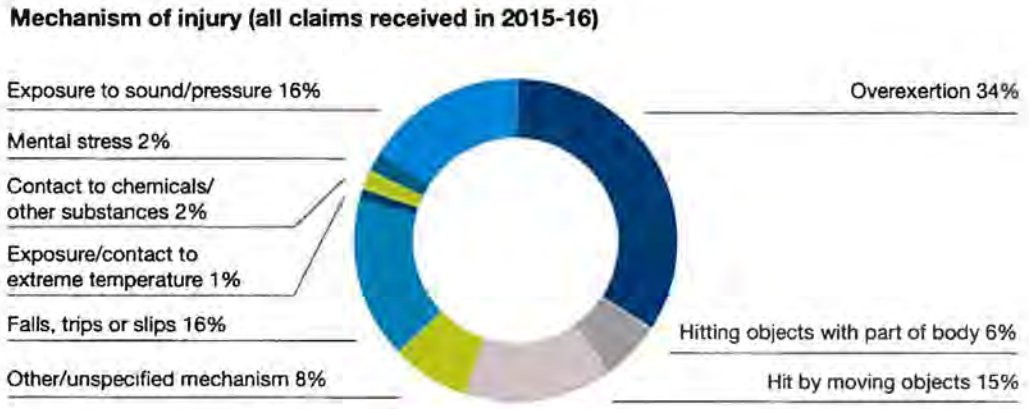


Figure 2
Source: 2016 Annual Report, page 22.

Queensland Mines and Quarries Safety Performance and Health Report

17. I have downloaded a copy of the *Queensland Mines and Quarries Safety Performance and Health Report* for the financial year 1 July 2015–30 June 2016 from the Queensland government website.[2] The report is published by the Queensland Department of Natural Resources and Mines, which administers mining safety and health laws in Queensland (through its Mine Safety and Health group). The purpose of this report is to present statistical information relating to the safety and health performance of Queensland's mines and quarries over the 12 months prior to the publication of the report. Annexed to this statement and marked as Annexure **"DG-3"** is a copy of *Queensland Mines and Quarries Safety Performance and Health Report* for the financial year 1 July 2015–30 June 2016.

18. Annexure DG-3 states the following in its disclaimer (in respect of the data collected in the report):

> *The data in this report is derived from the Department of Natural Resources and Mines (DNRM) Queensland mining industry Lost Time Accident database, in addition to information, including survey responses supplied by mining and quarrying operators throughout Queensland.*

19. Figure 5.3 of Annexure DG-3 shows the mechanism of injury in all mining industry sectors for the years 2013 to 2016 (but not for the coal mining sector alone). A copy of Figure 5.3 is set out as Figure 3 below.

---

[2] See here: https://publications.qld.gov.au/dataset/queensland-mines-and-quarries-safety-performance-and-health-reports

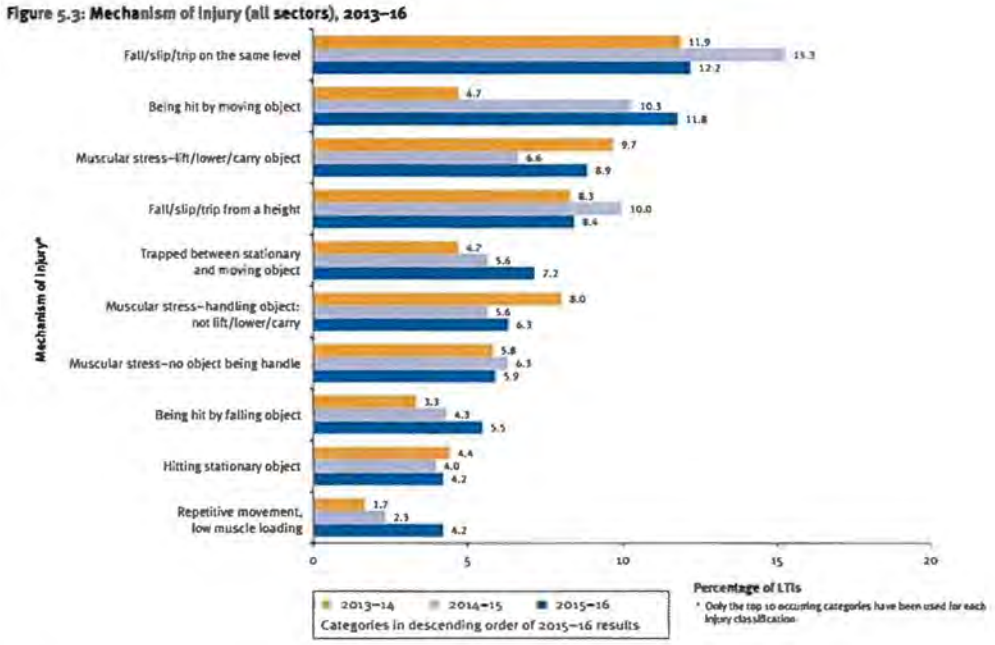


Figure 3
Source: Figure 5.3 of Annexure DG-3

*Australasian Institute of Mining and Metallurgy (**AusIMM**) Bulletin*

20. I have obtained an article from the February 2016 edition of AusIMM Bulletin, entitled "Director and senior management accountability for workplace health and safety" written by Jim Galvin FAusIMM(CP), Managing Director, Galvin and Associates.[3] Annexed to this statement and marked as Annexure **"DG-4"** is a copy of that article.

21. Annexure DG-4 contains data showing trends in fatality and injury rates in the Australian minerals industry and NSW coal mining industry. The article also describes the improvement in safety over that time due to the adoption of risk-based safety management systems supported by compliant behaviours in these industries. The graph entitled "Figure 2. Trends in safety performance measures for the NSW coal mining" shows safety performance measures in the NSW coal mining industry for the period 1975 to 2015. That graph is set out below as Figure 4.

---

3 See here: https://www.ausimmbulletin.com/feature/director-and-senior-management-accountability-for-workplace-health-and-safety/

Figure 2. Trends in safety performance measures for the NSW coal mining sector.

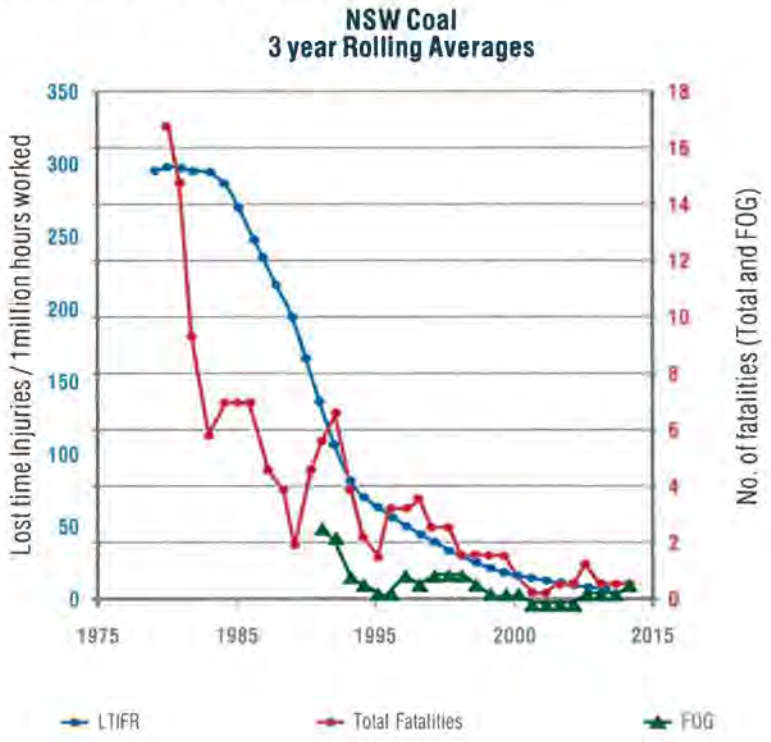


Figure 4
Source: Annexure DG-4.

Data produced by Coal Services

22. CMI provided a response to an Order for production of documents issued by Vice President Watson on 8 December 2016, upon the application of the CMIEG. Annexed to this statement and marked Annexure **"DG-5"** is a copy of that Order.

23. The data produced in response to Annexure DG-5 relates to NSW, as it has been sourced from CMI.

24. The data provided by CMI in response to Item 1, shows the number of workers covered by insurance policies held by employers that had workers' compensation policies with CMI in each year, for the period 1973 to 2016. Annexed to this statement and marked as Annexure **"DG-6"** is a copy of the data provided by CMI in response to Item 1.

25. The data provided by CMI in response to Item 2, shows the total number of claims for workers' compensation under insurance policies held with CMI, in each year, for the period 1973 to 2016. Annexed to this statement and marked as Annexure **"DG-7"** is a copy of the data provided in response to Item 2.

26. I have taken the data from Item 1 and Item 2 and used it to produce a graph showing the number of workers' compensation claims per 1,000 workers "exposed to risk" (as that

term is defined by CMI in their response to Item 1) in each year for the period 1973 to 2016.

27. This figure shows the proportionate number of employees who made claims over time relative to the total number of employees in the industry. The graph I prepared is set out at Figure 5 below.

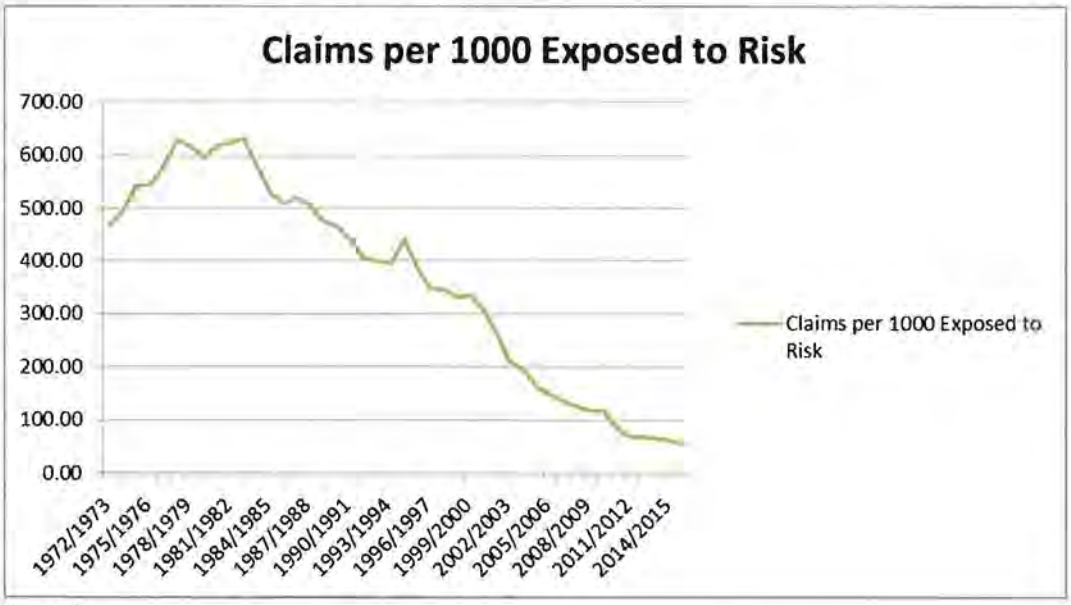


Figure 5
Source: Annexures DG-6 and DG-7.

28. The data provided by CMI in response to Item 5 shows the number of claims for workers' compensation under insurance policies held with CMI, in relation to which any payments for accident pay were made, which were indemnified under policies held with CMI, in each year, for the period 1973 to 2016. Annexed to this statement and marked as Annexure **"DG-8"** is a copy of the data provided in response to Item 5.

29. I have taken the data from Item 5 and used it to produce a graph showing the number of payments of accident pay per 1,000 workers. This figure shows the proportionate number of employees who received accident pay over time relative to the total number of employees in the industry. The graph I have prepared is set out at Figure 6 below.

30. In a note provided to the Fair Work Commission on 19 January 2017, upon a request for clarification by the CMIEG to CMI of the documents originally provided, CMI stated the following:

> *The discrepancy noted in the data [in respect of Item 5] is as a result of changes made to the relevant industrial instruments commencing from 1994/95 that affected the way in which accident pay applied. Prior to that time accident pay generally only applied post 26 weeks of total incapacity and where any 'over Award compensation' under the relevant instrument's accident pay clause was made in the 0-26 week period it was captured with the workers compensation payment as one amount and cannot be separately identified.*

Consequently, the increase in numbers between 1993/94 and 1994/95 is due to claims receiving accident pay from that point on isolated to the 0-26 week period.

31. Annexed to this statement and marked as Annexure **"DG-9"** is a copy of the note provided to the Fair Work Commission on 19 January 2017 by CMI.

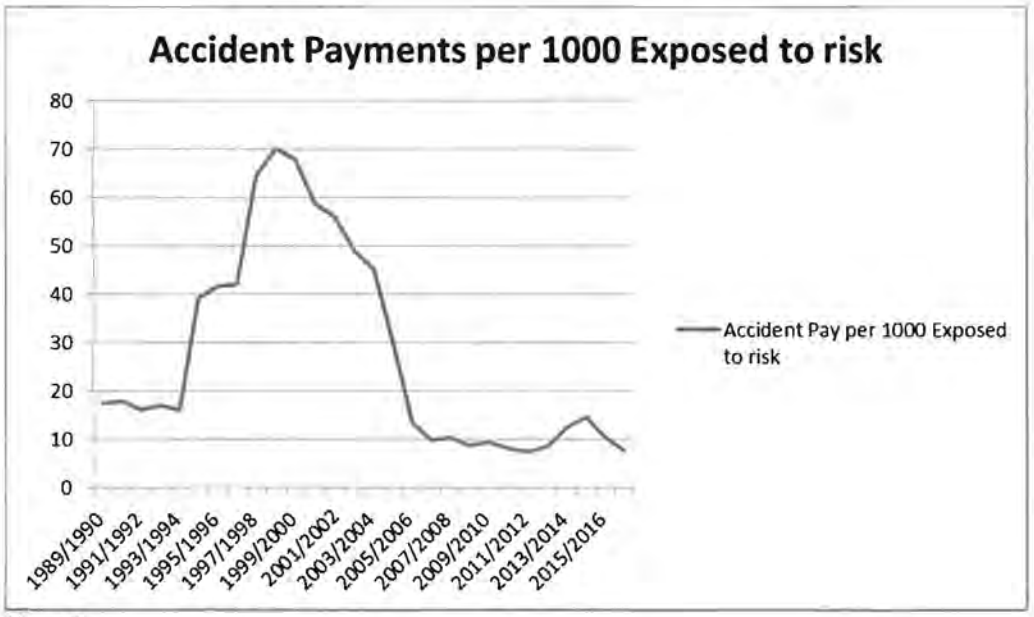


Figure 6
Source: Annexure DG-8.

Queensland Mines and Quarries Safety Performance and Health Reports - lost time injury frequency rates

32. In addition to obtaining Annexure DG-3, as set out in paragraph 17 above, I have also downloaded the *Queensland Mines and Quarries Safety Performance and Health Report* for the financial year 1 July 2010–30 June 2011 from the Queensland government website.[4] The report was published by the Department of Employment, Economic Development and Innovation (as it then was), which had responsibility for the regulation of mine safety and health, through its Safety and Health Division. Similar to the report included as Annexure DG-3, the purpose of this report is to present statistical information relating to the safety and health performance of Queensland's mines and quarries over the 12 months prior to the publication of the report. Annexed to this statement and marked as Annexure **"DG-10"** is a copy of *Queensland Mines and Quarries Safety Performance and Health Report* for the financial year 1 July 2010–30 June 2011.

33. Annexure DG-3 states the following in its disclaimer (in respect of the data collected in the report):

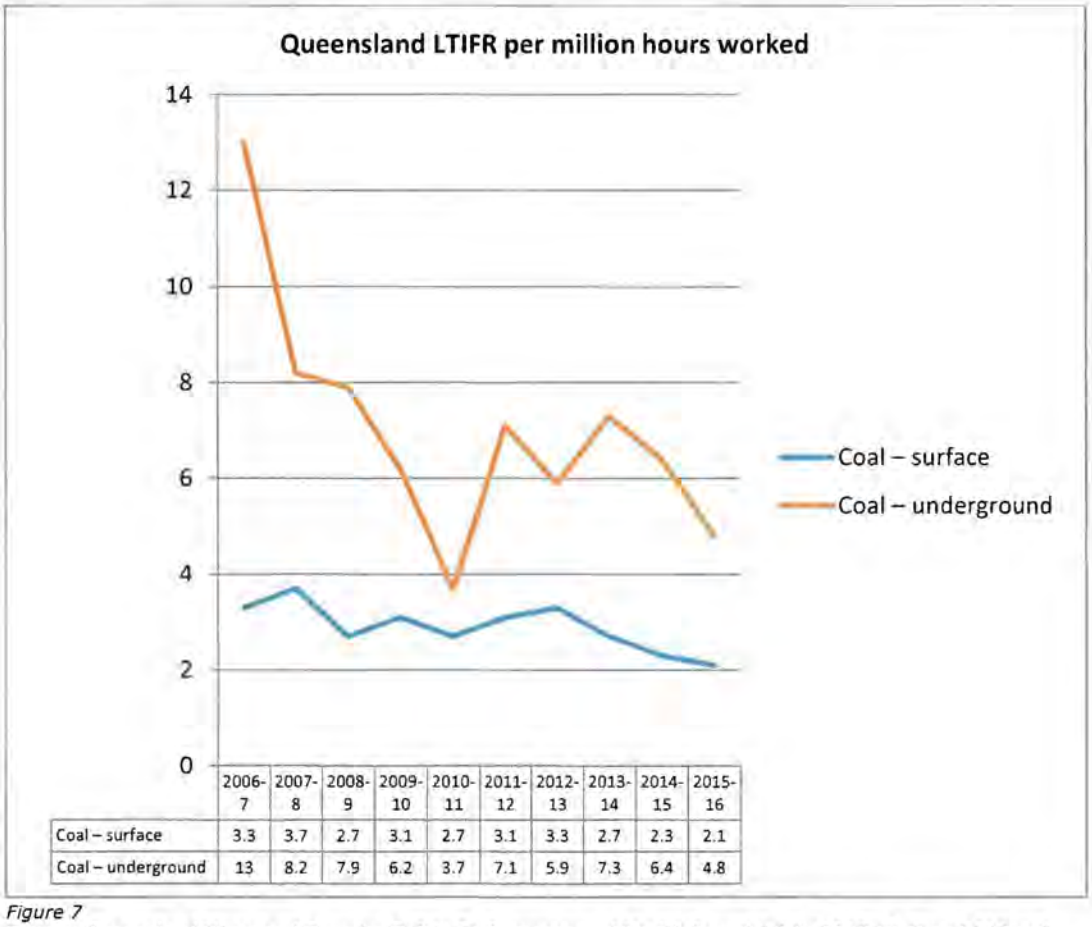
> *The data in this report are derived from the Department of Employment, Economic Development and Innovation (DEEDI) [as it then was] Queensland mining industry Lost*

[4] See here: https://publications.qld.gov.au/dataset/queensland-mines-and-quarries-safety-performance-and-health-reports

Time Accident database, in addition to information—including survey responses—supplied by mining and quarrying operators throughout Queensland.

34. Annexures DG-3 and DG-10 are the most recent and oldest versions of the *Queensland Mines and Quarries Safety Performance and Health Report* available on the Queensland government website. Annexures DG-3 and DG-10 each include graphs showing lost time injury frequency rates (**LTIFR**) over a period of 5 years. The graph entitled "Figure 4.1 Lost time injury frequency rate" in each of the 1 July 2015–30 June 2016 (Annexure DG-3) and 1 July 2010–30 June 2011 (Annexure DG-10) versions of the report show a decline in LTIFR for both underground and surface coal mining from 2006–07 to 2015–16.

35. I have taken the data for the "Coal — surface" and "Coal — underground" sectors for the years 2006–07 to 2015–16 from "Figure 4.1 Lost time injury frequency rate" in each of the 1 July 2015–30 June 2016 (Annexure DG-3) and 1 July 2010–30 June 2011 (Annexure DG-10) versions of the report and prepared a graph The graph that I have prepared is set out at Figure 7 below.



	2006-7	2007-8	2008-9	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Coal – surface	3.3	3.7	2.7	3.1	2.7	3.1	3.3	2.7	2.3	2.1
Coal – underground	13	8.2	7.9	6.2	3.7	7.1	5.9	7.3	6.4	4.8

Figure 7
Source: Queensland Mines and Quarries Safety Performance and Health Report 1 July 2015–30 June 2016 and 1 July 2010–30 June 2011

SafeWork Australia Statistics

36. I have downloaded from the SafeWork Australia website the statistical table entitled "Table 2.1 — number, frequency rate and incidence rate of serious claims by industry (2009–10 to 2013–14)".[5] SafeWork Australia is an independent statutory agency of the Commonwealth government that has the primary responsible of seeking to improve occupational health and safety and workers' compensation arrangements across Australia. Annexed to this statement and marked as Annexure **"DG-11"** is a copy of Table 2.1. The data in this table records frequency rates in respect of "serious claims". A serious claim is defined by SafeWork Australia to mean "an accepted workers' compensation claim that involves one or more weeks away from work and excludes all fatalities, and all injuries and diseases experienced while travelling to or from work or while on a break away from the workplace." The "Coal Industry" is one of the industries identified in this table.

37. I have extracted from Annexure DG-11 the data for various industries, including the "Coal Industry" and the "All Industry" average for the years 2009–2010 to 2013–2014 and prepared Table 2 below.

Industry	Frequency rate (serious claims per million hours worked)					Incidence rate (serious claims per 1000 employees)				
	2009–2010	2010–2011	2011–2012	2012–2013	2013–2014	2009–2010	2010–2011	2011–2012	2012–2013	2013–2014
Fabricated metal product manufacturing	22.4	26.9	29.1	29.9	20.0	45.3	54.1	56.8	60	38.4
Cement, lime, plaster and concrete product manufacturing	18.7	22.4	25.3	24.6	21.2	37.5	46.8	50.5	50.3	45.4
Construction material mining	*12.6	15.9	*22.1	*18.0	17.1	*30.4	36.6	*49.8	*41.5	44.4
Grain mill and cereal product manufacturing	31.5	16.8	21.5	18.0	18.5	59.7	28.8	43.1	33.8	34.8
Meat and meat product manufacturing	21.6	20.2	22.8	20.9	20.2	40.6	38.9	43.2	38.7	38.5
Wood product manufacturing	18.1	22.5	20.8	19.7	11.2	33.9	43	40.5	37.9	22.2
Water transport support services	18.2	16.2	26.0	17.8	11.9	32.6	30.1	50.7	34.1	21.1
Log sawmilling and timber dressing	18.3	19.3	21.3	12.8	13.0	34.3	37.8	42.6	25.5	24.8
Public order and safety services	21.5	19.2	17.3	18.4	16.1	37.9	33.5	30.6	32.7	28.3
Agriculture and fishing support services	19.1	17.3	20.3	16.9	14.4	34.8	32.2	38.4	30.6	26.1

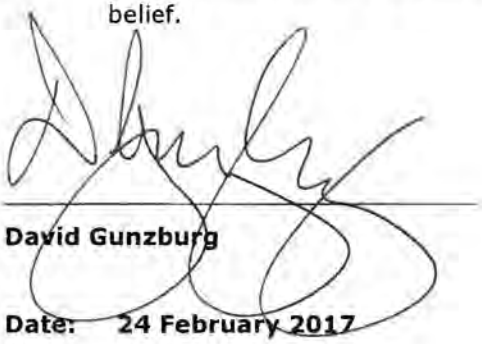
[5] See the website here: http://www.safeworkaustralia.gov.au/sites/swa/statistics/pages/statistics

Industry	Frequency rate (serious claims per million hours worked)					Incidence rate (serious claims per 1000 employees)				
Public order, safety and regulatory services	21.4	19.1	17.0	18.1	15.9	37.6	33.4	30.2	32.2	27.9
Road freight transport	14.2	14.6	15.2	14.5	13.1	31.1	32.2	33.6	31.5	28.7
Fruit and vegetable processing	13.6	15.4	21.5	21.2	14.5	24.9	25.4	36.5	35.9	29.1
Coal	**7.4**	**7**	**7.4**	**9.1**	**6.7**	**16.2**	**15.6**	**16.4**	**20.1**	**14.3**
All industries	**7.5**	**7.4**	**7.2**	**6.6**	**5.9**	**12.4**	**12.2**	**12.1**	**11**	**9.8**
Auxiliary finance and insurance services	1.5	1.7	1.3	1.1	0.7	3	3.3	2.4	2	1.4
Financial and insurance services	1.5	1.6	1.4	1.1	0.9	2.8	2.9	2.6	2.1	1.7
Medical services	1.9	1.7	1.6	1.6	1.3	2.8	2.5	2.3	2.3	2
Depository financial intermediation	1.5	1.4	1.4	1.1	0.9	2.7	2.6	2.5	2	1.6
Finance	1.5	1.5	1.3	1.0	0.8	2.8	2.7	2.4	1.8	1.5
Real estate services	1.3	1.3	1.3	1.0	0.9	2.5	2.5	2.5	1.9	1.7
Telecommunications services	1.1	1.0	1.1	0.9	1.1	2	1.8	2.2	1.7	2
Legal and accounting services	0.8	0.9	1.1	0.8	0.7	1.5	1.5	2	1.5	1.3
Computer system design and related services	0.7	0.7	0.6	0.5	0.5	1.4	1.3	1.2	1.1	1

Table 2
Source: Annexure DG-11

38. I have taken the incidence rates for each industry over the five years of 2009-2010 to 2013-2014 and averaged each of them and then sorted them from highest average incidence rate to lowest average incidence rate. The "Coal Industry" ranks 67 out of 190 when the industries in the report are sorted in this way.

39. The contents of this statement are true and correct to the best of my knowledge and belief.



David Gunzburg

Date: 24 February 2017

IN THE FAIR WORK COMMISSION

Matter No.:	**AM2014/190**
Title of Matter:	**Four yearly review of modern awards — Black Coal Mining Industry Award 2010 — Clause 18 — Accident Pay**

ANNEXURE DG-1

TO THE STATEMENT OF DAVID GUNZBURG DATED 24 FEBRUARY 2017

Coal Services

AUSTRALIAN BLACK COAL MINING SUMMARY 2011-12

31 May 2013

A publication of Coal Services Pty Limited

ISSN 1838-854X

Table of contents

Notes

This is the 3rd edition of the *Australian Black Coal Mining Summary.* This report replaces the *Australian Black Coal Statistics* (ISSN 1035-3364) series. *Australian Black Coal Statistics 2006* was the 16th and final edition in that series.

This report is based on the financial year, 1 July to 30 June and where possible, provides a ten year series to 2011-12. The statistics in this publication exclude brown coal (lignite).

A comprehensive range of coal industry statistics for New South Wales are available from Coal Services Pty Limited as standard monthly, quarterly and annual spreadsheet reports or, on request as user-specified ad hoc reports.

The black coal statistics in this report, except for Queensland statistics and those sourced to the Australian Bureau of Statistics, Geoscience Australia and the World Coal Association, have been compiled from surveys conducted by Coal Services Statistics.

Queensland statistics have been sourced from reports published by the Queensland Government's Department of Natural Resources and Mines. Queensland's web-based statistics come with the disclaimer 'these statistics may not agree with previously published data due to revision of the earlier figures'.

The Queensland website http://mines.industry.qld.gov.au/mining/coal-statistics.htm provides monthly, quarterly, calendar and financial year reports. Coal Services Statistics has included the latest Queensland data available at the time of publication to compile the Australian black coal statistics contained in this report.

Every effort is made to ensure the information in this report is accurate. Coal Services Pty Limited does not supply this material by way of an advice but rather as a service that is enabled by the provision of material from participating companies and organisations in the Australian coal industry.

Coal Services takes no responsibility for the reliance on this data that has caused or may have caused, as a consequence of its use, loss or damage to its user.

Enquires about this and other statistical reports should be directed to:-

Manager Statistics
Coal Services Pty Limited
Level 21, 44 Market Street
Sydney NSW 2000
Australia
T: + 61 (2) 8270 3286
E: statistics@coalservices.com.au
Visit www.coalservices.com.au for further information

Definitions

Black coal

Black coal is hard coal with high energy content; in Australia black coal refers to anthracite, bituminous and sub-bituminous coals.

Production

Raw coal production refers to 'as mined' or 'gross' quantities of coal extracted, i.e. it is measured prior to any subsequent treatment for removal of unwanted material (rejects) in washeries or coal preparation plants (cpp).

Saleable coal production also referred to as 'net' or 'marketable' production is a combination of raw coal and washed coal as delivered to market. It should be noted that saleable coal production includes reject material subsequently removed at steel industry coal preparation plants.

Saleable coal production for all states except Queensland refers to raw coal production less rejects removed at industry cpp plus/minus unexplained stock adjustments at mines.

Queensland saleable is based on processed coal. Processed coal is the quantity of raw coal fed to coal preparation plants and may differ from raw run of mine coal as most mines keep buffer stock of raw coal. Queensland saleable is processed coal feed less rejects removed at industry coal preparation plants plus/minus unexplained stock adjustments at mines.

Production employment

Except for Queensland, production employment covers all employees (full-time equivalent), including administrative and clerical staff, working in or about a coal mine or coal preparation plant in connection with its operation whether employed directly by the mine operator or by a contractor.

Workers engaged in the transport of coal from the mines and coal preparation plants to markets and those engaged in civil work are not included.

Where a coal preparation plant serves more than one mine, the plant's employees are apportioned to the mines according to the throughput tonnage for each mine served.

Queensland employment statistics also include certain off-site staff directly involved in the operations of the coal mine and where a coal preparation plant serves more than one mine; the plant's employees are not apportioned.

Labour productivity

Coal mine labour productivity statistics are presented in this report as production per employee per year and production per hour worked and are calculated in terms of both raw and saleable output.

Productivity measured as production per employee per year discounts time lost through industrial and non-industrial stoppages and absenteeism. The calculation is based on the average of production employment recorded during the year.

In each method employees and the hours worked include those captured as production employment (see definition above). Hours worked include both ordinary hours worked and overtime hours worked.

Exports

Australian coal exports are recorded according to the vessel sailing date and they are classified as metallurgical (coking) or steaming (thermal or energy) according to end use criteria.

Metallurgical coal exports are recorded in two categories:

- hard (low/medium volatile) coking
- other coking, which covers soft (high volatile) coking, the coals known as semi-soft coking and non-coking metallurgical (PCI) coals.

Symbols and other usages

-	nil
0	less than half final digit
BREE	Bureau of Resources and Energy Economics
cpp	coal preparation plant or washery
e	estimate
FOB	Free on board
FY	financial year (1 July to 30 June)
LW	longwall mine
Mt	million tonnes
n.a.	not available
NSW	New South Wales
OC	open cut mine
p	preliminary, subject to revision
Qld	Queensland
UG	underground mine
r	revised
SA	South Australia
WA	Western Australia
WAC	World Coal Association

Overview

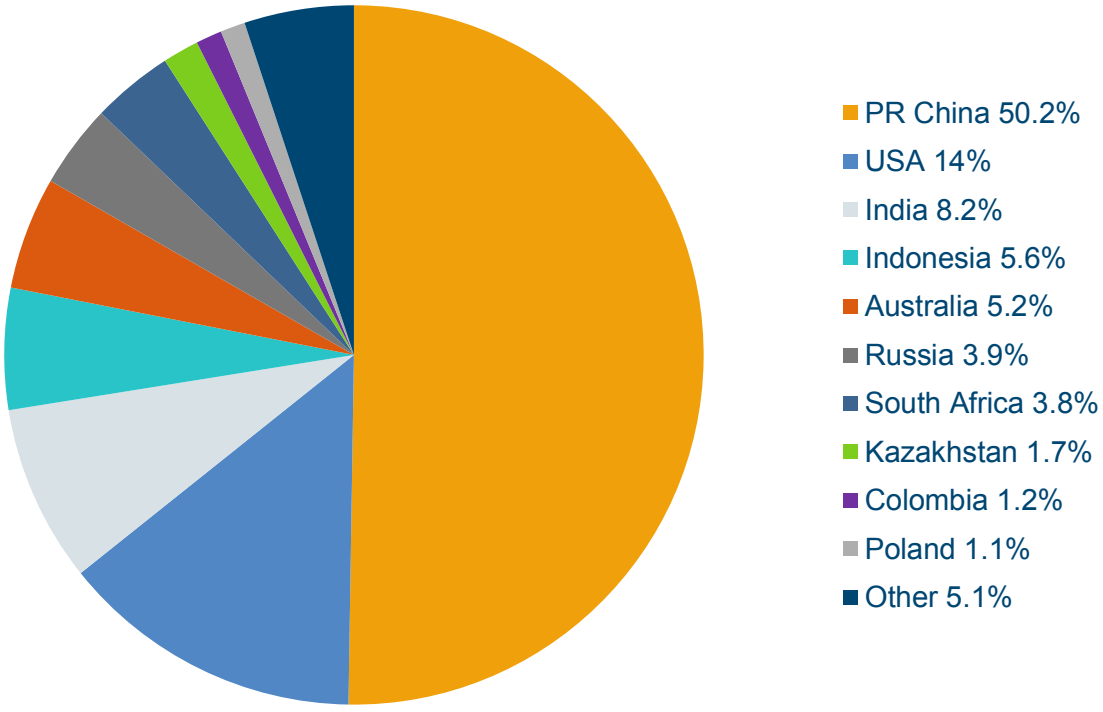
The latest statistics published by the World Coal Association (WCA) show that in 2011 Australia was ranked the fifth largest producer of black coal behind China, USA, India and Indonesia. The WCA data also shows that while Australia is still the largest exporter of metallurgical coal, the position of leading supplier of black coal (metallurgical plus steaming coal) in world markets, held by Australia since 1984, has been taken by Indonesia.

Geoscience Australia reports in the publication *Australia's Identified Mineral Resources 2012* that 'In terms of Australian coal categories, it is estimated that Australia has in the order of 6% of the world's economic recoverable black coal resources and ranks fifth behind the USA (31%), Russia (22%), China (14%) and India (8%).'

Trade data for financial years 2010-11 and 2011-12 released by the Australian Bureau of Statistics, shows that the FOB value of iron ore exports exceeded that of black coal exports in those years, relegating black coal to Australia's second largest commodity export earner.

The major uses of Australian black coal are electricity generation, steel production, cement manufacturing and alumina refining; other important users of Australian black coal include paper manufacturers, chemical and pharmaceutical industries.

World Black Coal Production Calendar Year 2011 (e)



Source: World Coal Association (e = estimated)

Resources

TABLE 1 - RECOVERABLE RESOURCES OF BLACK COAL, AUSTRALIA, at December 2011					
million tonnes					
State	JORC * Reserves (% of Accessible EDR)	Demonstrated economic	Demonstrated paramarginal	Demonstrated submarginal	Inferred
New South Wales	7,442	20,552	149	35	9,763
Queensland	11,547	34,848	580	3	36,120
South Australia		758	40	3,923	9,788
Western Australia	236	986	50	25	1,625
Tasmania		394	3	0	9
Total Australia	**19,225**	**57,538**	**822**	**3,986**	**57,305**

*Joint Ore Reserve Committee (JORC) EDR = Economic Demonstrated resource
Source: Geoscience Australia: *Australia's Identified Mineral Resources 2012*

Resource – a concentration of naturally occurring solid, liquid or gaseous material in or on the Earth's crust in such form and amount that economic extraction is currently or potentially (within a 20-25 year timeframe) feasible.

Categories based on degree of geological assurance of occurrence

To reflect degrees of geological assurance, Identified Resources are divided into Demonstrated Resources and Inferred Resources:

1. **Demonstrated Resource:** A collective term used in the national inventory for the sum of 'Measured Mineral Resources', 'Indicated Mineral Resources' 'Proved Ore Reserves' and 'Probable Ore Reserves', which are all defined according to the JORC Code:
    - A **Measured Mineral Resource** is that part of a Mineral Resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a high level of confidence. It is based on detailed and reliable exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes. The locations are spaced closely enough to confirm geological and grade continuity.
    - An **'Indicated Mineral Resource'** is that part of a Mineral Resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a reasonable level of confidence. It is based on exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes. The locations are too widely or inappropriately spaced to confirm geological and/or grade continuity but are spaced closely enough for continuity to be assumed.
    - A **'Proved Ore Reserve'** is the economically mineable part of a Measured Mineral Resource. It includes diluting materials and allowances for losses which may occur when the material is mined. Appropriate assessments and studies have been carried out, and include consideration of and modification by realistically assumed mining, metallurgical, economic, marketing, legal, environmental, social and

governmental factors. These assessments demonstrate at the time of reporting that extraction could reasonably be justified.

- A **'Probable Ore Reserve'** is the economically mineable part of an Indicated, and in some circumstances, a Measured Mineral Resource. It includes diluting materials and allowances for losses which may occur when the material is mined. Appropriate assessments and studies have been carried out, and include consideration of and modification by realistically assumed mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors. These assessments demonstrate at the time of reporting that extraction could reasonably be justified.

2. An **'Inferred Mineral Resource'** is that part of a Mineral Resource for which tonnage, grade and mineral content can be estimated with a low level of confidence. It is inferred from geological evidence and assumed but not verified geological and/or grade continuity. It is based on information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes which may be limited or of uncertain quality and reliability.

By definition, Inferred Resources are classified as such for want of adequate knowledge and therefore it may not be feasible to differentiate between economic and Subeconomic Inferred Resources. Where the economics cannot be determined, these Inferred Resources are shown as 'undifferentiated'.

Categories based on economic feasibility

Identified resources include economic and subeconomic components.

1. **'Economic':** Implies that, at the time of determination, profitable extraction or production under defined investment assumptions has been established, analytically demonstrated, or assumed with reasonable certainty.
2. **'Subeconomic':** Refers to those resources which do not meet the criteria of economic; Subeconomic Resources include Paramarginal and Submarginal categories
    - **'Paramarginal':** That part of Subeconomic Resources which, at the time of determination, could be produced given postulated limited increases in commodity prices or cost-reducing advances in technology. The main characteristics of this category are economic uncertainty and/or failure (albeit just) to meet the criteria for economic.
    - **'Submarginal':** That part of Subeconomic Resources that would require a substantially higher commodity price or major cost-reducing advance in technology, to render them economic.

The definition of 'economic' is based on the important assumption that markets exist for the commodity concerned. All deposits that are judged to be exploitable economically at the time of assessment are included in the economic resources category irrespective of whether or not exploitation is commercially practical. It is also assumed that producers or potential producers will receive the 'going market price' for their production.

The information required to make assessments of the economic viability of a particular deposit is commercially sensitive. Geoscience Australia's assessment of what is likely to be economic over the long term must take account of postulated price and cost variations. Economic resources include resources in enterprises that are operating or are committed, plus undeveloped resources that are judged to be economic on the basis of a realistic financial analysis, or compare with similar types of deposits in operating mines.

Production, deliveries and stocks

Australia's black coal mines are located mainly in the eastern states of New South Wales and Queensland. In financial year 2011-12, together these two states produced 98% of Australia's raw coal production (New South Wales 46% and Queensland 52%) with South Australia, Western Australia and Tasmania jointly producing the remaining 2%.

Raw coal production refers to 'as mined' or 'gross' quantities of coal extracted prior to any subsequent treatment for removal of unwanted material (rejects) in washeries or coal preparation plants (cpp).

Due to the impact of the weather related disruptions in December 2010 and January 2011 to the Queensland coal industry and supporting infrastructure, Australian raw coal production fell 19.6 million tonnes or 4.1% to 455.5 million tonnes in 2010-11 from the record tonnage of 475.1 million tonnes won in financial year 2009-10. Raw coal production, recovered in financial year 2011-12, up 24.5 million tonnes reaching a new record of 480 million tonnes, equivalent to a record 364.6 million tonnes of saleable coal.

In 2011-12 the increase in production came from open cut mines; open cuts produced 383.9 million tonnes of raw coal, or 80% of the total tonnage won. Raw coal production from underground mines fell from a record 115.2 million tonnes in 2009-10 by 7.6 million tonnes to 107.6 million tonnes in 2010-11; falling a further 11.5 million tonnes to 96.1 million tonnes in financial year 2011-12.

Saleable coal production or marketable production is a combination of raw coal and washed (clean) coal delivered to customers. Saleable production for Australian black coal mines overall was 76% of raw coal production in financial year 2011-12.

TABLE 2 - AUSTRALIAN BLACK COAL PRODUCTION, '000 tonnes

	Raw coal production			Saleable coal production		
FY	Underground	Open cut	Total	Underground	Open cut	Total
2002-03	82,235	265,901	348,136	67,739	207,120	274,859
2003-04	81,451	278,964	360,415	64,896	218,944	283,840
2004-05	87,066	306,292	393,358	70,214	234,797	305,011
2005-06	87,047	311,821	398,868	67,081	240,049	307,130
2006-07	93,540	321,495	415,035	73,571	250,984	324,555
2007-08	104,569	316,057	420,626	83,534	242,788	326,322
2008-09	104,512	338,746	443,258	82,722	257,741	340,463
2009-10	115,199	359,895	475,094	77,642	284,299	361,941
2010-11	107,629	347,909	455,538	76,126	271,515	347,641
2011-12	96,138	383,893	480,031	74,092	290,510	364,602

At 30 June 2012, there were 124 black coal mines in operating in Australia, 81 open cut mines and 43 underground mines (including 29 longwall operations).

TABLE 3 - NUMBER OF AUSTRALIAN BLACK COAL MINES, at 30 June 2012						
	New South Wales	Queensland	South Australia	Western Australia	Tasmania	Australia
Underground	30	11	-	-	2	43
Open Cut	32	44	1	2	2	81
Total	62	55	1	2	4	124

Please note that there are some mining operations where there is more than one area being mined on a lease that count as a single mine.

For the ten years to June 2010 raw production from all Australian coal mines was increasing by an average rate of 4.8% per year however, the rate fell to 3.6% for the ten years to June 2011 and then to 3.4% for the ten years to June 2012.

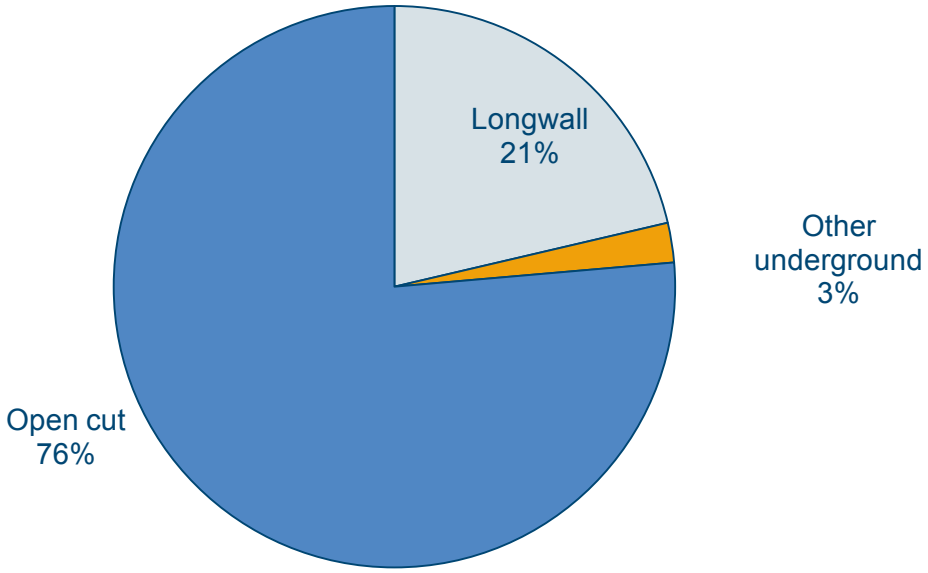
Raw coal production from open cut mines for the ten years to June 2010 was increasing by an average rate of 5.7% per year, falling to 4.4% over the ten years to June 2011 and then to 4.3% over the ten years to June 2012. The corresponding rates for underground mines are 2.5% for the ten years to June 2010, 1.8% for the ten years to June 2011 and 0.8% for ten years to June 2012.

TABLE 4 - AUSTRALIAN BLACK COAL PRODUCTION, BY MINING METHOD, '000 tonnes					
	Underground mines			Open cut mines	All mines
FY	Longwall	Other	Total		
2002-03	74,251	7,984	82,235	265,901	348,136
2003-04	73,302	8,149	81,451	278,964	360,415
2004-05	79,005	8,061	87,066	306,292	393,358
2005-06	77,562	9,485	87,047	311,821	398,868
2006-07	85,297	8,243	93,540	321,495	415,035
2007-08	95,801	8,768	104,569	316,057	420,626
2008-09	98,742	5,770	104,512	338,746	443,258
2009-10	106,186	9,013	115,199	359,895	475,094
2010-11	95,242	12,387	107,629	347,909	455,538
2011-12	84,778	11,360	96,138	383,893	480,031

The drop in raw coal production from Australian underground mines in financial year 2011-12 from the previous financial year was the result of a fall of 10.5 million tonnes, or 11% from mines operating longwalls and a fall of one million tonnes, or 8.3% from non-longwall underground mining.

In financial year 2011-12, raw coal production from open mines increased by 36 million tonnes to 383.9 million tonnes, up 10.3% from the 2010-11 tonnage.

Australian Black Coal Production, By Mining Method
FY 2010-11



Australian Black Coal Production, By Mining Method
FY 2011-12

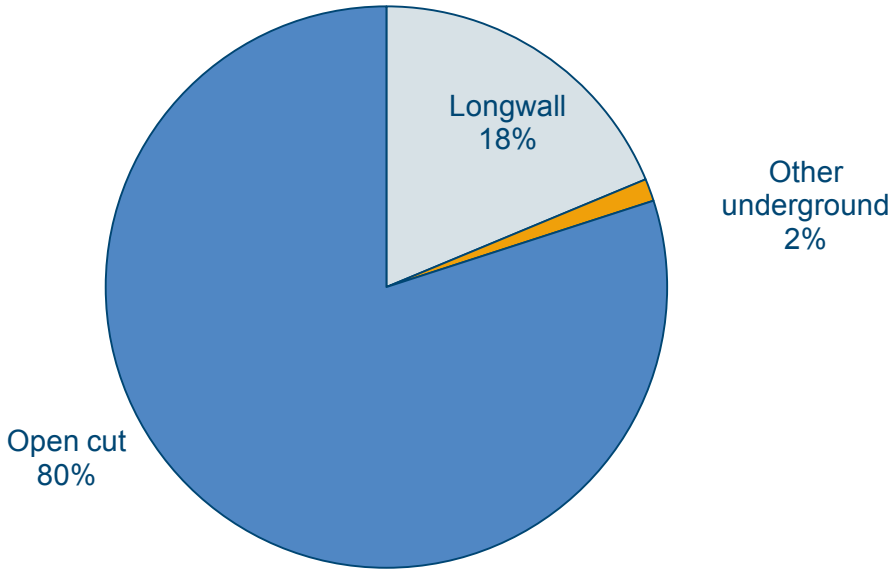


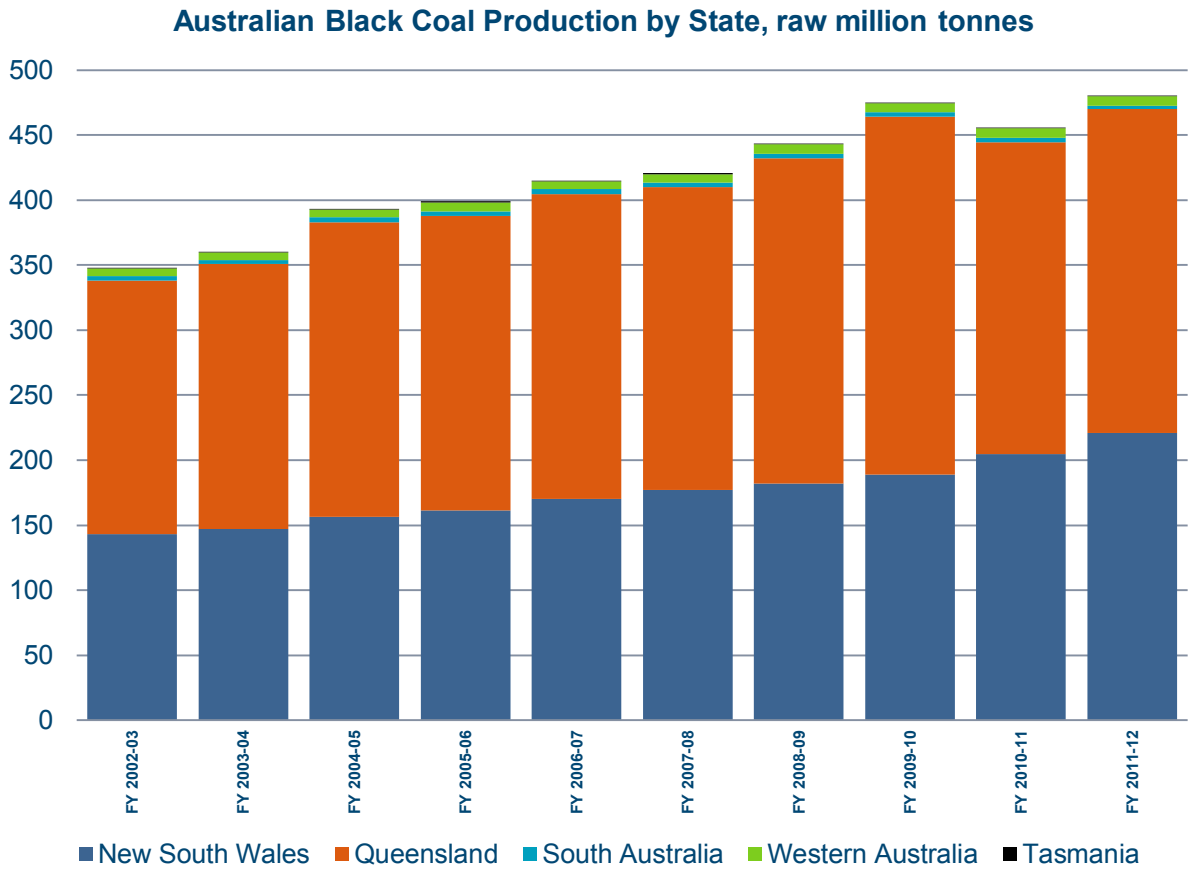
Table 5 below sets out raw and saleable coal production by state; Tables 6 and 7 set out raw and saleable coal production by state for underground mines and open cut mines respectively.

TABLE 5 - BLACK COAL PRODUCTION BY STATES, AUSTRALIA						
FY	New South Wales	Queensland	South Australia	Western Australia	Tasmania	Australia
Raw production '000 tonnes						
2002-03	143,066	195,166	3,240	6,136	528	348,136
2003-04	147,046	203,696	3,208	5,981	484	360,415
2004-05	156,309	226,616	3,640	6,217	576	393,358
2005-06	161,140	226,695	3,479	6,918	636	398,868
2006-07	170,323	234,120	3,799	6,122	671	415,035
2007-08	177,167	232,537	3,835	6,325	762	420,626
2008-09	181,978	249,956	3,845	6,941	538	443,258
2009-10	188,798	275,200	3,683	6,746	667	475,094
2010-11	204,852	239,623	3,487	7,019	557	455,538
2011-12	221,002	249,059	2,608	6,946	416	480,031
Saleable production '000 tonnes						
2002-03	111,533	153,602	3,240	6,136	348	274,859
2003-04	114,239	160,063	3,208	5,981	350	283,841
2004-05	122,063	172,666	3,640	6,217	424	305,011
2005-06	124,611	171,689	3,479	6,918	434	307,131
2006-07	131,334	182,848	3,799	6,122	452	324,555
2007-08	135,148	180,518	3,835	6,325	496	326,322
2008-09	138,456	190,895	3,845	6,941	326	340,463
2009-10	145,368	205,719	3,683	6,746	425	361,941
2010-11	156,952	179,833	3,487	7,019	350	347,641
2011-12	167,171	187,614	2,608	6,946	263	364,602

In the financial year 2011-12, New South Wales coal mines produced a record 221 million tonnes of raw coal, up 16.2 million tonnes or 7.9% on the previous financial year and equivalent to a record 167.2 million tonnes of saleable coal.

Queensland coal mines produced 249.1 million tonnes of raw coal in financial year 2011-12, an increase of 9.4 million tonnes on the previous financial year; however it was 26.1 million tonnes less than the record of 275.2 million tonnes reached in 2009-10.

The combined raw coal production from the three other Australian black coal mining states, South Australia, Western Australia and Tasmania for financial year 2011-12 was almost 10 million tonnes, down just over one million tonnes on the previous financial year.



Underground coal mining is carried out in three Australian states, New South Wales, Queensland and Tasmania. The majority of Australian black coal from underground mines is produced by New South Wales. In financial year 2011-12 New South Wales accounted for 62.9% of Australia's underground mine production, Queensland 36.8% and Tasmania just 0.3%.

As noted above, over the past ten years raw coal production from Australian underground mines has increased by an average rate per year of just 0.8%; reflecting an increase of 1.6% for New South Wales underground mines and an increase of 0.1% for Queensland underground mines. Tasmanian underground mines averaged a fall of 3.9% over the period.

New South Wales underground coal mines produced a 60.5 million tonnes of raw coal in financial year 2011-12, down 1.7 million tonnes or 2.7% on the previous financial year and equivalent to 49.3 million tonnes of saleable coal. New South Wales raw coal production from underground mines, for financial year 2011-12 was 2.6 million tonnes less than the record reached in the 2008-09 financial year.

Queensland underground operations produced 35.4 million tonnes of raw coal equivalent to 24.6 million tonnes of saleable coal in financial year 2011-12. Raw coal production in the financial year 2011-12 for Queensland underground mines was 16.6 million tonnes less than the record of 52 million tonnes set in 2009-10 financial year.

TABLE 6 - BLACK COAL PRODUCTION, UNDERGROUND MINES BY STATES, AUSTRALIA						
FY	New South Wales	Queensland	South Australia	Western Australia	Tasmania	Australia
Raw production '000 tonnes						
2002-03	46,957	34,772	-	-	506	82,235
2003-04	49,355	31,677	-	-	419	81,451
2004-05	51,907	34,685	-	-	474	87,066
2005-06	52,232	34,289	-	-	526	87,047
2006-07	57,240	35,906	-	-	394	93,540
2007-08	61,316	42,815	-	-	438	104,569
2008-09	63,069	41,041	-	-	402	104,512
2009-10	62,805	51,957	-	-	437	115,199
2010-11	62,134	45,157	-	-	338	107,629
2011-12	60,462	35,369	-	-	307	96,138
Saleable production '000 tonnes						
2002-03	40,156	27,250	-	-	333	67,739
2003-04	40,735	23,866	-	-	295	64,896
2004-05	43,185	26,684	-	-	345	70,214
2005-06	42,297	24,430	-	-	354	67,081
2006-07	46,202	27,109	-	-	260	73,571
2007-08	48,974	34,285	-	-	275	83,534
2008-09	51,609	30,854	-	-	259	82,722
2009-10	50,764	26,611	-	-	267	77,642
2010-11	50,308	25,606	-	-	212	76,126
2011-12	49,310	24,574	-	-	208	74,092

As already mentioned the drop in raw coal production from Australian underground mines in financial year 2011-12 from the previous financial year was made up of a fall of 10.5 million tonnes from mines operating longwalls plus a fall of one million tonnes from other underground mines.

Raw coal production at New South Wales longwall mines fell by 0.8% to 52.5 million tonnes, while production from other underground mines fell 13.7%. Raw coal production from longwall mines in Queensland fell 23.7% to 32.3 million tonnes and production at other underground mines rose by 10.2%.

Raw coal production from Australian open cut mines has increased during the last ten years to June 2012 by an average rate per year of 4.3%; the annual average rate per year of Queensland's open cut mines was 3.8% and open cut mines in New South Wales had an annual average rate per year of 5.7%.

TABLE 7 - BLACK COAL PRODUCTION, OPEN CUT MINES BY STATES, AUSTRALIA						
FY	New South Wales	Queensland	South Australia	Western Australia	Tasmania	Australia
Raw production '000 tonnes						
2002-03	96,109	160,394	3,240	6,136	22	265,901
2003-04	97,691	172,019	3,208	5,981	65	278,964
2004-05	104,402	191,931	3,640	6,217	102	306,292
2005-06	108,908	192,406	3,479	6,918	110	311,821
2006-07	113,083	198,214	3,799	6,122	277	321,495
2007-08	115,851	189,722	3,835	6,325	324	316,057
2008-09	118,909	208,915	3,845	6,941	136	338,746
2009-10	125,993	223,243	3,683	6,746	230	359,895
2010-11	142,718	194,466	3,487	7,019	219	347,909
2011-12	160,540	213,690	2,608	6,946	109	383,893
Saleable production '000 tonnes						
2002-03	71,377	126,352	3,240	6,136	15	207,120
2003-04	73,504	136,197	3,208	5,981	55	218,945
2004-05	78,878	145,982	3,640	6,217	80	234,797
2005-06	82,314	147,259	3,479	6,918	80	240,050
2006-07	85,132	155,739	3,799	6,122	192	250,984
2007-08	86,174	146,233	3,835	6,325	221	242,788
2008-09	86,847	160,041	3,845	6,941	67	257,741
2009-10	94,604	179,108	3,683	6,746	158	284,299
2010-11	106,644	154,227	3,487	7,019	138	271,515
2011-12	117,861	163,040	2,608	6,946	55	290,510

The next table is a summary of supply and demand by state for five financial years 2007-08 to 2011-12. The table shows that the proportion of coal delivered to port for export overseas has increased steadily from 77.4% in of total deliveries from coal mines in 2007-08 to 83.8% in 2011-12.

A breakdown of the sales within Australia (deliveries elsewhere) by major user groups is set out in Table 9.

TABLE 8 - PRODUCTION, DELIVERIES & STOCKS, AUSTRALIAN BLACK COAL MINES						
'000 tonnes						
	New South Wales	Queensland	South Australia	Western Australia	Tasmania	Australia
FY 2007-08						
Saleable production	135,148	180,518	3,835	6,325	496	326,322
To port for export	100,155	152,083	-	414	-	252,652
Deliveries elsewhere	36,839	26,751	3,875	5,860	442	73,767
unaccounted for *	-	5,913	-	-	-	5,913
Closing stock	9,374	19,499	262	434	119	29,688
FY 2008-09						
Saleable production	138,456	190,895	3,845	6,941	326	340,463
To port for export	102,860	159,973	-	578	-	263,411
Deliveries elsewhere	34,937	27,138	3,785	6,399	394	72,653
unaccounted for *	-	9,289	-	-	-	9,289
Closing stock	10,033	32,539	322	398	51	43,343
FY 2009-10						
Saleable production	145,368	205,719	3,683	6,746	425	361,941
To port for export	110,268	183,122	-	487	-	293,877
Deliveries elsewhere	33,974	26,028	3,734	6,231	381	70,348
unaccounted for *	-	-15,410	-	-	-	-15,410
Closing stock	11,159	13,732	271	426	95	25,683
FY 2010-11						
Saleable production	156,952	179,833	3,487	7,019	350	347,641
To port for export	122,947	162,494	-	1,081	-	286,522
Deliveries elsewhere	33,467	22,878	3,423	6,132	341	66,241
unaccounted for *	-	1,728	-	-	-	1,728
Closing stock	11,697	9,920	335	232	104	22,288
FY 2011-12						
Saleable production	167,171	187,614	2,608	6,946	263	364,602
To port for export	136,748	164,861	-	464	-	302,073
Deliveries elsewhere	28,394	20,613	2,581	6,524	320	58,432
unaccounted for *	-	-2,917	-	-	-	-2,917
Closing stock	13,726	9,143	362	190	47	23,468

* Unaccounted for equals the tonnage required to balance the data i.e. the coal stock at mines at the beginning of the year plus saleable coal production, minus coal deliveries within Australia and overseas, minus the coal stock at mines at the end of the year.

TABLE 9 - AUSTRALIAN BLACK COAL DELIVERIES BY STATE, BY MAJOR USERS, '000 tonnes					
	FY 2007-08	FY 2008-09	FY 2009-10	FY 2010-11	FY 2011-12
New South Wales					
Power stations	30,764	30,599	28,537	27,785	23,624
Steel industry	4,994	3,480	4,554	4,587	3,800
Coke works	276	220	294	291	268
Cement industry	312	287	263	331	262
Other *	493	351	326	473	440
Total	36,839	34,937	33,974	33,467	28,394
Queensland					
Power stations	23,256	23,776	22,911	20,513	16,892
Cement industry	160	218	127	189	98
Metal processing	2,167	2,097	2,100	1,770	1,341
Other *	1,168	1,047	890	406	2,282
Total	26,751	27,138	26,028	22,878	20,613
South Australia					
Power stations	3,875	3,785	3,734	3,423	2,581
Western Australia					
Power stations	4,225	4,758	4,543	4,743	4,713
Other *	1,635	1,641	1,688	1,389	1,811
Total	5,860	6,399	6,231	6,132	6,524
Tasmania					
Other *	442	394	381	341	320
Australia					
Power stations	62,120	62,918	59,725	56,464	47,810
Other *	11,647	9,735	10,623	9,777	10,622
Total	73,767	72,653	70,348	66,241	58,432

*Other - to protect data sources' commercially sensitive information it has been necessary to include some major users of black coal in this category.

In 2011-12, coal sales to power generators accounted for 81.8% of the black coal delivered to markets within Australia and 13.3% of total coal delivered (both domestic markets and to ports for shipment overseas). In 2010-11, the corresponding percentages were 85.2% and 16% respectively.

The Bureau of Resources and Energy Economics (BREE) reports in the publication *2012 Australian Energy Update*, that although Australian electricity generation has remained relatively unchanged in the five years to 2010-11, the share of coal in total consumption for power generation has fallen as a result of strong growth of gas-fired generation and increased solar, hydro and wind generation.

The deliveries to power stations shown in Table 9 indicate the reduction in demand for coal-fired electricity generation; the data shows an average rate of decline of 5% per year over the five years to June 2012.

The following two tables set out the top thirty Australian black coal mines measured by raw coal production, for financial years 2010-11 (Table 10) and 2011-12 (Table 11).

Table 10 shows that in 2010-11 the top 30 black coal mines in Australia produced 58.4% of total raw coal won, with a range from 5 million tonnes to 17.1 million tonnes. There were nine open cut mining operations that produced over 10 million tonnes of raw coal, five located in New South Wales and four in Queensland.

TABLE 10 - TOP THIRTY AUSTRALIAN BLACK COAL MINES, RAW PRODUCTION FY 2010-11					
	Mine name	Mine type	State	'000 tonnes	Company
1	Mt Arthur Coal	OC	NSW	17,080	BHP Billiton Ltd
2	Hunter Valley Operations	OC	NSW	15,730	Rio Tinto Coal Australia
3	Mt Owen	OC	NSW	14,349	Xstrata Coal Australia
4	Goonyella Riverside	OC	QLD	14,114	BHP Billiton Mitsubishi Alliance
5	Mt Thorley Warkworth	OC	NSW	13,633	Rio Tinto Coal Australia
6	Peak Downs	OC	QLD	13,188	BHP Billiton Mitsubishi Alliance
7	Hail Creek	OC	QLD	11,983	Rio Tinto Coal Australia
8	Wilpinjong	OC	NSW	11,797	Peabody Energy Pty Ltd
9	Blackwater	OC	QLD	10,420	BHP Billiton Mitsubishi Alliance
10	Curragh	OC	QLD	9,850	Wesfarmers Resources Limited
11	New Acland	OC	QLD	9,155	New Hope Corporation Limited
12	Bulga	OC	NSW	9,045	Xstrata Coal Australia
13	Saraji	OC	QLD	8,638	BHP Billiton Mitsubishi Alliance
14	Dawson	OC	QLD	8,495	Anglo American Metallurgical Coal Pty Ltd
15	Moolarben	OC	NSW	8,049	Yancoal Australia Pty Ltd
16	Oaky North	LW	QLD	7,740	Xstrata Coal Australia
17	Callide & Boundary Hill	OC	QLD	7,739	Anglo American - Australia
18	Bengalla	OC	NSW	6,744	Rio Tinto Coal Australia
19	Meandu	OC	QLD	6,558	Stanwell Corporation Limited
20	Clermont	OC	QLD	6,542	Rio Tinto Coal Australia
21	Liddell	OC	NSW	6,327	Xstrata Coal Australia
22	Rolleston	OC	QLD	6,230	Xstrata Coal Australia
23	Newlands Northern	LW	QLD	6,120	Xstrata Coal Australia
24	Oaky Creek	LW	QLD	5,504	Xstrata Coal Australia
25	Moranbah North	LW	QLD	5,346	Anglo American - Australia
26	Drayton	OC	NSW	5,166	Anglo American - Australia
27	Sonoma Coal	OC	QLD	5,126	QCoal Group
28	Mandalong	LW	NSW	5,103	Centennial Coal Company Limited
29	Bulga	LW	NSW	5,059	Xstrata Coal Australia
30	Crinum	LW	QLD	5,020	BHP Billiton Mitsubishi Alliance
			Sub- total	265,850	
			Total Australia	455,538	
Top 30 as a percentage of total Australia raw coal production				58.4%	

In 2011-12 there were 13 open cut mining operations that produced over 10 million tonnes of raw coal; six located in New South Wales and seven in Queensland. The production range was from 4.8 million tonnes to 21.4 million tonnes.

TABLE 11 - TOP THIRTY AUSTRALIAN BLACK COAL MINES, RAW PRODUCTION FY 2011-12					
	Mine name	Mine type	State	'000 tonnes	Company
1	Mt Arthur Coal	OC	NSW	21,388	BHP Billiton Ltd
2	Hunter Valley Operations	OC	NSW	16,078	Rio Tinto Coal Australia
3	Mt Owen	OC	NSW	15,147	Xstrata Coal Australia
4	Mt Thorley Warkworth	OC	NSW	14,858	Rio Tinto Coal Australia
5	Goonyella Riverside	OC	QLD	13,999	BHP Billiton Mitsubishi Alliance
6	Wilpinjong	OC	NSW	13,404	Peabody Energy Pty Ltd
7	Hail Creek	OC	QLD	12,817	Rio Tinto Coal Australia
8	Curragh	OC	QLD	11,957	Wesfarmers Resources Limited
9	Dawson	OC	QLD	11,767	Anglo American Metallurgical Coal Pty Ltd
10	Mangoola	OC	NSW	11,364	Xstrata Coal Australia
11	Peak Downs	OC	QLD	11,142	BHP Billiton Mitsubishi Alliance
12	New Acland	OC	QLD	10,323	New Hope Corporation Limited
13	Blackwater	OC	QLD	10,138	BHP Billiton Mitsubishi Alliance
14	Bulga	OC	NSW	9,608	Xstrata Coal Australia
15	Saraji	OC	QLD	9,154	BHP Billiton Mitsubishi Alliance
16	Rolleston	OC	QLD	9,129	Xstrata Coal Australia
17	Callide & Boundary Hill	OC	QLD	7,958	Anglo American - Australia
18	Oaky North	LW	QLD	7,924	Xstrata Coal Australia
19	Bengalla	OC	NSW	7,458	Rio Tinto Coal Australia
20	Moolarben	OC	NSW	7,138	Yancoal Australia Pty Ltd
21	Liddell	OC	NSW	6,504	Xstrata Coal Australia
22	Ulan	LW	NSW	6,123	Xstrata Coal Australia
23	South Walker Creek	OC	QLD	5,965	BHP Billiton Mitsui Coal
24	Meandu	OC	QLD	5,948	Stanwell Corporation Limited
25	Clermont	OC	QLD	5,606	Rio Tinto Coal Australia
26	Kestrel	LW	QLD	5,475	Rio Tinto Coal Australia
27	Drayton	OC	NSW	5,360	Anglo American - Australia
28	Mandalong	LW	NSW	5,324	Centennial Coal Company Limited
29	Collinsville	OC	QLD	4,867	Xstrata Coal Australia
30	Jellinbah	OC	QLD	4,803	Jellinbah Group
			Sub- total	288,726	
			Total Australia	480,031	
Top 30 as a percentage of total Australia raw coal production				60.1%	

Export shipments

The latest statistics from the World Coal Association show that in calendar year 2011, Indonesia replaced Australia as the leading supplier of black coal in world markets, a position held by Australia since 1984. Australia however, remains the leading exporter of metallurgical coal.

From 1974 until 2006 New South Wales and Queensland supplied all of Australia's black coal exports, Western Australia re-entered the export coal market in January 2007.

In this publication, coal exports are classified as metallurgical (coking) or steaming (thermal or energy) according to end-use criteria. The sailing date of each export vessel is the recording date.

Financial year 2011-12 saw a record 301.6 million tonnes of black coal shipped from Australia to 33 destinations. Steaming coal exports increased by 16.3 million tonnes in 2011-12 reaching a record 160.3 million tonnes. Metallurgical coal exports decrease by 77,000 tonnes from the previous financial year to 141.3 million tonnes and were 12.3 million tonnes less than the peak of 153.6 million tonnes achieved in financial year 2009-10.

In the ten years to 30 June 2012, black coal exports from Australia have increased by 45%; metallurgical exports increased by 32% and steaming coal exports up by 58%.

Exports from New South Wales have been increasing steadily at an average rate per year of 5.9% over the ten years to June 2012. Queensland exports increased at an average rate per year of 3.2% during the same period. Queensland exports were down significantly in financial year 2010-11, largely due the impact of flooding in Central Queensland.

TABLE 12 - AUSTRALIAN BLACK COAL EXPORTS BY STATES, '000 tonnes

FY	State			Australia	Coal type	
	New South Wales	Queensland	Western Australia		Metallurgical	Steaming
2002-03	79,290	129,225	-	208,515	107,081	101,434
2003-04	85,008	135,055	-	220,063	111,311	108,752
2004-05	86,568	145,465	-	232,033	124,027	108,006
2005-06	89,839	142,784	-	232,623	117,916	114,707
2006-07	91,533	153,294	42	244,869	130,630	114,239
2007-08	100,465	152,084	365	252,914	137,756	115,158
2008-09	103,275	159,973	538	263,786	131,403	132,383
2009-10	109,903	183,122	443	293,468	153,561	139,907
2010-11	121,801	162,474	1,073	285,348	141,347	144,001
2011-12	136,342	164,786	429	301,557	141,270	160,287

The FOB value of black coal shipments peaked in financial 2008-09 and then dropped dramatically in 2009-10 due to the fall in the contract prices as the short-term outlook had changed with the Global Financial Crisis.

TABLE 13 - AUSTRALIAN BLACK COAL EXPORTS BY TYPE AND FOB VALUE				
FY	Hard coking	Total metallurgical	Steaming	All exports
		'000 tonnes		
2002-03	n.a.	107,081	101,434	208,515
2003-04	n.a.	111,311	108,752	220,063
2004-05	n.a.	124,027	108,006	232,033
2005-06	n.a.	117,916	114,707	232,623
2006-07	n.a.	130,630	114,239	244,869
2007-08	n.a.	137,756	115,158	252,914
2008-09	n.a.	131,403	132,383	263,786
2009-10	98,734	153,561	139,907	293,468
2010-11	92,656	141,347	144,001	285,348
2011-12	90,948	141,270	160,287	301,557
		FOB value A$'000		
2002-03	n.a.	$7,372,621	$4,463,017	$11,835,638
2003-04	n.a.	$6,465,520	$4,505,345	$10,970,865
2004-05	n.a.	$10,756,749	$6,416,612	$17,173,361
2005-06	n.a.	$16,978,268	$7,627,133	$24,605,401
2006-07	n.a.	$15,464,827	$7,097,634	$22,562,461
2007-08	n.a.	$16,235,124	$8,518,999	$24,754,123
2008-09	n.a.	$40,141,594	$18,189,749	$58,331,343
2009-10	$16,063,955	$22,701,628	$13,084,427	$35,786,055
2010-11	$20,503,249	$28,822,539	$14,378,800	$43,201,339
2011-12	$21,298,584	$30,378,354	$17,360,431	$47,738,785
		Average FOB value per tonne A$		
2002-03	n.a.	$68.85	$44.00	$56.76
2003-04	n.a.	$58.09	$41.43	$49.85
2004-05	n.a.	$86.73	$59.41	$74.01
2005-06	n.a.	$143.99	$66.49	$105.77
2006-07	n.a.	$118.39	$62.13	$92.14
2007-08	n.a.	$117.85	$73.98	$97.88
2008-09	n.a.	$305.48	$137.40	$221.13
2009-10	$162.70	$147.83	$93.52	$121.94
2010-11	$221.28	$203.91	$99.85	$151.40
2011-12	$234.19	$215.04	$108.31	$158.31

The following graph shows fifteen years of Australian black coal export tonnages and FOB value, in Australian dollars.

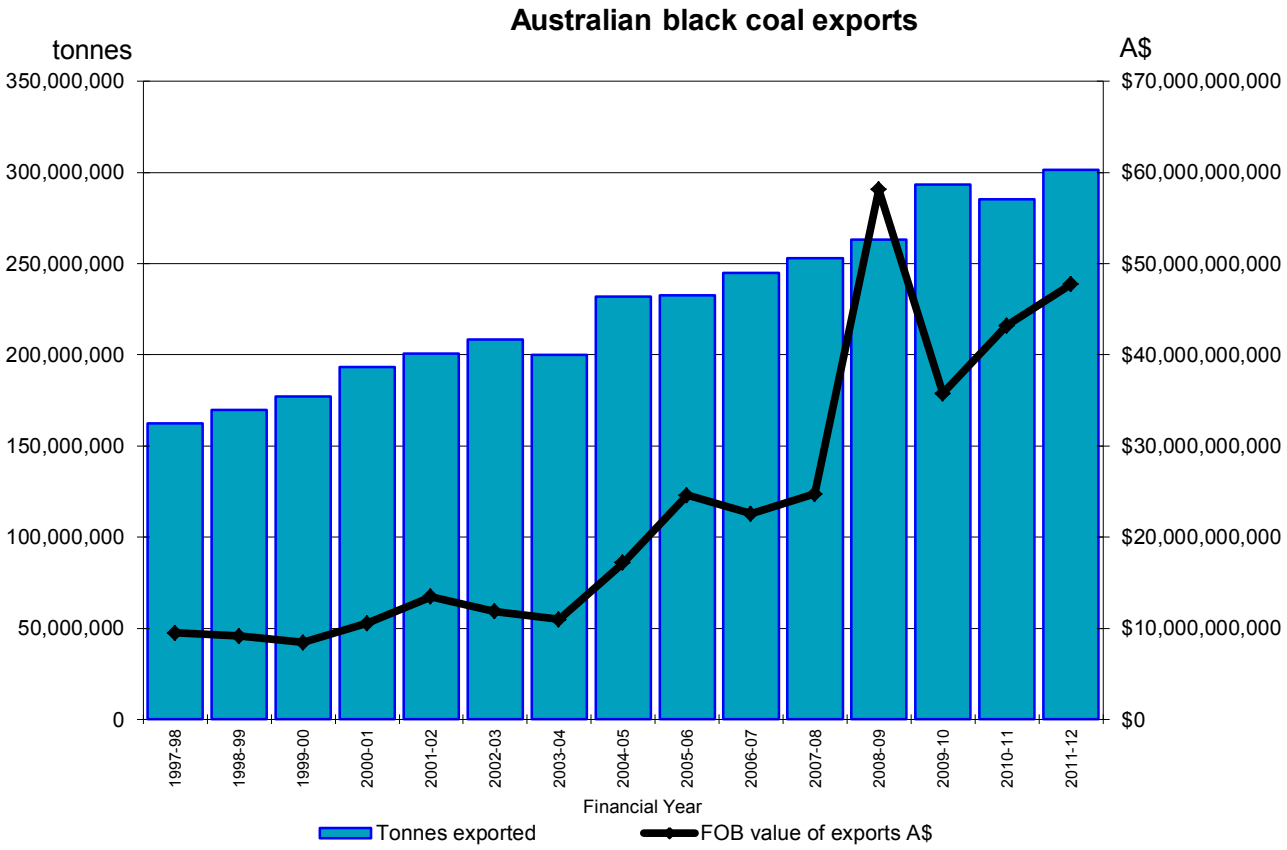


Table 14 shows the market for Australian black coal in descending order of size based on the financial year 2011-12 shipments.

In 2011-12 Japan remained Australia's largest black coal market with a 36.5% share however, shipments to Japan fell marginally from110.5 million tonnes in the financial year 2010-11 to 110.2 million tonnes.

China replaced the Republic of Korea as Australia's second largest black coal export market in 2011-12 and in 2009-10. Exports to the Republic of Korea fell from the 2008-09 record of 43.5 million tonnes to 40.7 million tonnes in 2009-10 while Australian black coal exports to China rose from 23.8 million tonnes to 42.4 million tonnes in the same period.

In the financial year 2011-12 China had a 16.3% market share while the Republic of Korea accounted for 14.7% of the 2011-12 Australia's black coal exports.

Five countries Japan, China, the Republic of Korea, India and Taiwan accounted for 86% of Australian black coal export shipments in 2011-12 the remaining 14% was shipped to 28 other destinations.

TABLE 14 – AUSTRALIA BLACK COAL EXPORTS BY MARKET SHARE FY 2011-12,'000 tonne						
Destination	FY2007-08	FY2008-09	FY2009-10	FY2010-11	FY2011-12	Market share
Japan	117,028	104,935	115,320	110,542	110,207	36.5%
China	2,438	23,801	42,378	33,835	49,225	16.3%
Korea Rep of	32,523	43,467	40,702	43,637	44,370	14.7%
India	22,612	24,862	31,922	31,936	30,011	10.0%
Taiwan	25,276	25,839	26,534	27,721	25,694	8.5%
Mexico	1,493	2,534	3,445	2,149	3,955	1.3%
France	7,267	3,427	2,544	3,634	3,389	1.1%
United Kingdom	4,487	3,926	3,649	3,081	3,324	1.1%
Malaysia	2,405	2,660	1,571	3,074	3,271	1.1%
Brazil	6,701	4,063	5,252	4,612	3,177	1.1%
Germany	3,002	1,658	943	1,002	3,008	1.0%
Thailand	2,011	3,516	2,299	2,916	3,002	1.0%
Italy	3,119	2,150	2,010	2,241	2,089	0.7%
Spain	3,249	1,709	1,413	1,783	1,913	0.6%
Netherlands	4,360	4,031	4,179	4,311	1,867	0.6%
Belgium/Luxembourg	2,472	1,737	960	1,211	1,730	0.6%
Turkey	2,287	2,050	1,225	815	1,679	0.6%
Hong Kong	-	902	71	212	1,664	0.6%
Singapore	434	71	62	44	1,267	0.4%
South Africa	804	1,043	1,670	1,006	1,229	0.4%
Chile	929	383	647	1,301	1,214	0.4%
Other countries	8,017	5,022	4,672	4,285	4,272	1.4%
Total	**252,914**	**263,786**	**293,468**	**285,348**	**301,557**	**100.0%**

TABLE 15 - AUSTRALIAN BLACK COAL EXPORTS BY PORT, '000 tonnes					
	FY 2007-08	FY 2008-09	FY 2009-10	FY 2010-11	FY 2011-12
Newcastle*	88,979	90,756	97,026	108,578	122,336
Port Kembla	11,486	12,519	12,877	13,223	14,006
New South Wales	**100,465**	**103,275**	**109,903**	**121,801**	**136,342**
Abbot Point	12,545	14,443	16,928	15,064	13,602
Brisbane	5,501	6,243	6,303	6,615	8,836
Dalrymple Bay	42,967	47,998	63,503	54,694	50,972
Gladstone	53,941	56,132	60,096	53,035	59,395
Hay Point	37,130	35,157	36,292	33,066	31,981
Queensland	**152,084**	**159,973**	**183,122**	**162,494**	**164,786**
Western Australia	365	538	443	1,073	429
Total	**252,914**	**263,786**	**293,468**	**285,348**	**301,557**

*Newcastle includes Carrington, Kooragang and NCIG

Metallurgical coal exports fell marginally from financial year 2010-11 to 2011-12 and were12.2 million tonnes less than the peak of 153.6 million tonnes achieved in financial year 2009-10.

TABLE 16 - AUSTRALIAN BLACK COAL EXPORTS BY TYPE BY DESTINATION, '000 tonne						
	FY 2010-11			FY 2011-12		
Country	Metallurgical	Steaming	Total	Metallurgical	Steaming	Total
Algeria	-	-	-	40	-	40
Argentina	608	-	608	581	-	581
Austria	-	-	-	72	-	72
Belgium/Luxembourg	1,211	-	1,211	1,730	-	1,730
Brazil	4,506	106	4,612	3,170	7	3,177
Chile	426	875	1,301	820	394	1,214
China	16,468	17,367	33,835	20,898	28,327	49,225
Croatia	70	-	70	-	-	-
Finland	201	-	201	314	-	314
France	3,625	9	3,634	3,389	-	3,389
Germany	998	4	1,002	3,008	-	3,008
Hong Kong	144	68	212	602	1,062	1,664
India	30,846	1,090	31,936	28,256	1,755	30,011
Israel	-	501	501	5	489	494
Italy	2,164	77	2,241	2,089	-	2,089
Japan	43,267	67,275	110,542	40,078	70,129	110,207
Korea Rep of	16,216	27,421	43,637	15,442	28,928	44,370
Malaysia	74	3,000	3,074	71	3,200	3,271
Mexico	304	1,845	2,149	352	3,603	3,955
Netherlands	4,303	8	4,311	1,867	-	1,867
New Caledonia	-	534	534	-	564	564
New Zealand	-	58	58	-	-	-
Pakistan	265	-	265	228	-	228
Philippines	-	276	276	-	485	485
Poland	-	-	-	93	-	93
Singapore	44	-	44	509	758	1,267
South Africa	1,006	-	1,006	1,229	-	1,229
Spain	1,783	-	1,783	1,913	-	1,913
Sweden	1,096	145	1,241	929	100	1,029
Switzerland	64	-	64	11	68	79
Taiwan	7,730	19,990	27,720	8,210	17,484	25,694
Thailand	129	2,787	2,916	80	2,922	3,002
Turkey	568	247	815	1,667	12	1,679
United Kingdom	3,081	-	3,081	3,324	-	3,324
United States	-	318	318	-	-	-
Vietnam	150	-	150	293	-	293
Total	**141,347**	**144,001**	**285,348**	**141,270**	**160,287**	**301,557**

Production employment

TABLE 17 - PRODUCTION EMPLOYMENT, BLACK COAL MINES AUSTRALIA						
At 30 June	NSW	Queensland	SA	WA	Tasmania	Australia
Underground mines						
2003	5,075	2,528	-	-	75	7,678
2004	5,054	3,202	-	-	65	8,321
2005	5,620	3,163	-	-	71	8,854
2006	6,541	3,539	-	-	73	10,153
2007	6,792	3,770	-	-	67	10,629
2008	7,469	3,982	-	-	73	11,524
2009	8,478	3,861	-	-	80	12,419
2010	8,768	5,103	-	-	80	13,951
2011	9,776	5,885	-	-	83	15,744
2012	10,906	7,302	-	-	81	18,289
Open cut mines						
2002	4,694	8,185	205	596	7	13,687
2003	4,944	9,990	198	576	14	15,722
2004	5,670	12,668	199	632	11	19,180
2005	6,117	15,148	209	710	12	22,196
2006	6,600	14,473	222	656	25	21,976
2007	7,918	15,480	218	704	20	24,340
2008	8,436	17,714	220	776	20	27,166
2009	10,341	22,536	227	747	15	33,866
2010	11,350	25,696	234	707	20	38,007
2011	14,066	29,999	228	824	12	45,129
All mines						
2003	9,769	10,713	205	596	82	21,365
2004	9,998	13,192	198	576	79	24,043
2005	11,290	15,831	199	632	82	28,034
2006	12,658	18,687	209	710	85	32,349
2007	13,392	18,243	222	656	92	32,605
2008	15,387	19,462	218	704	93	35,864
2009	16,914	21,575	220	776	100	39,585
2010	19,109	27,639	227	747	95	47,817
2011	21,126	31,581	234	707	103	53,751
2012	24,972	37,301	228	824	93	63,418

Production employment includes all employees (full-time equivalent), including administrative and clerical staff and contractors working in or about a coal mine or preparation plant in connection with its operation. Workers engaged in the transport of coal from the mines and preparation plants to markets and those engaged in civil work are not included.

Where a coal preparation plant serves more than one mine, the plant's employees are apportioned to the mines according to the throughput tonnage for each mine served, for all states except Queensland. Queensland employment statistics do not apportion coal preparation plant employees but do include certain off-site staff directly involved in the operations of the coal mine.

Average employment is based on production employment and is calculated for the period the mine was operating.

TABLE 18 - AVERAGE PRODUCTION EMPLOYMENT, BLACK COAL MINES AUSTRALIA						
FY	NSW	Queensland	SA	WA	Tasmania	Australia
Underground mines						
2002-03	5,440	2,459	-	-	71	7,970
2003-04	5,154	3,202	-	-	70	8,426
2004-05	5,286	3,212	-	-	73	8,571
2005-06	6,201	3,539	-	-	71	9,811
2006-07	6,739	3,770	-	-	66	10,575
2007-08	7,031	3,982	-	-	69	11,082
2008-09	8,170	3,861	-	-	75	12,106
2009-10	8,720	4,739	-	-	78	13,537
2010-11	9,293	3,606	-	-	72	12,971
2011-12	10,414	5,719	-	-	78	16,211
Open cut mines						
2002-03	4,710	8,233	201	598	6	13,748
2003-04	4,889	9,990	196	588	8	15,671
2004-05	5,162	12,649	200	619	13	18,643
2005-06	5,966	15,148	206	694	14	22,028
2006-07	6,435	14,473	221	685	25	21,839
2007-08	7,299	15,480	221	676	26	23,702
2008-09	8,290	17,713	217	750	21	26,991
2009-10	9,166	19,311	225	730	22	29,454
2010-11	10,949	23,989	233	806	21	35,998
2011-12	13,480	29,526	228	708	25	43,967
All mines						
2002-03	10,150	10,692	201	598	77	21,718
2003-04	10,043	13,192	196	588	78	24,097
2004-05	10,448	15,861	200	619	86	27,214
2005-06	12,167	18,687	206	694	85	31,839
2006-07	13,174	18,243	221	685	91	32,414
2007-08	14,330	19,462	221	676	95	34,784
2008-09	16,460	21,574	217	750	96	39,097
2009-10	17,886	24,050	225	730	100	42,991
2010-11	20,242	27,595	233	806	93	48,969
2011-12	23,894	35,245	228	708	103	60,178

Labour productivity

Coal mine labour productivity statistics are presented as production tonnes per employee per year and production tonnes per hour worked.

TABLE 19 - RAW BLACK COAL PRODUCTION PER EMPLOYEE, AUSTRALIA, tonnes						
FY	NSW	Queensland	SA	WA	Tasmania	Australia
Underground mines						
2002-03	8,632	14,141	-	-	7,123	10,318
2003-04	9,576	9,894	-	-	5,990	9,667
2004-05	9,820	10,798	-	-	6,498	10,158
2005-06	8,423	9,689	-	-	7,412	8,872
2006-07	8,494	9,524	-	-	5,964	8,845
2007-08	8,721	10,752	-	-	6,355	9,436
2008-09	7,720	10,630	-	-	5,364	8,633
2009-10	7,202	10,964	-	-	5,606	8,510
2010-11	6,686	12,523	-	-	4,693	8,298
2011-12	5,806	6,185	-	-	3,930	5,930
Open cut mines						
2002-03	20,405	19,482	16,119	10,261	3,713	19,341
2003-04	19,982	17,219	16,366	10,172	8,141	17,801
2004-05	20,225	15,174	18,202	10,043	7,831	16,430
2005-06	18,255	12,702	16,887	9,968	7,844	14,156
2006-07	17,573	13,695	17,191	8,937	11,066	14,721
2007-08	15,872	12,256	17,351	9,357	12,469	13,335
2008-09	14,344	11,790	17,717	9,255	6,488	12,547
2009-10	13,746	11,560	16,369	9,241	10,452	12,219
2010-11	13,035	8,106	14,966	8,708	10,430	9,665
2011-12	11,910	7,237	11,437	9,811	4,374	8,731
All mines						
2002-03	14,095	18,254	16,119	10,261	6,857	16,030
2003-04	14,642	15,441	16,366	10,172	6,211	14,957
2004-05	14,961	14,288	18,202	10,043	6,699	14,454
2005-06	13,244	12,131	16,887	9,968	7,483	12,528
2006-07	12,929	12,833	17,191	8,937	7,366	12,804
2007-08	12,363	11,948	17,351	9,357	8,028	12,093
2008-09	11,056	11,582	17,717	9,255	5,610	11,335
2009-10	10,556	11,443	16,369	9,241	6,672	11,051
2010-11	10,120	8,684	14,966	8,708	5,989	9,303
2011-12	9,249	7,067	11,437	9,811	4,038	7,977

Productivity measured as production per employee for the year discounts time lost through industrial and non-industrial stoppages and absenteeism. The calculation is based on average production employment recorded during the year.

Overall industry raw and saleable coal production per employee fell for the fifth successive year. The raw coal production per employee for financial year 2011-12 fell to 7,977 tonnes down 14.3% on the previous year and down 34% on the 2007-08 financial year. Saleable coal fell to 6,059 tonnes per employee, down 14.6% on financial year 2011-12 and down 35.4% on the 2007-08 financial year

TABLE 20 - SALEABLE BLACK COAL PRODUCTION PER EMPLOYEE, AUSTRALIA tonnes

FY	New South Wales	Queensland	South Australia	Western Australia	Tasmania	Australia
2002-03	10,988	14,366	16,119	10,261	4,518	12,656
2003-04	11,375	12,134	16,366	10,172	4,482	11,779
2004-05	11,683	10,886	18,202	10,043	4,936	11,208
2005-06	10,242	9,188	16,887	9,968	5,100	9,646
2006-07	9,969	10,023	17,191	8,937	4,971	10,013
2007-08	9,431	9,275	17,351	9,357	5,216	9,381
2008-09	8,412	8,848	17,717	9,255	3,398	8,708
2009-10	8,127	8,554	16,516	9,006	4,161	8,415
2010-11	7,754	6,517	14,966	8,708	3,761	7,099
2011-12	6,996	5,323	11,437	9,811	2,556	6,059

Coal production per hour worked per year, is set out in the following table for both raw and saleable coal and for underground and open cut mining. The table covers the five financial years 2007-08 to 2011-12. Hours worked, is ordinary hours worked plus overtime hours worked.

Raw coal production per employee per hour fell to 4.63 tonnes per hour for financial year 2011-12, down 17.5% from the previous year and down 30.7% from the 2007-08 financial year.

Saleable coal production per employee overall fell to 3.52 tonnes per employee for financial year 2011-12, down 17.8%.

TABLE 21 - BLACK COAL PRODUCTION PER HOUR WORKED, tonnes						
FY	NSW	Queensland	South Australia	Western Australia	Tasmania	Australia
Raw coal production underground mines						
2007-08	4.50	7.95	-	-	3.39	5.46
2008-09	3.89	7.19	-	-	3.02	4.73
2009-10	3.74	9.91	-	-	2.75	5.19
2010-11	3.44	9.40	-	-	2.32	4.67
2011-12	3.04	7.61	-	-	2.28	3.90
Raw coal production open cut mines						
2007-08	7.78	6.98	8.30	5.07	7.17	7.21
2008-09	6.94	6.04	8.44	5.28	4.15	6.33
2009-10	5.60	6.59	7.75	5.08	5.39	6.18
2010-11	6.34	5.74	7.34	5.28	5.13	5.98
2011-12	5.72	4.37	5.38	4.79	3.09	4.86
Raw coal production all mines						
2007-08	6.21	7.14	8.30	5.07	4.37	6.68
2008-09	5.45	6.20	8.44	5.28	3.24	5.86
2009-10	5.31	7.30	8.21	5.14	3.38	6.32
2010-11	5.05	6.20	7.34	5.28	2.96	5.61
2011-12	4.61	4.65	5.38	4.79	2.45	4.63
Saleable coal production underground mines						
2007-08	3.59	6.37	-	-	2.13	4.36
2008-09	3.18	5.40	-	-	1.94	3.75
2009-10	3.02	5.08	-	-	1.68	3.50
2010-11	2.78	5.33	-	-	1.46	3.31
2011-12	2.48	5.29	-	-	1.55	3.01
Saleable coal production open cut mines						
2007-08	5.79	5.38	8.30	5.07	4.88	5.54
2008-09	5.07	4.62	8.44	5.28	2.05	4.81
2009-10	4.20	5.29	7.75	5.08	3.69	4.88
2010-11	4.74	4.55	7.34	5.28	3.23	4.66
2011-12	4.20	3.33	5.38	4.79	1.55	3.68
Saleable coal production all mines						
2007-08	4.74	5.54	8.30	5.07	2.84	5.18
2008-09	4.15	4.73	8.44	5.28	1.96	4.50
2009-10	4.09	5.46	8.21	5.14	2.15	4.81
2010-11	3.87	4.65	7.34	5.28	1.86	4.28
2011-12	3.49	3.50	5.38	4.79	1.55	3.52

IN THE FAIR WORK COMMISSION

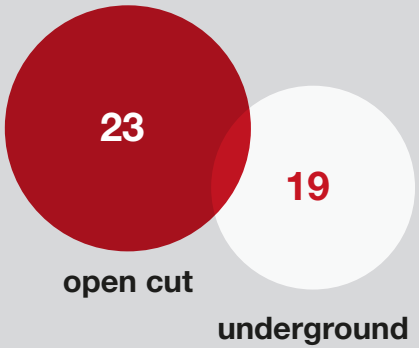
Matter No.:	**AM2014/190**
Title of Matter:	**Four yearly review of modern awards — Black Coal Mining Industry Award 2010 — Clause 18 — Accident Pay**

ANNEXURE DG-2
TO THE STATEMENT OF DAVID GUNZBURG DATED 24 FEBRUARY 2017

Partnering with Industry as Prevention Specialists

Performance highlights

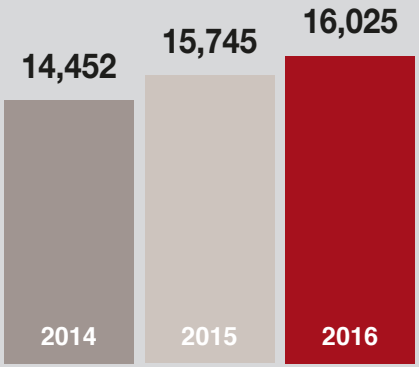
Operating coal mines in NSW



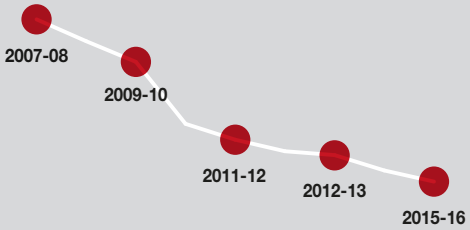
5,984

periodic health surveillance medicals to monitor and protect against occupational disease

Attendance at Mines Rescue courses



Claims frequency rate

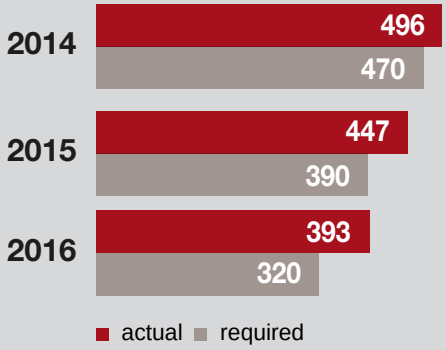


5.6%

4,058
workers' breathing zones sampled for respirable and inhalable dust

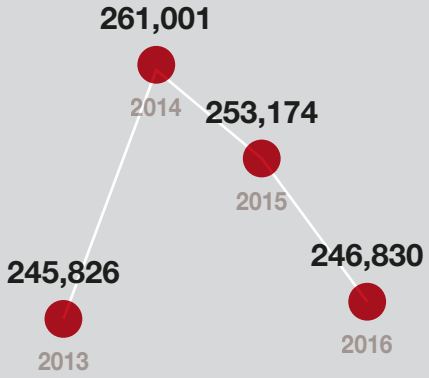
22
dust suppression plans were approved under Order 40

1.3%
reduction in respirable dust exceedances



Trained volunteer mines rescue brigadesmen

Raw coal production '000 tonnes



792

EAR-fit tests performed in 2015–16. EAR-fit validation helps to ensure that PPE is correctly fitted to protect against noise exposure

To protect workers and mining

Coal Services is an industry-owned organisation committed to providing critical services and expertise to the NSW coal mining industry.

We are a Specialised Health and Safety Scheme that provides an integrated suite of services aimed at preventing injury and illness in the workplace. These include occupational health and safety, workers compensation, mines rescue and training.

We work in collaboration with workers, employers, Government departments and other industry partners to help identify, assess, monitor and control many risks inherent in the NSW coal mining industry. Together, we work to protect the health and safety of those working in the industry through prevention, detection, enforcement and education.

We are jointly owned by two shareholders, the NSW Minerals Council and the Construction, Forestry, Mining and Energy Union (CFMEU). Our purpose, vision and values are aligned to focus on the safety and health of our industry and its workers.

Our purpose

To protect

Our vision

To partner with industry for a safe workplace and a healthy workforce

Message from the Chairman and Managing Director/CEO

David Moult and Lucy Flemming

These results are a testament to the unwavering commitment of our industry.

Our industry

The Australian coal mining industry continued its journey of change in 2015-16. In NSW, the industry's fourth year of contraction closed with 42 coal mines operating throughout the state after three mines closed due to unfavourable market conditions. By 30 June 2016, workforce numbers had reduced by 6.7 per cent to 22,784.

For the first time in many years, both raw coal production and export tonnages of NSW coal declined. Raw coal production fell 2.5 per cent to 246.8 million tonnes. Demand for NSW coal remained strong, however; export shipments fell 1.9 per cent following 15 years of record growth.

2015-16 saw the re-emergence of coal workers pneumoconiosis within the Australian coal mining industry with several cases confirmed in Queensland. The return of this preventable disease has proven to be a potent reminder of the need to remain vigilant when it comes to health and safety. It has also given weight to investing in critical prevention strategies and activities designed to protect the workforce and ensure a productive industry.

This is at the heart of our unique collaborative industry model that is in place in NSW. The model unites all industry stakeholders to prevent, detect, enforce and educate about occupational disease and other issues and is the NSW coal industry's key to achieving health and safety success. Its stakeholder groups – workers, employers, community and government – can be proud of the results they have delivered.

Our strategy

Our 2020 Strategy was launched in November 2014 as a long-term approach to building an organisation that is sustainable and fulfils our vision: to partner with industry for a safe workplace and a healthy workforce.

The implementation of our strategy is well underway. Over the last twelve months we have invested in initiatives designed to facilitate a more customer-focused and efficient business. We have also fostered new relationships with experts from within and outside of our industry to address key emerging issues in health and safety such as preventing dust disease and tackling obesity and its related health risks.

The performance of our industry Specialised Health and Safety Scheme, incorporating the collaborative industry model, is proof that our model works. The combination of strong legislation and regulation, appropriate ongoing measurement, and a focus on prevention, education and training, has delivered an exceptional safety record to the NSW coal mining industry.

This is validated by the industry's claims frequency rate which has improved year on year since Coal Services was formed in 2002. At 30 June 2016, the claims frequency rate sat at an industry low of 5.6 per cent. These results are a testament to the unwavering commitment of our industry, working together towards a common goal of zero harm.

Message from the Chairman and Managing Director/CEO *continued*

David Moult and Lucy Flemming

Our business

We continued to feel the effects of the contracting industry with a reduction in service provision across many business units. Insurance premium reduced as a result of the decline in employment numbers. Claims payments have continued at higher levels due to increases in litigation and associated legal costs, as well as difficult employment conditions adding impediments to returning injured workers back to health and back to work. Despite these challenges, we have held the Scheme's target collection rate stable at 3.2 per cent for the fifth consecutive year.

The year also saw lower attendance numbers at statutory induction training and for periodic health surveillance medicals. In contrast, attendance at pre-placement medicals increased 13.8 per cent.

The program of works to support our 2020 Strategy is progressing well with several major projects either implemented or commenced during the year.

Our new enterprise resource management system, Unit 4, became operational in October 2015 and is now embedded as business as usual activity. It is the culmination of extensive process re-engineering and consolidation of multiple financial management programs. By reducing paperwork and improving back office productivity we are better equipped to reinvest focus on our customers.

Implementation of Coal Mines Insurance's premium system reforms was completed in June 2016 and followed widespread consultation and communication with key stakeholders from across the industry. The reforms will help to ensure the Scheme remains financially viable and sustainable so we are able to support employers and their workers if and when they need it.

Work on a number of customer-focused initiatives will continue over the coming year, including transformation of case management practice, systems to support CMTS and CS Health reporting, and a model for effective customer and stakeholder engagement. Through these we aim to deliver improved support for employers and injured workers, working to provide more sustainable return to work outcomes for injured workers and data and education on preventative opportunities to minimise injury across the workforce.

The program of works to support our 2020 Strategy is progressing well.

Message from the Chairman and Managing Director/CEO *continued*

David Moult and Lucy Flemming

Our relationships

Protecting the health and safety of the NSW coal industry is our core function. Yet we cannot successfully fulfil our purpose without the support of workers, employers and our relationships with other industry and community groups. We have been working hard to strengthen these relationships and while we have seen positive progress we acknowledge we still have some work to do.

The re-emergence of coal workers pneumoconiosis has allowed us to strenghten our direct relationships and reassure our customers and stakeholders. It has also reinforced our position as leaders in health and safety. Throughout the latter half of the year Coal Services was invited to contribute to numerous information sessions, lectures and industry conferences across NSW and Qld. These were designed to help industry understand the measures and risk mitigation strategies that are in place across NSW to protect workers and operators against dust disease.

We would like to thank the Hon. Anthony Roberts, Minister for Industry, Resources and Energy; Stephen Galilee, CEO of the NSW Minerals Council and Tony Maher, National President of the Construction, Forestry, Mining and Energy Union (CFMEU) for their support throughout the year.

Our people

We welcomed two new Directors to the Board this year. Andrew Honeysett and Greg Sullivan were appointed as nominees from the CFMEU and the NSW Minerals Council; replacing Wayne McAndrew and Andrew McMahon who both retired at the end of last year. On behalf of the Board, we take this opportunity to thank and recognise Wayne's decades of service to the industry and his dedication to Coal Services.

At Coal Services we have a singular purpose, 'to protect'. This drives the passion and commitment of our people every day to ensure that everything we do helps to keep workers in our industry safe from harm. This commitment extends to providing support if they sustain an injury.

Thank you to our employees, management teams and the Board of Directors for your hard work and dedication throughout the year. Working together with our industry, we are continuing to make a difference.

Protecting the health and safety of the NSW coal industry is our core function.

People and Customers

Our people

Our people are critical to achieving our vision. By ensuring our complementary talents and skills are aligned with our common purpose we can work together to create a top quality service for our customers.

Coal Services employees are committed to building a culture that can adapt to ongoing changes in our industry. We recognise that change must be led from above, and that our people feel supported throughout the process.

Our diversity policy

Our diversity policy seeks to encourage cohesive decision making, in addition to trust and common values that seek to leverage diversity in order to:

- Drive business results
- Enhance our reputation
- Attract, recruit, engage and retain a diverse team of talented people.

We seek to add value to the organisation with a Board membership and General Management Team who have an appropriate mix of skills, experience (in a variety of specified fields), expertise and diversity.

We also seek to build a safe work environment by taking action against inappropriate workplace behaviour that does not value diversity including discrimination, harassment, bullying, victimisation and vilification.

Coal Services values and manages diversity through a variety of programs, practices and policies which cover:

- recruitment, selection and promotion of employees with the appropriate skills, talent and experience for the position
- equal employment opportunity and zero tolerance towards discrimination including but not limited to differences that relate to gender, age, ethnicity and cultural backgrounds
- talent and succession planning
- employee assistance programs
- flexible work hours and parental leave that supports employees at all levels of the organisation who may have domestic responsibilities
- career development through programs that assist employees to develop skills and experience for career enhancement
- a defined grievance and dispute process
- work health and safety programs and training
- study assistance.

Gender diversity is a key part of our overall diversity policy, ensuring that women are represented in senior roles and on the Board.

By ensuring our complementary talents and skills are aligned with our common purpose we can work together to create a top quality service for our customers.

People and Customers *continued*

Workplace profile 2015-16 (as submitted to the Workplace Gender Equality Agency for the period to 31 March 2016)

	WOMEN					MEN					TOTAL		
	Full time	Full time contract	Part time permanent	Part time contract	Casual	Full time	Full time contract	Part time permanent	Part time contract	Casual	Total	Women %	Men %
Managing Director/CEO	1										1	100	0
Key management personnel	1					4					5	20	80
Senior managers	9	1				10					20	50.00	50.00
Other managers	4					4		1	1		10	40.00	60.00
Professionals	65	3	38	4	5	61	3	3	2	1	185	62.16	37.84
Technicians and trade	1					23					24	4.17	95.83
Clerical and administrative	29	12	16	2	4	1					64	98.44	1.56
Total	**110**	**16**	**54**	**6**	**9**	**103**	**3**	**4**	**3**	**1**	**309**	**63.11**	**36.89**

	Female Representation	Male Representation	Total	Women %	Men %
Board	1	6	7	14.29	85.71

Coal Services is required to report its workplace profile annually under the *Workplace Gender Equality Act (2012)*.
Figures correct as at 31 March 2016. Total employment at 30 June is 314.

People and Customers *continued*

Work Health and Safety (WHS)

Our purpose 'to protect' is integral to all that we do. Coal Services is committed to safeguarding the health and safety of our employees and strives to improve WHS performance. This is achieved by consulting and communicating with all employees and gaining their involvement in the ownership of the Safety Management System.

We have five regional WHS committees and a central WHS committee to promote safety and health in the workplace. These consultation committees also assist in the review of WHS systems and incident trends, development and monitoring of safe work practices and systems, and discussion of issues that affect the health and safety of all employees. Health Safety Representative (HSR) training is provided to all committee members on an ongoing basis.

There were 11 elected HSRs for the period to 30 June 2016, 46 First Aiders and 52 Fire Wardens.

235 employees attended WHS courses in 2015-16

Positive WHS indicators

Our lead WHS indicators are the preventative measures that help to minimise the risk of injury or incident in the workplace. These include:

Workplace inspections

The five regional committees conducted 29 workplace inspections across the business in 2015-16.

WHS communications

14 WHS safety awareness messages were distributed to all employees throughout the year.

WHS committee meetings

A total of 34 meetings were held across all six WHS committees.

Employee WHS training

A total of 235 employees attended WHS courses during the year. WHS training is compulsory for all employees when they join Coal Services and they must attend a refresher course every two years thereafter. One of the largest risks to Coal Services employees is the high level of travel done on roads. Coal Services partners with the NRMA to deliver a low risk driver training course designed to provide a greater awareness of, and skills to reduce, driving risk. This training received a 100 per cent endorsement from the 91 participants who completed the course during the year.

Coal Services also offers employees the opportunity to complete an accredited First Aid course and Health Safety Representative course through Mines Rescue.

Lost time injury frequency rate

Coal Services' lost time injury frequency rate for 2015-16 was 5.6. This was due to three lost-time injuries recorded during the year. In each case, all worked through a rehabilitation program and successfully returned to work in a short timeframe.

People and Customers *continued*

Optimising capability and performance

Coal Services provides a suite of learning and development programs to equip employees with increased skills and knowledge to perform their duties.

On-boarding and compliance modules

42 new employees attended the induction welcome day in 2015-16. Upon joining the Coal Services team, new employees attend the welcome day as part of the 'New Starter Program' designed to articulate company culture and introduce basic company information, policies and procedures.

Other modules in the compliance suite include privacy, WHS, zero tolerance, drug and alcohol awareness, complaints handling and customer feedback. These modules must be completed by all new employees and refresher modules are undertaken by the broader business as required.

Leadership capability

The Leadership Capability Program is designed to improve leadership and management capability. It provides leaders with the skills and knowledge to carry out effective leadership throughout all stages of the employment life cycle. In 2016 Coal Services introduced a 360 degree feedback process for 30 leaders across the business. The feedback is used to drive succession planning and to design a bespoke leadership development plan for 2016-17 to ensure the senior leadership of Coal Services has the skillset required to deliver our 2020 strategic goals.

Stakeholder engagement framework

Our primary focus is to protect the health and wellbeing of the NSW coal industry: its workers and employers. Through these relationships we are also intrinsically linked to the wider communities in which we operate and our relationships with NSW Government agencies and other third parties.

We work together with workers and employers to achieve healthy, safe and productive workplaces. Regular consultation on key initiatives, attending industry conferences and trade exhibits, conducting information sessions and training days, and regular communications are just some of the ways in which we engage our stakeholders. Engagement is monitored through direct contact, customer satisfaction surveys and other research and also provides the means to identify emerging industry issues and areas for improvement.

We have also developed strong working relationships, and liaise regularly, with relevant levels of government to help influence and drive initiatives that promote the health and welfare of workers. Our ongoing relationship with government agencies such as the Department of Trade and Investment, advisory bodies such as the Mine Safety Advisory Council, local government and tri-partite committees such as the Standing Committee on Airborne Contaminants, Diesel Particulates, Noise Research and Control, enables us to be a voice for the industry and its workers.

During the year, Coal Services adopted a Stakeholder Engagement Framework. This framework represents our ongoing commitment to work effectively with our stakeholders, learning from past stakeholder engagement experiences and continue to improve performance. The framework is under development and currently focuses on implementation at the Board and Executive level. Reporting measures for the framework will develop over time.

Our relationships enable us to be a voice for the industry and its workers.

Community Events and Sponsorships

Coal Services establishes strong ties with NSW coal mining communities through support of not-for-profit organisations and industry and community events.

These sponsorships and community partnerships aim to:

- change or influence behaviours leading to better health, safety and wellbeing outcomes
- communicate health, safety and wellbeing messages and associated support programs
- increase awareness of Coal Services and its business units.

Our purpose, vision and values have the central theme of protecting the health and wellbeing of the NSW coal mining industry and its workers. This includes giving back to mining communities and extending support to local initiatives and events.

Sparke Helmore NBN Triathlon 2016

In 2016, Coal Services continued its proud sponsorship of Newcastle's Sparke Helmore NBN Triathlon, with eight Coal Services employees participating in the March event.

The triathlon is one of the largest held in NSW and raises much-needed funds for the Hunter Medical Research Institute (HMRI), which delivers community health outcomes in the Hunter region and beyond.

The mining industry shows strong support for this event every year. The perpetual 'Coal Services Cup' for the best performing mining team in the corporate event was awarded to Moly-Corp Team 1.

Westpac Rescue Helicopter Service

In October, Coal Services formally renewed our agreement with the Westpac Rescue Helicopter Service (the Service) extending our long-term support for the Service for another five years. Our corporate sponsorship embodies our commitment to giving back to the industry, families and communities in which we operate where safeguarding their health, wellbeing and welfare is important. Now in its 40th year, the Service performs around 1,000 life-saving missions each year and relies on corporate sponsorships and community fundraising to do this. Our renewed agreement is even more important as in 2017 the Service will become one of only two aeromedical providers in NSW to assist the people of northern NSW.

Community Events and Sponsorships *continued*

Newcastle Knights 'Voice for Mining Family Day'

Coal Services participated in the fourth annual 'Voice for Mining Family Day'; held on Saturday, 10 April 2016 at the Newcastle Knights home game. The Hunter's coal miners share a strong connection with the Knights, with many past players and relatives of current players working in the region's mining industry. The event is a joint initiative between the NSW Minerals Council and the Knights to recognise the contribution that coal mining makes to the Hunter region. It also provides a chance for miners, their families and the local community to show their support for the women and men that make up our local mining industry.

Community Open Days

Open days provide the opportunity for us to work together with our customers to demonstrate a range of mining-related activities for the community and other local businesses. Coal Services participated at Glencore Bulga's community day event in November 2015. The event provided a platform to showcase the health and rescue services we deliver to protect the NSW coal industry and its workers.

Hunter Coal Festival

The second annual Hunter Coal Festival was staged in Singleton in April 2016. The week-long event, owned and managed by the Singleton Business Chamber working in conjunction with the Muswellbrook and Newcastle Business Chambers, Singleton Council and Muswellbrook Council, aims to promote co-existence between the mining industry and local community.

The Festival demonstrated the strong connection between mining and community in our regional areas. Over 5,000 people participated in events that included a trade show, community day and street parade and industry-focused seminars.

Coal Services was proud to sponsor and contribute to the many Hunter Coal Festival events to reinforce the role of health and safety in industry.

Coal Services engaged former St George Dragons champion footballer turned mental health ambassador, Dan Hunt, to deliver a series of talks on mental health at local mine sites between Newcastle and Mudgee.

An emergency simulation showcased how Mines Rescue, brigadesmen and local emergency response functions coordinate their efforts to provide assistance in the event of a serious incident.

Roof bolting and coal shovelling titles

The roof bolting and coal shovelling challenge has been a major attraction to the Blackheath Rhododendron Festival for many years. Coal Services has long supported this annual event in support of showcasing mining-related tasks to the community. Teams from across NSW, Queensland and Tasmania competed at the 2015 Australian Roof Bolting and Coal Shovelling Titles in November.

Coal Services was proud to sponsor and contribute to the many Hunter Coal Festival events to reinforce the role of health and safety in industry.

Community Events and Sponsorships *continued*

Westpac Rescue Helicopter Service Cycle Classic

In March, Coal Services signed up as a major sponsor of the Westpac Rescue Helicopter Service 2016 Cycle Classic. The gruelling mountain bike ride saw participants travel 350km through national parks and scenic terrain spanning Bulahdelah, Gloucester and Dungog to raise funds for the vital service. We look forward to continuing our support of this event in years to come, as part of our sponsorship agreement with the Service.

Making a Difference

In addition to the corporate-funded events that Coal Services supports throughout the year, at a regional level Coal Services employees have helped to make a difference through a number of initiatives. These include:

- Raising funds to support 'Birthday in a Bag' and 'Homeless Packs'
- Participating in Australia's biggest morning tea in aid of cancer research
- Combating high stress levels and raising funds to support Lifeline's suicide prevention services through 'Stress Down Day'
- The MS Sydney to the Gong Ride to raise money to support people with multiple sclerosis (MS).

In addition to the corporate-funded events that Coal Services supports throughout the year, at a regional level Coal Services employees have helped to make a difference through a number of initiatives.

Caring for the Environment

Coal Services is committed to minimising our environmental footprint and reducing energy use across our ten sites.

Our environmental policy includes a commitment to the following goals:

- Targeting zero environmental incidents (achieving nil reportable incidents in 2015-16)
- Compliance with AS/NZS ISO 14001 Environmental Management Systems
- Consulting and communicating with all workers (employees, contractors and visitors) in Coal Services environmental standards
- Work closely with our clients, suppliers and other stakeholders to ensure they are aligned to the Coal Services Environmental Policy
- A commitment to continuously improving the areas of energy efficiency and recycling.

Coal Services has developed several policies and programs to help us meet or exceed regulatory and community standards. We have also implemented practices that help us to conduct our business in an environmentally-friendly manner such as:

- Use of energy-efficient lighting, including electronic sensors, wherever possible across Coal Services premises
- Reducing paper usage through limiting printer usage, applying electronic document scanning and storage and increased use of online materials. For example, during the year Coal Mines Insurance moved to electronic documentation for policyholders and in June all renewals for the 2016-17 policy year were distributed via email. The renewal packs included an interactive annual wages declaration enabling policyholders to complete and return the documents using desktop applications
- Utilising fuel and environmentally efficient motor vehicles and encouraging car-pooling where possible
- Utilising video conferencing and teleconferencing to reduce the need to travel for meetings
- Provision of recycling bins for plastics, paper and printer cartridges
- Recycling of obsolete I.T. equipment
- Having a Smoke Free Workplace Policy across all Coal Services sites to eliminate cigarette smoke and rubbish pollution
- Turning off computers at end-of-day
- Implementing and monitoring an Environmental Management System (EMS) at each Mines Rescue Station
- Monitoring, storing and treating trade wastewater at each Mines Rescue Station
- Employees displaying environmental awareness when out on worksites.

Coal Services will continue to monitor these initiatives and implement strategies to reduce our environmental footprint.

We have also implemented practices that help us to conduct our business in an environmentally-friendly manner.

Specialised Health and Safety Scheme

Workers Compensation

Health and Hygiene

Emergency Response

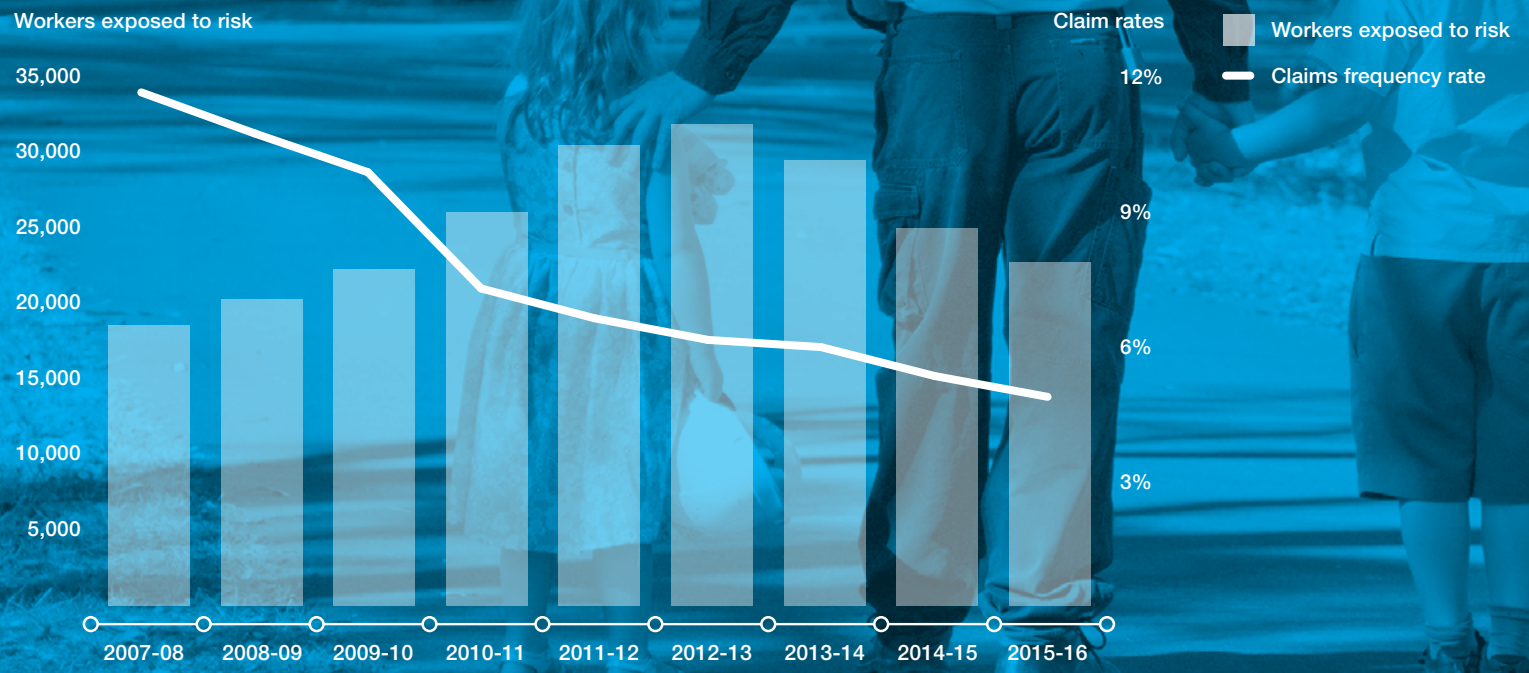
Training

Industry Statistics

Workers Compensation

Coal Mines Insurance (CMI) is responsible for providing workers compensation insurance to the NSW coal mining industry and administers the Coal Mines Insurance Workers Compensation Scheme (the Scheme).

Workers exposed to risk vs. claims frequency rate



Workers Compensation

The Coal Mines Insurance Scheme

The Scheme provides protection to workers and their employers in the event of a work-related injury or disease. The Scheme is funded by the insurance premiums paid by employers. In the unfortunate event where workers are injured we ensure workers receive the assistance, support and treatment they need to return to work.

Premiums fund financial and medical support to injured workers to return them to work and also cover the costs of dispute management and administration. While financial compensation is an important part of our workers compensation scheme, the primary aim is to enhance workplace health and safety by preventing incidents and fatalities. Under the Scheme, insurance premiums also subsidise industry-specific preventative measures such as Orders 34, 40, 41 and 42.

Premium profile

During the reporting period CMI provided workers compensation insurance for 753 policyholders; including 101 new policies. At 30 June 2016, the Scheme protected 22,784 exposed to risk employees; down 6.7 per cent from 24,437 in 2014-15.

In line with the contracting workforce, assessable wages for 2015-16 fell to $3.1 billion compared to the previous year of $3.4 billion. The fall in wages resulted in a reduced premium pool for the year of $101 million.

Target premium performance

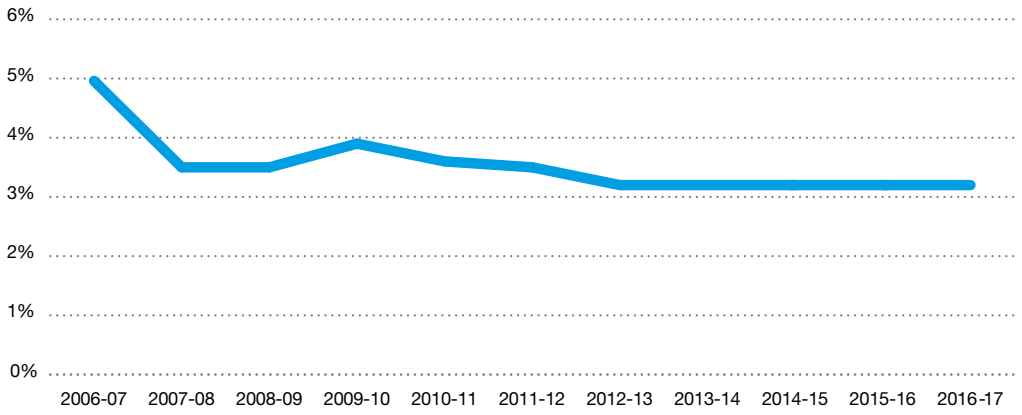
CMI obtains independent actuarial advice each year on outstanding claims liabilities and the premium pool required for the coming financial year. It is based on collecting the necessary funds to pay for policy and claims services for employers and workers as well as necessary statutory services.

The premium pool is determined by a number of factors, including the Target Premium Collection Rate (TPCR). Premium collected is the key source of funding, together with investment earnings, to provide for claims costs and associated expenses emerging from each year of employer coverage provided by the Scheme.

The TPCR for a policy year represents the proposed premium to be collected over all insured employers, expressed as a percentage of covered wages. Despite the reduced assessable wages pool the target premium collection rate was maintained at 3.2 per cent for the fourth consecutive year and will remain unchanged for the 2016-17 policy year.

Working with our coal partners to improve injury prevention and injury management practices has contributed towards the stable premium level in recent years.

Target premium collection rates



When Coal Services commenced in 2001, the Target Premium Collection Rate was 11.52 per cent. Since then there has been 72.2 per cent reduction in the target premium collection rate.

Workers Compensation *continued*

New premium system

CMI is committed to continuous improvement to deliver best practice workers compensation insurance and claim and injury management services that provide an overall benefit to the NSW coal industry.

As part of this commitment, CMI implemented a new premium system during 2015-16 for the 2016-17 policy year. This followed an extensive review and consultation process with policyholder groups and other stakeholders.

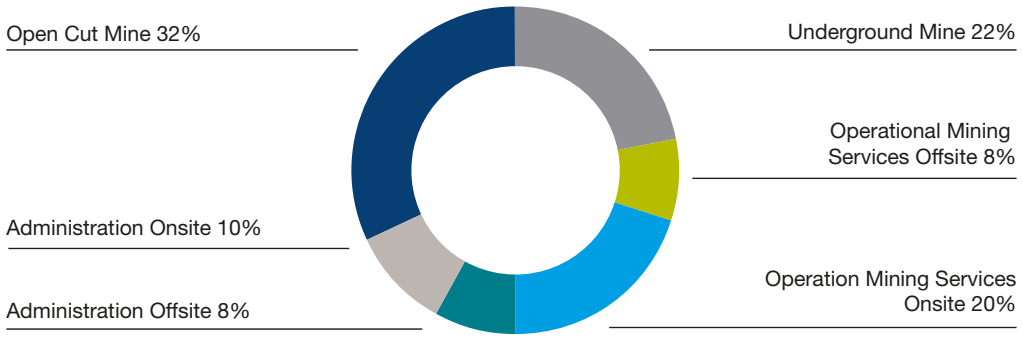
The objective is to ensure the CMI Scheme's premium system is fair, equitable, and responsive to different levels of risk and claims experience across the industry. The new premium system will also help ensure the Scheme remains financially viable and sustainable.

Four new policy risk categories were introduced as part of the new premium system to better reflect the specific risk exposures associated with different activities undertaken across the industry. The primary categories of risk are Open Cut, Underground, Operational Mining Services and Administration. There are also two sub-categories for Operational Mining Services and Administration; being for Offsite and Onsite services.

The new premium system no longer provides separate risk category rates for contractors, labour hire and consultants as most insured persons are likely to be working in one of the aforementioned categories.

Information concerning the changes was distributed to policyholders prior to the commencement of the 2016-17 policy year. This included explanations on how the new system would affect premium, new premium rate calculations and annual renewal packs.

Distribution of CMI policies according to the new policy risk categories



New risk categories were introduced as part of the new premium system to better reflect specific risk exposures.

Workers Compensation *continued*

Wages pool and premium pool

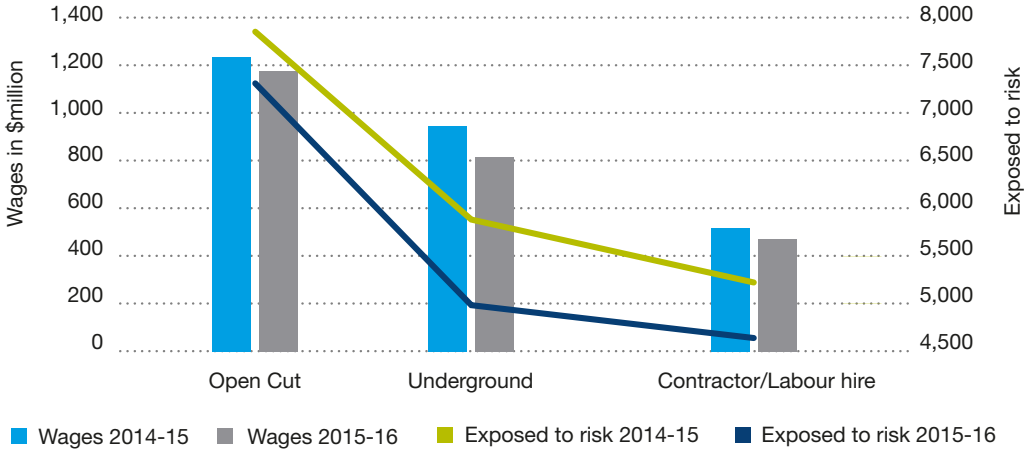
The introduction of the new premium system, and in particular the new policy risk categories, will ensure better classification of policies' assessable wages based on their predominant activity. This resulted in movement across policy risk categories between the actual assessable wages for 2015-16 and the projected 2016-17 assessable wages.

The forecast wages for the 2016-17 year of $2.8 billion compared to the $3.1 billion actual wages for the 2015-16 period suggest a further 10 per cent reduction in wages across the coal mining sector which is reflected in the projected premium pool.

Wages analysis

Full-time employment continued to decline from the peak of previous years with the majority of job losses coming from underground production. In 2014-15 there was a 19 per cent reduction in the number of underground workers and a further 16 per cent reduction in 2015-16. There was also a change in Contractor and Labour Hire employment where the exposed to risk number decreased by 10 per cent from the previous year.

Wages analysis 2014-15 vs. 2015-16



Claims services

CMI aims to ensure all notifications and claims are managed to an appropriate outcome through a focus on early initial assessment, case management, relevant return to work initiatives and meeting the requirements of applicable legislation.

The claims frequency rate for the year ended 30 June 2016 was 5.6 per cent. Just over a decade ago, 1 in 4 workers sustained a workplace injury. The claims frequency rate has consistently declined since that time to less than 1 in 17 workers – a reduction of 78 per cent.

There was an 11.2 per cent reduction in the number of new claims received by CMI in 2015-16 compared to the previous financial year. Significant injury claims accounted for 58.7 per cent of the 1,279 new claims received during the year; an increase of 5.3 per cent. Significant injury claims are where the worker is likely to be incapacitated for a period of seven days or more.

Workers Compensation *continued*

Claims management

The complexity or seriousness of the claims also increased, presenting greater strategic challenges for the CMI Case Manager in restoring the injured worker to health and work readiness. For example, the number of new claims where psychological factors have been identified as secondary to the primary injury has been increasing over the last 18 months and may be a contributor to weekly benefits extending beyond traditional return to work timeframes.

This is shown by the deterioration in the number of claims that have been finalised within the first 26 weeks.

Injury Management Specialists (IMS) are located in each office to work closely with Case Managers to assist in the management of these claims. IMS have particular skills in working with doctors and psychologists and, with their industry experience, are able to guide discussions and decisions around return to work in and around a coal mine.

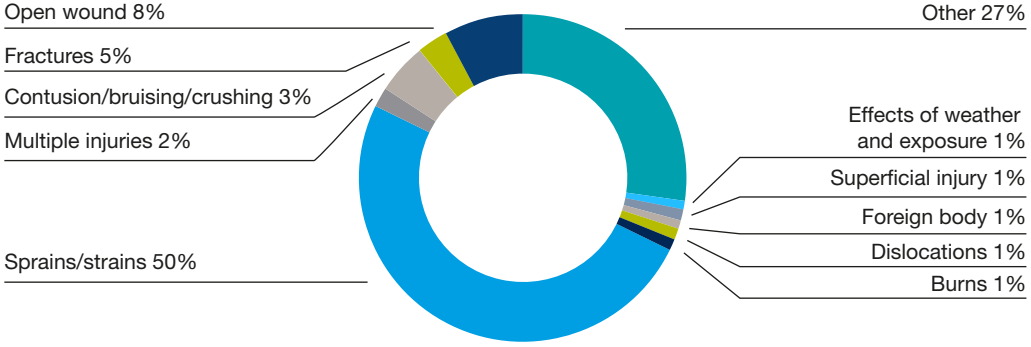
	2011-12	2012-13	2013-14	2014-15	2015-16
All claims reported during the year	2,068	2,029	1,823	1,441	1,279
Significant injury claims reported	1,211	1,104	1,022	714	748
Current, open claims at start of each year	1,417	1,758	2,133	2,207	1,682
Claims finalised within 26 weeks – Significant Injury	81%	84%	81%	80%	77%

Injury trends and profiles

Nature of injury

Sprains and strains remained the most commonly-incurred injury in 2015-16, accounting for 635 claims of all claims received. Of these, 471 (74 per cent) were significant injury claims; an increase of 25.6 per cent compared to the previous year.

Nature of injury (all claims received in 2015-16)

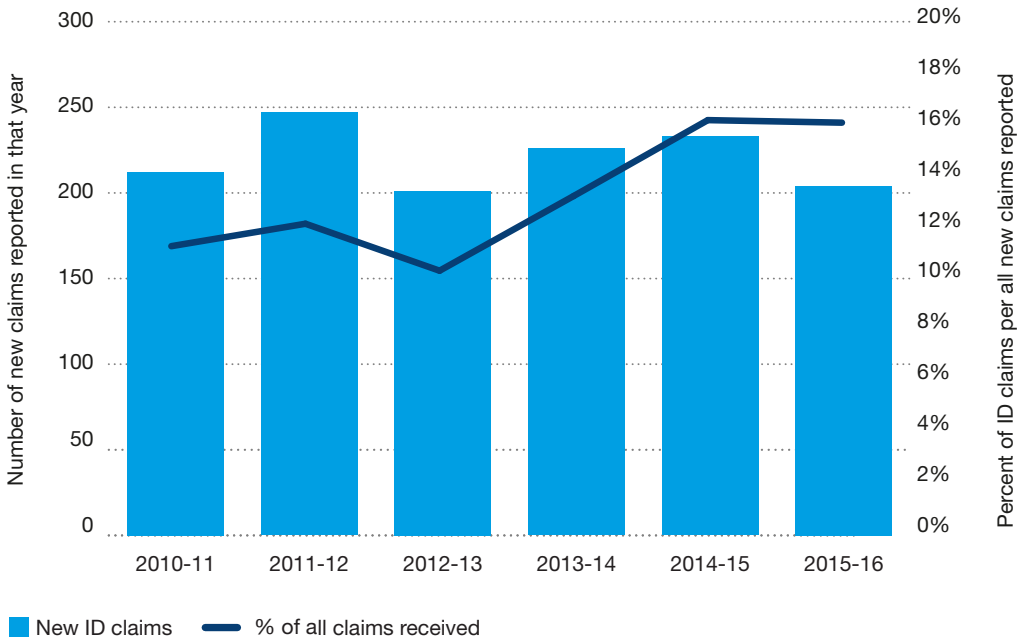


Workers Compensation *continued*

Industrial deafness claims

Industrial deafness (ID) claims have remained steady for the last two years and represented 16 per cent of all new claims received in 2015-16. The average cost per ID claim has increased 39 per cent since 2010-11 to $8,930. Factors contributing to this increase include technological advances and development of digital devices and the rising costs of hearing appliances over time.

Industrial deafness claims reported



Not all industrial deafness claims received by CMI will reach the required 6 per cent binaural hearing loss threshold that would lead to a compensable payment. On average, only 40 per cent of the ID claims have achieved the required loss threshold.

Psychological injury claims

Claims for psychological injury during 2015-16 accounted for approximately 2.3 per cent of all new claims in the Scheme yet, on average, incurred a considerably higher claims cost. This growing cohort of claims continues to be a priority area for CMI.

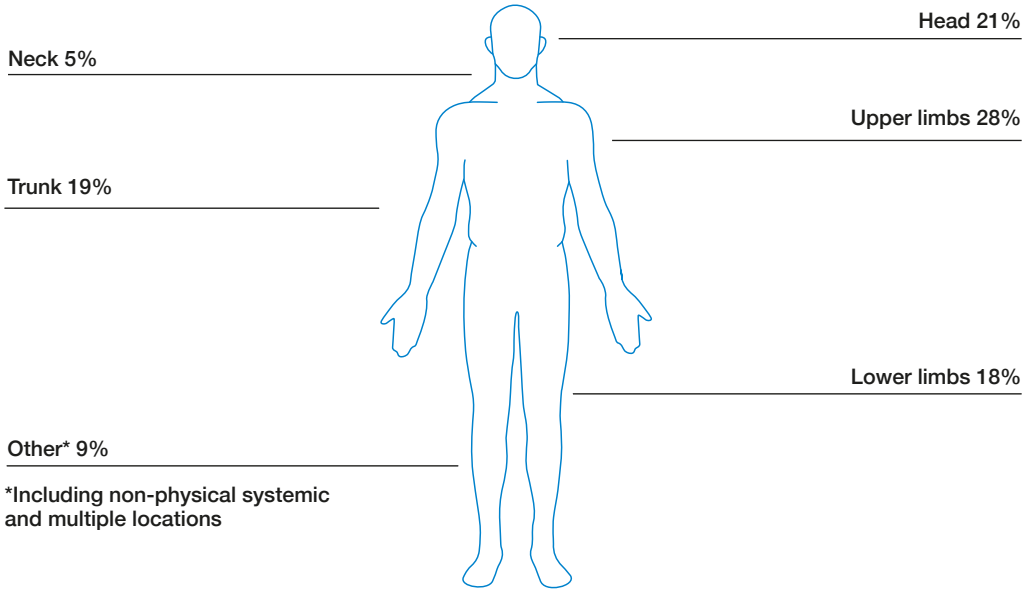
Year that the claim was reported	Average incurred cost per psychological injury claim	Average incurred cost per all other significant injury claims
2015-16	$75,932	$23,288
2014-15	$124,612	$43,604
2013-14	$126,997	$49,137

This table presents a comparison of the cost to manage a psychological injury claim compared to the average cost of all other significant injury claim types. These costs are developed (in terms of their total cost since their date of injury) and have been measured as at 30 June 2016.

Workers Compensation *continued*

Location of injury

The body map shows the parts of the body affected for all claims received during 2015-16.

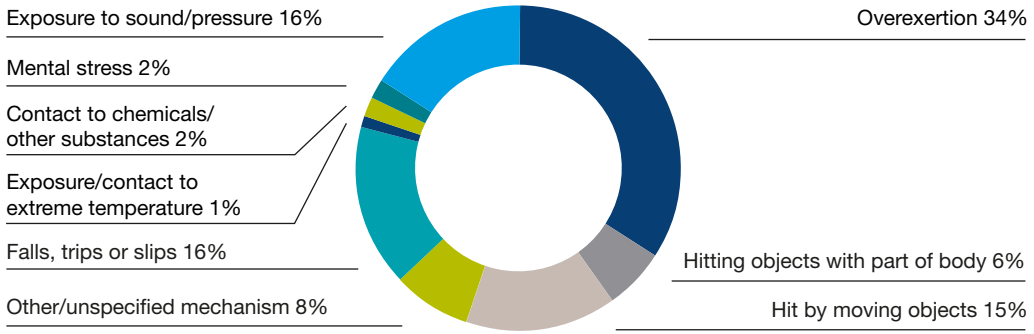


Mechanism of injury

The mechanism of injury is best described as the circumstance in which an injury occurs, for example, sudden deceleration, wounding by a projectile, or crushing by a heavy object. The mechanism of injury helps the doctor and/or the allied health professional to understand what mechanical forces may have been in play to cause the injury and therefore assist in the diagnosis of the injury. This information gives an indication as to the potential injury recovery timeframes and also guides the most appropriate treatment. This information also assists the employer to better understand risks within their workplace that need to be addressed or mitigated.

In reviewing the range of potential mechanisms of injury it was found that overexertion, slips/trips/falls, and being hit by moving objects are three of the largest risks in the workplace to cause injury. These factors can all be managed through safe, effective work practices.

Mechanism of injury (all claims received in 2015-16)



Workers Compensation *continued*

Claims costs and payments

In 2015-16, the net total payment for all CMI claims was $79.5 million. This represents a 0.9 per cent increase over the $78.8 million paid in 2014-15 which was due, in part, to increased medical costs, legal costs and industrial deafness payments. The future claims liability was negatively affected by the economic factors. As a consequence, the Scheme actuaries have strengthened the outstanding claims provision by $8 million to $384 million.

Other CMI Initiatives

Helping industry engage apprentices

A Skills Incentive Scheme was launched during the 2015-16 policy year. This scheme is designed to encourage employers in the NSW coal mining industry to take on apprentices by providing an incentive payment of $2,000 per eligible apprentice at the end of a policy period and on receipt of actual wage declarations. The first payments will be made after 30 June 2016 for the 2015-16 policy year for an estimated 400 apprentices.

One Vision, One Team

CMI commenced an initiative called ‘One Vision, One Team’ which aims to provide customers with consistent, quality customer service. By increasing collaboration between the insurance services and claims offices, the teams are better equipped to understand and respond to customer enquiries in an informed and timely manner.

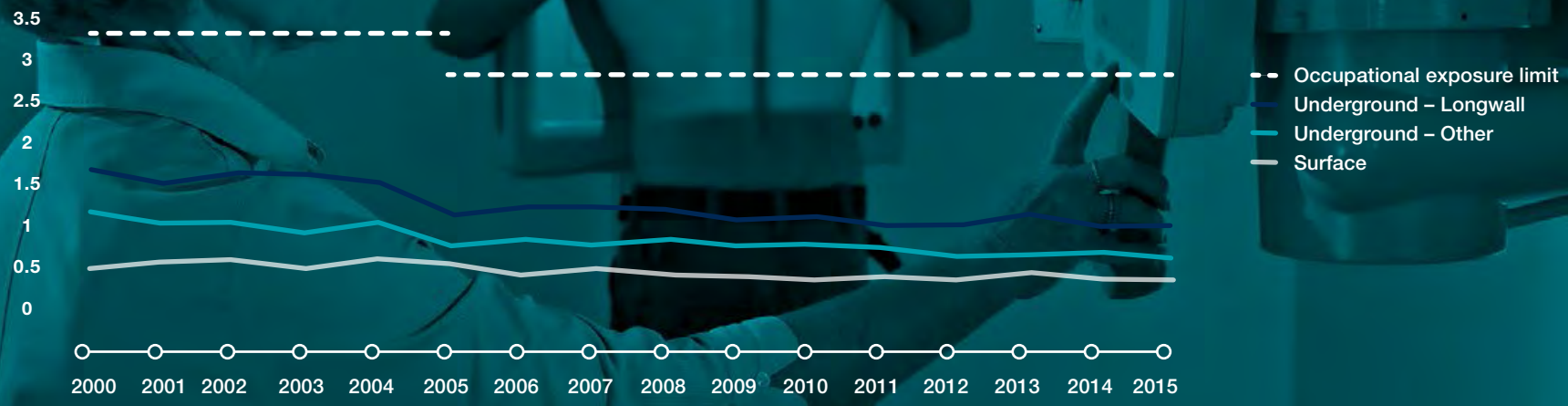
Improving systems and processes

- From mid-2015, customers were encouraged to complete and return their monthly wages declarations as soon as data was available, rather than waiting until the 15th of each month (the deadline for submissions). Processing the monthly returns prior to the 15th of the month enabled premiums to be allocated in a timely manner and alleviate any delays with reconciliations. For the first time, all monthly wages were submitted prior to the end of the financial year due date.
- In June 2016, all policy renewals for the 2016-17 policy year were emailed to policyholders, providing savings in time and production costs. The renewal packs included an interactive annual wages declaration enabling policyholders to complete and return the documents using desktop applications.

Health and Hygiene

Coal Services is in a unique position to collect, analyse and report on workplace health risk data across the NSW coal industry. This information is reviewed on a regular basis to monitor and identify emerging trends and areas requiring focus, enabling Coal Services to partner with industry to help minimise health and safety risks.

Respirable dust exposure profile (mean) trends NSW coal



CS Health

CS Health provides a range of workplace health services to protect workers in the NSW coal industry. These essential services focus on prevention, monitoring and early detection of occupational illness.

When injury or illness does occur, our treatment and rehabilitation services can help workers to recover and have a safe and durable return to work in the best possible timeframe.

NSW Coal Order 41: monitoring health

Order 41 requires employers of coal mine workers and operators of coal operations in NSW to ensure their workers undergo pre-placement medicals and periodic health surveillance medicals.

Pre-placement medical results are used by employers to ensure that applicants for roles are able to perform the inherent physical requirements of the proposed role safely, as well as ensuring that no underlying medical conditions exist that may impact on a worker's safety in the workplace. Pre-placement medical assessments are also vital to provide baseline health measures for ongoing health surveillance.

Despite the coal industry experiencing its fourth consecutive year of contraction, attendance at CS Health pre-placement medicals increased 13.8 per cent to 3,790 in 2015-16.

Periodic health surveillance is used to monitor workers for any adverse health effects as a result of hazardous exposure in the workplace. As some occupational illnesses take many years to develop, regular health surveillance allows for early detection and intervention with the goal of ensuring that a worker can continue to work safely and maintain their wellbeing.

13.8%

Increase in attendance at pre-placement medicals

In contrast to the rise in pre-placement medicals, periodic health surveillance attendance numbers dropped 9.5 per cent to 5,984. This decrease reflects the cyclical nature of periodic medical assessments, as well as lower total workforce numbers.

Under Order 41, coal workers must also attend a periodic chest x-ray to assist in detecting any abnormalities of the lungs or heart that may require further assessment. X-ray facilities are located at our CS Health offices in Singleton and Lithgow where 2,355 chest x-rays were performed in 2015-16. A further 969 chest x-rays were carried out by external Radiology Practices for the Mudgee, Speers Point and Woonona offices.

CS Health *continued*

Industry health and wellbeing

Data collected through pre-placement and periodic health surveillance medicals shows the industry's workforce increasingly displays the physical characteristics associated with obesity and related lifestyle diseases. Age, fatigue and stress are also factors demanding focus due to their health and safety implications.

CS Health's data has been the foundation for a number of projects and initiatives designed to reduce the impact of these issues and demonstrate effective collaboration with industry.

Obesity Blueprint

More than 80 per cent of the NSW coal mining workforce is classified as overweight or obese. Medical studies show that being overweight can lead to high cholesterol and blood pressure, cardiovascular disease, diabetes and some cancers. There is also increased risk of musculoskeletal injury.

An initiative of the NSW Minerals Council, the *Blueprint for the Management of Overweight and Obesity in the NSW Mining Industry* is the result of collaboration between industry and health professionals, including CS Health, to provide an industry-wide framework to promote effective weight management. This Blueprint identifies key directions for the industry and recommends evidence-based strategies to reduce and prevent obesity by promoting good health and wellbeing, improving the capacity of the industry response, encouraging a culture that challenges the normalisation of obesity, and providing support systems and strategies to reduce levels of obesity.

Working with industry to reduce injuries

Work-related musculoskeletal disorders (WMDs) are the most common injury across the industry, and these are generally associated with manual handling issues. CS Health reviewed injury trends and health data and determined that possible risk factors for WMDs included biological, psychosocial and environmental and workplace organisational factors.

In 2015, CS Health commenced a study with the aim of using this information to identify trends and risk factors as predictors of musculoskeletal injury by adding musculoskeletal screening to the standard periodic health surveillance medical. It was intended that the findings would allow for a targeted intervention to be designed to reduce the occurrence of WMD injury.

A sample of 138 workers from a single mine site were assessed during the study. Early results arising from the musculoskeletal screening and other assessments showed reduced performance relating to leg and upper limb restrictions. This may indicate that interventions designed to improve upper and lower limb strength and balance could contribute to injury prevention in the future.

Results are being collated and are due to be released late 2016.

University of Newcastle task rotation study

CS Health and Centennial Coal entered into a pilot study by the University of Newcastle to investigate whether task rotation in underground mines can help to reduce injuries. This was based on evidence that task rotation had been found to be an effective intervention in the reduction of musculoskeletal injuries and fatigue; however there was no research into its application in coal mining.

The pilot study found that task rotation improved psychological and environmental domains of quality of life and qualitative results indicated that the intervention was viewed positively by crew and management. The pilot also demonstrated that a three-segment rotation schedule is feasible and practical within the confines of a dynamic coal mining environment.

A further twelve-month study was commissioned on completion of the pilot to provide data and insights that align daily work tasks with appropriate interventions; one of which may be task rotation to minimise the risk of injury. The study commenced in May 2016 with results expected to be released mid-2017.

Interventions designed to improve limb strength and balance could contribute to injury prevention in the future.

CS Health *continued*

Other workplace health services

Other medicals

In addition to statutory health surveillance, CS Health performs a number of workplace medicals to support the health and safety of workers in coal mining and other industries.

Site access medicals are usually requested for contractors to meet specific site requirements. CS Health performed 2,474 site access medicals during the year.

1,061 pre-placement medicals were performed during the year for workers not directly employed within the coal industry.

Mines Rescue and Emergency Response Team medicals are used to determine whether or not rescue personnel have the required level of fitness to perform these specialist activities. CS Health completed 296 Mines Rescue medicals in 2015-16.

Personal Protective Equipment FIT-testing

Testing of personal protective equipment (PPE) is an essential component to protect against exposure to workplace hazards such as noise, dust, gas and fumes.

Noise-induced hearing loss continues to be an issue for the NSW coal mining industry, with industrial deafness claims accounting for 16 per cent of all new claims received by Coal Mines Insurance in 2015-16. E-A-Rfit validation helps to ensure that PPE is correctly fitted to protect against excessive noise exposure. During the year CS Health performed 792 E-A-Rfit validations of hearing protection.

85 respiratory fit tests were also conducted during the year to safeguard against exposure to airborne dust, gas and fumes.

Functional capacity evaluations

Functional capacity evaluations are generally conducted as part of the recruitment process or as part of a structured return to work program following injury to assess a worker's physical ability to perform tasks typical to their role. They may also help to identify focus areas for preventative strategies and education to reduce workplace injuries.

The number of functional capacity evaluations performed by CS Health increased 7 per cent to 1,856 in 2015-16.

Drug and alcohol screening

The mining industry has an instilled safety focus with sites having strict drug and alcohol policies and procedures in place that prohibit the use of illegal substances. In 2015-16, CS Health collected 12,528 drug and alcohol screening samples.

These screening services assist employers in meeting their obligations under the Coal Mines Health and Safety Regulation to implement measures to eliminate or control risks from the consumption of alcohol or drugs in the workplace and ensure workers are fit for duty.

Immunisations

Workplace immunisation programs are an important aid to help protect workers against illness and diseases such as hepatitis A and B and tetanus. CS Health also conducts flu immunisation clinics between March and June each year. 5,071 vaccines were administered throughout the year.

CS Health *continued*

Occupational rehabilitation and treatment services

During the year CS Health continued to provide allied health treatment services, injury management and occupational rehabilitation to injured mine workers and other clients.

NSW State Insurance Regulatory Authority (SIRA) audits for CS Health's rehabilitation services were completed across all regions returning a 98 per cent (Level 1) compliance rating.

The re-emergence in Queensland of black lung disease was a sobering reminder that vigilance must be maintained.

Managing business improvement and risk

Continuous improvements in systems and processes help to enable a consistent customer experience and allow CS Health to remain at the forefront of work health and safety.

In 2015-16 the Quality team was renamed the Business Improvement and Risk team in acknowledgement of their wider focus outside of ISO systems certification. They work in conjunction with the medical team to develop and audit all medical processes, and to drive continuous improvement. The team works with Coal Services' Internal Audit team to conduct annual audits of CS Health to examine both administrative and clinical processes.

Although our existing practices have successfully safeguarded against occupational disease, CS Health is committed to continuous improvement and ensuring best practice. The re-emergence in Queensland of coal workers pneumoconiosis (black lung disease) in late 2015 was a sobering reminder that vigilance must be maintained.

Earlier this year, CS Health commissioned two independent reviews to ensure the rigour of our health surveillance systems and processes. These reviews verified the quality and strengths of our systems. As part of these reviews approximately 340 chest x-rays were sent to an independent body for review against the ILO standard. The random sample was taken from around 5 per cent of periodic health assessments conducted since 2012. A further 60 chest x-rays from the last 20 years were included.

CS Health also commenced discussions with a leading professor from The Thoracic Society of Australia and New Zealand to gain their expert view on what would constitute the most effective evidence-based health surveillance program for the NSW coal industry in the 21st century. Discussions focused on the optimum frequency of chest x-rays for coal workers, and enhancements to respiratory testing such as including lung function rather than simple spirometry alone. An industry discussion paper outlining proposed changes to these aspects of Order 41 was developed following advice from this expert body.

Occupational Exposure Monitoring

Coal Mines Technical Services (CMTS) offers a range of vital occupational hygiene services including the monitoring of airborne dust and testing of noise, vibration, lighting, welding fume and diesel particulate levels.

All services are performed by our fully trained and certified team with all assessments conducted to the appropriate Australian or international standards.

Risk profiling using similar exposure groups (SEGs)

CMTS continues to collate, analyse and report on contaminant exposure data using NSW Coal Similar Exposure Groups (SEGs). A SEG is a group of workers with the same general exposure to health risk due to:

- the similarity and frequency of the tasks that they perform
- the similarity of the materials and processes with which they work
- similarity in the way that they perform tasks.

Categorising workers into SEGs allows more detailed risk profiling and benchmarking to be undertaken and reported back to operations and industry.

Order 40 – longwall dust suppression plans

NSW coal mines operating by longwall mining methods are required to prepare and submit to Coal Services an Order 40 application, detailing all dust abatement controls that they intend to have operational on the proposed longwall block to limit dust creation and personnel exposure. The manager or owner of the coal mine must obtain the consent in writing of the Coal Services Board prior to the commencement of production in any longwall block. Once production commences, an audit of these plans must be submitted to ensure that all provisions of the application, and any conditions within the approval, are in place and operational. Compliance with Order 40 and other dust control measures is an essential component of protecting workers from occupational disease.

Twenty-two dust suppression plans were received and approved by Coal Services during the year.

Occupational Exposure Monitoring *continued*

Order 42 – airborne dust exposure assessments

A comprehensive, targeted monitoring program is conducted in NSW to determine whether dust levels at coal mines are maintained below the approved airborne dust exposure limits. Regular onsite dust monitoring and analysis provides essential data for mines to review the effectiveness of dust control measures and identify areas or tasks that potentially present a respiratory health risk for workers.

Order 42 allows Coal Services to enter coal mine operations for the purposes of statutory dust monitoring and other functions relating to airborne dust exposure assessments.

Statutory respirable and inhalable dust samples were taken from the breathing zones of 4,058 NSW mine workers in 2015-16, down from 4,516 in 2014-15.

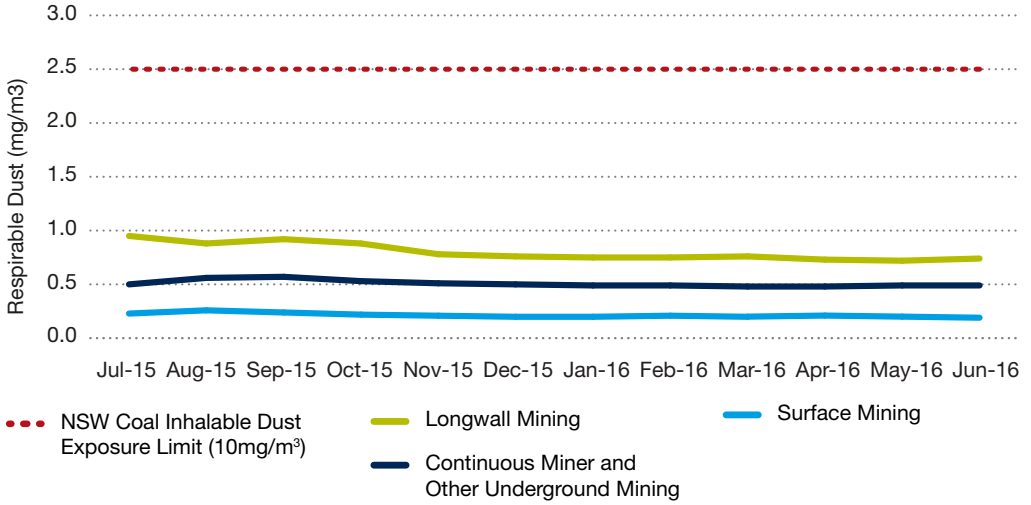
2,542 workers were sampled for respirable dust, with 2.4 per cent exceeding the specified respirable dust limit. This is an improvement on the previous year's results that returned an exceedance rate of 3.7 per cent.

Increased monitoring and analysis of respirable crystalline silica is a major focus in the respirable dust area. This monitoring assists operators to identify areas and activities of higher risk and to continue to drive further improvements.

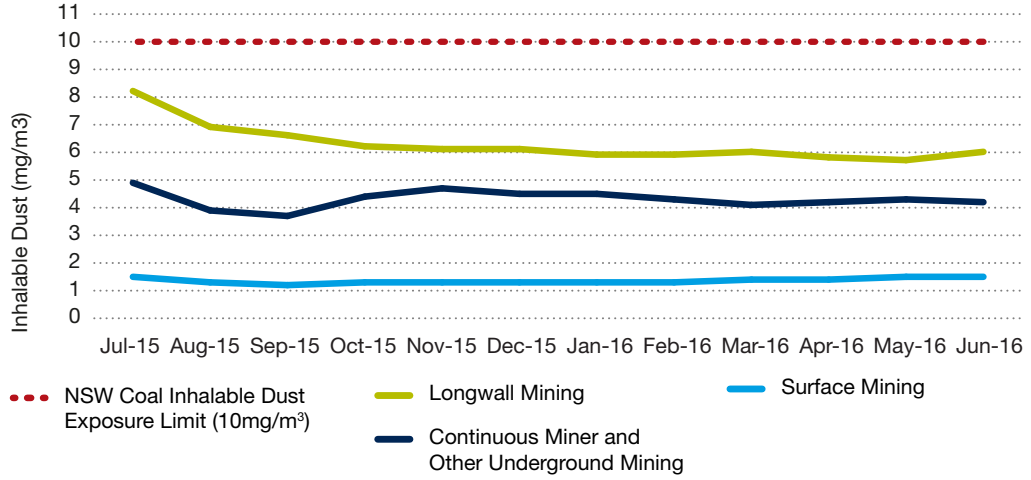
1,516 workers were sampled for inhalable dust, with 5.9 per cent exceeding the specified inhalable dust limit. This is an improvement on the previous year's results that returned an exceedance rate of 12.6 per cent.

All exceedances, particularly those relating to respirable crystalline silica, were reviewed to identify contributing factors and opportunities for improvement. Operator positioning appeared to be a significant contributing factor to results exceeding the airborne dust exposure limits.

Average Respirable Dust Exposure Levels July 2015 – June 2016



Average Inhalable Dust Exposure Levels July 2015 – June 2016



Occupational Exposure Monitoring *continued*

CMTS worked closely with mine operators to review the effectiveness of their dust controls and work procedures and provided guidance on dust abatement strategies using additional tools such as real-time monitoring to identify dust sources and best practice operator positioning. Dust education programs continued at mine sites across all regions to ensure workers are educated and informed to be better placed to make smart choices. In many mines, these education sessions have had immediate positive results with mineworkers, particularly in the areas of maintenance standards, operator positioning and respiratory protection compliance.

Mines that have undertaken such reviews and implemented effective controls and training saw significant improvements in their exposure results.

Independent, accompanied monitoring continues to be the cornerstone allowing CMTS to work closely with customers to identify risk and go 'beyond compliance' by providing practical solutions that keep our mineworkers out of the dust.

Diesel particulate matter (DPM)

Sampling numbers for DPM remained steady in relation to 2014-15 despite lower industry workforce numbers.

The exhaust fumes from diesel-powered equipment pose a potential risk for workers. The Work Health and Safety (Mines) Regulation 2014 states that if diesel engines are used underground, that the general body of air in which persons work or travel has a concentration of diesel emissions that is as low as reasonably practicable.

Mine Design Guideline 29 (MDG 29), 'Management of Diesel Engine Pollutants in Underground Environments', further specifies that workers should not be exposed to levels of DPM in the form of Elemental Carbon (EC) at greater than 0.1mg/m^3. A revised MDG 29 is expected to be released in 2016.

Operators can better understand the risk profile of their workers by using personal monitors to measure DPM exposures. The data can then be used to identify areas of risk and implement effective controls.

- CMTS conducted 559 individual personal samples for DPM during the year
- A further 167 static samples were taken that can provide useful insight into the potential exposure risk in various areas of a mine or when conducting specific tasks e.g. belt moves, longwall relocations.

CMTS also provided customers with assistance to develop diesel emission management plans to help minimise worker exposure to DPM.

559 **individual samples for DPM during the year were taken**

Occupational Exposure Monitoring *continued*

Industry working groups

The Standing Committee on Airborne Contaminants and Occupational Hygiene (known as the Standing Dust Committee or SDC) is a sub-committee of the Coal Services Board and has operated in some form since 1954. The purpose of the SDC is to ensure reduced exposure to airborne contaminants and improvements in occupational hygiene.

Membership is comprised of representatives from Coal Services with hygiene, health and technical expertise, persons nominated by the Chief Inspector with mining and engineering expertise, as well as representatives from the CFMEU, NSW Minerals Council and Mine Managers Association.

The functions of the SDC are to:

- monitor the results of nominated hazard sampling
- evaluate results and discuss improvement strategies
- identify hazards which may present emerging health issues
- research improved control strategies and methods for nominated hazards
- educate mine personnel in control of nominated hazards
- report back to industry stakeholders.

The SDC met five times during the year at North Wambo Underground, Bloomfield Open Cut, CMTS (Nth Wollongong), Newcastle Mines Rescue Station and Clarence Colliery. The purpose of the mine visits was to promote the work of the SDC and to investigate and inspect issues that had been identified through routine statutory monitoring.

With the recent increased industry focus on occupational lung disease, the SDC has been identified as having made a significant contribution to improved overall outcomes in this area. Over the last 12 months, the SDC has continued to work with industry to provide guidance and assistance through Information Bulletins and improved presentation of data to industry stakeholders. Bi-monthly meetings continued to see the SDC host a wide variety of guests from manufacturers to government and regulatory officials, all keen to observe what is widely considered to be a valuable and integral part of the collaborative model that keeps occupational lung disease under control in the NSW coal industry.

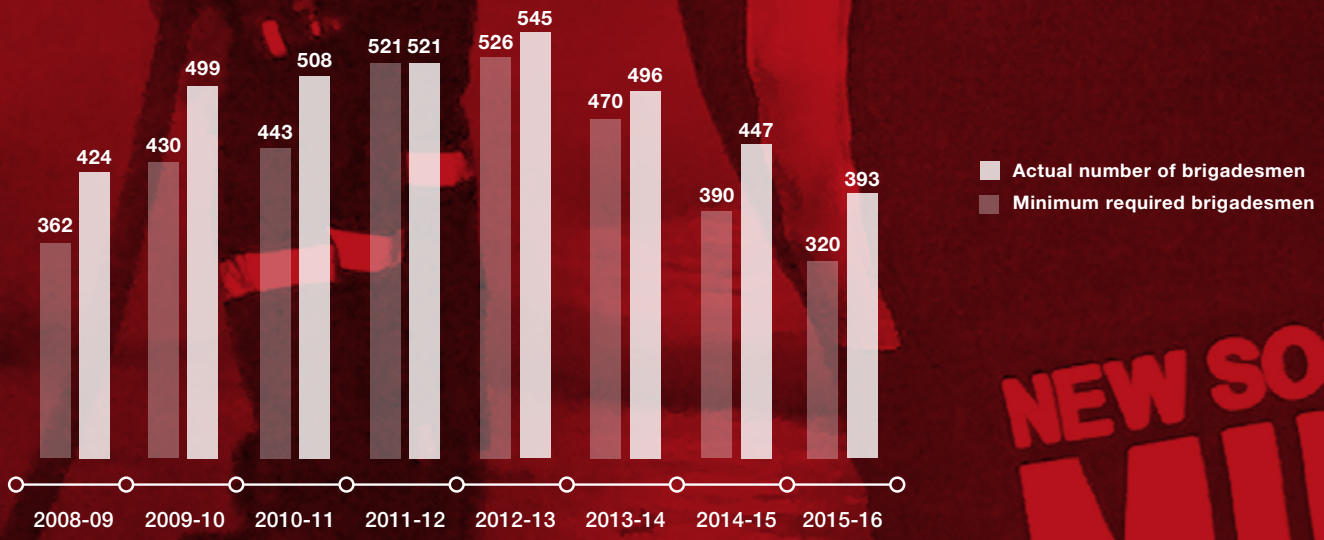
The SDC has been identified as having made a significant contribution to improved overall outcomes.

Emergency Response

NSW Mines Rescue (Mines Rescue) is responsible for training brigadesmen in rescue techniques and to provide expert advice and control in the event of an incident. They are also charged with ensuring emergency response procedures and guidelines are in place, tested and ready to be deployed.

They are supported by Coal Mines Technical Services (CMTS) who provide critical technical expertise when rapid real-time data and analysis is required for mines rescue deployment.

Mines Rescue brigadesmen



Emergency Response

Incident response

It is pleasing to report that in the last 12 months there were no incidents requiring Mines Rescue response. This result is testament to the safety focus being maintained in the NSW coal industry.

Mines Rescue is responsible for activating personnel, equipment and systems to respond to any emergency situation arising at NSW coal mines. They are supported by volunteer brigadesmen from underground coal mines across the state who are highly skilled in an array of specialised tasks and rescue techniques.

The specialist training provided by Mines Rescue is instrumental in bestowing brigadesmen and surface emergency responders with safety leadership skills that they can apply in the workplace. Whilst being ever prepared and ready to respond, the knowledge of mining hazards embedded in the brigadesmen ensures they continuously and silently play an important role in preventing incidents from occurring; helping to support a proactive safety culture onsite.

Nearly 10% of brigadesmen have been recognised for 20 years or more active service.

Brigadesmen numbers

To maintain response capability, a minimum five per cent of the underground workforce (plus full-time equivalent contractors) must be trained to provide mines rescue support. At the end of June 2016 there were 393 colliery-nominated brigadesmen in NSW. Although this number is down on previous years and can be attributed to changing workforce numbers, it remains above the Mines Rescue Board's minimum requirement. Nearly 10 per cent of brigadesmen have been recognised for 20 years or more active service.

It is essential that brigadesmen be assessed as fit, competent and capable of providing emergency services in the event of a mining emergency or incident. New recruits are required to complete a ten-day induction at Mines Rescue stations. Eleven new recruits completed this training during the year. Attendance at six rounds of training each year is also a necessity to maintain skills and active status.

Emergency Response *continued*

Response skills tested in emergency simulations

March 2016 marked the 90th anniversary of the first mines rescue station and the birth of a formal emergency response function for the NSW coal mining industry. This followed the Bellbird mining disaster of 1923 and subsequent Mines Rescue Act of 1925.

Fortunately, in today's safety focussed operations major incidents requiring emergency response are limited. Mines Rescue competitions are held regularly across NSW to assess skills and systems ahead of possible real-life challenges. Competitions such as these provide an opportunity for brigadesmen, surface emergency responders and first-aid personnel to practice their skills in a realistic, high-pressure environment. New trainees are encouraged to participate to learn from more experienced team members.

More than 330 brigadesmen competed at five regional competitions during the year. For the first time, the Western competition was held in the Mudgee-Ulan region where the format was expanded to include teams from open cut mines.

The winning teams of the underground competitions gained entry into the 53rd Australian Mines Rescue competition held on 22 October 2015. The annual event was held at Centennial Coal's Newstan Colliery and was co-hosted by NSW Mines Rescue and Queensland Mines Rescue. Peabody Energy's Wambo Mine were named overall winners of the event and will go on to represent Australia at the biennial International Mines Rescue competition in Canada in August 2016.

In addition to traditional mines rescue competitions, Coal Services' 3rd annual first aid competition was held in September 2015 at the Newcastle Mines Rescue Station. Twelve teams (51 first aiders) from mine sites across NSW competed at the event.

Competition details outlined below:

Competition	Date	Venue	No. Teams	Winners
Northern	26 June 2015	Newcastle Mines Rescue Station	8	Composite team
Hunter Valley (Underground)	17 July 2015	Glencore Ravensworth	6	Peabody Wambo
Southern	21 August 2015	South 32 Appin East	6	Appin Pink
Western	28 August 2015	Glencore Ulan West	9	Angus Place
Hunter Valley (Open Cut)	13 November 2015	Glencore Mt Owen	10	Glencore Bulga
NSW First Aid Competition	25 September 2015	Newcastle Mines Rescue Station	12	Glencore West Wallsend
Australian Mines Rescue Competition	22 October 2015	Centennial Newstan	8	1. Peabody Wambo 2. Oaky No.1 3. Appin

Emergency Response *continued*

Building relationships for emergency management

Emergency planning information sessions

In NSW, an Incident Command and Control System (ICCS) is used by all agencies who may be involved in an emergency response (including a coal mining emergency). These include the Police Force, Ambulance Service, Fire and Rescue, Rural Fire Service and Mines Rescue.

An ICCS helps to clearly define roles and a hierarchy of authority which then allows everyone to contribute to an effective and coordinated response. As an extension of the ICCS Operating Guidelines, the Department of Industry (Mines Safety) and Mines Rescue convened a series of Emergency Planning Information Sessions for local emergency services and local mining operations. These sessions enabled all parties to gain a better understanding of the mining environment as well as practical application of each group's roles and responsibilities in an emergency.

An ICCS helps to clearly define roles and a hierarchy of authority.

Critical controls for risk management

In June, Mines Rescue invited Dr Maureen Hassall, Associate Professor – Risk (University of Queensland) to conduct a workshop for Mines Rescue personnel on identifying critical controls. By understanding the methodology of this enhanced risk management technique, Mines Rescue is better placed to assist the industry to manage risk. Lessons learnt have been embedded in our risk management training courses and used where required during internal and external risk assessments.

Mines Rescue Working Group

The Mines Rescue Working Group is a collaborative forum facilitated by Mines Rescue to ensure all stakeholders within the industry keep abreast of and participate in determining the capabilities and capacity of the Mines Rescue service. The group meets four times a year and includes representation from the mining companies, the Mine Managers Association, the mines inspectorate and the unions.

Major enhancements this past year include communication and deployment systems and incorporating the requirements of the Mine Sub Plan into mines' upgraded ICCS. Mines Rescue also supported the Coal Services Health & Safety Trust-funded research and development of an Unmanned Aerial Vehicle (drone) that can enter a post incident mining environment for exploration purposes.

Standing out in a crowd

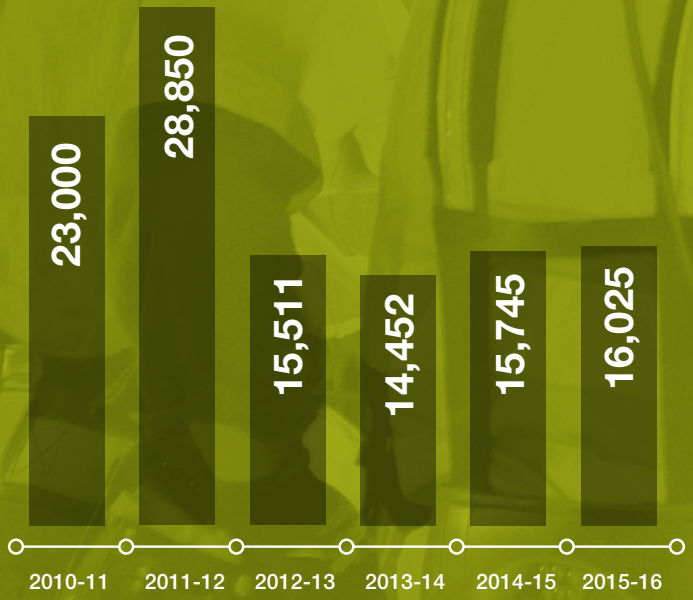
Instant recognition of authority is vital in an emergency. A distinctive red shirt was rolled out across all regions to distinguish Mines Rescue personnel from other, similarly clothed 'hi-vis' mine workers. This followed post-incident learnings where other emergency service providers, including the Police Force, had difficulty identifying Mines Rescue employees.

This simple initiative achieved immediate success. It is now a goal for the red shirt concept to progress to all underground brigadesmen such that in a time of need, mine workers will instantly recognise those who possess the advanced skills inherent in all mines rescuers. In times of emergency, this may make a significant difference.

Training

The NSW coal mining industry maintains one of the highest safety records in the world. As a Registered Training Organisation (RTO) and provider of specialist industry training, Mines Rescue plays a critical role in assisting workers and employers to manage risk and operate safely.

Attendance at Mines Rescue training courses



Industry education and training

Order 34

Order 34 requires each coal operation in NSW to have in place a Training and Competency Management Scheme (TCMS) that is approved by Coal Services and complies with the 'Guideline for Training and Competency Management Scheme.' Coal Services may periodically audit a coal operation's TCMS, or parts thereof. The aim of these audits is to ensure that employers conduct training as outlined in their approved TCMS and to improve the training and competency aspects of their Health and Safety Management System.

Coal Services' audit team assisted 13 mine sites to gain approval of their revised TCMS during the year. There was a temporary change of focus away from conducting routine audits of TCMS and instead, the team's attention turned to provision of individual advice, development of systems and audit tools and closer consultation with industry stakeholders. This was due to recent changes to relevant legislation and impending major changes to continuing professional development (CPD) requirements for mine officials.

A series of workshops was held to assist mines' training officers align their TCMS to the new requirements. The workshops, now in their second year, continued to grow in attendance and received positive feedback. Workshops were conducted in five regional areas (Mudgee, Singleton, Gunnedah, Wollongong and Newcastle) during May and June. A further combined workshop is planned for November 2016.

In the coming year, the audit team will return to performing normal site audits but with a closer examination on the effectiveness of training systems rather than simply meeting compliance requirements. This is an indication of the growing maturity of site systems and training staff.

Mines Rescue – a registered training organisation (RTO)

Mines Rescue is registered with the Australian Skills Quality Authority (ASQA) to operate as an RTO. Compliance with ASQA requirements ensure all training is developed and delivered to a national standard.

Mines Rescue also offer a range of courses which fall outside of the national training framework. These courses are tailored to specific safety outcomes required to meet unique industry and site needs.

13 mine sites gained approval of their revised TCMS during the year

Industry education and training *continued*

Meeting industry demand

To continue to meet industry training needs, Mines Rescue introduced several new courses throughout the year. This is in addition to an ongoing continuous improvement initiative whereby each existing course is reviewed annually and modified based on best practice and customer feedback.

Courses under development or released during the year included:

Incident Command and Control System (ICCS) course

An Incident Command and Control System (ICCS) course was delivered for the first time in 2015-16. The two-day course was developed to help mine operations manage an emergency and incorporate the widely accepted Australasian emergency response principles into their existing Emergency Management Systems (EMS). This followed the earlier release of a mine-specific 'ICCS Guide' by Mines Rescue.

To date, eleven coal mine sites and projects across NSW have completed the course since it was introduced.

Beyond the coal sector, work also commenced on a version of the ICCS course to meet the specific requirements of the metalliferous mining industry.

First aid suite of courses

'Advanced resuscitation' was added to Mines Rescue's suite of first aid courses in June. The course was introduced following industry requests to further develop the skills of their emergency responders and first aid officers. The course is relevant for all industries and complements the nationally-accredited courses of 'Provide first aid' and 'Provide cardiopulmonary resuscitation' (CPR).

The NSW Department of Education (DET) requires teachers in NSW schools to complete an annual anaphylaxis course and CPR refresher. Mines Rescue, who are listed on an approved provider panel, were engaged by the DET to deliver this training.

1,534 participants completed a first aid-related course during the year, including Coal Services employees.

Pain management

ASQA granted approval for Mines Rescue to deliver a pain management course through their RTO to complement first aid training. The course is targeted towards first aid officers and emergency responders who would be responsible for administering pain relief to casualties until medical assistance arrives. 108 participants have completed the course since it was introduced in May.

Improving the scope of fire-fighting qualifications

Mines Rescue developed an accredited Fire Warden course during the year. A non-accredited course has been offered for many years, however; customer interest from across all regions drove the team to design a new course to suit all industries. The course will be rolled out in 2016.

The existing three-day Fire Team Operations course was also reviewed and redesigned to incorporate additional competency units. The redesign also balanced the requirements for underground and surface operations. A one-day Fire Team Operations course was developed to suit the specific requirements of the non-mining sector. Using the three-day course as its base, the course includes just one fire-fighting unit of competency and can be delivered to any industry needing fire-fighting skills training.

Other training solutions

A new site access induction course was developed to cater to the needs of all Yancoal sites across NSW. 753 participants have completed the training since it was launched in September 2015.

Industry education and training *continued*

Overall training numbers

Overall attendances at Mines Rescue training courses increased 1.7 per cent on the previous year. This was mainly attributed to the introduction of new courses and take-up from non-mining sectors.

Of the 16,025 attendances (including brigadesmen training days), 2,972 were for accredited training. Training participant numbers for the Generic Underground Induction (GUI) continued to decline in line with the industry contraction, with just 133 attendances compared to 231 in 2014-15. There were 11,889 attendances at other training courses.

Beyond coal

The principal market for Mines Rescue's training courses is the NSW coal mining industry, however; a number of courses are available on a commercial basis. This work assists supplement income required to maintain services. During the year, Mines Rescue entered into relationships with WaterNSW and AGL power stations at Liddell and Bayswater. These relationships draw upon Mines Rescue's expertise to provide specialist assistance in incident response, training and complex confined space management.

There are numerous high-hazard industries now enjoying the first class training facilities available at each of the four regional Mines Rescue stations. These include fire training grounds, confined space and heights towers, simulated underground galleries, simulated marine facilities, lecture rooms and world leading virtual reality safety training platforms. In combination with our experience and expertise, we offer a superior blended learning experience.

Innovations to enhance the learning experience

Virtual reality (VR) continued to enhance the quality and flexibility of Mines Rescue training solutions.

The focus during the year was to further develop tools that allowed trainers to build their own scenarios, removing the need for specialist programmers and thus reducing the time and cost associated with development. The ROCk2 software was widely implemented to become the standard method used to create or adapt scenarios. The simple user-functionality enables trainers to edit scenarios in the classroom; allowing them to quickly demonstrate actions and consequences for improved training outcomes.

The DesktopVR system was developed as a new platform to run on a network of desktops or laptops. The portability of this system enables trainers to conduct VR training solutions at mine sites. Individual workstations provide trainees with a personal VR experience. DesktopVR was integrated into the annual Mines Rescue competition scenario agenda and debuted at the Australian Mines Rescue Competition in October 2015.

VR also featured at industry and community events. The portability of DesktopVR enabled many people to explore the mining environment on a laptop or through the new suite of Head-Mounted Displays such as the Oculus Rift.

Overall attendances at Mines Rescue training courses increased 1.7%

18.5%

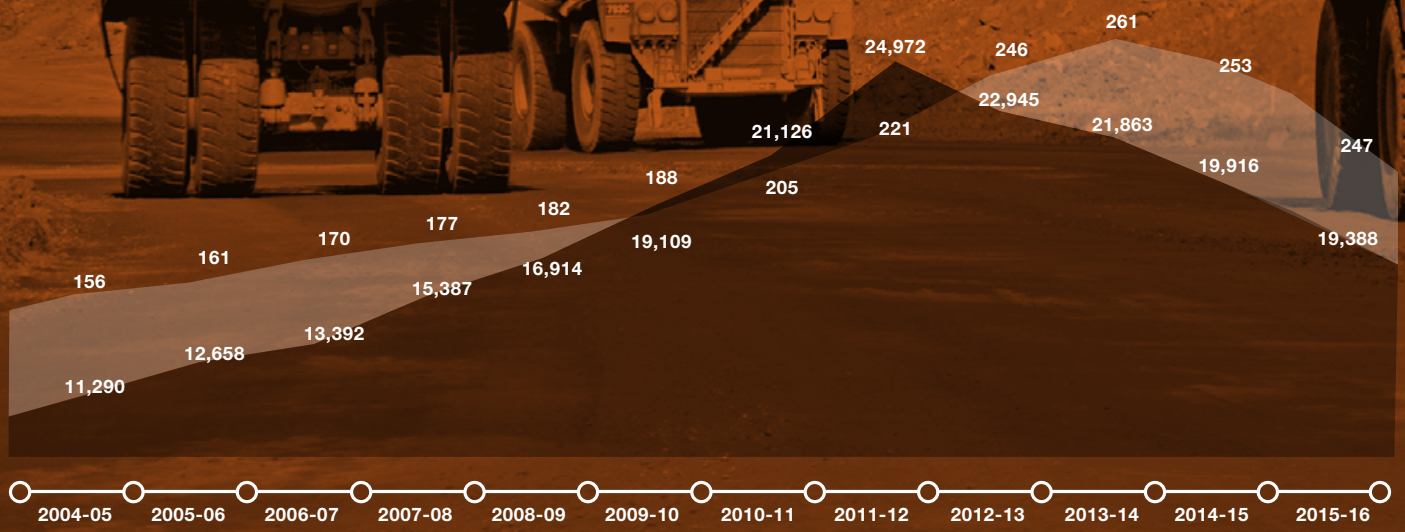
Of the 16,025 attendances (including brigadesmen training days), 2,972 were for accredited training.

Industry statistics

Coal Services Statistics' comprehensive current and historical data series describing the NSW coal industry provides a unique resource for the NSW coal mining industry and Government.

With the cooperation of NSW coal producers, shippers and coal consumers, the Coal Services' Statistics team is able to collect data on key aspects of the NSW coal industry.

Raw coal production vs. production employment



Industry statistics

Industry overview

After fifteen consecutive years of growth the twelve months to 30 June 2016 saw the tonnage of NSW coal shipped overseas fall. The value* of NSW coal exports continue to decline and the average value* per tonne was just $3 above the result achieved a decade ago.

The year also saw the downward trend of domestic coal sales reversed, as increased tonnages were delivered to NSW power stations and the Australian iron and steel industry to meet demand.

Overall raw and saleable coal production decreased for the second consecutive year and was accompanied by a further fall in the average number of production employees for the year. Annual productivity increased, measured as both output per employee and output per hour.

*Value, refers to the FOB value. Free on board value of exports includes the cost of transport to the port and loading for shipment.

NSW mining operations

At 30 June 2016, there was a production workforce of 19,388 at the 42 operating coal mines in NSW. During the twelve months to 30 June 2016, one new mine opened, two mines resumed production from their care and maintenance status (albeit on a short-term basis), three mines closed due to unfavourable market conditions and two closed due to exhausted reserves.

There were 19 underground mines (13 were longwall operations) and 23 open cut mines in operation at 30 June 2016.

42
coal mines operating in NSW as at 30 June 2016

19,388
production workforce in NSW

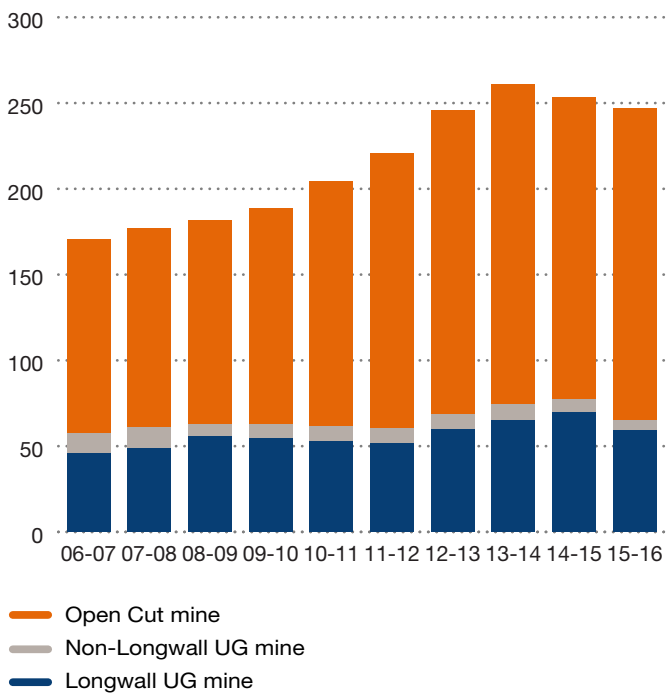
Industry statistics *continued*

NSW Coal Industry Statistics	03-04	04-05	05-06	06-07	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16
Number of coal mines at 30 June	52	55	58	60	60	60	62	61	61	55	51	44	42
Raw coal production underground mines (million tonnes)	49.3	51.9	52.2	57.2	61.3	63.1	62.8	62.2	60.5	69.0	74.4	77.4	65.5
Raw coal production open cut mines (million tonnes)	97.7	104.4	108.9	113.1	115.9	118.9	126.0	142.7	160.5	176.8	186.6	175.8	181.4
Raw coal production total (million tonnes)	147.0	156.3	161.1	170.3	177.2	182.0	188.8	204.9	221.0	245.8	261.0	253.2	246.8
Saleable coal production (million tonnes)	114.2	122.1	124.6	131.3	135.1	138.5	145.4	157.0	167.2	185.6	196.6	196.4	191.0
Coal sales to power stations within Australia (million tonnes)	26.6	27.8	28.5	30.4	30.8	30.6	28.5	27.8	23.6	24.2	23.1	21.9	22.5
Coal sales to others within Australia (million tonnes)	6.2	6.1	5.6	5.9	6.0	4.3	5.5	5.7	4.8	4.5	4.3	3.9	4.0
Coal sales within Australia (million tonnes)	32.8	33.9	34.1	36.3	36.8	34.9	34.0	33.5	28.4	28.7	27.4	25.8	26.5
Metallurgical coal exports overseas (million tonnes)	21.0	18.6	17.9	20.4	25.4	21.2	28.8	25.1	23.3	25.5	25.1	24.1	25.6
Steaming coal exports overseas (million tonnes)	64.0	68.0	71.9	71.1	75.1	82.1	81.1	96.7	113.0	129.8	142.2	148.8	144.0
Coal exports overseas (million tonnes)	85.0	86.6	89.8	91.5	100.5	103.3	109.9	121.8	136.3	155.3	167.3	172.9	169.6
FOB value of metallurgical coal exports overseas ($A billion)	1.1	1.3	2.0	1.8	2.6	5.7	3.7	4.5	12.4	3.3	2.9	2.6	2.5
FOB value of steaming coal exports overseas ($A billion)	2.6	4.2	4.7	4.4	5.7	11.4	7.5	9.6	12.3	11.7	12.3	11.8	10.7
FOB value of coal exports overseas ($A billion)	3.7	5.5	6.7	6.2	8.3	17.1	11.2	14.1	16.8	15.0	15.2	14.4	13.2
Average FOB value of metallurgical coal exports ($A per tonne)	50.77	71.81	110.89	88.37	103.15	272.48	129.85	178.85	190.49	129.01	114.49	107.73	98.38
Average FOB value of steaming coal exports ($A per tonne)	41.57	61.15	65.98	61.47	75.56	138.49	92.31	99.47	109.24	90.01	86.68	79.57	74.29
Average FOB value coal exports ($A per tonne)	43.85	63.43	74.92	67.46	82.52	165.95	102.16	115.80	123.11	96.41	90.86	83.5	77.92
Average number of employees insured (exposed to risk) at 30 June	10,736	12,272	14,726	16,691	17,628	19,312	20,383	23,407	30,595	30,065	27,740	25,324	23,528
Number of production employment at 30 June *	9,998	11,290	12,658	13,392	15,387	16,914	19,109	21,126	24,972	22,945	21,863	19,916	19,388
Saleable coal output per mineworker per year (tonnes)	11,380	11,680	10,240	9,970	9,430	8,410	8,130	7,750	7,000	7,830	8,830	9,260	9,460
Saleable coal output per mineworker per hour (tonnes)	5.82	5.73	4.95	4.87	4.74	4.15	3.87	3.87	3.49	3.91	4.46	4.98	4.99
Days worked per mineworker per year	279.2	291.1	295.6	292.2	284.4	289.6	286.7	286.4	286.6	286.0	283.2	265.7	270.8
Days lost per mineworker due to industrial disputes	0.2	0.3	0.1	0.1	0.1	0.0	0.2	0.4	0.1	0.0	0.3	0.0	0.0
Days lost per mineworker due to workers compensation	2.4	2.1	1.4	1.2	1.0	1.1	1.2	1.1	1.0	1.0	1.3	1.0	0.9
Lost-time injuries per million tonnes raw coal produced	2.9	2.4	2.6	2.6	2.3	2.5	2.0	1.9	2.1	2.3	2.1	1.6	1.5
Lost-time injuries per million tonnes saleable coal produced	3.7	3.1	3.4	3.3	3.0	3.2	2.6	2.5	2.8	3.0	2.8	2.0	2.0
Lost-time injuries per million hours worked	21.5	17.7	16.6	16.2	14.2	13.5	10.5	9.7	9.6	10.4	12.4	10.0	9.8

* Production employment includes working proprietors, persons engaged as employees of the operator of the mine or as employees of a contractor undertaking work relating to coal production, coal preparation, overburden removal, drivers transporting coal from the mine to a preparation plant or in administration/clerical work at the mine site and is a subset of exposed to risk numbers.

Industry statistics *continued*

NSW annual raw coal production by method of mining



246 million tonnes of raw coal produced from NSW mines

Production

Raw coal production from NSW coal mines fell by 6.3 million tonnes, or 2.5 per cent to 246.8 million tonnes in the twelve months to 30 June 2016 (year 2015-16). This followed a 3 per cent fall for the previous twelve months, after eleven years of growth at an annual average rate of 5.6 per cent. The year 2015-16 saw overall production fall across all coalfields except the Gunnedah coalfield and production from NSW underground mines fell 15.4 per cent while production at open cuts rose 3.2 per cent.

Raw coal production from the Gunnedah coalfield increased by 5.6 million tonnes or 24.6 per cent to a record 28.3 million tonnes; accounting for 11.5 per cent of the total raw coal production for the year. NSW underground coal mines produced 65.4 million tonnes of raw coal in the year 2015-16, down 15.4 per cent or 12 million tonnes compared to the previous year. Underground mines produced 26.5 per cent of total raw coal production. Open cuts mines produced 181.4 million tonnes of raw coal in the year 2015-16, up 3.2 per cent or 5.6 million tonnes compared to the previous year. Open cut mines produced 73.5 per cent of total raw coal production.

Employment and productivity

NSW coal industry production employment is defined as all persons working in or about the coal mine or coal preparation plant, pertaining to its operation, whether employed directly by the mine owner or the mine operator or by a contractor.

Production employment at NSW coal mines reached a peak of 24,972 workers at 30 June 2012 and has steadily declined since, falling to 19,388 at 30 June 2016.

The NSW coal industry average annual production employment and the total hours worked by those employees, fell for the fourth consecutive year. The average number of workers at NSW coal mines fell by 4.8 per cent, down 1,019 to 20,195 for the year 2015-16 while the total number of hours worked during the year fell by 3 per cent.

Overall productivity at NSW coal mines rose for the fourth successive year. Productivity calculated as raw coal production tonnes won per employee for the year 2015-16, rose by 2.4 per cent to 12,220 tonnes, up from 11,930 tonnes for the previous year. Productivity calculated as raw coal production tonnes won per hour worked, for the year 2015-16 rose to 6.45 tonnes, up marginally from 6.42 tonnes for the previous year.

Industry statistics *continued*

Exports

For fifteen years to 30 June 2015 NSW coal export shipments had been increasing year on year, reaching a record 172.9 million tonnes for the year 2014-15. The year 2015-16 saw NSW coal exports fall 1.9 per cent, or 3.4 million tonnes to 169.6 million tonnes. The value* of coal exports for the year 2015-16 fell 8.5 per cent to 13.21 billion Australian dollars with an average value* of $77.92 per tonne. The average value* was down 6.7 per cent or $5.58 on the previous year 2014-15.

NSW metallurgical coal exports increased by 6.2 per cent or 1.5 million tonnes to 25.6 million tonnes for the year 2015-16, accounting for 15 per cent of the total tonnage exported and 19 per cent of the value* for the year 2015-16. The value* of metallurgical coal exports fell 3 per cent to 2.52 billion Australian dollars with an average value* of $98.38 per tonne, down 8.7 per cent or $9.35 on the previous year.

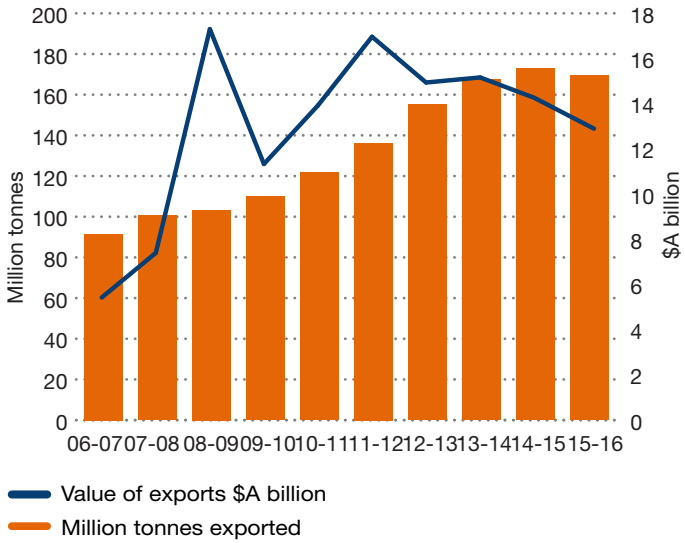
Metallurgical coal exports are made up of hard coking coal and other coking coal, which covers the semi-soft coking and non-coking metallurgical PCI (pulverised coal injection) coals. Hard coking coal exports which had increased to a record 8.2 million tonnes in the year 2014-15, fell by 9 per cent to 7.5 million tonnes in the year 2015-16, while other coking coal shipments rose 14 per cent to 18.1 million tonnes. Hard coking coal exports accounted for 4.4 per cent of the total NSW coal exports in the year 2015-16 with other coking coal exports accounting for 10.7 per cent.

Steaming coal exports fell 3.3 per cent to 144 million tonnes, accounting for 84.9 per cent of all NSW coal shipments in the year 2015-16. The value* of steaming coal exports fell 9.7 per cent to 10.7 billion Australian dollars with an average value* of $74.29 per tonne, down 6.6 per cent or $5.28 on the previous year.

NSW coal was shipped to 24 countries during the year 2015-16. The top four markets of Japan, the Republic of Korea, China and Taiwan accounted for 84.5 per cent of the total tonnage exported. Japan remained the largest market for NSW coal with 74.8 million tonnes shipped during the year 2015-16. Exports to Japan were up 4.6 million tonnes from the previous year.

In the year 2015-16, the Republic of Korea was the second largest market for NSW coal exports, relegating China to third place. NSW exported 28.4 million tonnes to the Republic of Korea in the year 2015-16, down 1.1 million tonnes from the previous year. After four successive years as NSW's second largest export market, coal exports to China fell 9.9 million tonnes to 20.5 million tonnes. NSW coal shipments to China peaked at 37.8 million tonnes for the year 2013-14.

NSW Coal exports as at 30 June 2016



1.9% NSW coal exports fell in 2016

Industry statistics *continued*

Taiwan remained NSW's fourth largest market with shipments up 0.6 million tonnes to a record 19.6 million tonnes. After reaching a record 9.1 million tonnes for year 2014-15, NSW coal shipments to India fell 1.4 million tonnes to 7.7 million tonnes and exports to Malaysia fell 1.6 million tonnes to 5.2 million tonnes for the year 2015-16.

NSW coal exports to Mexico rose 3 million tonnes to 4.1 million tonnes for the year 2015-16. Record tonnages were also shipped to the smaller markets of Thailand (3.1 million tonnes), Chile (1.8 million tonnes), Philippines (1 million tonnes), New Caledonia (0.9 million tonnes) and Indonesia (0.5 million tonnes).

Domestic market

Deliveries of NSW coal within Australia had been decreasing steadily since 2007-08 with coal-powered electricity generation becoming more efficient or replaced by natural gas and renewable energy sources. However; to meet market demand, 2015-16 saw coal sales to domestic markets rise by 2.7 per cent or 0.7 million tonnes to 26.5 million tonnes.

The largest market for NSW coal within Australia is power generation. NSW power stations account for 85 per cent of all domestic sales of NSW coal. NSW coal mines delivered 22.5 million tonnes to power stations during 2015-16, up 2.5 per cent on the previous year.

The iron and steel industry is the second largest domestic market for NSW coal with a 13 per cent market share. Sales to the steelworks in NSW and South Australia totalled 3.5 million tonnes for the year 2015-16, up 7 per cent on the previous year.

85%

of all domestic sales of NSW coal went to NSW power stations.

13% **of NSW coal is used by the iron and steel industry.**

Coal Services Pty Limited
A.B.N. 98 099 078 234

Corporate Office
T: +61 2 8270 3200
F: +61 2 9262 6090
Level 21, 44 Market Street
SYDNEY NSW 2000
GPO Box 3842
SYDNEY NSW 2001
Hunter Valley | Illawarra | Lithgow | Mackay | Mudgee | Newcastle – Central Coast

www.coalservices.com.au

Design Wills Brand Design

IN THE FAIR WORK COMMISSION

Matter No.:	**AM2014/190**
Title of Matter:	**Four yearly review of modern awards — Black Coal Mining Industry Award 2010 — Clause 18 — Accident Pay**

ANNEXURE DG-3
TO THE STATEMENT OF DAVID GUNZBURG DATED 24 FEBRUARY 2017

Queensland Mines and Quarries

Safety Performance and Health Report

1 July 2015–30 June 2016

Queensland Government

Photography
The Department of Natural Resources and Mines wishes to thank the following individuals and companies who have assisted with the provision of images for this publication: Bromelton Quarry, Hill of Stone Quarry (Gosford Quarries) and Meandu Coal Mine.

Cover image – *DNRM*
Internal images – *DNRM*.

Disclaimer
The data in this report is derived from the Department of Natural Resources and Mines (DNRM) Queensland mining industry Lost Time Accident database, in addition to information, including survey responses supplied by mining and quarrying operators throughout Queensland.

Some data has been summarised or consolidated in order to present a standardised format in this report. Although DNRM makes every effort to verify supplied data, it accepts no responsibility for data that was incorrect when supplied. The data in this report may not be fully representative of the industry or any component of it.

Please note: *The figures reported in this document are collected from mine sites on an ongoing basis. The figures are not finalised until the following year. For this reason there may be variations in the figures reported for the previous period of 2014–15.*

ISBN 978-1-921368-93-6 (print)
ISBN 978-1-921368-92-9 (online)

CC16-SAF022

www.dnrm.qld.gov.au

Contents

List of figures

List of tables

Abbreviations

CMSHAC	coal mining safety and health advisory committee
CMWHS	coal mine workers' health scheme
CWP	Coal workers' pneumoconiosis
DI	disabling injury
DNRM	Department of Natural Resources and Mines
HPI	high potential incident
HSU	Health Surveillance Unit
LTI	lost time injury/disease
LTIFR	lost time injury frequency rate
m	metre
mm	millimetre
MSHAC	mining safety and health advisory committee
MTI	medical treatment injury
NMA	nominated medical advisor
PPI	positive performance indicators
QGSO	Queensland Government Statistician's Office
T	tonne
TARP	trigger action response plan
TRI	total recordable injury
TRIFR	total recordable injury frequency rate

Definitions*

Breakdown agency	The object, substance or circumstance that was principally involved in, or most closely associated with the injury.
Coal mine	Mine subject to the *Coal Mining Safety and Health Act 1999* and associated regulations.
Days on alternative duties	The number of days a worker is unable to perform his/her regular job and has been assigned other temporary or modified duties. Alternative duties include a changed work environment, roster or shift pattern.
Days lost	All rostered shifts that a worker is unable to work because of injury, not including the day of the injury. This also includes days lost because of recurrences of injuries from previous periods and days on alternative duties after returning to work. A fatal injury is treated as 220 days lost (as per Australian Standard AS1885.1–1990, Clause 6.17).
Disabling injury	A work-related injury or disease resulting in a worker being unable to fully perform his/her regular job. Either light or alternative duties are performed.
Duration rate	The average time (days) lost and the time (days) on alternative duties for each LTI or DI. In this report, time lost includes all time lost for an incident to date.
High potential incident	An event, or series of events, that causes or has the potential to cause a significant adverse effect on the safety or health of a person.
Lost time injury/ disease	An incident resulting in a fatality, permanent disability or time lost from work of one shift or more. The shift on which the incident occurred is not counted as a shift lost.
Lost time injury frequency rate	The number of lost time injuries/diseases per million hours worked.
Lost time and disabling injury frequency rate	The number of lost time injuries/diseases and disabling injuries per million hours worked.
Mechanism of injury	The action, exposure or event that is the direct cause of the most serious injury.
Medical treatment injuries	Those incidents, which were not lost time injuries or disabling injuries, for which first aid and/or medical treatment was required by a doctor, nurse or person qualified to give first aid.
Metalliferous mine	Mine subject to the *Mining and Quarrying Safety and Health Act 1999* and associated regulation.
Nature of injury	The most serious injury or disease sustained or suffered by the worker.
Occurrence class of injury	The activity that was principally involved in, or most closely associated with the injury.
Quarry	Excavation of hard rock for use in construction (operations covered by the *Mining and Quarrying Safety and Health Act 1999* and associated regulation).
Severity rate	The time (days) lost and time (days) on alternative duties per million hours worked.
Total recordable injury	Includes the number of fatalities, lost time injuries/diseases, medical treatment injuries and disabling injuries.
Total recordable injury frequency rate	The number of total recordable injuries/diseases per million hours worked.

* The definitions in the report for bodily location, breakdown agency, lost time injury/disease, mechanism of injury, nature of injury, incidence rate and frequency rate generally conform to the workplace injury and disease recording Australian Standard (AS 1885.1–1990). The Standard's 'average lost time rate' (number of days lost per lost time injury) is called duration rate. The Standard's 'no lost time injuries/diseases' (those occurrences that were not lost time injuries and for which first aid or medical treatment was administered) are called medical treatment injuries or disabling injuries (the injured person cannot return to their normal job and is put on alternative duties). When calculating duration rate (number of days per lost time injury) and severity rate (days lost per million hours worked) for a lost time injury, the days lost include the days away from work and the days on alternative duties. The Australian Standard is not clear on whether days lost should include days on alternative duties. It is common practice in other Australian jurisdictions to only include days away from work in duration and severity calculations. However, as the number of days required to be spent on alternative duties is a reflection of the severity of the injury, it is considered that including these days presents a more accurate picture of the industry with respect to the severity of an injury or illness.

Message from the Executive Director

I am pleased to present the *Queensland Mines and Quarries Safety Performance and Health Report* for the 2015–2016 financial year.

The Mine Safety and Health group within the Department of Natural Resources and Mines administers mining safety and health laws in Queensland. These laws provide the framework we operate within to protect the safety and health of workers at mines and quarries. In addition to providing regulatory oversight, the group advises, mentors, and assists industry to build capacity in managing safety and health risk.

The drive for continuous improvement in safety and health performance in mining is tireless. This report provides performance indicators which offer a sound basis for targeting future safety and health interventions. The data and information presented helps identify focus areas and provides a benchmark for continuous improvement.

The number of lost time injuries (LTI) reduced from 301 in 2014–15 to 237 in 2015–16. The corresponding lost time injury frequency rate (LTIFR) fell from 3.1 to 2.6 injuries per million hours worked. This decrease in LTIFR was experienced across all mining sectors.

While it is positive to see these trends moving to lower numbers overall, we cannot become complacent and we need to use this information to drive change.

The number of permanent incapacities (PI) in the industry more than doubled from 38 to 87, driven by the coal sector. The number of PIs in metalliferous mines and quarries have both decreased. Forty-one per cent of the PIs are attributed to noise-induced hearing loss.

Contractors are still over represented in high potential incident data. In Queensland mining safety and health legislation, mine management owes an equal duty of care to both contractors and employees. Improved training, competency and support for front-line supervisors are key areas for continuous improvement. Inadequate knowledge and competency are precursors to major mining accidents.

The Mines Inspectorate will continue to work with operators to ensure all mines have effective dust management plans in place, so that worker exposure to respirable dust is kept to an acceptable level. Regulatory reforms introduced to tackle coal mine dust lung disease head-on and strengthen respirable dust monitoring requirements remain a key focus of our compliance and engagement program moving forward.

Recognising compromises in worker safety and health in an industry that is experiencing contraction and organisational change is important—factors such as concern over security of employment, loss of site-specific expertise, and the effectiveness of safety and health supervision, can all weaken safety and health management systems.

Safety and health is more than a priority; it is a value. Industry must actively support and reaffirm its commitment to safety and health leadership, to ensure all workers return home safe and well after working a shift at a Queensland mine or quarry.

Looking forward, while the data and information presented here and in the Queensland Mines and Quarries Safety Performance and Health Report provides a sound basis for targeted improvements, the Mines Safety and Health group is considering how to better analyse and present the data provided by industry. This will include more detailed analysis to identify trends and questions we need to be asking collectively in response to that information. We invite you to contribute your thoughts and ideas on the future focus for the data and information presented in this report. Industry stakeholders will be surveyed during the first quarter of 2017.

Mark Stone
Executive Director Mine Safety and Health

Summary from the Chief Inspectors of Mines

We welcome this opportunity to comment on the safety and health performance of Queensland's mines and quarries over the past 12 months.

The statistical information provided in this report predominantly focuses on the safety performance of the industry.

We recognise that most sectors of the industry have continued to experience a downturn in demand and price for their respective products over the last 12 months. This has resulted in an ongoing focus on reducing costs and improving productivity.

We have seen cutbacks in production, mines going into care and maintenance and/or closing. This has resulted in a 13 per cent reduction in the number of workers employed in the industry, from 45 899 workers at the end of 2014–15 to 39 797 at the end of 2015–16.

In this climate of uncertainty the challenge for industry has been to ensure that the safety and health of workers is not compromised by the actions taken to maintain the economic viability of individual mines and quarries.

The statistical information presented in this report generally indicates that despite the tough times industry has maintained a steady improvement in safety performance, continuing the trend that has been evident in recent years.

- The overall lost time injury frequency rate reduced from 3.1 to 2.6, compared to the five year average of 3.3.
- The overall lost time and disabling injury frequency rate reduced from 12.9 to 9.5, compared to the five year average of 10.1
- The lost time and disabling injury severity rate reduced from 300 to 218, compared to the five year average of 291.
- The lost time and disabling injury duration rate reduced from 32.4 to 23.1, compared to the five year average of 31.1.

We are pleased to recognise that this year the industry experienced a fatality free year. This is the first time that this has occurred in Queensland since mining fatality records were first compiled in 1877.

While having a fatality free year is something to be noted it needs to be tempered with a reality check that during 2015–16 we continued to have serious accidents and high potential incidents. We acknowledge that a fatality free year is an achievement of the efforts by all mine workers and the mines inspectorate in applying risk management processes to reduce risk to an acceptable level.

With regard to high potential incidents (HPIs), the number reported has continued its downward trend from the peak in 2011–12, in line with decreasing employment numbers. The overall HPI frequency rate has remained constant over the last five years.

On one hand it is encouraging that there has been no reduction in the HPI frequency rate despite the downturn in the industry as the willingness of workers to report HPIs is a measure of an open and efficient safety and health management system. This shows a measure of an empowered workforce and a measure of the willingness of leaders to receive "bad news".

On the other hand the fact that we are often seeing the same types of HPIs occurring, albeit usually at different sites, is a concern to us with regard to how well the lessons from such incidents are being shared across industry and recommended controls effectively implemented.

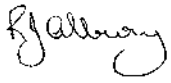
Across the industry there continue to be HPIs and serious accidents that cause significant concern.

In the coal mining sector an increasing number of wall failures in open cut mines and the occurrence of roof failures in some underground mines is most concerning.

Addressing coal workers' pneumoconiosis (CWP) remains a priority for the Mines Inspectorate. In 2015-16 the department confirmed nine cases of CWP, bringing the total to 10 by 30 June 2016. In response, we have amended the Coal Mining Safety and Health Regulation 2001 in consultation with industry and unions. These changes, which commence 1 January 2017, strengthen rules around respirable dust management, prescribes notifiable occupational diseases, and improves respiratory health screening for coal mine workers. In addition to the regulatory changes, the department is focused on improving the Coal Mine Workers' Health Scheme (CMWHS) to ensure early detection of respiratory conditions through better, effective screening.

In the metalliferous and quarrying sectors incidents involving being hit by moving or falling object continue to be over-represented.

Our thanks go to those who have assisted with compiling and contributing to this report. We hope the information provided in the report can be used by mines and quarries to improve their safety and health performance. We look forward to continuing to work with industry to achieve that result.



Russell Albury
Chief Inspector of Coal Mines

Phil Goode
Chief Inspector of Mines
(Metalliferous and Quarries)

Mines Inspector Deon Esterhuizen conducting a site visit at Bromelton Quarry
Photo: DNRM

1 PERFORMANCE

Industry safety and health performance

Workshop activity
Photo: DNRM

1. Industry safety and health performance

This report summarises information about accidents and incidents that occurred between 1 July 2015 and 30 June 2016 on Queensland mines and quarries subject to the provisions of the *Coal Mining Safety and Health Act 1999* and the *Mining and Quarrying Safety and Health Act 1999*.

Table 1.1 shows a comparison of each sector's key performance indicators for 2015–16. Performance measures for individual mines and quarries can be found on the DNRM website at www.dnrm.qld.gov.au.

For more information on the data used in this report refer to Chapter 9.

1.1 Fatal injuries

There were no fatalities in the mining industry during 2015–16. While Figure 1.1 shows a significant decline in the number of mine fatalities since 1900, this trend has stabilised over the last 10 years.

Figure 1.2 illustrates that even though there was a continuing decline in employee numbers across the industry in 2015—16, there was a decrease in fatalities compared with 2014–15. The mechanism that was the direct cause of the 22 fatalities in Queensland mines and quarries over the past 10 years is shown in Figure 1.3. Being hit by a moving object has resulted in 18 per cent of fatalities, the most common cause of fatalities.

Coal mines

There were no fatal accidents in the coal mining sector in 2015–16.

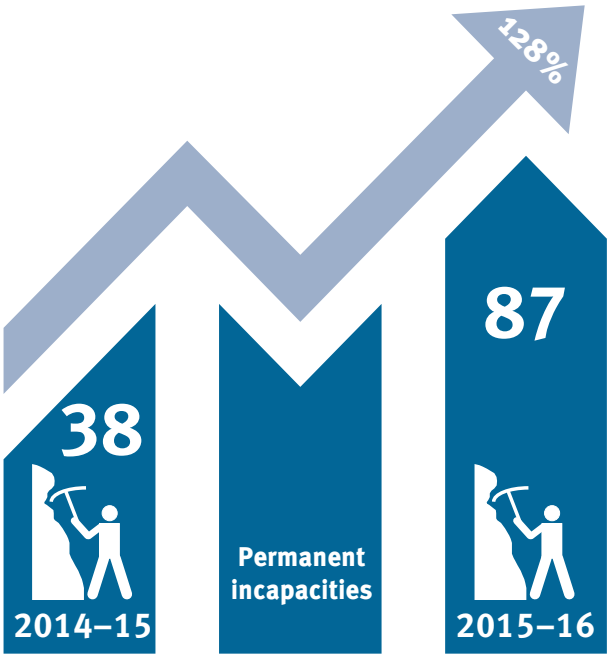
Metalliferous mines and quarries

There were no fatal accidents in the metalliferous mines and quarries sector in 2015–16.

1.2 Permanent incapacities

Table 1.2 provides further information on these permanent incapacities.

For details on the number of permanent incapacities for the 2011–2016 period refer to Table 3.8 in Chapter 3.



1.3 Lost time injuries and disabling injuries

Figures 1.4–1.6 show the lost time injury frequency rate (LTIFR), severity rate and duration rate per month combined for all sectors over the 10 year period of 2006–16. These figures emphasise changes in trend over time. Over the last five years there has been a decreasing trend in the average LTIFR and severity rate per month. The average duration rate per month has remained steady over the same period.

The combined lost time injury (LTI) and disabling injury (DI) severity rate and duration rate are shown in Figures 1.7 and 1.8, respectively. The severity rate has decreased over the last 10 years while the duration rate has remained relatively steady until 2014–16, which shows a substantial decrease compared to other years.

As shown in Figure 1.9, the number of LTIs in coal mines has generally increased and decreased in line with rising and falling employment numbers over the last 10 years. In comparison, the number of DIs continued to increase while employment numbers fell. However, there was a decrease in the number of DI's at coal mines in 2015–16.

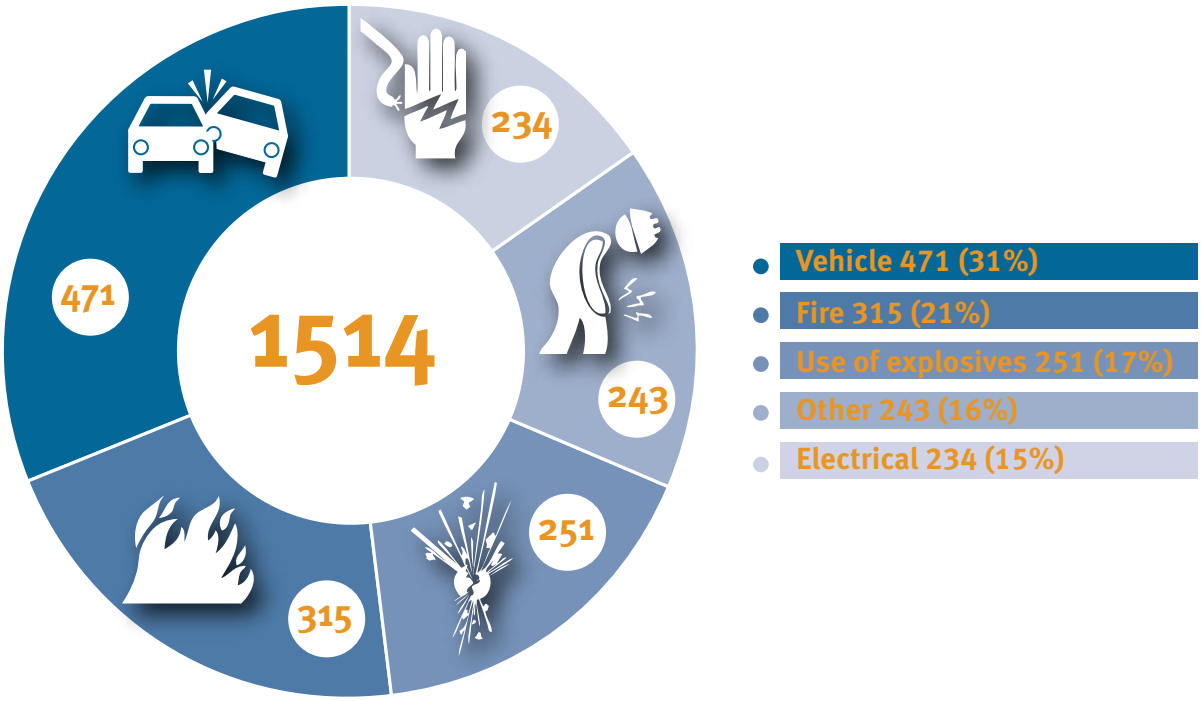
For metalliferous mines and quarries, Figure 1.10, there has been a decrease in the number of LTIs and DIs in recent years in line with falling employment numbers and these numbers continue to remain low in 2015–16.

Table 1.1: Comparison of key performance indicators 2014–15 to 2015–16

	Number of lost time injuries (LTI)		Number of disabling injuries (DI)		Number of medical treatments (MTI)		Number of high potential incidents (HPI)		LTI days lost†		Number of DI days		LTI frequency rate (LTIFR)*		LTI severity rate#†		LTI Duration rate*†		LTI + DI severity rate#		LTI + DI duration rate*		Million hours worked*		Number of permanent incapacities		Number of fatalities	
	14–15	15–16	14–15	15–16	14–15	15–16	14–15	15–16	14–15	15–16	14–15	15–16	14–15	15–16	14–15	15–16	14–15	15–16	14–15	15–16	14–15	15–16	14–15	15–16	14–15	15–16	14–15	15–16
Coal surface	118	105	463	277	350	355	1 147	1 112	6 299	3 698	6 270	6 308	2.3	2.1	122	74	53.4	35.2	244	201	21.6	26.2	51.6	49.8	8	52	2	0
Coal underground	89	66	384	231	162	77	324	288	4 120	2 576	6 147	3 679	6.4	4.8	294	188	46.3	39.0	733	457	21.7	21.1	14.0	13.7	8	29	1	0
All Coal	**207**	**171**	**847**	**508**	**512**	**432**	**1 471**	**1 400**	**10 419**	**6 274**	**12 417**	**9 987**	**3.2**	**2.7**	**159**	**99**	**50.3**	**36.7**	**348**	**256**	**21.7**	**23.9**	**65.6**	**63.5**	**16**	**81**	**3**	**0**
Metalliferous surface	50	36	15	27	101	71	182	138	1 021	740	361	503	3.0	2.5	61	51	20.4	20.6	82	86	21.3	19.7	16.8	14.4	11	2	0	0
Metalliferous underground	31	20	90	85	44	44	173	124	2 443	1 016	1 965	847	2.4	2.0	189	104	78.8	50.8	342	190	36.4	17.7	12.9	9.8	8	3	1	0
All Metalliferous	**81**	**56**	**105**	**112**	**145**	**115**	**355**	**262**	**3 464**	**1 756**	**2 326**	**1 350**	**2.7**	**2.3**	**117**	**73**	**42.8**	**31.4**	**195**	**128**	**31.1**	**18.5**	**29.7**	**24.2**	**19**	**5**	**1**	**0**
Quarries	13	10	9	2	31	39	51	54	410	290	294	26	5.2	4.2	164	121	31.5	29.0	282	132	32.0	26.3	2.5	2.4	3	1	0	0
All Sectors	**301**	**237**	**961**	**622**	**688**	**586**	**1 877**	**1 716**	**14 293**	**8 320**	**15 037**	**11 363**	**3.1**	**2.6**	**146**	**92**	**47.5**	**35.1**	**300**	**218**	**23.2**	**22.9**	**97.8**	**90.1**	**38**	**87**	**4**	**0**

#Rounded to whole numbers
*Rounded to 1 decimal place
†Days lost to LTIs include lost time days and days on alternative duties

Five most common mechanisms of HPIs



1.4 High potential incidents

The number of reported HPIs continued to fall in line with decreasing employment numbers from the peak in 2011, as shown in Figure 1.11. The industry is to be commended on the sustained compliance with reporting of HPIs. This reporting allows for the sharing of information across the industry and enables industry to implement proactive strategies for managing the identified risks before a person is injured.

The rate of HPIs for all sectors, as shown in Table 1.3, remained steady in 2015–16.

Figure 1.12 outlines the number of HPIs per type of incident for all sectors combined.

The most common type of HPI reported for surface coal mines was related to vehicles, while underground coal mines was related to electrical incidents (Figures 1.13 and 1.14 respectively). Surface and underground metalliferous mines, and quarries reported vehicle related incidents as the most common type of HPI—which is illustrated in Figures 1.15—1.17.

Safety alerts and bulletins issued by DNRM in response to a number of HPIs are reported in Table 1.4. Further information on HPIs including graphical breakdowns and statistics by sector is available from the DNRM website at www.dnrm.qld.gov.au.

A number of HPIs that occurred during 2015–16 are of particular concern. These incidents do not include all HPIs which occurred during this period but represent a sample of incidents.

Coal mines

- Face operations went down at a site, due to a blown return line of a shearer. Coal mine workers were walking off face and noticed a flame coming from main gate pivot point of ranging arm. The fire was extinguished with the water hose available at the face. An oil leak had been previously identified, but the ignition source was not known. Permission was given to locate shearer if required to a location where roof and face support has been installed.
- A continuous miner was bolting up the cut cycle when the personal gas detectors of the ERZ Controller and miner driver alarmed at 3.5 per cent and offscale methane respectively. The ERZ Controller noticed floor heave to the rear of the continuous miner and withdrew the crew from the area.
- While driving to work, a coal mine worker left the road and impacted heavily into an embankment ending upside down on a drainage line. The driver received extensive serious injuries and was air lifted to a base hospital for medical attention.
- While relocating a cable tower that was feeding an electric shovel (SHE 37), a loop of cable on the tower became wedged under the tower and was damaged as the tower moved over it. Mine site transportable substation protection detected the fault as “earth continuity” and tripped the circuit breaker feeding the shovel immediately.
- A truck came into contact with an overhead 6.6 kV cable on a truck underpass. The truck had dumped a load on the ramp and moved away with its tray in the air. The extent of damage is unknown at this stage and the truck was treated for tyre heating.

- As a loaded Cat 793C rear dump truck reversed into the tiphead the dump's edge dropped under the trucks's rear wheels. The truck was unable to drive out, and was recovered by two dozers pulling it out. The dump was approximately 10 to 12 metres high.
- The operator of a Cat 789C rear dump truck had a suspected microsleep, allowing the truck to veer to the left off the haul road and into the safety rill with the Pos 1 tyre.
- The tyres of load haul dump impacted an on-setting trolley. This caused unplanned movement of the trolley, towards a coal mine worker who took evasive action to avoid being struck by the trolley.
- While assisting to conduct NATA calibrations an electrician found that the DSEM NERZ/ERZ gas monitoring (Trolex) control system had both alarm and trip, trigger point levels set at 5 per cent
- While flitting the continuous miner backwards for a clean-up run, a continuous miner backed into the rib on its right side, squashing the cable at the point where the cable sock attaches to the frame. There was no report of a flash, but the electrician has reported that conductors were exposed.
- A Cat 797 had just been refuelled in the 9–12 go-line maintenance bay when a fire started near top of fuel tank and spread rapidly, engulfing the truck. No coal mine workers were injured. Initial indications indicate that the fire was fuelled by diesel that had sprayed from the overflow line during the servicing.
- A tyre on a mobile lighting plant was discovered to be on fire after it had been towed for approximately 2 km. An Open Cut Examiner (OCE) pulled up alongside the lighting plant and saw the issue.
- Fitters were removing chocks from a Cat 789C dump truck when they found the chock at the rear of Pos 1 tyre could not be removed. They have moved the chock in front of the Pos 1 tyre about 0.5 m forward and a fitter has started the truck to move it forward off the rear chock. Truck has moved forward ejecting chock.

Metalliferous mines and quarries

- While reversing up to a tip face a Terex MT3300 truck has breached the bund and tipped over ending up resting on its back. The operator was able to self-escape from the cabin. The operator was transported to hospital for assessment and treatment.
- A worker was working from an integrated tool carrier loader basket to repair a vent when the basket made contact with a charged 63 mm diameter compressed air line hung from the back, causing it to come apart at a fitting and whip around. The line struck the worker in the basket several times before the basket was lowered. He was transported to hospital for assessment and later released.
- Fitters in an underground workshop were adjusting the feed beam side clearance of a carousel and rod changer assembly on a Tamrock ITHH production drill rig when it detached from the unit. A worker was knocked to the floor by the assembly as it fell, but was able to crawl out from under it as the horseshoe frame prevented the assembly going right to the floor.
- An electrician was struck by a fire suppression cylinder he was relocating when it suddenly discharged and became a violent projectile. He sustained serious injuries.
- A light vehicle was stopped and stationary on a decline to allow an agitator truck to drive into a recess. While the agitator truck was moving into the recess a rock wedged between the tyre and road surface was suddenly ejected. The rock smashed through the windscreen of the light vehicle, hit the operator and went through the back window. The operator was hospitalised with head injuries.
- A high voltage isolation was performed to work on a 132 kV switchyard. Work started in a bay within the switchyard not covered by the isolation. This bay was alive. Test equipment was placed on live 132 kV lines the test equipment was destroyed and the supply tripped on earth fault.
- A Sandvik DP1100i drill rig was operating near the crest of a bench, when it rolled over onto the crest, coming to rest on its roof. The operator was trapped in the machine and was rescued by Queensland Fire Service.
- A brick wall in an underground cribroom collapsed while being backfilled with concrete. A person standing on a platform ladder pouring the concrete into a void between the brick wall and the drive sidewall received fractured bones to one foot when the ladder was struck by the brick wall.
- A worker sustained an abdominal injection injury while high pressure water blasting. The hose ruptured near the gun during pre-start at about 28 000 psi.
- Three workers were dismantling a G50 cone crusher, when a wedge was driven into one side of the crusher, causing a wedge that was already driven into a slot on the other side to dislodge and strike one of the workers in the chest. The worker sustained cracked ribs.
- During maintenance on a SAG mill a feed chute liner plate has fallen approximately 3.7 m and glanced off the hard hat of a worker below. The worker was not injured.
- Excavator operator was preparing to load a sandstone block (approximately 8.9 tonne) onto the dump truck. The operator lost control of the oversized block during the loading process and the block then fell onto the cab of the excavator. The operator sustained small lacerations to both legs from broken front screen. There was major damage to the excavator cab. The operator was taken to a doctor for assessment.

Figure 1.1: Fatalities in Queensland mines (all sectors), 1900–2016

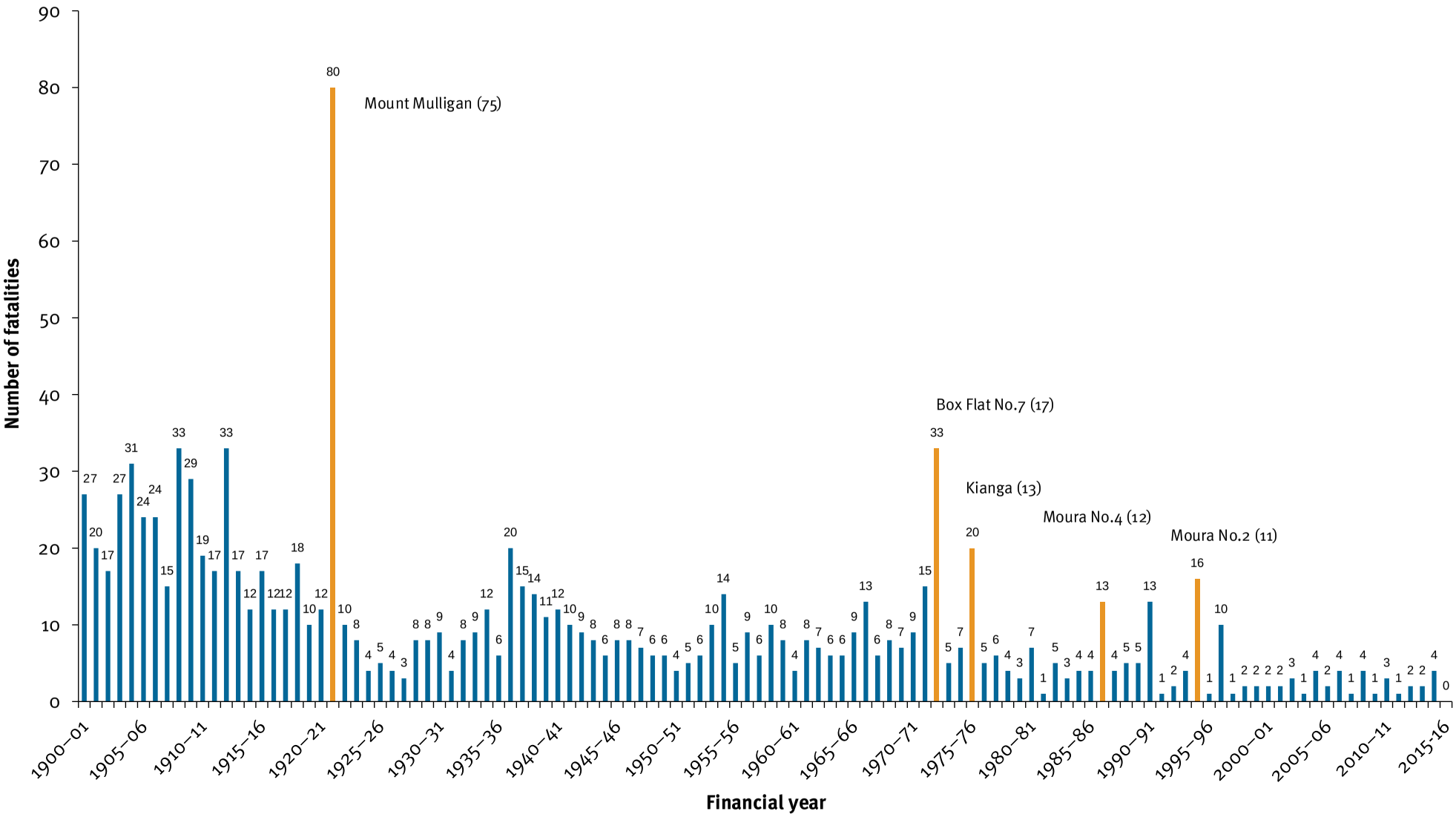


Figure 1.01: Fatalities in Queensland mines (all sectors - since the introduction of current mining legislation), 2001–16

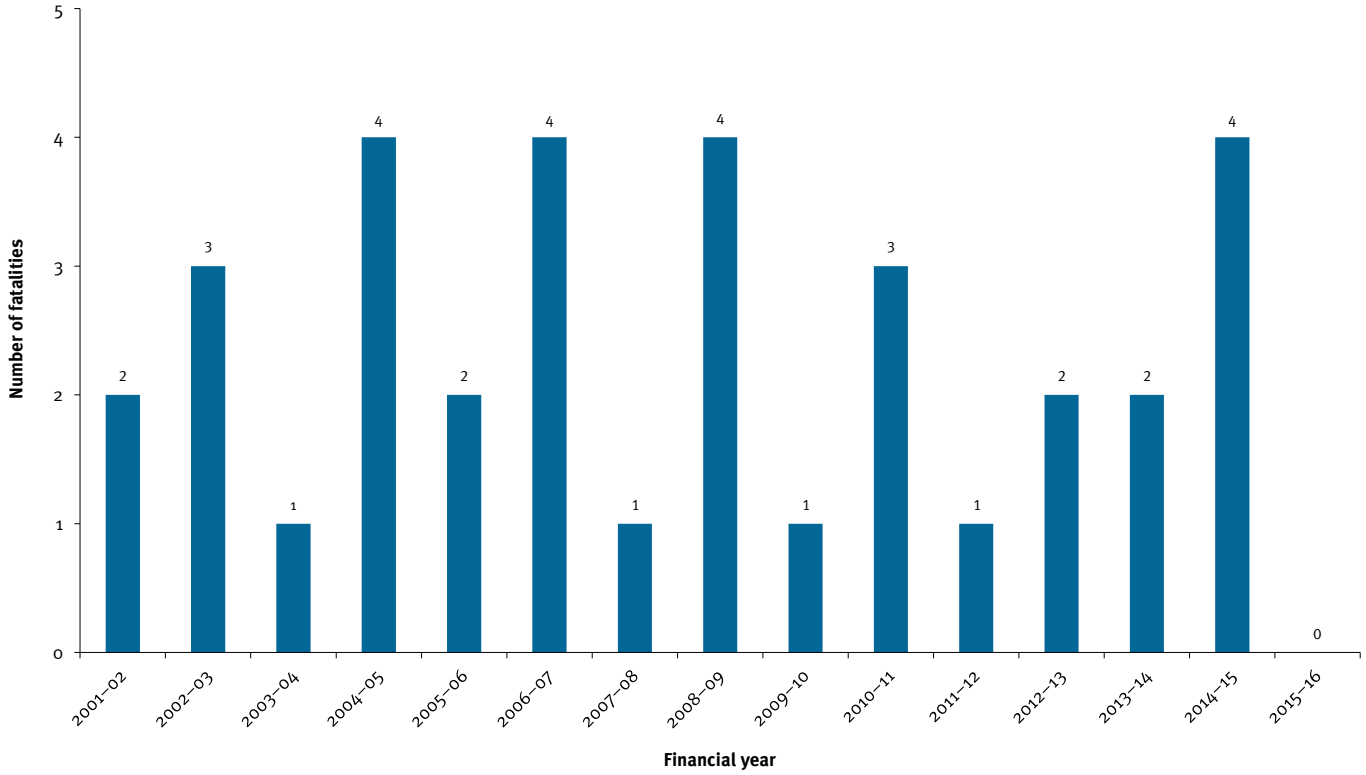
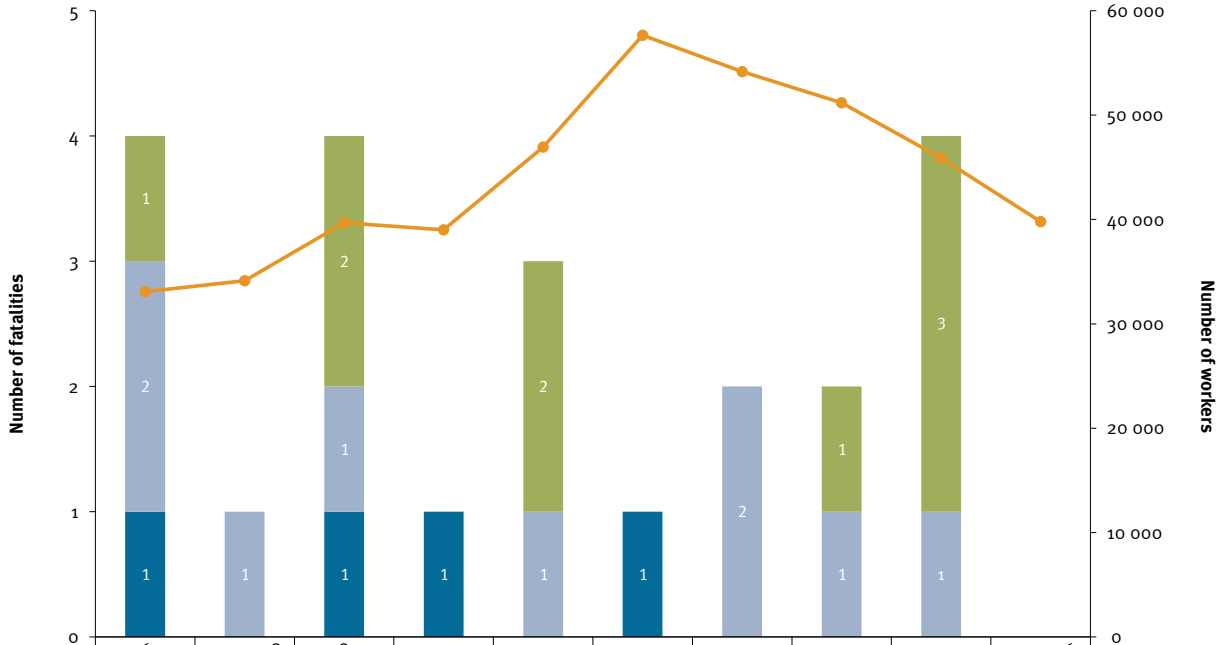


Figure 1.2: Fatalities versus employment numbers (all sectors), 2006–16



	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15	2015–16
Total fatalities	4	1	4	1	3	1	2	2	4	0
Coal fatalities	1	0	2	0	2	0	0	1	3	0
Metalliferous fatalities	2	1	1	0	1	0	2	1	1	0
Quarry fatalities	1	0	1	1	0	1	0	0	0	0
No. of workers	33 092	34 135	39 691	39 013	46 936	57 656	54 158	51 186	45 899	39 797

Table 1.2: Permanent incapacities reported by mines, 2015–16

Injury/disease	Incapacity type	Incapacity description	Qty
Coal surface			
Hearing loss	Ears	Noise induced hearing loss	36
Sprain/strain	Trunk–back (upper/lower)	Lower back injury	4
	Trunk–back (upper/lower)	Back injury	1
	Lower limbs–knee	Knee injuries	5
	Upper limbs–arm/shoulder	Shoulder injuries	4
Unspecified injury	Lower limbs–knee	Knee injury–anterior cruciate ligament	1
	Trunk–back (upper/lower)	Disc pathology injury	1
Coal underground			
Fracture	Lower limbs–leg	Distal right femur	1
	Other/unspecified		1
Hearing loss	Ears	Noise induced hearing loss	2
Traumatic amputation	Upper limbs–hand/finger/thumb	Partial amputation of right index finger	1
	Upper limbs–hand/finger/thumb	Partial amputation of the right middle finger	1
	Upper limbs–hand/finger/thumb	Partial amputation of crushed left little finger, crushed left ring finger	2
	Upper limbs–hand/finger/thumb	Partial amputation of crushed left thumb	1
	Upper limbs–hand/finger/thumb	Partial amputation of the right little finger	1
	Upper limbs–hand/finger/thumb	Partial amputation of the right little and ring fingers	1
	Upper limbs–hand/finger/thumb	Partial amputation of the right middle finger	1
	Upper limbs–hand/finger/thumb	Partial amputation of right index finger	1
Sprain/strain	Lower limbs–knee	Knee injury meniscus tear	1
	Lower limbs–lower leg/ankle	Lower leg and ankle injury	2
	Upper limbs–arm/ shoulder	Shoulder injuries	2
Pre–existing condition	Upper body	Cardiac failure	1
Other/unspecified			1
Other diseases	Lung	Pneumoconiosis	5
Unspecified injury	Other/unspecified	Lower back/knee/leg	3
Unspecified injury	Other/unspecified	Anxiety disorder	1
Metalliferous surface			
Unspecified injury	Upper and lower limbs	Impairment to right elbow and right leg	1
	Trunk–back (upper/lower)	Back injury from a slip trip	1
Metalliferous underground			
Burns	Upper body	Superficial burns to chest, neck and right arm	1
Unspecified injury	Upper limbs–shoulder and neck	Shoulder/neck injury	2
Quarries			
Unspecified injury	Lower limbs–knee	Left knee injury	1
Total			**87**

Figure 1.3: Mechanism of fatalities (all sectors), 2006–16

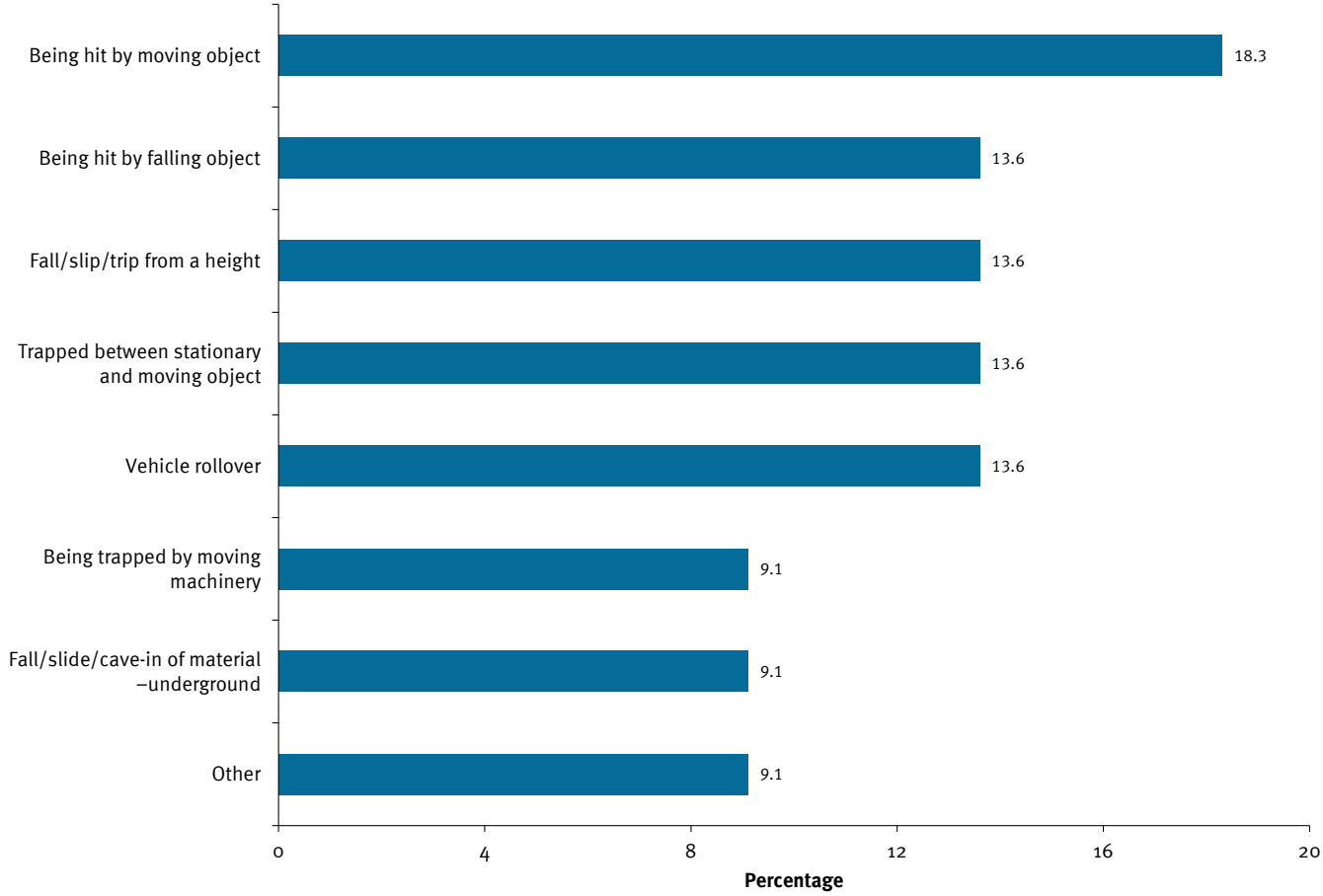


Figure 1.4: Lost time injury frequency rate per month (all sectors), 2006–16

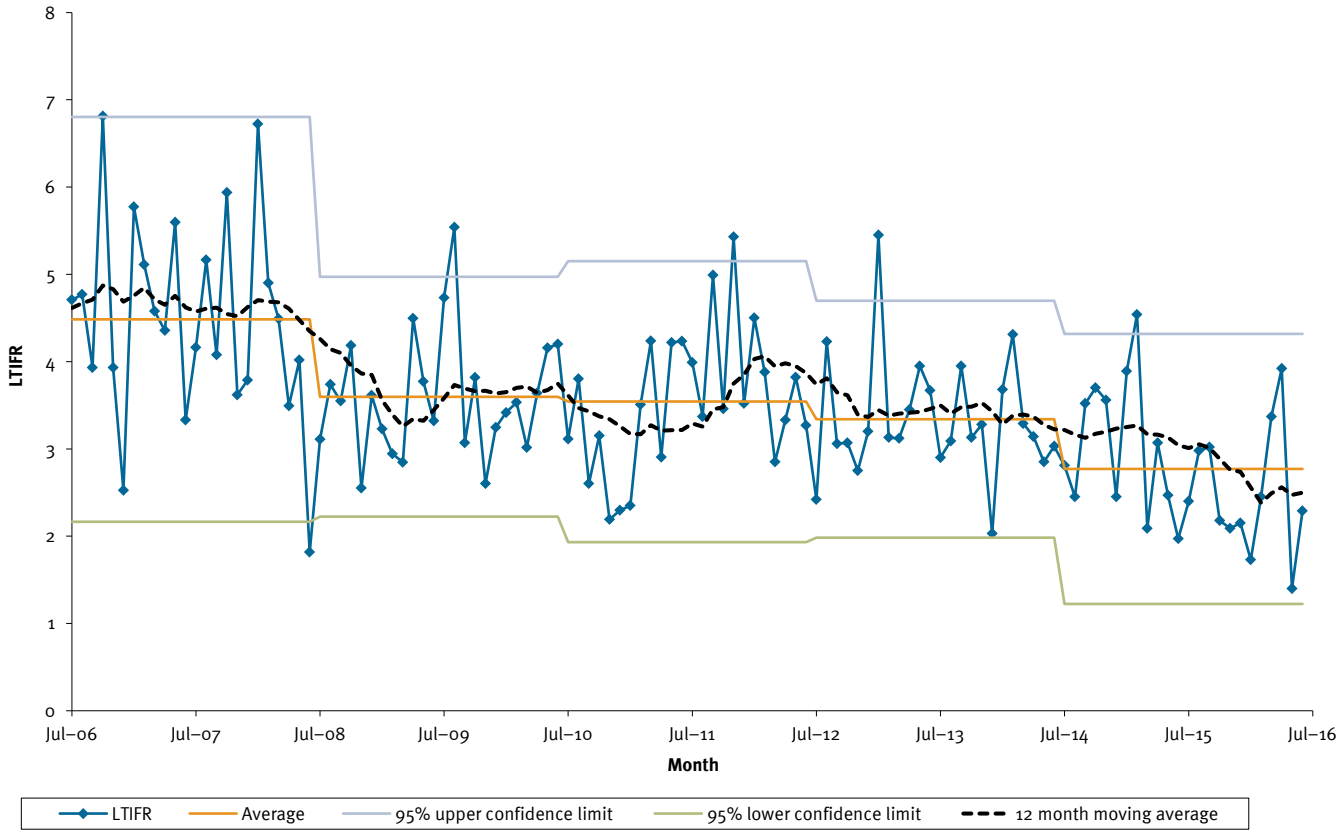


Figure 1.5: Lost time injury severity rate per month (all sectors), 2006–16

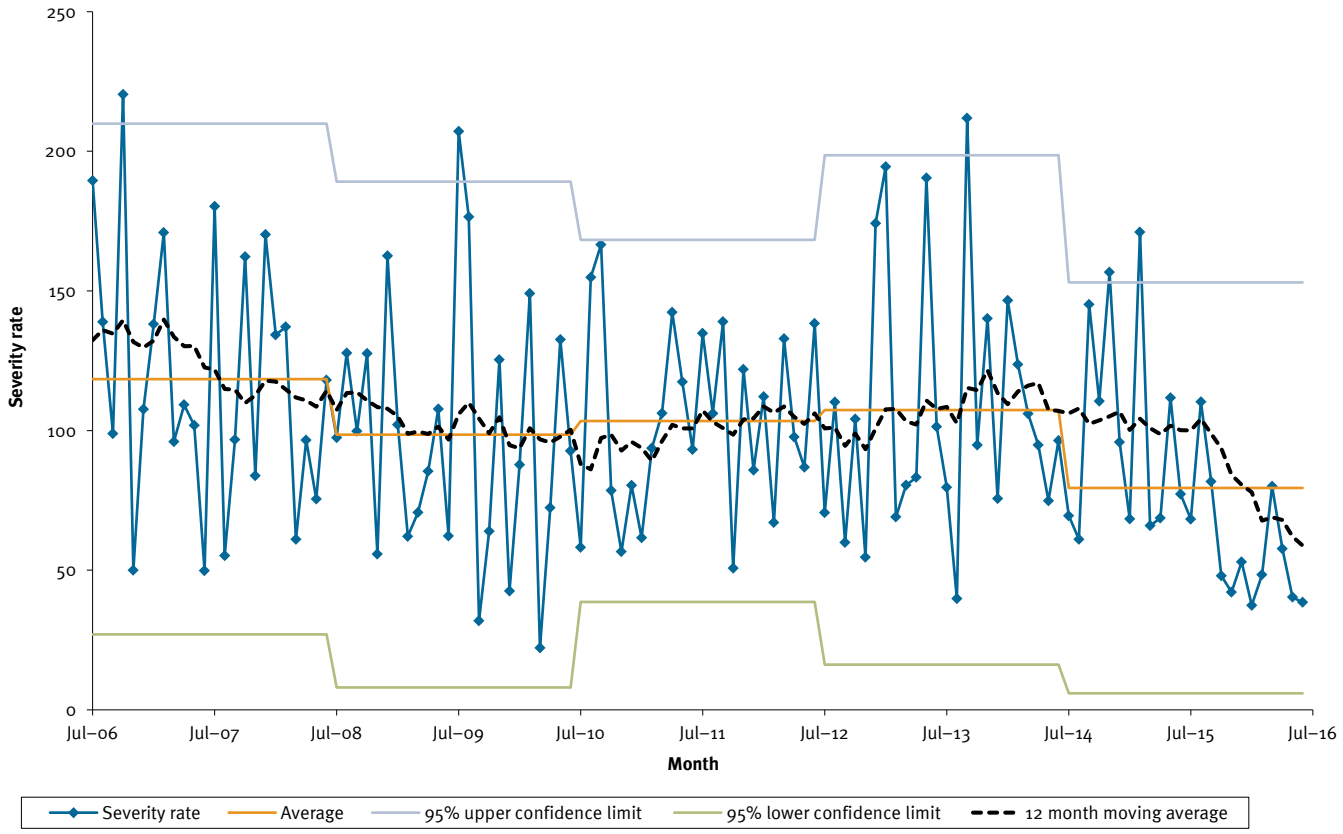


Table 1.3: High potential incident rate (per 1000 workers), 2011–16

	2011–12	2012–13	2013–14	2014–15	2015–16
Coal–surface	41	46	47	45	47
Coal–underground	55	61	64	49	62
All coal	**43**	**48**	**50**	**46**	**49**
Metalliferous–surface	35	28	22	25	25
Metalliferous–underground	35	32	30	33	28
All metalliferous	**35**	**30**	**25**	**28**	**26**
Quarries	53	46	35	35	40
All sectors	**41**	**43**	**42**	**41**	**43**

Table 1.4: Safety alerts and bulletins relating to high potential incidents, 2015–16

Dust	
Safety Bulletin 151	Preventing dust-related lung diseases
Equiptment failure	
Safety Alert 321	High pressure water jet injection injury
Safety Alert 323	Worker injured by a discharging fire suppression cylinder
Explosives	
Safety Alert 318	Mobile mixing unit explosives truck rollover
Fall of ground	
Safety Alert 328	Working under a stope bridge
Falling material or objects	
Safety Alert 320	Rock from loading shovel smashes rear window of a dozer
Safety Alert 326	Serious leg injuries from unrestrained drill rig break-out wrench
Hazardous materials or substances	
Safety Bulletin 150	Exploding lead acid batteries
Inadequate systems or responses	
Safety Alert 319	Dragline and cable tractor interaction
Safety Alert 322	Worker injured in pugmill
Medical emergency	
Safety alert 325	Contract coal mine worker suffers cardiac arrest
Plant failure or damage	
Safety Bulletin 153	Handling and management of surface trailing cables (update to safety bulletin 6)
Vehicle	
Safety Alert 327	Uncontrolled engine shutdown on a dump truck

Figure 1.6: Lost time injury duration rate per month (all sectors), 2006–16

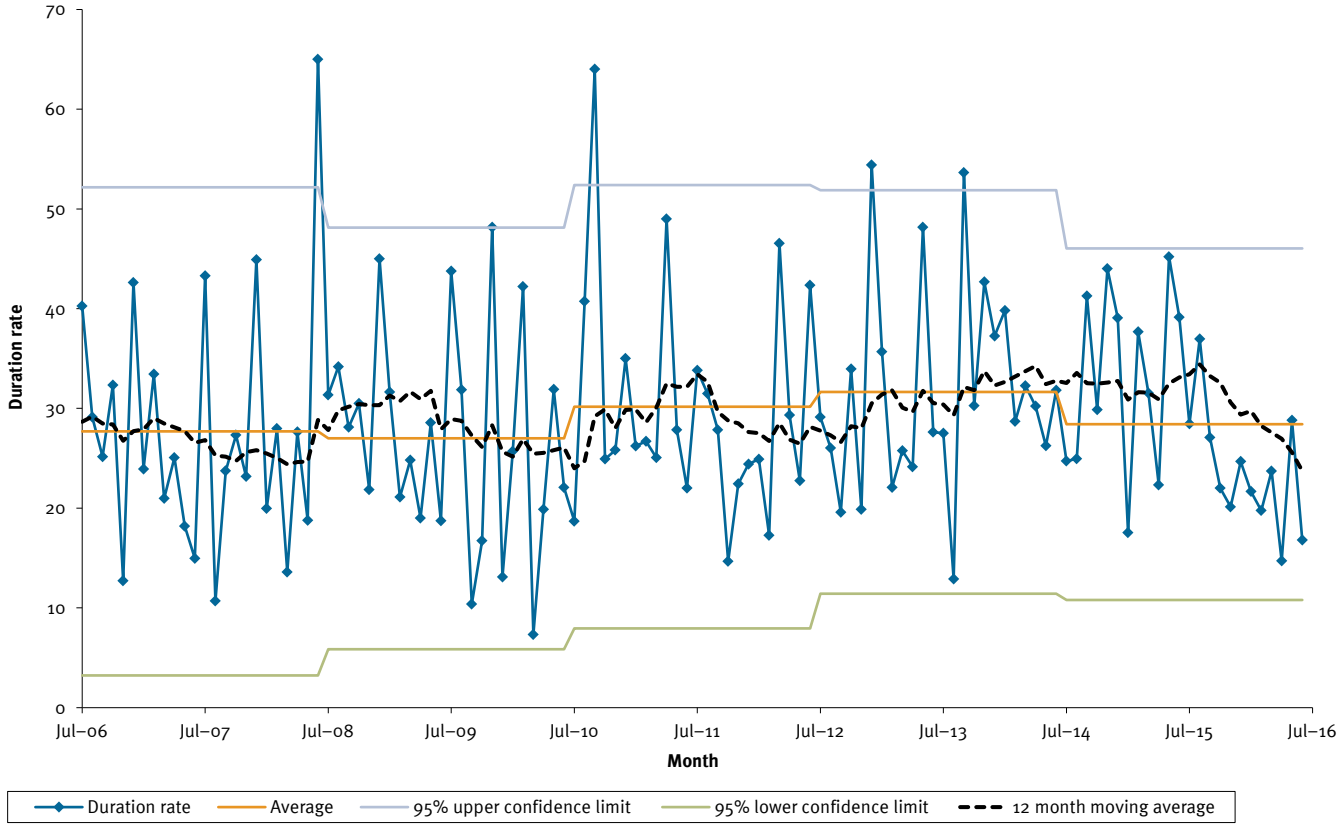
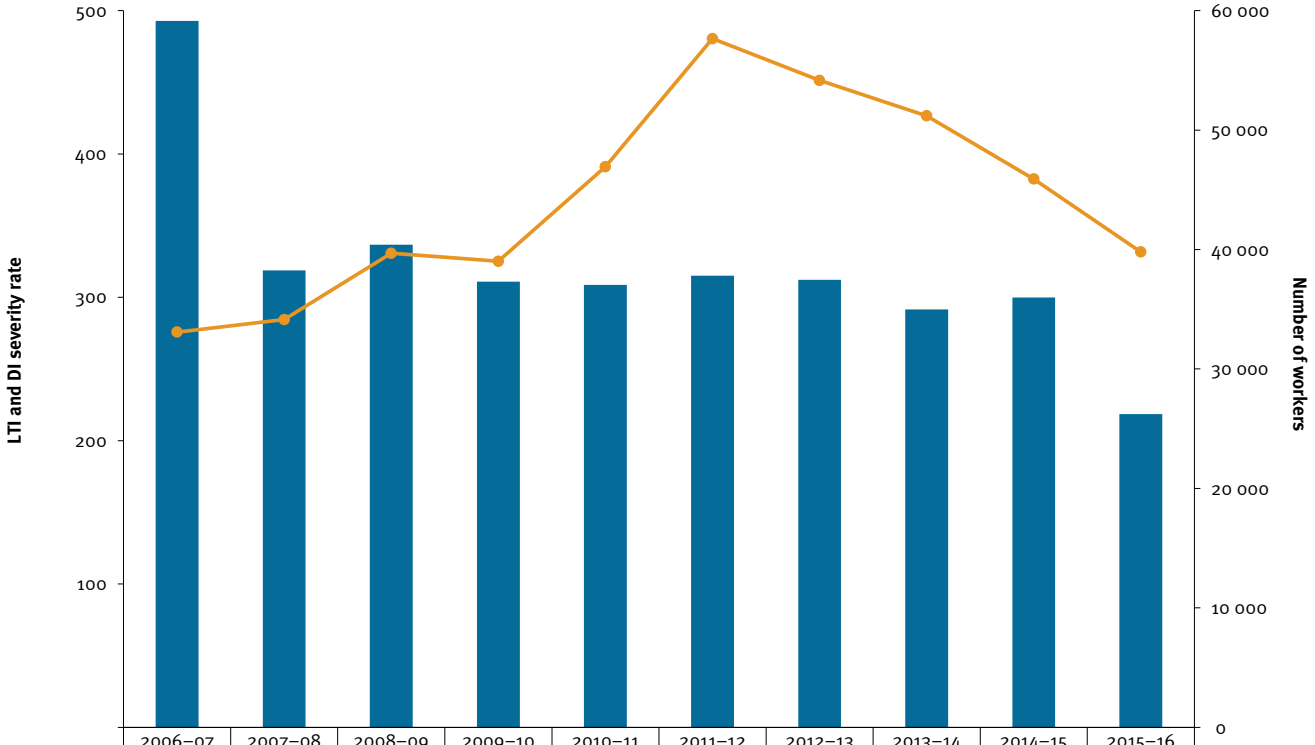
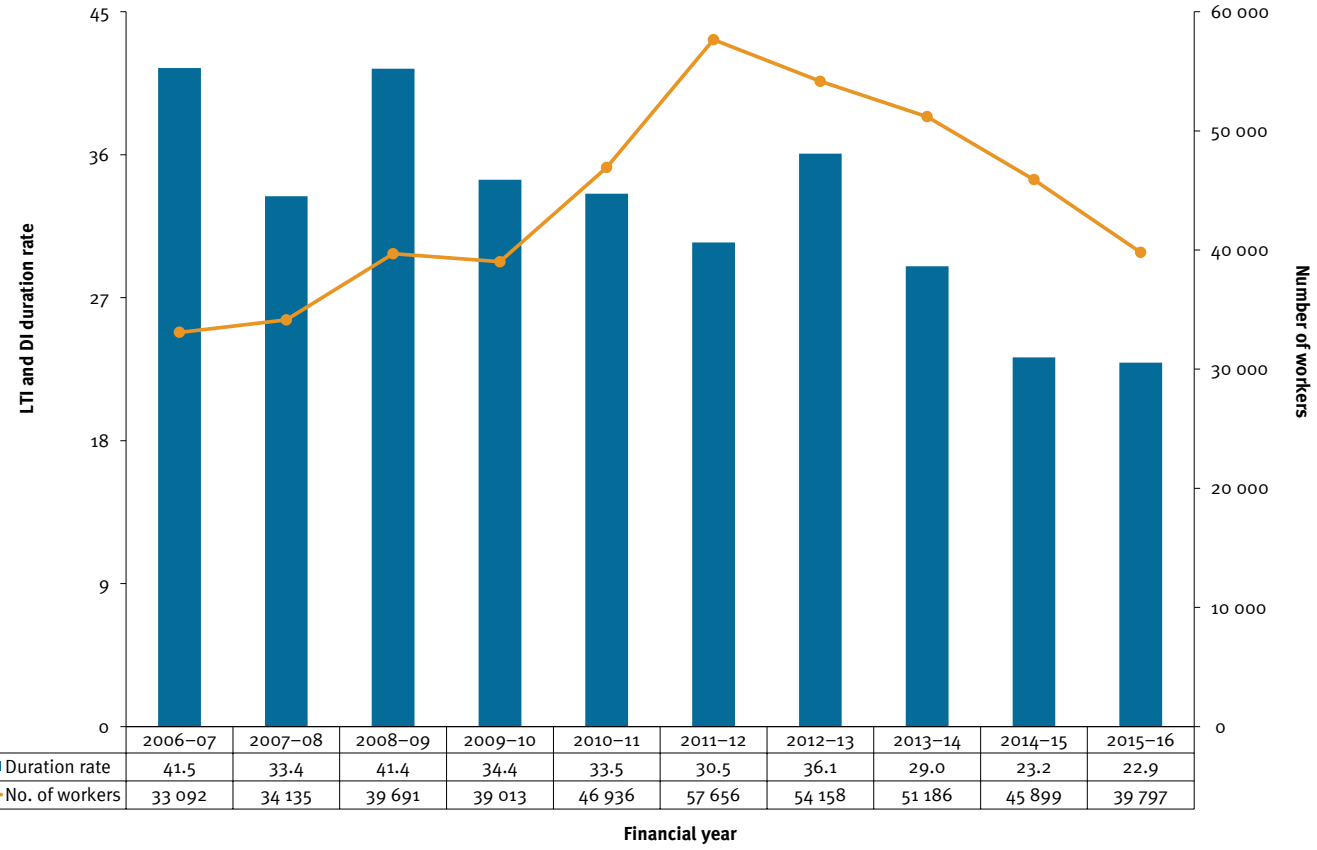


Figure 1.7: Lost time and disabling injury severity rate versus employment numbers (all sectors), 2006–16



	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15	2015–16
Severity rate	493	319	337	311	309	315	312	292	300	218
No. of workers	33 092	34 135	39 691	39 013	46 936	57 656	54 158	51 186	45 899	39 797

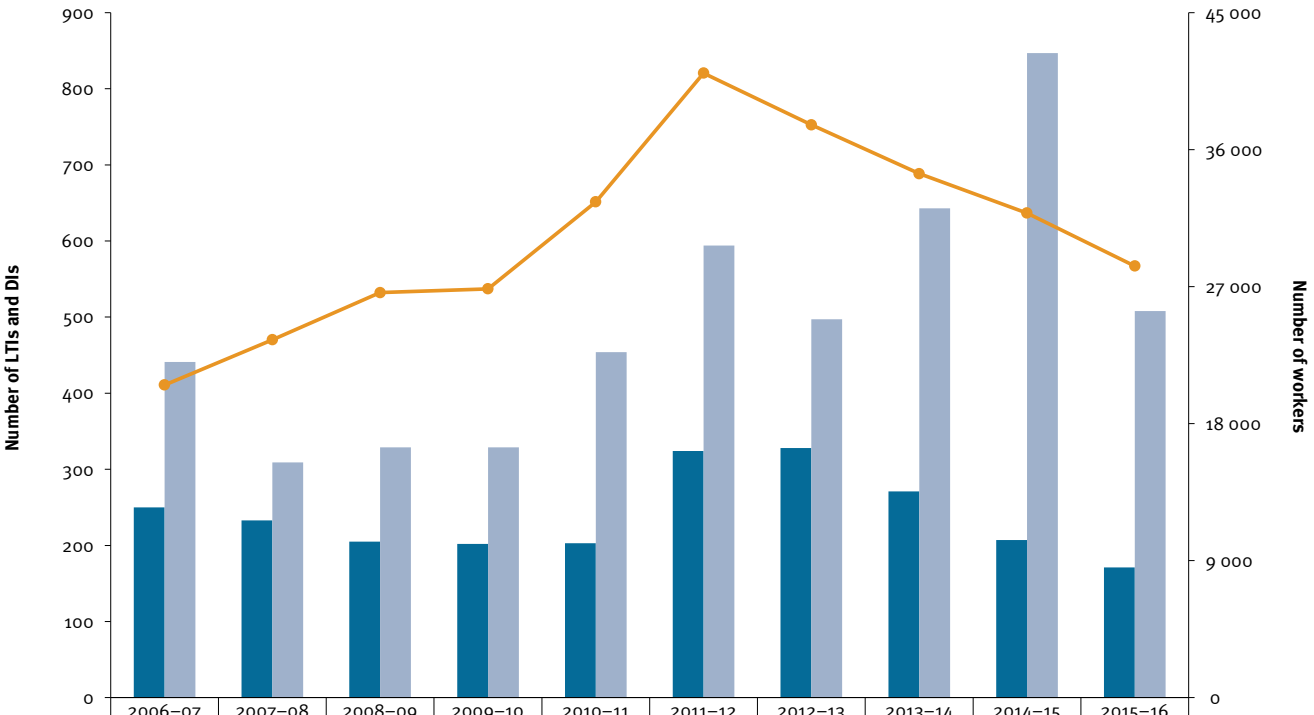
Figure 1.8: Lost time and disabling injury duration rate versus employment numbers (all sectors), 2006–16



	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15	2015–16
Duration rate	41.5	33.4	41.4	34.4	33.5	30.5	36.1	29.0	23.2	22.9
No. of workers	33 092	34 135	39 691	39 013	46 936	57 656	54 158	51 186	45 899	39 797

Financial year

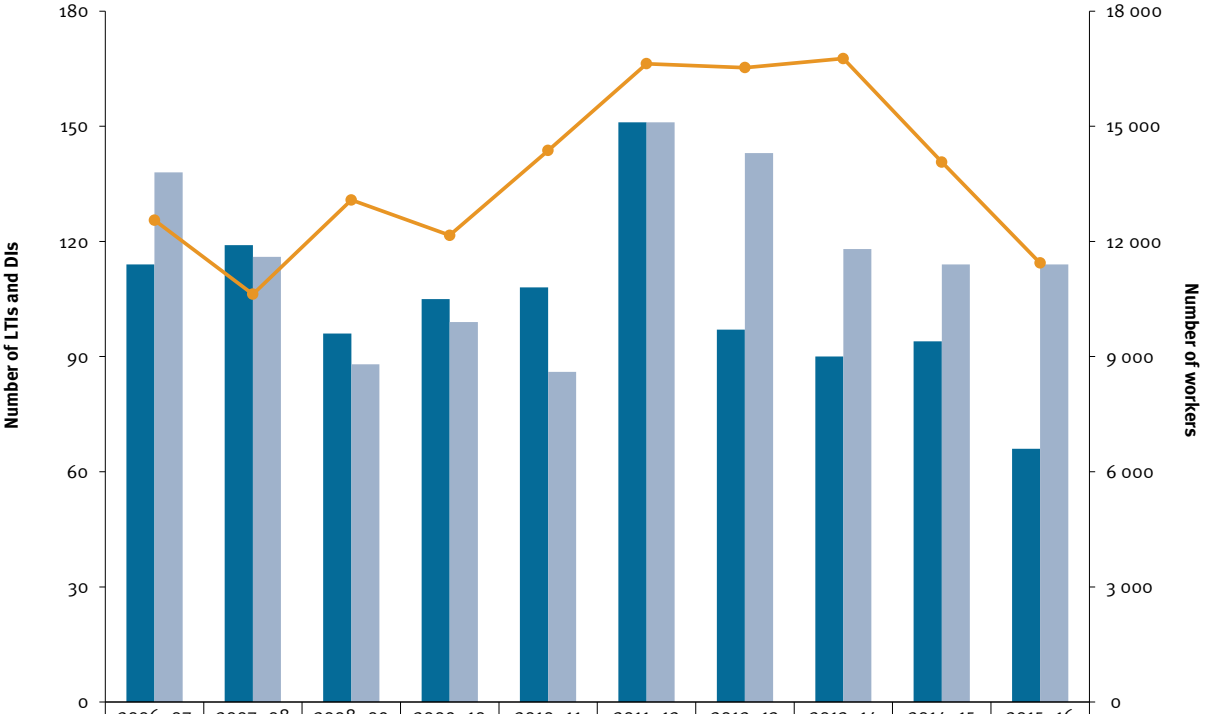
Figure 1.9: Lost time and disabling injuries versus employment numbers (coal mines), 2006–16



	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15	2015–16
Coal LTIs	250	233	205	202	203	324	328	271	207	171
Coal DIs	441	309	329	329	454	594	497	643	847	508
Coal workers	20 539	23 510	26 611	26 855	32 568	41 027	37 632	34 421	31 834	28 359

Financial year

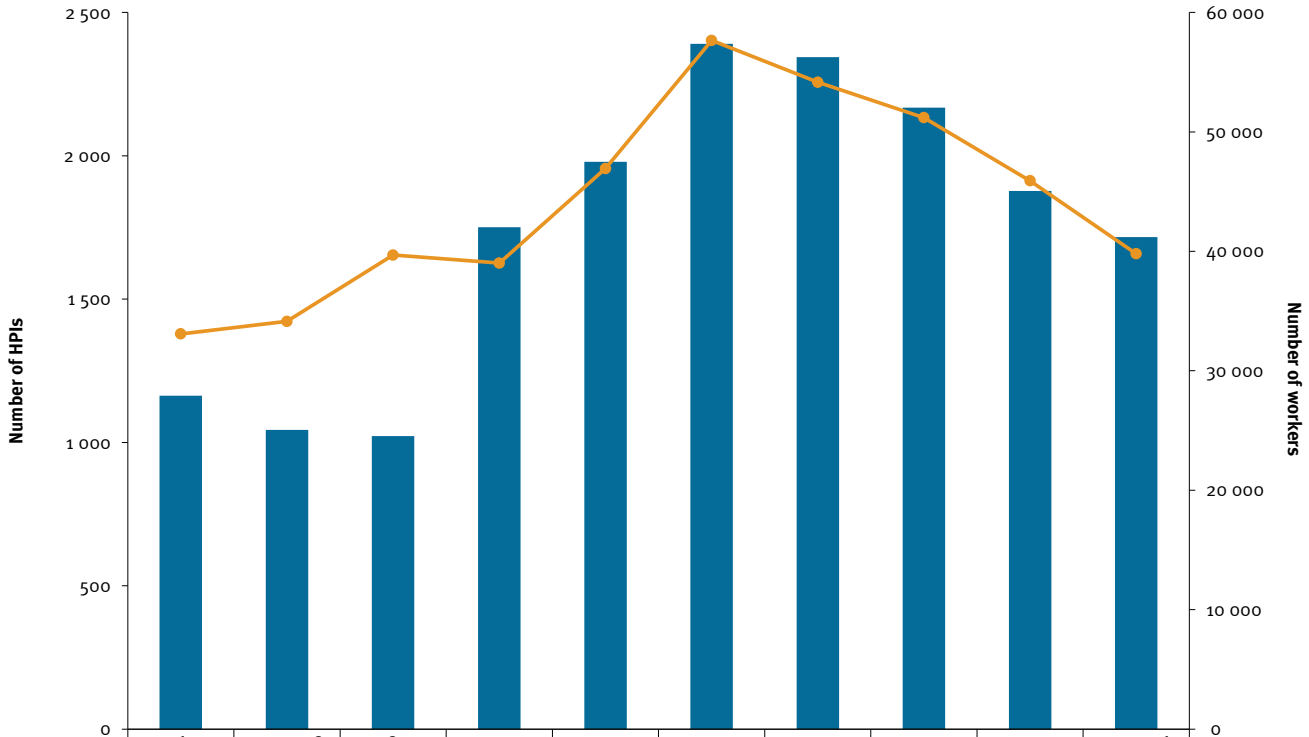
Figure 1.10: Lost time and disabling injuries versus employment numbers (metalliferous mines and quarries), 2006–16



	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15	2015–16
Met and quarries LTIs	114	119	96	105	108	151	97	90	94	66
Met and quarries DIs	138	116	88	99	86	151	143	118	114	114
Met and quarries workers	12 553	10 625	13 080	12 158	14 368	16 629	16 526	16 765	14 065	11 438

Financial year

Figure 1.11: High potential incidents versus employment numbers (all sectors), 2006–16



	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15	2015–16
Number of HPIs	1 163	1 044	1 022	1 751	1 979	2 390	2 344	2 168	1 877	1 716
No. of workers	33 092	34 135	39 691	39 013	46 936	57 656	54 158	51 186	45 899	39 797

Finamcial year

Figure 1.12: High potential incidents by type (all sectors), 2013–16

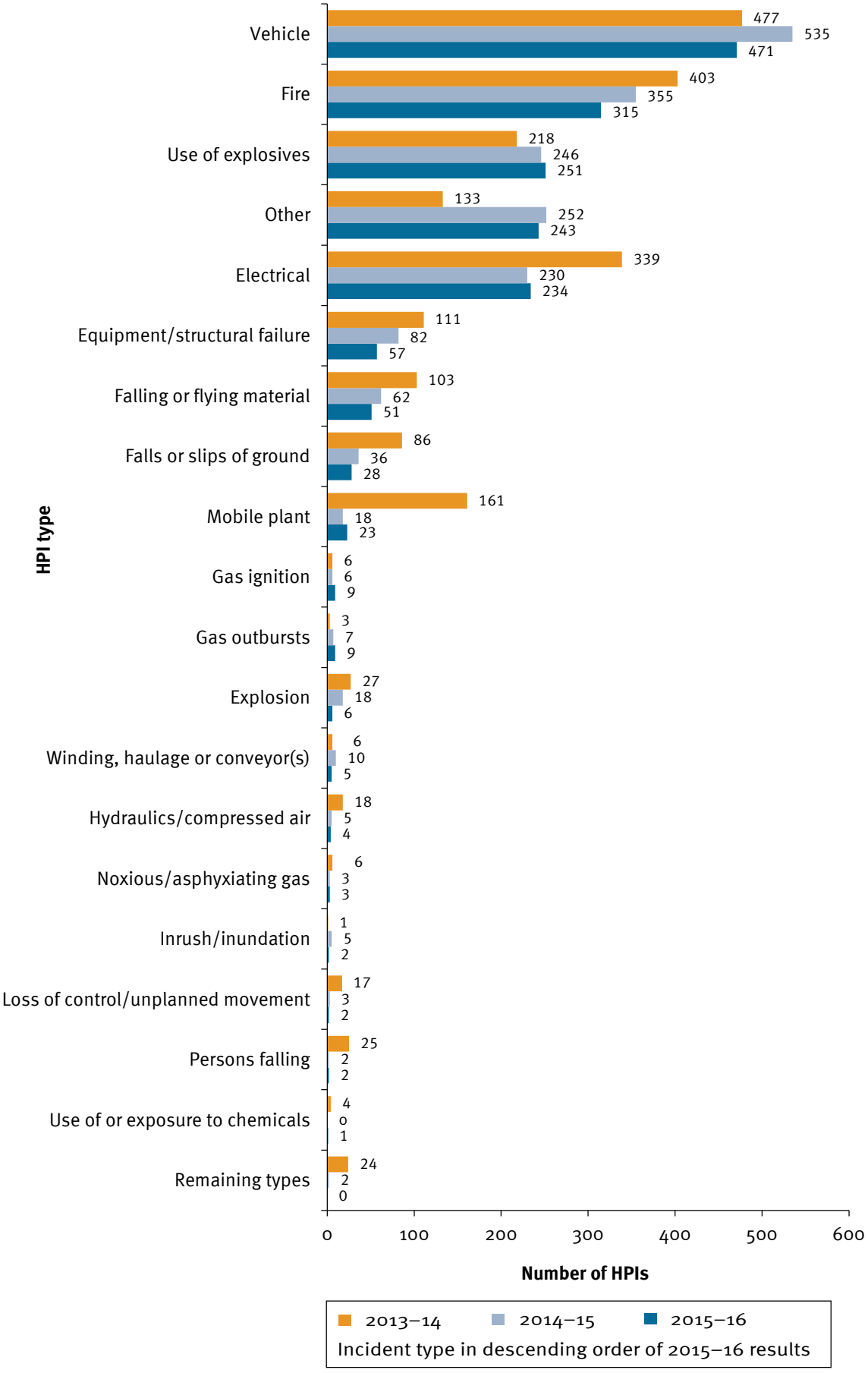


Figure 1.13: High potential incidents by type (surface coal mines), 2015–16

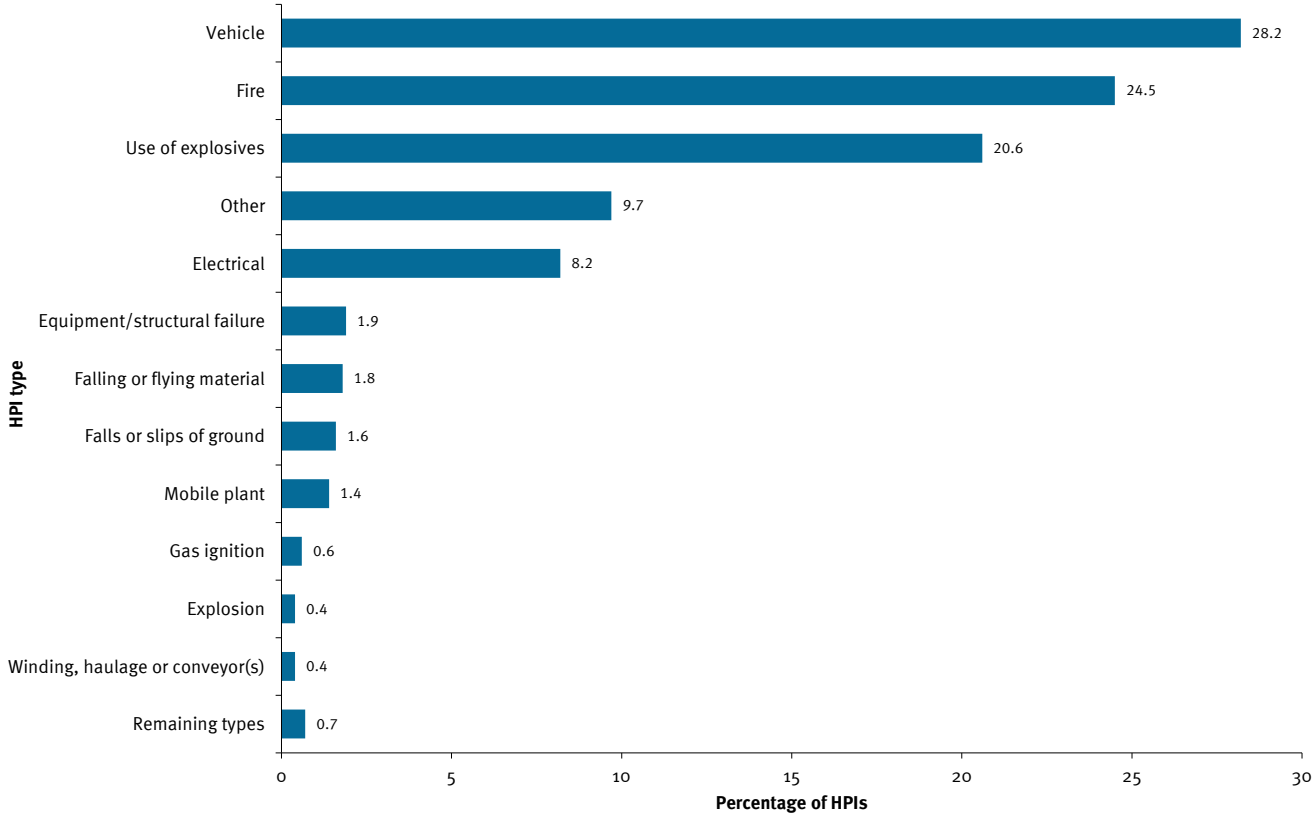


Figure 1.14: High potential incidents by type (underground coal mines), 2015–16

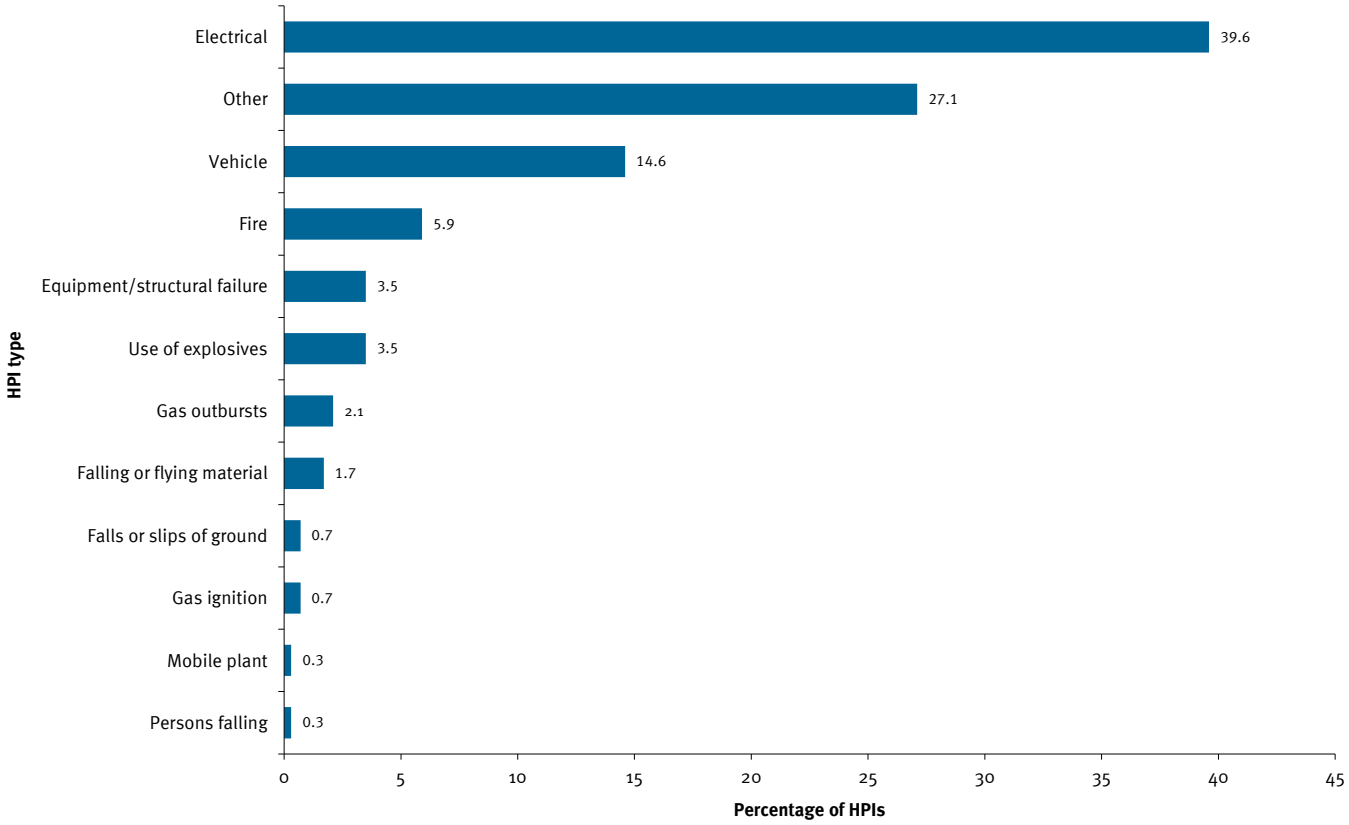


Figure 1.15: High potential incidents by type (surface metalliferous mines), 2015–16

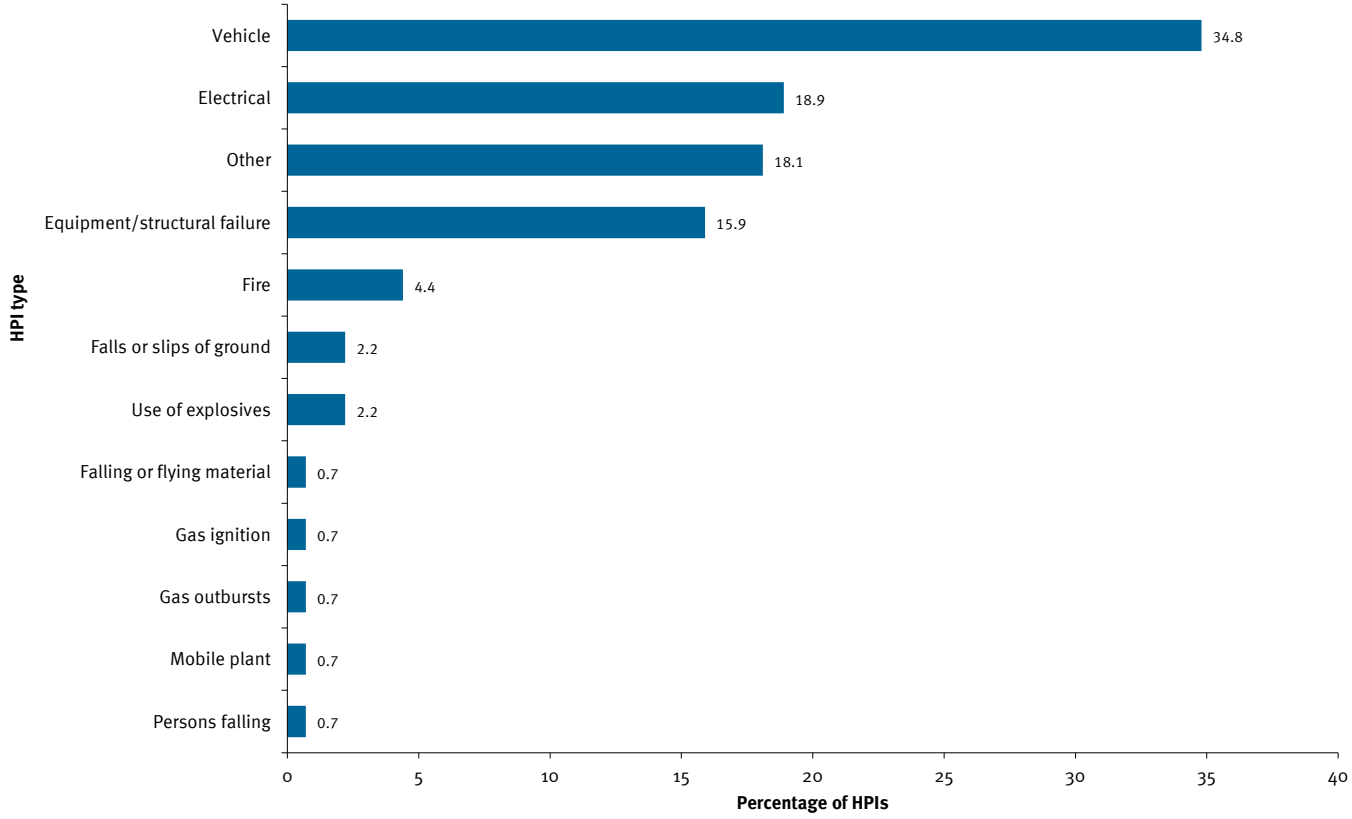


Figure 1.16: High potential incidents by type (underground metalliferous mines), 2015–16

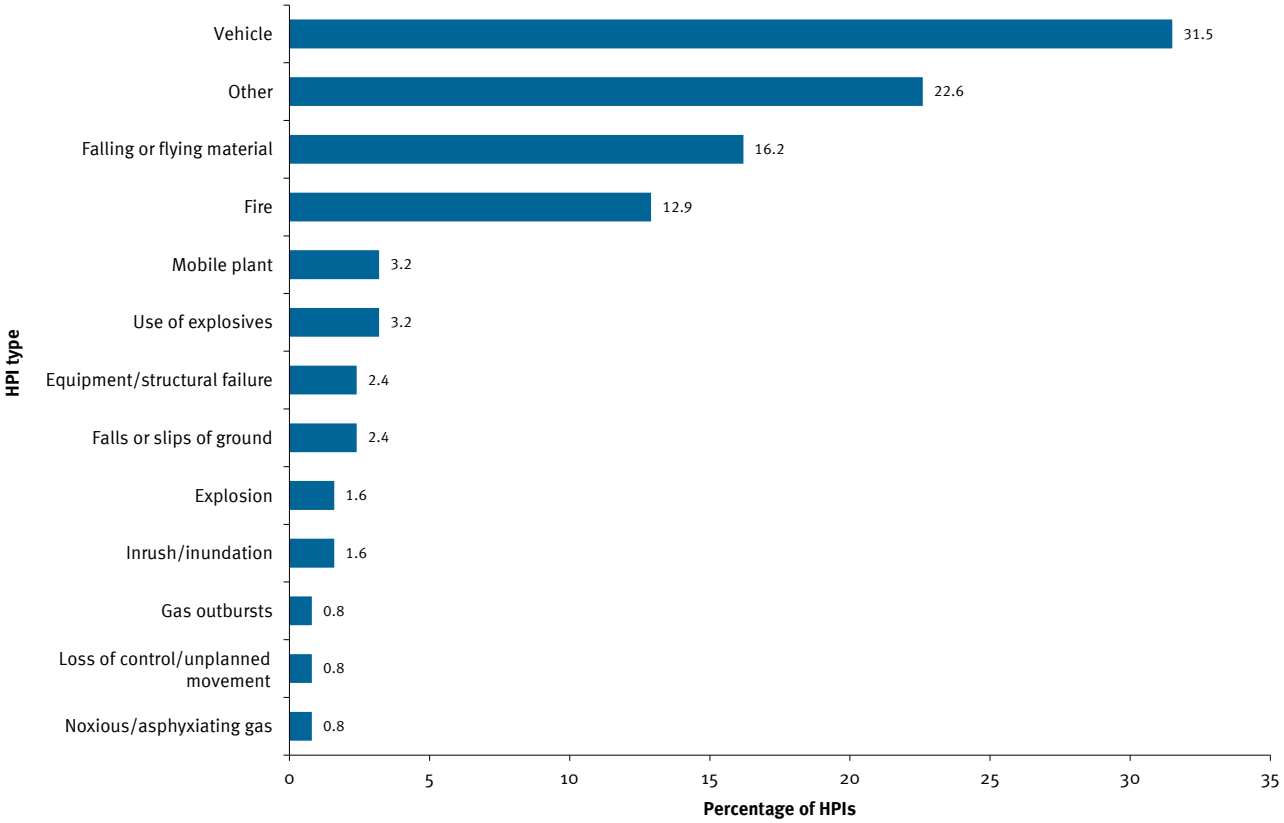
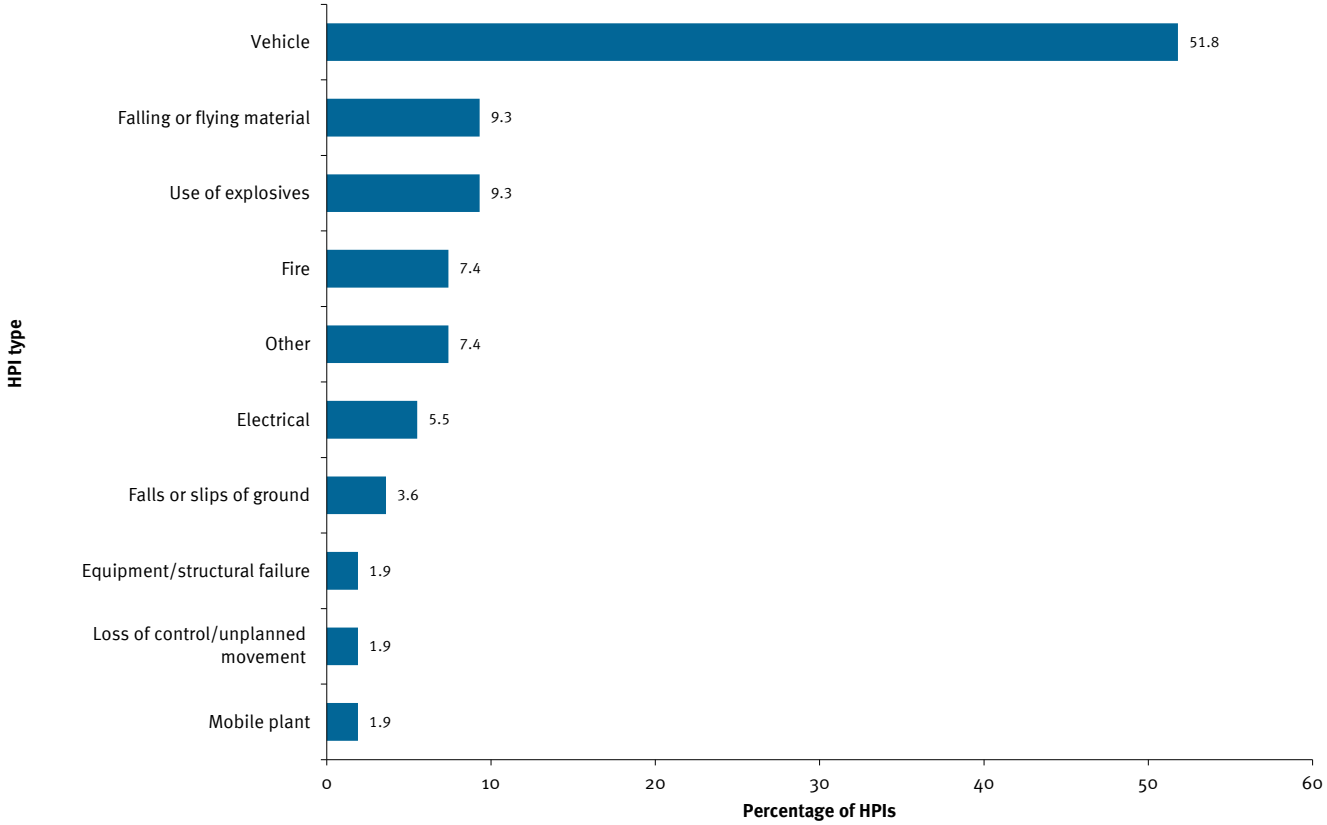


Figure 1.17: High potential incidents by type (quarries), 2015–16



2 MINES INSPECTORATE

The Mines Inspectorate

Mines Inspectorate staff, coal mine in the Bowen Basin
Photo: DNRM

2. The Mines Inspectorate

2.1 Miners Memorial Day

Every year on 19 September a service is held on the anniversary of Queensland's worst mining disaster when 75 coal miners lost their lives at the Mount Mulligan Mine in 1921. The 2015 Miners Memorial Day service was held at the Mount Morgan mine site and commemorated the lives of more than 1 500 miners who have died in mining tragedies in Queensland since 1877.

Members of the clergy, government, unions, industry officials and families of deceased mine workers were invited to attend and lay wreaths at the service. The service was also attended by members of the local mining community as well as the Minister for State Development and Minister for Natural Resources and Mines Dr Anthony Lynham and representatives from the Mines Inspectorate and Simtars.

2.2 Prosecutions and other enforcement actions

Metalliferous mines and quarries

On 6 March 2013, a fatal incident occurred at a metalliferous mine in north-west Queensland, in which a sub-contracting company's employee was fatally injured after being struck in the head by a falling pump, when it was being lifted with a crane.

As a result of this accident, three defendants were sentenced during the 2014–15 reporting year for failing to discharge their safety and health obligations and causing the death of the worker. They received a total of $210 000 in fines. This included the main contractor, the sub-contractor company engaged by the main contractor to complete maintenance work (which included lifting the pump) and the crane driver performing the lift.

The Site Senior Executive (SSE) of the main contractor was charged with failing to discharge their safety and health obligations and causing the death of the worker, contrary to section 31 of the *Mining and Quarrying Safety and Health Act 1999*. The charge related to a failure to ensure a manager performed the role of overseeing of independent contractors to ensure the safety and health management system was complied with by those contractors when they performed their work.

The SSE pleaded guilty and was sentenced in June 2016. A $35 000 fine was imposed by the court and orders were made that the SSE pay $25 300 in investigation costs and $4 860 in professional costs and disbursements.

Proceedings are still ongoing for additional defendants in relation to this incident.

On 5 June 2012, an incident occurred at a quarry in Central Queensland in which an employee was fatally injured after being pulled into an operating conveyor.

The company responsible for the design and importation of the conveyor was prosecuted for failing to discharge their safety and health obligations and causing the death of the worker, contrary to section 31 of the *Mining and Quarrying Safety and Health Act 1999*. The two charges related to failures to ensure the plant was designed and constructed in such a way that, when used properly, the risk from using the plant was at an acceptable level. Two directors of the company were also prosecuted for failing to ensure the company did not breach its obligations.

The Minister for State Development and Minister for Natural Resources and Mines, Dr Anthony Lynham lays a wreath at the Miners Memorial Day, 2015
Photo: DNRM

The company pleaded guilty and received a $30 000 fine as well as being required to pay $20 500 in professional and investigation costs.

The directors of the company, who also pleaded guilty, each received fines of $15 000 and were required to pay professional and investigation costs of approximately $20 500 each.

Proceedings are still ongoing for additional defendants in relation to this incident.

2.3 Complaints about safety and health at mines

Queensland mine safety and health legislation allows mine workers, their representatives or others to make confidential complaints about safety and health matters to the Mines Inspectorate.

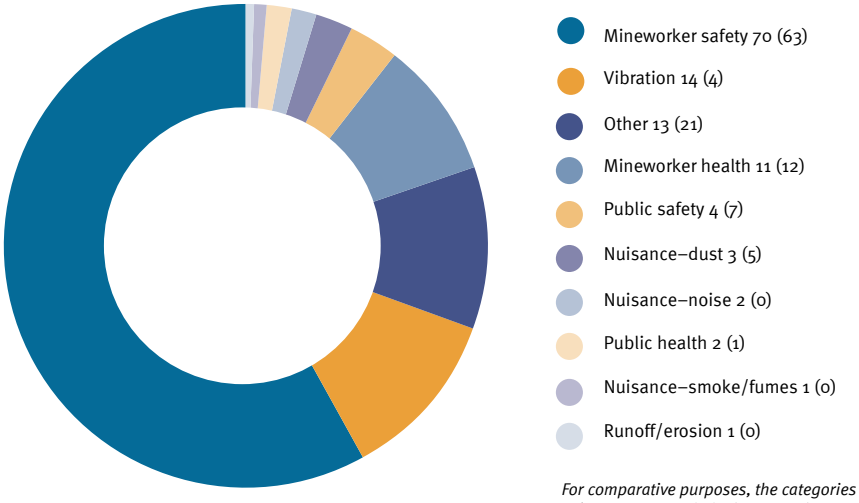
The complaints divided into the categories are shown in Figure 2.1 and an overview of complaints in Figure 2.2.

2.4 Inspections and audits conducted by the Mines Inspectorate

Inspectors and inspection officers have the power to enter and inspect or audit mines and quarries under the *Coal Mining Safety and Health Act 1999* and the *Mining and Quarrying Safety and Health Act 1999*.

Table 2.1 shows details of Mines Inspectorate activities in 2015–16. There were 1 781 inspections and 35 audits completed in 2015–16.

Figure 2.1: Complaints by type (all sectors), 2015–16 (compared with 2014–15)



For comparative purposes, the categories of 'Waste/spoil' and 'Hazardous substances' recorded 0 instances in 2015–16 (both down from 1 each recorded in 2014–15.)

Figure 2.2: Complaints about safety and health at mines, 2015–16

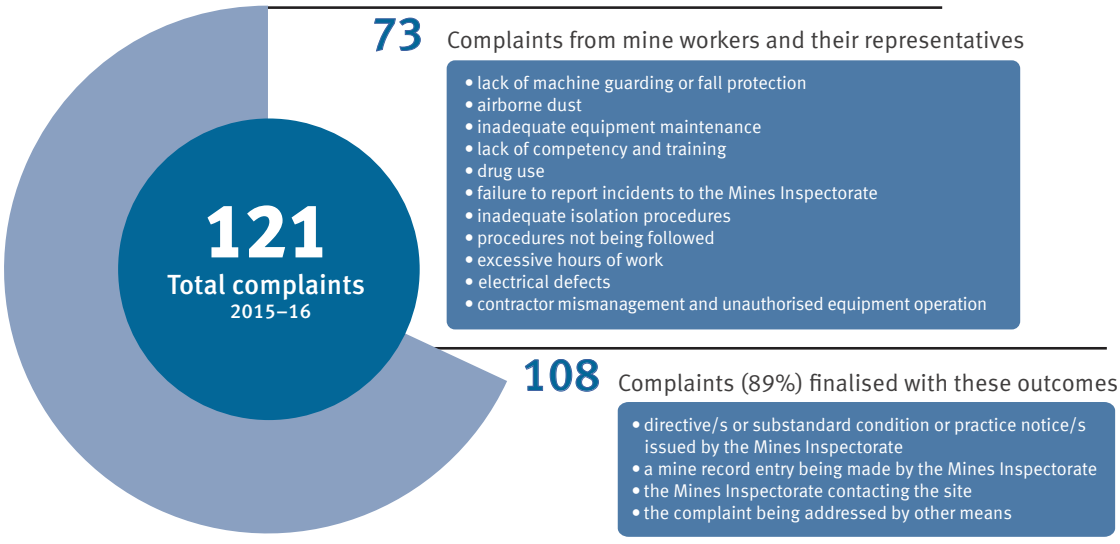


Table 2.1: Mines Inspectorate activity, 2011–16

	2011–12	2012–13	2013–14	2014–15	2015–16
Inspections	1 387	1 451	1 487	1 431	1 598
Inspections–unannounced	136	127	135	102	162
Inspections–weekend or backshift	8	13	12	10	17
Inspections–unannounced weekend or backshift	12	11	7	2	4
Audits–subject or system specific	48	14	36	35	32
Audits–compliance audits	7	19	13	27	3

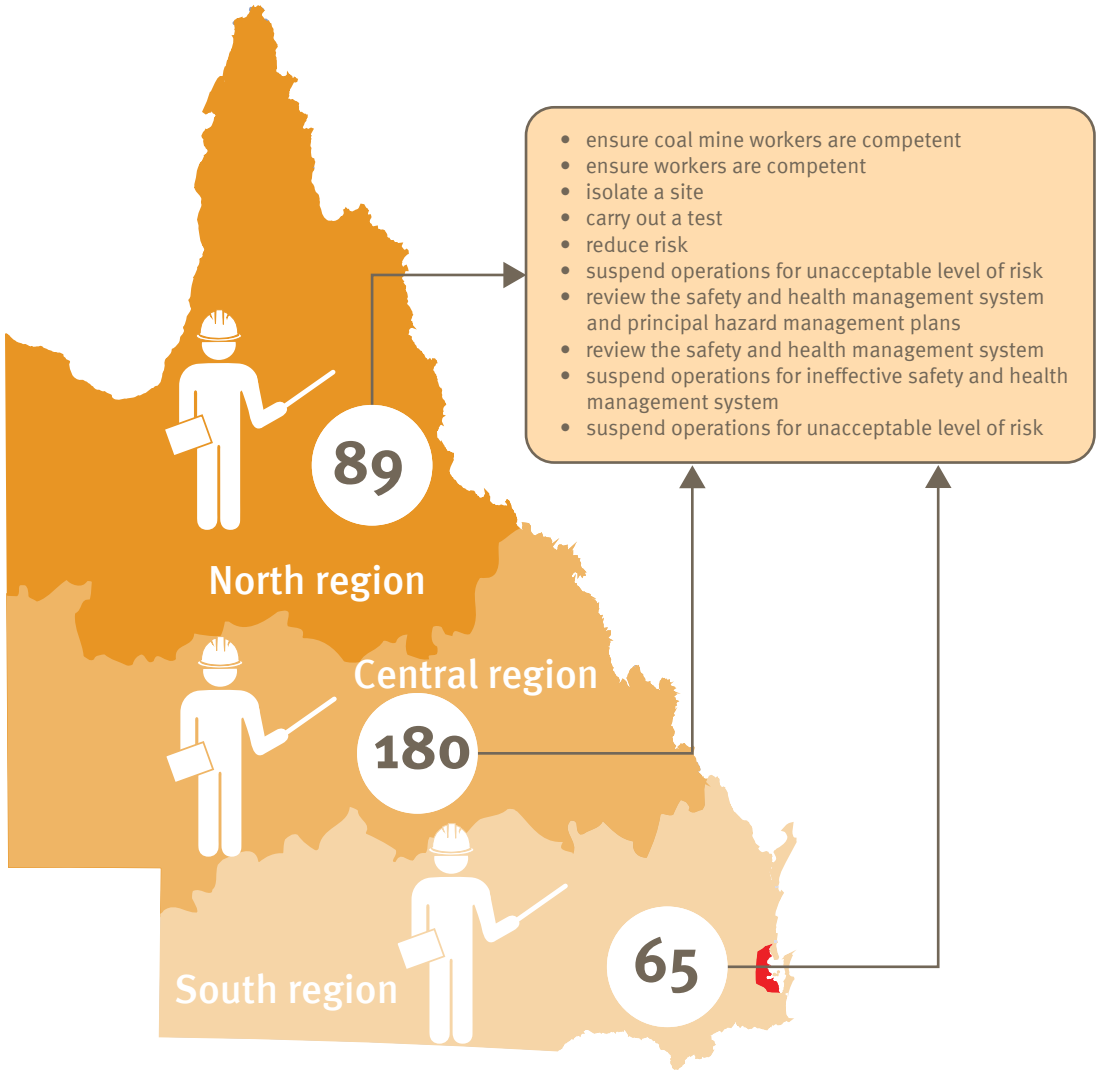
2.5 Directives issued by the Mines Inspectorate

Inspectors of mines and inspection officers have the power to issue various directives under the *Coal Mining Safety and Health Act 1999* and the *Mining and Quarrying Safety and Health Act 1999*.

During 2015–16 the Mines Inspectorate issued 334 directives; an increase from the 240 issued in 2014–15. Of these directives, 149 were issued to coal mines and 185 to non-coal mines and quarries.

The number of directives issued by the Mines Inspectorate by region are shown in Figure 2.3.

Figure 2.3: Directives issued by the Mines Inspectorate by region, 2015–16



3 INCIDENT NUMBERS

Lag performance indicators: incident numbers

Training exercise at Simtars
Photo: DNRM

3. Lag performance indicators: incident numbers

The following tables show five-year trends in a number of indicators used to assess safety and health performance across the industry. These are the raw, unadjusted numbers and cannot be used for comparison of industry sectors. Adjusted data and rates are presented in Chapter 4 of this report.

The performance indicators plotted are:

- Table 3.1: Number of lost time injuries, 2011–16
- Table 3.2: Number of lost time injury days (days away from work only), 2011–16
- Table 3.3: Number of lost time injury days (days away from work and days on alternative duties), 2011–16
- Table 3.4: Number of disabling injuries, 2011–16
- Table 3.5: Number of disabling injury days (days on alternative duties), 2011–16
- Table 3.6: Number of lost time injuries and disabling injuries, 2011–16
- Table 3.7: Number of lost time injury and disabling injury days (days away from work and days on alternative duties), 2011–16
- Table 3.8: Number of permanent incapacities, 2011–16
- Table 3.9: Number of fatalities, 2011–16
- Table 3.10: Number of medical treatment injuries, 2011–16
- Table 3.11: Number of total recordable injuries, 2011–16
- Table 3.12: Number of reported high potential incidents, 2011–16
- Table 3.13: Number of employees at 30 June, 2011–16
- Table 3.14: Total hours worked (millions), 2011–16

These indicators are lag indicators and are a measure of performance after the event. Lead indicators, while difficult to define and measure, show the positive steps taken to prevent incidents from occurring. A suite of lead indicators were measured and these are detailed in Chapter 6 of this report.

The number of total recordable injuries shown in Table 3.11 is a more accurate reflection of safety and health performance compared to the use of the number of lost time injuries alone. Using the number of lost time injuries as the main safety and health measure can be manipulated by having injured or sick workers prematurely return to work on light or alternative duties.

Table 3.3 shows the number of days lost from work and the number of days on alternative duties for lost time injuries. Most jurisdictions in Australia do not include the number of days on alternative duties but only count the days lost from work (see Table 3.2). The true severity of an injury can only be assessed by evaluating the number of days a worker is away from their normal job. So, it is necessary to count the days lost from work and the days on alternative duties when assessing injury severity.

Lost time injuries (LTI) 2014–15 compared to 2015–16

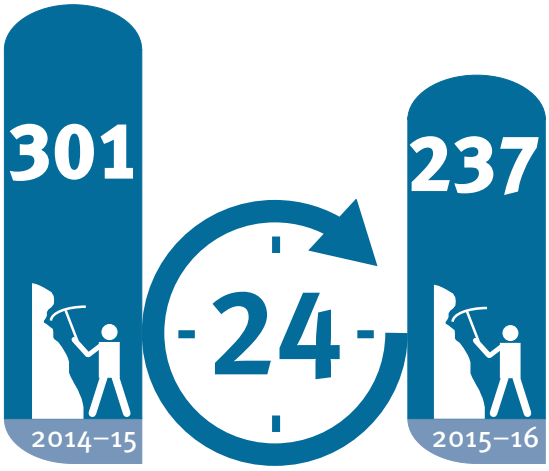


Table 3.1: Number of lost time injuries, 2011–16

	2011–12	2012–13	2013–14	2014–15	2015–16
Coal–surface	202	219	166	118	105
Coal–underground	122	109	105	89	66
Coal subtotal	**324**	**328**	**271**	**207**	**171**
Metalliferous–surface	73	64	47	50	36
Metalliferous–underground	50	19	25	31	20
Metalliferous subtotal	**123**	**83**	**72**	**81**	**56**
Quarries	28	14	18	13	10
All operations	**475**	**425**	**361**	**301**	**237**

Table 3.2: Number of lost time injury days (days away from work only), 2011–16

	2011–12	2012–13	2013–14	2014–15	2015–16
Coal–surface	6 077	7 777	5 526	4 597	2 698
Coal–underground	3 477	3 269	3 654	2 942	1 692
Coal subtotal	**9 554**	**11 046**	**9 180**	**7 539**	**4 390**
Metalliferous–surface	1 512	1 239	851	492	376
Metalliferous–underground	991	479	1 303	1 438	523
Metalliferous subtotal	**2 503**	**1 718**	**2 154**	**1 930**	**899**
Quarries	573	410	444	308	272
All operations	**12 630**	**13 174**	**11 778**	**9 777**	**5 561**

Table 3.3: Number of lost time injury days (days away from work and days on alternative duties), 2011–16

	2011–12	2012–13	2013–14	2014–15	2015–16
Coal–surface	10 684	13 320	8 950	6 299	3 698
Coal–underground	6 003	6 696	5 458	4 120	2 576
Coal subtotal	**16 687**	**20 016**	**14 408**	**10 419**	**6 274**
Metalliferous–surface	1 887	1 833	1 341	1 021	740
Metalliferous–underground	1 403	1 265	1 853	2 443	1 016
Metalliferous subtotal	**3 290**	**3 098**	**3 194**	**3 464**	**1 756**
Quarries	736	435	558	410	290
All operations	**20 713**	**23 549**	**18 160**	**14 293**	**8 320**

Table 3.4: Number of disabling injuries, 2011–16

	2011–12	2012–13	2013–14	2014–15	2015–16
Coal–surface	337	312	374	463	277
Coal–underground	257	185	269	384	231
Coal subtotal	**594**	**497**	**643**	**847**	**508**
Metalliferous–surface	56	62	50	15	27
Metalliferous–underground	85	80	64	90	85
Metalliferous subtotal	**141**	**142**	**114**	**105**	**112**
Quarries	10	1	4	9	2
All operations	**745**	**640**	**761**	**961**	**622**

Table 3.5: Number of disabling injury days (days on alternative duties), 2011–16

	2011–12	2012–13	2013–14	2014–15	2015–16
Coal–surface	8 983	6 623	7 405	6 270	6 308
Coal–underground	2 752	3 466	3 900	6 147	3 679
Coal subtotal	**11 735**	**10 089**	**11 305**	**12 417**	**9 987**
Metalliferous–surface	1 551	1 939	732	361	503
Metalliferous–underground	2 951	2 821	2 231	1 965	847
Metalliferous subtotal	**4 502**	**4 760**	**2 963**	**2 326**	**1 350**
Quarries	231	17	76	294	26
All operations	**16 468**	**14 866**	**14 344**	**15 037**	**11 363**

Table 3.6: Number of lost time injuries and disabling injuries, 2011–16

	2011–12	2012–13	2013–14	2014–15	2015–16
Coal–surface	539	531	540	581	382
Coal–underground	379	294	374	473	297
Coal subtotal	**918**	**825**	**914**	**1 054**	**679**
Metalliferous–surface	129	126	97	65	63
Metalliferous–underground	135	99	89	121	105
Metalliferous subtotal	**264**	**225**	**186**	**186**	**168**
Quarries	38	15	22	22	12
All operations	**1 220**	**1 065**	**1 122**	**1 262**	**859**

Table 3.7: Number of lost time injury and disabling injury days (days away from work and days on alternative duties), 2011–16

	2011–12	2012–13	2013–14	2014–15	2015–16
Coal–surface	19 667	19 943	16 355	12 569	10 006
Coal–underground	8 755	10 162	9 358	10 267	6 255
Coal subtotal	**28 422**	**30 105**	**25 713**	**22 836**	**16 261**
Metalliferous–surface	3 438	3 772	2 073	1 382	1 243
Metalliferous–underground	4 354	4 086	4 084	4 408	1 863
Metalliferous subtotal	**7 792**	**7 858**	**6 157**	**5 790**	**3 106**
Quarries	967	452	634	704	316
All operations	**37 181**	**38 415**	**32 504**	**29 330**	**19 683**

Table 3.8: Number of permanent incapacities, 2011–16

	2011–12	2012–13	2013–14	2014–15	2015–16
Coal–surface	16	16	21	8	52
Coal–underground	3	7	6	8	29
Coal subtotal	**19**	**23**	**27**	**16**	**81**
Metalliferous–surface	3	6	3	11	2
Metalliferous–underground	3	1	6	8	3
Metalliferous subtotal	**6**	**7**	**9**	**19**	**5**
Quarries	3	2	2	3	1
All operations	**28**	**32**	**38**	**38**	**87**

Table 3.9: Number of fatalities, 2011–16

	2011–12	2012–13	2013–14	2014–15	2015–16
Coal–surface	0	0	0	2	0
Coal–underground	0	0	1	1	0
Coal subtotal	**0**	**0**	**1**	**3**	**0**
Metalliferous–surface	0	2	0	0	0
Metalliferous–underground	0	0	1	1	0
Metalliferous subtotal	**0**	**2**	**1**	**1**	**0**
Quarries	1	0	0	0	0
Exploration	0	0	0	0	0
All operations	**1**	**2**	**2**	**4**	**0**

Table 3.10: Number of medical treatment injuries, 2011–16

	2011–12	2012–13	2013–14	2014–15	2015–16
Coal–surface	467	396	364	350	355
Coal–underground	350	201	88	162	77
Coal subtotal	**817**	**597**	**452**	**512**	**432**
Metalliferous–surface	195	131	120	101	71
Metalliferous–underground	149	79	60	44	44
Metalliferous subtotal	**344**	**210**	**180**	**145**	**115**
Quarries	38	58	72	31	39
All operations	**1 199**	**865**	**704**	**688**	**586**

Table 3.11: Number of total recordable injuries, 2011–16

	2011–12	2012–13	2013–14	2014–15	2015–16
Coal–surface	1 006	927	904	931	737
Coal–underground	729	495	462	635	374
Coal subtotal	**1 735**	**1 422**	**1 366**	**1 566**	**1 111**
Metalliferous–surface	324	257	217	166	134
Metalliferous–underground	284	178	149	165	149
Metalliferous subtotal	608	**435**	**366**	**331**	**283**
Quarries	76	73	94	53	51
All operations	**2 419**	**1 930**	**1 826**	**1 950**	**1 445**

Table 3.12: Number of reported high potential incidents, 2011–16

	2011–12	2012–13	2013–14	2014–15	2015–16
Coal–surface	1 380	1 397	1 303	1 147	1 112
Coal–underground	398	428	423	324	288
Coal subtotal	**1 778**	**1 825**	**1 726**	**1 471**	**1 400**
Metalliferous–surface	302	238	196	182	138
Metalliferous–underground	216	210	186	173	124
Metalliferous subtotal	**518**	**448**	**382**	**355**	**262**
Quarries	94	71	60	51	54
All operations	**2 390**	**2 344**	**2 168**	**1 877**	**1 716**

Table 3.13: Number of employees at 30 June, 2011–16

	2011–12	2012–13	2013–14	2014–15	2015–16
Coal–surface	33 820	30 666	27 825	25 211	23 731
Coal–underground	7 207	6 966	6 596	6 623	4 628
Coal subtotal	**41 027**	**37 632**	**34 421**	**31 834**	**28 359**
Metalliferous–surface	8 628	8 394	8 821	7 325	5 618
Metalliferous–underground	6 217	6 600	6 209	5 270	4 462
Metalliferous subtotal	**14 845**	**14 994**	**15 030**	**12 595**	**10 080**
Quarries	1 784	1 532	1 735	1 470	1 358
All operations	**57 656**	**54 158**	**51 186**	**45 899**	**39 797**

Table 3.14: Total hours worked (millions), 2011–16

	2011–12	2012–13	2013–14	2014–15	2015–16
Coal–surface	64.2	66.3	61.4	51.6	49.8
Coal–underground	17.3	18.6	14.3	14.0	13.7
Coal subtotal	**81.5**	**84.9**	**75.7**	**65.6**	**63.5**
Metalliferous–surface	20.1	20.3	19.6	16.8	14.4
Metalliferous–underground	14.2	15.0	13.3	12.9	9.8
Metalliferous subtotal	**34.3**	**35.3**	**32.9**	**29.7**	**24.2**
Quarries	2.2	2.8	2.9	2.5	2.4
All operations	**118.0**	**123.0**	**111.5**	**97.8**	**90.1**

Bromelton Quarry, 2016
Photo: DNRM

4 INCIDENT RATES

Lag performance indicators: incident rates

Workshop maintenance
Photo: DNRM

4. Lag performance indicators: incident rates

The graphs in this chapter and their accompanying tables show five-year trends across a number of indicators used to assess safety and health performance across the industry. The data presented here has been adjusted either in terms of the number of hours worked or the average days lost per injury. These adjusted values can be used to make comparisons across different sectors.

The performance indicators plotted are:

- Figure 4.1: Lost time injury frequency rate, 2011–16
- Figure 4.2: Lost time injury severity rate (days away from work only), 2011–16
- Figure 4.3: Lost time injury duration rate (days away from work only), 2011–16
- Figure 4.4: Lost time injury severity rate (days away from work and on alternative duties), 2011–16
- Figure 4.5: Lost time injury duration rate (days away from work and on alternative duties), 2011–16
- Figure 4.6: Disabling injury frequency rate, 2011–16
- Figure 4.7: Disabling injury severity rate, 2011–16
- Figure 4.8: Disabling injury duration rate, 2011–16
- Figure 4.9: Lost time injury and disabling injury frequency rate, 2011–16
- Figure 4.10: Lost time injury and disabling injury severity rate, 2011–16
- Figure 4.11: Lost time injury and disabling injury duration rate, 2011–16
- Figure 4.12: Permanent incapacity frequency rate, 2011–16
- Figure 4.13: Fatality frequency rate, 2011–16
- Figure 4.14: Total recordable injury frequency rate, 2011–16
- Figure 4.15: Fatality frequency rate by sector, 2006–16.

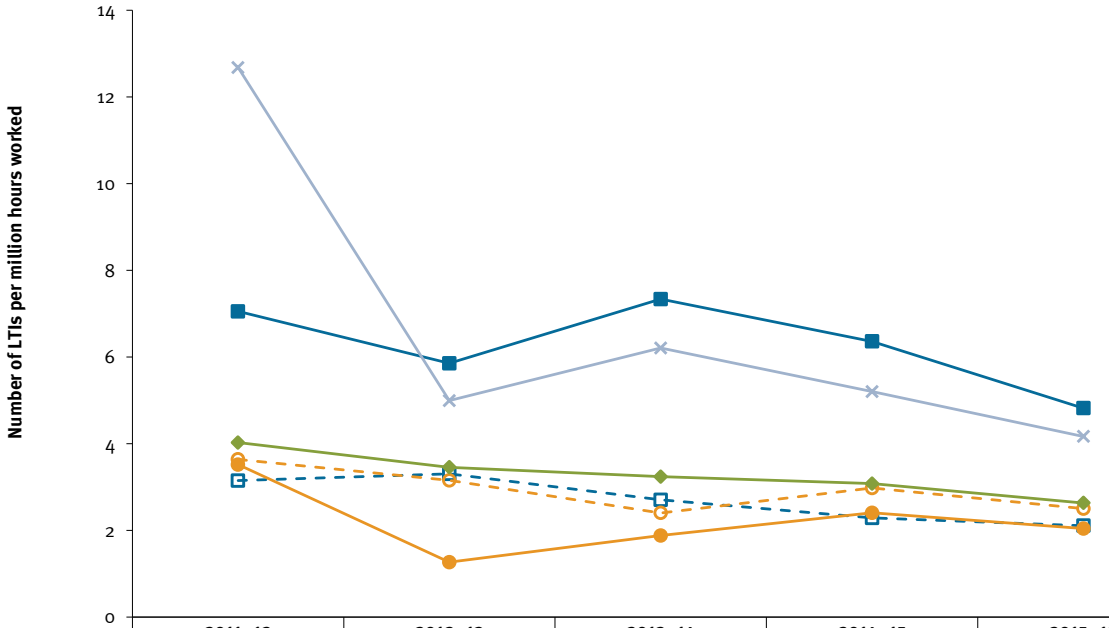
Figures 4.10 and 4.11 indicate the combined lost time injury and disabling injury severity rate and duration rate respectively. These performance indicators are the best measure of safety performance and are primarily referred to when assessing industry performance.

Lost time injury/disease: An incident resulting in a fatality, permanent disability or time lost from work of one shift or more. The shift on which the incident occurred is not counted as a shift lost.

Lost time injury frequency rate: The number of lost time injuries/diseases per million hours worked.

Lost time and disabling injury frequency rate: The number of lost time injuries/diseases and disabling injuries per million hours worked.

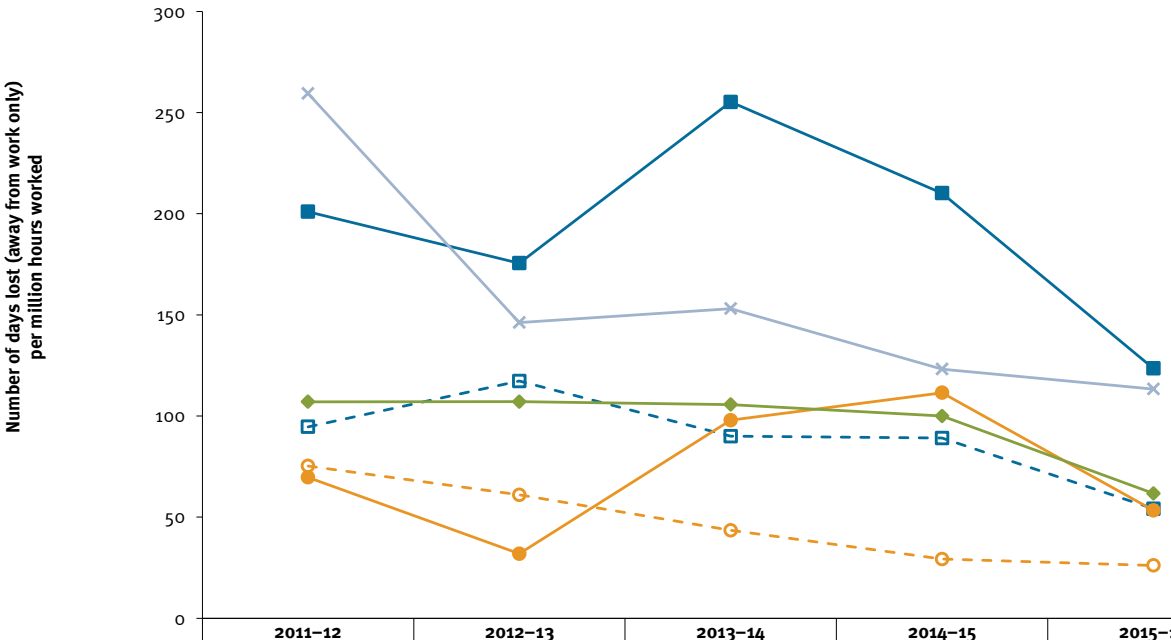
Figure 4.1: Lost time injury frequency rate, 2011–16



	2011–12	2012–13	2013–14	2014–15	2015–16
Coal – surface	3.1	3.3	2.7	2.3	2.1
Coal – underground	7.1	5.9	7.3	6.4	4.8
Metalliferous – surface	3.6	3.2	2.4	3.0	2.5
Metalliferous – underground	3.5	1.3	1.9	2.4	2.0
Quarries	12.7	5.0	6.2	5.2	4.2
All operations	4.0	3.5	3.2	3.1	2.6

Financial year

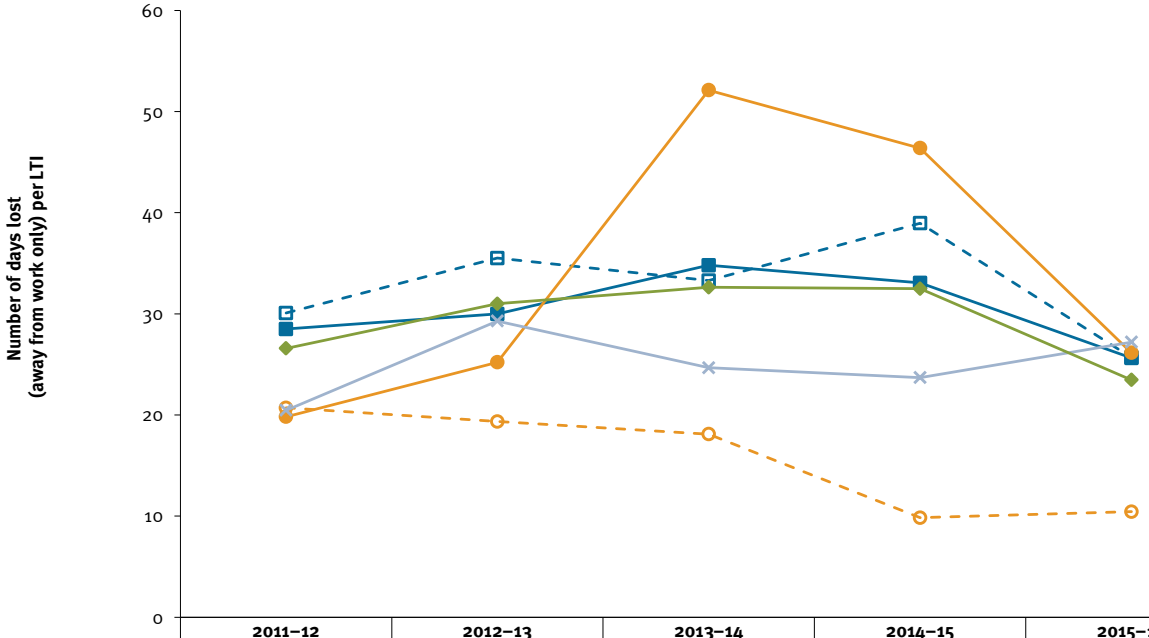
Figure 4.2: Lost time injury severity rate (days away from work only), 2011–16



	2011–12	2012–13	2013–14	2014–15	2015–16
Coal – surface	95	117	90	89	54
Coal – underground	201	176	255	210	124
Metalliferous – surface	75	61	44	29	26
Metalliferous – underground	70	32	98	111	53
Quarries	259	146	153	123	113
All operations	107	107	106	100	62

Financial year

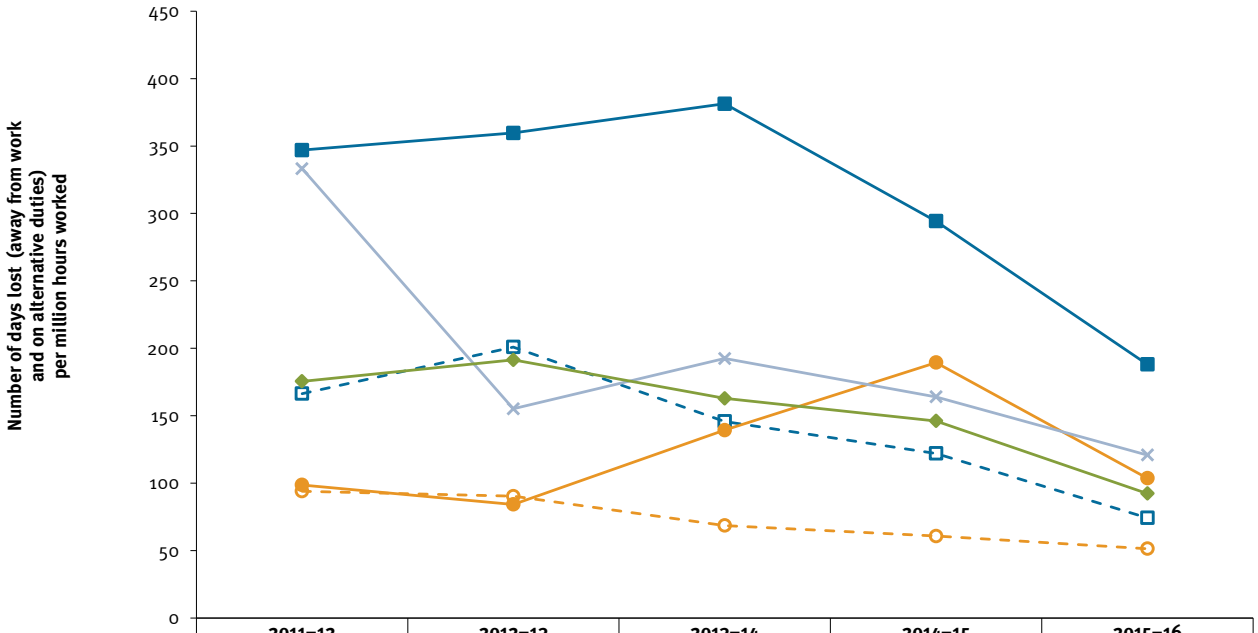
Figure 4.3: Lost time injury duration rate (days away from work only), 2011–16



	2011–12	2012–13	2013–14	2014–15	2015–16
Coal – surface	30.1	35.5	33.3	39.0	25.7
Coal – underground	28.5	30.0	34.8	33.1	25.6
Metalliferous – surface	20.7	19.4	18.1	9.8	10.4
Metalliferous – underground	19.8	25.2	52.1	46.4	26.2
Quarries	20.5	29.3	24.7	23.7	27.2
All operations	26.6	31.0	32.6	32.5	23.5

Financial year

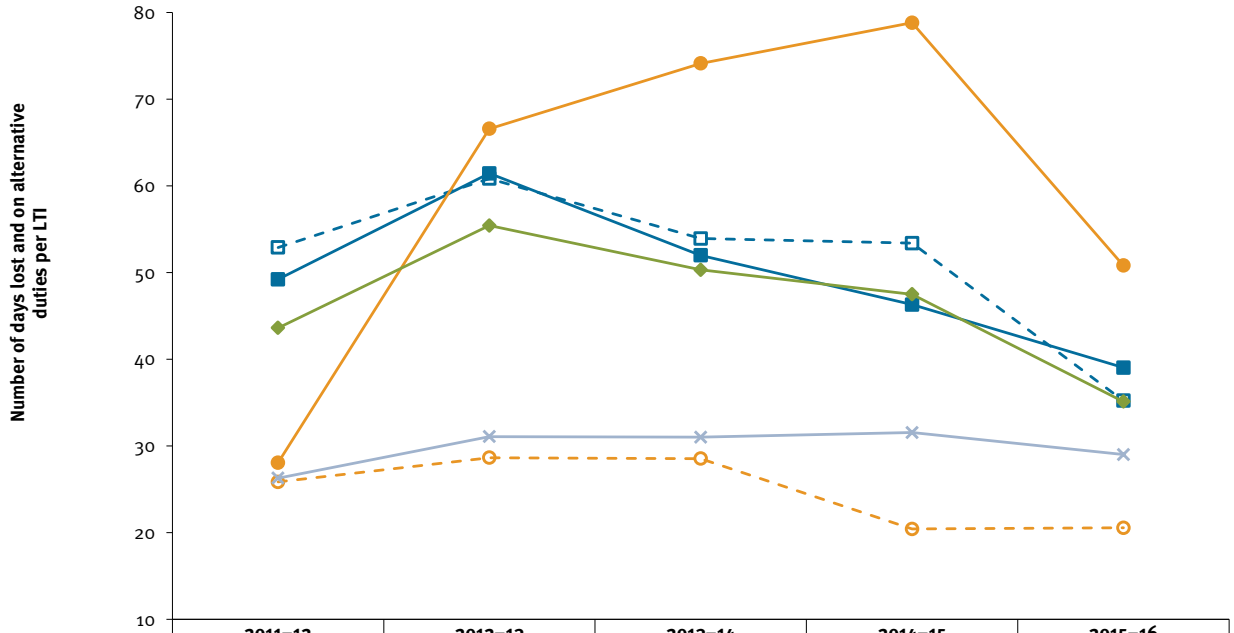
Figure 4.4: Lost time injury severity rate (days away from work and on alternative duties), 2011–16



	2011–12	2012–13	2013–14	2014–15	2015–16
Coal – surface	166	201	146	122	74
Coal – underground	347	360	381	294	188
Metalliferous – surface	94	90	69	61	51
Metalliferous – underground	99	84	139	189	104
Quarries	333	155	192	164	121
All operations	176	191	163	146	92

Financial year

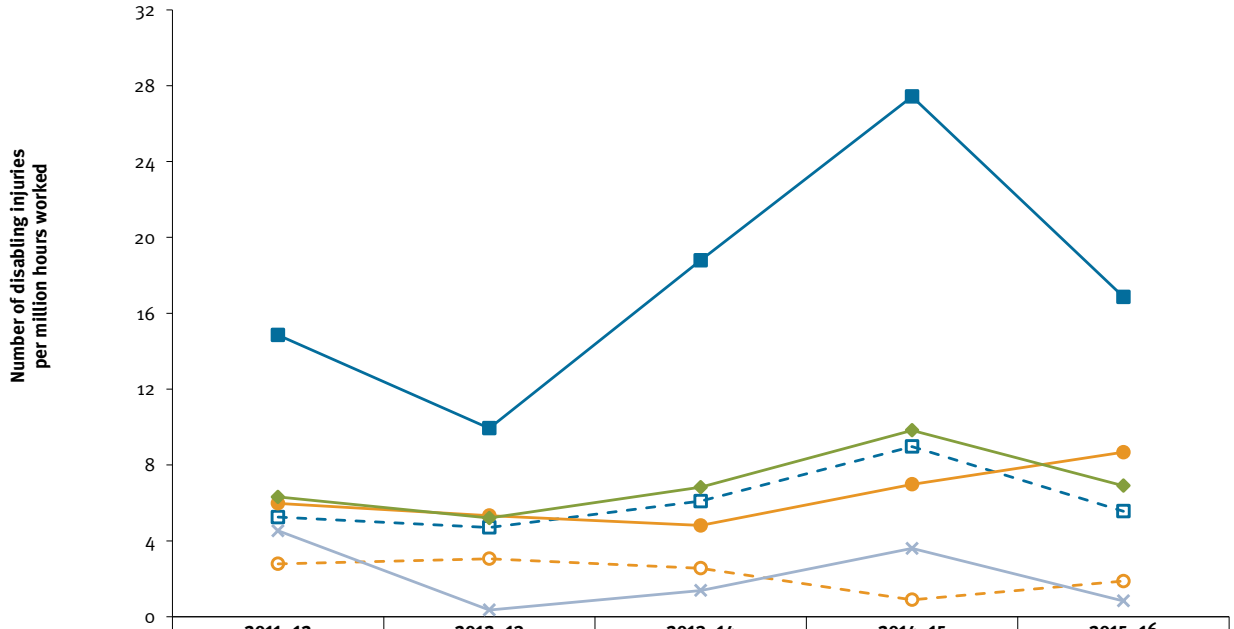
Figure 4.5: Lost time injury duration rate (days away from work and on alternative duties), 2011–16



	2011–12	2012–13	2013–14	2014–15	2015–16
Coal – surface	52.9	60.8	53.9	53.4	35.2
Coal – underground	49.2	61.4	52.0	46.3	39.0
Metalliferous – surface	25.8	28.6	28.5	20.4	20.6
Metalliferous – underground	28.1	66.6	74.1	78.8	50.8
Quarries	26.3	31.1	31.0	31.5	29.0
All operations	43.6	55.4	50.3	47.5	35.1

Financial year

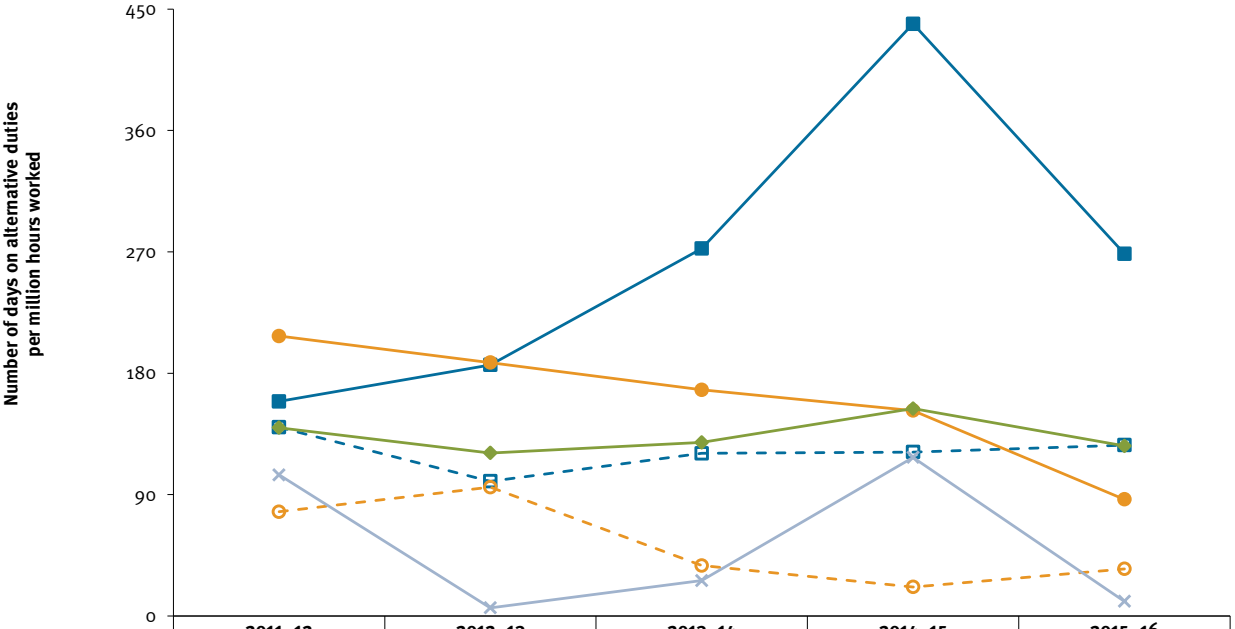
Figure 4.6: Disabling injury frequency rate, 2011–16



	2011–12	2012–13	2013–14	2014–15	2015–16
Coal – surface	5.2	4.7	6.1	9.0	5.6
Coal – underground	14.9	9.9	18.8	27.4	16.9
Metalliferous – surface	2.8	3.1	2.6	0.9	1.9
Metalliferous – underground	6.0	5.3	4.8	7.0	8.7
Quarries	4.5	0.4	1.4	3.6	0.8
All operations	6.3	5.2	6.8	9.8	6.9

Financial year

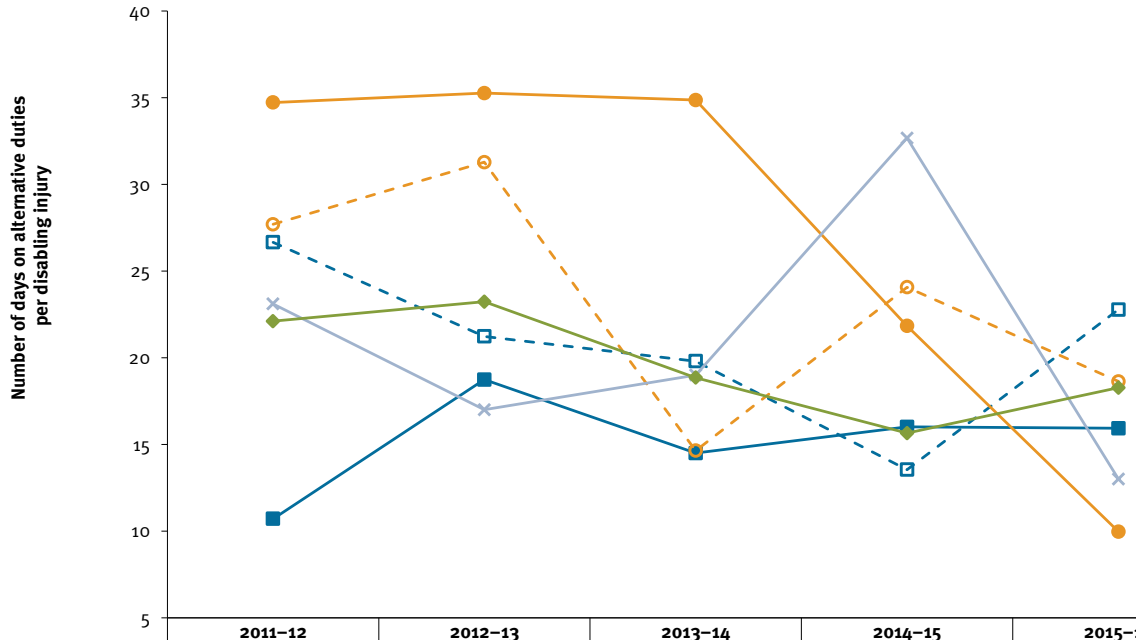
Figure 4.7: Disabling injury severity rate, 2011–16



	2011–12	2012–13	2013–14	2014–15	2015–16
Coal – surface	140	100	121	122	127
Coal – underground	159	186	272	439	269
Metalliferous – surface	77	96	37	21	35
Metalliferous – underground	208	188	168	152	86
Quarries	105	6	26	118	11
All operations	140	121	129	154	126

Financial year

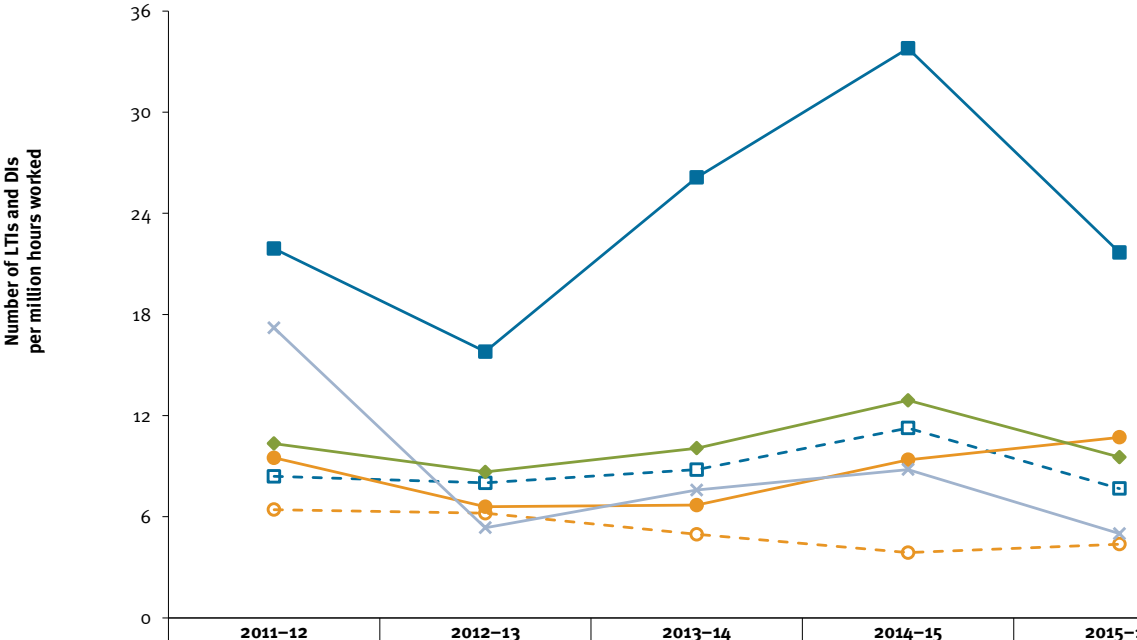
Figure 4.8: Disabling injury duration rate, 2011–16



	2011–12	2012–13	2013–14	2014–15	2015–16
Coal – surface	26.7	21.2	19.8	13.5	22.8
Coal – underground	10.7	18.7	14.5	16.0	15.9
Metalliferous – surface	27.7	31.3	14.6	24.1	18.6
Metalliferous – underground	34.7	35.3	34.9	21.8	10.0
Quarries	23.1	17.0	19.0	32.7	13.0
All operations	22.1	23.2	18.8	15.6	18.3

Financial year

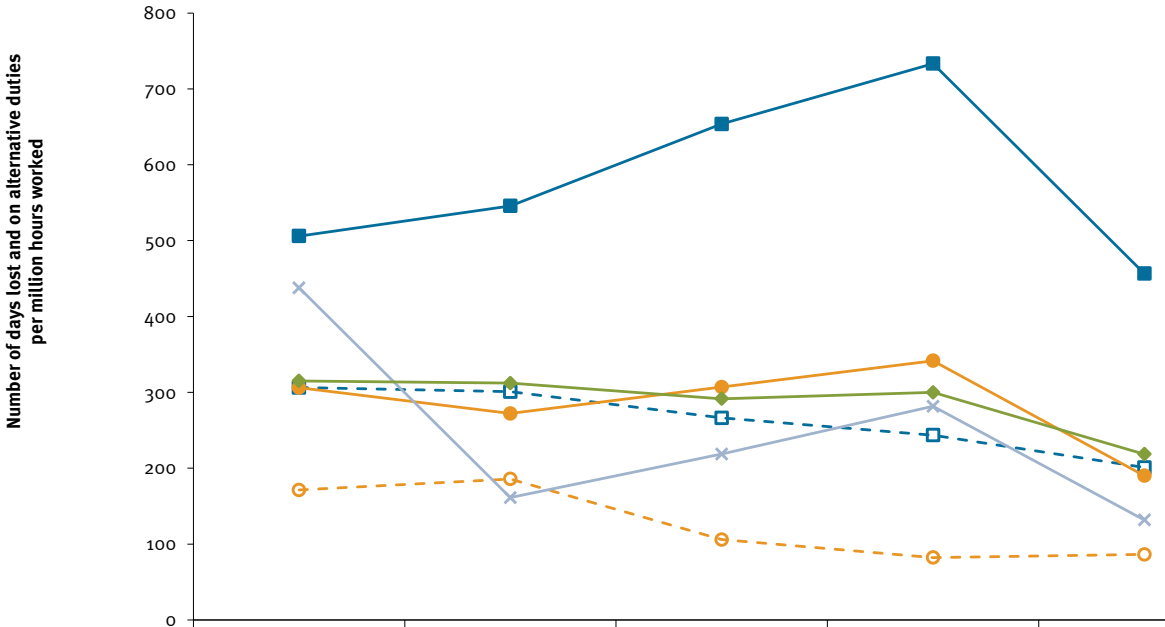
Figure 4.9: Lost time injury and disabling injury frequency rate, 2011–16



	2011–12	2012–13	2013–14	2014–15	2015–16
Coal – surface	8.4	8.0	8.8	11.3	7.7
Coal – underground	21.9	15.8	26.1	33.8	21.7
Metalliferous – surface	6.4	6.2	5.0	3.9	4.4
Metalliferous – underground	9.5	6.6	6.7	9.4	10.7
Quarries	17.2	5.3	7.6	8.8	5.0
All operations	10.3	8.7	10.1	12.9	9.5

Financial year

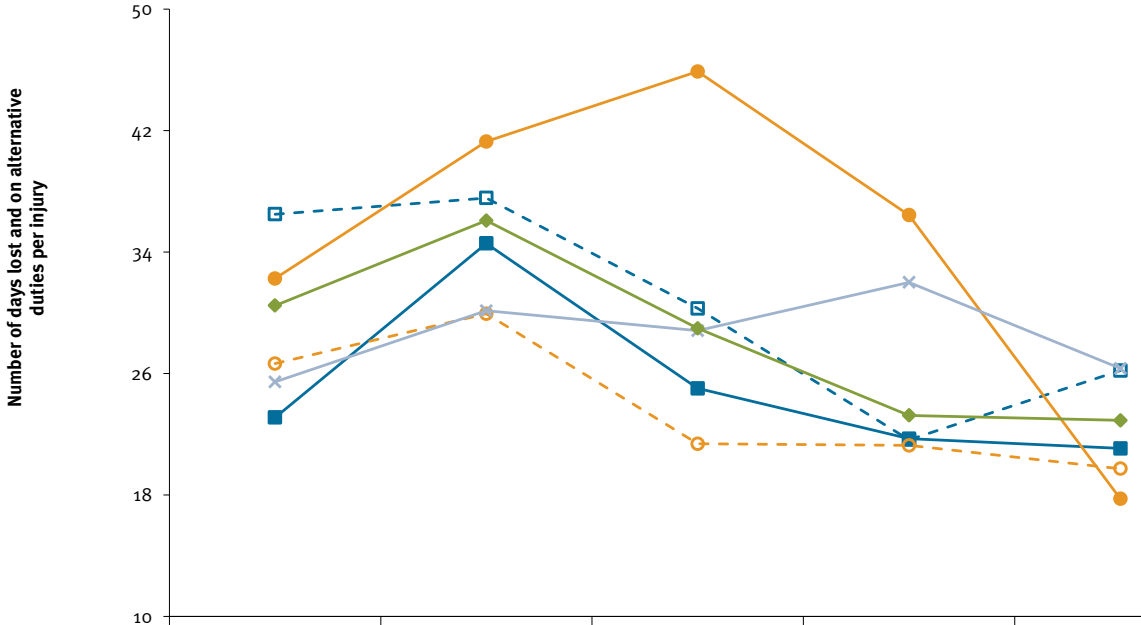
Figure 4.10: Lost time injury and disabling injury severity rate, 2011–16



	2011–12	2012–13	2013–14	2014–15	2015–16
Coal – surface	306	301	266	244	201
Coal – underground	506	546	654	733	457
Metalliferous – surface	171	186	106	82	86
Metalliferous – underground	306	272	307	342	190
Quarries	438	161	219	282	132
All operations	315	312	292	300	218

Financial year

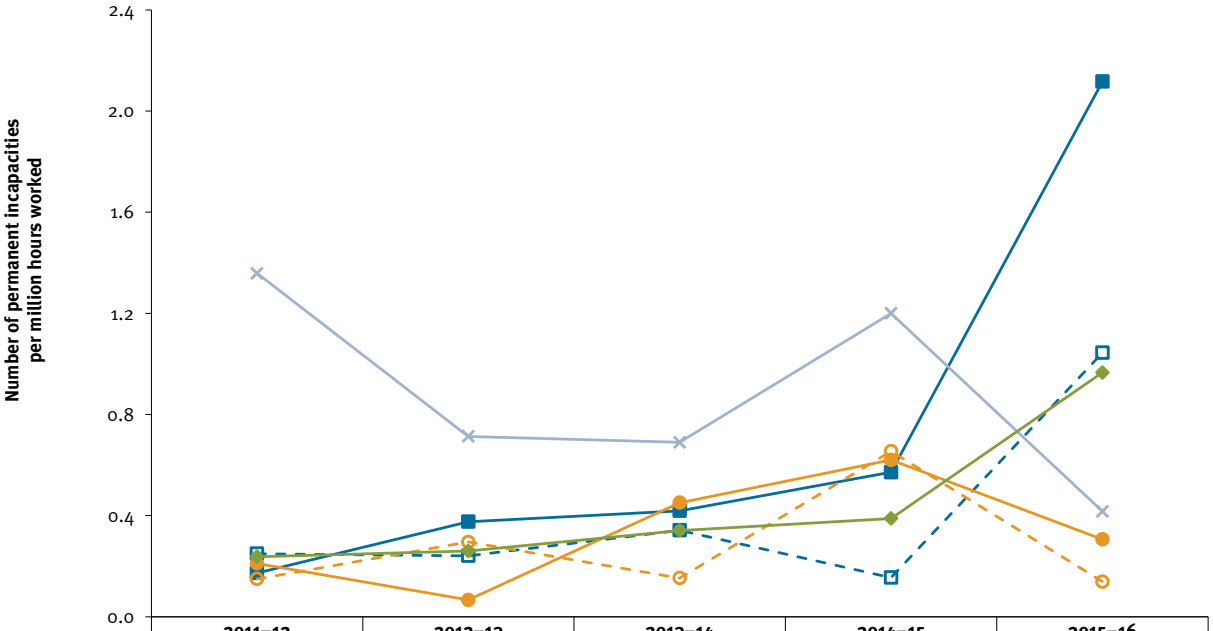
Figure 4.11: Lost time injury and disabling injury duration rate, 2011–16



	2011–12	2012–13	2013–14	2014–15	2015–16
Coal – surface	36.5	37.6	30.3	21.6	26.2
Coal – underground	23.1	34.6	25.0	21.7	21.1
Metalliferous – surface	26.7	29.9	21.4	21.3	19.7
Metalliferous – underground	32.3	41.3	45.9	36.4	17.7
Quarries	25.4	30.1	28.8	32.0	26.3
All operations	30.5	36.1	29.0	23.2	22.9

Financial year

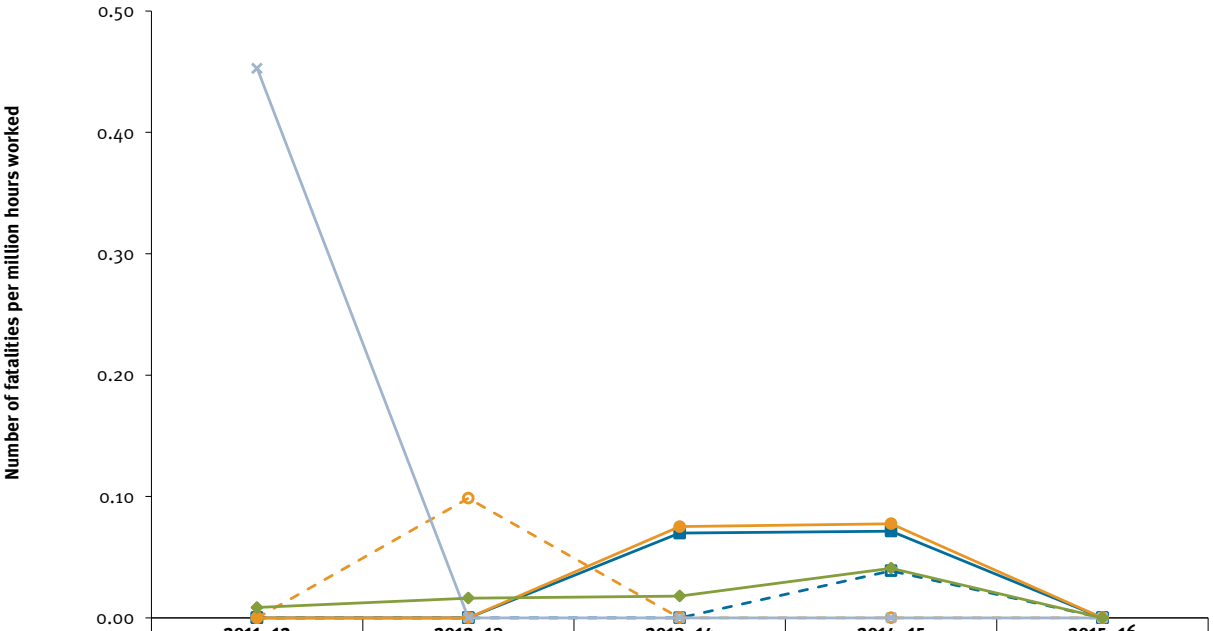
Figure 4.12: Permanent incapacity frequency rate, 2011–16



	2011–12	2012–13	2013–14	2014–15	2015–16
Coal – surface	0.25	0.24	0.34	0.16	1.04
Coal – underground	0.17	0.38	0.42	0.57	2.12
Metalliferous – surface	0.15	0.30	0.15	0.65	0.14
Metalliferous – underground	0.21	0.07	0.45	0.62	0.31
Quarries	1.36	0.71	0.69	1.20	0.42
All operations	0.24	0.26	0.34	0.39	0.97

Financial year

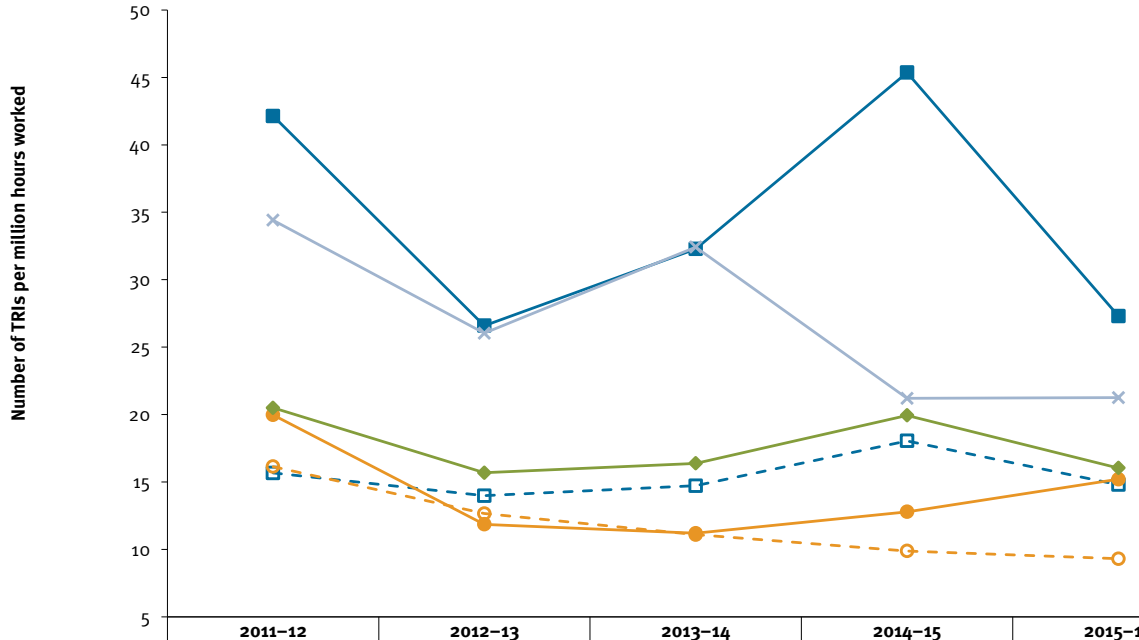
Figure 4.13: Fatality frequency rate, 2011–16



	2011–12	2012–13	2013–14	2014–15	2015–16
Coal – surface	0.00	0.00	0.00	0.04	0.00
Coal – underground	0.00	0.00	0.07	0.07	0.00
Metalliferous – surface	0.00	0.10	0.00	0.00	0.00
Metalliferous – underground	0.00	0.00	0.08	0.08	0.00
Quarries	0.45	0.00	0.00	0.00	0.00
All operations	0.01	0.02	0.02	0.04	0.00

Financial year

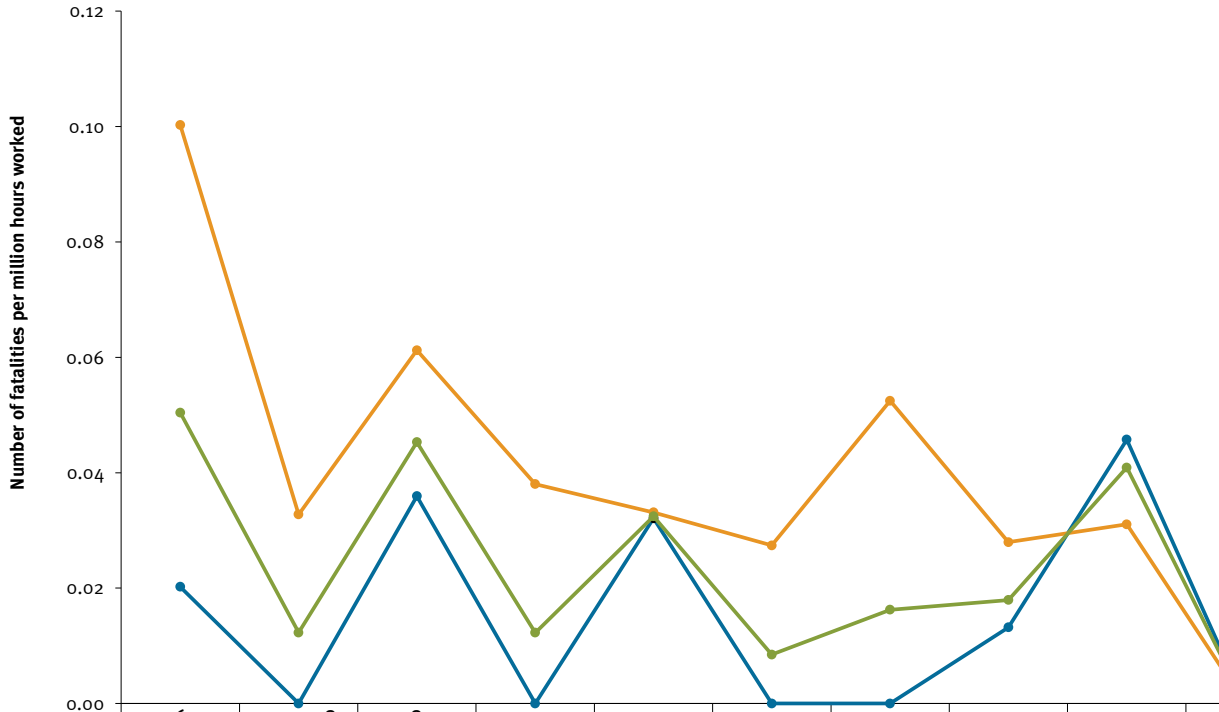
Figure 4.14: Total recordable injury frequency rate, 2011–16



	2011–12	2012–13	2013–14	2014–15	2015–16
Coal – surface	15.7	14.0	14.7	18.0	14.8
Coal – underground	42.1	26.6	32.3	45.4	27.3
Metalliferous – surface	16.1	12.7	11.1	9.9	9.3
Metalliferous – underground	20.0	11.9	11.2	12.8	15.2
Quarries	34.4	26.0	32.4	21.2	21.3
All operations	20.5	15.7	16.4	19.9	16.0

Financial year

Figure 4.15: Fatality frequency rate by sector, 2006–16



	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15	2015–16
Coal	0.02	0.00	0.04	0.00	0.03	0.00	0.00	0.01	0.05	0.00
Metal & Quarry	0.10	0.03	0.06	0.04	0.03	0.03	0.05	0.03	0.03	0.00
All Operations	0.05	0.01	0.05	0.01	0.03	0.01	0.02	0.02	0.04	0.00

Financial year

Bromelton Quarry, 2016
Photo: DNRM

5 OCCURRENCE DATA

Injury occurrence data

Plant at a south-east Queensland quarry, 2016
Photo: DNRM

5. Injury occurrence data

There were 237 LTIs during 2015–16 and these have been classified and illustrated in the following figures:

- Figure 5.1: Body parts injured, 2013–16
- Figure 5.2: Nature of injury, 2013–16
- Figure 5.3: Mechanism of injury, 2013–16
- Figure 5.4: Breakdown agency–equipment, 2013–16
- Figure 5.5: Occurrence class of injuries–activity, 2013–16.

Significant results from this classification are summarised below:

- hand and back injuries account for 35 per cent of injuries (Figure 5.1)
- disorder of muscles/tendons/other soft tissue account for almost 22 per cent of injuries (Figure 5.2)
- fall/slip/trip on the same level accounts for almost 13 per cent of injuries (Figure 5.3)
- earthmoving equipment was involved in almost 15 per cent of injuries (Figure 5.4)
- manual handling of equipment/material accounts for almost 44 per cent of injuries (Figure 5.5).

5.1 Age analysis of injury occurrence data

The breakdown of age across the coal mining sector, based on data collected for the Coal Mine Workers' Health Scheme (CMWHS), is shown in Figure 5.6. Note the average age for 2001–16 was 39 years old. The average days lost of lost time injuries by age group from 2011 to 2016 are shown in Figures 5.7 and 5.8.

Table 5.1 provides a breakdown of LTIs for 2007–16 by age group according to:

- nature of injury
- mechanism of injury
- occurrence class of injury.

The analysis gives an indication of which age group had the highest proportion of a single type of LTI.

Figure 5.1: Body parts injured (all sectors), 2013–16

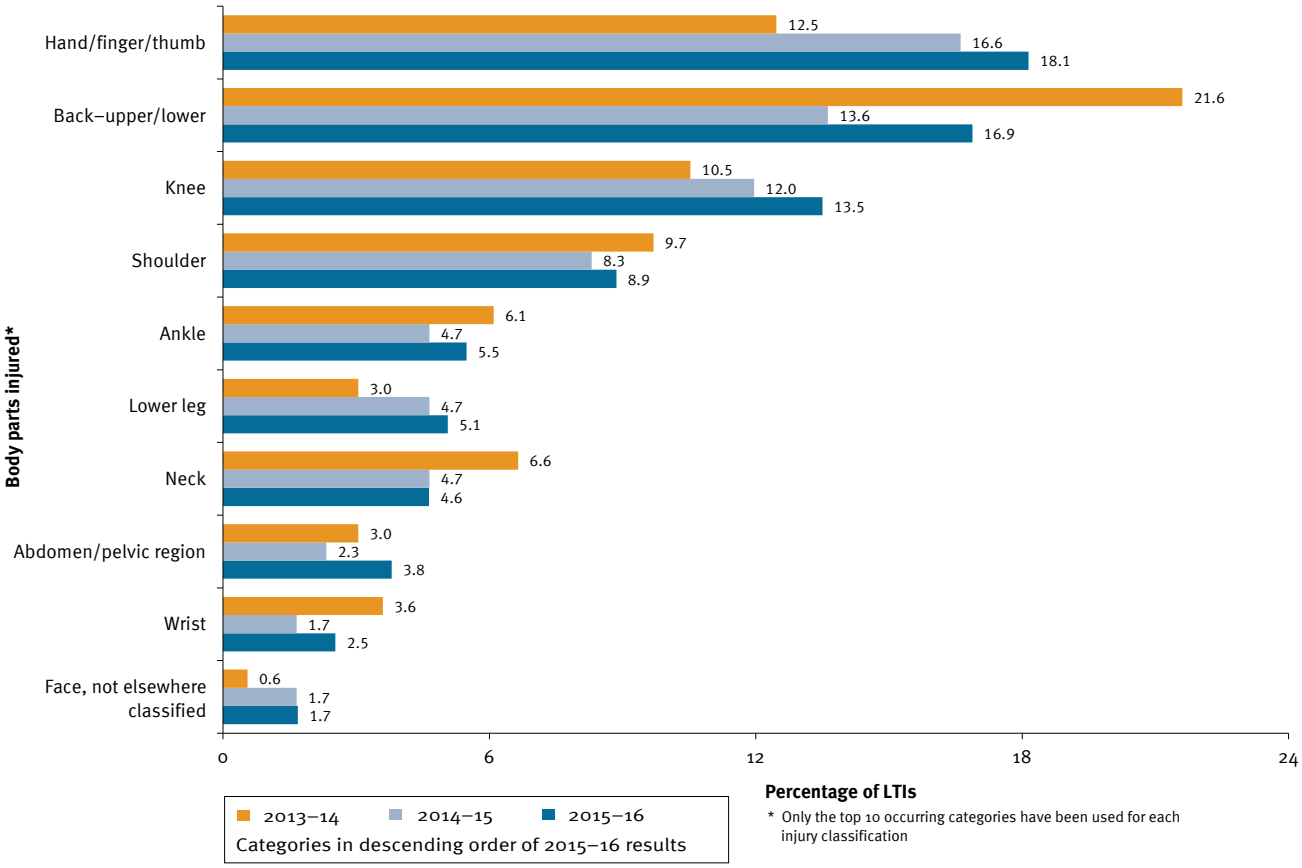


Figure 5.2: Nature of injury (all sectors), 2013–16

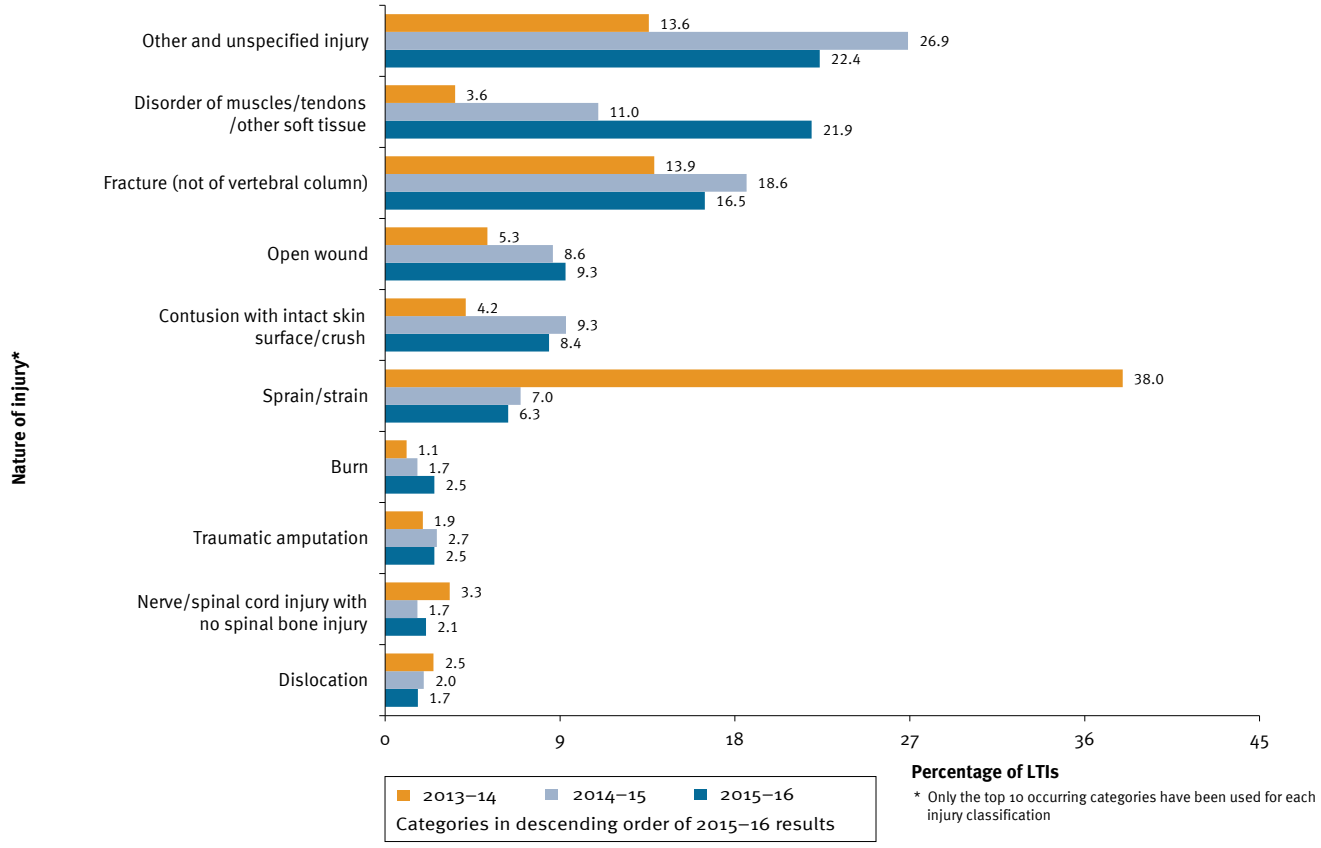


Figure 5.3: Mechanism of injury (all sectors), 2013–16

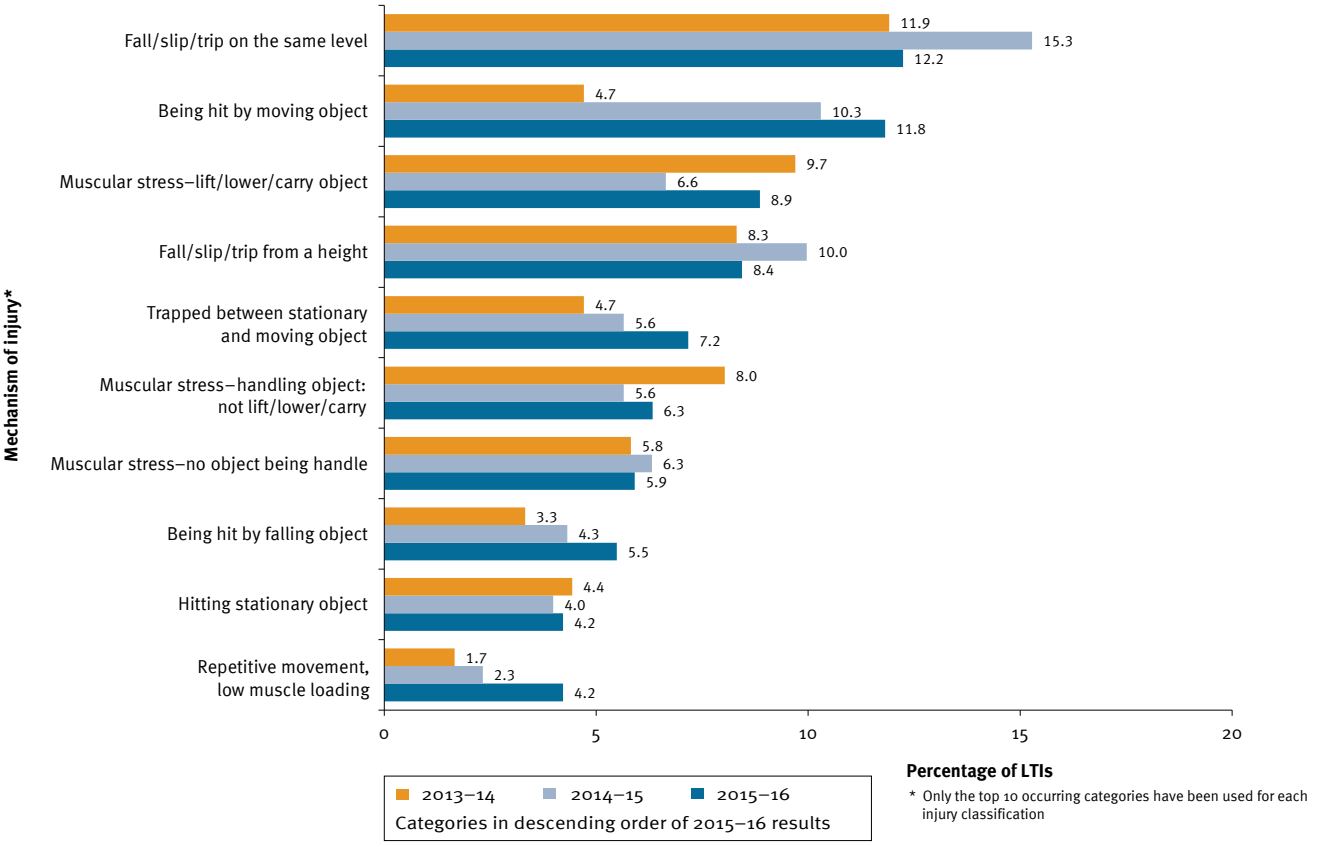


Figure 5.4: Breakdown agency – equipment (all sectors), 2013–16

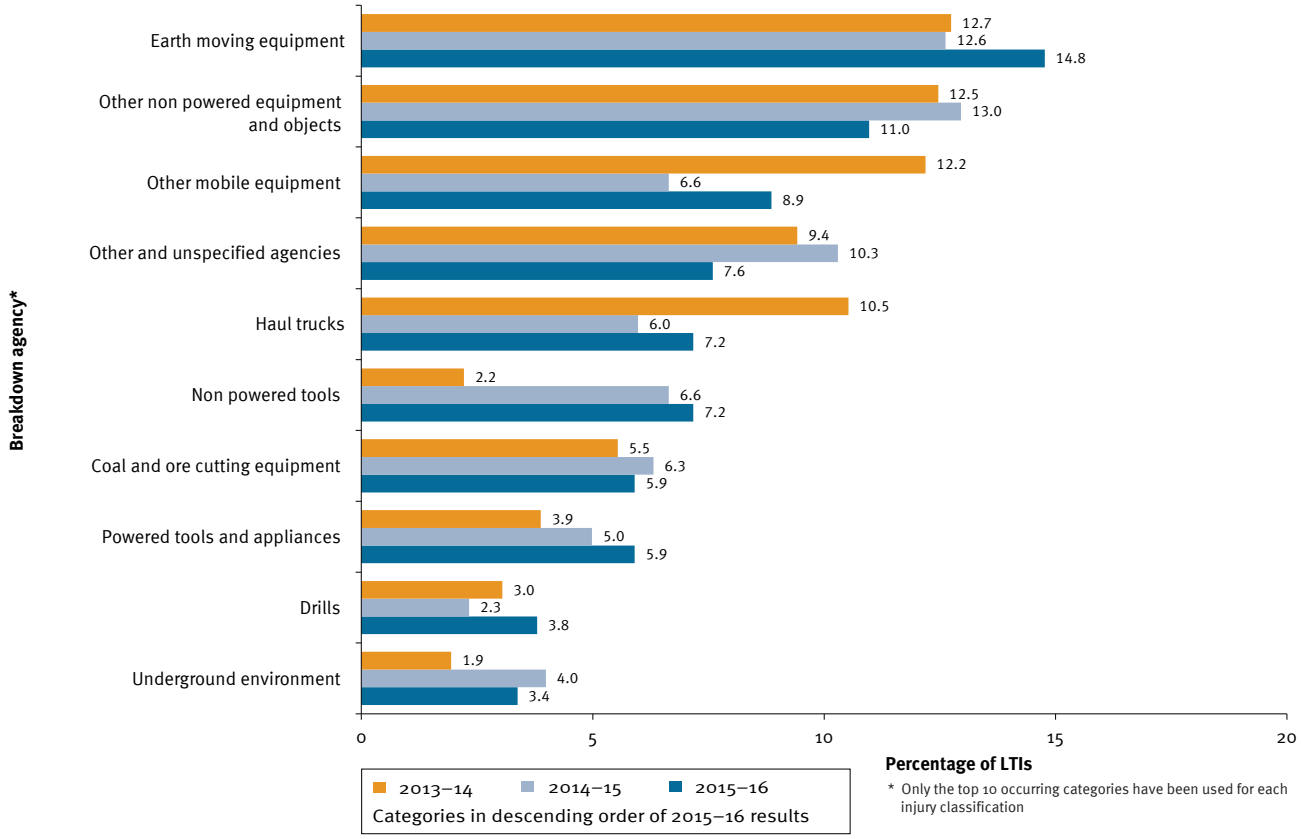


Figure 5.5: Occurrence class of injuries – activity (all sectors), 2013–16

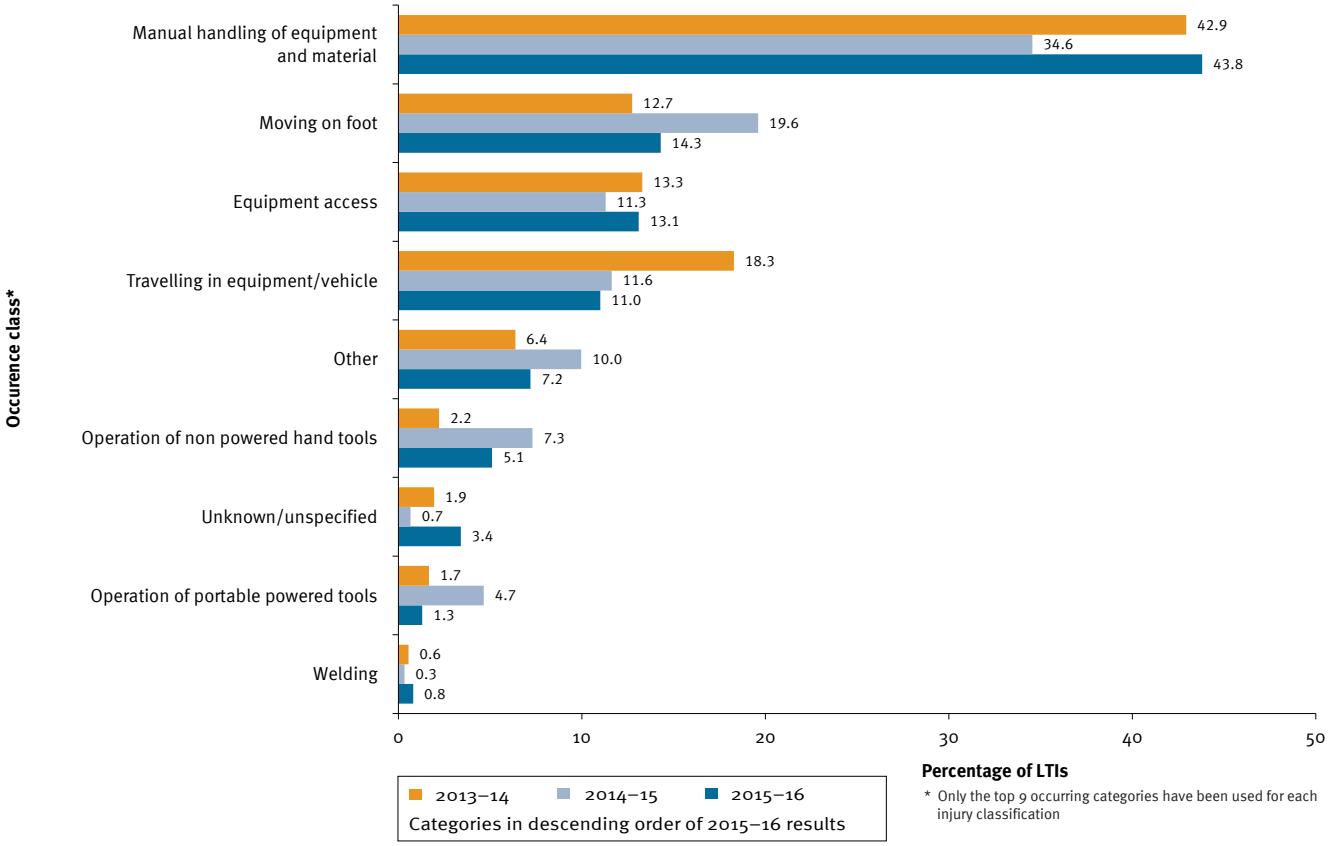
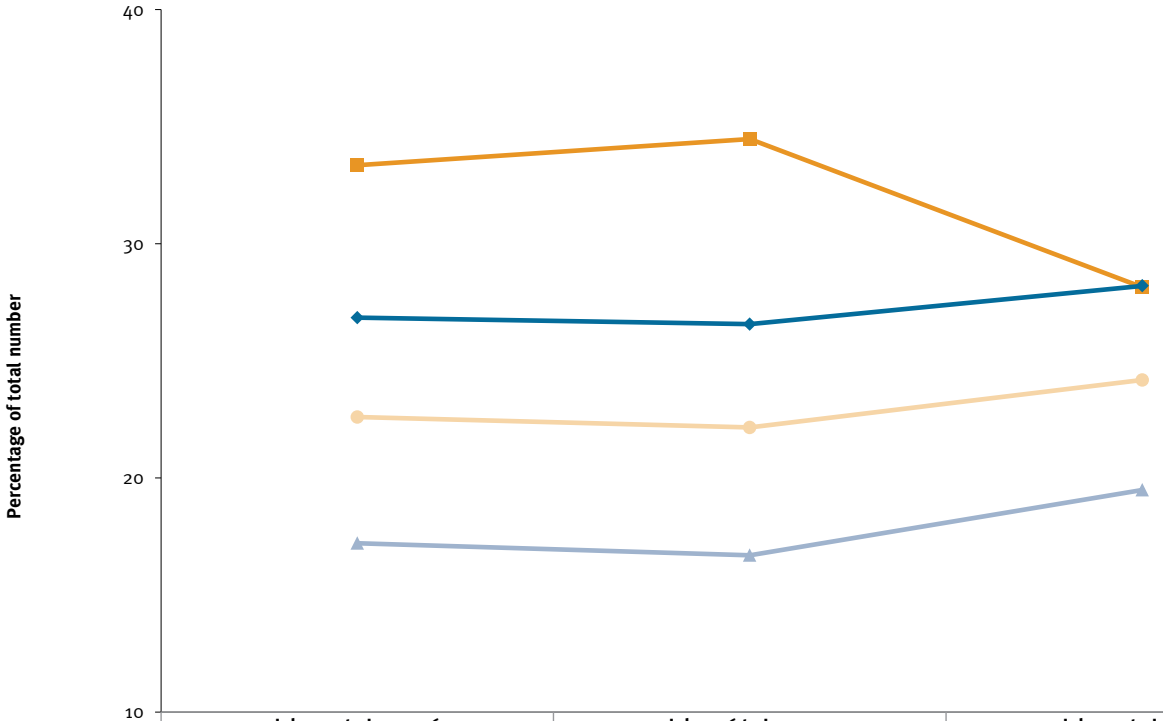


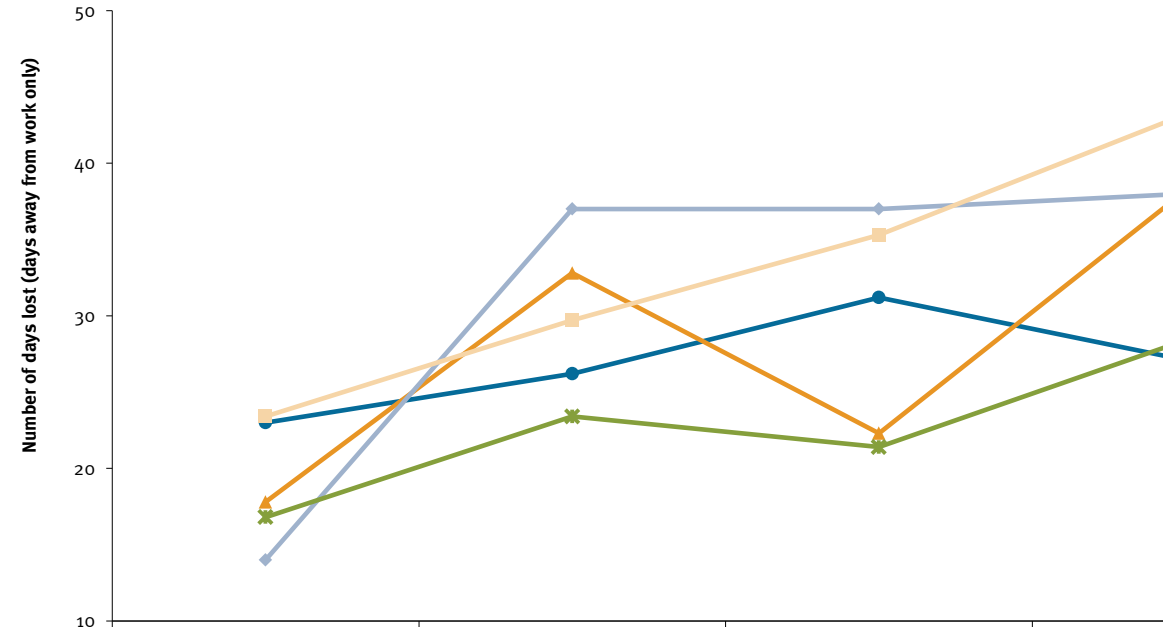
Figure 5.6: Age distribution (coal mines), 2001–16



	Jul 2001 to Jun 2006	Jul 2006 to Jun 2011	Jul 2011 to Jun 2016
18–29 years old	33.4	34.5	28.1
30–39 years old	26.8	26.6	28.2
40–49 years old	22.6	22.2	24.2
50+ years old	17.2	16.7	19.5

Age group

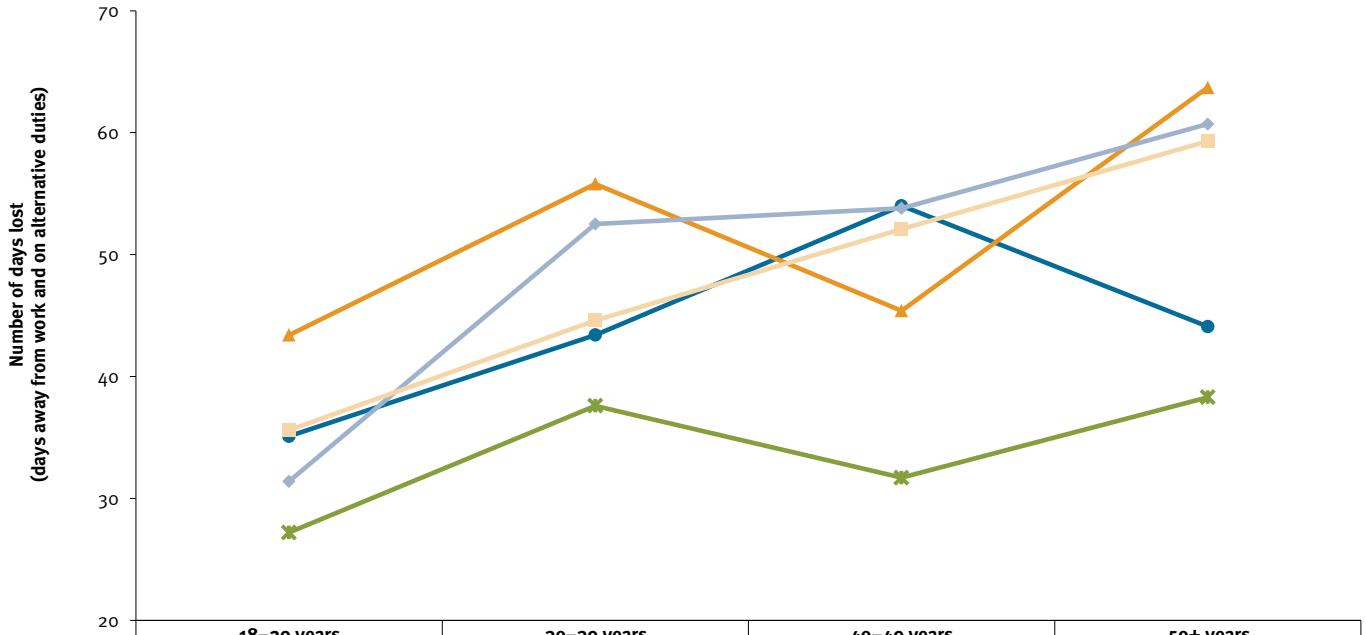
Figure 5.7: Average days lost (days away from work only) of lost time injuries per age group (all sectors), 2011–16



	18–29 years	30–39 years	40–49 years	50+ years
2011–12	23.0	26.2	31.2	27.1
2012–13	17.8	32.8	22.3	38.2
2013–14	14.0	37.0	37.0	38.0
2014–15	23.4	29.7	35.3	43.2
2015–16	16.8	23.4	21.4	28.4

Age group

Figure 5.8: Average days lost (days away from work and on alternative duties) of lost time injuries per age group (all sectors), 2011–16



	18–29 years	30–39 years	40–49 years	50+ years
2011–12	35.1	43.4	54.0	44.1
2012–13	43.4	55.8	45.4	63.7
2013–14	31.4	52.5	53.8	60.7
2014–15	35.6	44.6	52.1	59.3
2015–16	27.2	37.6	31.7	38.3

Age group

Table 5.1: Lost time injury occurrence per age group (all sectors), 2007–16

		18–29 yrs old 23.2% of all LTIs		30–39 yrs old 29.1% of all LTIs		40–49 yrs old 25.2% of all LTIs		50+ yrs old 22.5% of all LTIs	
		% in age group	% of all LTIs	% in age group	% of all LTIs	% in age group	% of all LTIs	% in age group	% of all LTIs
Nature of Injury *	Sprain/strain	31.1	7.2	39.4	11.5	38.6	9.7	41.2	9.3
	Fracture (not of vertebral column)	15.8	3.7	13.6	3.9	15.1	3.8	11.4	2.6
	Other and unspecified injury	9.8	2.3	11.8	3.4	10.7	2.7	13.2	3.0
	Open wound	10.2	2.4	5.4	1.6	5.9	1.5	6.3	1.4
	Contusion with intact skin surface/crush	7.0	1.6	7.0	2.0	6.5	1.6	6.3	1.4
	Disorder of muscles/tendons/other soft tissue	2.1	0.5	4.2	1.2	6.4	1.6	6.2	1.4
	Burn	4.2	1.0	2.7	0.8	1.5	0.4	1.6	0.4
	Traumatic amputation	3.9	0.9	0.7	0.2	1.8	0.5	1.7	0.4
	Foreign body (not superficial skin injury)	2.4	0.5	3.2	0.9	1.8	0.5	0.6	0.1
	Dislocation	3.1	0.7	1.2	0.4	1.8	0.5	0.7	0.2
Mechanism of Injury *	Fall/slip/trip on the same level	11.5	2.7	11.0	3.2	14.0	3.5	14.5	3.3
	Muscular stress – lift/lower/carry object	7.8	1.8	11.0	3.2	9.1	2.3	10.9	2.5
	Fall/slip/trip from a height	6.1	1.4	7.4	2.2	9.8	2.5	12.2	2.7
	Being hit by moving object	10.9	2.5	7.2	2.1	7.4	1.9	6.5	1.5
	Muscular stress – no object being handled	6.7	1.6	7.8	2.3	8.5	2.1	7.2	1.6
	Muscular stress – handling object not lift/lower/carry	4.7	1.1	5.7	1.6	6.4	1.6	7.3	1.6
	Being hit by falling object	7.1	1.6	6.3	1.8	4.7	1.2	4.5	1.0
	Motion of moving vehicle	4.5	1.0	5.6	1.6	5.6	1.4	6.0	1.4
	Trapped between stationary and moving object	7.8	1.8	5.1	1.5	4.1	1.0	3.9	0.9
	Unspecified mechanisms of injury	2.5	0.6	5.1	1.5	4.6	1.2	4.5	1.0
Occurrence class of injury *	Working on equipment	25.6	5.9	19.7	5.7	14.9	3.8	15.5	3.5
	Moving on foot	14.9	3.5	13.9	4.0	16.4	4.1	16.8	3.8
	Travelling in equipment/vehicle	10.8	2.5	13.7	4.0	15.1	3.8	14.1	3.2
	Other manual handling	11.5	2.7	12.1	3.5	14.5	3.7	13.6	3.1
	Other	7.8	1.8	10.0	2.9	7.7	1.9	7.2	1.6
	Other equipment access e.g. moving about	3.1	0.7	4.2	1.2	5.5	1.4	4.9	1.1
	Operation of non powered hand tools	6.0	1.4	3.6	1.0	3.6	0.9	2.9	0.6
	Loading/unloading from vehicles	3.2	0.7	3.7	1.1	4.1	1.0	3.9	0.9
	Descending – ground/floor involved	2.9	0.7	3.2	0.9	4.0	1.0	3.3	0.7
	Transporting manually i.e. carrying, dragging	3.2	0.7	3.7	1.1	2.8	0.7	3.7	0.8

* Only the top 10 occurring categories have been used for each injury classification

6 INDICATORS

Lead performance indicators

Prep/wash plant, Meandu Mine
Photo: DNRM

6. Lead performance indicators

Lead indicators or positive performance indicators (PPIs) are measures of pre-emptive actions or initiatives that assist in preventing workplace injury and disease. This is considered a more proactive approach than the use of lag indicators, such as lost time injuries which, by their nature, measure the event or its impact after it has occurred.

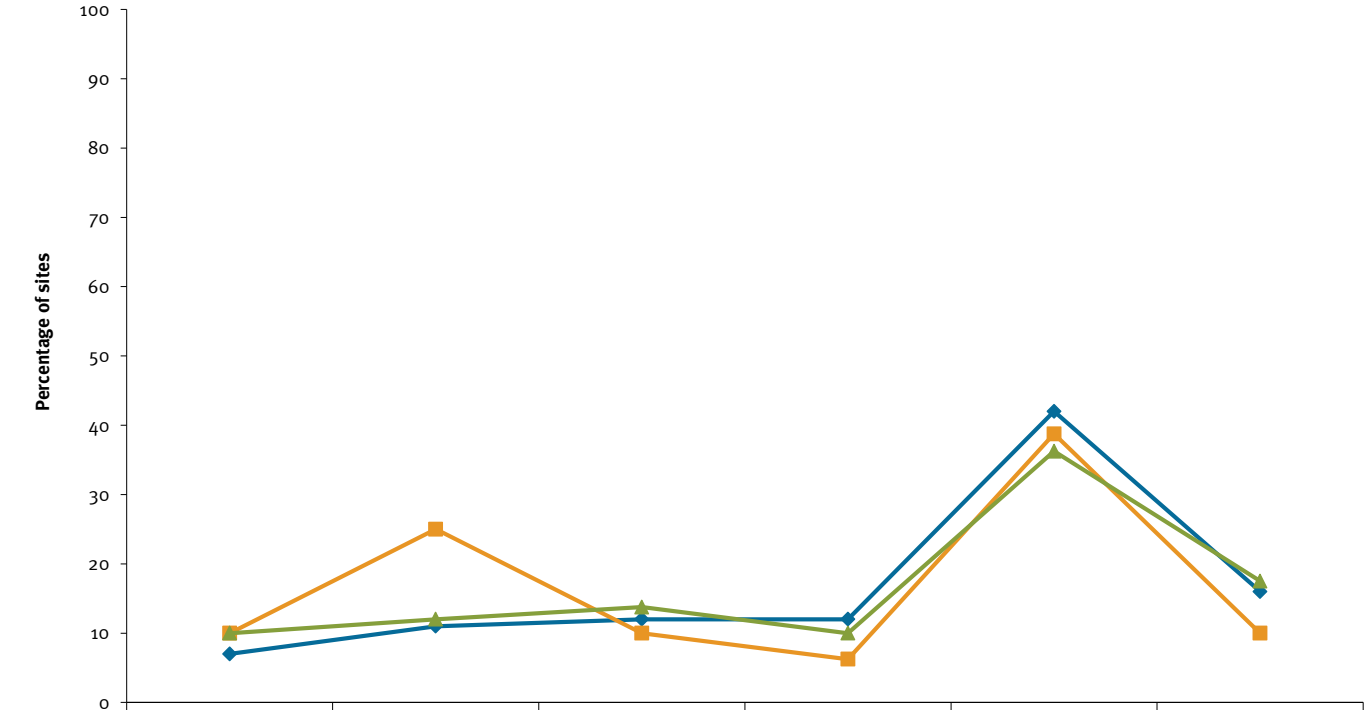
Questions in relation to PPIs have been included in the Queensland Mining and Quarrying Industry Census since 2007–08. The questions cover areas of risk management, audits, reviews and HPIs; and are designed to collect data on safety and health issues concerning both employees and contractors.

The data are presented in the graphs listed below:

- Figures 6.1–6.3: Annual formal risk assessment carried out by sector, 2013–16
- Figures 6.4–6.6: Annual audits (internal and external) by sector, 2013–16
- Figure 6.7: Improvement actions resulting from investigations into high potential incidents by sector, 2013–16
- Figure 6.8: High potential incident rates by sector (number of HPIs per 1000 workers), 2013–16.

Mines Inspector, Deon Esterhuizen on site, 2016
Photo: DNRM

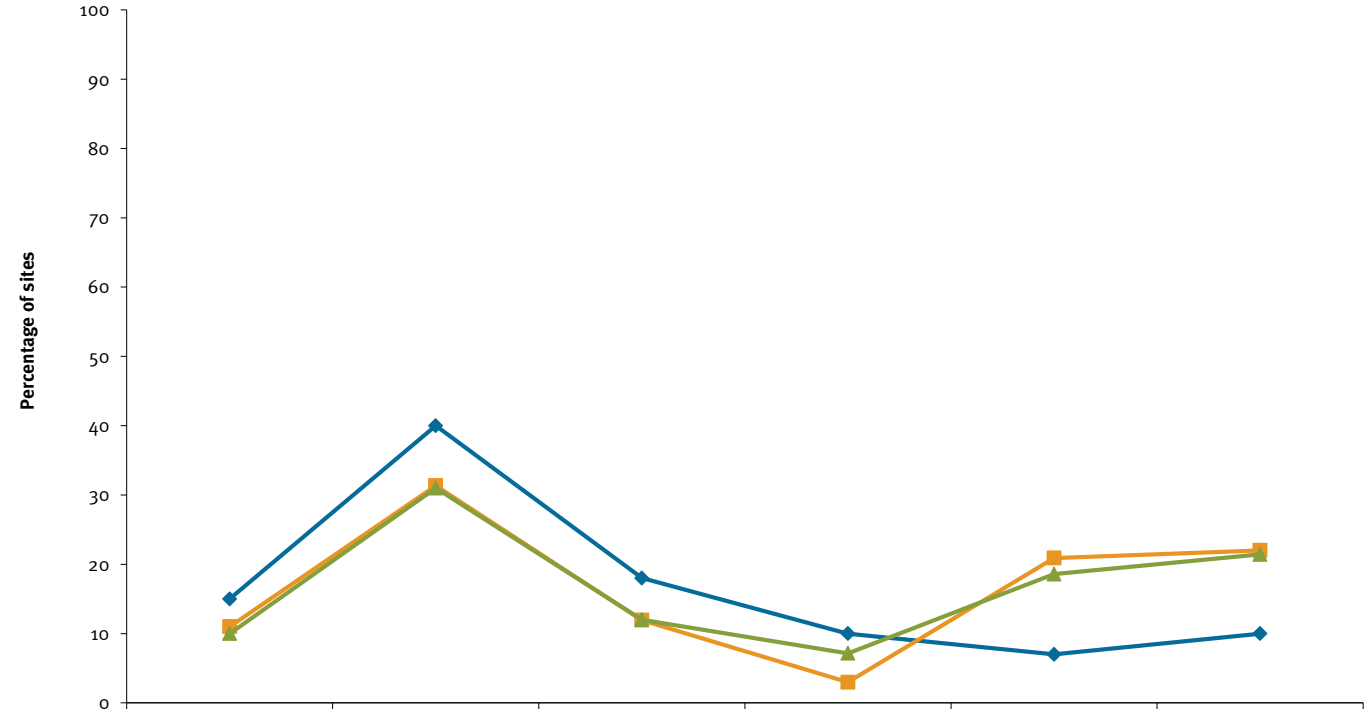
Figure 6.1: Annual formal risk assessment carried out (coal mines), 2013–16



	0	1–10	11–20	21–30	31–100	>100
2015–16	7	11	12	12	42	16
2014–15	10	25	10	6	39	10
2013–14	10	12	14	10	36	18

Number of risk assessments

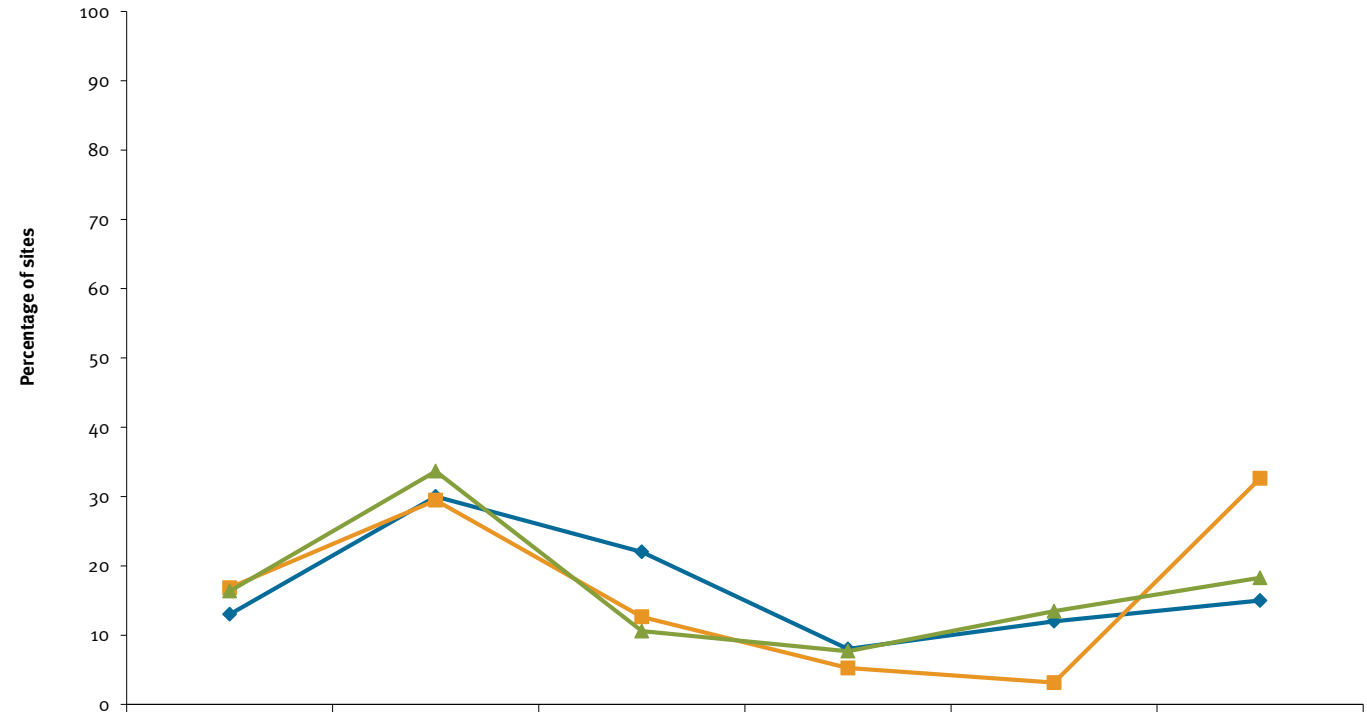
Figure 6.2: Annual formal risk assessments carried out (metalliferous mines), 2013–16



	0	1–10	11–20	21–30	31–100	>100
2015–16	15	40	18	10	7	10
2014–15	11	31	12	3	21	22
2013–14	10	31	12	7	19	21

Number of risk assessments

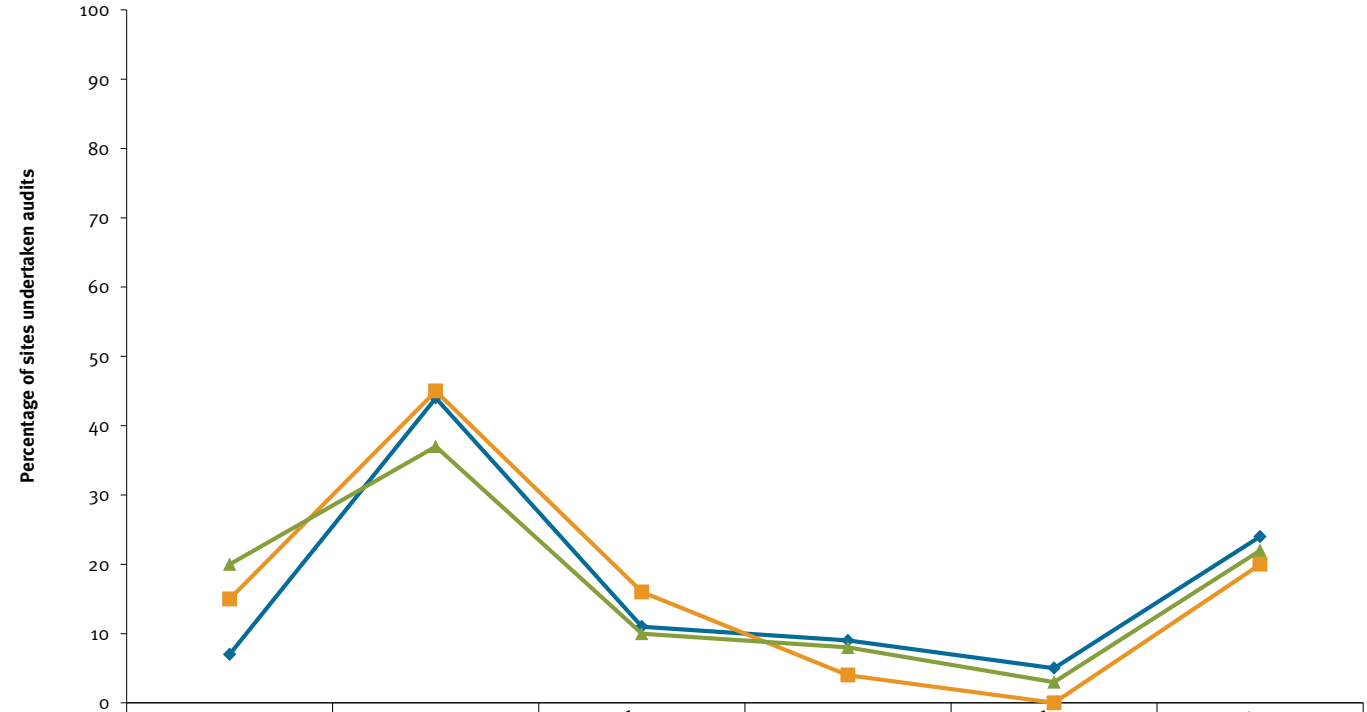
Figure 6.3: Annual formal risk assessments carried out (quarries), 2013–16



	0	1–10	11–20	21–30	31–100	>100
2015–16	13	30	22	8	12	15
2014–15	17	29	13	5	3	33
2013–14	16	34	11	8	13	18

Number of risk assessments

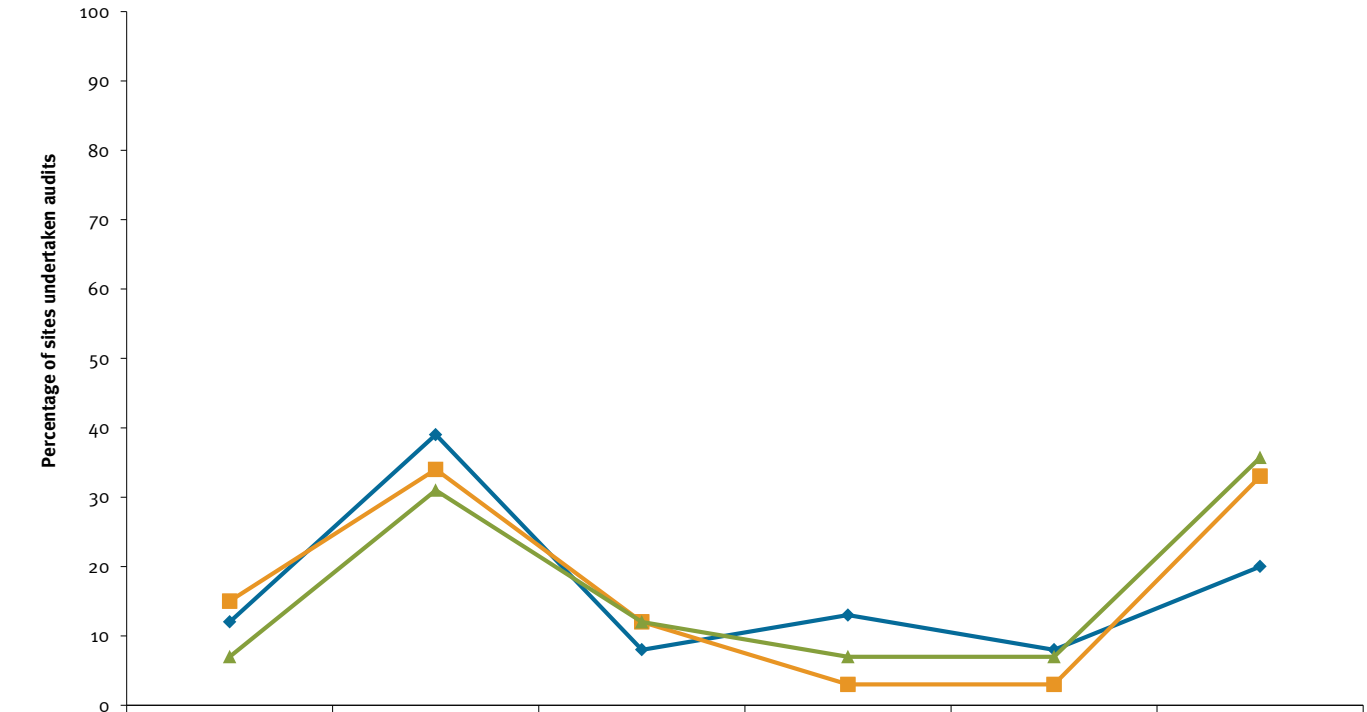
Figure 6.4: Annual audits (internal and external) (coal mines), 2013–16



	0	1–5	6–10	11–15	16–20	>20
2015–16	7	44	11	9	5	24
2014–15	15	45	16	4	0	20
2013–14	20	37	10	8	3	22

Number of audits

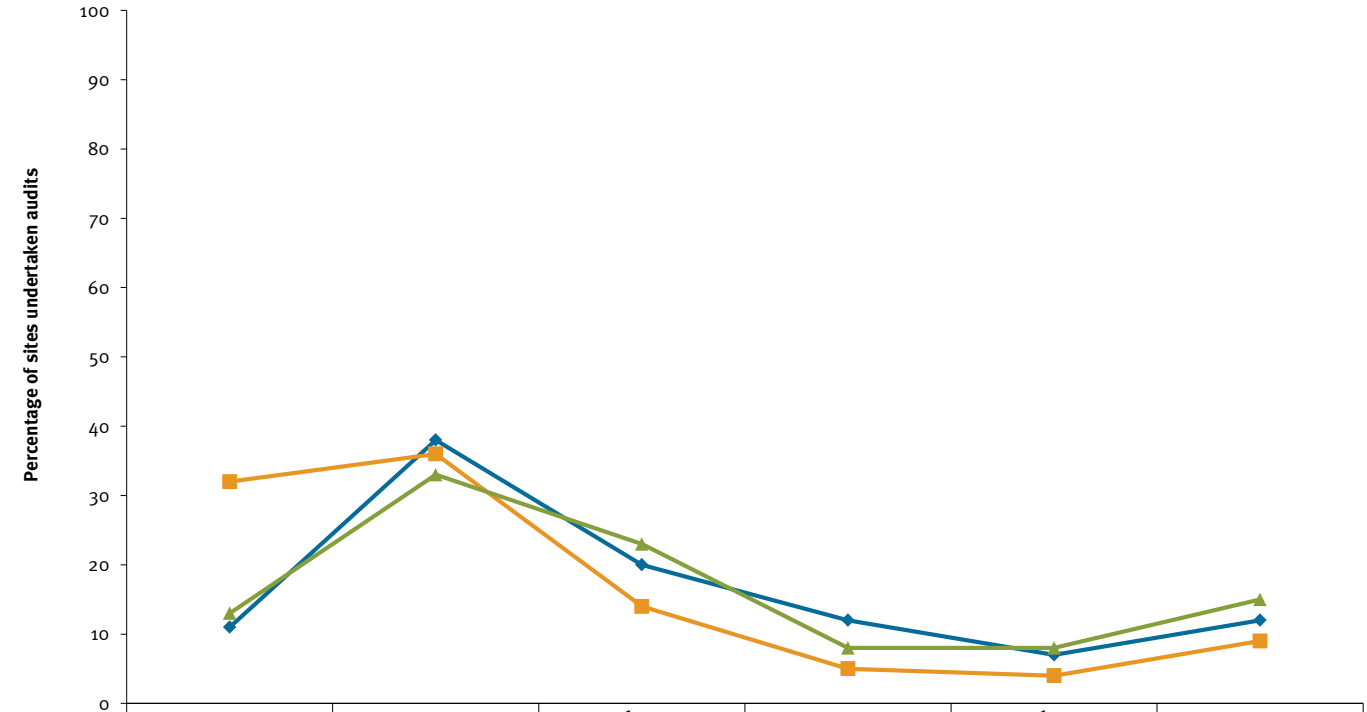
Figure 6.5: Annual audits (internal and external) (metalliferous mines), 2013–16



	0	1–5	6–10	11–15	16–20	>20
2015–16	12	39	8	13	8	20
2014–15	15	34	12	3	3	33
2013–14	7	31	12	7	7	36

Number of audits

Figure 6.6: Annual audits (internal and external) (quarries), 2013–16



	0	1–5	6–10	11–15	16–20	>20
2015–16	11	38	20	12	7	12
2014–15	32	36	14	5	4	9
2013–14	13	33	23	8	8	15

Number of audits

Figure 6.7: Improvement actions resulting from investigations into high potential incidents by sector, 2013–16

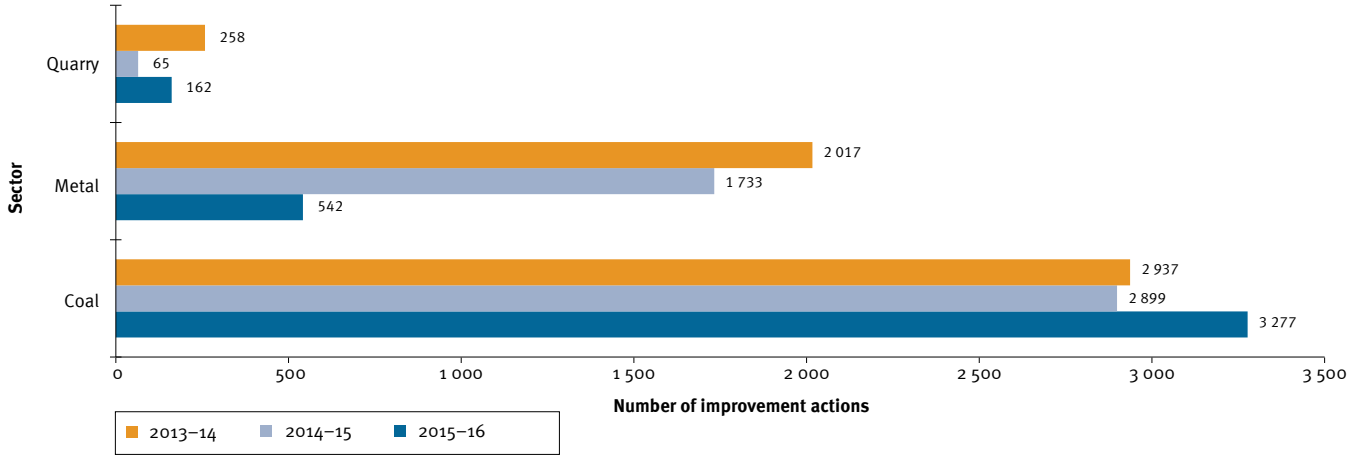
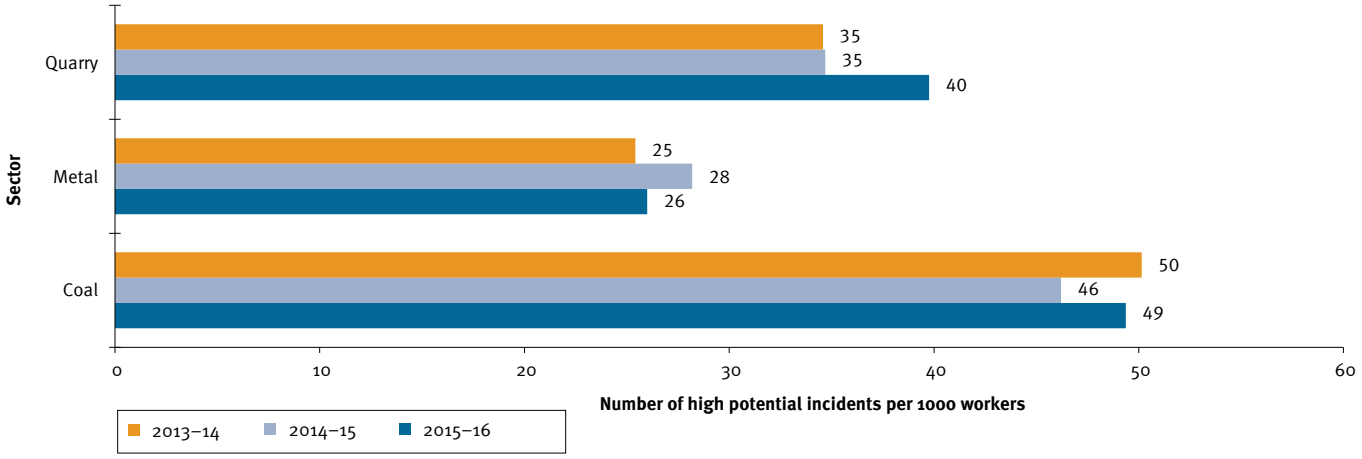


Figure 6.8: High potential incident rates by sector (number of HPIs per 1000 workers), 2013–16



7 HEALTH ASSESSMENT

Health assessment data

Hill of Stone Quarry, 2016
Photo: DNRM

7. Health assessment data

All workers are required to undergo a health assessment and health surveillance if a hazard with the potential to cause a significant adverse effect on the health or safety of a person is identified at a mine or quarry. Health assessments for coal mine workers are carried out under the Coal Mine Workers' Health Scheme (CMWHS) by a Nominated Medical Adviser (NMA) appointed by the worker's employer. These health assessment records are sent by the NMA to the department's Health Surveillance Unit (HSU) for database entry and storage.

The fitness level of workers, health assessments and health surveillance for other mine workers at quarries, metalliferous mines and other non-coal mines are carried out by an appropriate doctor, as required in the Mining and Quarrying Safety and Health legislation. The records from these activities are retained and kept confidentially by the site senior executive and are not required to be submitted to DNRM.

7.1 Coal mine workers' health assessments

Employers of coal mine workers must ensure a health assessment is carried out for each person who is to be employed, or is employed as a coal mine worker other than those employed to do low risk tasks. The assessment must be completed before the person is employed as a coal mine worker and periodically as decided by the NMA, but at least once every five years.

The employer is required to complete Section 1 of the health assessment form with details about the worker's job and any potential exposure to hazards at the mine. The person undergoing the health assessment is required to complete Section 2 of the health assessment form. This section records the person's work history, medical history and health status. The examining medical officer or NMA completes Section 3 of the health assessment form. This section records the findings from the person's physical examination, eye test, hearing test, and chest X-ray and concludes with an assessment of fitness for duty. The NMA then completes Section 4 of the health assessment form. This section is also known as the Health Assessment Report. This report records the person's fitness for duty, work restrictions, follow-up tests and date of next periodic assessment. The NMA is required to provide a copy of the report to the employer; and a copy of the report and an explanation of the report to the person who was examined. The NMA retains a copy of the completed health assessment and related documentation and sends a copy of the health assessment form, along with any digital x-ray to the HSU where the details are recorded in the CMWHS database. There are currently over 182 958 health assessments recorded in the database. The earliest of these health assessments dates back to 1983 under the previous legislation's Coal Board Medical Scheme.

In 2015–16, HSU entered 22 392 health assessments into the CMWHS database, a significant increase on 2014–15, mainly due to additional staffing at the department's Stafford facility.

7.2 Coal workers' pneumoconiosis

Eight cases of coal workers' pneumoconiosis (CWP) were confirmed by the HSU in 2015–16. A case is confirmed when the NMA advises the department's occupational physician. Prior to the first case in 2014–15, no cases of CWP had been identified by the CMWHS for a number of decades. Data on the number of confirmed CWP cases by DNRM is provided in Table 7.1.

7.3 Review of the respiratory component of the CMWHS

In December 2015, DNRM engaged Monash University Centre for Occupational and Environmental Health to conduct an independent review of the respiratory component of the CMWHS. The final report was delivered in July 2016. The department supports all 18 recommendations and is working on five key areas (chest X-rays, spirometry, medical practitioners, surveillance and digital records management) to address the issues identified in the report.

Table 7.1: Coal workers' pneumoconiosis, 2014–16

	2014–15	2015–16
Confirmed CWP cases	1	8

8 INFORMATION

Collection of information

Bromleton Quarry, 2016
Photo: DNRM

8. Collection of information

The department collected the information used in this report a number of ways. Injuries and incidents were reported by mine and quarry operators. Details of injuries, time lost and/or alternative duties and hours worked were reported monthly by large mines and quarries. Confirmed cases of CWP was provided by the department's CWP team. The number of workers was gathered from the quarterly safety and health levy census submissions. The levy data was used to validate the hours of work data submitted and has been reported here where a significant difference was found.

The dataset used in this report is not usually complete until well into the following financial year because mines often take considerable time to supply the data. An arbitrary cut-off, in order to start analysis, usually takes place in September each year after most of the data has been received. For this reason there will be minor changes in data reported in this year's report for previous years because all financial year's data are updated with each new report.

8.1 Data collected

Fatalities, accidents that resulted in injuries involving the loss of at least one full working shift (LTIs), DIs and medical treatment injuries (MTIs) are included in this report. High potential incidents are also included.

Data on permanent incapacities is collected from census data. A permanent incapacity is any work-related injury or disease that leads to one or more of the following outcomes:

- the complete loss, or permanent loss of use, of any member or part of the body
- any permanent impairment of any member or part of the body, regardless of any pre-existing disability of that member or part
- any permanent impairment of physical/mental functioning, regardless of any pre-existing impaired physical or mental functioning
- a permanent transfer to a different job
- termination of employment

Accidents and injuries that occurred while employees were travelling to or from work are not included in this report.

8.2 Access to the lost time accident database

Twenty consecutive years of injury and disease data for coal and metalliferous mines is available to industry and members of the public on request including site specific performance and sector-wide data. The data can be used as a benchmark in the preparation of safety management systems.

Examples of requests for information received during 2015–16 included:

- cost and category information for lost time incidents for 2013–14 and 2014–15, including explanations, definitions, values for accident severity, total days alternate duties, worker type, provided to a contractor for Simtars
- occupational accidents in Queensland's underground coal mines starting from 1950, including lost time injuries, lost time injuries frequency rate, fatal injuries frequency rates for underground coal mines since 2000, provided to a student completing a master's degree in Germany
- health and safety statistics for nature of injury claims in Queensland separated by gender and occupational groups such as profession, traditional, operator roles, and other roles for 2010–11 and 2014–15, provided to a student studying for a bachelor degree in Queensland
- vertebral column fracture injuries in Queensland mines and quarries from July 2008 to June 2014 as a distribution of mine workers based on type of employment, job title, age and gender, provided to a student studying a master's degree in Australia
- mine worker numbers for June and September 2015, provided to a mining analyst in Australia
- coal specific—surface and underground safety statistics up to current date, or at least until the end of 2015, provided to a mining company manager
- last five years incident types, based on description of incident for lightning strike, explosion, and use of explosives incident types, provided to a mining company
- statistics for injury rates and overall graph for combined injuries provided to a student
- statistics on the number of production employees, including working proprietors, employees of the operator of the mine or as employees of a contractor undertaking work relating to coal production, coal preparation, overburden removal, drivers transporting coal from the mine to a preparation plant or in administration work at the mine site
- statistics on fly-in/fly-out industry for previous 5–10 years, provided to a student.

To request data, contact the regional Mines Inspectorate office or email minesafetystats@dnrm.qld.gov.au .

Mines Inspectorate contact details can be found at www.dnrm.qld.gov.au

This report provides information to assist industry improve safety and health management systems and processes. The Mines Inspectorate welcomes suggestions for improvement and feedback on the report. Please email customerfeedback@dnrm.qld.gov.au or call 13 QGOV (13 74 68) and ask to be put through to the Mines Inspectorate.

Thanks are extended to the mining industry in Queensland for providing the data used in this report.

Scale of equipment!
Photo: DNRM

CC16-SAF022

IN THE FAIR WORK COMMISSION

Matter No.:	**AM2014/190**
Title of Matter:	**Four yearly review of modern awards — Black Coal Mining Industry Award 2010 — Clause 18 — Accident Pay**

ANNEXURE DG-4
TO THE STATEMENT OF DAVID GUNZBURG DATED 24 FEBRUARY 2017

POSTED FEBRUARY 2016

Director and senior management accountability for workplace health and safety

By Jim Galvin FAusIMM(CP), Managing Director, Galvin and Associates

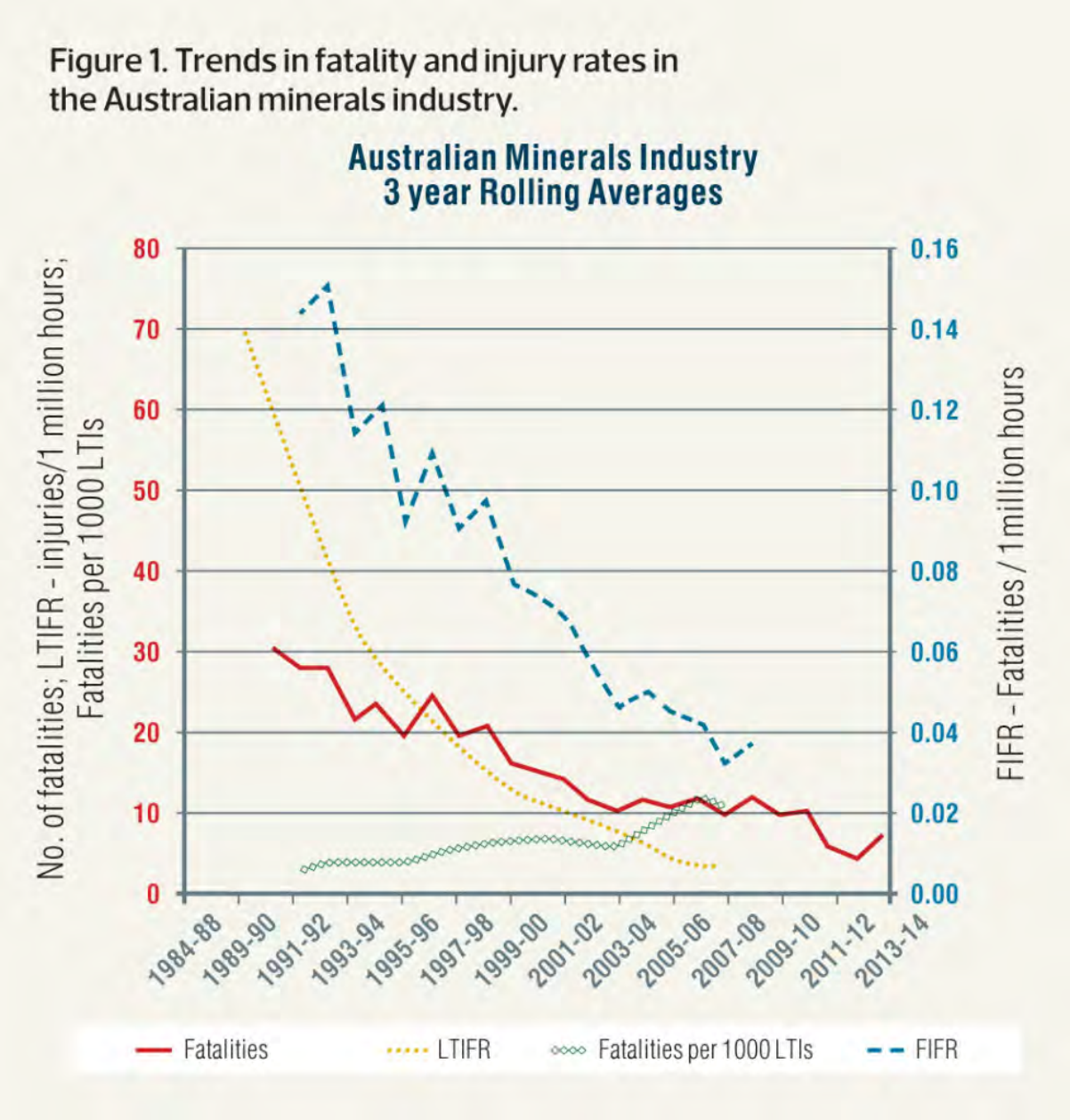
Risk-based safety management systems supported by compliant behaviours provide the framework for operating healthy and safe workplaces

Directors of boards and senior management are the primary drivers of success and are increasingly being held accountable for workplace health and safety (WHS) performance in legal jurisdictions and within corporations. A number of examples of the positive impact that corporate management can have on WHS culture and performance can be found in the Australian minerals industry. A notable pioneer in this area was Ken Finlay, whose passion and uncompromising values for safety were demonstrated in his role as manager of Mt Isa Mines, and subsequently felt globally when running Exxon Minerals out of Houston in the USA. Passion and visible leadership from corporate management are essential to achieving healthy and safe workplaces.

Risk-based workplace health and safety management

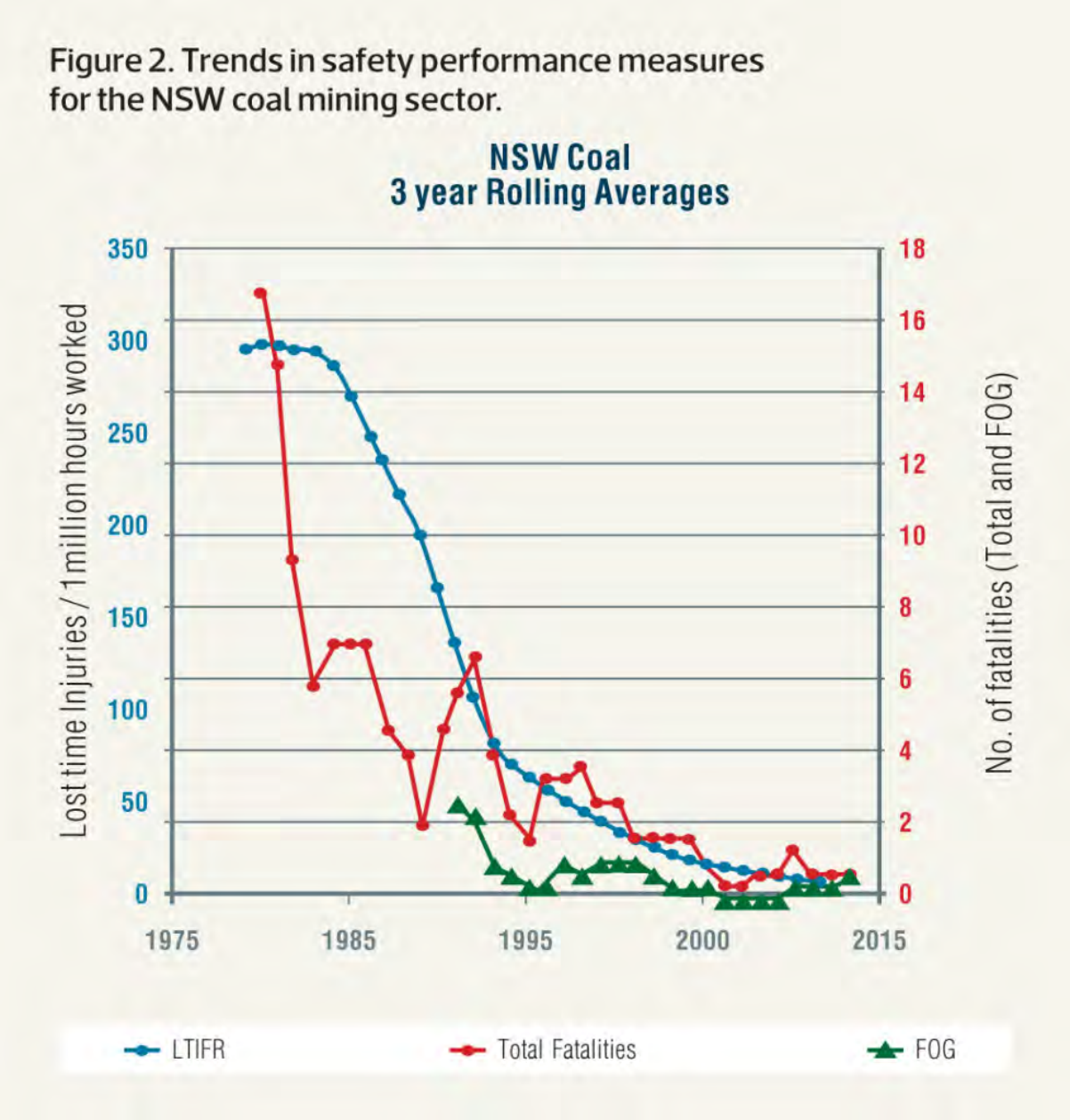
The Australian minerals industry, which includes exploration and quarrying, began to adopt a risk management approach to WHS in the mid-1980s, supporting it with a range of guidelines, new technologies and research and development initiatives. The benefits are reflected in trends in the safety performance of the minerals industry nationally (see Figure 1), and particularly in the NSW coal sector and in the productivity of the Australian black coal mining industry (see Figures 2, 3 and 4; changes in reporting criteria limit the continuity of some trend lines).

Figure 1. Trends in fatality and injury rates in the Australian minerals industry.



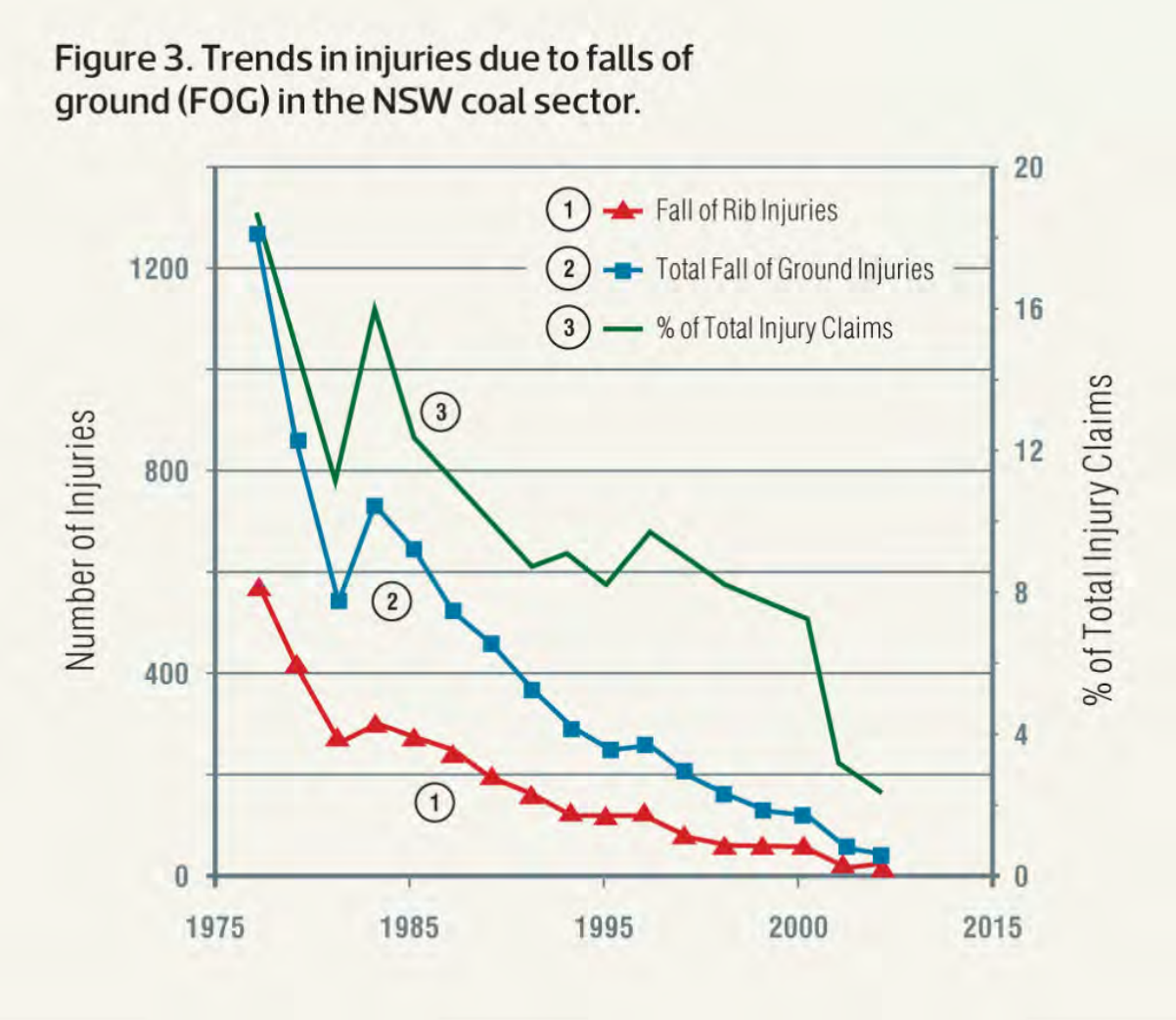
(https://www.ausimmbulletin.com/app/uploads/2016/02/aus1.jpg)

Figure 2. Trends in safety performance measures for the NSW coal mining sector.



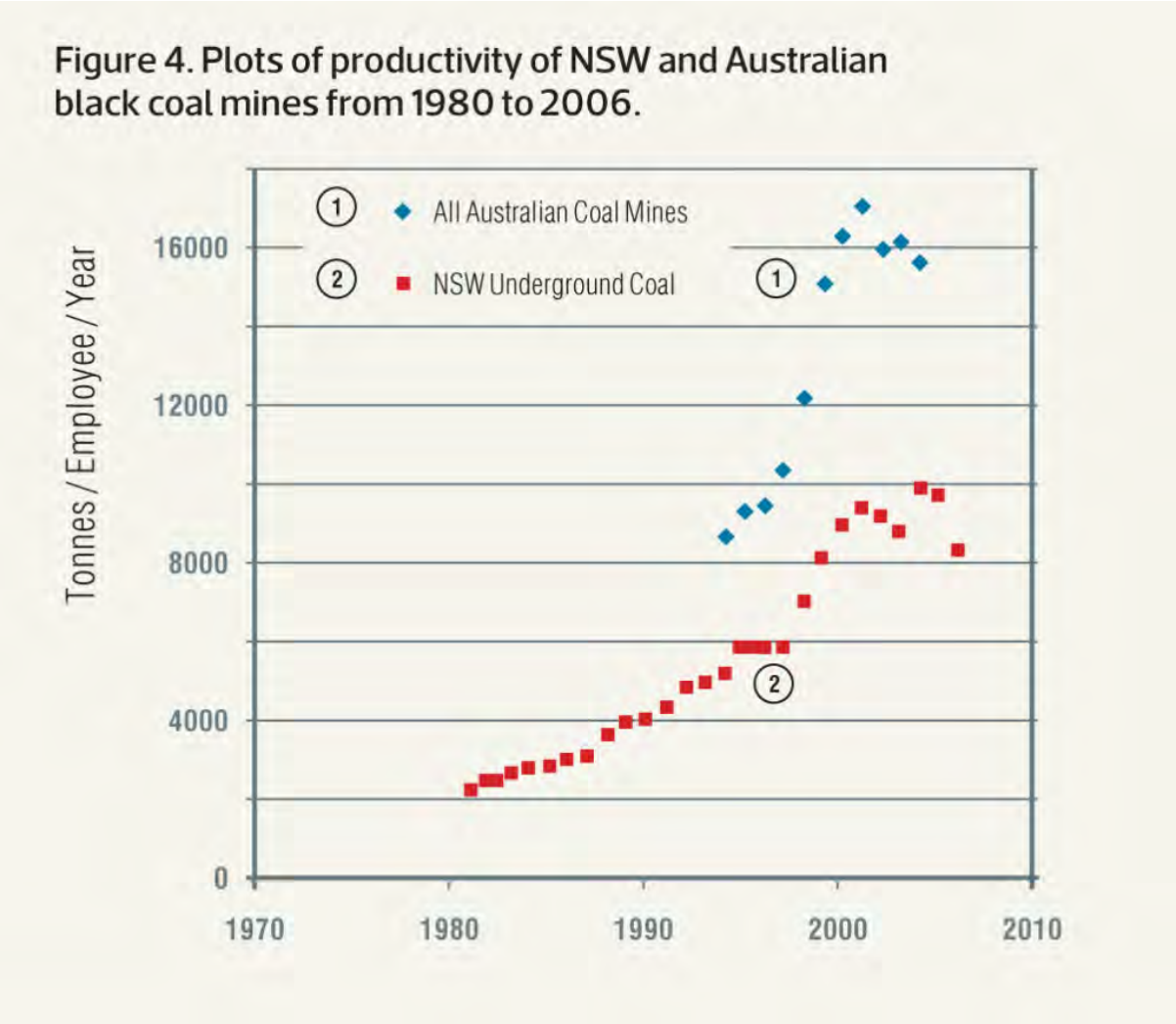
(https://www.ausimmbulletin.com/app/uploads/2016/02/aus2.jpg)

Since the early 1980s, the NSW coal sector has experienced a 15-fold decrease in fatalities, with a number of fatality-free years, and a tenfold decrease in lost time injury frequency rate (LTIFR; see Figure 2). The rolling averages disguise the fact that 22 fatalities occurred in this sector in 1980 and 17 in 1981. Improvements have been particularly pronounced in ground control, with falls of ground (FOG) accounting for only four fatalities in the 14 years to 2015 and only 2 per cent of all injury compensation claims as of 2007 (see Figure 3), which is down from 16 per cent in 1995. There has not been a fatal roof fall for almost a decade. Notably, these improvements were well advanced prior to the adoption of an aggressive prosecution policy in some states, especially NSW.



(https://www.ausimmbulletin.com/app/uploads/2016/02/aus3.jpg)

Figure 4 shows that the significant improvements in health and safety in the Australian black coal sector have been accompanied by significant improvements in productivity. This is consistent with the adage that 'a safe mine is a productive mine'. It reflects the management and operating discipline that well-designed and implemented risk management systems supported by engineered controls bring to controlling all risks, not just those related to health and safety. Safety has been a major driver of innovation in underground coal mining, leading to new ground support technologies, hydraulic temporary roof supports, remote controlled and automated coal cutting equipment and mobile roof supports. These have all had flow on benefits for productivity.



(https://www.ausimmbulletin.com/app/uploads/2016/02/aus4.jpg)

Unfortunately, improvements in health and safety performance have not been as impressive or sustainable in other sectors of the Australian minerals industry. The total number of fatalities in the overall Australian mining sector declined from 40 in FY1990-91 to seven in both FY1995-96 and FY2001-02. However, the average number of fatalities per year over the last decade has plateaued at just over ten, with annual performances fluctuating widely from two fatalities in FY2012-13 to 17 in FY2013-14.

Figures 1 and 2 show a correlation between the reduction in LTIFR and fatalities. Superficially, these appear to confirm the concept of a safety triangle, where a reduction in the number of lower-level events is postulated to translate to a reduction in the number of higher-order events. However, this does not hold true in organisations with mature safety cultures, where fatal incidents are now often associated with sites that have a very low LTIFR. This is a global trend in some multinational mining companies. The correlation is more likely due to the fact that the Australian minerals industry and these companies now aspire to a blanket risk management approach to health and safety.

The quest to continue to improve WHS performance is becoming more challenging to boards of directors and senior management because, for the most part, the higher probability and more obvious risks have been addressed. The increasing rate of fatalities per 1000 lost time injuries (see Figure 1) is a reflection of this and places increasing demands on board governance procedures for preventing low-probability, high-consequence events. At the same time, boards and senior management have to be alert to the health and safety implications of changes in work arrangements, such as 12-hour shifts and fly-in, fly-out (FIFO).

The obligations of boards and senior management

Improvements in workplace safety in Australia have been intimately associated with a realisation that the board, through its senior management team, is ultimately responsible and accountable for safety performance. Safety is an integral part of board governance. Given a board's moral obligation to the organisation's employees and shareholders, safety should be the most important performance metric for a business.

When focusing on safety, one must not overlook employer obligations for employee health and welfare. Issues such as the effect of diesel particulate matter on health have been receiving attention for some years. With one in five persons now expected to suffer from a mental health issue at some time in their life, there is an emerging focus on employer obligations to ensure that the workplace does not contribute to mental illness, workplace safety is not jeopardised by these illnesses and unwell persons are not discriminated against. These types of considerations have elevated importance at remote workplaces and for FIFO operations, where there may be restricted and a lack of timely access to medical resources and appropriate case management services.

While health and safety culture is determined by 'the way we do things around here', the true test is 'when no one is looking'. If safety culture is not set at a board level, varied perceptions of what is expected, rewarded and supported are likely to prevail; that is, climate (variable behaviour on the day) will prevail over culture (embedded behaviour). The establishment of an embedded safety culture requires a board chair with strong leadership capabilities and visible and felt board leadership at all levels in the organisation.

Any doubts that a board is not ultimately accountable for health and safety performance were categorically dispelled by incident investigations and court proceedings almost a decade ago, although a surprising number of directors still do not fully appreciate this. For example, the following is a sample of questions asked of directors by investigating officers following a serious incident at a NSW mine over eight years ago:

- How is occupational health and safety information reported to the directors?
- Are health, safety and welfare issues reviewed at every board meeting?
- If the board becomes aware of a problem, what do they do?
- How does the board ensure instructions are carried out?
- Has the board of directors reviewed the mine's safety management system to ensure its ongoing suitability, adequacy and effectiveness?
- Has any director been involved in assessing the outcomes of internal and external audits and examined what role the board has in formulating and implementing remedial measures consistent with the findings?

The courts have held that the obligations imposed by WHS legislation apply in their full extent to directors and senior management. This is because these individuals have the 'power to direct, control and drive a corporation by exerting influence over its conduct' (Kumar v Ritchie [2006] NSWIRComm 323).

These obligations are reinforced in recent initiatives to harmonise WHS legislation across all Australian states. Fundamentally, directors are accountable for ensuring that systems have been devised and implemented for managing WHS risks and, most importantly, that such systems are effective.

Training sessions with boards of directors and senior management have revealed that, quite often, persons in these roles cannot immediately list the three greatest WHS risks that their organisation is exposed to and, furthermore, that there is poor alignment between these persons as to these risks. When a board or senior management has a poor understanding of the nature of risks within the workplaces over which they exert control, it is difficult for them to fulfil their WHS obligations.

Although emergency response often presents a much greater risk than the initiating event, especially in hazardous industries, it is one of the most frequently overlooked core risks at the board and executive management level. Loss of corporate memory and an inappropriate or inadequate skills mix at these levels contribute significantly to this situation, resulting in too much reliance on and faith in 'paper work' safety; that is, keeping good paper work.

Fulfilling health and safety governance obligations

Information, knowledge, skill and experience underpin sound judgements and decision making by the board of directors and management. One unfortunate repercussion of aggressive prosecution policies in Australia has been a reluctance of those with a good understanding of health and safety risk management to become board members because they are a standout target for prosecution in the event of a mishap.

Questions that need to be asked at board level include:

- Do directors really understand the nature of the health and safety risks and, therefore, are they seeking assurances on the right topics?
- Are directors being provided with meaningful information from their executive?
- Do directors have the skill set to interpret and challenge the relevance and reliability of the health and safety data they are given?

By way of example, it is not uncommon for directors to believe that the maximum shift length in their organisation is 12 hours and to seek assurance from executive management that their organisation has a fatigue management policy to address the risks associated with this working arrangement. However, few directors appreciate that a 12-hour shift requires supervisors to be on site for at least 45 minutes at either end of their employee's shift. As a result, line management, whose performance is critical to workplace health and safety, are working a 13.5-hour shift, without factoring in travel time or the need to stay back to attend to incidents. The risk management control of eight hours sleep between shifts then becomes problematic, even in ideal circumstances where the employee does not have to contend with family-related obligations and sleep interruptions outside of working hours.

Boards and executive management need to be careful not to take false comfort from auditing outcomes and risk assessments. All too often, the former is focused on auditing against standards and not against risks and how they are being managed. Directors and executive management need to be aware of the context in which the risk assessments were undertaken and have confidence in the quality of the risk assessment process. A common pitfall is a risk assessment team comprised only of internal participants.

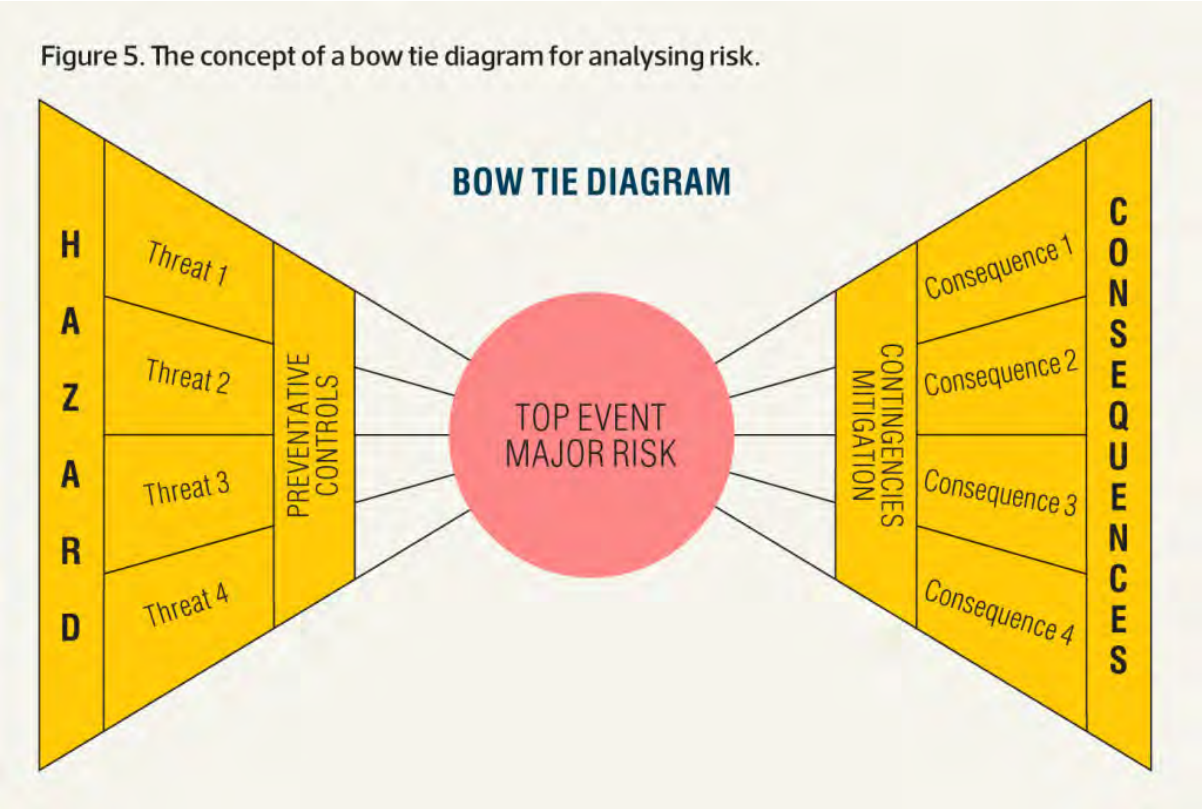
since these members are prone to be conditioned to the risks being assessed and to normalise them. External participants provide a reality check and bring additional knowledge, skills and experience to the assessment. This is particularly important when assessing issues of a technical nature.

It is important for assurance purposes that risk assessment not only identifies the controls to manage risk but also assesses the likely effectiveness of these controls. Reliance placed on a poor-quality risk assessment may present a higher risk than if the risk assessment had not been undertaken.

A disturbing number of serious incidents in recent years point to the danger of placing too much confidence in risk assessment based on job safety analysis (JSA). In most health and safety management systems, a JSA is triggered when a person or persons are assigned to a task that is unfamiliar to them and for which a safe work procedure has not been developed. The inherent risk in a JSA is not just that it is completed by persons who may not fully appreciate the nature of the task and the risks associated with it. More fundamentally, it is that these persons don't know what they don't know and may not know that they do not know. Hence, the process is prone to produce over-optimistic outcomes and inadequate or ineffective risk controls.

In the absence of a technical understanding of the operations, directors and executive management are vulnerable to operating on the wrong side of the risk management bow tie (Figure 5). They take comfort from the controls put in place to manage the consequences of an unwanted event, rather than drilling down to identify the underlying root causes in order to avoid a reoccurrence.

Figure 5. The concept of a bow tie diagram for analysing risk.



(https://www.ausimmbulletin.com/app/uploads/2016/02/aus5.jpg)

Hence, boards of directors and executive management need appropriate knowledge, skills, training and experience to make informed judgements about employee exposure to operational WHS risks. Measures that can contribute to achieving this at board level include:

- The appointment of at least one director who has a good operational background in the business and an understanding of WHS.
- Director induction, training and refresher training, especially in WHS legislation and guidance material, risk management, incident causation analysis and health and safety culture and leadership.
- The provision of tools to assist directors in making meaningful business decisions and timely interventions that are consistent with and aligned to their WHS obligations.
- Annual workplace inspections by board members. Director engagement with employees reinforces company values and standards, builds integrity and trust and demonstrates leadership and commitment to health and safety.
- The formation of a health, safety (and environment) advisory committee (HSEC) of the board. It should include a standing invitation to executive management and one or more independent external advisors and have a clear, strategic agenda for setting performance measures, monitoring, auditing and remediating WHS performance.

In industrial sectors, directors and executive management have traditionally placed high importance on LTIFR as a performance measure. However, this measure has come in for criticism because it is a lagging indicator; that is, a measure of past performance. Nevertheless, there is considerable merit in continuing to use LTIFR, but it should be complemented with metrics based on total recordable injuries. Company officers can be just as liable for a serious injury as for a fatality, and the elimination of injuries is integral to achieving the aspiration of all employees of returning home from work safe and sound.

One of the most valuable leading indicators that should feature in executive management and board reporting is significant and near-hit (or near-miss) incidents. Many of these incidents provide free learnings in that the potential for harm was present but did not materialise on that particular occasion. Significant and near-hit incident reporting increases an organisation's awareness and understanding of the risks that it owns and needs to manage better. A number of leading performance organisations require that all significant and near-hit incidents with the potential to result in one or more fatalities are subjected to a formal root causation analysis. Some require line management to present these findings to the HSEC. Close out of action plans arising from root causation analysis is another valuable performance indicator that provides a measure of assurance to senior management and the board that effective remedial action is being undertaken to manage safety.

Even with sound WHS management systems and procedures, performance is highly dependent on human behaviour. Hence, in more mature WHS cultures, behavioural observations are utilised as a leading indicator of health and safety performance.

Conclusions

Ultimate responsibility and accountability for WHS resides with the board of directors. A board needs to have a good understanding of the risks that it is charged with controlling and have policies and procedures in place that provide it with assurance that management has developed and implemented

systems that are effective for managing these risks. While good progress has been made in managing safety in the Australian mining industry over the last 30 years, there is still a considerable way to go before all employees always return home from their workplaces safe and sound.

IN THE FAIR WORK COMMISSION

Matter No.:	**AM2014/190**
Title of Matter:	**Four yearly review of modern awards — Black Coal Mining Industry Award 2010 — Clause 18 — Accident Pay**

ANNEXURE DG-5
TO THE STATEMENT OF DAVID GUNZBURG DATED 24 FEBRUARY 2017

ORDER

Fair Work Act 2009
s.590(2)(c) - Order requiring a person to produce documents etc to the Fair Work Commission

Applicant: **Coal Mining Industry Employer Group**
(consisting of BHP Billiton Limited (ACN 004 028 077); Centennial Coal Company Limited (ACN 003 714 538); Ensham Resources Pty Limited (ACN 011 048 678); Glencore Coal Pty Limited (ACN 082 271 930); Jellinbah Resources Pty Ltd (ACN 010 825 215); Peabody Energy Australia Coal Pty Limited (ACN 001 401 663); Rio Tinto Coal Australia Pty Limited (ACN 010 542 140); South32 Limited (ACN 093 732 597); Vale Australia Pty Ltd (ACN 062 536 270); Wesfarmers Limited (ACN 008 984 049); Whitehaven Coal Mining Limited (ACN 086 426 253); Yancoal Australia Ltd (ACN 111 859 119) and each of their associated entities operating in the black coal mining industry.)

v

Respondents: **Construction, Forestry, Mining and Energy Union**
The Association of Professionals, Engineers, Scientists and Managers, Australia

(AM2014/190)

VICE PRESIDENT WATSON MELBOURNE, 8 DECEMBER 2016

TO: Coal Mines Insurance Pty Limited
Level 21, 44 Market Street
SYDNEY NSW 2000

Pursuant to s.590(2) of the *Fair Work Act 2009* you are **ORDERED** to provide to the Fair Work Commission the documents, records and other information specified in the Schedule to this order before the Fair Work Commission at the following time, date and place:

Time:	4.00pm
Date:	Monday, 19 December 2016
Place:	Fair Work Commission

Level 10, Terrace Tower
80 William Street
EAST SYDNEY NSW 2011

VICE PRESIDENT

Note:

- This order has been issued at the request of the Respondents in the main proceedings.
- You can apply to have this order set aside or varied.
- Instead of attending to provide the documents etc. covered by this order at the time and place specified above, you may produce them to an officer of the Commission at the place specified above not later than 4.00 pm on the day before the day specified above.
- If you have any queries in relation to this order please contact the Associate to Vice President Watson at chambers.watson.vp@fwc.gov.au.

SCHEDULE

1. Data showing the number of workers covered by insurance policies held by employers that had workers compensation policies with Coal Mines Insurance Pty Limited (**CMI**), in each year, for the period 1973 to 2016.

2. Data showing the total number of claims for workers' compensation under insurance policies held with CMI, in each year, for the period 1973 to 2016.

3. Data showing, of the number of claims for workers' compensation under insurance policies held with CMI, the number of claims for which:

   (a) liability was accepted;

   (b) liability was denied,

   by CMI in each year, for the period 1973 to 2016.

4. In respect of the claims for workers' compensation under insurance policies held with CMI, data showing the number of claims made in respect of each type of injury or illness, in each year, for the period 1973 to 2016.

5. Data showing the number of claims for workers' compensation under insurance policies held with CMI, in relation to which any payments for accident pay were made, which were indemnified under policies held with CMI, in each year, for the period 1973 to 2016.

6. In respect of the claims for workers' compensation under insurance policies held with CMI, in relation to which any payments for accident pay were made, which were indemnified under policies held with CMI, data showing the period of time for which payments for accident pay were made, in each year, for the period 1973 to 2016.

7. In respect of the claims for workers' compensation under insurance policies held with CMI, data showing the average period for which workers compensation payments were made, in each year, for the period 1973 to 2016.

8. In respect of the claims for workers' compensation under insurance policies held with CMI, data showing the percentage of claims that fell into various bands of periods of time for which workers' compensation payments had been made, in each year, for the period 1973 to 2016.

9. In respect of the claims for workers' compensation under insurance policies held with CMI, in relation to which any payments for accident pay were made, which were indemnified under policies held with CMI, data showing the average period for which payments for accident pay were made, in each year, for the period 1973 to 2016.

10. Any reports or other documents made to the Board of CMI, or to its associated entity Coal Services Pty Limited (or its Board) or any predecessors of that company (or the Board of any predecessors), used to report on the estimated length and impact of (then) current workers compensation claims made under insurance policies held with CMI, for

each year, for the period 1973 to 2016.

11. Any reports or other documents setting out claims data provided by CMI to the State Insurance Regulatory Authority, the WorkCover Authority of New South Wales, the State Compensation Board of New South Wales, or any predecessors of those agencies, for each year, for the period 1973 to 2016.

12. Any reports or other documents setting out claims data provided by CMI to Safe Work Australia, the National Occupational Health and Safety Commission Act or any predecessors of those agencies, for each year, for the period 1973 to 2016.

13. Any reports or other documents comparing, or otherwise showing, the incidence and/or length of workers' compensation claims in the black coal mining industry in NSW against the black coal mining industry in other States or Territories of Australia, for the period (or any part of the period) 1973 to 2016.

14. Any reports or other documents comparing, or otherwise showing, the incidence and/or length of workers' compensation claims in the black coal mining industry against other industries or sectors (in New South Wales or in industries/sectors generally), for the period (or any part of the period) 1973 to 2016.

Notes:

A. In respect of each item required to be produced, a reference to Coal Mines Insurance Pty Limited, includes a reference to each of its predecessor including, but not limited to, Mine Owners Insurance Ltd.

B. "Accident pay" has the same meaning as in an industrial instrument (including an award, enterprise agreement or other collective agreement), order or determination of a tribunal (including but not limited to the Coal Industry Tribunal, the Australian Conciliation and Arbitration Commission, the Australian Industry Relations Commission, Fair Work Australia, the Fair Work Commission, the Industrial Commission (of New South Wales) and the Industrial Relations Commission of New South Wales) for accident pay.

C. "Document" has the same meaning as under the *Evidence Act 1995 (Cth)*.

D. The singular includes the plural and the plural includes the singular.

E. A reference to any corporation, whether expressly identified or not, includes a reference to any associated entity, related body corporate, representative or agent of that corporation.

IN THE FAIR WORK COMMISSION

Matter No.:	**AM2014/190**
Title of Matter:	**Four yearly review of modern awards — Black Coal Mining Industry Award 2010 — Clause 18 — Accident Pay**

ANNEXURE DG-6
TO THE STATEMENT OF DAVID GUNZBURG DATED 24 FEBRUARY 2017

Exposed to Risk (Workers covered by CMI Workers Compensation Insurance Policies)

Item 1:
Data showing the number of workers covered by insurance policies held by employers that had workers compensation policies with Coal Mines Insurance Pty Limited (**CMI**), in each year, for the period 1973 to 2016.

Notes/Limitations:

1. Data was sourced from the relevant Annual Reports for each financial year.
2. Exposed To Risk = the average number of workers covered by CMI workers compensation insurance policies as at 30 June / Numbers may be rounded.
3. 2001/2002 is shown as a split year, which represents the closing down of the Joint Coal Board at 31 December 2001 and the establishment of Coal Services Pty Limited as at 1 January 2002.
4. 2016/2017 Exposed to Risk is based on 2016/2017 estimated wages entered as at 30 November 2016.

Financial Year	Exposed to Risk	
1972/1973	13,570	
1973/1974	13,700	
1974/1975	15,000	
1975/1976	15,600	
1976/1977	16,000	
1977/1978	16,063	
1978/1979	16,700	
1979/1980	17,700	
1980/1981	19,800	
1981/1982	20,900	
1982/1983	19,600	
1983/1984	19,249	
1984/1985	18,862	
1985/1986	19,662	
1986/1987	20,153	
1987/1988	18,011	
1988/1989	16,800	
1989/1990	17,200	
1990/1991	17,000	
1991/1992	16,600	
1992/1993	15,100	
1993/1994	14,700	
1994/1995	14,300	
1995/1996	14,473	
1996/1997	14,793	
1997/1998	13,552	
1998/1999	11,064	
1999/2000	10,150	
2000/2001	9,838	
Jul-Dec 2001	10,041	**2001/2002 Average**
Jan-Jun 2002	10,819	**10,430** *See Note 3*
2002/2003	10,820	
2003/2004	10,736	
2004/2005	12,272	
2005/2006	14,726	
2006/2007	16,691	
2007/2008	17,628	
2008/2009	19,312	
2009/2010	20,383	
2010/2011	23,407	
2011/2012	30,595	
2012/2013	30,065	
2013/2014	27,740	
2014/2015	25,324	
2015/2016	25,528	
2016/2017	22,189	*See Note 4*

IN THE FAIR WORK COMMISSION

Matter No.:	**AM2014/190**
Title of Matter:	**Four yearly review of modern awards — Black Coal Mining Industry Award 2010 — Clause 18 — Accident Pay**

ANNEXURE DG-7
TO THE STATEMENT OF DAVID GUNZBURG DATED 24 FEBRUARY 2017

Total number of claims entered by Financial Year as at 30 November 2016

Item 2:
Data showing the total number of claims for workers compensation under insurance policies held with CMI in each year, for the period 1973 to 2016.

Notes/Limitations:
1. Data was extracted as at 30 November 2016 and shows the number of claims entered into the system in each financial year.
2. FY 2016/2017 consists of 5 months of claims entered.

Financial Year	Total no of claims entered	
1972/1973	6,308	
1973/1974	6,789	
1974/1975	8,133	
1975/1976	8,483	
1976/1977	9,298	
1977/1978	10,090	
1978/1979	10,293	
1979/1980	10,537	
1980/1981	12,233	
1981/1982	13,011	
1982/1983	12,355	
1983/1984	11,195	
1984/1985	9,937	
1985/1986	10,021	
1986/1987	10,477	
1987/1988	9,147	
1988/1989	7,999	
1989/1990	8,012	
1990/1991	7,511	
1991/1992	6,727	
1992/1993	6,027	
1993/1994	5,824	
1994/1995	6,311	
1995/1996	5,570	
1996/1997	5,140	
1997/1998	4,688	
1998/1999	3,669	
1999/2000	3,415	
2000/2001	3,021	
2001/2002	2,740	
2002/2003	2,278	
2003/2004	2,072	
2004/2005	1,982	
2005/2006	2,188	
2006/2007	2,273	
2007/2008	2,198	
2008/2009	2,237	
2009/2010	2,383	
2010/2011	1,959	
2011/2012	2,068	
2012/2013	2,029	
2013/2014	1,823	
2014/2015	1,520	
2015/2016	1,341	
2016/2017	547	*See Note 2*

IN THE FAIR WORK COMMISSION

Matter No.:	**AM2014/190**
Title of Matter:	**Four yearly review of modern awards — Black Coal Mining Industry Award 2010 — Clause 18 — Accident Pay**

ANNEXURE DG-8
TO THE STATEMENT OF DAVID GUNZBURG DATED 24 FEBRUARY 2017

Total number of claims with Accident Pay payments by Financial Year as at 30 November 2016

Item 5:
Data showing the number of claims for workers compensation under insurance policies held with CMI, in relation to which any payments for accident pay were made, which were indemnified under policies held with CMI, in each year, for the period 1973 to 2016.

Notes/Limitations:

1. Due to system upgrades and data migration processes, a detailed breakdown of Accident Pay payments processed before November 1989 are not available in the CMI System.
2. Future weeks' deductions, internal adjustments, overpayment recoveries and CTP recoveries payment transactions were excluded.
3. FY 1989/1990 consists of 8 months of Accident Pay payments processed.
4. FY 2016/2017 consists of 5 months of Accident Pay payments processed.

Financial Year	No of claims Paid Accident Pay payments	
1989/1990	301	*See Note 3*
1990/1991	306	
1991/1992	267	
1992/1993	258	
1993/1994	237	
1994/1995	561	
1995/1996	603	
1996/1997	624	
1997/1998	876	
1998/1999	776	
1999/2000	689	
2000/2001	579	
2001/2002	585	
2002/2003	531	
2003/2004	486	
2004/2005	367	
2005/2006	200	
2006/2007	167	
2007/2008	185	
2008/2009	172	
2009/2010	196	
2010/2011	189	
2011/2012	233	
2012/2013	258	
2013/2014	349	
2014/2015	371	
2015/2016	267	
2016/2017	173	*See Note 4*

IN THE FAIR WORK COMMISSION

Matter No.:	**AM2014/190**
Title of Matter:	**Four yearly review of modern awards — Black Coal Mining Industry Award 2010 — Clause 18 — Accident Pay**

ANNEXURE DG-9
TO THE STATEMENT OF DAVID GUNZBURG DATED 24 FEBRUARY 2017

Coal Services

Fair Work Commission Order: Summary of additional information requested

Fair Work Act 2009 (Cwth)
s.590(2)(c) – Order requiring a person to produce documents etc. to the Fair Work Commission

AM2014/190 – Four yearly review of modern awards – Transitional provisions – Accident pay provisions – Black Coal Mining Industry Award 2010

Requests for clarification / additional information

Coal Mines Insurance (CMI) responded to the above order on 16 December 2016. In January 2017 CMI received two emails from Mr David Gunzburg (attached) seeking clarification and additional information with regard to the original response. The new requests and CMI's responses are attached and summarised below.

	Schedule item / *January 2017 request*	January 2017 response summary
4	In respect of the claims for workers' compensation under insurance policies held with CMI, data showing the number of claims made in respect of each type of injury or illness, in each year, for the period 1973 to 2016. ***In Mr Gunzburg's email of 4/1/2017 he notes:*** *Item 4 – In this item we were seeking information about the cause of each injury or illness i.e. trips and falls, lacerations etc and not the location of each injury. Under the SafeWork Australia guidelines I think this is called the Mechanism of Injury but I am not sure if you use that classification or something similar.*	Data showing the total number of claims by Mechanism of Injury Classifications specified by the Type of Occurrence Classification System (TOOCS) or predecessor system is provided for each of the financial years 1973 to 2016.
5	Data showing the number of claims for workers' compensation under insurance policies held with CMI, in relation to which any payments for accident pay were made, which were indemnified under policies held with CMI, in each year, for the period 1973 to 2016. ***In Mr Gunzburg's email of 7/1/2017 he notes:*** *The information provided in Item 5 in relation to number of accident pay incidences shows a discontinuous jump between 93/94 and 94/95. Either side of that data is fairly even.* *Was there some change in Workers Compensation arrangements, the way in which CMI measured this information or the way in which accident payments were made or recorded that can explain this that you are aware of?*	The discrepancy noted in the data is as a result of changes made to the relevant industrial instruments commencing from 1994/95 that affected the way in which accident pay applied. Prior to that time accident pay generally only applied post 26 weeks of total incapacity and where any 'over Award compensation' under the relevant instrument's accident pay clause was made in the 0-26 week period it was captured with the workers compensation payment as one amount and cannot be separately identified. Consequently, the increase in numbers between 1993/94 and 1994/95 is due to claims receiving accident pay from that point on isolated to the 0-26 week period.

	Schedule item / *January 2017 request*	January 2017 response summary
6	In respect of the claims for workers' compensation under insurance policies held with CMI, in relation to which any payments for accident pay were made, which were indemnified under policies held with CMI, data showing the period of time for which payments for accident pay were made, in each year, for the period 1973 to 2016. ***In Mr Gunzburg's email of 4/1/2017 he notes:*** *Item 6 – The problem here is a little more confusing. We were seeking information about the duration of payments for each injury which occurred in what I think you may call each "accident year". So if an accident occurred in 2006 and lasted for 60 weeks it would show as 2006 for 62 weeks. You have provided the length of payments made in each calendar year – which of course cannot exceed 52 weeks and would presumably split one injury of 60 weeks duration into two payments (of say 30 weeks each) made in consecutive years.* *Could you please provide the information as clarified above?*	Taking into consideration the wording of the original Item 6 in the schedule of the order and the clarification provided by Mr Gunzburg in his email of 4/1/2017, the following is provided: Data showing claims that received accident pay by date of injury by accident year (calendar year) for the years 1995 to 2016 and the duration for which payments for accident pay were made. There are a number of system data limitations and these are provided on the attached updated response to Item 6.

Bruce Grimshaw

From: David Gunzburg <gunzburg@bigpond.net.au>
Sent: Wednesday, 4 January 2017 9:56 AM
To: Bruce Grimshaw
Cc: Trent.Sebbens@ashurst.com
Subject: Request for Data

Bruce, I hope you had a good Christmas break.

I have had a chance to look through the data that was provided to the FWC in response to the order from VP Watson.

There are two items where we seek some clarification or where the data provided is not what we sought.

Item 4 – In this item we were seeking information about the cause of each injury or illness i.e. trips and falls, lacerations etc and not the location of each injury. Under the SafeWork Australia guidelines I think this is called the Mechanism of Injury but I am not sure if you use the that classification system or something similar.

Item 6 – The problem here is a little more confusing. We were seeking information about the duration of payments for each injury which occurred in what I think you may call each "accident year". So if an accident occurred in 2006 and lasted for 60 weeks it would show as 2006 for 62 weeks. You have provided the length of payments made in each calendar year – which of course cannot exceed 52 weeks and presumably would split one injury of 60 weeks duration into two payments (of say 30 weeks each) made in consecutive years.

Can you please provide the information as clarified above. If it is not clear in any way please contact myself.

Given the Christmas break we are now running up against a time problem and would appreciate you giving this your urgent attention.

Thank you

David Gunzburg

DGHR Services

gunzburg@bigpond.net.au
☎ 0407 844 649
(03) 8677 3305 (fax)
www.dghrservices.com.au

Bruce Grimshaw

From: David Gunzburg <gunzburg@bigpond.net.au>
Sent: Saturday, 7 January 2017 10:07 AM
To: Bruce Grimshaw
Subject: Data Provided

Bruce, one more question of clarification if I may ask.

The information provided in item 5 in relation to number of accident pay incidences shows a discontinuous jump between 93/94 and 94/95. Either side of that the data is fairly even.

Was there some change in Workers Compensation arrangements, the way in which CMI measured this information or the way in which accident payments were made or recorded that can explain this that you are aware of? A doubling of numbers (which is not associated with a similar jump at that time in the number of claims) jus doesn't look right.

1992/1993	258
1993/1994	237
1994/1995	561
1995/1996	603
1996/1997	624

Thank you

David Gunzburg

DGHR Services

gunzburg@bigpond.net.au
0407 844 649
(03) 8677 3305 (fax)
www.dghrservices.com.au

Total number of claims by Mechanism of Injury entered by Financial Year as at 30 November 2016

Item 4 (as per the order schedule):
In respect of the claims for workers compensation under insurance policies held with CMI, data showing the number of claims made in respect of each type of injury or illness, in each year, for the period 1973 to 2016.

Item 4 (clarification as per email from Mr David Gunzburg dated 4/1/2017):
In this item we were seeking information about the cause of each injury or illness i.e. trips and falls, lacerations etc and not the location of each injury. Under the SafeWork Australia guidelines I think this is called the Mechanism of Injury but I am not sure if you use that classification or something similar.

January 2017 response
Data showing the total number of claims by Mechanism of Injury Classifications specified by the Type of Occurrence Classification System (TOOCS) or predecessor system is provided for each of the financial years 1973 to 2016.

Notes/Limitations:
1. From 1/7/1991 claim injury types are coded under the Type of Occurrence Classification System (TOOCS).
2. From 01/07/2011 to date - TOOCs Version 3.1 classifications are used.
3. From 01/07/1991 to 30/06/2011 - TOOCs Version 2 or Version 1 classifications are used.
4. From 01/07/1972 to 30/06/1991 - Injury Mechanism codes are the same as TOOCs Version 2 or Version 1.
5. Prior to 1985 most claims did not have the corresponding Mechanism of Injury codes recorded in the CMI system.
6. The column titled Other Unspecified (Disease) represents a code used in a number of claims records in the Mechanism of Injury field pre 1998/1999.
7. The column titled Codes Missing for Claims is where nothing was entered for Mechanism of Injury in claim records, primarily found in earlier years.
8. The column titiled Codes Missing for Incidents relates to early notifications not yet converted to a claim and nothing has been entered for Mechanism of Injury.

FY	Group 0 Falls,Trips or Slips of a Person	Group 1 Hitting Objects with Part of Body	Group 2 Being Hit by Moving Objects	Group 3 Exposure to Sound and Pressure	Group 4 Body Stress / Overexertion	Group 5 Heat, Electricity and Other Environmental Factors	Group 6 Contact Chemicalsand Other Substances	Group 7 Biological Factors	Group 8 Mental Stress	Group 9 Vehicle Incidents and Other	Other Unspecified (Disease)	Invalid Code (9999)	Codes Missing for Claims	Codes Missing for Incidents	Total
2016/2017	87	46	115	88	193	9	20	1	11	72	0	1	0	33	676
2015/2016	199	81	197	213	446	16	25	1	26	92	0	0	0	45	1341
2014/2015	208	89	237	242	498	15	45	0	30	100	0	0	0	56	1520
2013/2014	237	125	345	234	585	16	44	0	27	144	0	0	0	66	1823
2012/2013	298	147	414	211	562	22	45	6	22	229	0	0	0	73	2029
2011/2012	324	188	376	255	568	49	52	5	14	182	0	1	0	54	2068
2010/2011	355	164	406	229	464	26	33	1	10	219	0	0	0	52	1959
2009/2010	353	177	463	563	514	27	59	0	8	152	0	0	0	67	2383
2008/2009	403	185	602	280	514	50	37	4	14	125	0	2	2	19	2237
2007/2008	479	177	645	133	554	42	46	5	3	107	0	0	1	6	2198
2006/2007	478	200	650	167	585	34	44	4	10	99	0	0	0	2	2273
2005/2006	497	174	564	161	584	30	63	2	5	108	0	0	0	0	2188

Total number of claims by Mechanism of Injury entered by Financial Year as at 30 November 2016

FY	Group 0 Falls,Trips or Slips of a Person	Group 1 Hitting Objects with Part of Body	Group 2 Being Hit by Moving Objects	Group 3 Exposure to Sound and Pressure	Group 4 Body Stress / Overexertion	Group 5 Heat, Electricity and Other Environmental Factors	Group 6 Contact Chemicalsand Other Substances	Group 7 Biological Factors	Group 8 Mental Stress	Group 9 Other Unspecified Mechanism	Other Unspecified Disease	Invalid Code (9999)	Codes Missing for Claims	Codes Missing for Incidents	Total
2004/2005	416	151	540	132	538	25	46	2	8	121	0	0	0	3	1982
2003/2004	414	163	557	141	607	20	40	1	8	119	0	0	0	2	2072
2002/2003	508	188	577	181	626	19	41	0	12	118	0	0	0	8	2278
2001/2002	601	257		162	794	27	57	3	16	178	0	0	0	2	2097
2000/2001	634	293	643	190	845	28	60	5	15	161	0	0	2	6	2882
1999/2000	711	396	782	200	977	41	67	14	20	158	0	0	3	6	3375
1998/1999	822	379	822	228	1042	30	66	10	19	186	0	1	1	8	3614
1997/1998	1056	489	877	269	1339	43	90	6	12	236	1	0	0	0	4418
1996/1997	1173	512	1147	203	1433	45	102	11	12	271	0	0	2	0	4911
1995/1996	1127	579	1376	523	1433	43	149	16	24	305	0	0	0	0	5575
1994/1995	1313	599	1371	733	1470	50	174	23	13	315	0	0	1	0	6062
1993/1994	1124	647	1620	849	1279	41	156	8	12	303	0	0	4	0	6043
1992/1993	1204	630	1401	680	1312	61	124	15	12	346	0	0	4	0	5789
1991/1992	1359	739	1639	560	1519	54	120	8	13	597	1	0	10	0	6619
1990/1991	1707	712	1747	7	1471	72	63	0	0	658	624	0	22	0	7083
1989/1990	1792	967	2175	10	1550	96	39	0	0	603	561	0	2	0	7795
1988/1989	1841	953	2392	12	1582	90	31	0	0	537	588	0	0	0	8026
1987/1988	2131	1083	2365	15	1841	93	34	1	0	591	678	0	3	0	8835
1986/1987	2414	1245	2677	10	2104	118	68	0	0	713	662	0	3	0	10014
1985/1986	6	5	3140	8	10	1	0	1	0	5	36	1	9938	0	13151
1984/1985	11	8	10	7	15	0	1	0	0	6	32	0	9850	0	9940
1983/1984	15	7	7	9	16	0	0	0	0	16	69	0	11043	0	11182
1982/1983	13	3	20	7	14	1	0	0	0	11	53	0	12237	0	12359
1981/1982	9	2	16	9	4	0	0	0	0	5	60	0	12919	0	13024
1980/1981	5	8	3	4	8	0	0	0	0	9	58	0	12133	0	12228
1979/1980	8	3	8	3	5	0	0	0	0	9	29	0	10474	0	10539
1978/1979	1	3	6	3	7	0	0	0	0	4	14	0	10258	0	10296
1977/1978	2	2	3	2	8	0	1	0	0	9	14	0	10050	0	10091
1976/1977	4	2	2	1	1	0	0	0	0	0	19	0	9270	0	9299
1975/1976	5	3	1	0	0	0	0	0	0	4	6	0	8459	0	8478
1974/1975	3	2	6	0	2	1	1	0	0	1	7	0	8113	0	8136
1973/1974	6	3	3	0	3	0	1	0	0	3	3	0	6768	0	6790
1972/1973	1	0	2	1	1	0	0	0	0	1	8	0	6294	0	6308
			2												

Total number of claims with Accident Pay payments by Financial Year as at 30 November 2016

Item 5 (as per the order schedule):
Data showing the number of claims for workers compensation under insurance policies held with CMI, in relation to which any payments for accident pay were made, which were indemnified under policies held with CMI, in each year, for the period 1973 to 2016.

Item 5 (clarification as per email from Mr David Gunzburg dated 7/1/2017):
The information provided in Item 5 in relation to number of accident pay incidences shows a discontinuous jump between 93/94 and 94/95. Either side of that data is fairly even. Was there some change in Workers Compensation arrangements, the way in which CMI measured this information or the way in which accident payments were made or recorded that can explain this that you are aware of?

January 2017 response
The discrepancy noted in the data is as a result of changes made to the relevant industrial instruments commencing from 1994/95 that affected the way in which accident pay applied. Prior to that time accident pay generally only applied post 26 weeks of total incapacity and where any 'over Award compensation' under the relevant instrument's accident pay clause was made in the 0-26 week period it was captured with the workers compensation payment as one amount and cannot be separately identified.

Consequently, the increase in numbers between 1993/94 and 1994/95 is due to claims receiving accident pay from that point in the 0-26 week period.

Notes/Limitations:

1. Due to system upgrades and data migration processes, a detailed breakdown of Accident Pay payments processed before November 1989 are not available in the CMI System.
2. Future weeks' deductions, internal adjustments, overpayment recoveries and CTP recoveries payment transactions were excluded.
3. FY 1989/1990 consists of 8 months of Accident Pay payments processed.
4. FY 2016/2017 consists of 5 months of Accident Pay payments processed.

Financial Year	No of claims Paid Accident Pay payments	
1989/1990	301	*See Note 3*
1990/1991	306	
1991/1992	267	
1992/1993	258	
1993/1994	237	
1994/1995	561	
1995/1996	603	
1996/1997	624	
1997/1998	876	
1998/1999	776	
1999/2000	689	
2000/2001	579	
2001/2002	585	
2002/2003	531	
2003/2004	486	
2004/2005	367	
2005/2006	200	
2006/2007	167	
2007/2008	185	
2008/2009	172	
2009/2010	196	
2010/2011	189	
2011/2012	233	
2012/2013	258	
2013/2014	349	
2014/2015	371	
2015/2016	267	
2016/2017	173	*See Note 4*

Claim counts by Financial Year and Paid duration weeks of Accident Pay payments as at 30 November 2016

Item 6 (as per the order schedule):
In respect of the claims for workers compensation under insurance policies held with CMI, in relation to which any payments for accident pay were made, which were indemnified under policies held with CMI, data showing the period of time for which payments for accident pay were made, in each year, for the period 1973 to 2016.

Item 6 (clarification as per email from Mr David Gunzburg dated 4/1/2017):
The problem here is a little more confusing. We were seeking information about the duration of payments for each injury which occurred in what I think you may call each "accident year". So if an accident occurred in 2006 and lasted for 60 weeks it would show as 2006 for 62 weeks. You have provided the length of payments made in each calendar year – which of course cannot exceed 52 weeks and would

January 2017 response
Taking into consideration the wording of the original Item 6 in the schedule of the order and the clarification provided by Mr Gunzburg in his email of 4/1/2017, the following is provided: Data showing claims that received accident pay by date of injury by accident year (calendar year) for the years 1995 to 2016 and the duration for which payments for accident pay were made. There are a number of system data limitations and these are provided under Notes/Limitations below.

Notes/Limitations:

1. Due to system upgrades and data migration processes, a detailed breakdown of Accident Pay payments processed before November 1989 are not available in the CMI System.

2. Additionally, prior to 1994/95, Accident Pay generally only applied post 26 weeks of total incapacity and where any 'over Award compensation' under the relevant instrument's Accident Pay clause was made in the 0-26 week period it was captured with the workers compensation payment as one amount and cannot be separately identified. For the purposes of data consistency, claims were grouped by date of injury by accident year from 1995.

3. In response to changes in the relevant industrial instruments in the mid 1990s that affected the way Accident Pay applied, an additional Accident Pay payment code was implemented in the CMI System from FY 1994/95 which is used in the 0-26 week period of total incapacity. However, paid duration data is not captured in the 0-26 week period so duration data for that period cannot be extracted from the system.

4. Due to the system limitations stated in Note 3, the duration of Accident Pay payments in the 0 to 26 week period cannot be identified. Claims with Accident Pay payments isolated to the first 26 weeks of total incapacity were grouped in a single 0 to 26 week payment category that shows the total number of claims. Claims with over 26 weeks Accident Pay were assumed to have received the first 26 weeks of Accident Pay payments. Duration of Accident Pay payments post 26 weeks is captured in the CMI system.

5. For the 27 to 78 week period, claims were counted in a paid duration week category which matches the rounded whole number value of it's total paid duration weeks of Accident Pay payments processed from date of injury up to 30 November 2016 with the following exception:

   27 wk : Total paid duration greater than 26 weeks and less than 27.5 weeks

6. Future weeks' deductions, internal adjustments, overpayment recoveries and CTP recoveries payment transactions were excluded in the calculation of Total Paid duration weeks of Accident Pay payments.

Claim counts by Financial Year and Paid duration weeks of Accident Pay payments as at 30 November 2016

Accident Year	0 to 26 wk	27 wk	28 wk	29 wk	30 wk	31 wk	32 wk	33 wk	34 wk	35 wk	36 wk	37 wk	38 wk	39 wk
1995	**281**	7	3	6	3	3	0	2	4	3	0	2	3	0
1996	**259**	4	4	3	3	0	4	1	1	0	2	5	2	2
1997	**427**	8	3	1	4	1	2	3	2	1	2	1	2	1
1998	**366**	7	5	3	3	2	2	1	3	0	1	1	1	1
1999	**305**	0	0	5	2	1	1	4	3	0	3	2	0	2
2000	**276**	1	1	4	0	1	1	2	2	2	0	0	0	4
2001	**274**	3	3	1	1	3	2	0	1	3	2	1	2	1
2002	**227**	2	3	5	2	1	2	4	1	0	1	1	1	1
2003	**199**	1	0	1	1	3	1	1	2	1	1	1	1	0
2004	**187**	2	1	0	2	3	1	0	3	0	0	1	1	0
2005	**46**	1	0	2	0	0	1	2	2	0	0	1	0	0
2006	**16**	2	1	4	0	3	1	0	0	0	2	2	0	0
2007	**26**	3	6	2	2	1	0	0	5	0	0	1	1	0
2008	**17**	3	4	2	0	0	0	0	1	2	1	1	0	0
2009	**23**	5	2	2	0	1	1	2	1	2	4	0	0	0
2010	**32**	4	2	1	1	1	1	0	1	1	1	1	1	0
2011	**43**	5	2	0	1	1	0	2	1	2	1	1	3	2
2012	**41**	10	1	0	1	2	1	1	1	1	3	1	0	2
2013	**71**	5	1	1	0	2	1	1	3	0	1	3	0	1
2014	**91**	3	3	2	1	1	0	3	0	0	3	0	2	1
2015	**52**	3	1	0	3	1	0	1	0	0	1	2	3	2
2016	**50**	2	0	2	0	2	1	1	0	1	1	0	0	0

Claim counts by Accident Year and Total Paid duration weeks of Accident Pay payments as at 30 November 2016

Accident Year	40 wk	41 wk	42 wk	43 wk	44 wk	45 wk	46 wk	47 wk	48 wk	49 wk	50 wk	51 wk	52 wk	53 wk
1995	2	1	2	1	2	3	0	2	0	1	4	0	2	3
1996	0	1	0	0	2	0	2	0	2	1	0	3	0	2
1997	1	2	2	4	2	3	1	3	2	1	0	1	0	0
1998	1	0	2	3	1	4	2	0	2	0	5	1	0	2
1999	2	4	1	1	0	1	0	1	1	2	0	0	0	0
2000	2	1	1	0	1	0	0	2	1	1	1	1	1	0
2001	0	2	2	2	0	1	1	2	1	1	0	3	0	1
2002	2	1	3	0	0	1	0	1	1	1	0	2	1	1
2003	1	2	1	0	1	1	2	0	2	1	2	3	1	0
2004	0	1	2	0	0	0	3	2	0	2	3	1	1	0
2005	0	2	1	1	1	2	0	1	0	0	1	0	1	0
2006	2	1	1	1	0	0	0	0	0	0	0	0	0	4
2007	1	0	1	1	0	0	1	0	0	0	0	0	0	1
2008	2	2	1	0	1	0	0	0	0	0	1	0	1	0
2009	3	2	2	0	0	0	3	1	1	0	0	0	0	0
2010	1	0	0	0	0	0	4	0	0	0	1	1	0	0
2011	3	1	0	1	0	0	0	2	0	0	0	2	1	0
2012	0	0	2	0	3	3	4	2	1	1	0	2	1	1
2013	4	2	0	2	1	0	1	1	1	3	2	0	1	2
2014	2	3	0	1	0	1	0	2	0	0	1	0	1	1
2015	1	2	2	0	1	1	3	1	1	0	2	2	1	0
2016	1	0	0	0	0	0	0	0	0	0	0	0	0	0

Claim counts by Accident Year and Total Paid duration weeks of Accident Pay payments as at 30 November 2016

Accident Year	54 wk	55 wk	56 wk	57 wk	58 wk	59 wk	60 wk	61 wk	62 wk	63 wk	64 wk	65 wk	66 wk	67 wk
1995	1	2	0	3	1	2	2	2	1	0	2	1	0	2
1996	0	1	0	0	1	1	0	1	1	0	1	0	1	0
1997	1	2	0	1	0	1	0	0	0	0	2	3	1	0
1998	1	3	3	3	0	0	0	1	0	1	1	0	0	2
1999	1	0	1	0	3	0	0	0	1	0	3	0	1	0
2000	1	1	3	0	0	0	0	0	1	0	1	1	0	1
2001	2	0	0	2	0	1	1	2	1	2	2	0	1	2
2002	1	1	0	1	1	0	0	0	1	1	0	0	0	0
2003	0	1	0	1	4	0	0	1	2	0	1	2	1	0
2004	1	0	0	1	0	1	0	1	1	0	0	0	0	1
2005	1	1	2	0	0	1	0	0	0	0	2	1	0	0
2006	0	0	2	0	3	2	0	1	1	1	2	0	1	0
2007	2	2	0	0	2	1	1	0	1	1	1	0	0	0
2008	0	0	0	1	2	1	2	1	1	0	2	0	1	1
2009	0	0	0	0	0	1	0	0	0	1	2	0	1	0
2010	1	0	0	0	1	1	0	2	0	2	0	0	0	1
2011	1	1	1	1	0	0	0	1	0	0	1	0	3	0
2012	1	1	0	3	2	0	0	0	1	1	0	2	0	0
2013	1	2	1	2	0	1	0	0	1	0	0	0	1	0
2014	0	0	0	0	2	0	1	1	0	0	1	2	0	0
2015	4	0	0	0	0	1	1	1	1	1	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Claim counts by Accident Year and Total Paid duration weeks of Accident Pay payments as at 30 November 2016

Accident Year	68 wk	69 wk	70 wk	71 wk	72 wk	73 wk	74 wk	75 wk	76 wk	77 wk	78 wk
1995	1	0	1	1	2	0	2	1	0	2	57
1996	1	0	1	2	4	0	0	3	2	1	65
1997	3	0	1	1	2	1	1	4	1	1	72
1998	1	2	0	0	1	0	0	1	2	1	81
1999	1	0	2	1	1	0	3	0	2	1	58
2000	0	1	1	1	0	0	0	0	0	1	59
2001	1	1	1	1	1	0	1	0	1	1	67
2002	0	0	1	1	2	1	0	0	0	3	53
2003	1	1	0	0	1	0	0	0	0	0	44
2004	0	0	0	3	0	0	2	0	0	0	36
2005	0	0	0	0	0	1	1	1	1	3	33
2006	0	0	0	1	0	0	1	1	0	2	26
2007	0	0	0	1	0	2	1	1	0	1	36
2008	1	0	0	0	0	1	1	0	1	1	40
2009	0	3	3	1	0	0	0	0	1	1	50
2010	4	1	0	0	0	1	1	1	1	1	30
2011	2	0	0	0	1	2	2	1	0	5	43
2012	3	0	2	0	1	0	4	0	0	2	47
2013	0	1	0	1	2	2	1	3	0	0	35
2014	1	1	0	2	0	0	2	0	0	0	34
2015	0	0	1	0	0	0	1	1	2	0	5
2016	0	0	0	0	0	0	0	0	0	0	0

IN THE FAIR WORK COMMISSION

Matter No.:	**AM2014/190**
Title of Matter:	**Four yearly review of modern awards — Black Coal Mining Industry Award 2010 — Clause 18 — Accident Pay**

ANNEXURE DG-10

TO THE STATEMENT OF DAVID GUNZBURG DATED 24 FEBRUARY 2017

Department of **Employment, Economic Development and Innovation**

Queensland Mines and Quarries
Safety Performance and Health Report

1 July 2010 – 30 June 2011

Queensland Government

200

Queensland Mines and Quarries
Safety Performance and Health Report

1 July 2010 – 30 June 2011

CS1087 01/12

Disclaimer

The data in this report are derived from the Department of Employment, Economic Development and Innovation (DEEDI) Queensland mining industry Lost Time Accident database, in addition to information—including survey responses—supplied by mining and quarrying operators throughout Queensland.

Some data have been summarised or consolidated in order to present a standardised format in this report. Although DEEDI makes every effort to verify supplied data, it accepts no responsibility for data that was incorrect when supplied. The data in this report may not be fully representative of the industry or any component of it.

Please Note: *The figures reported in this document are collected from mine sites on an ongoing basis. The figures are not finalised until the following year. For this reason there may be variations in the figures reported for the previous period of 2010–11.*

CC11–SAF017
ISSN (Print)1834–3708
ISSN (Online)1834–3716

This report can be found on DEEDI's mining and safety website at **www.mines.industry.qld.gov.au**

Contents

Abbreviations

CFMEU	Construction, Forestry, Mining and Energy Union
DEEDI	Department of Employment, Economic Development and Innovation
DES	diesel engine system
DI	disabling injury
DPM	diesel particulate matter
EPC	exploration permit coal
HIAC	Health Improvement and Awareness Committee
HPI	high-potential incident
ICT	incident control team
LTI	lost time injury/disease
LTIFR	lost time injury frequency rate (injuries per million hours worked)
MTI	medical treatment injuries
NMA	nominated medical advisor
OESR	Queensland Office of Economic and Statistical Research
PPI	positive performance indicators
QMRS	Queensland Mines Rescue Service
QPS	Queensland Police Service
QRC	Queensland Resources Council
SCSR	self-contained self-rescuer
SHMS	safety and health management system
Simtars	Safety in Mines Testing and Research Station
SMS	safety management system
SSE	site senior executive
TRI	total recordable injury
TRIFR	total recordable injury frequency rate (injuries per million hours worked)
WBV	whole-body vibration

Definitions

Coal mines Mines subject to the *Coal Mining Safety and Health Act 1999* and associated regulations.

Days on alternative duties The number of days a worker is unable to perform his/her regular job and has been assigned other temporary or modified duties. Alternative duties include a changed work environment, roster or shift pattern.

Days lost All rostered shifts that a worker is unable to work because of injury, not including the day of the injury. This also includes days lost because of recurrences of injuries from previous periods and days on alternative duties after returning to work. A fatal injury is treated as 220 days lost (as per Australian Standard AS1885.1–1990, Clause 6.17).

Disabling injury A work-related injury or disease resulting in a worker being unable to fully perform his/her regular job. Either light or alternative duties are performed.

Duration rate The average time (days) lost and the time (days) on alternative duties for each LTI or DI. In this report, time lost includes all time lost for an incident to date.

Lost time injury/disease An incident resulting in a fatality, permanent disability or time lost from work of one shift or more. The shift on which the incident occurred is not counted as a shift lost.

Lost time injury frequency rate The number of lost time injuries/diseases per million hours worked.

Lost time and disabling injury frequency rate The number of lost time injuries/diseases and disabling injuries per million hours worked.

Medical treatment injuries Those incidents, which were not lost time injuries or disabling injuries, for which first aid and/or medical treatment was required by a doctor, nurse or person qualified to give first aid.

Metalliferous mines Mines subject to the *Mining and Quarrying Safety and Health Act 1999* and associated Regulations.

Quarries Excavations of hard rock for use in construction; covered by the *Mining and Quarrying Safety and Health Act 1999* and associated Regulations.

Severity rate The time (days) lost and time (days) on alternative duties per million hours worked.

Total recordable injury Includes the number of fatalities, lost time injuries/diseases, medical treatment injuries and disabling injuries.

Total recordable injury frequency rate The number of total recordable injuries/diseases per million hours worked.

The definitions in the report for bodily location, breakdown agency, lost time injury/disease, mechanism of injury, nature of injury, incidence rate and frequency rate generally conform to the workplace injury and disease recording standard (AS 1885.1–1990). The Standard's 'average lost time rate' (number of days lost per lost time injury) is called *duration rate*. The Standard's 'no lost time injuries/diseases' (those occurrences that were not lost time injuries and for which first aid or medical treatment was administered) are called *medical treatment injuries* or *disabling injuries* (the injured person cannot return to their normal job and is put on alternative duties). When calculating duration rate (number of days per lost time injury) and *severity rate* (days lost per million hours worked) for a lost time injury, the days lost include the days away from work and the days on alternative duties. The Australian Standard is not clear on whether days lost should include days on alternative duties. It is common practice in other Australian jurisdictions to only include days away from work in duration and severity calculations. However, as the number of days required to be spent on alternative duties is a reflection of the severity of the injury, it is considered that including these days presents a more accurate picture of the industry with respect to the severity of an injury or illness.

Message from the Commissioner for Mine Safety and Health

I am pleased to present the *Queensland Mines and Quarries Safety Performance and Health Report* for the year 1 July 2010 to 30 June 2011.

The responsibility for the regulation of mine safety and health lies with the Safety and Health Division of the Department of Employment, Economic Development and Innovation (DEEDI). Our aim in Safety and Health is to make a difference each day that will assist the mining industry in achieving its goal of Zero Harm.

The Queensland mining industry continues to maintain its prime position as one of the safest in the world. Safety and Health, through the Mines Inspectorate, takes its role in the maintenance and improvement of this statistic very seriously. We must never become complacent and forget the lessons of history, and we should look to innovation and new technology as we strive for continuous improvement.

The aim of this report is to focus the attention of mine management and mine workers on safety and health priorities and to encourage and prioritise proactive planning of strategies to improve safety and health performance.

We must always remember the families who have lost a loved one as a result of a mine accident. The awareness of these accidents makes us ever more vigilant and watchful in the pursuit of a truly safe and healthy industry. It is, however, disappointing for me to report that there have been three fatalities in the mining industry this year. I extend my sympathy and condolences to the family and friends of these mine workers. I can assure them that the Mines Inspectorate continues to work relentlessly to eliminate such tragedies. There is no greater contribution we can make than to ensure that our people get home from work safely, live a healthy life at work and, importantly, continue that healthy status when they retire.

While fatal accidents have increased, the combined lost time injury frequency rate for all Queensland mines continues to improve—down from 3.8 injuries per million hours worked in 2009–2010 to 2.9 in 2010–2011[1]. Queensland continues to have one of the highest standards in mining safety and health statistics in the world and I am determined to maintain this position.

It has been a busy year for Safety and Health. The Mines Inspectorate and Simtars devoted their time, knowledge and experience in assisting New Zealand authorities with the Pike River disaster where 29 miners lost their lives in an underground coal mine explosion. Simtars' gas monitoring and interpretation staff and the Deputy Chief Inspector of Coal Mines travelled to the Pike River mine site soon after the event. They performed critical roles in the operation from the initial phases until the time the mine was safely sealed. The Mines Inspectorate was also involved in an audit of the remaining New Zealand underground coal mines to provide a level of assurance to the New Zealand Government that safety issues are being addressed.

In addition, I have been appointed as a commissioner of New Zealand's Pike River Royal Commission, which is currently investigating this terrible tragedy. There is no doubt the recommendations that will flow from this Royal Commission will have implications for mining jurisdictions around the world; and I am fully committed to adopting any safety recommendations that have applicability in Queensland.

Our dedication to ensuring that Queensland mining legislation remains one of the safest in the world has again meant a heavy commitment to the National Mine Safety Framework activities by both me and the Mines Inspectorate staff this year. The Mines Inspectorate has also participated in other important matters, such as the development of the mining Codes of Practice, regular Steering and Legislation Group meetings and New South Wales, Western Australian and Queensland regulators' technical group meetings. The technical group meetings were instrumental in identifying what was required by the three major mining states for non-core mining regulations.

It is also important to reiterate the Mines Inspectorate's continued investigation and encouragement in the use of collision-avoidance equipment; incorporating proximity-detection and warning systems. The use of collision-avoidance equipment is vital in reducing the risk of unplanned vehicle interaction and preventing people coming to harm.

I urge you to continue your good work in helping to make Queensland one of the safest and healthiest mining jurisdictions in the world. I commend this report and its contents to you. Please use this data to identify areas of weakness and to address them so that we continue to improve in our ongoing pursuit of Zero Harm. In doing so we will take another step closer to ensuring that all mine workers can return home to their families, healthy and safe, after each and every shift.

Stewart Bell
Deputy Director-General—Safety and Health
Commissioner for Mine Safety and Health

1 The combined lost time injury frequency rate has reduced since the Commissioner for *Mine Safety and Health Queensland Mines Inspectorate Performance report 2010–11* was published. The figures reported are collected from mine sites on an ongoing basis and are not finalised until the following year. For this reason, there may be variation in the figures reported in the two reports.

Summary from the Chief Inspectors of Mines

The year in review was marred by the tragic loss of three lives. One death is one too many and we feel the loss of our three fellow miners. Not as much, of course, as the families and mates of those who are no longer with us. To these people, we again send our heartfelt condolences.

The three fatalities in the reporting period were attributed to:

- the rollover of a light vehicle at a surface coal mine
- the collapse of a shaft at a small opal mine
- the explosion of a truck tyre during maintenance at a surface coal mine.

The first fatality of the year occurred when a contractor, on his penultimate day at the mine as the contract was concluding, was fatally injured when the 4WD vehicle in which he was riding as a rear passenger, rolled over and he was ejected from the vehicle. The deceased, who was not wearing a seatbelt, was fatally injured when the vehicle rolled on him.

The fatality at the opal mine occurred when an 81-year-old miner was found deceased, buried up to his neck in mullock. He was in a previously mined section of 1.2 m high underground workings, just off the bottom of a 3.5 m deep shaft within the Yowah opal mining designated fossicking area. It has been concluded that the deceased was alone mining the mullock, placed as backfill in an adjacent shaft, when the material has moved unexpectedly and engulfed him.

The incident involving the tyre decompression is still under investigation and a report is being prepared for the Coroner.

Save for the tragic losses of three lives, the injury statistics for the year are most encouraging. There has been a further decline for most statistical indicators. Year-on-year we are experiencing declining trends but we still have some way to go to reach Zero Harm. Figures show:

- lost time injuries down from 307 to 273 injuries
- days lost to lost time injuries down from 14 325 to 11 027 days
- days lost to disabling injuries down from 10 977 to 10 313 days
- lost time injury plus disabling injury severity rate down from 311 to 230 days lost per million hours worked
- lost time injury plus disabling injury duration rate down from 34.4 to 27.4 days per injury
- lost time injury frequency rate down from 3.8 to 2.9 injuries per million hours worked.

The following indices suffered a slight increase:

- disabling injuries up from 428 to 505
- medical treatment injuries up from 402 to 811 (for the first time the number of medical treatments include those from metalliferous mines and quarries)
- permanent incapacities up from 47 to 57 injuries or illnesses.

One measurement that did rise, and with which we are more than comfortable, is the number of incidents reported. We have expressed concern for some time that not all high-potential incidents were being reported. If incidents are not being reported, then latent hazards are not being addressed industry-wide and that is of significant concern. With mature safety systems the number of incidents will decrease, but given that many of the systems in the mining industry are not mature, we expect that this type of incident will remain high for some time.

The duration rate is considered one of the most important measures of safety and health performance as it is a calculation of the severity of injuries, not just the number of injuries. The parameter showed an improvement this year, down 13.5% on last year. This improvement occurred in underground coal (56%), metalliferous surface (39%) and metalliferous underground (19%) mines.

The duration rate in the coal surface sector increased marginally over the previous year, up 4.7%, and the quarrying sector was the worst it has been for the past five years with a 98.2% increase since last year.

The cause of the increase in the quarrying sector was four significant lost time injuries at four separate operations for a total of 639 lost days. Injuries included two fractures of the vertebral column (one from falling, the other from being struck by a falling object), a broken leg caused by a fall from a ladder and a significant contusion caused by a falling object.

Most other major lag indicators showed an improvement with the exception of the disabling injury frequency rate, which rose from 5.3 to 5.4, and the permanent incapacity frequency rate, which increased from 0.58 to 0.61. The total recordable injury frequency rate was 17.1. For the first time, the number of medical treatments includes those from metalliferous mines and quarries. Last year the total recordable injury frequency rate of 16.9 was for coal mines only.

The increase in the disabling injury frequency rate does not represent a significant decrease in performance. Though there was an increase in the number of disabling injuries from last year, there was also an increase in the number of workers in the industry. Therefore, the number of hours worked, as reported to the department, increased from 81.4 million to 92.9 million. This reflects the impact on the various frequency rates due to an increase in hours worked.

We believe the increase in the number of permanent incapacities is due to better data collection by the department and improved reporting by industry. Though this is an unwanted statistic, the industry is commended on its improved reporting in this area. There is still a wide discrepancy between workers' compensation figures and permanent incapacity reporting and it is very difficult to draw parallels between the two as the data sets differ significantly in their descriptors.

The most concerning increase, as stated at the start of this summary, is the number of fatalities and the fatal injury frequency rate, which is up from 0.01 to 0.03.

During the year, mines inspectors undertook 1512 inspections and 179 audits. From those inspections some 345 directives were issued, as were 1334 notices of substandard conditions or practices (SCPs). During the period we also investigated some 107 complaints on a wide range of issues and a significant number of man hours were expended in investigating high-potential incidents and compliance matters.

Unfortunately, at times we have had to initiate other compliance actions including a Level 5, which is prosecution. A prosecution is initiated in accordance with a Level 5 Administrative Response under the Mines Inspectorate Compliance Policy, if there is sufficient evidence to provide a realistic prospect of conviction; and it has been decided in accordance with the Compliance Policy that it is in the public interest to prosecute. The Mines Inspectorate Compliance Policy can be found at www.mines.industry.qld.gov.au

The following mine-related incidents were brought to the attention of the Commissioner for Mine Safety and Health and prosecution was recommended:

- grievous bodily harm as a result of driving an underground shuttle-car over a person's leg—a deputy pleaded guilty and returned his statutory certificate of competency
- the operation of a load haul dump vehicle in an underground coal mine after the methane sensor was bypassed—both a contract supervisor and a contract deputy pleaded guilty and were fined
- grievous bodily harm as a result of a forklift rolling forward and crushing a person's ankle—this matter is still before the court
- grievous bodily harm as a result of the rollover of an underground cement agitator truck due to overloading and defective braking—this matter is still before the court
- fatal injury due to loss of control of a water truck—the site senior executive, the truck operator and the contract company that owned the truck all pleaded guilty and were fined.

In other mine-related incidents, the Compliance Policy requires that accountability is achieved through Level 3 and Level 4 compliance meetings. In the previous 12 months there were nine such compliance actions in the coal division, and nine in the metalliferous and quarrying division. Three of these meetings were chaired by the respective Chief Inspector, while district or regional inspectors chaired the remainder.

A number of industry fora were conducted throughout the year. In the coal sector, the following topics were discussed:

- proximity detection and collision avoidance
- fatigue management
- blast fume prevention and management
- surface mine haul road design and maintenance.

In the metalliferous and quarries sector, these initiatives were implemented:

- proximity detection and collision avoidance
- fatigue management
- traffic management and slope stability workshop
- opal and gemstone miners workshops.

A significant proportion of both Chief Inspectors' time has been dedicated to the national harmonisation process, essentially the National Mine Safety Framework, both core (all states and territories) and non-core (NSW, WA and Qld). With the bulk of the time spent on non-core, we have been working closely with the other two large mining states, NSW and WA, to ensure, wherever possible, alignment with these two jurisdictions.

It is planned that toward the end of this calendar year, or early next year, a series of presentations will be undertaken around the state to provide information and to receive feedback on the intended course of action in Queensland. We believe that at the pick point people will see little change; it is and continues to be the state government's desire that there will be no diminution of existing safety and health laws in the mining industry. This is based on the fact that, when compared with comparable industries throughout the world, Queensland's legislation and safety and health statistics are without peer.

On 19 November 2010, 29 miners lost their lives in a horrific explosion at the Pike River Coal Mine, near Greymouth, on the South Island of New Zealand. Shortly after the initial incident, both Simtars and the Mines Inspectorate provided assistance to the mine and the New Zealand Department of Labour. This assistance continues. Also, the Queensland Commissioner for Mine Safety and Health has been appointed to the Royal Commission set up by the New Zealand Government to examine and report on the causes of the explosions at the mine, subsequent loss of life and all aspects of the safety regulatory regime and rescue operations at the mine.

We wish to thank the contributors to this report for their assistance. We look forward to this report being used to assist industry in identifying safety and health priorities for 2011–12 and beyond. We encourage industry to continue to work with the Mines Inspectorate to ensure Queensland maintains its place as a best practice example of mining safety and health performance and to strive vigilantly for our common goal of an industry free of safety and health incidents.

Gavin Taylor
Chief Inspector of Coal Mines

Rob O'Sullivan
Chief Inspector of Mines
(Metalliferous and Quarries)

Table 1: Key performance indicators, 2010–11

	Number of lost time injuries (LTIs)		Number of disabling injuries (DIs)		Number of medical treatment injuries (MTIs)		Number of high-potential incidents (HPIs)		LTI days lost@		Number of DI days	
	09–10	10–11	09–10	10–11	09–10	10–11	09–10	10–11	09–10	10–11	09–10	10–11
Coal surface	138	134	214	248	264	368	988	1 228	6 461	6 570	4 234	5 201
Coal underground	64	45	115	175	138	272	356	338	3 884	1 207	2 828	3 418
Coal subtotal	202	179	329	423	402	640	1 344	1 566	10 345	7 777	7 062	8 619
Metalliferous surface	47	41	28	33	n.a.	92	214	183	1 785	942	1 264	863
Metalliferous underground	30	25	70	49	n.a.	49	121	162	1 560	1 047	2 610	831
Metalliferous subtotal	77	66	98	82	n.a.	141	335	345	3 345	1 989	3 874	1 694
Quarries	28	28	1	0	n.a.	30	72	68	635	1 261	41	0
TOTAL	**307**	**273**	**428**	**505**	**402**	**811**	**1 751**	**1 979**	**14 325**	**11 027**	**10 977**	**10 313**
Exploration	2	12	4	12	2	45	2	5	3	198	20	125

\# Rounded to whole numbers
* Rounded to 1 decimal place
n.a. not available
@ Days lost to LTIs include lost time days and days on alternative duties

Table 1: Key performance indicators, 2010–11 (continued)

	LTI frequency rate (LTIFR) *		LTI severity rate #@		LTI duration rate *@		LTI + DI severity rate #		LTI + DI duration rate *		Million hours worked		Number of permanent incapacities		Number of fatalities	
	09–10	10–11	09–10	10–11	09–10	10–11	09–10	10–11	09–10	10–11	09–10	10–11	09–10	10–11	09–10	10–11
Coal surface	3.1	2.7	144	131	46.8	49.0	239	234	30.4	30.8	44.8	50.2	36	40	0	2
Coal underground	6.2	3.7	376	100	60.7	26.8	651	385	37.5	21.0	10.3	12.0	5	10	0	0
Coal subtotal	3.7	2.9	188	125	51.2	43.4	316	264	32.8	27.2	55.1	62.2	41	50	0	2
Metalliferous surface	3.1	2.3	119	53	38.0	23.0	203	101	40.7	24.4	15.0	17.9	3	1	0	0
Metalliferous underground	3.3	2.6	173	107	52.0	41.9	463	192	41.7	25.4	9.0	9.8	2	1	0	1
Metalliferous subtotal	3.2	2.4	139	72	43.4	30.1	301	133	41.3	24.9	24.0	27.6	5	2	0	1
Quarries	12.3	9.0	278	407	22.7	45.0	296	407	23.3	45.0	2.3	3.1	1	5	1	0
TOTAL	**3.8**	**2.9**	**176**	**119**	**46.7**	**40.4**	**311**	**230**	**34.4**	**27.4**	**81.4**	**92.9**	**47**	**57**	**1**	**3**
Exploration	n.a.	13.2	n.a.	217	0.3	8.3	n.a.	354	1.4	13.5	0.357	0.913	0	0	0	0

\# Rounded to whole numbers
* Rounded to 1 decimal place
n.a. not available
@ Days lost to LTIs include lost time days and days on alternative duties

1. Industry safety and health performance

This report summarises the accident and incident data collected from Queensland mines and quarries that are subject to the provisions of the *Coal Mining Safety and Health Act 1999* and the *Mining and Quarrying Safety and Health Act 1999*. It relates to accidents and incidents that occurred at a mine site from 1 July 2010 to 30 June 2011. Accidents that occurred while employees were travelling to or from work are not included in the analysis. Fatalities, accidents that resulted in injuries involving the loss of at least one full working shift, disabling injuries (DIs)—employees on alternative/light duties—and medical treatment injuries (MTIs) are reported. High-potential incidents (HPIs) are also reported. The report was prepared using the Department of Employment, Economic Development and Innovation (DEEDI) Queensland Mining Industry Lost Time Accident Database.

The data reported are collected from mine sites on an ongoing basis and via monthly and quarterly summaries. The data set is usually not complete until well into the following financial year as mines often take some considerable time to supply the data. An arbitrary cut-off, in order to begin data analysis, usually takes place in September or October each year when most, but not all, of the data have been received. For this reason there will be minor changes in data reported for the previous year as these data are updated with each new report.

Performance measures for individual mines in each sector are no longer reported in the *Queensland Mines and Quarries Safety Performance and Health Report*. Instead they will be released on a quarterly basis at www.mines.industry.qld.gov.au

1.1 Fatal injuries

There were three fatal injuries in the mining industry in Queensland in 2010–11. This compares with one fatality in 2009–10. Figure 1.1 shows the declining trend in mine fatalities since 1900, with major fatality events annotated on the graph.

The worst disaster in Queensland's mining history occurred on 19 September 1921, when 75 miners lost their lives in a coal dust explosion at Mount Mulligan in Far North Queensland. On 19 September 2008, the State Government initiated Miners Memorial Day. This day commemorates the lives of more than 1450 miners who have died in mining tragedies in Queensland. In 2010 the Miners Memorial Day was held at the Community Centre in Blackwater and was attended by over 300 members of the local mining community. Figure 1.2 shows that the number of employees in the industry has steadily increased. Unfortunately fatalities have also risen when compared to 2009–10.

Figure 1.1: Fatalities in Queensland mines, 1900–2011

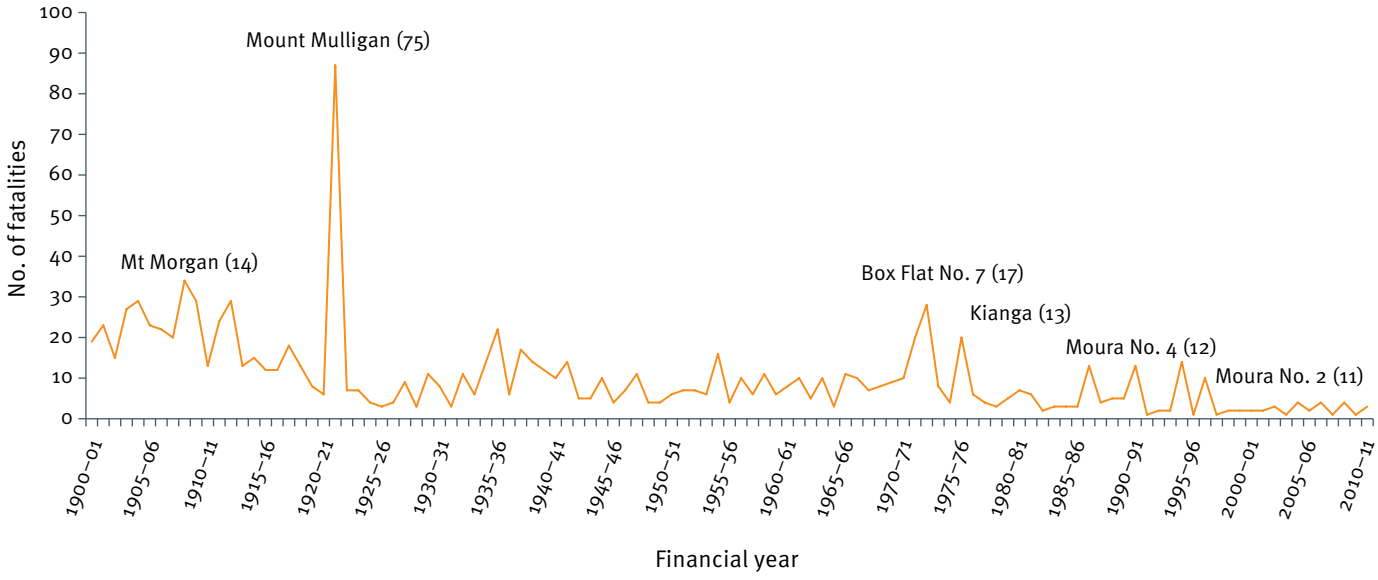
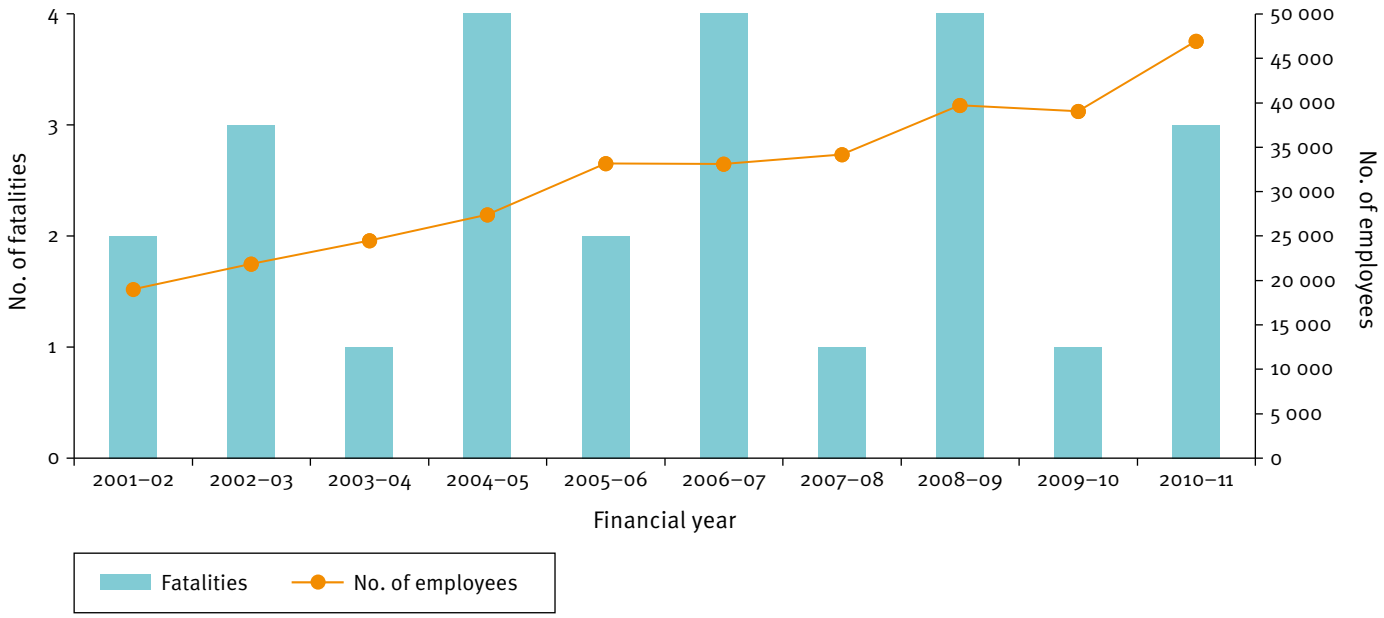


Figure 1.2: Employee numbers and fatalities (all sectors), 2001–11



Coal mines

There were two fatal accidents in coal mines in 2010–11 compared with zero fatalities in 2009–10.

The first accident occurred on 31 August 2010 when a light vehicle containing four persons was involved in a single vehicle rollover on a haul road near the top of a ramp. The driver of the vehicle had lost control on a recently watered section of road.

The second accident occurred on 18 December 2010 when a truck driver was fatally injured when a tyre ruptured. The tyre had just been changed and the truck driver was lowering the jack.

Metalliferous mines and quarries

There was one fatal accident in the metalliferous mines and quarries sector in 2010–11 compared with one in 2009–10.

The accident occurred on 6 March 2011 when an opal miner, working alone in old shallow underground workings on a mining claim, was fatally injured while removing mullock used to backfill a shaft. The material flowed and engulfed him.

1.2 Permanent incapacities

There were 57 permanent incapacities reported for 2010–11, compared with 47 permanent incapacities in 2009–10. These were:

- 40 from surface coal (36 in 2009–10)
- 10 from underground coal (5 in 2009–10)
- 1 from metalliferous surface (3 in 2009–10)
- 1 from metalliferous underground (2 in 2009–10)
- 5 from quarries (1 in 2009–10).

This increase is due to Safety and Health's continuing campaign to improve the reporting of permanent incapacity injuries and illnesses. The campaign came about because the Mines Inspectorate was concerned that a complete record of all permanent incapacities that occurred throughout the mining industry in Queensland was not being collected. Industry reporting of permanent incapacities, particularly in the surface coal sector, has improved dramatically in the 2007–10 period.

Under section 279 of the *Coal Mining Safety and Health Act 1999*, and under section 259 of the *Mining and Quarrying Safety and Health Act 1999*, the department may require mines to submit statistics or other information about the mining industry. This is to be done on an approved form. The approved forms for submission of such statistics are the 'Queensland Mining Industry Incident Report Form' and the 'Queensland Mining Industry Monthly Incident Summary'. The incident report form defines a permanent incapacity as any work-related injury or disease that leads to one or more of the following outcomes:

- the complete loss, or permanent loss of use, of any member or part of the body
- any permanent impairment of any member or part of the body, regardless of any pre-existing disability of that member or part
- any permanent impairment of physical/mental functioning, regardless of any pre-existing impaired physical or mental functioning
- a permanent transfer to a different job
- termination of employment.

Data extracted from the Queensland Employee Injury Database and supplied by the Queensland Office of Economic and Statistical Research (OESR), which includes data on all workers compensation cases in Queensland from WorkCover Queensland and the self-insurers, indicates that there were 1391 claims in the mining industry. Of these, 77 were for deafness or noise-induced hearing loss. It is not possible to determine which of the other 1314 claims would have resulted in permanent incapacity, nor is it possible to determine which claims may be as a result of the injuries reported as permanent incapacities.

Table 1.1: Permanent incapacities reported by mines, 2010–11

Injury/disease	Incapacity type	Incapacity description—the outcome where known is shown in brackets	Qty
Coal exploration			
Contusion with intact skin/crush	Upper limbs—hand/finger/thumb	Finger crushed	1
Coal surface			
Deafness	Head—ear	Binaural hearing loss	21
Disorder of muscle/ tendon/other soft tissue	Upper limbs—hand/finger/thumb	Finger injury	1
	Upper limbs—shoulder	Shoulder injury	1
	Upper limbs—shoulder	Injury to shoulder region—resulting in mild loss of all movements	1
Hernia	Abdomen/pelvic region	Subjective symptoms and signs such as pain, dysaethesia or tenderness following hernia repair	1
Nerve/spinal cord injury	Trunk—back (upper/lower)	Aggravation of lumbar spondylosis (degenerative condition)	1
Sprain/strain	Lower limbs—ankle	Severe high ankle strain	1
	Trunk—back (upper/lower)	Lower back injury	1
	Trunk—back (upper/lower)	Back injury	1
	Unspecified locations		4
Traumatic amputation	Upper limbs—hand/finger/thumb	Finger amputation	1
	Upper limbs—hand/finger/thumb	Amputation of thumb and index finger as well as fractured wrist	1
Unspecified injury	Other/unspecified injury	Upper extremity injury other than in this table of injuries	1
		Moderate to severe aggravation or acceleration of pre-existing disease	1
		Other injury other than in this table of injuries	2
Coal underground			
Deafness	Head—ear	Binaural hearing loss	1
Disorder of muscle/ tendon/other soft tissue	Upper limbs—wrist	Ongoing wrist soft tissue symptomatology	1
	Lower limbs—foot/toe	Foot crushed	1
Mental disorder	Psychological system	Psychological impairment from trauma (major depression or psychosis)	1
	Psychological system	Adjustment disorder with anxiety/depression	1
Nerve/spinal cord injury	Trunk—back (upper/lower)	Prolapsed intervertebral disc in lumbosacral spine with referred pain, treated surgically by discectomy or fusion	1
Other disease	Elbow	Medial epicondylitis and osteoarthritis	1
Sprain/strain	Trunk—back (upper/lower)	Lower back pain	1
	Neck	Neck strain	1
Traumatic amputation	Upper limbs—hand/finger/thumb	Loss of distal joint to index finger	1
Metalliferous surface			
Disorder of muscle/ tendon/other soft tissue	Upper limbs—forearm	Forearm injured in rock fall	1
Metalliferous underground			
Disorder of muscle/ tendon/other soft tissue	Upper limbs—hand/finger/thumb	Finger crushed	1
Quarries			
Deafness	Head—ear	Binaural hearing loss	3
Disorder of muscle/ tendon/other soft tissue	Lower limbs—knee	Infection from laceration to knee	1
	Upper limbs—shoulder	Shoulder injury	1
Total			**57**

1.3 Lost time injuries and disabling injuries

Figures 1.3–1.5 include statistics for the lost time injury frequency rate (LTIFR), severity rate and duration rate over a 10-year period from 2001–11, shown as statistical process control charts to emphasise changes in trends over time.

Figures 1.6 and 1.7 show the trends in lost time injury (LTI) and disabling injury (DI) rates in the years 2001–11.

Figure 1.8 illustrates how the number of LTIs and DIs in coal mines have remained reasonably constant since 2001 (with the exception of peaks in disabling injuries in 2005–06, 2006–07 and 2010–11), even though the number of employees has risen steadily. An increase in the number of injuries may have been expected, particularly given the increasing number of inexperienced employees entering the mining industry.

Interestingly, Figure 1.9 shows that at metalliferous mines and quarries the number of LTIs and DIs has steadily decreased over the 2001–11 period.

Figure 1.3: Lost time injury frequency rate per month (all sectors), 2001–11

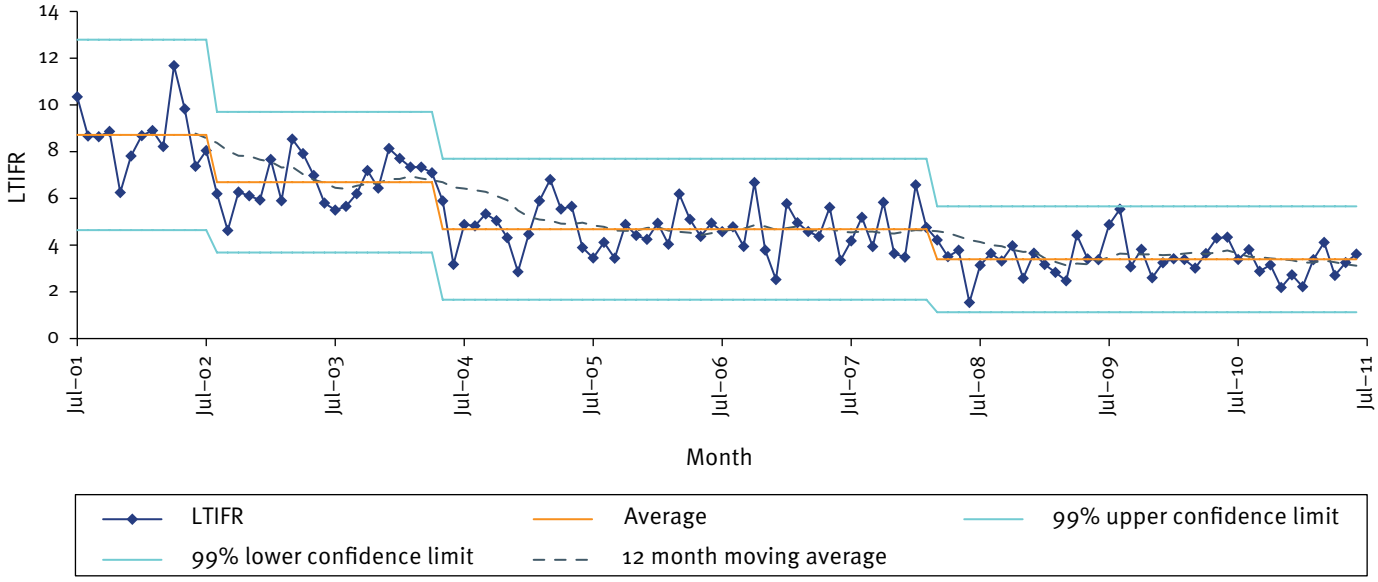


Figure 1.4: Severity rate per month (all sectors), 2001–11

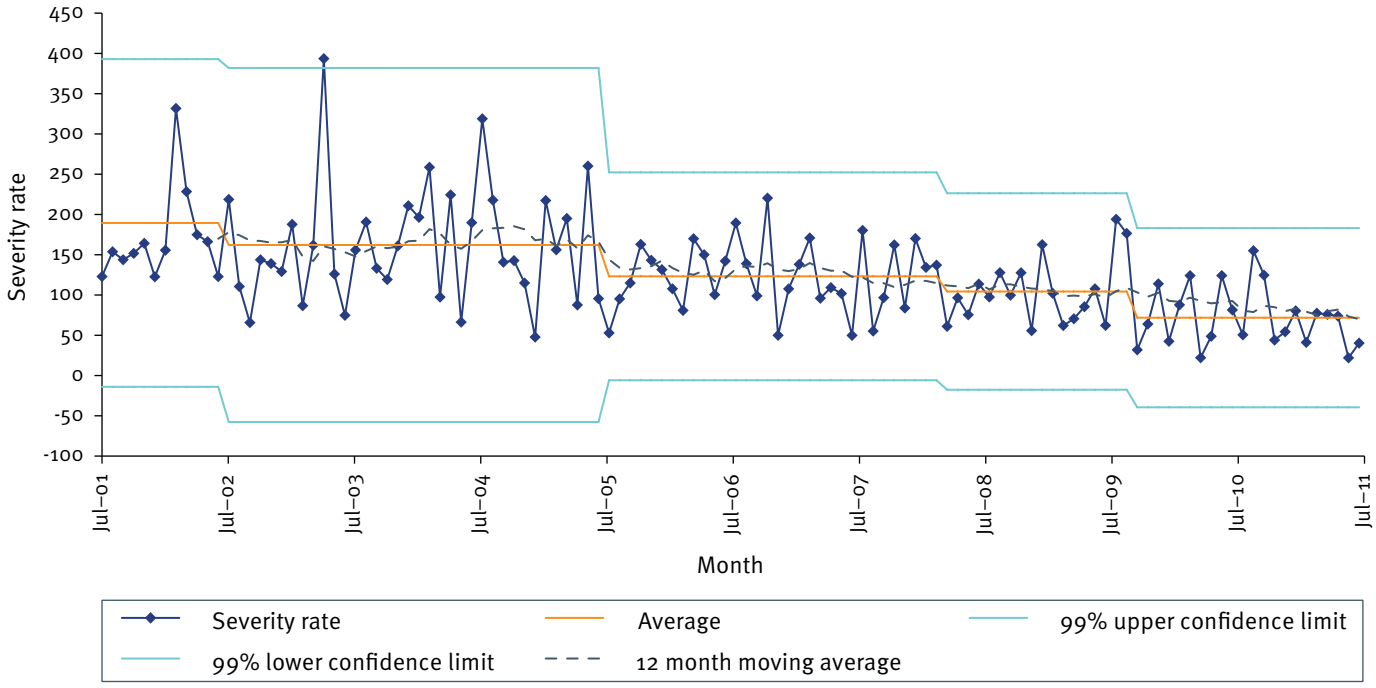


Figure 1.5: Duration rate per month (all sectors), 2001–11

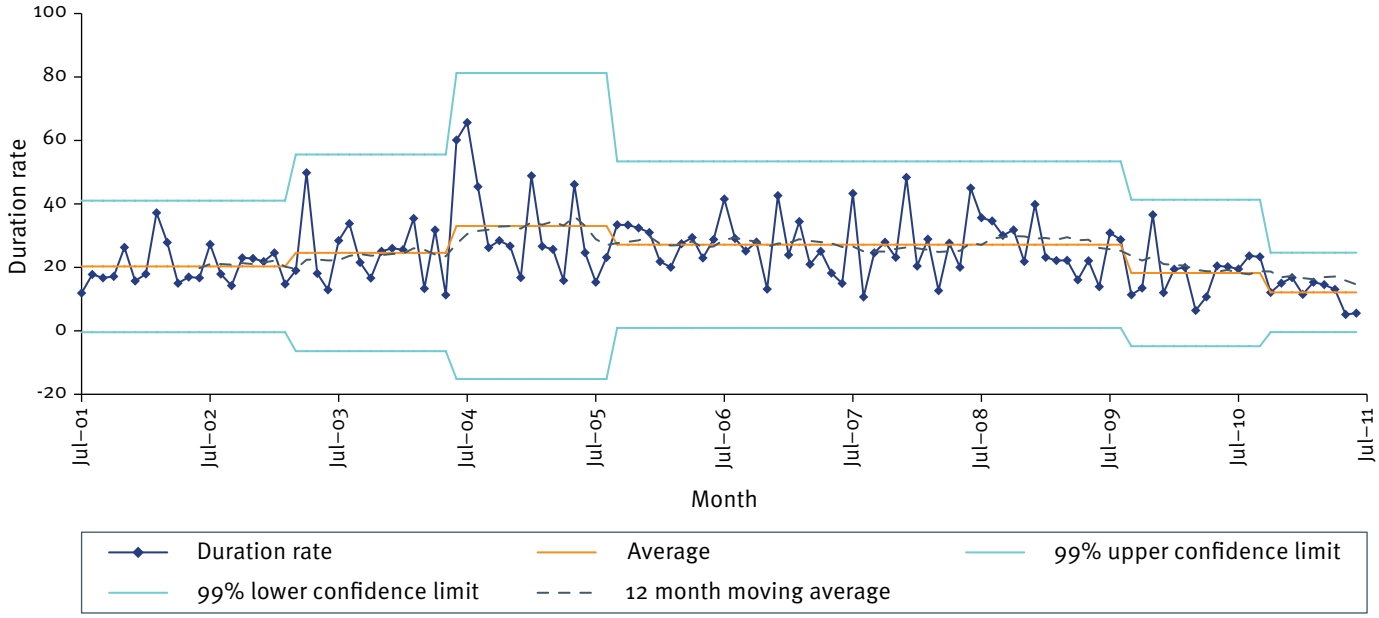


Figure 1.6: Lost time and disabling injury severity rate versus employment numbers (all sectors), 2001–11

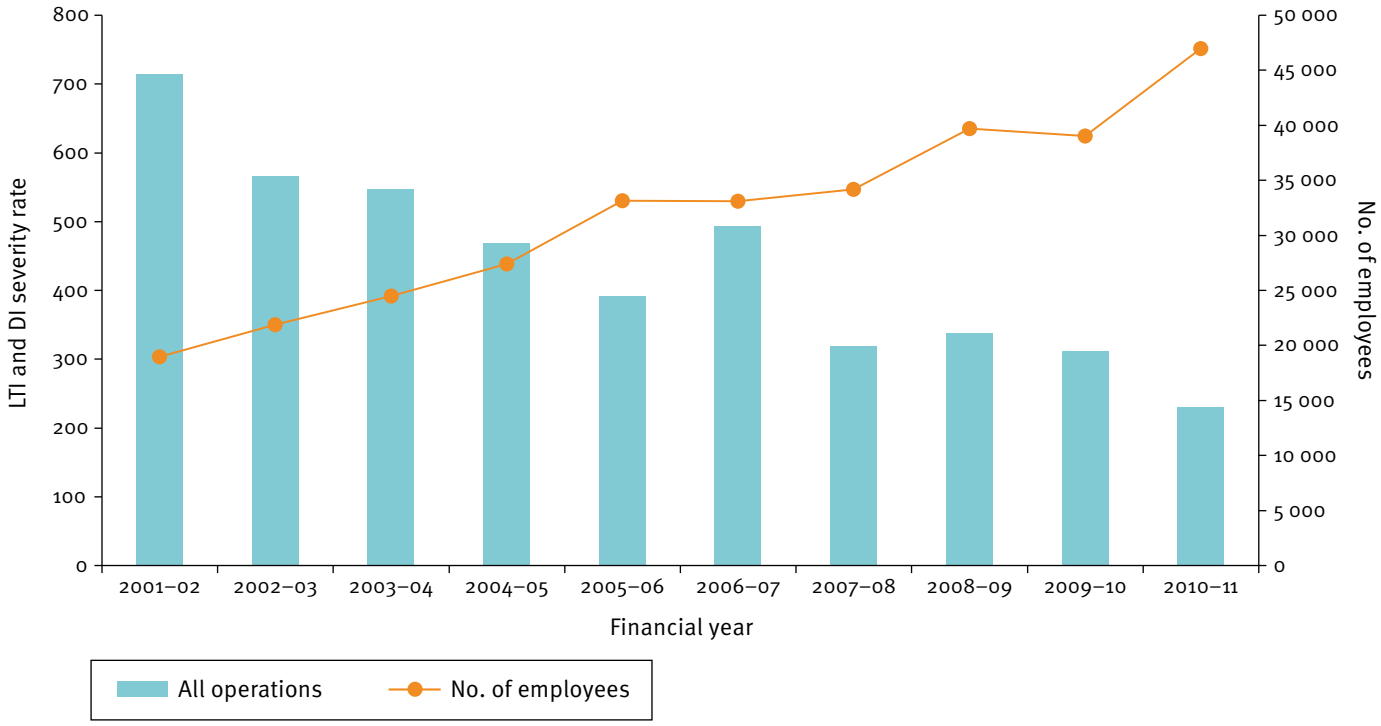


Figure 1.7: Lost time and disabling injury duration rate versus employment numbers (all sectors), 2001–11

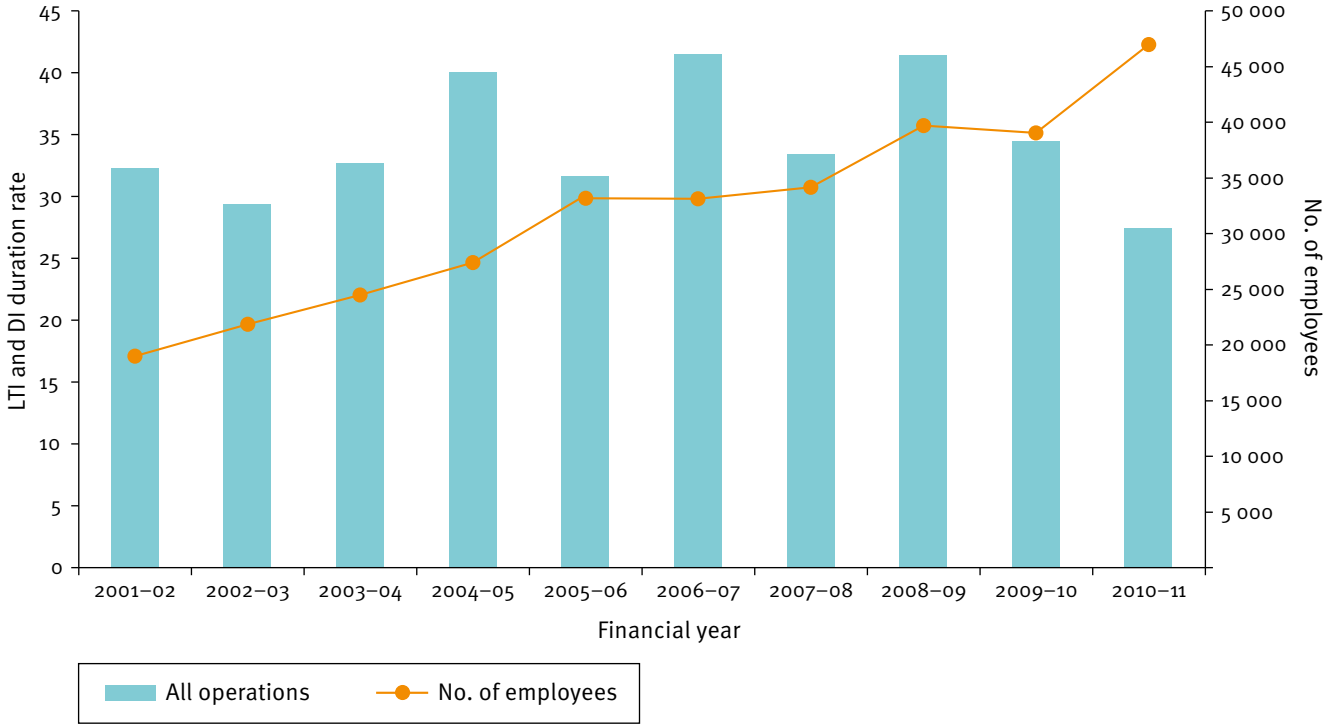


Figure 1.8: Lost time and disabling injuries versus employment numbers for coal mines, 2001–11

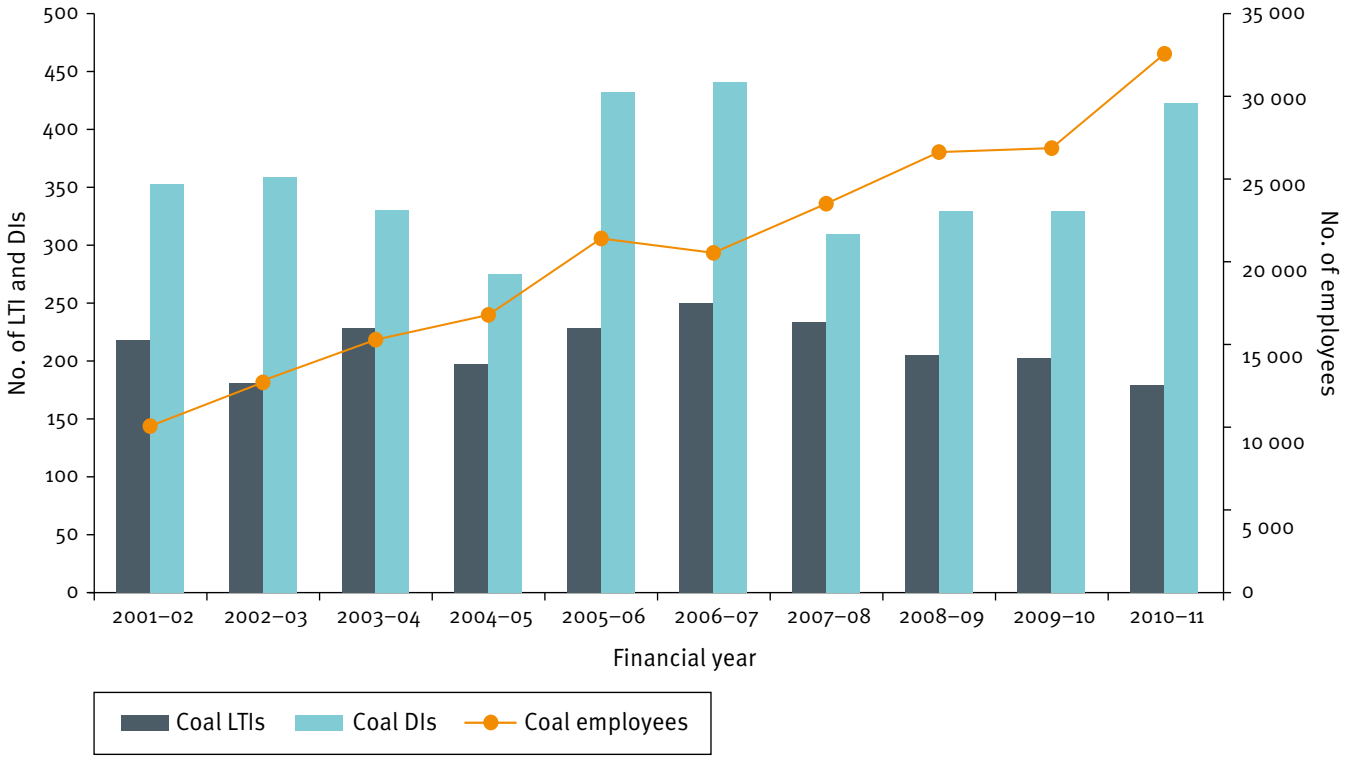
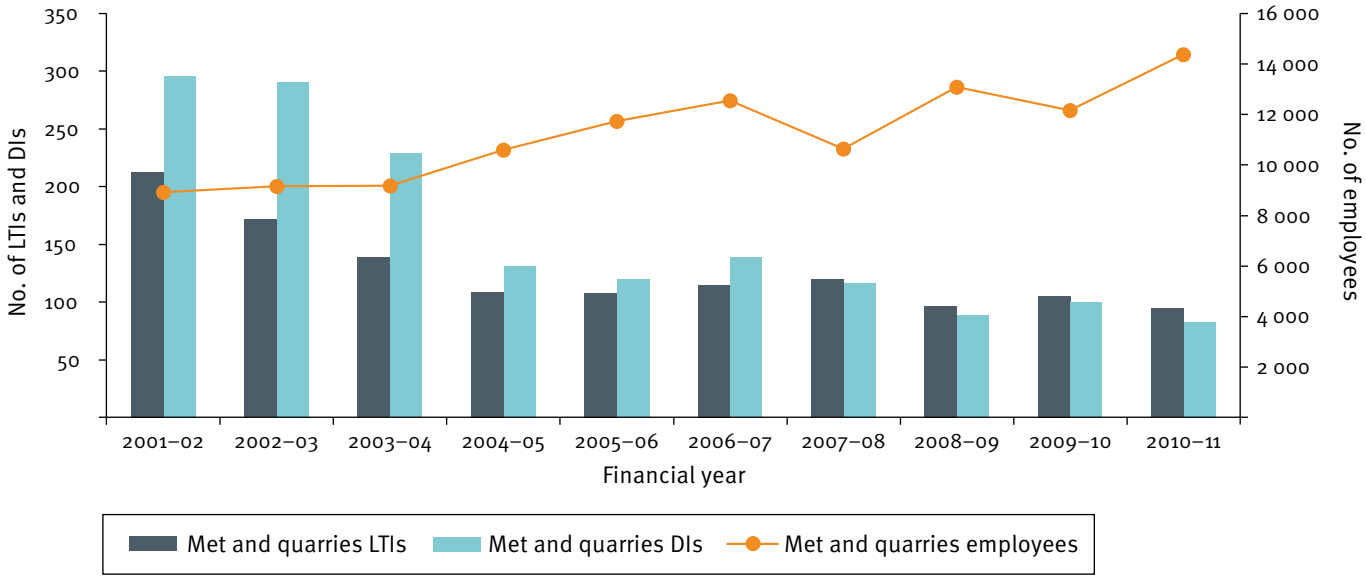


Figure 1.9: Lost time and disabling injuries versus employment numbers for metalliferous mines and quarries, 2001–11



1.4 Significant incidents

A significant incident is one in which a worker or workers either suffered, or could have suffered, a serious bodily injury. A serious bodily injury is defined as an injury endangering (or likely to endanger) life, or causing (or likely to cause) a permanent injury to health.

The following incidents have been selected from the lost time accident database and HPI database. They do not include all the significant incidents that occurred but are a representative sample of such incidents.

Coal mines

Throughout the year there were numerous fire-related incidents. Most were associated with vehicle engine bays and brakes. Often these involved oil (engine, transmission or hydraulic) spraying onto exhausts, engines, and so on. There were also a number of vehicle incidents. These incidents were caused by driving at a speed faster than the conditions would permit, falling asleep at the wheel, mechanical failure, not obeying road rules, lack of communication or losing control on recently watered ground. There were also numerous incidents of heavy vehicle rollovers.

Significant incidents reported at coal mines this year include:

- A scraper was conducting a cut on the topsoil block. During the loading process, the scraper drove off the edge of the stockpile and rolled onto its roof.
- There were numerous rock falls at open-cut mines. One such incident occurred when a rock fell out of a Cat 789 while it was tipping a load of overburden alongside a haul road. A dozer was stationed close to the truck and the rock bounced onto the left-hand rail of the dozer and smashed into the side glass of the cabin. The rock was approximately 50 cm in diameter and could have potentially caused a serious injury. This incident prompted an immediate review of clearances.
- After riggers had secured the load, an overhead crane operator began to operate the crane in order to remove the hoist gear case lid. The overhead crane made contact with an access walkway at the rear of the dragline house. The walkway fell to the ground, ricocheted and collided with an employee's left calf.
- While a dragline dozer operator was engaged in the task of ripping at the toe of the highwall, he noticed some signs of instability. A dragline was used to scale the wall. The dozer operator was observing the wall prior to resuming the task when a section of the wall fell out, narrowly missing the dozer.
- While replacing the cutting edges on a scraper, a fitter hit the cutting edge with a steel hammer sending a small shard of metal as a projectile. The metal fragment penetrated the scraper operator's shirt and approximately 10 mm into his abdomen.
- A fitter, working on a highwall pump in the bucket shop, fell from a 1.8 m high work platform and struck his head on the pump structure. He was taken to the local hospital where he received medical attention and precautionary x-rays and was then kept in hospital for observation.
- A worker lit an oxy torch without wearing the correct gloves and, when adjusting the hand piece, the connection from the hose to the handle blew off resulting in burns to both hands.
- There were numerous falls from roofs.

Metalliferous mines and quarries

There were numerous vehicle accidents. These accidents were caused by speed, mechanical failure, not obeying road rules and losing control on recently watered ground.

Significant incidents reported at metalliferous mines this year include:

- While driving out of the screener area an employee tried to adjust the air conditioning without looking. He drove over a bump that forced his hand up into the vent. The employee's finger could have been caught in the metal fan.
- While driving a loader up a haul road, the vehicle hit a pot hole; the driver received a sprained back when the seat bottomed out.
- A timber sleeper decking on a bridge broke under the weight of a 20 tonne Franna crane.
- A 120 mm diameter poly pipe was lifted with a 5 tonne auxiliary hook; the hook block failed and dropped the load approximately 4 m to the ground.
- During the course of fitting a new tyre to an articulated dump truck, the tyre fitter became trapped between the tyre (that was being transported on forklift tines) and the wheel rim that was still on the truck.
- During a survey, a rock (0.5 m × 0.5 m) fell off a blast rill and landed 5 m away from a surveyor.
- Momentum rolled a prime mover onto its side while it was tipping the first trailer.
- An operator was attempting to clear a blockage in a silo cement chute and had partially removed an inspection plate when approximately 10 tonnes of product was unexpectedly released.
- A steel rod, that had been left against a hand rail, moved with the vibration of the rail and fell to the ground within 1 m of an operating Bobcat.
- While an employee was installing a vent on a feeder platform, part of the platform collapsed, causing the employee to fall approximately 1.5 m.
- The inflation of a grader tyre blew the split rim flange 6 m due to a locking ring not being fitted. The remote tyre inflation tool was projected 65 m.

1.5 High-potential incidents

An HPI is defined in mining legislation as an event, or series of events, that causes, or has the potential to cause, a significant adverse effect on the safety or health of a person. The identification of HPIs enables industry to implement proactive strategies for managing the identified risks before someone is injured.

The reporting of HPIs at mines and quarries is mandated by legislation. The ramifications of these incidents are often costly, both in human and commercial terms. It is therefore important that these data are gathered and not lost. The publication of this collective data benefits industry by raising awareness of repeat incidents at mines so that corrective action can be taken. An effective incident-reporting system is also indicative of a mature industry that treats the safety of its workers seriously.

Periodic summaries of reported HPIs—in the form of general incident descriptions and quarterly year-to-date graphs—are circulated to mines by email. Also, graphical breakdowns and statistics on HPIs by each mining sector are available at www.mines.industry.qld.gov.au

By 2006–07, the number of HPIs had steadily increased as the number of employees in the industry increased. However, even with this growth, the number of reported incidents dropped over the 2007–09 period. In the most recent two years, 2009–11, there has been an increase in reporting of HPIs. It is believed the higher number reported is consistent with reporting prior to 2006–07 (see Figure 1.10). The industry is to be commended on the increased reporting of HPIs.

Table 1.2 states that the number of HPIs reported per 1000 workers has decreased slightly in 2010–11 compared with 2009–10. This table also shows the number of improvement actions per 1000 workers arising from investigations of HPIs.

Figure 1.11 outlines the number of HPIs per type of incident. The top five HPIs, according to the number of reported incidents in 2010–11, were:

- loss of control/unplanned movement
- fire
- electrical
- vehicle
- mobile plant.

Multiple safety alerts and bulletins have recently been issued in relation to these hazards. Further information on these and other HPIs is available from www.mines.industry.qld.gov.au

Figures 1.12–1.16 illustrate each reported HPI type as a percentage of the total HPIs in each mining sector.

Figure 1.10: Employee numbers and HPIs (all sectors), 2001–11

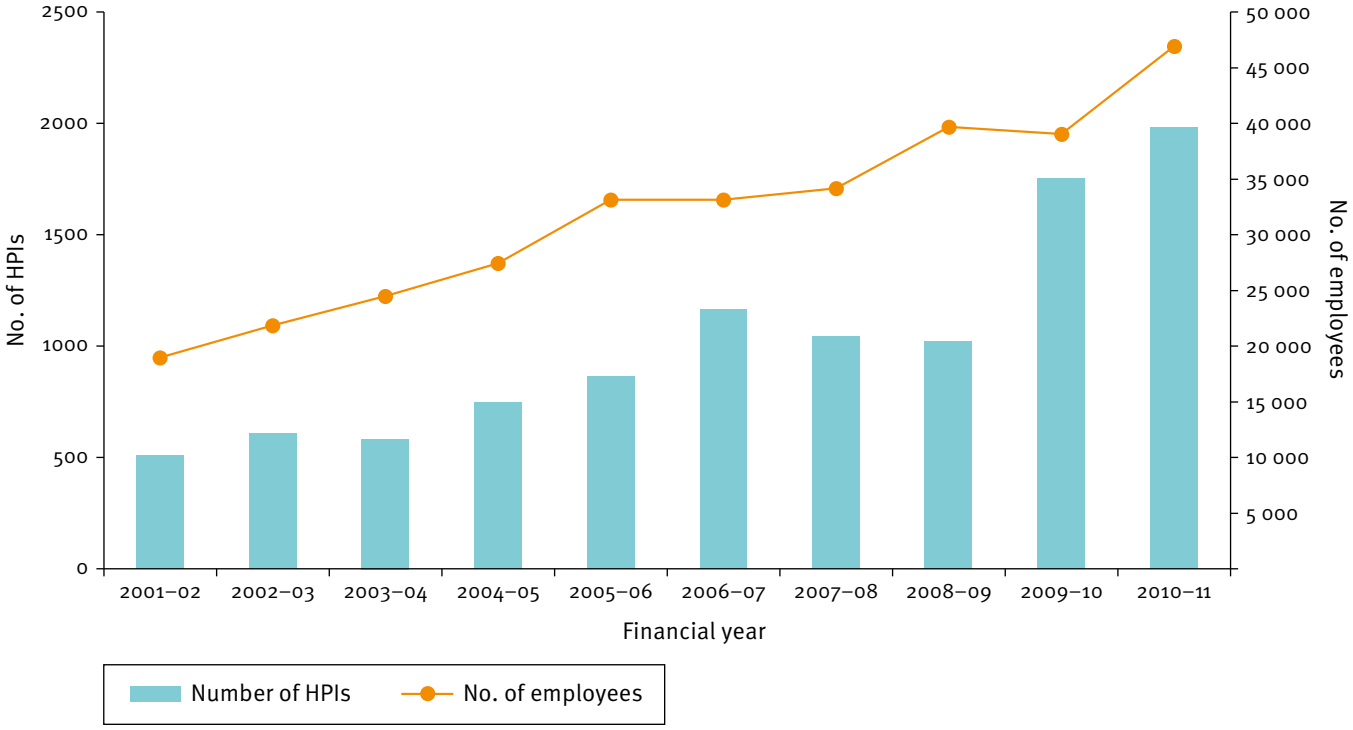


Table 1.2: Comparison of HPI reporting across sectors, 2008–11

	High-potential incidents per 1000 workers			Improvement actions resulting from HPI investigations per 1000 workers		
	2008–09	2009–10	2010–11	2008–09	2009–10	2010–11
Coal—surface	30	44	46	n/a	n/a	n/a
Coal—underground	16	70	56	n/a	n/a	n/a
Coal (per 1000 workers)	**27**	**49**	**48**	**96**	**95**	**73**
Metalliferous—surface	18	32	22	n/a	n/a	n/a
Metalliferous—underground	29	29	31	n/a	n/a	n/a
Metalliferous (per 1000 workers)	**23**	**31**	**26**	**114**	**251**	**88**
Quarries	**23**	**54**	**50**	**151**	**278**	**94**
Total = combined industries (per 1000 workers)	**26**	**44**	**42**	**103**	**132**	**78**

Figure 1.11: High-potential incidents in the Queensland mining industry, 2008–11

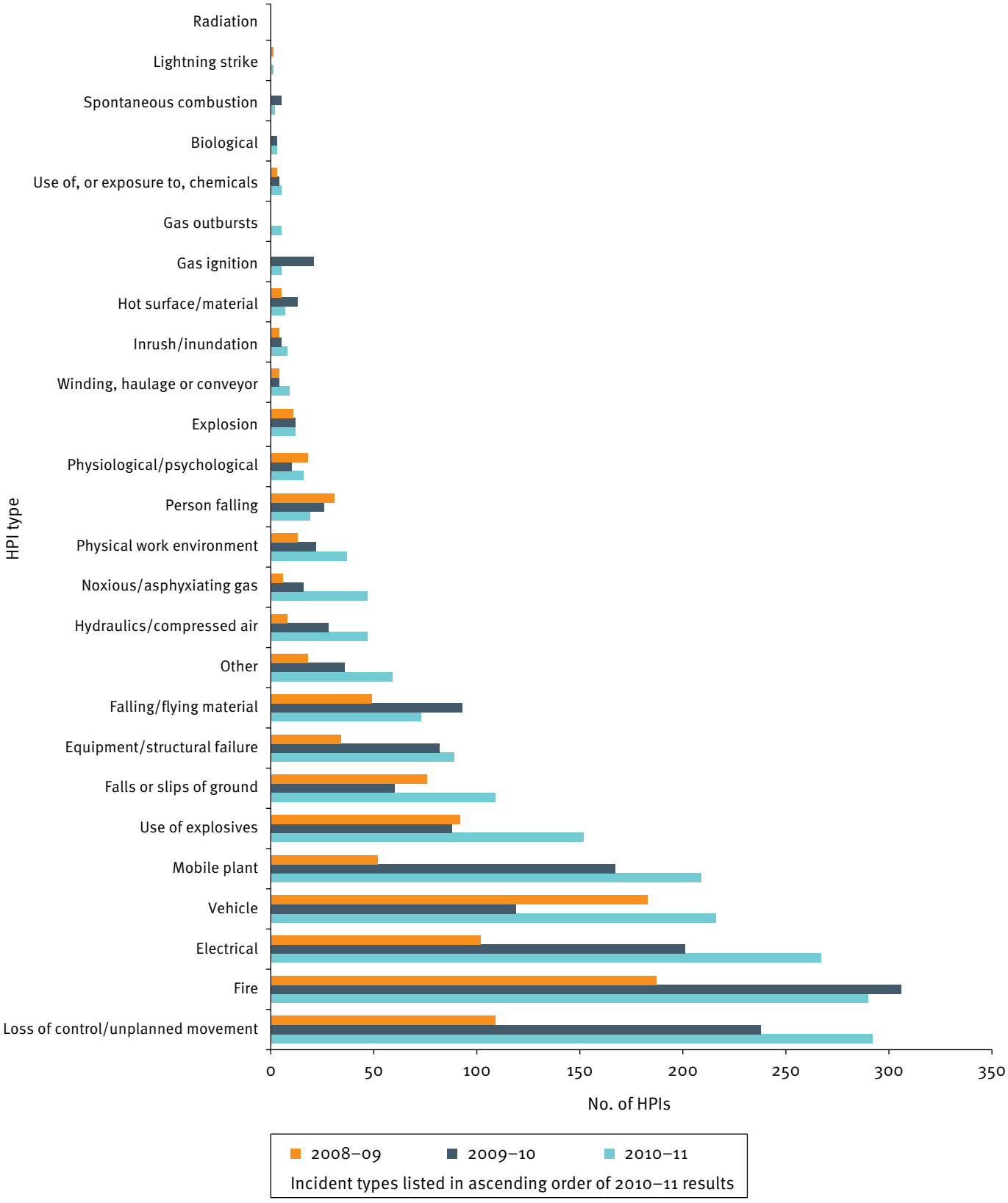


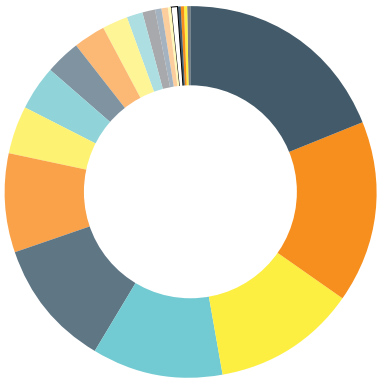
Table 1.3: Safety alerts and bulletins—high-potential incidents, 2010–11

Loss of control/unplanned movement	
Safety Alert No. 270	Managing underground coal mine contractors
Safety Alert No. 266	Managing hot-seat changeovers
Safety Alert No. 246	Driving while fatigued
Safety Bulletin No. 99	Uncontrolled movement on mine roads, including skidding, sliding, and light or heavy vehicle roll-over
Noxious/asphyxiating gas	
Safety Alert No. 269	Open-cut blast fume
Explosion	
Safety Alert No. 268	Unauthorised use of auxiliary fan
Hydraulics/compressed air	
Safety Alert No. 267	Incorrect use of Victaulic flexible coupling SC 77
Office of the Commissioner for Mine Safety and Health No. 1	Earthmover tyre and rim safety
Safety Alert No. 248	Facial impact injury from fuel tank cap releasing under pressure
Use of explosives	
Safety Alert No. 265	Blast-exclusion zones
Electrical	
Safety Alert No. 253	Electric shock from welding equipment
Safety Alert No. 264	Hazard of backfeed on some UPS units
Mobile plant	
Safety Alert No. 263	Non-slewing articulated mobile cranes tipping
Safety Alert No. 260	Failure of explosion protection on underground diesel engine systems
Safety Alert No. 258	Rail safety at coal mines
Safety Alert No. 249	Injury while working from a loader bucket
Safety Alert No. 245	Serious crush injury from Jumbo development drill boom
Safety Bulletin No. 109	Preventing excavators from rolling over
Safety Bulletin No. 100	Retrofit advice for some Haulotte mobile elevating work platforms
Falling or flying material	
Safety Alert No. 259	Injury from a hardened steel sledgehammer
Fire	
Safety Alert No. 255	Fire on an underground loader
Safety Bulletin No. 106	Recall of faulty Bulbeck 4.5 and 9 kg fire extinguishers
Vehicle	
Safety Alert No. 251	Safe operation of light vehicles
Safety Alert No. 247	Trucks tipping over the edge
Safety Bulletin No. 101	Brake system maintenance—rubber tyred vehicles
Other	
Safety Alert No. 243	Injury while working on Jaw Crusher Spring Assembly
Safety Bulletin No. 108	Exploration permits for coal: a reminder about the legislative requirements
Spontaneous combustion	
Safety Bulletin No. 107	Construction of seals
Inrush/inundation	
Safety Bulletin No. 105	Safety and health management system—water management plans
Physical work environment	
Safety Bulletin No. 104	Resuming operations after severe weather
Safety Bulletin No. 102	Severe weather preparedness
Equipment/structural failure	
Safety Bulletin No. 103	Integrity testing of earthmover rims

High-potential incidents—surface coal mines

The number of surface coal HPIs reported increased from 988 in 2009–10 to 1228 in 2010–11. Although fire was once again the highest contributing HPI type for surface coal, the percentage has reduced significantly from 27.3% in 2009–10 to 19.2% in 2010–11.

Figure 1.12: High-potential incidents at surface coal mines, 2010–11

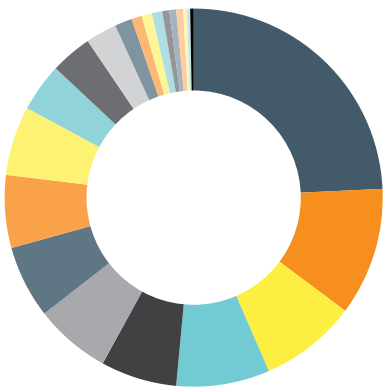


- Fire 19.2%
- Loss of control/unplanned movement 15.8%
- Vehicle 12.4%
- Electrical 11.5%
- Mobile plant 11.2%
- Use of explosives 8.4%
- Equipment/structural failure 4.2%
- Falls or slips of ground 4.1%
- Noxious/asphyxiating gas 3.0%
- Falling/flying material 2.7%
- Hydraulics/compressed air 2.3%
- Other 1.5%
- Physiological/psychological 0.9%
- Explosion 0.6%
- Physical work environment 0.6%
- Persons falling 0.4%
- Gas ignition 0.3%
- Hot surface/material 0.3%
- Winding, haulage or conveyor(s) 0.2%
- Inrush/inundation 0.2%
- Biological 0.1%
- Gas outbursts 0.1%
- Spontaneous combustion 0.1%
- Use of, or exposure to, chemicals 0.1%

High-potential incidents—underground coal mines

The number of underground coal HPIs reported decreased from 356 in 2009–10 to 338 in 2010–11. Electrical incidents decreased (36.6% to 24.3%) in 2010–11 but remained the most common underground coal HPI. Decreases in loss of control/unplanned movement (14.2% to 8.0%) and equipment/structural failure (11.9% to 6.2%) were marginal, but both types of incidents remained commonly reported. Mobile plant increased (6.7% to 10.9%) and moved from sixth to the second highest reported incident. The third highest reported incident, use of explosives (8.3%), went unreported in 2009–10.

Figure 1.13: High-potential incidents at underground coal mines, 2010–11

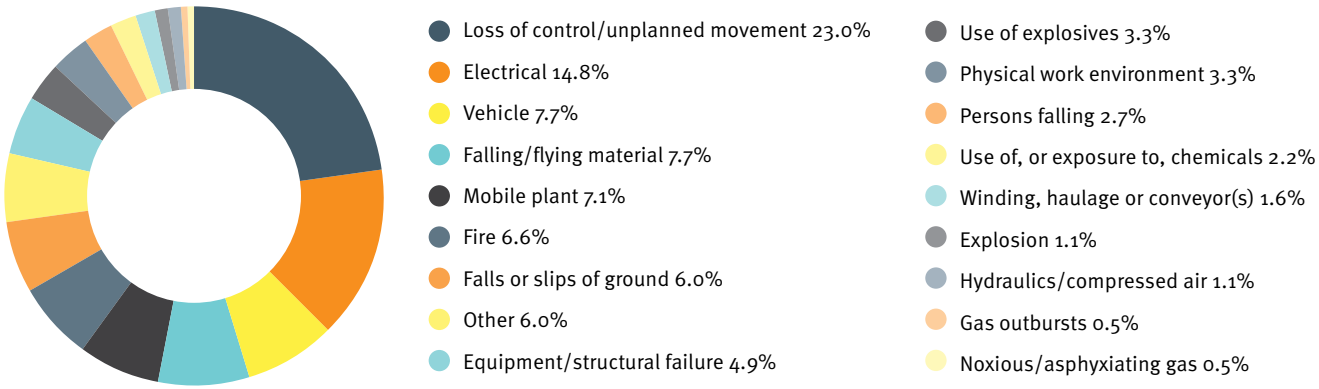


- Electrical 24.3%
- Mobile plant 10.9%
- Use of explosives 8.3%
- Loss of control/unplanned movement 8.0%
- Falls or slips of ground 6.5%
- Physical work environment 6.5%
- Equipment/structural failure 6.2%
- Vehicle 6.2%
- Other 5.9%
- Fire 4.1%
- Hydraulics/compressed air 3.6%
- Falling/flying material 2.7%
- Noxious/asphyxiating gas 1.5%
- Gas outbursts 0.9%
- Hot surface/material 0.9%
- Inrush/inundation 0.9%
- Persons falling 0.6%
- Winding, haulage or conveyor(s) 0.6%
- Physiological/psychological 0.6%
- Biological 0.3%
- Gas ignition 0.3%
- Spontaneous combustion 0.3%

High-potential incidents—surface metalliferous mines

The number of surface metalliferous HPIs reported decreased from 214 in 2009–10 to 183 in 2010–11. Last year, loss of control/unplanned movement and falling/flying material shared the highest percentage of surface metalliferous incidents reported at 18%. While loss of control/unplanned movement incidents increased to 23% in 2010–11 to remain the most common, falling/flying material dropped sharply to 7.7% to be the fourth highest reported incident. Electrical incidents rose marginally (9.8% to 14.8%) to become the second highest reported.

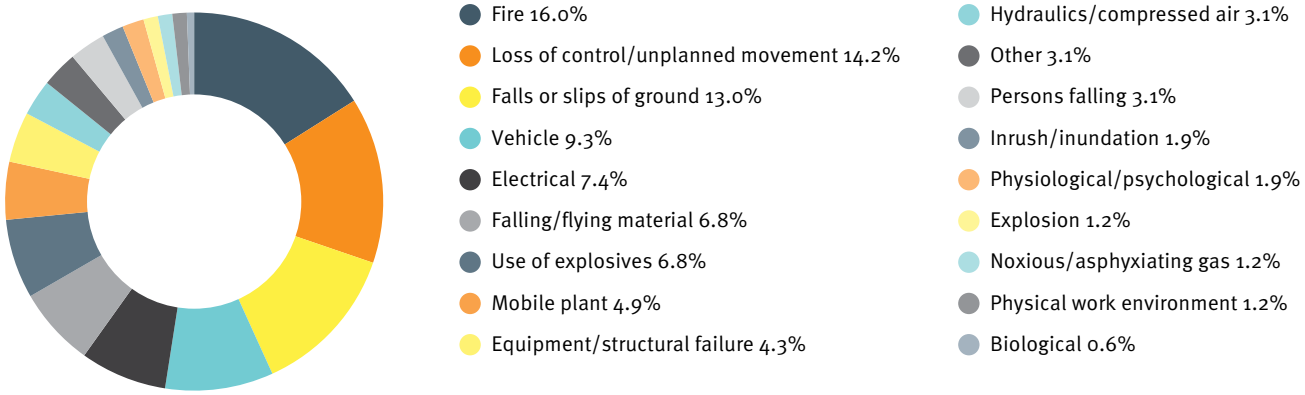
Figure 1.14: High-potential incidents at surface metalliferous mines, 2010–11



High-potential incidents—underground metalliferous mines

The number of underground metalliferous HPIs reported increased from 121 in 2009–10 to 162 in 2010–11. Although fire incidents decreased in percentage during 2010–11 (21.2% to 16.0%), they remained the most commonly reported. While loss of control/unplanned movement and falls or slips of ground again contributed to a large portion of incidents reported, there were no other significant changes in 2010–11.

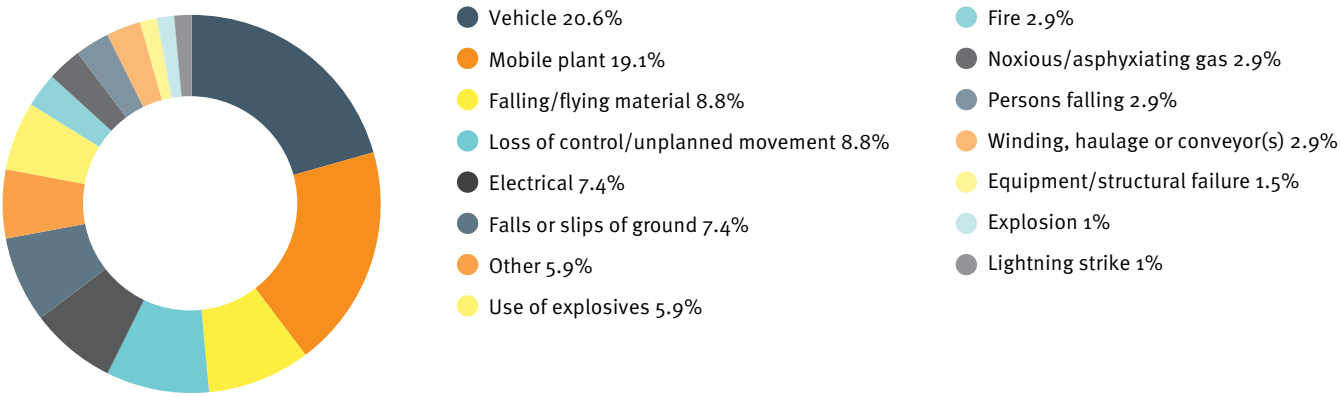
Figure 1.15: High-potential incidents at underground metalliferous mines, 2010–11



High-potential incidents—quarries

The number of quarrying HPIs reported decreased from 72 in 2009–10 to 68 in 2010–11. The percentage of vehicle incidents rose sharply (6.4% to 20.6%) to move from the fourth most reported to the highest reported quarrying incident in 2010–11. Conversely, electrical incidents dropped significantly (19.2% to 7.4%) and moved from the second to fifth highest reported.

Figure 1.16: High-potential incidents at quarries, 2010–11



1.6 Queensland Level 1 Mine Emergency Exercise 2010

The Executive Summary from the 2010 Level 1 Mine Emergency Exercise *report is outlined below. The full report is available at www.mines.industry.qld.gov.au*

The Warden's Inquiry into the coal mine explosion at the Moura No. 2 Underground Mine on 7 August 1994 recommended that every mine test its emergency systems at least annually.

Level 1 Mine Emergency Exercises are conducted in accordance with the requirements of Recognised Standard 8 Conduct of mine emergency exercises under the *Coal Mining Safety and Health Act 1999*. This standard states that it is the responsibility of the Chief Inspector of Coal Mines to ensure that a State Emergency Exercise Executive Management Committee is convened each year to design, organise, implement and audit the exercise.

This year's exercise was held on Tuesday 19 October 2010, between midnight and 5.30 am, at Carborough Downs coal mine, an underground coal mine located 30 km south of Moranbah, or 180 km west of Mackay, in Central Queensland. Severe storms are frequently experienced in this region.

Objectives of the exercise

Level 1 Exercises are set out to:

1. safely test the facilities and strategies in place at a mine to manage emergency events in all circumstances
2. test the competency of mine workers in using those facilities and implementing the strategies
3. enhance the confidence and ability of mine workers to respond in an emergency
4. identify opportunities for improvement
5. share the learning outcomes with industry
6. test the mine's emergency response system
7. test the ability of external services to administer assistance
8. provide a focal point for emergency preparedness in the state.

Based on the learnings from previous exercises and the individual characteristics of Carborough Downs coal mine, the 2010 exercise also sought to:

1. observe the donning and changeover of self-rescuers
2. observe the preparation for evacuation following a fan failure
3. observe evacuation from the mine through the belt drift
4. test dealing with an injured person
5. test the fire-fighting response
6. evaluate the effect of the gate system on emergency responders, including mines rescue teams
7. observe the use of the duty cards
8. observe the Incident Control Team's decision-making and use of resources
9. monitor the effectiveness of people-tracking systems
10. monitor fatigue management
11. examine the response to severe weather conditions.

Exercise scenario

The scenario involved a runaway vehicle underground causing a fire and injuring the operator. A severe storm caused the main ventilation fans to stop, and a mine official inspecting the mine during the emergency was reported missing.

The exercise aimed to test the systems and features at the Carborough Downs coal mine in an emergency and to verify the effect of recommendations of the previous year's emergency exercises, including:

1. mine response to the scenario including testing self-escape/aided escape and in-seam response as required
2. mobilisation of Queensland Mines Rescue Service(QMRS)
3. use of external services, including Mines Inspectorate, Industry Safety and Health Representative(s), Simtars, Police and Ambulance, to the extent required by the exercise scenario.

Evacuating mine workers was expected to:

1. shut the mine down safely before leaving their workplace
2. don their self-rescuers when they found smoke during the mine evacuation
3. look for the source of the smoke and fight the fire if they located it
4. treat the casualty if found and search for a missing person, and
5. find an alternative route to exit from the mine.

Performance effectiveness

The exercise report considered four aspects of the simulated emergency:

1. Activation
2. Response
3. Evacuation
4. Incident Management and the Incident Control Team (ICT).

Performance was evaluated against the relevant legislation, the Carborough Downs Emergency Response Principal Hazard Management Plan and industry best practice.

Best practice response to normal production stopping activities

- Don't leave hazards for others.
- Mine workers should leave their workplace in a condition that will allow safe re-entry, and minimise the effect of hazardous situations during their absence. Appropriate controls include supporting exposed strata, minimising the effect of any gas emissions, isolating mine services and placing machinery in a safe location.
- Mine workers should communicate the presence of hazards and the state of services to others needing to re-enter the mine.

Best practice response — activation and notification

- When in possession of information that can affect someone's safety, you must give it to them (requirement of the Act).
- The efficient gathering, analysis and dissemination of information can save lives. Early warning and rapid response systems are essential components of an efficient emergency response system.

Best practice response — fight that fire, if it is safe to do so!

- The discovery of fire requires mine workers to take immediate action in accordance with pre-defined strategies. The priority is to evacuate people to a place of safety, as they could be burnt or poisoned by fire products. A concurrent priority is to evaluate the situation and extinguish the fire if it is safe to do so.
- Putting out fires mitigates potential harm to others and reduces risk of an explosion. All people not involved in fire-fighting activities should be evacuated from the mine and accounted for.

Best practice response — evacuation via escapeways and use of self-rescuers

- When evacuating from an underground mine, mine workers should consider the circumstances and choose the safest escape route.
- Evacuation via a fresh-air escapeway will reduce risk of being overcome by fire products. Self-contained self-rescuers should be worn if there is a possibility of having to travel in contaminated escapeways.
- All else being equal, mine workers should travel via the primary escapeway in mechanised transport such as the mines 'drift runner' vehicles. This minimises travel time and conserves the oxygen available in their self-contained self-rescuer units. At some stage it may become unsafe to travel in a vehicle. An alternative fresh air escapeway should then be chosen to continue the evacuation.

Best practice response — duty cards

- Duty cards are an effective way to delegate and maintain control of activities in an emergency. They should be distributed as appropriate to the circumstances.
- Use duty cards to allocate critical tasks to available people.
- Duty cards remove the need for on-the-spot decision making and reduce the requirement for experience and knowledge.
- Duty cards allow people to achieve the objectives via appropriate prompts and stated performance criteria. In the absence of comprehensive training, instructions and supervision should be provided when issuing duty cards.

Best practice response — incident management and implementation of predefined strategies

- Obligations do not cease during an emergency, and so there is a need to provide for effective incident management. An Incident Control Team (ICT) is able to provide for effective incident management, and it should be formed when there is an emergency, or when there is a potential for a situation to escalate.
- The purpose of the ICT is to provide for adequate planning, organisation, leadership, supervision and control of coal-mining operations during an emergency. Its functions include:
  - The identification and implementation of strategies that reduce risk to persons affected by the emergency.
  - The implementation and maintenance of a management structure that helps ensure the safety and health of persons during an emergency.
- Provision of regular monitoring and assessment of the working environment, work procedures, equipment and installations at the mine during an emergency
- The ICT must:
  - Proceed with due diligence. This includes using and reviewing, during the emergency, pre-developed procedures, for example Trigger Action Response Plans (TARPs) and Standard Operating Procedures (SOPs).
  - Respond to changing circumstances, anticipate the future, and make necessary adjustments.
  - Manage by objectives, establish priorities, and track the progress of action plans.
  - Communicate effectively with all stakeholders, including external service providers.
  - Recognise that time lost mobilising resources could jeopardise efficient rescue or recovery operations. It is better to stand down resources than to discover that they are not there when you need them.

Recommendations to industry

The assessors have made 18 recommendations based on the exercise. They relate to training, allocation of tasks in the early stages of an emergency, fatigue management, and risk assessment.

1. That communications room operators learn to delegate their many functions to available people once an emergency response is activated.
2. That critical functions that can best be carried out in the communications room be identified, and alternative locations be designated for other activities.
3. That making outgoing calls be delegated to one of the first available people, and done away from the communications room.
4. That a single set of duty cards be readily available and distributed as soon as an emergency procedure is activated.
5. That mines investigate the features that are available on the DAC Communications System, including provision to override automatic calls in an emergency or once they have been acknowledged
6. That the Queensland Mines Rescue Service examine how it will respond when a mine indicates that 'there may be a problem'.
7. That the amount of effort required to release a CSE type of self-contained self-rescuer (SCSR) be included in refresher training and inductions.
8. That evacuation training include a preference for using a vehicle wherever this is possible.
9. That, where evacuation is through a portal away from the main entrance to the mine, systems be in place to:
   - record details of those who evacuate successfully
   - control entry to the mine
   - transport evacuated mine workers to a suitable location for debriefing and other activities.
10. That a review of a mine's emergency management risks include the need for low expansion foam at high fire-risk points underground and for the training of mine workers in fire-fighting technique.
11. That a review of a mine's emergency management risks include training in first aid and the location of emergency equipment.
12. That a relief plan be in place so that a blend of first and reserve members is available for the Incident Control Team.
13. That the Incident Control Team's objectives and priorities be clearly stated and posted so that they remain the focus of team activities, adjusted as they are achieved or as the situation changes.
14. That once an Incident Control Team is established all activities at the mine be brought under its control.
15. That mines examine the recording systems used for identifying who is at the mine and the underlying reasons for the systems. Where multiple purposes can be achieved in a single system, a single system should be preferred.
16. That mines review whether there are barriers to emergency response in their access system and identify ways of eliminating these without using people who could be used more effectively elsewhere.
17. That mines keep an up-to-date simulation of their ventilation system so that it can be used when circumstances change. A person familiar with the simulation must be available to the Incident Control Team.
18. That the system for minute taking at Incident Control Team meetings be similar to the one used in operational meetings at the mine so that a new system does not have to be learned during an emergency.

1.7 Diesel Particulate Matter Committee

The Diesel Particulate Matter (DPM) Committee was formed to oversee health and safety issues relating to the use of diesel equipment in the coal mining industry in Queensland, particularly in underground coal mines. The committee has been running in its current format since 2007 and meets approximately quarterly. The committee includes industry consultants and representatives from industry and the Mines Inspectorate.

The DPM Committee met three times in 2010–11. These meetings were held on 10 November 2010, 2 March 2011 and 3 June 2011.

The major activities included:

- continuing effort by the sub-committee to prepare and publish a guideline for the management of diesel particulate in Queensland underground coal mines—a useful basis for a code of practice on DPM
- examining the use, by mines, of the arbitrarily set personal exposure standard of 0.1 mg of diesel particulate per cubic metre of air flow as a benchmark. The results of exposure monitoring show that most mines, at most times, do not exceed this figure; any mines that have difficulty in reaching this exposure level are being dealt with individually.
  - Longwall moves and development panels are most likely to exceed the limit.
  - Control measures such as exhaust filters and ventilation alterations are being used at times of high diesel vehicle usage; for example, longwall moves.
  - Some mines are striving to reduce exposure below 0.1 mg by using exhaust filters at all times and applying the as low as reasonably achievable (ALARA) principle to diesel particulate exposure.

Several industry organisations currently sponsor a research and test project on lowering raw DPM production from the CAT 3126 diesel engine system (DES) through tuning practices that do not impinge upon the DES certification requirements. Significant gains in DPM reduction are being cost-effectively achieved and other engine packages are being considered for inclusion in this project.

The 2010 series of inspectorate audits on implementation of the DPM systems were completed and efforts will be focused on checking the health of the systems during routine mine visits. In the future, the importance of ventilation as a control measure for DPM exposure will assume added significance. Other options for significant reduction of point of source emissions from existing engine packages have been fully explored.

1.8 Health Improvement and Awareness Committee

The Queensland Mining Health Improvement and Awareness Committee (HIAC) was established to assist industry to anticipate, identify, evaluate and control health hazards in the mining environment. It is a tripartite committee with representatives from the Australian Workers Union (AWU), the Construction, Forestry, Mining and Energy Union (CFMEU), the coal and metalliferous industries, the quarrying and cement industry, the Queensland Resources Council (QRC) and the Department's Safety and Health Division. The committee met three times in 2010–2011. These meetings were held in Brisbane on 9 September 2010 and 9 February 2011, and in Townsville on 18 May 2011.

The major activities included:

- Toolbox talks were developed to improve the communication of mining health information. The training materials for open-cut coal and underground coal, on whole-body vibration (WBV), were completed and circulated to safety and health personnel at most major coal mines.
- One committee meeting was dedicated to communicating health information:
  - understanding the principles of plain English communication of occupational health information
  - developing templates and strategies for communicating mining health hazards in the future.
- One committee meeting was dedicated to UV solar radiation with presentations on research and good practice. The key topics and presenters included:
  - Professor Adèle Green, Deputy Director, Queensland Institute of Medical Research (QIMR) and expert in skin cancer and melanoma, provided information on research into the role of sunscreen in melanoma prevention.
  - Reg Green, Cancer Council Queensland, presented a toolbox talk on adverse health effects due to solar UV exposure.
  - Gary Craig, Uvex, spoke on issues relating to UV, glare and safety glasses.
  - Brett Harrison, Energex, shared information on workplace-based sun protection activities.
- A subcommittee was formed to review *A guide to the development and implementation of a health management plan in the NSW mining and extractives industry*[2] in order to draft a similar, customised document for Queensland mining. As a result, templates addressing key health hazards were created.

[2] Published by Industry and Investment NSW for and on behalf of The State of NSW, 2009.

2. The Mines Inspectorate

2.1 Departmental initiatives

Whole-body vibration toolbox talks project

In conjunction with the HIAC, the senior principal ergonomist completed a project to raise awareness of effective management of WBV in mining. Based on input from both industry and unions, this pilot project provided a format for toolbox talks and fact sheets for workers on WBV that will be used as a model for further health hazard communication. A DVD containing all the information, including a guide for presenters delivering toolbox talks, was sent to coal mine site senior executives (SSEs) with the support of Anglo American Metallurgical Coal Pty Ltd. All of the presentations and fact sheets will also be made available on the HIAC website for sites to use and tailor to their specific equipment examples. A recent article in *The Mining Advocate* publication also raised awareness of the issue and the availability of information.

Polymeric chemicals

The Mines Inspectorate, through the senior principal hygienist, has been reviewing the use of polymeric chemicals in Queensland coal mines. Surveys were sent to all underground coal mines and responses were used to generate a report that provided feedback to industry. This report details information on the hazards, control measures and extent of use of these products. As a part of this ongoing review, personal exposure monitoring during the use of these products underground has commenced. This monitoring program will continue into 2012.

This report is available at www.mines.industry.qld.gov.au

DPM exposure in Queensland coal mines

The Mines Inspectorate, through the senior principal hygienist and an inspector of mines (mechanical), conducted a review of personal exposure in Queensland underground coal mines during 2010. Approximately 800 samples were reviewed, statistically analysed and compared with the current guideline limit. This information was presented to the DPM Committee.

Excessive exposures were discussed with respective mines where appropriate. A small number of mines had no issues and were provided with emailed feedback rather than official results. The remaining mines received visits from the senior principal hygienist and an inspector of mines to discuss their results.

Berlin questionnaire

Following a meeting of nominated medical advisers (NMAs)—the doctors who carry out the medicals for the Coal Mine Workers Health Scheme—it was recommended that testing for sleep disorders be included in the health scheme medical. This recommendation was endorsed by the Coal Mining Safety and Health Advisory Committee and, as a result, the medical included a sleep survey, known as the Berlin questionnaire.

The decision of the committee meeting held on 12 August 2010 was that the Berlin questionnaire would run for a trial period of six months. Meetings with industry and worker representatives were held, resulting in the development of three information sheets—one each for workers, employers and NMAs. The Berlin questionnaire was introduced on 1 January 2011 and concluded on 30 June 2011.

The accurate number of personnel with sleep apnoea will not be known until all the results have been analysed.

Queensland Mining Industry Health and Safety Conference

Safety and health personnel were well represented at the podium at the 2010 Simple Solutions to Complex Problems Queensland Mining Industry Health and Safety Conference held in Townsville.

The sessions presented by Mines and Energy, DEEDI, were:

- Simple solutions: communicating vibration information to workers in toolbox talks; presented by Trudy Tilbury, Senior Principal Ergonomist/Principal Human Factors Advisor
- The work ability index; co-presented by Gerard Tiernan, Manager, Health Surveillance, Safety and Health, and Trudy Tilbury, Senior Principal Ergonomist/Principal Human Factors Advisor
- Statewide audit of underground coal mine gas monitoring systems; co-presented by Darren Brady, Manager, Occupational Hygiene, Environment and Chemistry Centre (OHECC), Simtars, and Tim Watson, Inspector of Mines
- ISOLgate/TYREgate/COLLISIONgate—a suite of global risk management decision support portals; co-presented by Tilman Rasche, Senior Inspector of Mines and Dr Guldidar Kizil, Research Fellow, Risk Management, Minerals Industry Safety and Health Centre (MISHC), The University of Queensland
- Managing hazardous materials in Queensland mines; presented by Carolyn Topping, Health, Safety and Environmental Scientist, Simtars
- The Health Improvement and Awareness Committee; presented by Fritz Djukic, Senior Principal Hygienist
- Lots of training—how much learning; presented by John Sleigh, Inspector of Mines
- Simtars' new mobile gas laboratory for emergency response; presented by Darren Brady, Manager OHECC, Simtars
- Safety management system (SMS)—what makes an effective SMS?; presented by Gavin Taylor, Chief Inspector of Coal Mines

Quarrying Safety and Health Seminar, Brisbane

The Ninth Annual Quarrying Safety and Health Seminar was held on 8 June 2011 at the Victoria Park Function Centre. Presentations delivered at the seminar by safety and health officers were:

- Incident case studies; presented by Phil Goode, Regional Inspector of Mines

- National OH&S Harmonisation—How will I be affected?; presented by Rob O'Sullivan, Chief Inspector of Mines (Metalliferous and Quarries)

Quarrying Safety and Health Seminar, Townsville

The Sixth Annual Quarrying and Small Mines Safety and Health Seminar, *Striking a balance*, was held on 12 April 2011 at the Rydges Southbank Convention Centre, Townsville. Presentations delivered by safety and health officers were:

- Incidents/accidents Qld 2010; presented by Hermann Fasching, Acting Manager Safety and Health
- Avoiding the competency confession: 'I thought he knew, now I know he didn't'; presented by Trevor Brown, Acting District Inspector of Mines
- Update on Queensland legislation harmonisation—small mines opal and gemfields program; presented by Rob O'Sullivan, Chief Inspector of Mines (Metalliferous and Quarries)

Opal and gemstone mines initiative

Opal and gemstone miners have successfully completed stage 1 of the small mines initiative. Workshops were conducted by mines inspectors to assist opal and gemstone miners develop and implement a safety and health management system (SHMS) for their operations.

In conjunction with industry leaders, the Mines Inspectorate has successfully developed and refined resources and training material, including:

- SHMS Safety Resource booklet
- SHMS plan pro forma template
- a mine diary suitable for training opal miners to develop and implement a SHMS to suit the size and complexity of their operation.

A total of 700 miners attended 22 one-day workshops throughout regional Queensland. A further 18 workshops are planned for the next season in 2012.

Safety publications for small mines and quarries

In conjunction with the Institute of Quarrying Australia, the Mines Inspectorate has developed and published two safety publications: *Slope stability field book* and *Traffic management—a guide to your safety*. These publications, which target workers and supervisors, have been produced to assist quarries and small mines to develop and implement effective strategies to control known hazards. Following the success of the slope stability publication, a number of other publications are planned.

2.2 Legislative changes

Reviews of the *Coal Mining Safety and Health Act 1999* and the *Mining and Quarrying Safety and Health Act 1999*

The Mines Inspectorate regularly reviews its legislation in consultation with stakeholders and representative bodies to ensure the legislative framework is robust and promotes industry best practice to minimise risk to persons at mine sites. During 2010–2011, the Mines Inspectorate initiated and implemented amendments to the *Coal Mining Safety and Health Act 1999* and the *Mining and Quarrying Safety and Health Act 1999*. The *Mines and Energy Legislation Amendment Act 2011* made the following amendments to the Acts:

- The Acts have been amended to recognise other means of engagement of an SSE, for example, SSEs not 'employed' in the normal use of the word in instances where they are contractors or are employed through an employment agency.
- Under the Acts, obligations are placed on designers, manufacturers, importers and suppliers of plant at a mine site, but there was no obligation on persons designing earthworks (e.g. tailings, dams). The obligation is now extended to persons designing earthworks.
- The legislation was amended to make clear that only one SHMS is to be developed for a mine. Where contractors are working at the mine and conducting similar work, all persons should work under the same SHMS.
- A mine record must now be kept for seven years and mine operators are to ensure that mine records relating to the previous six months are to be available at all reasonable times for inspection by workers. The purpose of the amendment is to create an obligation for sufficient mine record history to be made available for the SSE and mine workers to assist in maintaining an effective SHMS and to ensure the record is passed from one mine operator to the next if a new operator is appointed.
- There is now a power to obtain a court injunction for noncompliance with a statutory notice.
- The minimum age provision for operation of plant at a mine prohibits persons under 16 years of age from operating or maintaining plant and machinery at a mine.
- Provisions provide the Industrial Court the power to award costs in appropriate matters.

The following amendments apply only to the *Coal Mining Safety and Health Act 1999*:

- It is now a requirement for mine surveyors to be registered with a recognised professional body constituted under the *Surveyors Act 2003* or alternatively hold a competency recognised by the Coal Mining Safety and Health Advisory Committee.
- The underground mine manager now has the authority to appoint an appropriate person as ventilation officer for a coal mine.
- The underground mine manager may assume the responsibilities of the ventilation officer as long as he/she satisfies the conditions for competency.

The Mines Inspectorate will continue to work with unions and industry representatives to ensure Queensland's mining safety and health legislation supports the safe operation of mines and protects the safety and health of workers.

2.3 Prosecutions and other enforcement actions

Coal mines

On 29 September 2008 a fatality occurred on a coal exploration site (EPC987) when a water truck driver was crushed between a gate and the water diffuser outlet pipe on the rear of his truck. It is likely that the truck rolled backwards while the driver was closing the gate. The operator, Macmines Austasia, and the SSE, were prosecuted. The SSE, who pleaded guilty, received a $15 000 fine and was required to pay $577 in professional fees and $49 908 for the cost of investigations. The operator, who also pleaded guilty, received a $75 000 fine and was required to pay $5000 in professional fees and $70 000 for the cost of investigations.

On 8 November 2009 a serious accident occurred at Bundoora Colliery—a contract machine operator suffered fractures to both bones in his lower left leg when he was injured by a shuttle car. The shuttle car was driven by the ERZ Controller (Deputy) for the district, who was also a contract employee. The shuttle car driver was prosecuted and subsequently pleaded guilty. He returned his certificate of competency to the Board of Examiners and, on 13 May 2011, was fined $10 000.

Metalliferous mines and quarries

Nil

2.4 Coronial inquests into mining-related fatalities

A coronial inquest was held in Rockhampton into the road crash deaths of Graham Peter Brown on 24 October 2005 at Hedlow; Malcolm James Mackenzie on 24 October 2005 on the Rockhampton–Yeppoon Road; and Robert John Wilson on 1 February 2007 on the Dysart Middlemount Road, Dysart. Two of the three people killed were coal mine workers who had completed 12-hour shifts prior to their departure from their places of employment.

One of the contributory factors considered by the coroner was the possibility that fatigue played a part in the incidents.

The coroner delivered the findings of the coronial inquest on 23 February 2011. Twenty-four recommendations were made by the coroner, the majority of which were directed at the Department of Transport and Main Roads and the Queensland Police Service (QPS). The Mines Inspectorate was mentioned in nine of the recommendations, two of which were:

- negotiation of a memorandum of understanding between the QPS and the Mines Inspectorate—for the Mines Inspectorate to be notified of road crashes involving persons travelling to and from a mine to enable investigation at the mine
- the establishment of a fatigue management forum—co-sponsored by the Mines Inspectorate, QRC and CFMEU to target research at the industry and mine level.

Work has commenced on the implementation of the nine recommendations that were accepted in full by DEEDI. The Mines Inspectorate is working with the QPS, the Department of Transport and Main Roads and the Department of Justice and Attorney-General on the recommendations that involve a collaborative approach.

2.5 Complaints about safety and health at mines

Queensland mine safety and health legislation, particularly section 254 of the *Mining and Quarrying Safety and Health Act 1999* and section 275 of the *Coal Mining Safety and Health Act 1999*, allows mine workers or their representatives to make confidential complaints about safety and health matters to the Mines Inspectorate.

During 2010–11, 107 complaints were received by the Mines Inspectorate, of which 71 were from mine workers or their representatives. Mine worker safety complaints included dust exposure, inadequate equipment maintenance, quality of training, fatigue and working hours, non-reporting of incidents, workplace bullying and lack of personal protective equipment (PPE).

Of the total complaints, 87 have been fully completed and closed out to date. The broad range of outcomes included:

- 18 complaints saw one or more directive(s) or substandard condition or practice notice(s) issued by the Mines Inspectorate
- 30 complaints resulted in a mine record entry being made by the Mines Inspectorate
- 31 involved the Mines Inspectorate contacting the site
- 4 were not under the Mines Inspectorate jurisdiction and were passed on to the appropriate body
- 4 were addressed by other means.

2.6 Directives issued by the Mines Inspectorate

Inspectors of mines and inspection officers have the power to issue various directives under part 9, division 5 of both the *Mining and Quarrying Safety and Health Act 1999* and the *Coal Mining Safety and Health Act 1999*.

During 2010–11, the Mines Inspectorate issued 345 directives, a decrease of 546 from the unusually high number issued in 2009–10, when the coroner's recommendations saw multiple directives issued to all coal mines and coal exploration sites.

The directives issued in 2010–11 included:

- 185 in the central region
- 89 in the northern region
- 71 in the southern region.

Of these directives, 163 were issued under the *Coal Mining Safety and Health Act 1999* and 182 were issued under the *Mining and Quarrying Safety and Health Act 1999*. The types of directives issued were to:

- ensure coal mine worker competent
- ensure worker competent
- carry out test
- reduce risk
- suspend operations for unacceptable level of risk
- review SHMS and principal hazard management plans
- review SHMS
- suspend operations for ineffective SHMS
- isolate site
- provide independent engineering study.

Figure 2.1: Complaint type and number received across all sectors, 2010–11 (compared with 2009–10)

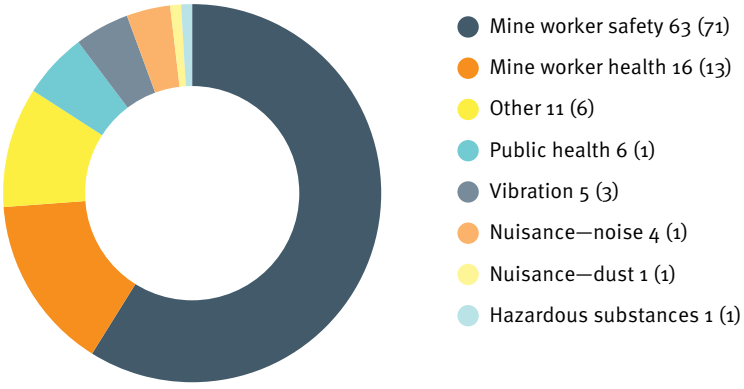


Table 2.1: Mines Inspectorate inspection activity, 2010–11

	2008–09	2009–10	**2010–11**
Inspections	1115	1197	**1321**
Inspections—unannounced	337	288	**161**
Inspections—weekend or backshift	27	18	**18**
Inspections—unannounced weekend or backshift	29	32	**12**
Audits—subject or system specific	41	135	**135**
Audits—compliance audits	24	108	**44**

3. Lag performance indicators: incident number

The following graphs and accompanying tables show five-year trends in a number of indicators used to assess safety and health performance across the industry. These are the raw number of incidents and are provided for information. Comparison of these numbers across sectors is not valid as they are not normalised. Normalised data and rates are presented in Chapter 4 of this report.

The performance indicators plotted are:

- Table 3.1: Number of lost time injuries, 2006–11
- Table 3.2: Number of lost time injury days (days away from work only), 2006–11
- Table 3.3: Number of lost time injury days (days away from work and days on alternative duties), 2006–11
- Table 3.4: Number of disabling injuries (injuries where the worker is given alternative duties because they cannot return to their normal job), 2006–11
- Table 3.5: Number of disabling injury days (days on alternative duties), 2006–11
- Table 3.6: Number of lost time injuries and disabling injuries, 2006–11
- Table 3.7: Number of lost time injury and disabling injury days (days away from work and days on alternative duties), 2006–11
- Table 3.8: Number of permanent incapacities, 2006–11
- Table 3.9: Number of fatalities, 2006–11
- Table 3.10: Number of medical treatment injuries, 2006–11
- Table 3.11: Total recordable injuries, 2006–11
- Table 3.12: Number of reported high-potential incidents, 2006–11
- Table 3.13: Number of employees at 30 June, 2006–11
- Table 3.14: Total hours worked (millions), 2006–11

These indicators are all lag indicators—they are a measure of performance after the event. It is better to measure and trend lead indicators so that incidents can be predicted; however, appropriate lead indicators are much more difficult to define and measure. A suite of lead indicators has been measured and these are detailed in Chapter 6 of this report.

There has been much criticism of using the number of LTIs as the main industry performance measure with respect to health and safety. The criticism centres on the fact that the number of LTIs can be manipulated by having injured or ill workers prematurely return to work and be placed on alternative or light duties so they do not appear in the statistics as an LTI. To prevent such manipulation, the use of total recordable injuries (TRIs)—the sum of the number of fatalities, LTIs, DIs and MTIs—is proposed as a parameter that more accurately reflects the injury status at a mine site. The department has only just commenced collecting MTI data from metalliferous mines and quarries and these statistics have been included in the report for the first time.

Table 3.3 shows the number of days lost from work and the number of days on alternative duties for LTIs. Most jurisdictions in Australia do not include the number of days on alternative duties but only count the days lost from work (see Table 3.2). The true severity of an injury can only be assessed by evaluating the number of days a worker is away from their normal job. Thus it is necessary to count both the days lost from work and the days on alternative duties when assessing injury severity.

The total number of days on alternative duties for LTIs and for DIs is not reported in this document—this number has no real meaning and cannot be normalised and calculated as a rate.

Table 3.1: Number of lost time injuries, 2006–11

	2006–07	2007–08	2008–09	2009–10	2010–11
Coal—surface	133	152	125	138	134
Coal—underground	117	81	80	64	45
Coal subtotal	**250**	**233**	**205**	**202**	**179**
Metalliferous—surface	52	54	54	47	41
Metalliferous—underground	39	40	26	30	25
Metalliferous subtotal	**91**	**94**	**80**	**77**	**66**
Quarries	23	25	16	28	28
All operations	**364**	**352**	**301**	**307**	**273**

Table 3.2: Number of lost time injury days (days away from work only), 2006–11

	2006–07	2007–08	2008–09	2009–10	2010–11
Coal—surface	4 253	5 312	4 234	3 184	3 475
Coal—underground	2 517	1 887	2 105	2 010	737
Coal subtotal	**6 770**	**7 199**	**6 339**	**5 194**	**4 212**
Metalliferous—surface	1 201	454	918	1 110	721
Metalliferous—underground	1 151	960	1 135	639	599
Metalliferous subtotal	**2 352**	**1 414**	**2 053**	**1 749**	**1 320**
Quarries	332	322	328	462	874
All operations	**9 454**	**8 935**	**8 720**	**7 405**	**6 406**

Table 3.3: Number of lost time injury days (days away from work and days on alternative duties), 2006–11

	2006–07	2007–08	2008–09	2009–10	2010–11
Coal—surface	7 764	8 330	7 669	6 461	6 570
Coal—underground	5 263	3 021	5 925	3 884	1 207
Coal subtotal	**13 027**	**11 351**	**13 594**	**10 345**	**7 777**
Metalliferous—surface	1 974	909	1 596	1 785	942
Metalliferous—underground	1 833	1 831	1 819	1 560	1 047
Metalliferous subtotal	**3 807**	**2 740**	**3 415**	**3 345**	**1 989**
Quarries	412	429	378	635	1 261
All operations	**17 246**	**14 520**	**17 387**	**14 325**	**11 027**

Table 3.4: Number of disabling injuries (injuries where the worker is given alternative duties as they cannot return to their normal job), 2006–11

	2006–07	2007–08	2008–09	2009–10	2010–11
Coal—surface	232	151	208	214	248
Coal—underground	209	158	121	115	175
Coal subtotal	**441**	**309**	**329**	**329**	**423**
Metalliferous—surface	53	38	31	28	33
Metalliferous—underground	78	75	57	70	49
Metalliferous subtotal	**131**	**113**	**88**	**98**	**82**
Quarries	7	3	0	1	0
All operations	**579**	**425**	**417**	**428**	**505**

Table 3.5: Number of disabling injury days (days on alternative duties), 2006–11

	2006–07	2007–08	2008–09	2009–10	2010–11
Coal—surface	11 295	5 317	6 295	4 234	5 201
Coal—underground	7 389	3 735	3 028	2 828	3 418
Coal subtotal	**18 684**	**9 052**	**9 323**	**7 062**	**8 619**
Metalliferous—surface	781	668	828	1 264	863
Metalliferous—underground	2 348	1 601	2 195	2 610	831
Metalliferous subtotal	**3 129**	**2 269**	**3 023**	**3 874**	**1 694**
Quarries	35	100	0	41	0
All operations	**21 848**	**11 421**	**12 346**	**10 977**	**10 313**

Table 3.6: Number of lost time injuries and disabling injuries, 2006–11

	2006–07	2007–08	2008–09	2009–10	2010–11
Coal—surface	365	303	333	352	382
Coal—underground	326	239	201	179	220
Coal subtotal	**691**	**542**	**534**	**531**	**602**
Metalliferous—surface	105	92	85	75	74
Metalliferous—underground	117	115	83	100	74
Metalliferous subtotal	**222**	**207**	**168**	**175**	**148**
Quarries	30	28	16	29	28
All operations	**943**	**777**	**718**	**735**	**778**

Table 3.7: Number of lost time injury and disabling injury days (days away from work and days on alternative duties), 2006–11

	2006–07	2007–08	2008–09	2009–10	2010–11
Coal—surface	19 059	13 647	13 964	10 695	11 771
Coal—underground	12 652	6 756	8 953	6 712	4 625
Coal subtotal	**31 711**	**20 403**	**22 917**	**17 407**	**16 396**
Metalliferous—surface	2 755	1 577	2 424	3 049	1 805
Metalliferous—underground	4 181	3 432	4 014	4 170	1 878
Metalliferous subtotal	**6 936**	**5 009**	**6 438**	**7 219**	**3 683**
Quarries	447	529	378	676	1 261
All operations	**39 094**	**25 941**	**29 733**	**25 302**	**21 340**

Table 3.8: Number of permanent incapacities, 2006–11

	2006–07	2007–08	2008–09	2009–10	2010–11
Coal—surface	1	2	23	36	40
Coal—underground	2	3	8	5	10
Coal subtotal	**3**	**5**	**31**	**41**	**50**
Metalliferous—surface	2	1	0	3	1
Metalliferous—underground	0	0	3	2	1
Metalliferous subtotal	**2**	**1**	**3**	**5**	**2**
Quarries	2	1	5	1	5
All operations	**7**	**7**	**39**	**47**	**57**

Table 3.9: Number of fatalities, 2006–11

	2006–07	2007–08	2008–09	2009–10	2010–11
Coal—surface	0	0	1	0	2
Coal—underground	1	0	0	0	0
Coal subtotal	**1**	**0**	**1**	**0**	**2**
Metalliferous—surface	0	0	0	0	0
Metalliferous—underground	1	1	1	0	1
Metalliferous subtotal	**1**	**1**	**1**	**0**	**1**
Quarries	1	0	1	1	0
Exploration	1	0	1	0	0
All operations	**4**	**1**	**4**	**1**	**3**

Table 3.10: Number of medical treatment injuries, 2006–11

	2006–07	2007–08	2008–09	2009–10	2010–11
Coal—surface	577	618	446	264	368
Coal—underground	558	548	478	138	272
Coal subtotal	**1 135**	**1 166**	**924**	**402**	**640**
Metalliferous—surface	n/a	n/a	n/a	n/a	92
Metalliferous—underground	n/a	n/a	n/a	n/a	49
Metalliferous subtotal	**n/a**	**n/a**	**n/a**	**n/a**	**141**
Quarries	n/a	n/a	n/a	n/a	30
All operations	**1 135**	**1 166**	**924**	**402**	**811**

n/a = collection of data was not required at this time

Table 3.11: Total recordable injuries, 2006–11

	2006–07	2007–08	2008–09	2009–10	2010–11
Coal—surface	942	921	779	616	750
Coal—underground	884	787	679	317	492
Coal subtotal	**1 826**	**1 708**	**1 458**	**933**	**1 242**
Metalliferous—surface	n/a	n/a	n/a	n/a	166
Metalliferous—underground	n/a	n/a	n/a	n/a	123
Metalliferous subtotal	**n/a**	**n/a**	**n/a**	**n/a**	**289**
Quarries	n/a	n/a	n/a	n/a	58
All operations	**1 826**	**1 708**	**1 458**	**933**	**1 589**

n/a = collection of data was not required at this time

Table 3.12: Number of reported high-potential incidents, 2006–11

	2006–07	2007–08	2008–09	2009–10	2010–11
Coal—surface	639	613	641	988	1 228
Coal—underground	218	107	82	356	338
Coal subtotal	**857**	**720**	**723**	**1 344**	**1 566**
Metalliferous—surface	134	167	128	214	183
Metalliferous—underground	135	103	137	121	162
Metalliferous subtotal	**269**	**270**	**265**	**335**	**345**
Quarries	37	54	34	72	68
All operations	**1 163**	**1 044**	**1 022**	**1 751**	**1 979**

Table 3.13: Number of employees at 30 June, 2006–11

	2006–07	2007–08	2008–09	2009–10	2010–11
Coal—surface	16 456	18 989	21 582	22 339	26 346
Coal—underground	4 083	4 521	5 029	4 516	6 222
Coal subtotal	**20 539**	**23 510**	**26 611**	**26 855**	**32 568**
Metalliferous—surface	6 775	4 933	6 943	6 653	7 776
Metalliferous—underground	4 506	4 298	4 654	4 195	5 219
Metalliferous subtotal	**11 281**	**9 231**	**11 597**	**10 848**	**12 995**
Quarries	1 272	1 394	1 483	1 310	1 373
All operations	**33 092**	**34 135**	**39 691**	**39 013**	**46 936**

Table 3.14: Total hours worked (millions), 2006–11

	2006–07	2007–08	2008–09	2009–10	2010–11
Coal—surface	40.4	40.9	45.6	44.8	50.2
Coal—underground	9.0	9.9	10.1	10.3	12.0
Coal subtotal	**49.4**	**50.8**	**55.7**	**55.1**	**62.2**
Metalliferous—surface	17.5	18.1	17.5	15.0	17.9
Metalliferous—underground	10.0	10.2	12.3	9.0	9.8
Metalliferous subtotal	**27.5**	**28.3**	**29.8**	**24.0**	**27.6**
Quarries	2.4	2.2	2.9	2.3	3.1
All operations	**79.3**	**81.4**	**88.3**	**81.4**	**92.9**

4. Lag performance indicators: incident rates

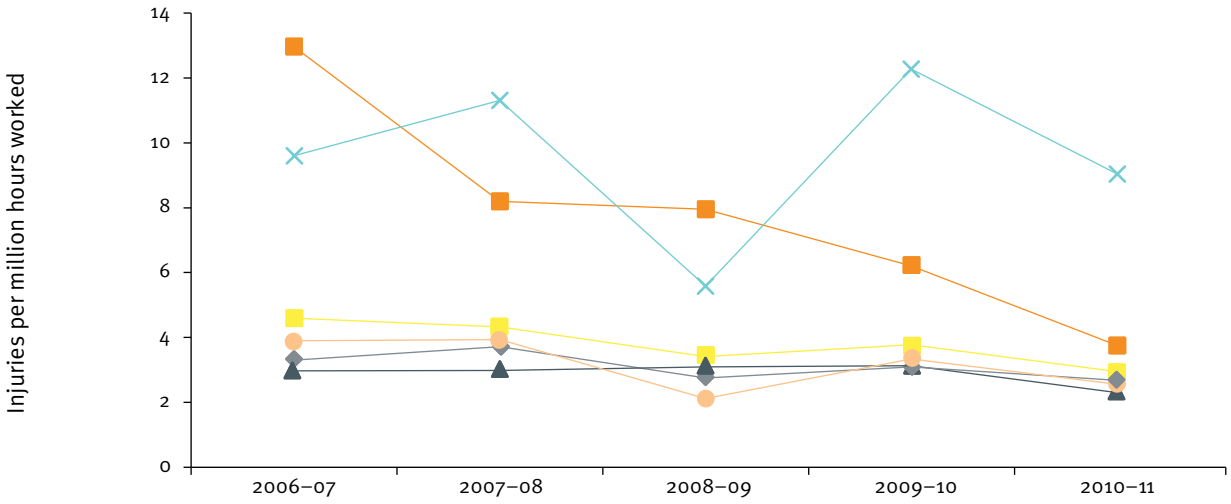
The following graphs and accompanying tables show five-year trends across a number of indicators used to assess safety and health performance across the industry. The data presented here are normalised either in terms of number of hours worked or the average days lost per injury. These normalised values can be used to make comparisons across different sectors.

The performance indicators plotted are:

- Figure 4.1: Lost time injury frequency rate, 2006–11
- Figure 4.2: Lost time injury severity rate (days away from work only), 2006–11
- Figure 4.3: Lost time injury duration rate (days away from work only), 2006–11
- Figure 4.4: Lost time injury severity rate (days away from work and on alternative duties), 2006–11
- Figure 4.5: Lost time injury duration rate (days away from work and on alternative duties), 2006–11
- Figure 4.6: Disabling injury frequency rate, 2006–11
- Figure 4.7: Disabling injury severity rate, 2006–11
- Figure 4.8: Disabling injury duration rate, 2006–11
- Figure 4.9: Lost time injury and disabling injury frequency rate, 2006–11
- Figure 4.10: Lost time injury and disabling injury severity rate, 2006–11
- Figure 4.11: Lost time and disabling injury duration rate, 2006–11
- Figure 4.12: Permanent incapacity frequency rate, 2006–11
- Figure 4.13: Fatality frequency rate, 2006–11
- Figure 4.14: Total recordable injury frequency rate for coal mines, 2006–11

Figures 4.10 and 4.11 indicate the combined LTI and DI severity rate and duration rate respectively. These performance indicators are the best measure of safety performance and are primarily referred to in assessing industry performance.

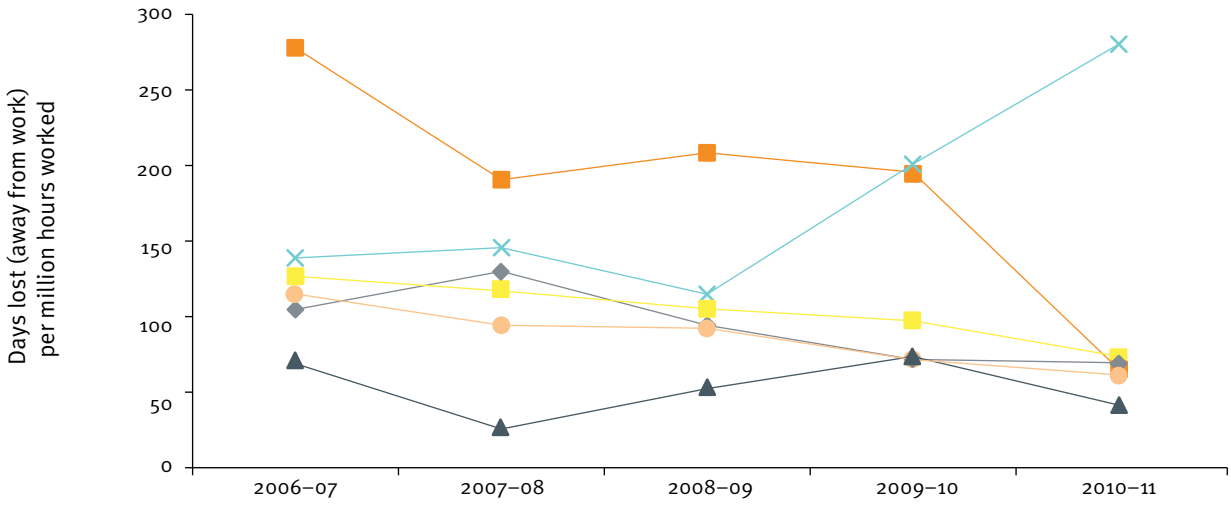
Figure 4.1: Lost time injury frequency rate, 2006–11



	2006–07	2007–08	2008–09	2009–10	2010–11
Coal—surface	3.3	3.7	2.7	3.1	2.7
Coal—underground	13.0	8.2	7.9	6.2	3.7
Metalliferous—surface	3.0	3.0	3.1	3.1	2.3
Metalliferous—underground	3.9	3.9	2.1	3.3	2.6
Quarries	9.6	11.3	5.6	12.3	9.0
All operations	4.6	4.3	3.4	3.8	2.9

Financial year

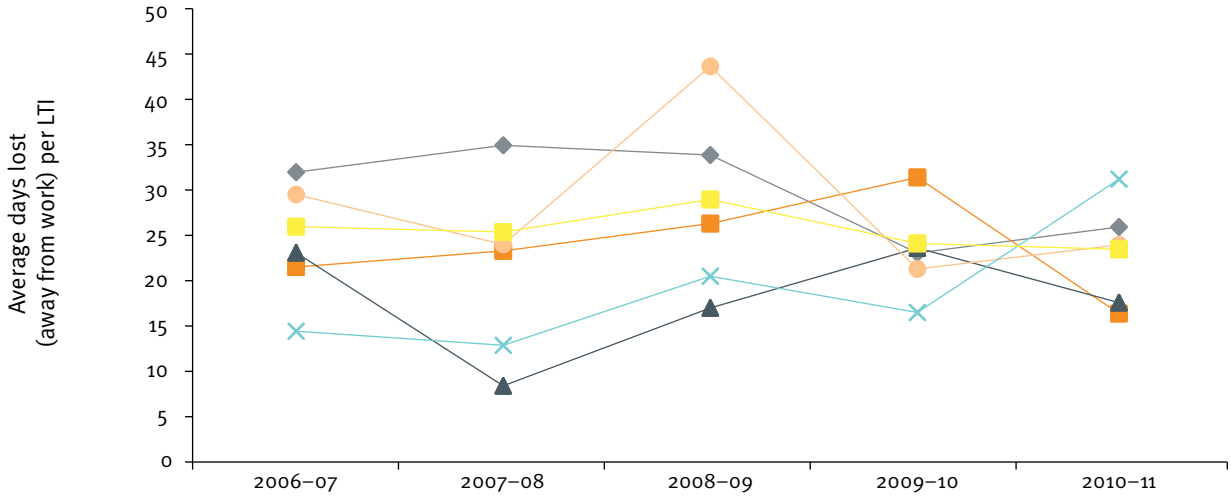
Figure 4.2: Lost time injury severity rate (days away from work only), 2006–11



	2006–07	2007–08	2008–09	2009–10	2010–11
Coal—surface	105	130	93	71	69
Coal—underground	279	191	209	195	61
Metalliferous—surface	69	25	53	74	40
Metalliferous—underground	115	94	92	71	61
Quarries	138	146	114	202	282
All operations	119	110	99	91	69

Financial year

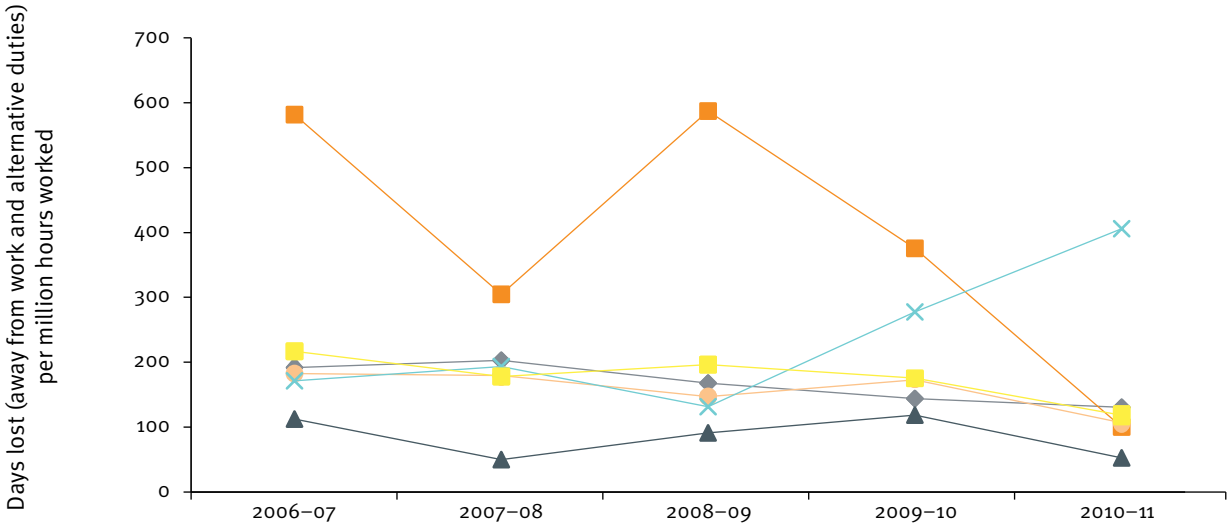
Figure 4.3: Lost time injury duration rate (days away from work only), 2006–11



	2006–07	2007–08	2008–09	2009–10	2010–11
Coal—surface	32.0	34.9	33.9	23.1	25.9
Coal—underground	21.5	23.3	26.3	31.4	16.4
Metalliferous—surface	23.1	8.4	17.0	23.6	17.6
Metalliferous—underground	29.5	24.0	43.7	21.3	24.0
Quarries	14.4	12.9	20.5	16.5	31.2
All operations	26.0	25.4	29.0	24.1	23.5

Financial year

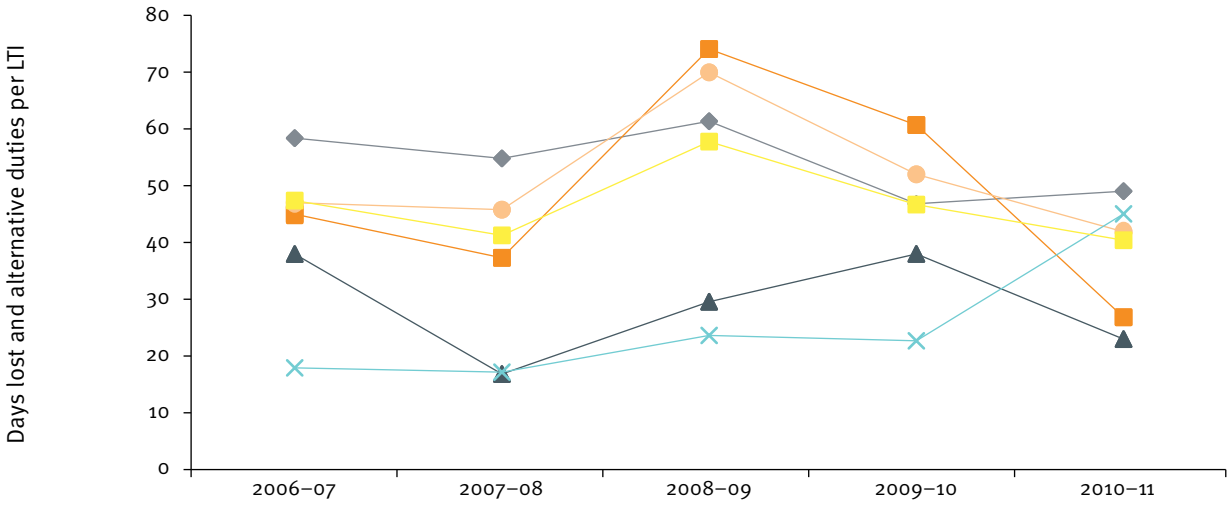
Figure 4.4: Lost time injury severity rate (days away from work and on alternative duties), 2006–11



	2006–07	2007–08	2008–09	2009–10	2010–11
Coal—surface	192	203	168	144	131
Coal—underground	583	305	589	376	100
Metalliferous—surface	113	50	91	119	53
Metalliferous—underground	183	180	147	173	107
Quarries	172	194	132	278	407
All operations	217	178	197	176	119

Financial year

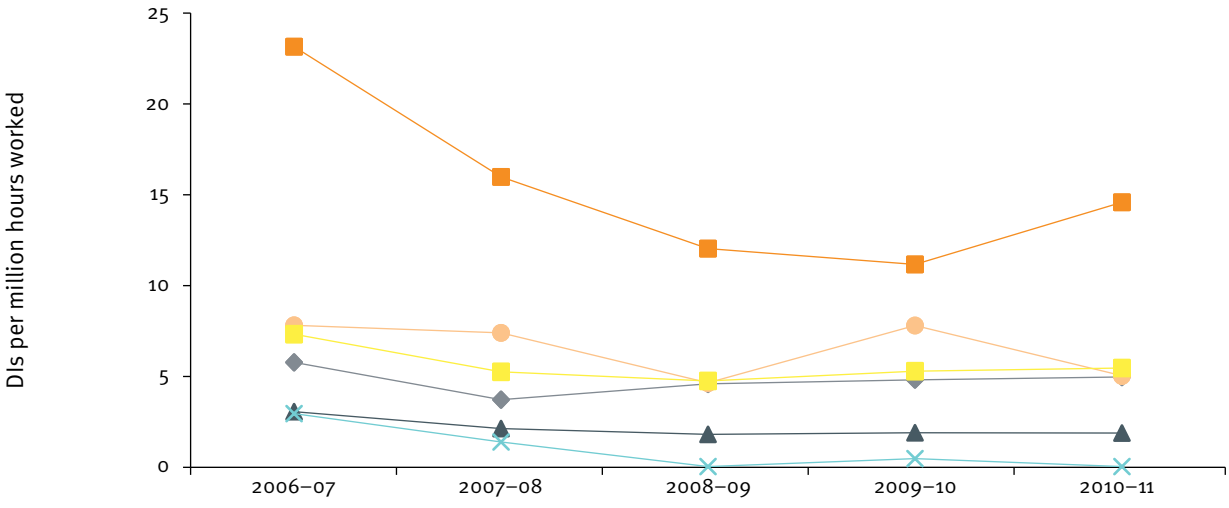
Figure 4.5: Lost time injury duration rate (days away from work and on alternative duties), 2006–11



	2006–07	2007–08	2008–09	2009–10	2010–11
Coal—surface	58.4	54.8	61.4	46.8	49.0
Coal—underground	45.0	37.3	74.1	60.7	26.8
Metalliferous—surface	38.0	16.8	29.6	38.0	23.0
Metalliferous—underground	47.0	45.8	70.0	52.0	41.9
Quarries	17.9	17.2	23.6	22.7	45.0
All operations	47.4	41.3	57.8	46.7	40.4

Financial year

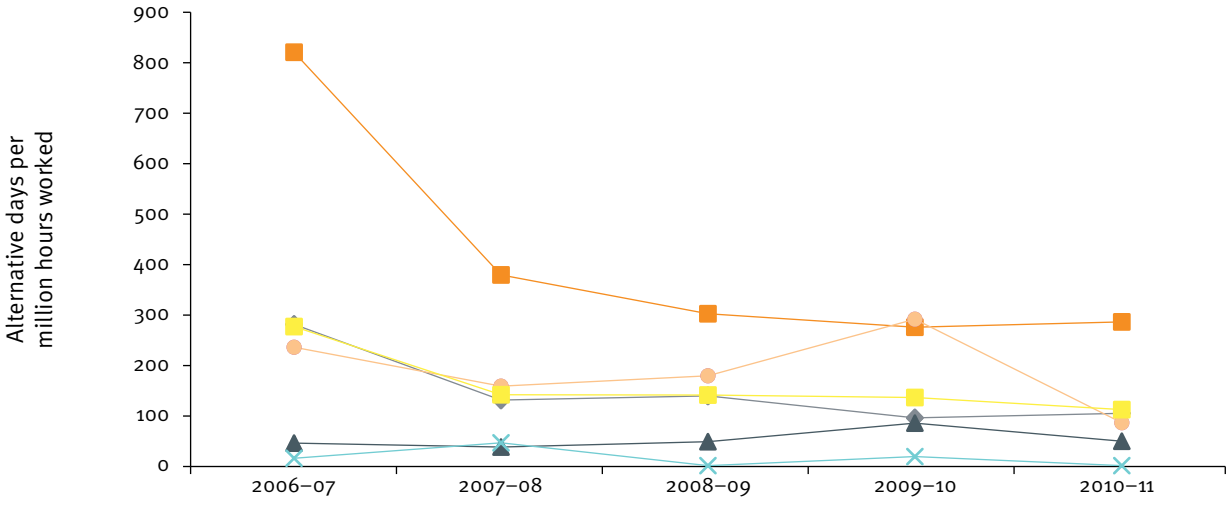
Figure 4.6: Disabling injury frequency rate, 2006–11



	2006–07	2007–08	2008–09	2009–10	2010–11
Coal—surface	5.7	3.7	4.6	4.8	4.9
Coal—underground	23.2	16.0	12.0	11.1	14.6
Metalliferous—surface	3.0	2.1	1.8	1.9	1.8
Metalliferous—underground	7.8	7.4	4.6	7.8	5.0
Quarries	2.9	1.4	0.0	0.4	0.0
All operations	7.3	5.2	4.7	5.3	5.4

Financial year

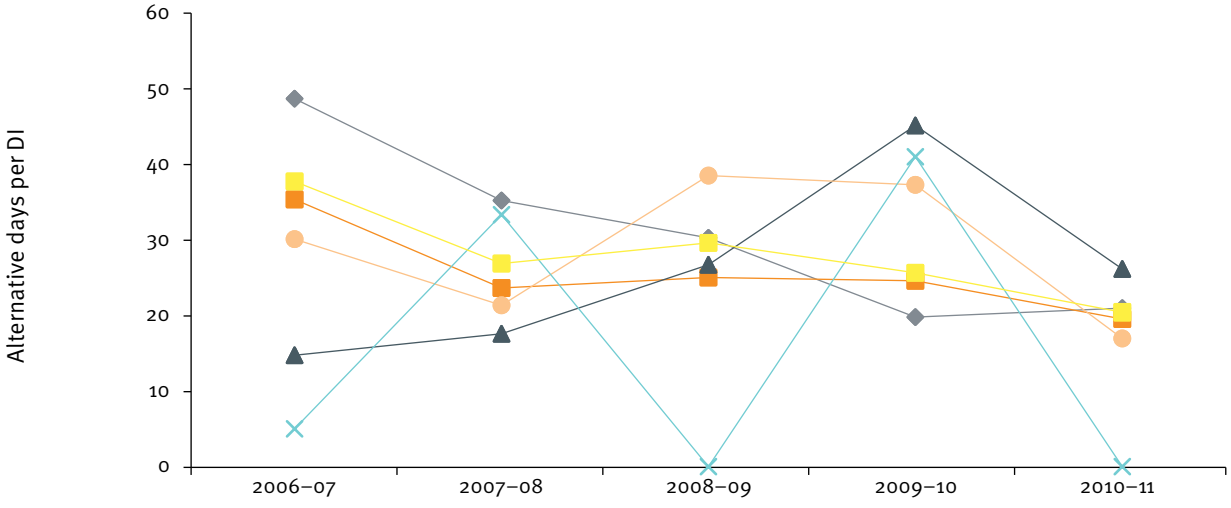
Figure 4.7: Disabling injury severity rate, 2006–11



	2006–07	2007–08	2008–09	2009–10	2010–11
Coal—surface	280	130	138	95	104
Coal—underground	819	378	301	274	285
Metalliferous—surface	45	37	47	84	48
Metalliferous—underground	234	157	178	290	85
Quarries	15	45	0	18	0
All operations	275	140	140	135	111

Financial year

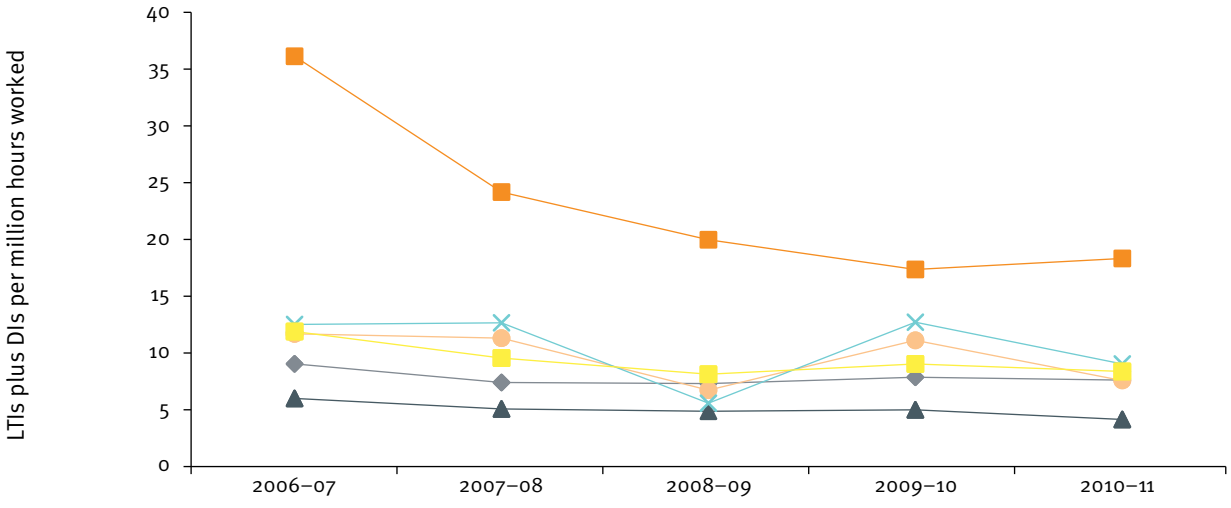
Figure 4.8: Disabling injury duration rate, 2006–11



	2006–07	2007–08	2008–09	2009–10	2010–11
Coal—surface	48.7	35.2	30.3	19.8	21.0
Coal—underground	35.4	23.6	25.0	24.6	19.5
Metalliferous—surface	14.7	17.6	26.7	45.1	26.2
Metalliferous—underground	30.1	21.3	38.5	37.3	17.0
Quarries	5.0	33.3	0.0	41.0	0.0
All operations	37.7	26.9	29.6	25.6	20.4

Financial year

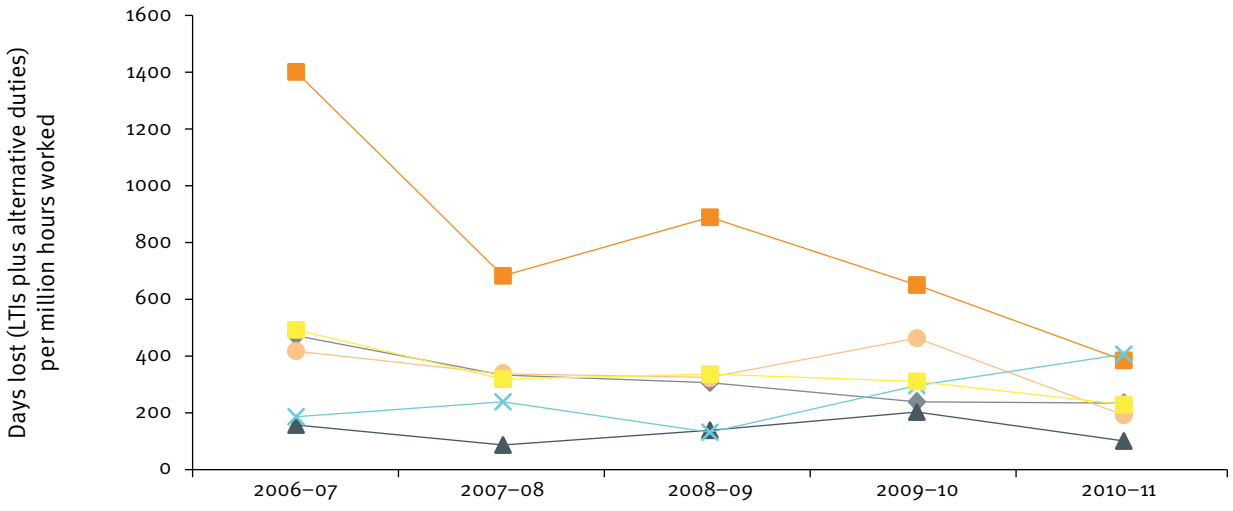
Figure 4.9: Lost time injury plus disabling injury frequency rate, 2006–11



	2006–07	2007–08	2008–09	2009–10	2010–11
Coal—surface	9.0	7.4	7.3	7.9	7.6
Coal—underground	36.1	24.2	20.0	17.3	18.3
Metalliferous—surface	6.0	5.1	4.9	5.0	4.1
Metalliferous—underground	11.7	11.3	6.7	11.1	7.6
Quarries	12.5	12.7	5.6	12.7	9.0
All operations	11.9	9.5	8.1	9.0	8.4

Financial year

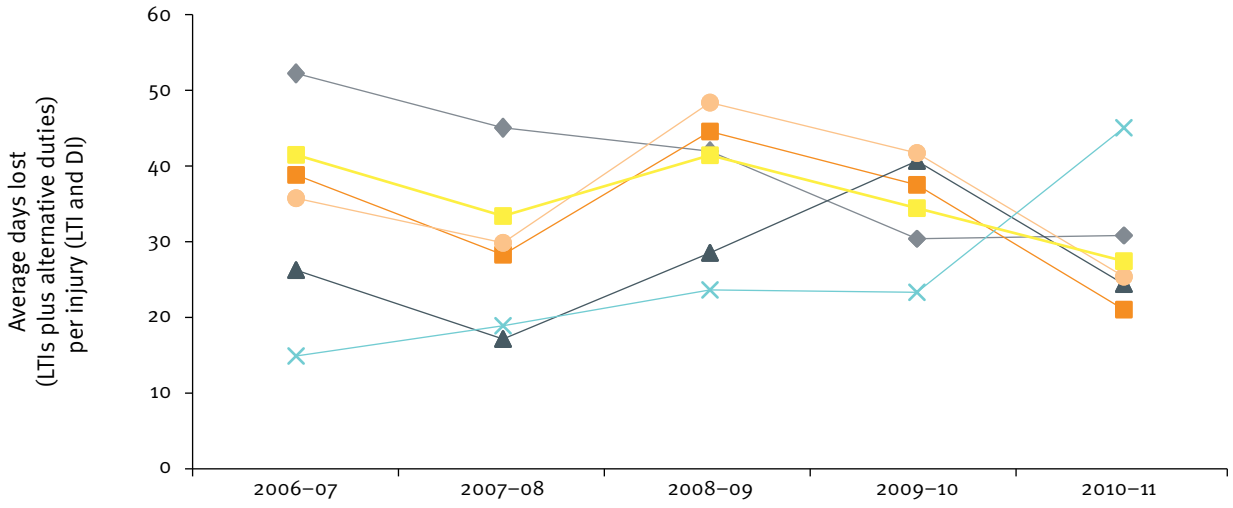
Figure 4.10: Lost time injury and disabling injury severity rate, 2006–11



	2006–07	2007–08	2008–09	2009–10	2010–11
Coal—surface	472	333	306	239	234
Coal—underground	1402	683	889	651	385
Metalliferous—surface	157	87	139	203	101
Metalliferous—underground	417	337	325	463	192
Quarries	186	239	132	296	407
All operations	493	319	337	311	230

Financial year

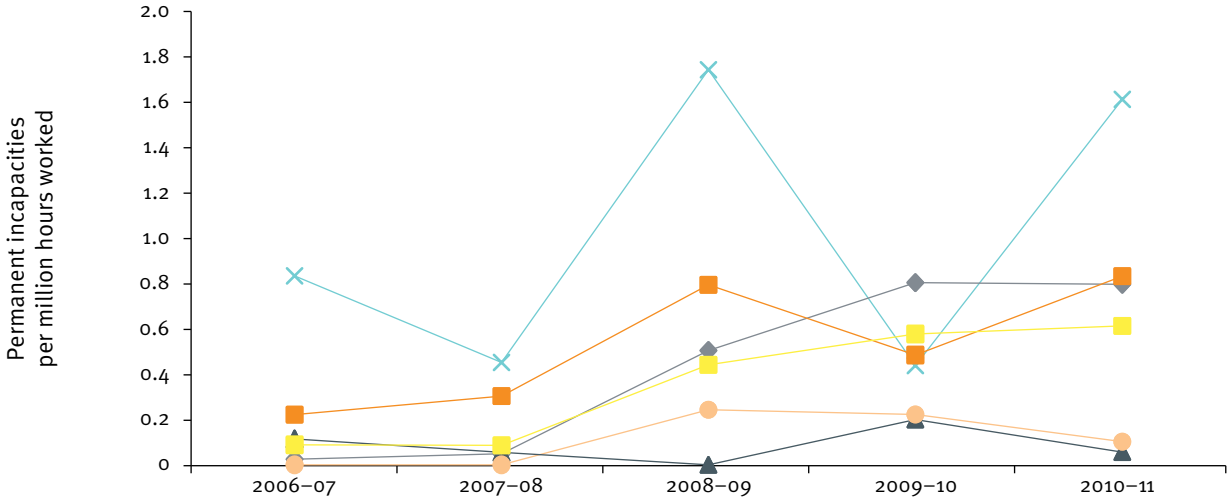
Figure 4.11: Lost time injury and disabling injury duration rate, 2006–11



	2006–07	2007–08	2008–09	2009–10	2010–11
Coal—surface	52.2	45.0	41.9	30.4	30.8
Coal—underground	38.8	28.3	44.5	37.5	21.0
Metalliferous—surface	26.2	17.1	28.5	40.7	24.4
Metalliferous—underground	35.7	29.8	48.4	41.7	25.4
Quarries	14.9	18.9	23.6	23.3	45.0
All operations	41.5	33.4	41.4	34.4	27.4

Financial year

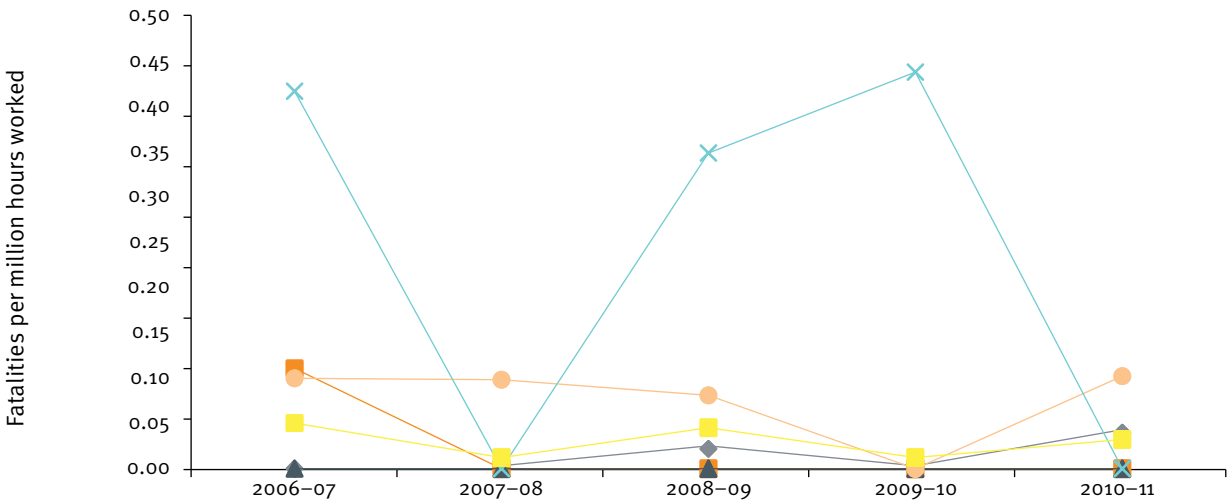
Figure 4.12: Permanent incapacity frequency rate, 2006–11



	2006–07	2007–08	2008–09	2009–10	2010–11
Coal—surface	0.02	0.05	0.50	0.80	0.80
Coal—underground	0.22	0.30	0.79	0.48	0.83
Metalliferous—surface	0.11	0.06	0.00	0.20	0.06
Metalliferous—underground	0.00	0.00	0.24	0.22	0.10
Quarries	0.83	0.45	1.74	0.44	1.61
All operations	0.09	0.09	0.44	0.58	0.61

Financial year

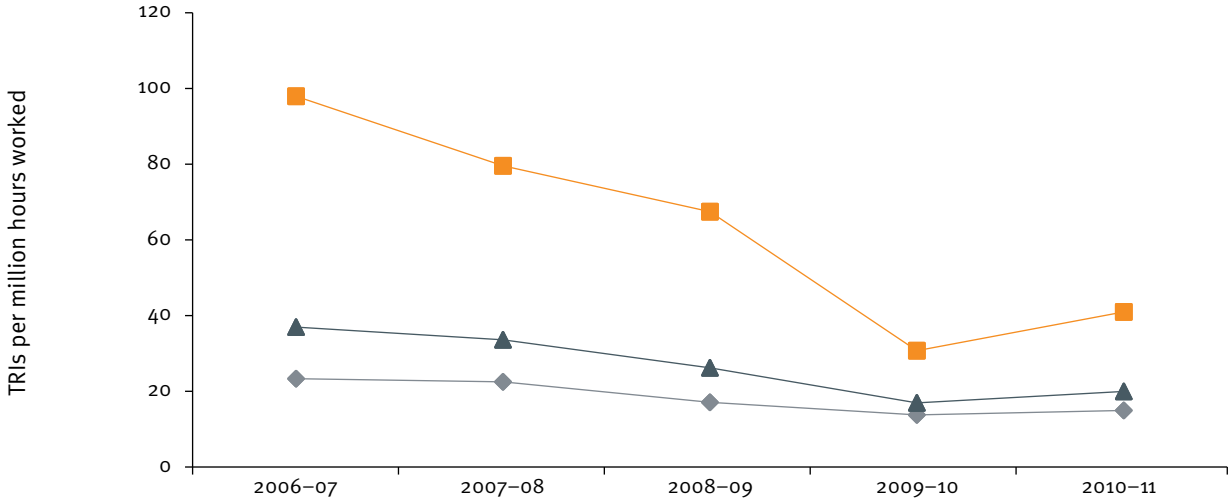
Figure 4.13: Fatality frequency rate, 2006–11



	2006–07	2007–08	2008–09	2009–10	2010–11
Coal—surface	0.00	0.00	0.02	0.00	0.04
Coal—underground	0.11	0.00	0.00	0.00	0.00
Metalliferous—surface	0.00	0.00	0.00	0.00	0.00
Metalliferous—underground	0.10	0.10	0.08	0.00	0.10
Quarries	0.42	0.00	0.35	0.44	0.00
All operations	0.05	0.01	0.05	0.01	0.03

Financial year

Figure 4.14: Total recordable injury frequency rate for coal mines, 2006–11



	2006–07	2007–08	2008–09	2009–10	2010–11
Coal—surface	23.3	22.5	17.1	13.8	14.9
Coal—underground	97.9	79.6	67.4	30.7	41.0
Coal total	37.0	33.6	26.2	16.9	20.0

Financial year


DANGER

5. Injury classification data

The LTI data collected for all sectors have been classified as follows:

- Figure 5.1: Body parts injured, 2008–11
- Figure 5.2: Nature of injury, 2008–11
- Figure 5.3: Mechanism of injury (the action, exposure or event that is the direct cause of the most serious injury), 2008–11
- Figure 5.4: Breakdown agency—equipment (the equipment that was principally involved in, or most closely associated with, the injury), 2008–11
- Figure 5.5: Occurrence class of injuries—activity (the activity that was principally involved in, or most closely associated with, the injury), 2008–11
- Figure 5.6: Age distribution (coal industry), 1996–2011
- Figure 5.7: Number of days lost per age group to lost time injuries, 2011

Significant results from this classification include:

- Back and hand injuries account for almost 37% of injuries as shown in Figure 5.1.
- Sprains and strains account for 44% of injuries as shown in Figure 5.2.
- Falls/slips/trips account for almost 24% of injuries as shown in Figure 5.3.
- Earthmoving equipment accounts for almost 15% of injuries as shown in Figure 5.4.
- Manual handling of equipment/material accounts for 42% of injuries as shown in Figure 5.5.

Figure 5.1: Body parts injured, 2008–11

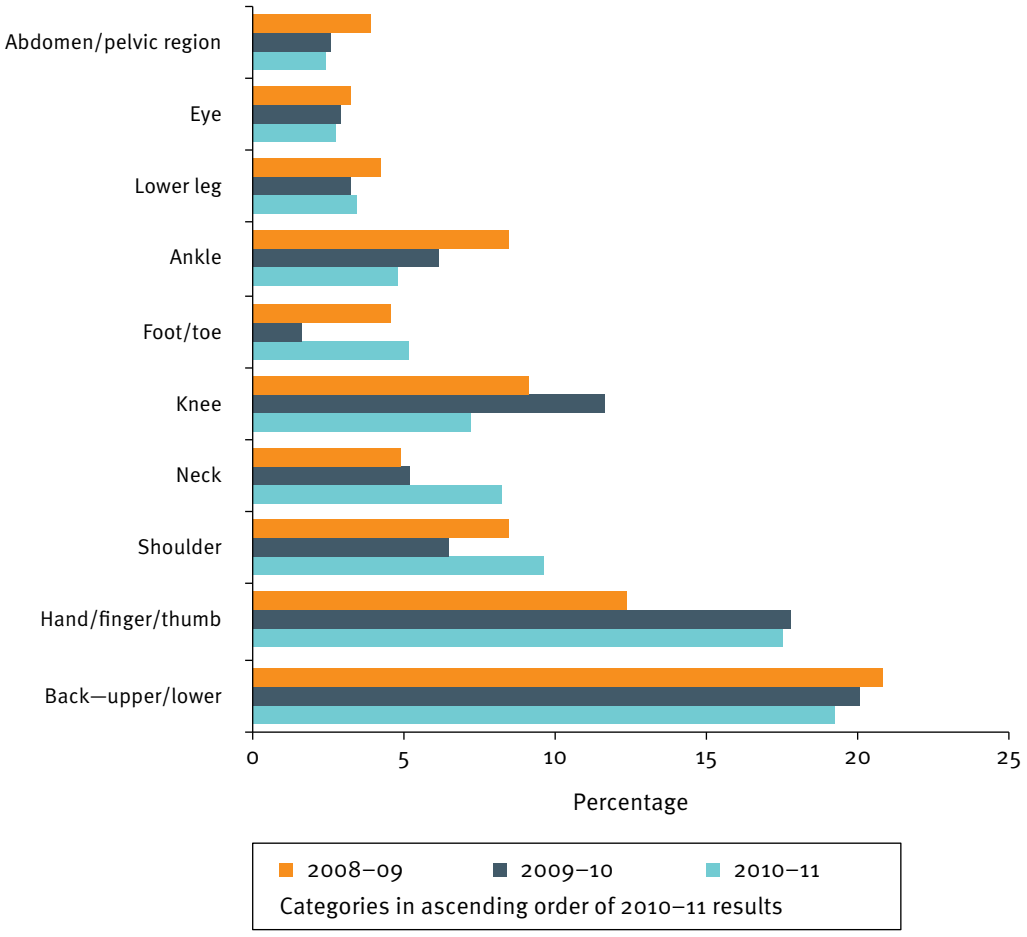


Figure 5.2: Nature of injury, 2008–11

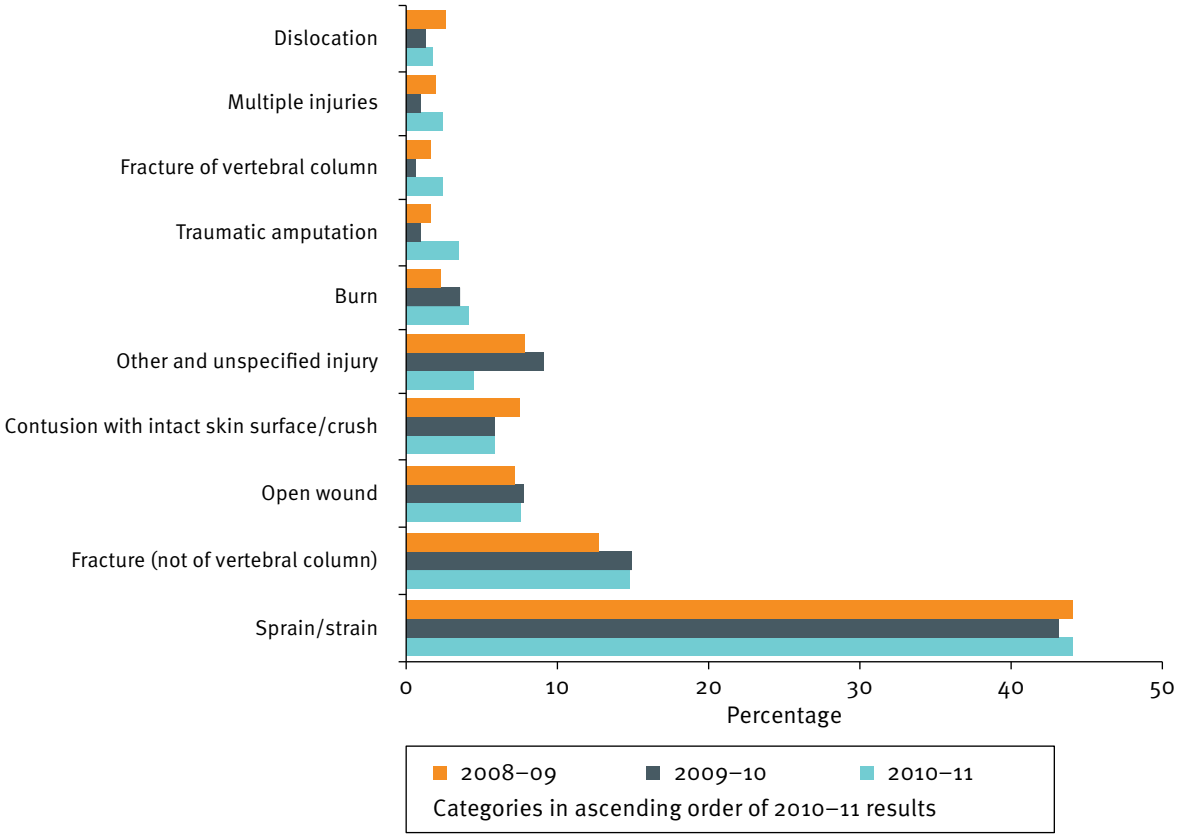


Figure 5.3: Mechanism of injury (the action, exposure or event that is the direct cause of the most serious injury), 2008–11

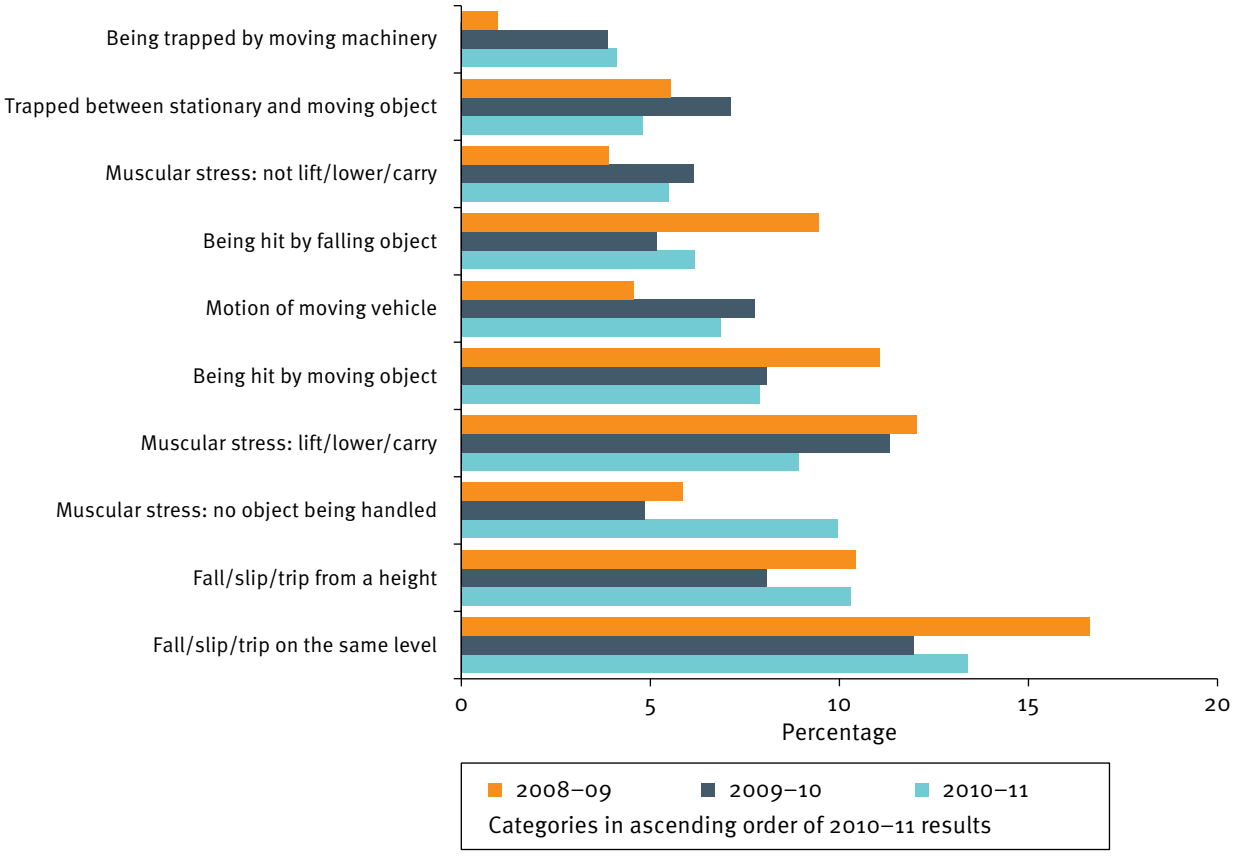


Figure 5.4: Breakdown agency—equipment (the equipment that was principally involved in, or most closely associated with, the injury), 2008–11

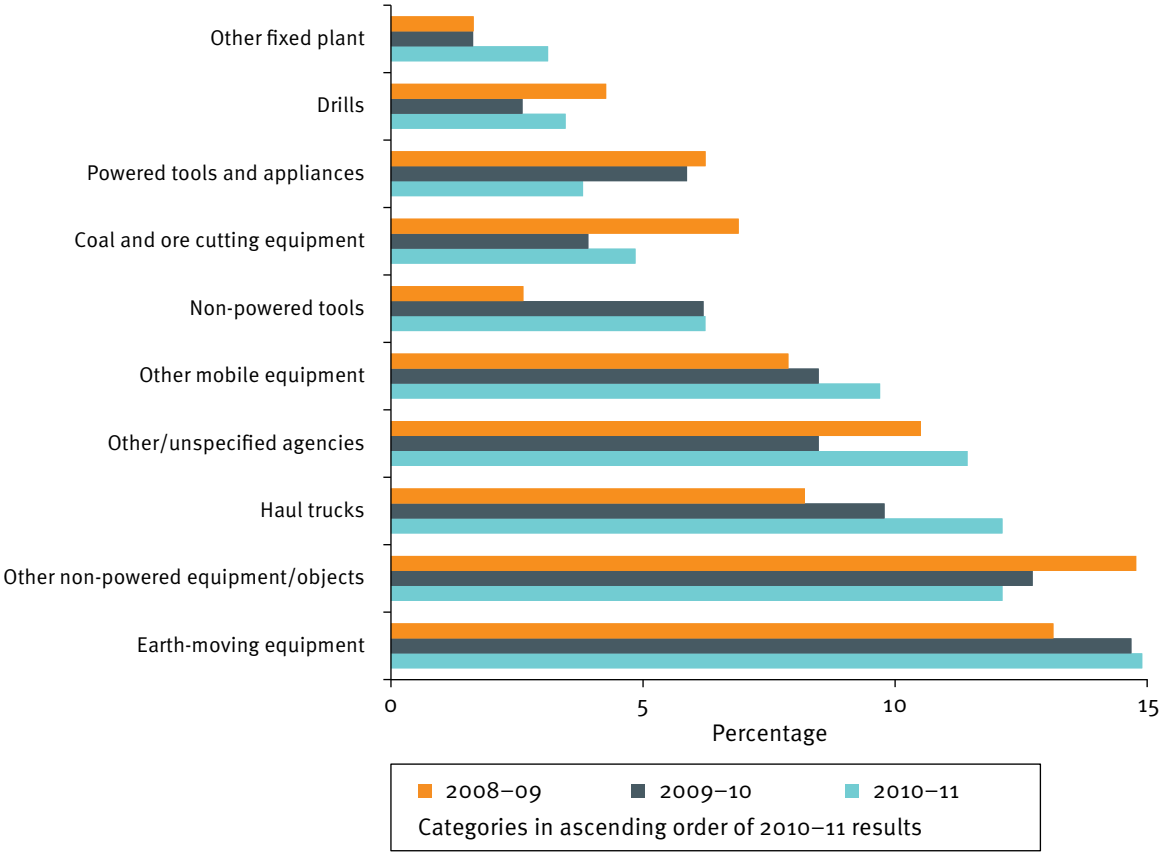
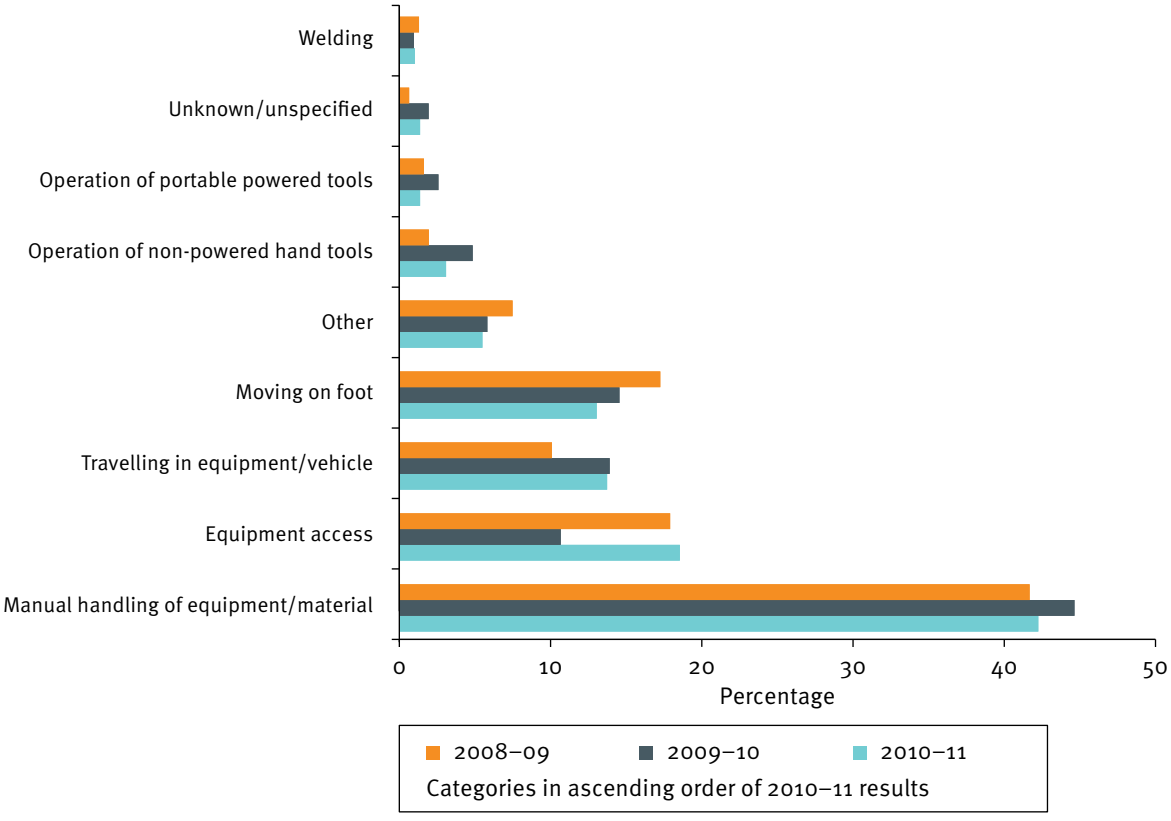


Figure 5.5: Occurence class of injuries—activity (the activity that was principally involved in, or most closely associated with, the injury), 2008–11



5.1 Age analysis of injury classification data

The breakdown of age across the coal industry, based on data collected for the Coal Mine Workers Health Scheme, is shown in Figure 5.6. Note that the average age from 1996 to 2011 is 37 years old. The number of days lost per injury in relation to age is shown in Figure 5.7.

Table 5.1 provides a breakdown of Queensland mining LTIs (2004–11) across ten-year age groupings (20s, 30s, 40s and 50+).

The age-related injury profile is presented by a comparison of three classifications of injury data:

- nature of injury
- mechanism of injury
- breakdown agency—circumstance.

The analysis identifies the highest classifications for each age group and gives an indication of which age group had the highest proportion of a single type of lost time injury.

Figure 5.6: Age distribution (coal industry), 1996–2011

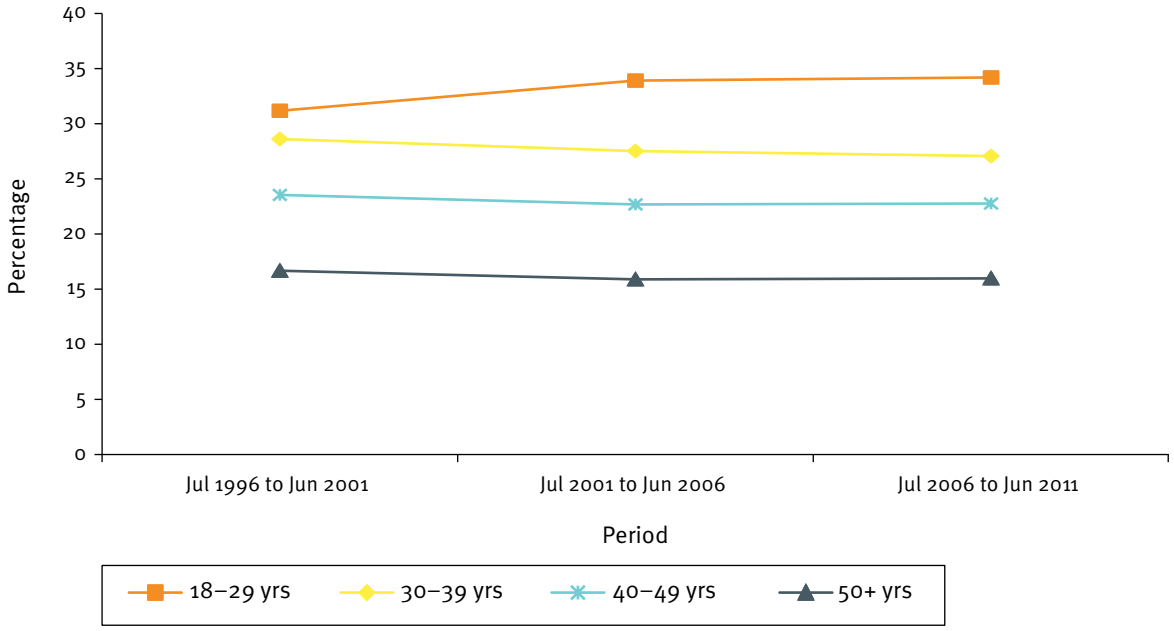


Figure 5.7: Number of days lost per age group to lost time injuries, 2011

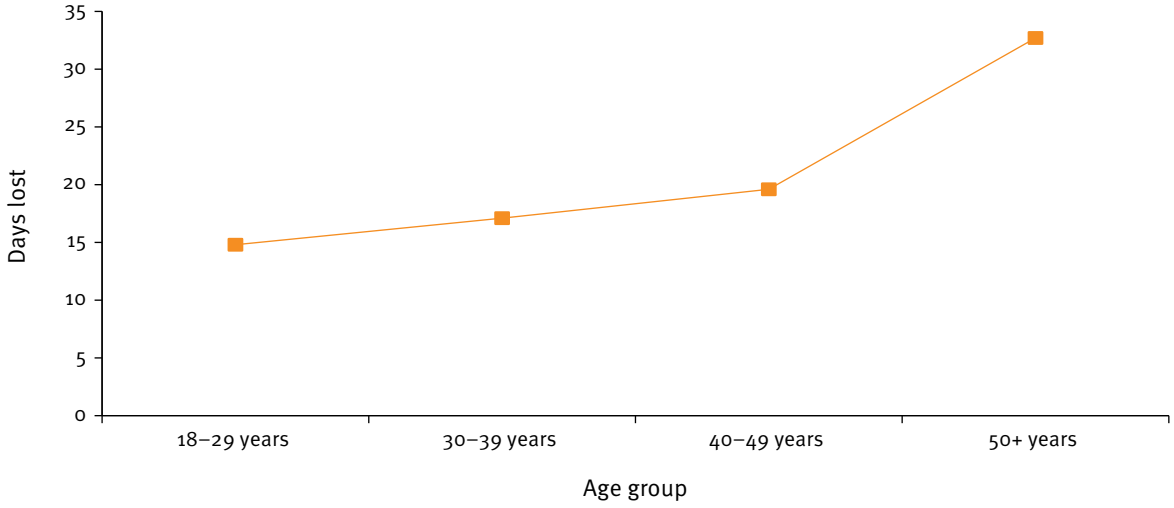


Table 5.1: Lost time injuries in all sectors—percentage of type across all groups, 2004–11

		18–29 yr old (20s) 22.9% of all LTIs		30–39 yr old (30s) 29.3% of all LTIs		40–49 yr old (40s) 25.9% of all LTIs		50+ yr old (50s) 21.8% of all LTIs	
		% in age group	% of all LTIs	% in age group	% of all LTIs	% in age group	% of all LTIs	% in age group	% of all LTIs
Nature of injury	Sprain/strain	31.8	7.3	45.4	13.3	45.2	11.7	48.4	10.5
	Fracture (not of vertebral column)	14.6	3.4	14.0	4.1	15.6	4.1	13.0	2.8
	Open wound	10.0	2.3	5.1	1.5	6.5	1.7	7.9	1.7
	Contusion with intact skin surface/crush	8.9	2.0	7.5	2.2	7.5	1.9	4.9	1.1
	Other and unspecified injury	7.1	1.6	6.5	1.9	7.3	1.9	6.9	1.5
	Burn	5.8	1.3	4.2	1.2	2.4	0.6	2.2	0.5
	Foreign body (not superficial skin injury)	4.2	1.0	2.1	0.6	2.0	0.5	1.4	0.3
Mechanism of injury	Fall/slip/trip on the same level	12.3	2.8	12.9	3.8	16.0	4.1	13.8	3.0
	Being hit by moving object	11.9	2.7	8.3	2.4	6.3	1.6	6.9	1.5
	Being hit by falling object	10.4	2.4	6.0	1.8	6.5	1.7	7.7	1.7
	Muscular stress—lift/lower/carry object	8.9	2.0	11.6	3.4	9.4	2.4	9.9	2.2
	Trapped between stationary and moving object	8.7	2.0	6.6	1.9	4.1	1.1	4.7	1.0
	Fall/slip/trip from a height	6.0	1.4	6.9	2.0	11.7	3.0	13.0	2.8
	Muscular stress—no object being handled	5.2	1.2	5.4	1.6	5.1	1.3	6.7	1.5
	Being trapped by moving machinery	4.2	1.0	3.6	1.1	3.2	0.8	1.2	0.3
	Hitting moving object	4.0	0.9	1.5	0.4	2.2	0.6	2.4	0.5
	Motion of moving vehicle	3.7	0.8	6.9	2.0	6.5	1.7	5.7	1.2
	Muscular stress—handling object not lift/lower/carry	3.3	0.8	5.3	1.5	4.6	1.2	6.9	1.5
	Unspecified mechanisms of injury	2.9	0.7	3.6	1.1	3.4	0.9	2.8	0.6
	Single contact with chemical substance	2.7	0.6	2.3	0.7	1.0	0.3	0.8	0.2
	Contact with hot object	2.3	0.5	2.1	0.6	1.5	0.4	1.4	0.3
	Hitting stationary object	2.3	0.5	3.5	1.0	5.3	1.4	4.5	1.0
Breakdown agency—circumstance	Working on equipment	24.3	5.6	17.7	5.2	16.3	4.2	16.2	3.5
	Moving on foot	13.7	3.1	14.1	4.1	17.9	4.6	19.6	4.3
	Other manual handling	10.4	2.4	12.2	3.6	12.4	3.2	13.0	2.8
	Other	9.1	2.1	10.1	3.0	8.0	2.1	5.3	1.1
	Travelling in equipment/vehicle	8.1	1.9	13.2	3.9	12.6	3.3	14.0	3.0
	Operation of non-powered hand tools	6.7	1.5	4.1	1.2	4.3	1.1	3.8	0.8
	Loading/unloading from vehicles	3.9	0.9	3.8	1.1	3.2	0.8	3.4	0.8
	Operation of portable powered tools	3.9	0.9	3.3	1.0	2.2	0.6	3.2	0.7
	Unknown/unspecified	3.3	0.8	2.4	0.7	2.0	0.5	1.6	0.4
	Other equipment access (e.g. moving about)	3.1	0.7	3.6	1.1	6.0	1.5	5.5	1.2
	Transporting manually (i.e. carrying, dragging)	3.1	0.7	2.9	0.8	2.6	0.7	2.0	0.4
	Descending—ground/floor involved	2.5	0.6	4.2	1.2	4.8	1.2	3.8	0.8
	Loading/unloading shelves, racks, bins, etc.	2.1	0.5	1.5	0.4	1.5	0.4	0.8	0.2
	Descending—ground/floor not involved	1.5	0.4	1.7	0.5	2.6	0.7	2.0	0.4
	Shovelling	1.5	0.4	0.9	0.3	0.3	0.1	0.4	0.1

6. Lead performance indicators

Lead indicators or positive performance indicators (PPIs) are measures of pre-emptive actions or initiatives that assist in preventing workplace injury and disease. This is considered a more proactive approach than the use of lag indicators, such as the lost time injury system, which, by their nature, measure the event or its impact after it has already occurred.

Questions in relation to PPIs have been included in the mines census since 2007–08. The questions cover areas of risk management, audits, reviews and HPIs and are designed to collect data on safety and health issues concerning both employees and contractors.

The data are presented in graphs as follows:

- Figure 6.1: Sites with a register of key hazards on site, 2008–11
- Figure 6.2: Sites where key hazards on site are identified using a formal system, 2008–11
- Figures 6.3.1–6.3.3: Sites that have undertaken formal risk assessments within the previous 12 months and the number of risk assessments performed, 2008–11
- Figure 6.4.1–6.4.3: Workers and contractors routinely involved in conducting formal risk assessments, 2008–11
- Figure 6.5.1–6.5.3: Audits (internal and external) conducted in the previous 12 months, 2008–11
- Figure 6.6: Sites with no outstanding improvement actions that came out of audits, 2008–11
- Figure 6.7.1–6.7.3: Workers involved as auditors in internal audits during the previous 12 months, 2008–11
- Figure 6.8: Sites with a formal reporting system for capturing and reporting high potential incidents, 2008–11
- Figure 6.9: Improvement actions resulting from investigations into high-potential incidents, 2008–11

Figure 6.1: Sites with a register of key hazards on site, 2008–11

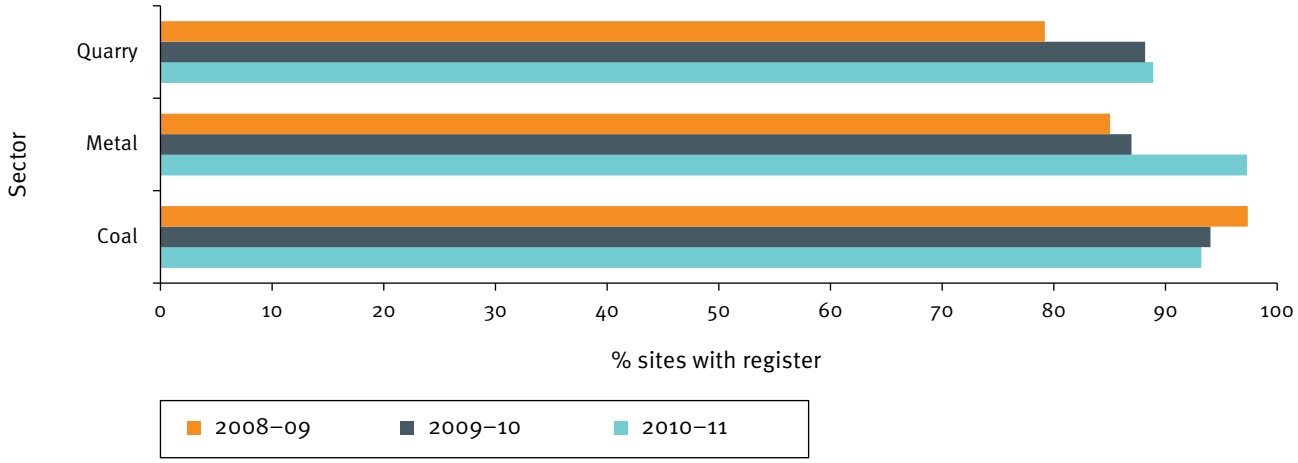


Figure 6.2: Sites where key hazards on site are identified using a formal system, 2008–11

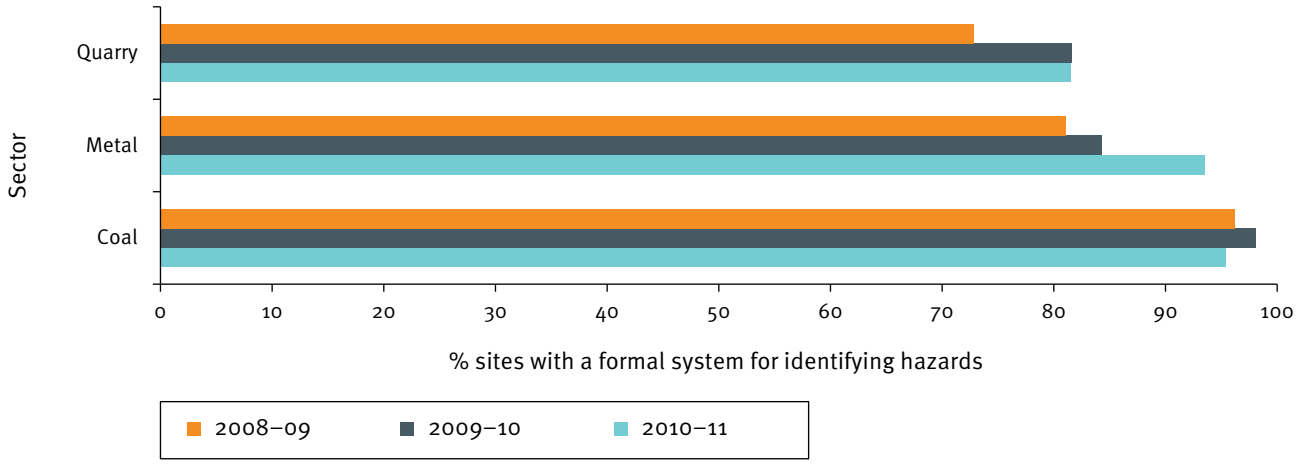


Figure 6.3.1: Coal sites that have undertaken formal risk assessments within the previous 12 months and the number of risk assessments performed, 2008–11

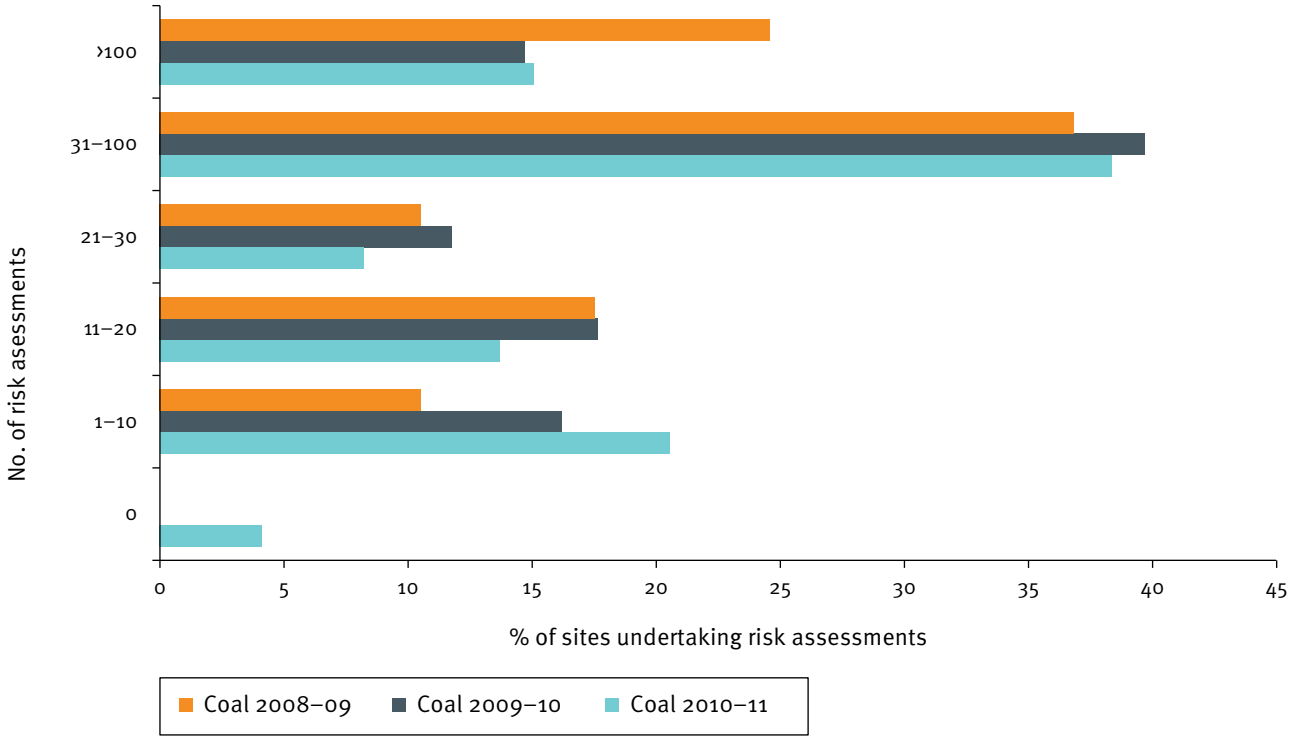


Figure 6.3.2: Metalliferous sites that have undertaken formal risk assessments within the previous 12 months and the number of risk assessments performed, 2008–11

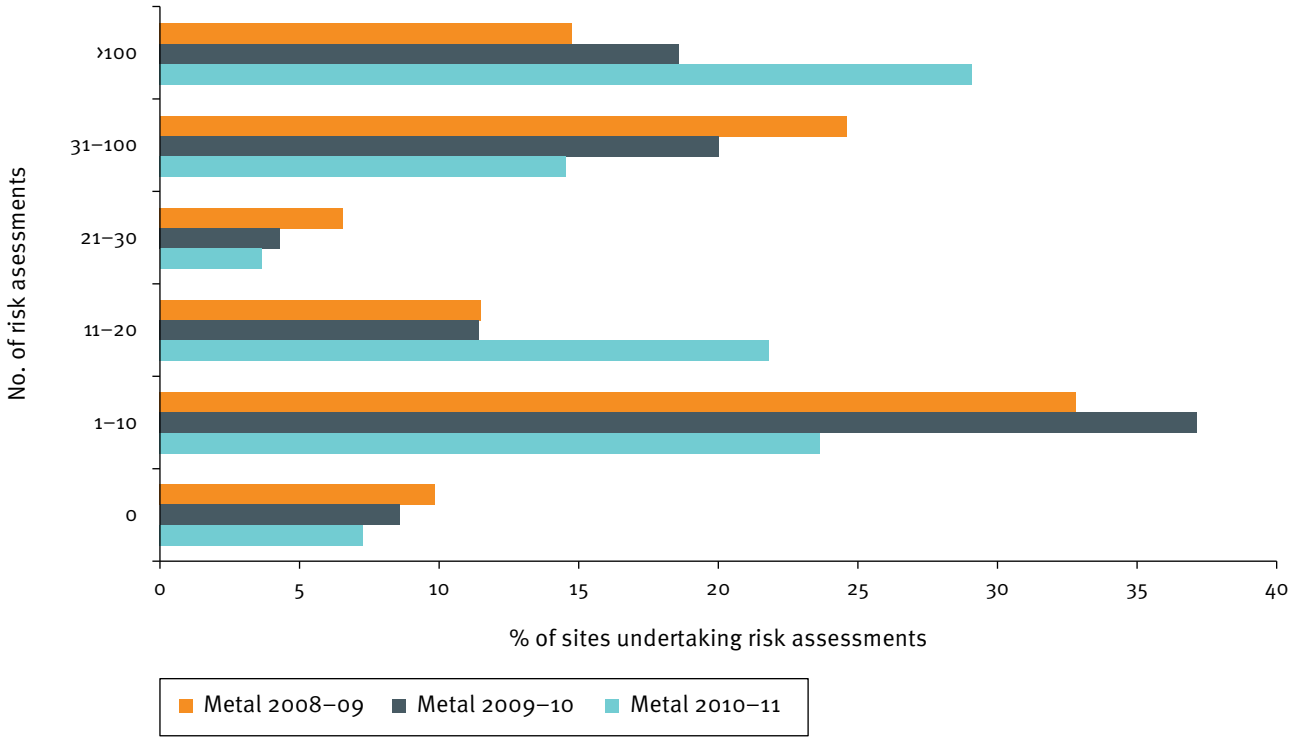


Figure 6.3.3: Quarry sites that have undertaken formal risk assessments within the previous 12 months and the number of risk assessments performed, 2008–11

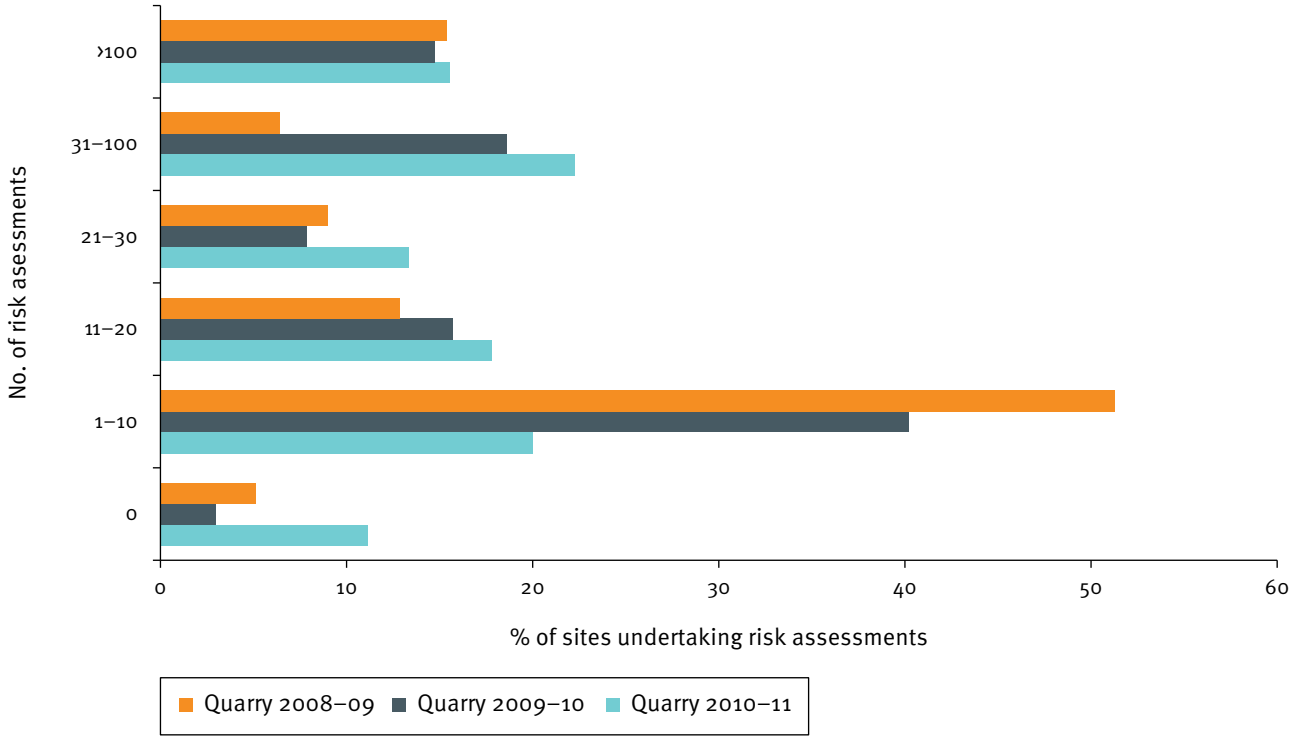


Figure 6.4.1: Coal sector workers and contractors routinely involved in conducting formal risk assessments, 2008–11

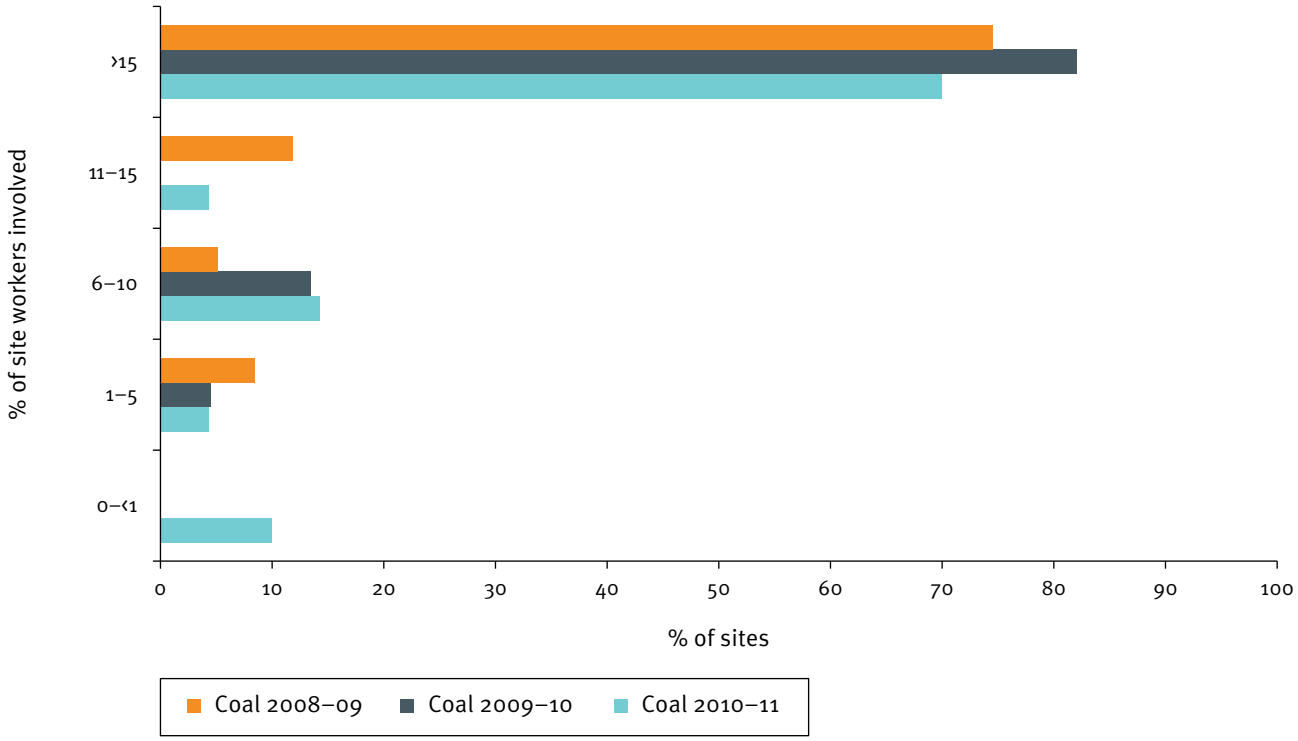


Figure 6.4.2: Metalliferous sector workers and contractors routinely involved in conducting formal risk assessments, 2008–11

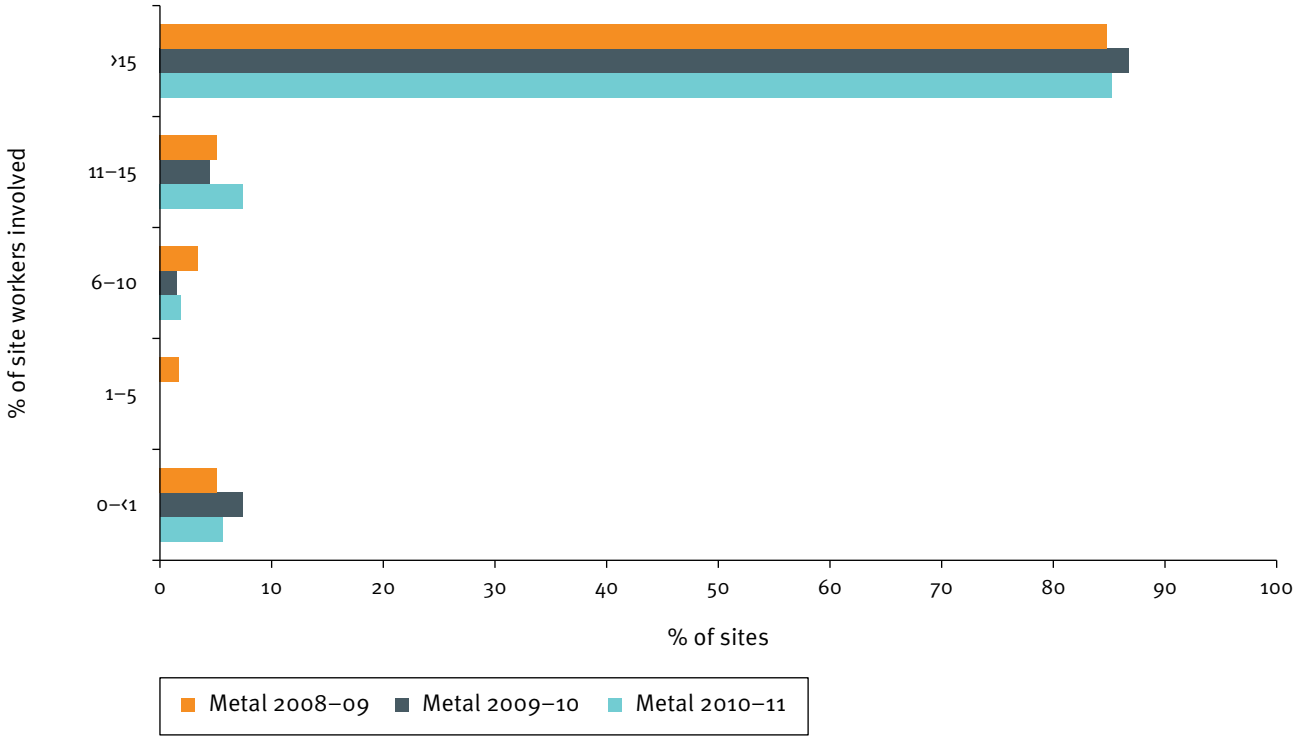


Figure 6.4.3: Quarry sector workers and contractors routinely involved in conducting formal risk assessments, 2008–11

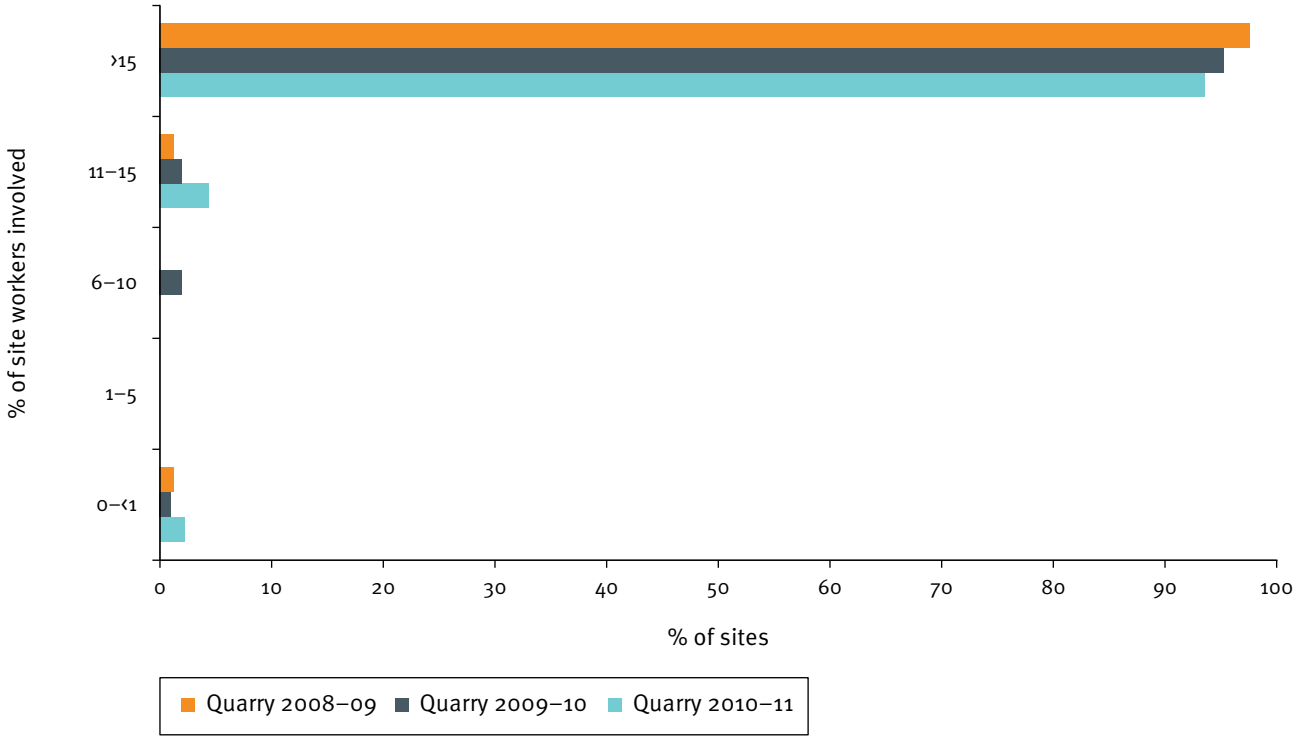


Figure 6.5.1: Coal sector audits (internal and external) conducted in the previous 12 months, 2008–11

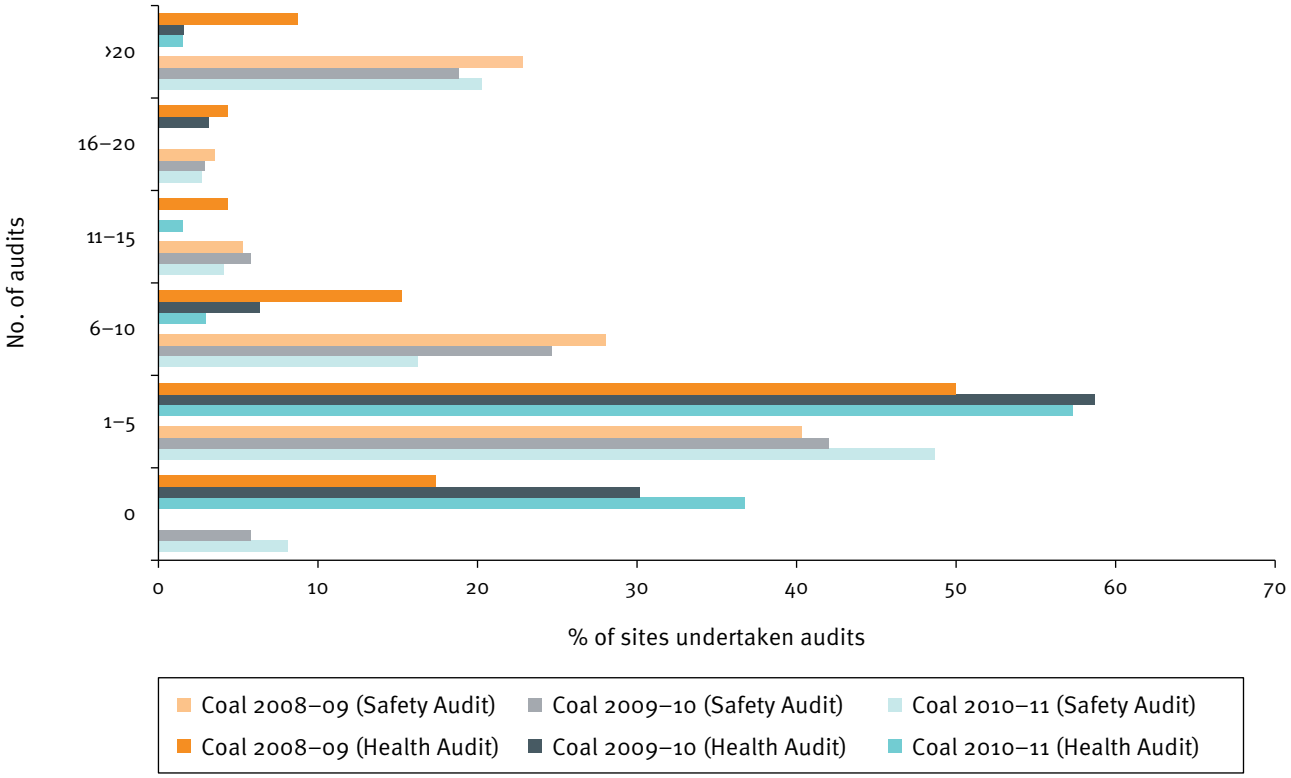


Figure 6.5.2: Metalliferous sector audits (internal and external) conducted in the previous 12 months, 2008–11

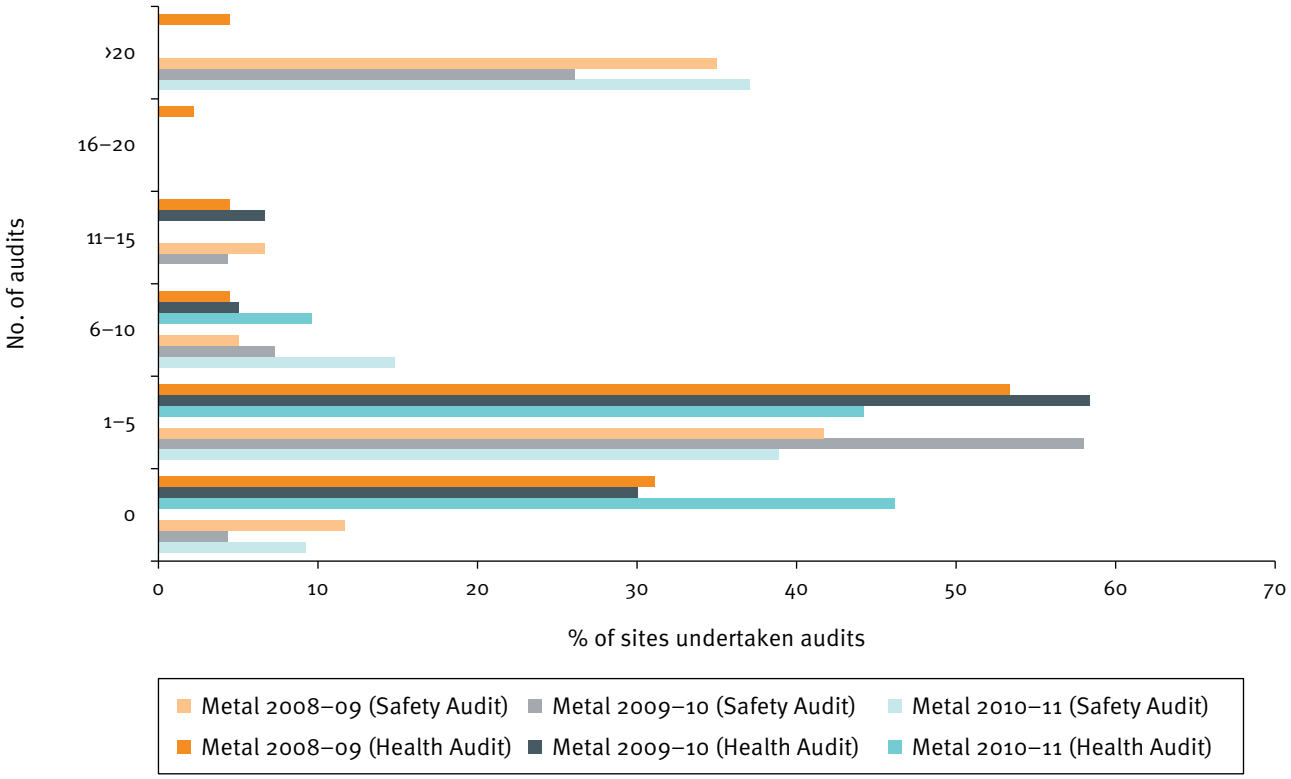


Figure 6.5.3: Quarry sector audits (internal and external) conducted in the previous 12 months, 2008–11

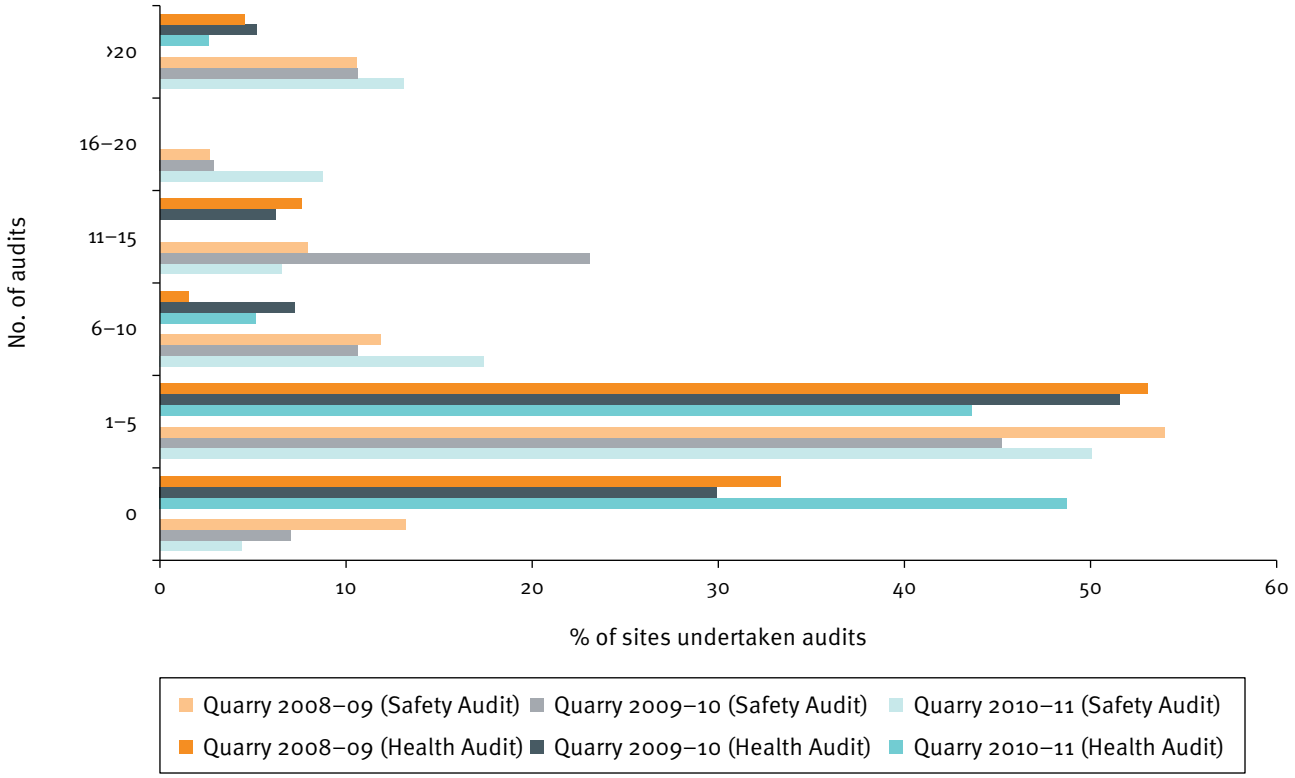


Figure 6.6: Sites with no outstanding improvement actions that came out of audits, 2008–11

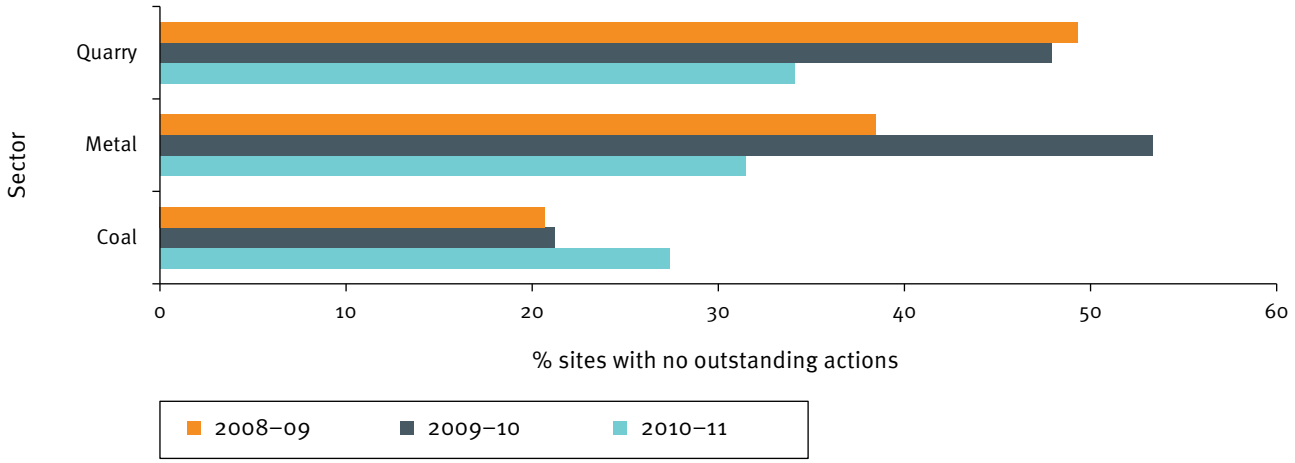


Figure 6.7.1: Coal sector workers involved as auditors in internal audits during the previous 12 months, 2008–11

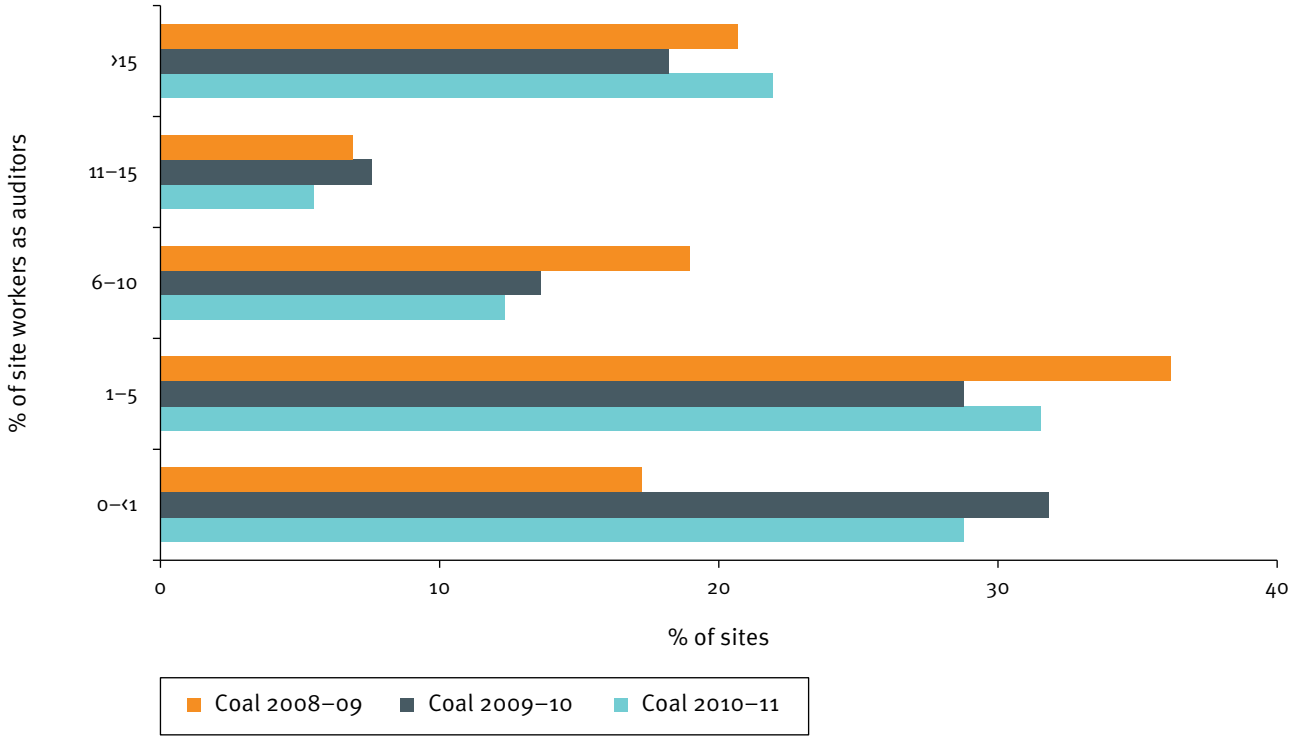


Figure 6.7.2: Metalliferous sector workers involved as auditors in internal audits during the previous 12 months, 2008–11

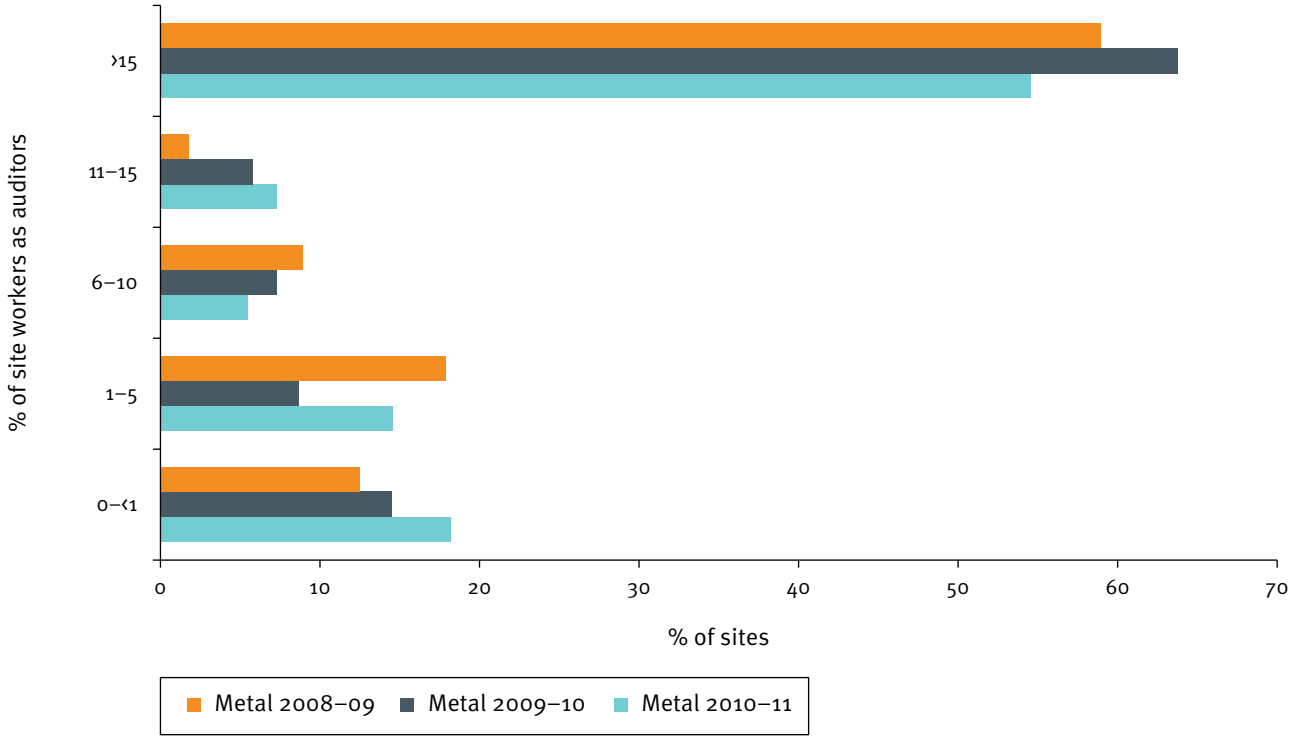


Figure 6.7.3: Quarry sector workers involved as auditors in internal audits during the previous 12 months, 2008–11

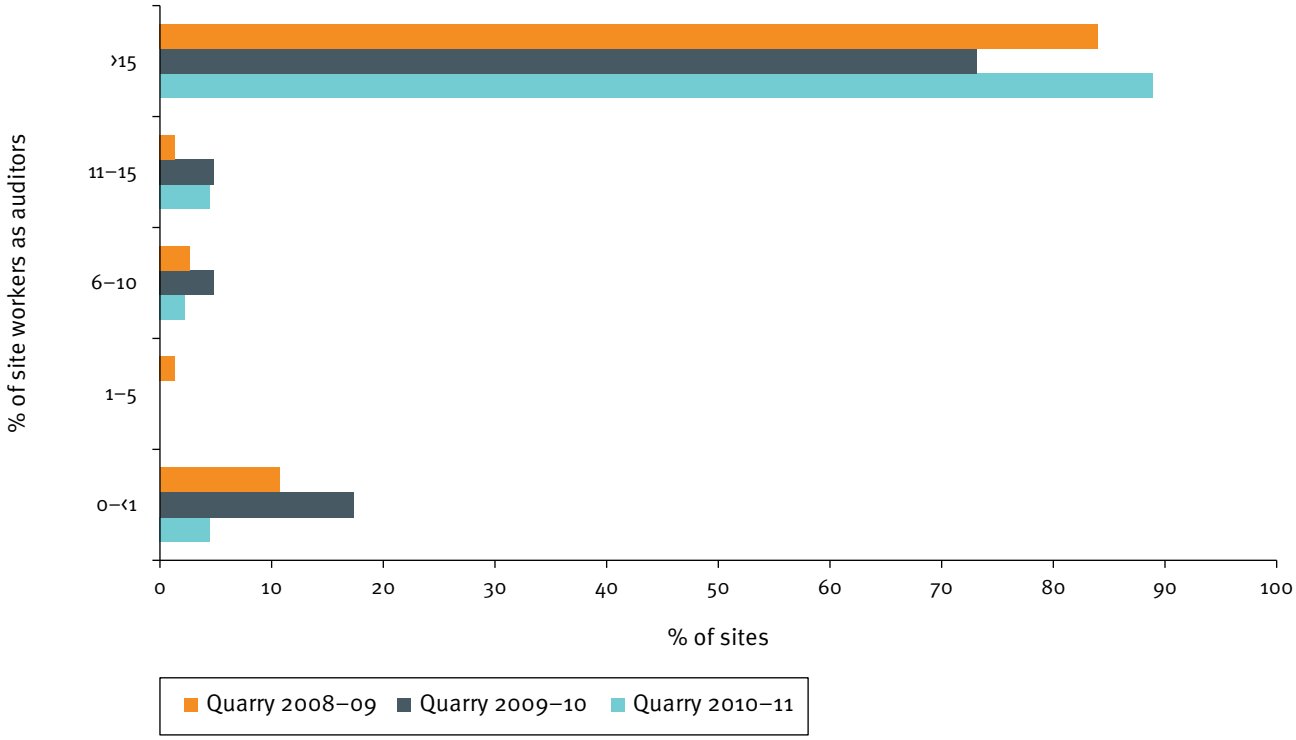


Figure 6.8: Sites with a formal reporting system for capturing and reporting high-potential incidents, 2008–11

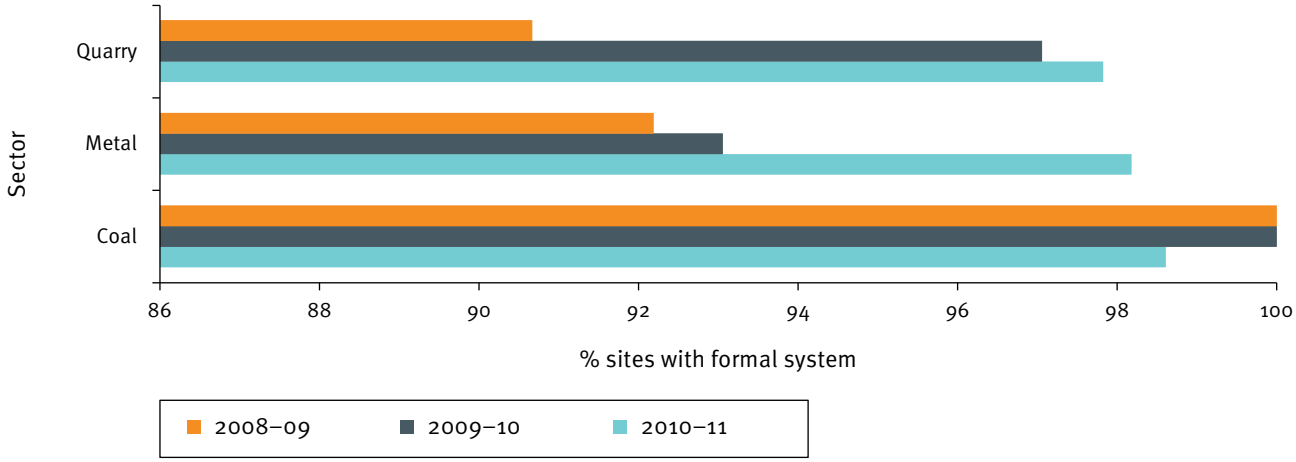


Figure 6.9: Improvement actions resulting from investigations into high-potential incidents, 2008–11

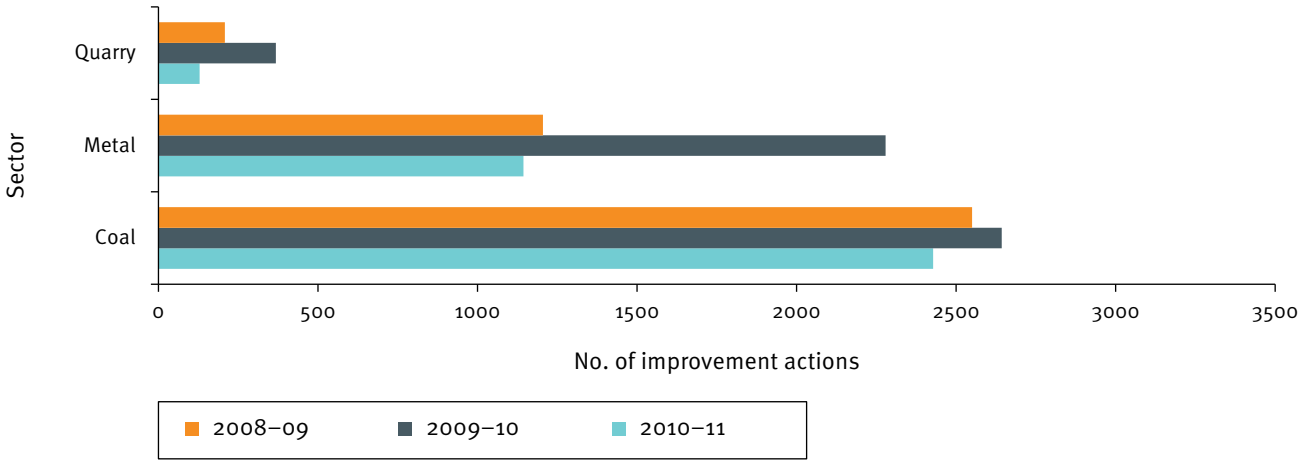
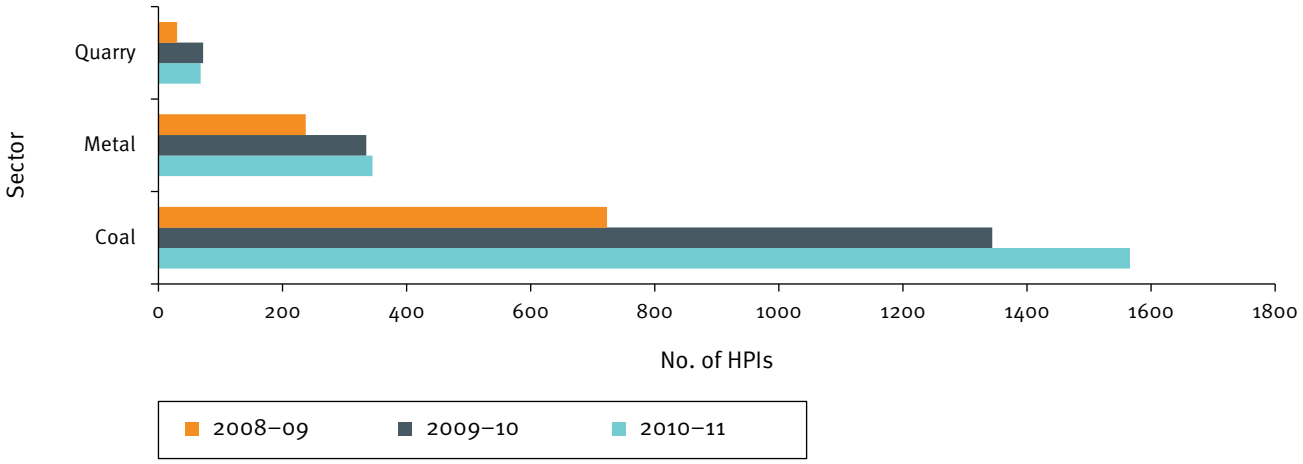


Figure 6.10: Number of high-potential incidents, 2008–11



7. Health report

7.1 Coal mine health assessments

The Coal Mine Workers Health Scheme requires that an employer must ensure a health assessment is carried out for each person who is to be employed, or is employed, by the employer as a coal mine worker. The assessment is carried out by an NMA in accordance with a departmental medical assessment form. The assessment must be carried out before the person is employed as a coal mine worker and periodically as decided by the NMA, but at least once every five years. There is no such regulated scheme in the metalliferous and quarrying sectors.

The most recent data regarding the number of health assessments carried out are detailed in Table 7.1.

There are over 95 000 medicals entered into the Coal Mine Workers Health Scheme database. The earliest of these medicals date from 1983. In 2010–11 there were 36 532 medicals received by the department's Health Surveillance Unit. There were 32 568 workers in the coal mining industry as at 30 June 2011, an increase of 5713 workers since 30 June 2010. Based on an estimated attrition rate of 10% it was forecast that approximately 8400 medicals for new workers and 6500 medicals for existing workers (based on the five-yearly medical interval) would be required. Therefore, the total expected number of medicals for 2010–11 was approximately 14 900, leaving 21 620 to be accounted for.

Some of the additional 21 620 medicals received by the Health Surveillance Unit are possibly carried over from previous years. It is also possible that many of the medicals received are for employees who are not coal mine workers. That latter is due to the fact that many employers or employment agencies are insisting that prospective employees obtain medicals prior to employment. This practice is counter to the premise of the Coal Mine Workers Health Scheme, which is to assess a person against the job they are doing or going to do.

The Health Surveillance Unit has taken a number of measures to combat these problems, such as creating an interim Health Assessment Form that can be used by doctors when assessing people who are not yet employed in the industry. In addition, medicals received that are clearly for people not yet working in the industry are returned to the medical practice where the assessment took place.

The department is currently investigating automating the health assessment scheme to meet the increasing number of medical records received by the Health Surveillance Unit.

Table 7.1: Health assessments entered into the Coal Mine Workers Health Scheme Database, 2005–11

	2005 –06	2006 –07	2007 –08	2008 –09*	2009 –10	2010 –11
New industry entrants	11 718	10 881	5 324	589	9 668	9 572
Periodic follow-up medicals for existing workers	6 959	5 532	2 770	290	6 807	5 947
Total	**18 677**	**16 413**	**8 094**	**879**	**16 475**	**15 519**
Medicals awaiting entry into the database**	n/a	n/a	10 157	26 633	58 545	60 617

* The low number of medicals entered in 2008–09 was due to a change to a new system, which was not fully commissioned until June 2009.

** Some of these medicals may have been done in previous years due to NMAs not submitting medicals immediately upon completion.

7.2 Coal mine sickness, absenteeism and other lost time statistics

The department compiles statistics on lost time due to sickness, injuries, unauthorised absence and other causes (e.g. annual leave or bereavement leave) based on monthly reports it receives from coal mines. These are shown in Table 7.2.

Table 7.2: Distribution of lost time in coal mines, 2011

	Opencut		Underground	
	Hours	%	Hours	%
Injury/compensation	33 728	2.5	5 052	1.0
Sickness and medical	579 899	43.3	131 863	26.5
Unauthorised absence	43 713	3.3	44 870	9.0
Other	682 618	50.9	316 226	63.5
Total	**1 339 958**	**100.0**	**498 011**	**100.0**
Hours lost per worker		51		80

8. Workers compensation data

The mining industry injury compensation data are sourced from OESR and cover the 2010–11 financial year. The data includes compensation information provided by WorkCover Queensland and the self-insurers through Q-Comp. The data in this report have been aggregated for each of the coal, metalliferous and quarry sectors.

There were 1391 workers compensation claims in the mining industry for 2010–11. The sector breakdown of claims is as follows:

- the coal mining sector incurred 936 claims costing $8.3 million ($8888 per worker)
- the metalliferous sector had 411 claims costing $2.7 million ($6693 per worker)
- the quarry sector had 44 claims costing $301 772 ($6858 per worker).

The number of claims and associated costs for 2010–11 can be found in Table 8.1. These data do not capture smelting operations on mine sites in Queensland. Such operations are categorised separately in the OESR data under smelting operations, not mining.

Table 8.1: Workers compensation data—claims and associated costs, 2010–11

Nature of injury		Coal mining	Metalliferous mining	Quarrying	All	Cost per claim
Anxiety/stress disorder	Payment $	539 247	59 031	0	598 278	54 389
	No. of claims	8	3	0	11	
Contusion, bruising and superficial crushing	Payment $	165 835	168 175	3 789	337 799	2 619
	No. of claims	79	45	5	129	
Deafness	Payment $	638 402	138 842	0	777 244	10 094
	No. of claims	60	17	0	77	
Disc—displacement, prolapse, degeneration or hernia	Payment $	98 717	119 723	0	218 440	16 803
	No. of claims	8	5	0	13	
Dislocation	Payment $	114 005	94 621	17 600	226 226	9 836
	No. of claims	14	7	2	23	
Hernia	Payment $	130 768	136 268	0	267 036	10 681
	No. of claims	14	11	0	25	
Laceration or open wound not involving traumatic amputation	Payment $	50 414	165 404	21 426	237 244	2 791
	No. of claims	48	31	6	85	
Other fractures (not elsewhere classified)	Payment $	831 130	297 327	154 366	1 282 823	17 573
	No. of claims	48	22	3	73	
Soft tissue injuries due to trauma or unknown mechanisms (insufficient specific information)	Payment $	48 479	43 219	10 824	102 522	3 943
	No. of claims	18	7	1	26	
Tendonitis	Payment $	141 913	130 309	0	272 222	14 327
	No. of claims	10	9	0	19	
Trauma to joints and ligaments (not elsewhere classified)	Payment $	1 181 433	125 894	1 193	1 308 520	9 551
	No. of claims	108	27	2	137	
Trauma to joints and ligaments (unspecified)	Payment $	538 484	84 116	17 124	639 724	8 530
	No. of claims	54	18	3	75	
Trauma to muscles	Payment $	279 315	13 359	2 182	294 856	3 985
	No. of claims	54	16	4	74	
Trauma to muscles and tendons (not elsewhere classified)	Payment $	1 136 159	143 496	6 850	1 286 505	15 883
	No. of claims	63	17	1	81	
Trauma to muscles and tendons (unspecified)	Payment $	849 407	603 259	36 158	1 488 824	5 242
	No. of claims	161	114	9	284	
Traumatic amputation	Payment $	35 806	162 956	0	198 762	24 845
	No. of claims	4	4	0	8	
Other	Payment $	1 539 775	264 700	30 260	1 834 734	7 310
	No. of claims	185	58	8	251	
Total	**Payment $**	**8 319 291**	**2 750 699**	**301 772**	**11 371 761**	**8 175**
	No. of claims	**936**	**411**	**44**	**1 391**	

Figure 8.1: Workers compensation claims—major injury/illness types, 2006–11

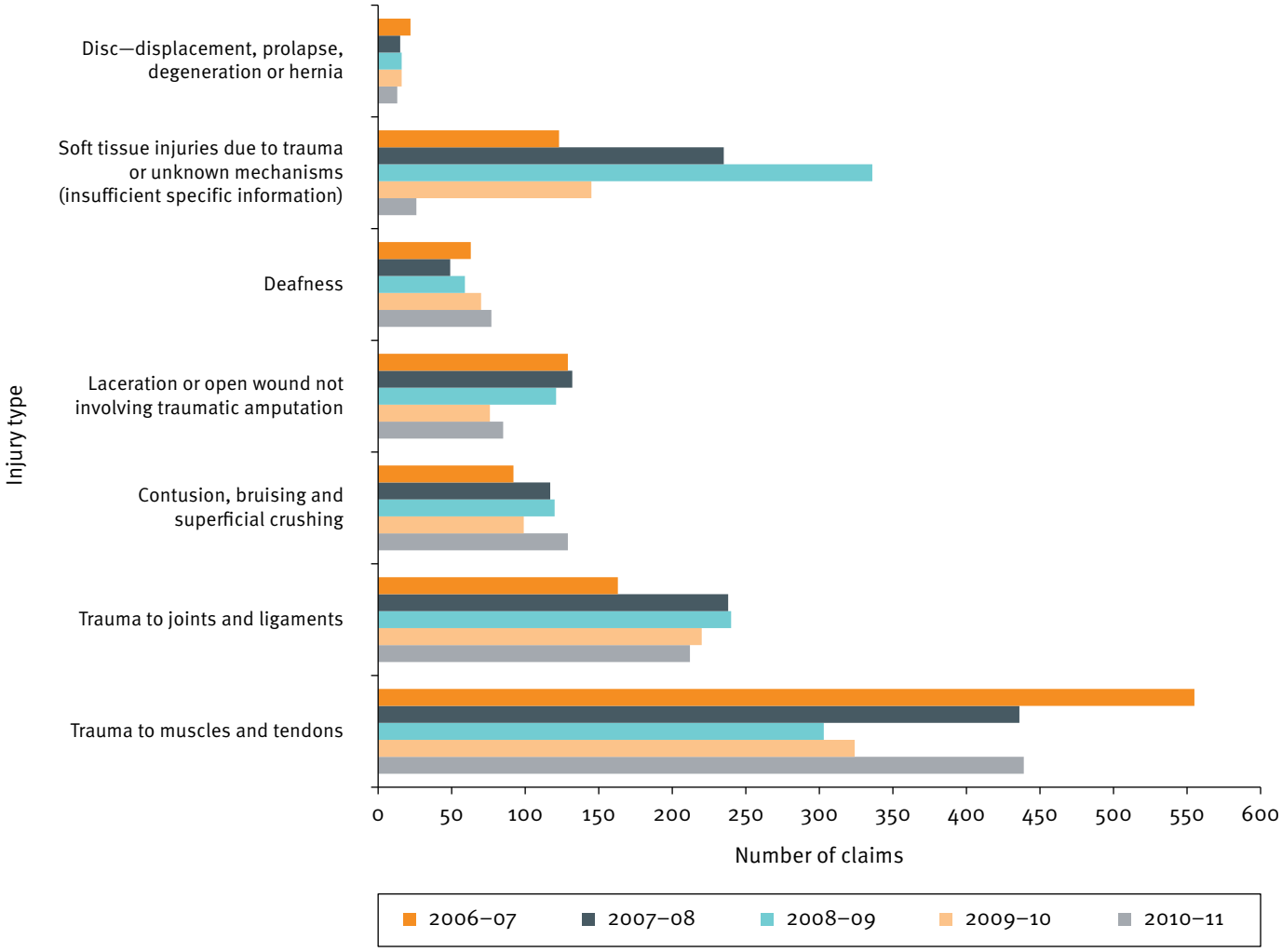
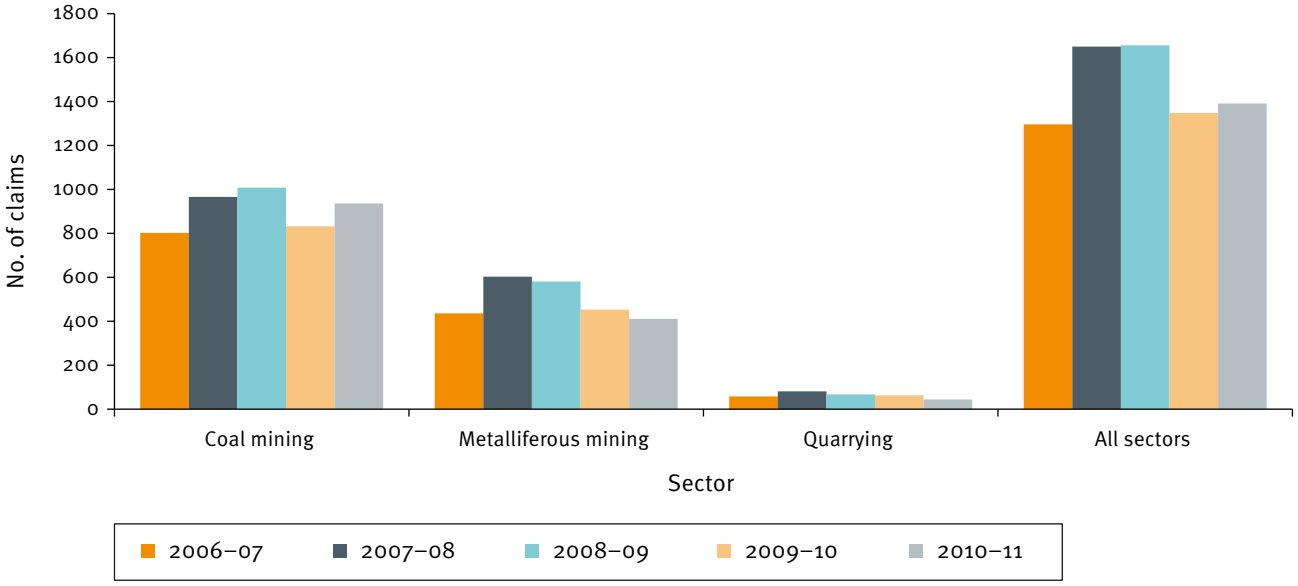


Figure 8.2: Five-year comparison of workers compensation claims per sector, 2006–11



9. Collection of information

Whenever an LTI or HPI occurs, the mine or quarry operator must submit a completed Queensland Mining Incident Report Form to the local mines inspector.

Large mines and quarries (with 10 or more employees) also provide a monthly summary that lists new and carryover LTIs and DIs, re-opened injuries, days lost and/or on alternative duties, and hours worked during the period. Data on the number of workers in the industry are sourced through the quarterly Safety and Health Levy Submissions from industry. The levy data are used to validate the hours of work data submitted and the levy data are given preference if there is a significant difference. Eighteen consecutive years of injury/disease data for coal and metalliferous mines are now available for analysis.

The report is available on the Department of Employment, Economic Development and Innovation's mining and safety website at www.mines.industry.qld.gov.au

More detailed analysis of injuries in the mining and quarrying industry is available from:

Safety and Health
Department of Employment, Economic Development and Innovation
PO Box 15216
City East Qld 4002
Telephone +61 7 3404 3143
minesafetystats@deedi.qld.gov.au

Requests for information during 2010–11 included:

- A mining company requested information on incidents relating to shuttle cars, continuous miners and other mobile plant–coal mine worker interaction, mobile plant to mobile plant interaction and longwall shelf movement–coal mine worker interaction. The information provided was to confirm which scenario resulted in the largest number of HPIs over the last few years. From these scenarios it was to be determined which to target as a trial.
- A Canadian government department requested historical information on the LTIFR in Queensland mines. These statistics were to be used to compare Canada's mining industry with that of other countries.
- Information on the number of accidents/incidents occurring in relation to employees and contractors was requested for presentation at the Coal Mining Contractor Safety Seminar in Mackay.
- A safety and training superintendent at a Queensland mine requested information relating to 'in cab' distractions (for example, two-way radio, commercial radio, insect/debris flying through windows) that have resulted in or contributed to a recordable incident. This information was used in a safety brief to be presented at the mine.
- A departmental officer requested information on the number of employees in the Queensland mining industry. This information was used in the production of maps. These maps are used by other government departments and local councils in planning for housing, roads, and so on.

- A departmental officer requested information on all crane-related incidents from 2005 to 2010. This information was used in producing an inspection report.
- A federal government department requested information on the number and causes of fatalities in Queensland mines.
- A departmental officer requested information on accidents and injuries relating to tyre explosions. This information was used to respond to a media query.
- A departmental officer requested statistics relating to underground metalliferous fires. This information was used in research into reducing underground fires.
- A mining company strategist requested a summary of vehicle-related HPIs in underground metalliferous mines. This information was used to determine suitable proximity-awareness and collision-avoidance systems.
- A safety officer at a mine requested information on LTIs and the time of day that these occurred. This information was used in a research project.
- An officer at an exploration company requested information on surface drill incidents from 2005–2010. This information was used in a research project.
- A safety and compliance administrator at a Queensland coal mine requested historical TRIFR data. These statistics were to be used in determining the mine's safety targets for the upcoming year.
- A federally funded university study received information regarding the number of HPIs and LTIs related to electrical isolation at the longwall face.
- A coal mine requested industry statistics regarding incidents at underground coal mines broken down by hazards and the number of people caught in rotating equipment. The mine was carrying out a semi-quantitive risk assessment for the top 20 risks on its mine site. Mine staff members were to discuss and update their current risk profile on consideration of the information.
- A departmental officer requested information on the causes of fatalities in Queensland mines. This information was presented at a seminar for all mine CEOs. Statistics were provided for 2004–2010 and it was determined that a large proportion of the fatalities were as a result of vehicle interaction.

Access to the Lost Time Accident database

Industry can be provided with selected data from the departmental Lost Time Accident Database, which was used in the compilation of this report. Individual mine operators can obtain their data as well as the statistical sector-wide data. Mine operators can also use these data as a benchmark in the preparation of their safety management systems. The Mines Inspectorate uses the data when planning audit programs.

Interested parties should contact the Mines Inspectorate at their nearest regional office:

Brisbane (Head Office): 07 3404 3143 or 07 3237 1631

Woolloongabba (South Region): 07 3238 3722

Rockhampton (Central Region): 07 4938 4340

Mackay (Central Region): 07 4967 1444

Townsville (North Region): 07 4760 7404

Mount Isa (North Region): 07 4747 2158

This report is delivered with the intention of providing useful information to industry organisations to build better safety and health management systems and processes across their operations.

The Mines Inspectorate welcomes suggestions for improvement and feedback on the report. Please call the DEEDI Customer Service Centre on 13 25 23 (within Australia) or +61 7 3404 6999 (outside Australia) with your comments.

Thanks and commendations are extended to the mining industry in Queensland for providing the data required to assemble this report.

Department of **Employment, Economic Development and Innovation**
13 25 23
www.deedi.qld.gov.au

CS1087 1/12

IN THE FAIR WORK COMMISSION

Matter No.:	**AM2014/190**
Title of Matter:	**Four yearly review of modern awards — Black Coal Mining Industry Award 2010 — Clause 18 — Accident Pay**

ANNEXURE DG-11
TO THE STATEMENT OF DAVID GUNZBURG DATED 24 FEBRUARY 2017

Statistics on workers in Australia
Published by Safe Work Australia
Table 2.1 - number, frequency rate and incidence rate of serious claims by industry (2009-10 to 2013-14)

Industry of employer	Number of serious claims					Frequency rate (serious claims per million hours worked)					Incidence rate (serious claims per 1000 employees)				
	2009-10	2010-11	2011-12	2012-13	2013-14p	2009-10	2010-11	2011-12	2012-13	2013-14p	2009-10	2010-11	2011-12	2012-13	2013-14p
Accommodation and food services	6 295	6 490	6 580	6 730	6 155	6.6	6.9	6.9	6.8	6.3	8.2	8.4	8.6	8.5	7.8
Accommodation	1 605	1 610	1 550	1 540	1 445	9.7	10.3	10.1	9.8	8.7	14.4	14.9	15.5	15.0	13.5
Food and beverage services	4 695	4 885	5 030	5 190	4 715	6.0	6.2	6.3	6.2	5.8	7.2	7.3	7.6	7.5	6.9
Cafes, restaurants and takeaway food services	2 850	2 990	3 220	3 325	2 945	5.3	5.3	5.6	5.5	4.9	6.0	6.0	6.5	6.4	5.6
Clubs (hospitality)	975	945	905	840	830	11.1	12.6	10.4	10.3	10.2	15.4	15.9	13.5	13.6	14.1
Pubs, taverns and bars	870	950	905	1 025	940	5.3	6.5	6.4	6.8	7.1	7.7	9.0	8.7	9.4	9.6
Administrative and support services	5 585	6 280	5 785	5 130	4 525	8.6	9.4	8.3	7.4	6.5	13.8	15.2	13.4	12.1	10.5
Administrative services	3 510	4 270	3 485	3 035	2 525	7.1	8.5	6.6	6.0	4.9	12.0	14.6	11.5	10.2	8.4
Employment services	2 865	2 975	2 970	2 615	2 160	8.1	8.2	7.7	7.1	5.8	13.7	14.0	13.4	12.3	9.9
Building cleaning, pest control and other support services	2 075	2 010	2 300	2 095	2 000	13.2	12.1	13.3	11.5	11.3	18.3	16.6	18.1	16.6	15.5
Building cleaning, pest control and gardening services	1 915	1 840	2 145	1 940	1 870	13.9	12.3	14.1	12.1	11.7	18.7	16.5	18.4	17.0	15.7
Packaging services	160	170	155	155	130	7.9	10.5	7.7	7.0	7.6	14.8	17.8	14.6	12.9	13.9
Agriculture, forestry and fishing	3 815	3 585	3 815	3 625	3 365	11.2	10.3	10.5	10.5	8.6	22.0	20.2	20.8	20.6	17.4
Agriculture	2 845	2 785	2 945	2 865	2 565	10.1	9.3	9.7	9.9	7.8	20.0	18.3	19.3	19.4	16.1
Dairy cattle farming	165	195	220	225	230	5.3	5.2	10.1	9.5	6.4	11.3	11.6	19.6	19.5	15.9
Fruit and tree nut growing	475	435	435	420	365	12.8	9.8	12.1	10.2	7.7	21.2	17.1	20.6	17.7	14.1
Mushroom and vegetable growing	185	210	205	210	205	5.7	8.0	9.5	8.4	8.5	10.2	13.1	15.6	15.8	15.0
Nursery and floriculture production	200	200	175	210	195	11.9	9.1	14.9	12.9	14.1	19.8	13.9	22.5	21.3	21.8
Poultry farming	200	175	220	140	115	15.4	10.2	14.6	11.4	16.5	27.0	18.2	23.1	19.0	32.9
Sheep, beef cattle and grain farming	1 180	1 155	1 175	1 210	1 065	9.5	9.0	8.8	11.8	10.7	21.2	20.1	20.1	25.5	23.0
Agriculture, forestry and fishing support services	565	470	550	495	520	18.3	17.0	17.7	15.1	13.7	32.6	31.5	32.4	27.6	24.9
Agriculture and fishing support services	465	395	480	420	425	19.1	17.3	20.3	16.9	14.4	34.8	32.2	38.4	30.6	26.1
Forestry and logging	140	125	115	110	130	10.9	12.9	8.0	9.3	11.2	22.7	27.5	16.4	19.8	22.5
Arts and recreation services	2 130	2 155	2 265	1 870	1 865	8.7	8.4	8.3	6.8	7.3	11.1	10.6	11.0	8.8	9.2
Creative and performing arts activities	190	215	180	160	185	7.3	9.4	6.0	5.2	7.5	9.3	12.6	8.4	6.3	11.3
Parks and gardens operations	380	340	315	285	250	12.0	10.2	7.7	8.0	8.4	17.2	15.9	11.9	12.9	11.3
Gambling activities	515	570	575	295	255	11.0	12.0	13.0	6.3	5.6	17.7	17.7	20.4	9.8	8.9
Amusement and other recreation activities	200	180	165	150	175	18.3	13.1	14.9	13.1	13.3	22.8	16.8	17.1	14.9	14.9
Heritage activities	425	395	380	345	295	9.4	8.0	6.2	6.4	5.9	13.3	11.7	8.9	9.8	8.3
Sports and recreation activities	1 005	975	1 130	1 070	1 125	7.8	7.1	8.3	7.6	8.4	9.1	8.1	9.9	8.8	9.3
Sports and physical recreation activities	370	350	480	415	390	3.7	3.1	4.3	3.6	3.5	4.1	3.4	5.0	4.1	3.9
Construction	12 440	12 630	12 850	12 100	11 535	9.2	8.9	8.9	8.2	7.2	18.3	17.8	17.8	16.7	14.7
Building construction	2 460	2 665	2 625	2 330	2 230	*5.9	*6.5	*5.5	*4.9	4.5	*12.0	*13.0	*11.3	*10.2	9.3
Non-residential building construction	1 080	1 240	1 255	980	965	*7.0	*7.8	*12.3	*12.1	9.0	*15.3	*16.7	*27.7	*26.4	20.1
Residential building construction	1 375	1 425	1 375	1 350	1 265	*5.3	*5.7	*11.4	*11.5	9.4	*10.3	*10.9	*22.2	*22.4	18.4
Construction services	8 050	8 060	8 220	7 660	7 240	10.0	9.3	9.9	9.0	7.9	19.6	18.3	19.3	17.7	15.6
Building completion services	1 700	1 640	1 715	1 485	1 450	11.4	9.6	11.0	8.9	8.3	20.9	18.3	20.9	17.2	16.0
Building installation services	2 890	2 815	2 955	2 690	2 585	8.2	7.2	8.1	7.4	6.5	16.2	14.3	15.8	14.7	12.8
Building structure services	1 390	1 495	1 330	1 245	1 215	13.4	13.6	11.8	11.2	11.1	25.7	26.2	23.3	21.1	21.8
Land development and site preparation services	970	990	1 030	1 000	855	11.6	11.7	11.6	11.0	8.4	25.3	26.1	24.8	24.4	18.4
Heavy and civil engineering construction	1 930	1 905	2 005	2 115	2 065	13.5	13.2	14.1	14.4	11.4	28.5	28.9	31.1	33.4	25.5
Education and training	7 130	7 385	7 175	6 550	6 025	5.3	5.4	5.3	4.6	4.2	8.4	8.5	8.3	7.2	6.5
Adult, community and other education	420	500	395	425	335	3.7	4.4	2.5	2.9	2.0	5.0	5.8	3.4	3.9	2.6
Tertiary education	990	1 195	1 255	1 135	1 005	2.7	3.0	3.3	2.8	2.6	4.1	4.8	5.2	4.3	4.1
Preschool and school education	5 720	5 690	5 525	4 990	4 685	6.7	6.7	6.8	5.8	5.3	10.9	10.7	10.8	9.1	8.6

Industry of employer	Number of serious claims					Frequency rate (serious claims per million hours worked)					Incidence rate (serious claims per 1000 employees)				
	2009-10	2010-11	2011-12	2012-13	2013-14p	2009-10	2010-11	2011-12	2012-13	2013-14p	2009-10	2010-11	2011-12	2012-13	2013-14p
Preschool education	245	210	185	225	210	6.6	4.8	4.1	4.1	3.9	8.6	6.5	5.1	5.5	5.5
School education	5 480	5 485	5 340	4 770	4 475	6.7	6.8	6.9	5.9	5.4	11.1	10.9	11.2	9.4	8.8
Electricity, gas, water and waste services	1 355	1 445	1 340	1 175	1 100	5.5	5.3	4.8	4.5	3.9	11.0	10.2	9.4	8.7	7.5
Electricity supply	345	360	325	310	250	*3.1	*2.8	*2.7	*2.5	2.2	*6.0	*5.7	*5.4	*4.8	4.3
Electricity distribution	265	250	240	245	195	*5.7	*4.9	*8.6	*9.0	6.4	*10.9	*9.4	*16.7	*16.7	12.2
Waste collection, treatment and disposal services	660	635	590	650	675	10.9	9.7	8.0	11.4	8.8	22.4	19.4	16.1	22.3	17.3
Waste collection services	195	305	265	265	315	6.7	8.8	7.8	10.2	7.8	14.1	17.9	16.3	20.6	15.4
Waste treatment, disposal and remediation services	465	330	325	385	360	14.8	10.6	11.6	19.5	13.6	30.0	21.0	22.5	38.3	26.6
Water supply, sewerage and drainage services	115	180	175	185	155	2.1	2.7	2.7	3.2	2.8	4.2	5.0	5.1	6.0	5.2
Financial and insurance services	1 080	1 105	1 035	815	685	1.5	1.6	1.4	1.1	0.9	2.8	2.9	2.6	2.1	1.7
Auxiliary finance and insurance services	265	280	250	195	140	1.5	1.7	1.3	1.1	0.7	3.0	3.3	2.4	2.0	1.4
Finance	595	595	540	400	335	1.5	1.5	1.3	1.0	0.8	2.8	2.7	2.4	1.8	1.5
Depository financial intermediation	560	540	505	375	300	1.5	1.4	1.4	1.1	0.9	2.7	2.6	2.5	2.0	1.6
Insurance and superannuation funds	220	230	245	220	210	1.6	1.7	1.8	1.6	1.4	2.8	3.0	3.3	2.8	2.5
Health and general insurance	195	210	215	200	185	1.6	1.8	2.1	1.8	1.6	3.0	3.3	3.8	3.2	2.8
Health care and social assistance	18 385	18 825	19 585	18 685	17 415	10.9	10.4	10.2	9.7	8.7	15.4	14.9	14.9	13.8	12.5
Hospitals	7 060	7 415	7 465	7 085	6 370	11.9	12.2	11.6	11.8	11.2	17.8	18.4	17.7	17.6	16.5
Medical and other health care services	2 305	2 335	2 495	2 455	2 420	5.3	4.9	4.8	4.3	4.0	7.7	7.0	7.1	6.2	5.9
Allied health services	430	505	455	405	390	2.7	3.0	2.7	2.4	2.1	3.7	3.9	3.8	3.2	2.9
Medical services	315	325	265	295	260	1.9	1.7	1.6	1.6	1.3	2.8	2.5	2.3	2.3	2.0
Pathology and diagnostic imaging services	220	270	290	285	280	3.5	3.8	3.7	4.4	3.7	5.4	5.8	5.9	6.8	5.6
Residential care services	5 835	6 055	6 655	6 240	5 770	21.5	21.3	22.5	21.4	18.2	28.9	29.0	30.8	27.9	24.4
Social assistance services	3 185	3 020	2 970	2 905	2 855	8.1	6.9	6.5	6.1	5.7	10.9	9.5	9.1	8.6	8.0
Child care services	960	1 095	1 270	1 175	1 175	7.4	7.6	9.0	8.0	6.8	9.7	10.0	12.2	11.1	9.4
Information media and telecommunications	735	715	790	585	575	2.1	2.0	2.1	1.5	1.7	3.7	3.5	3.9	2.7	3.0
Telecommunications services	210	195	235	190	215	1.1	1.0	1.1	0.9	1.1	2.0	1.8	2.2	1.7	2.0
Publishing (except internet and music publishing)	185	185	190	155	110	3.5	3.2	3.4	2.8	2.7	6.2	5.8	5.9	4.9	4.8
Newspaper, periodical, book and directory publishing	185	185	185	155	110	3.5	3.2	3.8	3.2	3.2	6.2	5.8	6.6	5.7	5.5
Manufacturing	17 870	17 400	17 220	15 105	12 930	10.5	10.3	10.4	9.2	7.9	19.8	19.7	20.0	17.6	15.0
Basic chemical and chemical product manufacturing	480	470	545	465	410	5.0	5.2	6.7	5.9	4.9	9.7	10.0	13.2	11.1	8.8
Beverage and tobacco product manufacturing	430	375	385	340	350	7.9	7.9	6.7	7.3	5.7	14.7	14.6	12.6	14.0	10.5
Beverage manufacturing	390	350	370	330	350	7.7	7.7	6.8	7.4	5.9	14.4	14.3	12.6	14.3	11.0
Fabricated metal product manufacturing	2 695	2 785	2 810	2 550	2 185	22.4	26.9	29.1	29.9	20.0	45.3	54.1	56.8	60.0	38.4
Metal container manufacturing	160	185	180	125	120	11.4	15.9	19.5	12.4	8.4	23.1	31.6	38.2	23.7	15.5
Food product manufacturing	4 855	4 480	4 325	3 890	3 315	14.0	12.7	10.2	8.5	8.3	24.7	22.4	18.6	15.2	14.8
Bakery product manufacturing	605	585	660	535	530	5.9	5.5	8.3	7.6	6.2	9.0	8.5	12.2	10.6	9.1
Dairy product manufacturing	390	380	335	280	240	10.1	8.7	11.0	8.4	10.9	20.2	16.3	21.1	16.0	18.8
Fruit and vegetable processing	260	195	205	180	140	13.6	15.4	21.5	21.2	14.5	24.9	25.4	36.5	35.9	29.1
Grain mill and cereal product manufacturing	230	190	180	155	150	31.5	16.8	21.5	18.0	18.5	59.7	28.8	43.1	33.8	34.8
Meat and meat product manufacturing	2 510	2 245	2 075	1 930	1 605	21.6	20.2	22.8	20.9	20.2	40.6	38.9	43.2	38.7	38.5
Sugar and confectionery manufacturing	260	245	215	230	180	8.6	7.3	10.9	10.2	6.9	16.6	14.4	20.0	19.5	12.7
Furniture and other manufacturing	855	740	775	665	595	8.7	8.6	8.4	7.7	6.2	16.8	16.2	16.6	15.3	11.7
Furniture manufacturing	640	555	555	465	365	8.7	9.0	8.2	7.2	4.9	17.3	17.5	16.6	14.3	9.2
Machinery and equipment manufacturing	1 890	1 805	2 025	1 900	1 415	7.7	7.7	9.4	8.9	6.4	15.1	15.5	19.1	18.0	12.4
Electrical equipment manufacturing	295	295	270	260	175	7.1	8.5	9.4	9.4	7.5	14.0	16.9	19.4	17.7	14.2
Professional and scientific equipment manufacturing	130	135	145	120	100	2.6	3.3	5.0	3.8	2.8	5.0	6.4	10.1	7.3	5.3

Industry of employer	Number of serious claims					Frequency rate (serious claims per million hours worked)					Incidence rate (serious claims per 1000 employees)				
	2009-10	2010-11	2011-12	2012-13	2013-14p	2009-10	2010-11	2011-12	2012-13	2013-14p	2009-10	2010-11	2011-12	2012-13	2013-14p
Specialised machinery and equipment manufacturing	585	645	770	715	500	12.3	11.4	14.6	13.5	10.3	25.4	23.8	31.2	27.8	21.0
Non-metallic mineral product manufacturing	870	880	950	795	775	12.3	13.0	13.5	12.9	12.4	24.6	26.0	27.9	26.8	24.6
Cement, lime, plaster and concrete product manufacturing	530	520	625	530	545	18.7	22.4	25.3	24.6	21.2	37.5	46.8	50.5	50.3	45.4
Glass and glass product manufacturing	155	185	175	135	115	9.7	9.6	11.0	13.7	9.2	18.2	18.4	22.9	28.3	15.7
Polymer product and rubber product manufacturing	900	815	695	530	480	13.4	12.7	10.2	7.6	8.9	25.8	24.6	20.3	14.4	16.9
Polymer product manufacturing	830	775	645	470	445	12.9	12.6	10.1	7.2	9.3	24.7	24.4	20.2	13.6	17.3
Primary metal and metal product manufacturing	550	655	620	555	415	3.5	3.7	3.7	3.6	2.9	6.9	7.5	7.6	7.3	5.7
Basic ferrous metal manufacturing	140	175	120	145	100	1.8	2.0	1.7	2.3	1.5	3.6	4.2	3.4	4.6	2.9
Basic non-ferrous metal manufacturing	200	255	240	200	145	3.6	3.9	3.7	3.0	2.7	7.0	7.9	7.6	6.2	5.4
Printing (including the reproduction of recorded media)	510	440	395	325	265	5.5	4.4	5.9	4.1	3.7	10.0	8.3	10.5	7.6	7.0
Printing and printing support services	495	430	390	310	255	5.4	4.3	5.8	4.0	3.7	10.0	8.3	10.5	7.3	7.0
Pulp, paper and converted paper product manufacturing	375	355	330	255	205	*10.5	*9.4	*11.8	*9.2	8.2	*19.8	*18.2	*22.6	*18.1	15.8
Converted paper product manufacturing	285	270	215	170	155	*11.8	*10.5	*17.6	*14.8	10.7	*22.9	*20.2	*34.9	*28.6	21.3
Textile, leather, clothing and footwear manufacturing	545	520	455	230	240	8.2	7.8	8.7	4.2	4.5	14.1	13.7	15.6	7.5	8.2
Textile product manufacturing	320	300	270	125	140	12.2	16.7	24.2	9.2	8.6	21.2	28.6	39.3	16.6	17.1
Transport equipment manufacturing	1 375	1 480	1 505	1 340	1 265	8.5	8.5	9.9	9.4	8.7	16.9	17.3	19.7	18.6	16.8
Motor vehicle and motor vehicle part manufacturing	835	920	945	860	815	8.1	8.7	10.6	10.2	9.7	15.8	17.2	20.7	19.7	18.4
Wood product manufacturing	1 470	1 535	1 340	1 195	970	18.1	22.5	20.8	19.7	11.2	33.9	43.0	40.5	37.9	22.2
Log sawmilling and timber dressing	425	475	395	255	245	18.3	19.3	21.3	12.8	13.0	34.3	37.8	42.6	25.5	24.8
Mining	2 225	2 425	2 865	2 965	2 670	5.9	5.4	5.3	5.1	4.6	13.5	12.5	12.2	11.7	10.4
Coal mining	690	725	805	855	755	7.4	7.0	7.4	9.1	6.7	16.2	15.6	16.4	20.1	14.3
Exploration and other mining support services	640	680	905	910	780	7.9	7.1	9.2	7.4	5.6	18.1	15.8	20.0	17.3	13.0
Exploration	195	180	270	250	195	3.8	3.5	6.5	4.4	2.8	8.7	7.6	13.2	10.2	6.1
Metal ore mining	540	570	720	810	800	3.8	3.0	3.6	4.2	4.2	8.9	7.1	8.7	9.8	9.7
Non-metallic mineral mining and quarrying	295	375	360	315	285	*12.2	14.4	*12.2	*9.6	10.1	*28.0	32.9	*27.5	*22.5	24.9
Construction material mining	255	300	300	245	250	*12.6	15.9	*22.1	*18.0	17.1	*30.4	36.6	*49.8	*41.5	44.4
Other services	3 385	3 395	3 885	3 695	3 370	5.5	5.6	6.3	6.0	4.9	9.4	9.7	10.9	10.4	8.6
Personal and other services	1 390	1 365	2 035	1 880	1 765	4.9	5.1	7.6	7.1	5.9	7.3	7.8	11.5	10.6	8.9
Civic, professional and other interest group services	535	530	1 155	1 045	1 015	7.9	7.8	17.3	15.3	12.0	12.2	12.5	29.2	24.0	19.0
Personal care services	225	210	220	195	185	2.3	2.5	2.5	2.1	2.2	3.4	3.7	3.6	3.1	3.0
Religious services	115	200	170	170	140	1.8	3.4	3.6	3.6	2.3	3.0	5.2	5.3	5.3	3.8
Repair and maintenance	1 960	2 000	1 820	1 780	1 580	5.9	5.9	5.2	5.1	4.1	11.4	11.4	10.2	10.0	8.1
Automotive repair and maintenance	1 310	1 260	1 210	1 200	1 045	6.7	6.2	6.2	5.8	4.3	12.7	11.7	12.0	11.4	8.2
Machinery and equipment repair and maintenance	615	705	545	535	475	4.8	5.3	3.8	4.1	3.6	9.4	11.0	7.6	8.0	7.3
Professional, scientific and technical services	2 150	2 310	2 085	1 865	1 665	1.7	1.8	1.5	1.3	1.1	3.2	3.3	2.8	2.4	2.1
Computer system design and related services	190	185	185	170	160	0.7	0.7	0.6	0.5	0.5	1.4	1.3	1.2	1.1	1.0
Professional, scientific and technical services (except computer system design and related services)	1 960	2 125	1 900	1 695	1 505	1.9	2.1	1.8	1.5	1.3	3.6	3.8	3.2	2.7	2.4
Architectural, engineering and technical services	640	700	665	585	465	2.0	1.9	1.8	1.5	1.2	3.8	3.7	3.4	2.8	2.3
Legal and accounting services	300	295	385	305	280	0.8	0.9	1.1	0.8	0.7	1.5	1.5	2.0	1.5	1.3
Management and related consulting services	580	620	435	410	385	5.9	5.8	4.0	3.1	2.6	11.1	10.6	7.7	5.9	5.0
Veterinary services	135	140	140	125	155	4.6	4.9	4.8	3.6	6.2	7.8	7.4	7.4	5.3	8.8
Public administration and safety	10 740	10 335	9 240	9 505	8 775	9.4	8.8	7.5	7.8	6.9	16.0	14.8	12.8	13.6	11.7
Defence	130	115	145	180	175	2.0	1.7	1.9	2.4	2.3	3.4	3.1	3.4	4.2	4.1

Industry of employer	Number of serious claims					Frequency rate (serious claims per million hours worked)					Incidence rate (serious claims per 1000 employees)				
	2009-10	2010-11	2011-12	2012-13	2013-14p	2009-10	2010-11	2011-12	2012-13	2013-14p	2009-10	2010-11	2011-12	2012-13	2013-14p
Public administration	5 140	4 705	4 260	4 280	3 775	6.3	5.7	4.9	5.0	4.2	10.6	9.5	8.2	8.5	7.1
Central government administration	685	685	1 035	1 000	795	2.1	2.1	3.0	2.7	2.2	3.6	3.5	5.1	4.6	3.8
Local government administration	2 205	1 660	1 645	1 660	1 700	12.1	9.3	8.8	9.5	8.8	19.7	15.4	14.5	16.2	14.7
State government administration	2 150	2 265	1 480	1 540	1 195	7.8	7.9	5.0	5.6	4.1	13.2	13.0	8.5	9.7	6.8
Public order, safety and regulatory services	5 470	5 515	4 835	5 045	4 830	21.4	19.1	17.0	18.1	15.9	37.6	33.4	30.2	32.2	27.9
Public order and safety services	5 425	5 475	4 820	5 030	4 800	21.5	19.2	17.3	18.4	16.1	37.9	33.5	30.6	32.7	28.3
Rental, hiring and real estate services	1 370	1 395	1 375	995	965	4.8	4.5	4.2	3.1	2.8	8.5	8.0	7.7	5.7	5.0
Property operators and real estate services	555	625	640	370	375	2.5	2.6	2.5	1.5	1.4	4.6	4.9	4.7	2.8	2.5
Property operators	345	390	405	185	190	6.1	6.7	5.9	3.0	2.7	10.0	11.7	10.3	5.3	4.7
Real estate services	215	235	235	185	185	1.3	1.3	1.3	1.0	0.9	2.5	2.5	2.5	1.9	1.7
Rental and hiring services (except real estate)	815	770	735	625	590	12.5	10.5	9.8	9.1	7.8	20.0	16.5	17.2	15.1	13.8
Motor vehicle and transport equipment rental and hiring	120	120	135	110	120	6.6	7.1	6.7	5.2	5.3	11.2	12.7	11.6	9.2	9.8
Retail trade	9 515	9 875	10 020	9 735	8 975	6.1	6.1	6.2	5.9	5.4	8.3	8.3	8.5	8.1	7.3
Food retailing	4 245	4 390	4 240	4 055	3 850	8.9	8.7	8.6	8.1	7.6	11.3	11.0	11.0	10.5	9.7
Specialised food retailing	790	730	705	700	615	5.8	4.8	4.8	5.3	4.3	8.1	6.9	7.0	7.9	6.1
Supermarket and grocery stores	3 455	3 655	3 535	3 355	3 235	10.2	10.3	10.3	9.4	9.2	12.4	12.4	12.6	11.4	11.2
Fuel retailing	245	260	295	270	255	5.3	5.0	6.1	5.2	4.4	7.7	6.8	8.5	7.3	6.5
Motor vehicle and motor vehicle parts retailing	1 085	1 070	1 200	1 185	1 065	6.3	6.3	5.7	4.7	4.4	11.9	11.8	10.1	8.3	7.8
Motor vehicle parts and tyre retailing	365	380	420	420	355	7.7	7.9	9.5	9.0	8.6	14.1	14.1	18.4	16.0	15.4
Motor vehicle retailing	720	690	780	770	710	5.7	5.7	6.2	6.1	5.1	11.0	10.9	11.3	12.2	9.9
Other store-based retailing	3 885	4 095	4 200	4 170	3 735	4.5	4.7	5.0	5.1	4.4	6.0	6.3	6.7	6.7	5.8
Clothing, footwear and personal accessory retailing	630	710	730	685	605	3.6	3.9	4.2	4.0	3.3	4.4	4.8	5.0	4.6	4.0
Department stores	675	715	660	625	480	7.4	7.3	7.3	6.3	5.6	7.3	7.6	7.6	6.6	5.5
Electrical and electronic goods retailing	330	320	280	250	235	2.8	2.8	2.5	2.5	2.5	4.8	4.9	4.2	4.3	4.2
Furniture, floor coverings, houseware and textile goods retailing	530	575	595	620	550	8.0	9.5	9.6	9.2	7.4	12.7	14.4	15.0	14.2	11.0
Hardware, building and garden supplies retailing	745	795	880	990	930	5.8	6.3	7.4	9.2	7.5	9.2	9.8	11.7	14.4	11.9
Pharmaceutical and other store-based retailing	685	720	770	760	745	3.6	3.6	4.0	3.8	3.8	4.6	4.6	5.2	5.0	4.8
Recreational goods retailing	290	265	285	240	190	3.3	3.0	3.3	3.3	2.4	4.2	4.0	4.3	4.0	3.0
Transport, postal and warehousing	10 995	10 770	10 955	10 265	9 425	11.6	11.3	11.7	10.3	9.3	21.7	21.3	22.1	19.3	17.4
Air and space transport	665	785	635	695	675	9.2	8.9	8.3	8.6	8.2	15.3	15.4	13.1	14.0	13.7
Pipeline and other transport	365	380	440	375	340	14.7	14.0	16.0	13.4	12.7	27.5	26.5	30.3	25.5	23.8
Postal and courier pick-up and delivery services	1 225	1 385	1 350	1 050	950	6.5	7.5	8.3	6.6	5.2	10.8	12.6	14.1	11.1	8.8
Rail transport	990	750	580	655	650	*10.5	*7.9	*6.8	*7.8	7.9	*20.2	*15.4	*13.3	*14.6	15.3
Rail freight transport	220	165	150	140	150	*6.0	*5.1	*9.8	*8.9	7.8	*12.3	*9.4	*19.7	*17.2	14.6
Road transport	4 745	4 675	4 675	4 860	4 435	13.4	13.5	13.6	13.0	11.8	27.4	28.0	27.7	26.2	24.0
Road freight transport	3 790	3 785	3 845	4 005	3 650	14.2	14.6	15.2	14.5	13.1	31.1	32.2	33.6	31.5	28.7
Road passenger transport	955	890	830	855	785	11.1	10.4	9.1	8.8	8.2	18.6	17.9	15.3	14.7	13.7
Transport support services	1 480	1 225	1 600	1 310	1 210	16.8	13.0	20.7	13.6	11.0	30.7	24.0	40.1	25.6	20.7
Airport operations and other air transport support services	310	205	450	265	310	13.8	9.0	17.9	10.1	10.5	25.5	16.3	33.8	18.1	19.7
Water transport support services	520	545	565	535	410	18.2	16.2	26.0	17.8	11.9	32.6	30.1	50.7	34.1	21.1
Warehousing and storage services	1 110	1 130	1 305	1 005	880	15.3	14.4	12.3	8.3	8.0	27.0	25.4	22.3	15.1	14.3
Water transport	310	305	285	245	200	8.6	9.5	*7.2	*6.1	5.1	20.7	24.1	*16.3	*14.4	11.7
Water freight transport	200	240	225	190	165	6.5	9.0	*8.7	*7.1	5.9	17.0	23.5	*22.6	*18.7	15.7
Wholesale trade	5 970	6 130	5 780	4 805	4 380	8.1	8.6	8.1	6.3	6.1	15.4	16.3	15.2	12.0	11.6
Basic material wholesaling	1 705	1 715	1 590	1 135	1 010	9.0	8.7	7.8	4.9	4.7	17.7	16.9	15.0	9.5	9.1
Agricultural product wholesaling	300	290	330	200	150	6.6	8.4	10.6	6.2	4.2	12.5	14.7	18.7	11.4	8.0
Mineral, metal and chemical wholesaling	635	585	615	385	375	11.0	9.2	11.4	7.2	6.5	21.6	17.5	22.7	14.9	12.8
Timber and hardware goods wholesaling	730	775	570	550	485	8.5	7.8	7.5	5.9	5.9	17.1	16.0	14.5	11.6	12.0
Grocery, liquor and tobacco product wholesaling	1 270	1 285	1 150	1 155	1 040	10.2	10.7	10.1	9.3	10.7	19.3	19.7	19.2	17.0	19.6

Industry of employer	Number of serious claims					Frequency rate (serious claims per million hours worked)					Incidence rate (serious claims per 1000 employees)				
	2009-10	2010-11	2011-12	2012-13	2013-14p	2009-10	2010-11	2011-12	2012-13	2013-14p	2009-10	2010-11	2011-12	2012-13	2013-14p
Machinery and equipment wholesaling	1 460	1 470	1 590	1 220	1 050	7.0	7.6	7.8	6.0	5.1	13.8	15.0	15.0	11.7	10.1
Specialised industrial machinery and equipment wholesaling	370	415	510	470	430	7.5	8.6	10.0	9.0	8.2	14.6	16.8	20.5	18.4	16.4
Motor vehicle and motor vehicle parts wholesaling	435	450	460	345	395	8.2	12.4	11.9	7.6	8.7	15.7	24.7	24.2	14.3	16.7
Other goods wholesaling	980	1 010	860	845	835	6.7	6.6	5.9	6.1	5.9	11.9	12.1	10.6	10.8	10.6
Furniture, floor covering and other goods wholesaling	630	645	545	560	565	9.1	8.0	7.0	7.7	7.6	15.4	14.3	12.4	13.7	13.5
Pharmaceutical and toiletry goods wholesaling	195	210	175	165	165	4.5	5.9	4.9	4.2	4.3	8.1	10.5	8.7	7.4	7.9
Textile, clothing and footwear wholesaling	160	155	140	120	110	4.8	4.3	4.3	4.7	3.8	9.0	8.3	8.1	8.2	6.7
All industries	123 485	125 170	125 305	116 325	106 565	7.5	7.4	7.2	6.6	5.9	12.4	12.2	12.1	11.0	9.8

A serious claim is an accepted workers' compensation claim that involves one or more weeks away from work and excludes all fatalities, and all injuries and diseases experienced while travelling to or from work or while on a break away from the workplace.
Claim numbers are rounded to the nearest 5 to maintain confidentiality. Therefore, the sum of claims may not be equal to the reported totals.
Time lost and amounts of compensation are not reported for the preliminary year (2013–14) because serious claims for that period are likely to be open and claimants may accrue more time off work and compensation in subsequent years.
Median amounts of compensation are rounded to the nearest 100.
p data are preliminary and are subject to revision.
np data are not available due to confidentiality restrictions.
* rate should be interpreted with caution because the relative standard error of the denominator is between 25% and 50%.
** rate suppressed because the relative standard error of the denominator is above 50%.
Source: National Data Set for Compensation-Based Statistics, Safe Work Australia (explanatory notes are available on the following webpage: http://www.safeworkaustralia.gov.au/sites/swa/about/publications/pages/explanatory-notes-datasets).