

Mine Health and Safety Inspectorate

# ANNUAL REPORT



# 2013/14



**mineral resources**

Department:  
Mineral Resources  
**REPUBLIC OF SOUTH AFRICA**



ANNUAL REPORT  
Mine Health and Safety Inspectorate  
2013/14



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# GENERAL INFORMATION

# 1. GENERAL INFORMATION

## 1.1 Submission of the Annual Report to the Executing Authority

The Honourable Ngoako Ramatlhodi, MP  
Minister: Department of Mineral Resources  
Republic of South Africa

Dear Minister

I am pleased to present to you the Annual Report of the Mine Health and Safety Inspectorate for the 2013/14 reporting period. This report is in accordance with the requirements of Section 49(1) (j) of the Mine Health and Safety Act, 1996 (Act 29 of 1996), as amended.

Yours sincerely



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**D Msiza**  
**Chief Inspector of Mines**  
Mine Health and Safety Inspectorate



## 1.2 Executive Summary: Chief Inspector of Mines

### Introduction

It is with great honour and pleasure that I present this report on the state of health and safety in the South African mining industry and the activities of the MHSI for the 2013/14 financial year.

### Staffing

The establishment of the Inspectorate provides for 312 funded posts, of which 263 are currently filled and 49 posts are vacant. Nine officials are carried in addition to the approved establishment, bringing the total number of employees to 272. The demographics of the Inspectorate, as on 31 March 2014, were as follows:

| Gender | African | White | Asian | Coloured | Total |
|--------|---------|-------|-------|----------|-------|
| Male   | 111     | 49    | 0     | 1        | 161   |
| Female | 95      | 12    | 0     | 4        | 111   |

### Implemented Training

During the 2013/14 reporting period, the Inspectorate developed the skills and knowledge base of its staff as follows:

A total of 81 officials attended technical and non-technical training courses.

- Ten managers attended the Advanced Management Development Programme (AMDP) or Emerging Management Development Programme (EMDP).
- A total of 126 officials attended Defensive Driver Training to curb road accidents that may be encountered while carrying out the legislative mandate.
- Two managers obtained their Master of Business Administration (MBA) degrees.

### Training Interventions

#### Assistant Inspector Programme

Thirteen assistant inspectors were recruited with tertiary qualifications in electrical or mechanical engineering and are undergoing inspector training at the various regional offices of the Department. This is to prepare them for permanent appointment as inspectors of mines (IOMs) when they acquire their required Government Certificate of Competency (GCC) certificates.

Six of the above 13 assistant inspectors attained their GCC certificates during the reporting period and were subsequently absorbed as permanent inspectors within the MHSI.

The other eight assistant inspectors are at various stages of acquiring the required GCC certificates.

#### Learner Inspector Programme

There were four learner inspectors in the Inspectorate at the commencement of the reporting period. They were beneficiaries of the departmental bursary scheme and, after completing their undergraduate qualifications, they were placed at a mining site for their experiential mine training.

Of the abovementioned four learner inspectors, three completed their experiential mine training during the reporting period and were placed at various regional offices to commence with the Assistant Inspector Training Programme. One resigned.

The Department, in collaboration with the MQA, also placed 50 learner inspectors on a mine for a two-year period to obtain experiential mine training. This initiative adds to the human resource pool from which the Inspectorate may recruit future inspectors. The learner inspectors were selected from the disciplines of electrical engineering, mechanical engineering, mining engineering, mine surveying and occupational hygiene.

#### Bursary Scheme

The Department issued three bursaries during the reporting period to previously disadvantaged students in the fields of electrical engineering (heavy current), mechanical engineering, mining engineering and mine surveying. They have all completed their undergraduate qualifications and are currently undergoing experiential mine training in preparation for acceptance as GCC certificate candidates.

### Current Health and Safety Performance

The Inspectorate continues to place great emphasis on the health and safety of mine employees, which is crucial to the sustainability of the mining sector by enforcing applicable laws to protect mine employees from health and safety hazards in their respective workplaces.

#### Health

Mines are required to submit annual medical reports (AMRs) in terms of the provisions of the MHSA, as amended. These reports have revealed a lack of

significant improvement with regard to health issues, mainly noise-induced hearing loss (NIHL), silicosis and tuberculosis (TB).

The gold-mining sector continues to report the majority of occupational diseases in comparison to other sectors. The mining sector needs to increase its focus on health matters, as there has not been an improvement in this regard and more mine employees continue to lose their lives as a result of exposure to health hazards.

### **Mine Safety**

The safety track record in the South African mining industry remains a challenge for the Inspectorate, although there has been a downward trend and improvement in the reported number of mine accidents year-on-year.

Despite this downward trend, one death is still one death too many. A total of 93 fatalities were reported in 2013, compared to 112 fatalities during the previous year, which translates to an improvement of approximately 17% year-on-year. The mining sector recorded the lowest fatalities ever during 2013.

The statistics show that the gold and platinum mines of South Africa are the main contributors to accidents and the subsequent loss of life. This is regrettable, because these mines should be in the front ranks of those forces with the appropriate systems and expertise to enhance health and safety.

### **Disaster-type Accidents**

A multi-fatal accident occurred in October 2013 at the Ingula pumped-storage scheme, a facility owned by Eskom, which left six underground workers dead. Three separate platforms were installed in one of the steeply inclined water tunnels to be used for electricity generation. These platforms were used to act as a working platform during the installation of the water inlet tunnel linings. The topmost platform broke loose from its support, struck the other two platforms and ran down the steeply inclined tunnel, fatally injuring six persons.

In February 2014, nine mine employees died after being exposed to harmful fumes after a fire broke out in the underground workings of Doornkop Mine, which is owned by Harmony Gold.

### **HIV/AIDS and TB**

The MHSI continues to enforce and ensure compliance with the monitoring of Human Immunodeficiency Virus

(HIV)/Acquired Immune Deficiency Syndrome (AIDS) and TB programmes and the implementation of the National Strategic Plan (NSP). The South African mining industry has reported on the implemented HIV/AIDS and TB programmes. This information assists the Inspectorate in assessing the impact of HIV/AIDS on other occupational diseases in the mining industry. It will also create a better understanding of the diseases burden to be addressed, which will help the Inspectorate by informing interventions in awareness, prevention and treatment in the mining sector.

### **Stakeholder Collaboration**

The Inspectorate will continuously engage its social partners through the Mining Industry Growth and Development Task Team (MIGDETT), MHSC, MQA and bilateral tripartite meetings to ensure that mine health and safety in the industry is prioritised. It is also through the Inspectorate's commitment to collaborate with all stakeholders that there has been an improvement with regard to health and safety in the South African mining sector over the past two decades.

### **Mine Health and Safety Summit**

The MHSI will continue with the implementation of the 2011 Tripartite Summit Action Plan, in collaboration with stakeholders, through the MHSC. This action plan includes the eradication of fatalities, injuries, silicosis, NIHL and the implementation of a national strategy on TB and HIV/AIDS programmes.

Stakeholders approved a framework that targets the culture and attitude of workers towards occupational health and safety in the mining sector. The MHSC is monitoring the implementation of the Culture Transformation Framework, which has identified 11 pillars that address aspects such as leadership, bonus incentives, risk management, discrimination and technology.

The MHSC will be hosting a Tripartite Summit towards the end of 2014 to further review the mining industry's performance on health and safety matters over the past 10 years and also report on the achievement of the health and safety milestones as adopted during the Mine Health and Safety Summit of 2003.

### **Skills Development and Education**

Skills development and education are key in addressing the country's triple challenges of unemployment, inequality and poverty. The MHSI is collaborating with the Department of Higher Education and Training and

other stakeholders through the MQA to improve the skills development of the youth and mine employees. The training of health and safety representatives and shop stewards by accredited institutions is progressing.

The MQA has implemented programmes to provide learners in townships and rural mining areas with core mathematics and physical science skills, so that professional and artisan skills can be pursued in the mining sector. These initiatives are strengthened by career guidance programmes that encourage learners to make informed choices by growing a pool of successful matric learners who can pursue mining careers. Learners are awarded MQA bursaries in areas such as mining engineering, electrical engineering, mechanical engineering and metallurgical engineering. The MQA also offers other skills programmes, such as artisan development, improving women's participation in mining and skills required for the jewellery-making industry.

### **Mine Health and Safety Act Amendment**

The Department has embarked on a process of reviewing and refining the MHSA, as amended, to ensure that regulatory best practices are included in the Act to influence the mining activities that have an impact on the health and safety of mine employees and the affected communities.

The review of the MHSA seeks to strengthen enforcement provisions, streamline the administrative processes, reinforce offences and penalties, remove ambiguities in certain definitions, and express and harmonise the Act with other laws, such as the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002 (MPRDA)).

The Department was granted approval by Cabinet to publish the Mine Health and Safety Amendment Bill in the *Government Gazette* for public comment. The public had been given a period of 60 working days from 15 November 2013 to submit comments on the Amendment Bill. Thereafter, the Department would consider inputs from stakeholders, revise the Amendment Bill and table it in Parliament towards the end of 2014.

### **Monitoring Compliance and Enforcing Legal Provisions**

In order to monitor and enforce compliance to health and safety measures at mines, group audits and inspections are being conducted to ensure compliance with the legal provisions. Group audits focus on the effectiveness of control measures that have been put in place to prevent rock falls, rock bursts and transport equipment accidents.

Other audits evaluate mine management systems on preventing the exposure of employees to noise and dust (including silica dust), which could result in workers suffering from NIHL and silicosis. The mine management systems are also evaluated on their TB and HIV/AIDS programmes. Mine inspectors monitor compliance with the commitments of the Mining Charter to improve the living conditions of employees and the conversion of single-sex hostels into accommodation complexes. Research has determined that poor living conditions at mines exacerbate the occurrence of TB, HIV/AIDS and other health and safety concerns.

### **Health and Safety of Women in Mining**

There has been an increase in the number of women participating in the mining sector since the dawn of democracy. However, it is disturbing to note that there are still reports or incidents of female employees being killed, sexually harassed or exposed to inhumane treatment by their fellow male workers in the workplace. All stakeholders need to ensure that interventions are implemented to prevent the intimidation of women in mining, while more attention should be given to the health and safety of women in the mining sector.

The personal protective equipment (PPE) available for use at mines is not always suitable for female mine employees, as most of the PPE is based on the male body structure. Research has been conducted, through the MHSC, in this regard and the recommendations of the research will assist the mining sector in the selection, provision, appropriateness and suitability of clothing for female mine employees.

### **Illegal Mining**

Illegal mining continues to be one of the MHSI's greatest concerns. Such activities have recently been reported in Gauteng's Ekurhuleni, Roodepoort and Florida areas.

This is a serious safety challenge, as illegal miners access dangerous old mines without any knowledge and understanding of the safety risks involved. This results in numerous deaths. The illegal miners are easily exploited by organised crime syndicates and a holistic approach is required to find a solution. The MHSI continues to collaborate with the relevant law enforcement agencies and other social partners to ensure that there is national coordination in the combatting of illegal mining.

## 1.3 Mission Statement

The MHSI strives towards a safe and healthy mining industry. This is to be achieved by reducing mining-related deaths, injuries and ill health through the formulation of national policy and legislation, the provision of advice, and the application of systems that monitor and enforce compliance with the law in the mining sector.

## 1.4 Legislative Mandate

The MHSI was established in terms of the Mine Health and Safety Act, 1996 (Act 29 of 1996), as amended, for the purpose of executing the statutory mandate of the Inspectorate in safeguarding the health and safety of mine employees and communities affected by mining operations.



# PROGRAMME PERFORMANCE

## 2. PROGRAMME PERFORMANCE

### Aim of the Programme

The MHSI was established in terms of the MHSA, as amended. The aim of the programme is to carry out the Department of Mineral Resources' constitutional mandate of protecting the health and safety of persons working at mines and in nearby communities directly affected by mining activities. This is done through performing statutory inspections and audits, the enforcement of the MHSA and its regulations, as well as conducting investigations and inquiries into all occupational health and safety deaths and injuries at South African mines. The programme also administers GCCs for the mining sector. It consists of two sub-programmes: Governance and Policy Oversight, and Mine Health and Safety Regions.

### Purpose

To execute the Department's statutory mandate to protect the health and safety of mine employees and people affected by mining activities.

### 2.1 Service Delivery Objectives and Indicators

The MHSI's strategic plan and achievements during the period under review are outlined in the following table. This is an account of progress achieved in the period under review against the annual targets set for achieving the strategic objectives of the MHSI.

TABLE 2.1: PROGRAMME 2: PROMOTION OF MINE HEALTH AND SAFETY

| Strategic goals                                     | Strategic objectives             | Measure  | Actual | Target | Variance | Performance analysis  | Recommendations  |
|---|----------------------------------|--|--------|--------|----------|---|--|
| Sufficient and relevant skills in the mining sector | Contribute to skills development | Review and implement a Certificate of Competency Model to improve pass rates | 1      | 1      | 0        | <b>Achieved:</b> Model reviewed<br><b>Verification source:</b> Draft report   |  |
| Transformed mineral sector (stakeholder)            | Promote health and safety        | Percentage adherence to the enforcement guideline                            | 100    | 100    | 0        | <b>Achieved:</b> There were 1 074 Section 54 instructions issued, 2 390 Section 55 instructions and nine administrative fines imposed during 2013/14.<br><b>Verification source:</b> Summary of statutory instruction report (Section 54 or Section 55 or administrative fines) |  |
|   |                                  | Percentage of enquiries completed (initiated vs completed)                   | 88     | 70     | 18       | <b>Achieved:</b> The average percentage achieved is 88%.<br><b>Calculation:</b> There were 97 enquiries initiated and 85 completed (85/97) = 88%, as indicated in verification source.<br><b>Verification source:</b> Summary of enquiry reports                                | The reasons that led to surpassing the target are as follows:<br><ul style="list-style-type: none"> <li>• Officials went the extra mile and worked harder to complete all the enquiries initiated.</li> <li>• The availability of witnesses required at most of the enquiries improved.</li> <li>• Unions and employer representatives assisted a great deal in preparing their respective witnesses at most of the enquiries.</li> </ul>                |
|   |                                  | Percentage of investigations completed (initiated vs completed)              | 87     | 80     | 7        | <b>Achieved:</b> The average performance achieved is 87%.<br><b>Calculation:</b> Initiated 2 773 and completed 2 408. Calculation: (2 408/2 773) = 87% as indicated in the verification source<br><b>Verification source:</b> Summary of investigation reports                  | The reasons that led to surpassing the target are as follows:<br><ul style="list-style-type: none"> <li>• Officials went the extra mile and worked harder to complete all the initiated investigations.</li> <li>• The availability of witnesses required at most of the investigations improved.</li> <li>• Unions and employer representatives assisted a great deal in preparing their respective witnesses at most of the investigations.</li> </ul> |



| Strategic goals | Strategic objectives | Measure   | Actual | Target | Variance | Performance analysis   | Recommendations   |
|-----------------|----------------------|---|--------|--------|----------|--|---|
|                 |                      | Percentage reduction in dangerous occurrences   | 1.5    | 20     | -18.5    | <p><b>Not achieved:</b> There were 475 dangerous occurrences during 2013/14 and 468 during 2012/13.</p> <p><b>Calculation:</b> <math>(475 - 468)/468 = 1.5\%</math> regression</p> <p><b>Verification source:</b> Summary of dangerous occurrences</p>   | <p>More investigations and audits to be conducted on the causes of these dangerous occurrences. However, mines that have not reported have been monitored and this has resulted in an increase in these reports. It must be noted that these reports are for incidents that have occurred at the mine, but did not result in an injury or fatality. The outcome of investigations will assist in coming up with strategies to minimise these dangerous occurrences.</p> |
|                 |                      | Percentage reduction in employee overexposure to noise occupational exposure limit (OEL) to reduce NIHL | 10     | 10     | 0        | <p><b>Achieved:</b><br/> Quarter 1: -33% improvement<br/> Quarter 2: -14.17% improvement<br/> Quarter 3: +3% regression<br/> Quarter 4: +3% regression<br/> Therefore: <math>[-33 - 14.17 + 3 + 3] = 41/4 = -10.25</math> improvement.</p> <p><b>Verification source:</b> Noise Milestone Indicator Report</p>   |   |
|                 |                      | Percentage reduction in employee overexposure to silica OEL to reduce silicosis                         | 3.6    | 10     | -6.4     | <p><b>Not achieved:</b> The reason that led to non-achievement of the set target is mainly increased incidents regarding overexposure to silica-bearing dust particles during the second quarter. However, the stringent action taken by inspectors against non-complying mines led to an improvement in this regard during the last two quarters of the financial year.</p> <p>Quarter 1: -18% improvement<br/> Quarter 2: +31% regression<br/> Quarter 3: -8% improvement<br/> Quarter 4: -19.42% improvement<br/> Therefore: <math>[-18 + 31 - 8 - 19.42] = -14.42/4 = -3.6\%</math> improvement.</p> <p><b>Verification source:</b> Silicosis Milestone Indicator Report</p> | <p>More inspections and audits to be carried out by the occupational hygiene inspectors in the areas of silica exposure in the mine.</p>  |

| Strategic goals | Strategic objectives | Measure   | Actual | Target | Variance | Performance analysis   | Recommendations  |
|-----------------|----------------------|---|--------|--------|----------|--|--|
|                 |                      | Percentage reduction in occupational fatalities | 16     | 20     | -4       | <p><b>Partially achieved:</b> There were 109 fatalities in 2013/14 and 129 during 2012/13.</p> <p><b>Calculation:</b> <math>(109 - 129)/129 \times 100\% = -16\%</math> improvement. There were two disasters during 2013/14, where six and nine mine employees were killed in the two separate accidents respectively.</p> <p><b>Verification source:</b> Summary of fatalities</p>   | <p>Two CIOM instructions were issued to all mines to be more vigilant during the first and last quarters of every calendar year, because the mining industry experiences a high number of fatalities during this period. Mines were also instructed to launch health and safety campaigns to reduce the number of fatalities. However, more investigations and inquiries on the causes of these fatalities are to be conducted.</p>  |
|                 |                      | Percentage reduction in occupational injuries   | 28     | 20     | -8       | <p><b>Achieved:</b> There were 3 044 injuries reported in 2013/14 and 4 202 during 2012/13.</p> <p><b>Calculation:</b> <math>(3\ 044 - 4\ 202)/4\ 202 \times 100 = -28\%</math> improvement.</p> <p><b>Verification source:</b> Summary of injuries</p>  | <p>The reasons that led to surpassing the target are as follows:</p> <ul style="list-style-type: none"> <li>• Officials went the extra mile and were stricter during inspections and audits.</li> <li>• Lessons learned from inquiries and investigations minimised the risk and prevented injuries against mine employees.</li> <li>• The implementation of leading practices and outcomes of focused health and safety research contributed to less injuries of mine employees.</li> </ul> |
|                 |                      | Legislative framework reviewed                  | 100    | 100    | 0        | <p><b>Achieved:</b></p> <p>Quarter 1: Refuge Bay Regulations completed</p> <p>Quarter 2: Conveyor Belt Regulation and Occupational Health Incident Reporting Regulation</p> <p>Quarter 3: Two CIOM instructions were issued on the protection of female mine employees and extra caution and vigilance to minimise fatalities and injuries of mine employees during the last quarter of the calendar year.</p> <p>Quarter 4: Electricity Regulations and Trackless Mobile Machines (TMM) Regulations were completed.</p> <p><b>Verification source:</b> Copies of the instructions and regulations</p> |  |

| Strategic goals | Strategic objectives | Measure  | Actual | Target | Variance | Performance analysis  | Recommendations  |
|-----------------|----------------------|--|--------|--------|----------|---|--|
|                 |                      | MHSI Annual Report submitted   | 1      | 1      | 0        | <b>Achieved:</b> Annual report submitted and tabled in Parliament on 26 September 2013.<br><b>Verification source:</b> Copy of the Annual Report  |  |
|                 |                      | Number of audits conducted (cumulative), individual audits included  | 473    | 396    | 77       | <b>Achieved</b><br><b>Calculation:</b> The total for the first quarter is 130, the second quarter 120, the third quarter 101 and the fourth quarter 122.<br><b>Verification source:</b> Summary of audit report               | The reasons that led to surpassing the target are as follows:<br>• Officials went the extra mile and conducted extra audits due to additional time that became available as a result of the strike in the Platinum Belt and improved inquiries and investigation processes.      |
|                 |                      | Number of inspections conducted (cumulative)                         | 9 446  | 8 000  | 1 446    | <b>Achieved</b><br><b>Calculation:</b> The total of the first quarter is 2 412, the second quarter 2 511, the third quarter 2 213 and the fourth quarter 2 310.<br><b>Verification source:</b> Summary of inspections report  | The reasons that led to surpassing the target are as follows:<br>• Officials went the extra mile and conducted extra inspections due to additional time that became available as a result of the strike in the Platinum Belt and improved inquiries and investigation processes. |
|                 |                      | Number of tripartite workshops conducted                             | 62     | 40     | 22       | <b>Achieved</b><br><b>Calculation:</b> The total for the first quarter is 15, the second quarter 18, the third quarter 18 and the fourth quarter 11.<br><b>Verification source:</b> Summary of tripartite workshops conducted | The reasons that led to surpassing the target are as follows:<br>• Officials went the extra mile and conducted extra tripartite workshops in bigger regions due to high demand, different commodities and vast distances between mines.  |
|                 |                      | Quarterly Occupational Health and Safety (OHS) newsletters published | 4      | 4      | 0        | <b>Achieved</b><br><b>Verification source:</b> Copies of newsletters  |  |
|                 |                      |  |        |        |          |   |  |

| Strategic goals   | Strategic objectives                      | Measure   | Actual | Target | Variance | Performance analysis  | Recommendations |
|---|---|---|--------|--------|----------|---|-----------------|
| Efficient, effective and development-orientated department (internal processes) | Develop and review internal processes     | Percentage of identified internal processes developed, reviewed and implemented | 100    | 100    | 0        | <p><b>Achieved</b></p> <p>Quarter 1: DMR 164-HIV and TB reporting form was developed and sent to the regions to be distributed to various mines. A reviewed template for the quarterly reporting of branch performance was presented at the meeting of the principal inspectors of mines (PIs) meeting and adopted</p> <p>Quarter 2: The examination procedure of GCC engineers' Annexure E was reviewed and a standard operation procedure for the packaging of examination papers was developed.</p> <p>Quarter 3: Revision of the South African Mines Reportable Accidents Statistical System (SAMRASS) codebook training offered to stakeholders on the review and implementation of the revised forms.</p> <p>Quarter 4: Instructions related to the exit medical examinations and the challenges of mine fatalities and injuries in the first quarter of the calendar year were issued to all the mines.</p> <p><b>Verification source:</b> Copies of all the above documents</p> |                 |
|   | Implement service-level agreements (SLAs) | Percentage adherence to existing SLAs   | 100    | 100    | 0        | <p><b>Achieved:</b> The Department has an SLA with Mine Rescue Services (MRS) and the Department must pay MRS once services have been rendered.</p> <p><b>Verification source:</b> Proof of payment to show that all services rendered were paid for. The services rendered are the rescuing of illegal miners from ownerless or abandoned mines.</p>   |                 |

| Strategic goals | Strategic objectives     | Measure   | Actual | Target | Variance | Performance analysis   | Recommendations  |
|-----------------|--------------------------|---|--------|--------|----------|--|--|
|                 | Improve turnaround times | Percentage adherence to prescribed timeframes of administrative tasks | 100    | 80     | 20       | <p><b>Achieved:</b> There were 1 786 applications received and 1 789 completed during 2013/14. The additional three applications rolled over from 2012/13.</p> <p><b>Calculation:</b> <math>((1\ 789/1\ 786)*100) = 100\%</math>.</p> <p><b>Verification source:</b> Summary of administrative registers</p> | <p>The reasons that led to surpassing the target are as follows:</p> <ul style="list-style-type: none"> <li>Officials went the extra mile in finalising administrative tasks.</li> <li>More time became available due to the strike in the Platinum Belt and this time was used to complete more administrative work.</li> </ul> |
|                 |                          | Percentage adherence to prescribed timeframes for CIOM appeals        | 100    | 90     | 10       | <p><b>Achieved:</b> All CIOM appeals received during 2013/14 were completed within the prescribed timeframes.</p> <p><b>Verification source:</b> Letter of reply to appeals</p>  | <p>The reasons that led to surpassing the target are as follows:</p> <ul style="list-style-type: none"> <li>Officials went the extra mile in finalising CIOM appeals.</li> <li>More time became available due to the strike in the Platinum Belt and this time was used to complete more CIOM appeals.</li> </ul>                |
|                 |                          | Percentage adherence to prescribed timeframes for medical appeals     | 96     | 80     | 16       | <p><b>Achieved:</b> There were 162 appeals received and 156 completed during 2013/14</p> <p><b>Calculation:</b> <math>((156/162)*100) = 96\%</math>.</p> <p><b>Verification source:</b> Summary of medical appeal register</p>   | <p>The reasons that led to surpassing the target are as follows:</p> <ul style="list-style-type: none"> <li>Officials went the extra mile in finalising medical appeals.</li> <li>More time became available due to the strike in the Platinum Belt and this time was used to complete more medical appeals.</li> </ul>          |
|                 |                          | Percentage adherence to prescribed timeframes for MPRDA applications  | 96     | 80     | 16       | <p><b>Achieved:</b> There were 3 773 applications received and 3 638 completed during 2013/14.</p> <p><b>Calculation:</b> <math>((3\ 638/3\ 773)*100) = 96\%</math>.</p> <p><b>Verification source:</b> Summary of administrative register</p>   | <p>The reasons that led to surpassing the target are as follows:</p> <ul style="list-style-type: none"> <li>Officials went the extra mile in finalising MPRDA applications.</li> <li>More time became available due to the strike in the Platinum Belt and this time was used to complete more MPRDA applications.</li> </ul>    |

| Strategic goals  | Strategic objectives                             | Measure   | Actual | Target | Variance | Performance analysis   | Recommendations  |
|--|--|---|--------|--------|----------|--|--|
| Efficient, effective and development-orientated department (learning and growth) | Attract, develop and retain skills               | Percentage reduction in staff turnover                                    | -1     | 1      | -2       | <b>Not achieved</b><br><b>Verification source:</b> Human Resources (HR) Establishment Report   | Review of exit interviews to determine the causes of the high staff turnover   |
|  |  | Improved numbers in terms of identified employment equity (EE) categories | 125    | 157    | -32      | <b>Partially achieved:</b> The branch has advertised the posts, but failed to attract people from all categories.<br><b>Verification source:</b> Personnel and Salary System (PERSAL) and Excel spreadsheets                               | The branch will ensure that more attention will be given to those categories that were not achieved when filling positions in the fourth quarter, 31 March 2015. |
|  |  | Number of Human Resources Development (HRD) initiatives implemented       | 6      | 6      | 0        | <b>Achieved:</b> Workplace learning, technical programmes, demand/supply of scarce skills, career planning and talent management programmes plus sector education and training authorities (SETAs) implemented as part of HRD initiatives. |  |
|  |  |   |        |        |          | <b>Verification source:</b> MHSI Branch reporting template. Lists and attendance registers are with HRD.   |  |
|  | Facilitate management and leadership development | Number of management programmes implemented                               | 4      | 4      | 0        | <b>Achieved:</b> The following training programmes were implemented during the financial year: EMDP, AMDP, BTEch and MBA degrees<br><b>Verification source:</b> Attendance registers.  |  |
|  |  | Number of managers who completed management courses                       | 13     | 10     | 3        | <b>Achieved:</b> 13 managers attended management courses. EMPD (2), AMPD (8), BTEch (1) and MBA (2).<br><b>Verification source:</b> The list of nominated officials  | The variance is due to the directive by the Department's management requesting managers to attend certain management courses.                                    |
|  |  | Number of workshops on Department of Mineral Resources (DMR) strategy     | 11     | 11     | 0        | <b>Achieved</b><br><b>Verification source:</b> Summary of DMR strategy workshops   |  |
|  | Filling of funded vacancies                      | Percentage reduction in vacancies   | 4      | 3      | 1        | <b>Achieved:</b> Vacancy rate decreased with 2% to 19% the previous quarter with a target of 4%  |  |
|  |  |   |        |        |          | <b>Verification source:</b> HRD Report   |  |

| Strategic goals  | Strategic objectives         | Measure  | Actual | Target | Variance | Performance analysis  | Recommendations  |
|--|------------------------------|--|--------|--------|----------|---|--|
| Efficient, effective and development-oriented department (financial) | Align budget to strategy     | Percentage changes made to the original allocated budget   | 0      | 20     | -20      | <b>Achieved:</b> There was no shifting between economic classifications.<br><b>Verification source:</b> Report on changes effected on original spending plan received from Public Finance Management Act (PFMA)   | The branch only made 6% changes to its originally allocated budget. This was due to proper planning and monitoring of expenditure.   |
|  | Manage cost effectively      | Percentage variance on allocated budget  | 1      | 5      | -4       | <b>Achieved:</b> There was R153, 3 million spent compared to the projected R154,55 million. This entails an underspending of 0,51%<br><b>Verification source:</b> March 2014 budget analysis report received from PFMA.   | The variance between the planned and the actual expenditure is due to proper planning and monitoring of expenditure.   |
|  |                              | Percentage reduction in irregular expenditure cases  | 100    | 100    | 0        | <b>Achieved:</b> No cases for this quarter<br><b>Verification source:</b> DMR Irregular Expenditure Report  |  |
|  | Maximise use of resources    | Percentage reduction in the number of branch assets disposed of prior to the end of their lifespan | -26    | 15     | -41      | <b>Not achieved:</b> Increased from R44 667 in previous year to R60 246 for current year. (R60 246 - R44 667 = R15 579) (R15 579/ R60 246 = 26%).<br><b>Verification source:</b> Supply Chain Management (SCM) reports percentage reduction in the number of assets disposed of prior to the end of their lifespan. | Encourage and instruct employees to safeguard assets at all times as the majority of these assets were laptops that were stolen.   |
|  | Promote corporate governance | Percentage adherence to compliance framework   | 100    | 100    | 0        | <b>Achieved:</b> The compliance checklist has been completed  |  |
|  |                              | Percentage implementation of risk management plans   | 100    | 100    | 0        | <b>Achieved:</b> All 45 action plans were implemented<br><b>Verification source:</b> Summary of Risk Register Report for 2013/14  |  |
|  |                              | Percentage of fully implemented, agreed-upon management action plans (external audit)              | 100    | 100    | 0        | <b>Achieved:</b> All agreed-upon management action plans were fully implemented<br><b>Verification source:</b> Audit reports are kept with the internal auditors.   |  |
|  |                              | Percentage of fully implemented, agreed-upon management action plans (internal audit)              | 33     | 100    | 67       | <b>Not achieved:</b> The branch implemented one of three action plans   | The two outstanding action plans were implemented during the fourth quarter. However, at the time of reporting, the internal auditors had not yet finalised the audit for the fourth quarter. Hence, this measure still reflected as not achieved. |



## 2.2 Service Delivery Improvement Plan

TABLE 2.2: SERVICE DELIVERY IMPROVEMENT PLAN

| Key service   | Service beneficiary | Current standard (2012/13)       |   | Desired standard (2012/13)               | Progress as at 31 March 2014  |   |
|---|---------------------|----------------------------------|---|--|---|---|
| Address health and safety risks in mining through: <ul style="list-style-type: none"> <li>• Number of audits conducted</li> <li>• Number of inspections conducted</li> <li>• Number of investigations conducted</li> <li>• Number of inquiries completed</li> </ul> | Mining operations   | Quantity                         | 100% of planned audits as per capacity  | Quantity                                 | 100% of planned audits as per capacity  | 119% of planned audits as per capacity        |
|   |                     |                                  | 100% of planned inspections as per capacity   |  | 100% of planned inspections as per capacity   | 118% of planned inspections as per capacity   |
|   |                     |                                  | 80% of planned investigations as per capacity   |  | 80% of planned investigations as per capacity   | 87% of planned investigations as per capacity |
|   |                     |                                  | 70% of planned inquiries as per capacity  |  | 70% of planned inquiries as per capacity  | 88% of planned inquiries as per capacity      |
|   |                     | Quality                          | Implementation and compliance to standardised policies and procedures                               | Quality                                  | Implementation and compliance to standardised policies and procedures   | Achieved                                      |
|   |                     | Consultation                     | Quarterly consultations with mining operations  | Consultation                             | Monthly consultations with mining operations  | Achieved                                      |
|   |                     | Open and transparent Information | Policies and procedures are public documents<br>Information is shared with mines on a monthly basis | Openness and transparency<br>Information | Policies and procedures are public documents.<br>Information is shared with mines on a monthly basis and an electronic management system would improve the availability of information. | Achieved                                      |
|   |                     | Value for money                  | Ensure the optimal utilisation of voted funds   | Value for money                          | Ensure the optimal utilisation of voted funds   | Achieved                                      |





# STATE OF SAFETY AND HEALTH AT MINES

### 3. STATE OF SAFETY AND HEALTH AT MINES

#### 3.1 Occupational Safety

##### 3.1.1 Accident Statistics

##### 3.1.1.1 Number of Employees in Service

**TABLE 3.1.1.1: NUMBER OF EMPLOYEES IN SERVICE DURING 2012 AND 2013**

|              | 2012           | 2013           | Change      |
|--------------|----------------|----------------|-------------|
|              | Labour         | Labour         |             |
| Gold         | 130 973        | 122 202        | -6.7        |
| Platinum     | 180 010        | 173 047        | -3.9        |
| Coal         | 80 582         | 84 883         | 5.3         |
| Diamonds     | 12 289         | 13 405         | 9.1         |
| Copper       | 3 110          | 3 115          | 0.2         |
| Chrome       | 17 882         | 18 232         | 2.0         |
| Iron ore     | 23 134         | 20 710         | -10.5       |
| Manganese    | 8 556          | 9 747          | 13.9        |
| Other        | 49 899         | 47 886         | -4.0        |
| <b>Total</b> | <b>506 435</b> | <b>493 227</b> | <b>-2.6</b> |

There has been an overall decline of 2.6% in the total number of persons or labour in service in the mining industry. A decrease can be seen in the following commodities: gold (6.7%), platinum (3.9%), iron ore (10.5%) and other mines (4%). However, there was an increase in the following commodities: coal (5.3%), diamonds (9.1%), copper (0.2%), chrome (2%) and manganese (13.9%).

##### 3.1.1.2 Fatality Rates per Region

**TABLE 3.1.1.2: FATALITY RATES PER REGION**

|                        | 2012 | Fatality rate | 2013* | Fatality rate | Percentage change in rates |
|------------------------|------|---------------|-------|---------------|----------------------------|
| All mines              | 112  | 0.10          | 93    | 0.09          | -10.00                     |
| Western Cape           | 2    | 0.14          | 0     | 0.00          | -100.00                    |
| Northern Cape          | 3    | 0.04          | 2     | 0.02          | -50.00                     |
| Free State             | 12   | 0.15          | 8     | 0.10          | -33.33                     |
| Eastern Cape           | 0    | 0.00          | 1     | 0.21          | 100.00                     |
| KwaZulu-Natal          | 1    | 0.03          | 9     | 0.27          | 800.00                     |
| Mpumalanga             | 14   | 0.07          | 11    | 0.06          | -14.29                     |
| Limpopo                | 15   | 0.13          | 6     | 0.05          | -61.54                     |
| Gauteng                | 31   | 0.16          | 21    | 0.12          | -25.00                     |
| North West: Klerksdorp | 9    | 0.19          | 5     | 0.11          | -42.11                     |
| Rustenburg             | 25   | 0.07          | 30    | 0.09          | 28.57                      |
| * provisional          |      |               |       |               |                            |

The overall fatality rate for all mines decreased by 10%. The following regions have shown a decrease: Western Cape (100%), Northern Cape (50%), Free State (33.3%), Mpumalanga (14.29%), Limpopo (61.54%), Gauteng (25%) and North West: Klerksdorp (42.11%). The other regions showed an increase: Eastern Cape (100%), KwaZulu-Natal (800%) and North West: Rustenburg (28.57%).

### 3.1.1.3 Injury Rates per Region

**TABLE 3.1.1.3: INJURY RATES PER REGION**

|                               | 2012         | Injury rate | 2013*        | Injury rate | Percentage change in rates |
|-------------------------------|--------------|-------------|--------------|-------------|----------------------------|
| <b>All mines</b>              | <b>3 367</b> | <b>3.03</b> | <b>3 126</b> | <b>2.88</b> | -4.95                      |
| <b>Western Cape</b>           | <b>14</b>    | <b>0.99</b> | <b>6</b>     | <b>0.42</b> | -57.58                     |
| <b>Northern Cape</b>          | <b>60</b>    | <b>0.72</b> | <b>67</b>    | <b>0.83</b> | 15.28                      |
| <b>Free State</b>             | <b>323</b>   | <b>4.03</b> | <b>305</b>   | <b>3.96</b> | -1.74                      |
| <b>Eastern Cape</b>           | <b>2</b>     | <b>0.44</b> | <b>0</b>     | <b>0.00</b> | -100.00                    |
| <b>KwaZulu-Natal</b>          | <b>35</b>    | <b>1.11</b> | <b>44</b>    | <b>1.30</b> | 17.11                      |
| <b>Mpumalanga</b>             | <b>314</b>   | <b>1.65</b> | <b>277</b>   | <b>1.43</b> | -13.33                     |
| <b>Limpopo</b>                | <b>202</b>   | <b>1.69</b> | <b>156</b>   | <b>1.37</b> | -18.93                     |
| <b>Gauteng</b>                | <b>797</b>   | <b>3.97</b> | <b>631</b>   | <b>3.58</b> | -9.82                      |
| <b>North West: Klerksdorp</b> | <b>378</b>   | <b>8.06</b> | <b>319</b>   | <b>7.16</b> | -11.17                     |
| <b>Rustenburg</b>             | <b>1 242</b> | <b>3.61</b> | <b>1 321</b> | <b>3.82</b> | 5.82                       |
| * provisional                 |              |             |              |             |                            |

The overall injury rate for all mines decreased by 4.95%. The following regions showed a decrease: Western Cape (57.58%), Free State (1.74%), Eastern Cape (100%), Mpumalanga (13.33%), Limpopo (18.93%), Gauteng (9.82) and North West: Klerksdorp (11.17%). The other regions showed an increase: Northern Cape (15.28%), KwaZulu-Natal (17.11%) and North West: Rustenburg (5.82%).

### 3.1.1.4 Fatality Rates per Commodity

**TABLE 3.1.1.4: FATALITY RATES PER COMMODITY**

| Commodity        | 2012       | Fatality rate | 2013*     | Fatality rate | Percentage change in rates |
|------------------|------------|---------------|-----------|---------------|----------------------------|
| <b>All mines</b> | <b>112</b> | <b>0.10</b>   | <b>93</b> | <b>0.09</b>   | -10.00                     |
| <b>Chrome</b>    | <b>4</b>   | <b>0.10</b>   | <b>7</b>  | <b>0.17</b>   | 70.00                      |
| <b>Coal</b>      | <b>11</b>  | <b>0.06</b>   | <b>7</b>  | <b>0.04</b>   | -33.33                     |
| <b>Copper</b>    | <b>1</b>   | <b>0.15</b>   | <b>1</b>  | <b>0.15</b>   | 0.00                       |
| <b>Diamonds</b>  | <b>2</b>   | <b>0.07</b>   | <b>0</b>  | <b>0.00</b>   | -100.00                    |
| <b>Gold</b>      | <b>53</b>  | <b>0.18</b>   | <b>37</b> | <b>0.14</b>   | -22.22                     |
| <b>Iron ore</b>  | <b>2</b>   | <b>0.04</b>   | <b>0</b>  | <b>0.00</b>   | -100.00                    |
| <b>Manganese</b> | <b>0</b>   | <b>0.00</b>   | <b>0</b>  | <b>0.00</b>   | 0.00                       |
| <b>Other</b>     | <b>11</b>  | <b>0.12</b>   | <b>14</b> | <b>0.13</b>   | 8.33                       |
| <b>Platinum</b>  | <b>28</b>  | <b>0.07</b>   | <b>27</b> | <b>0.07</b>   | 0.00                       |

\* provisional

The fatality rates of mines in the following commodities decreased: gold (22.22%), coal (33.33%), diamonds (100%) and iron ore (100%). The commodities that maintained similar fatality rates include platinum, copper and manganese. The commodities that showed increased fatality rates are chrome (70%) and other mines (8.33%).

### 3.1.1.5 Injuries and Rates per Commodity

**TABLE 3.1.1.5: INJURIES AND RATES PER COMMODITY**

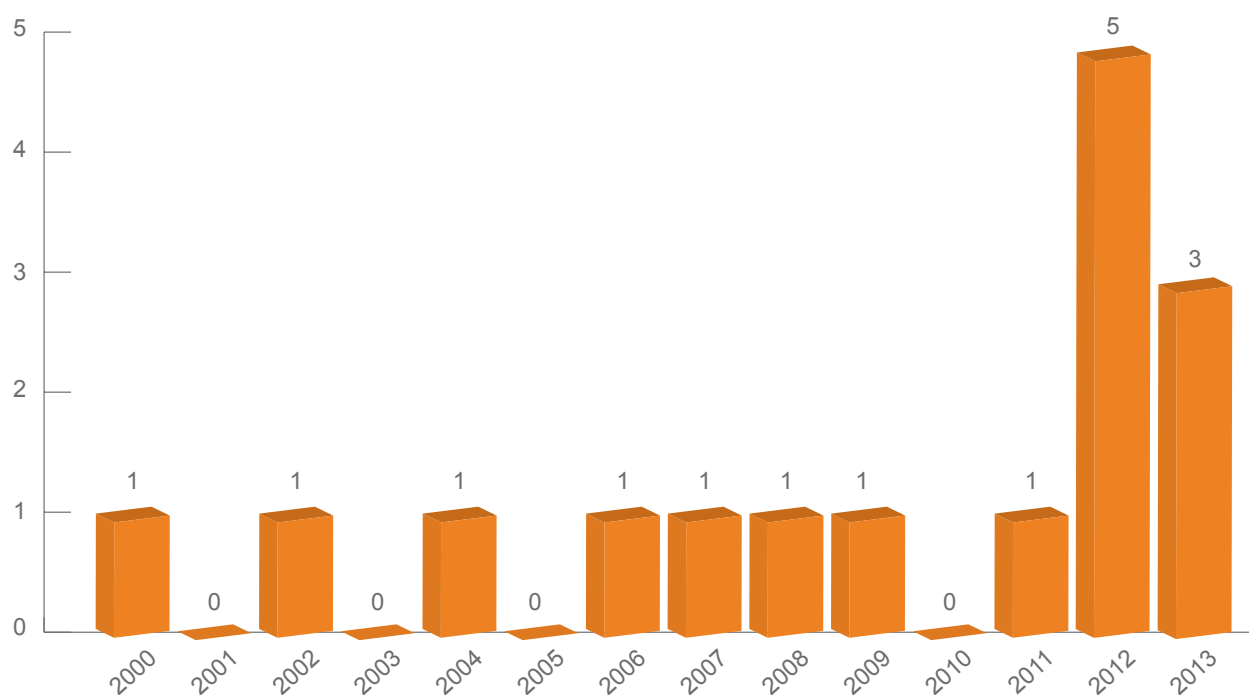
|           | 2012  | Injury rate | 2013* | Injury rate | Percentage change in rates |
|-----------|-------|-------------|-------|-------------|----------------------------|
| All mines | 3 367 | 3.03        | 3 126 | 2.88        | -4.95                      |
| Gold      | 1 477 | 5.13        | 1 252 | 4.66        | -9.16                      |
| Platinum  | 1 345 | 3.43        | 1 344 | 3.53        | 2.92                       |
| Coal      | 269   | 1.51        | 263   | 1.41        | -6.62                      |
| Diamonds  | 49    | 1.78        | 19    | 0.64        | -64.04                     |
| Copper    | 13    | 1.90        | 15    | 2.19        | 15.26                      |
| Chrome    | 82    | 1.96        | 91    | 2.27        | 15.82                      |
| Iron ore  | 20    | 0.39        | 34    | 0.75        | 92.31                      |
| Manganese | 13    | 0.80        | 14    | 0.65        | -18.75                     |
| Other     | 99    | 0.90        | 94    | 0.89        | -1.11                      |

\* provisional

The injury rates of mines in the following commodities showed a decrease: gold (9.16%), coal (6.62%), diamonds (64.04%), manganese (18.75%) and other mines (1.11%). The commodities that showed increased injury rates are platinum (2.92%), copper (15.26%), chrome (15.82%) and iron ore (92.31%).

### 3.1.1.6 Fatalities: Women in Mining

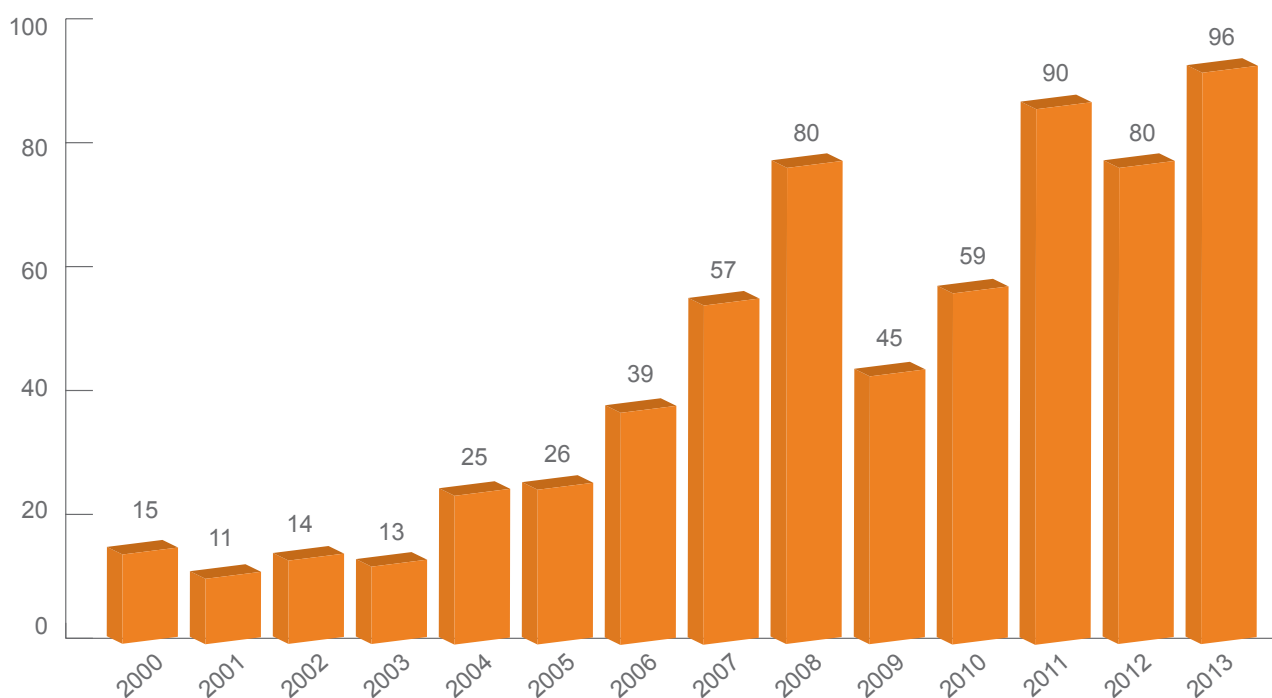
**TABLE 3.1.1.6: FATALITIES: WOMAN IN MINING**



Three female employees were fatally injured in 2013. This is as opposed to five in 2012, which translates to a 40% decrease.

### 3.1.1.7 Injuries: Women in Mining

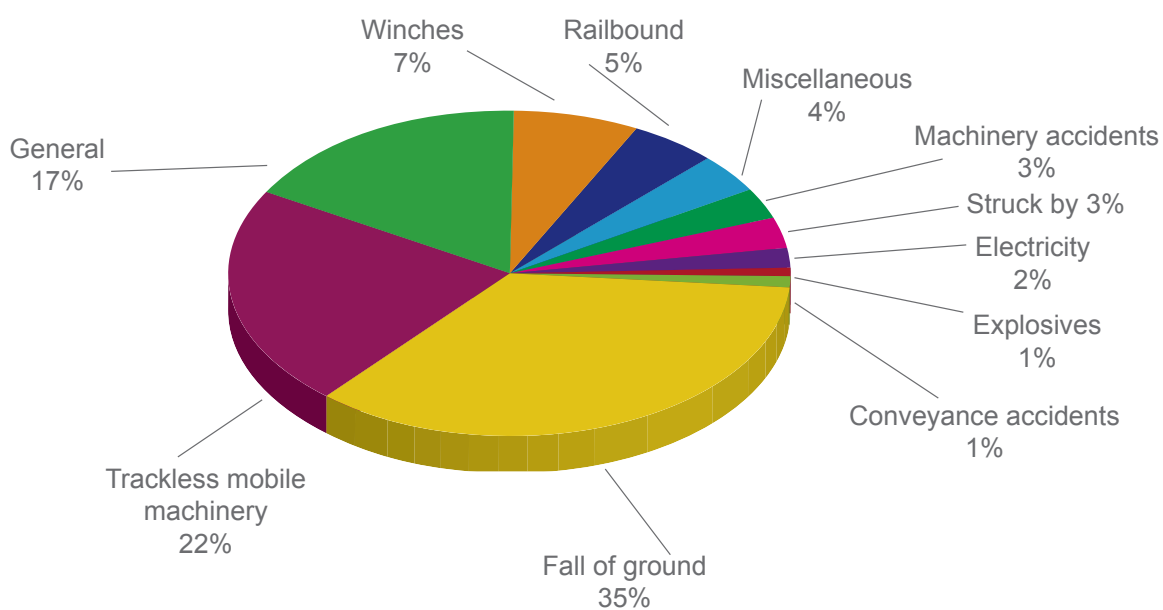
**TABLE 3.1.1.7: INJURIES: WOMAN IN MINING**



Eighty female employees were injured in 2012, as opposed to 92 in 2013, which translates to an increase of 15%.

### 3.1.2 Fatalities Classified by Casualty Classification

**TABLE 3.1.2: FATALITIES CLASSIFIED BY CASUALTY CLASSIFICATION**



**Falls of ground (FoGs) (35%)**

- Thirty-two fatalities were reported due to FoGs. Fifteen fatalities occurred at gold mines, 13 at platinum mines and four at other mines. During 2013, the coal sector did not experience a single fatality due to FoG for 12 months for the first time ever.

**Trackless mobile machines (TMMs) (22%)**

- Twenty fatalities were reported in this classification. Two fatalities occurred at gold mines, three at platinum mines, five at coal mines and 10 at other mines.

**General (17%)**

- Sixteen fatalities were reported in this classification. The platinum sector reported five, the coal sector two, the gold sector five and other mines reported four.

**Winches (7%)**

- Six fatalities were reported in this classification. Three occurred at gold mines and three at platinum mines.

**Rail-bound Mining Machinery (5%)**

- Five fatalities were reported in this classification. All these fatalities occurred at gold mines.

**Miscellaneous (4%)**

- Four fatalities were reported in this classification: three in the gold mines and one in the platinum mines.

**Machinery (3%)**

- Three fatalities were reported in this classification: two in gold mines and one in other mines.

**Struck by (3%)**

- Three fatalities were reported in this classification: one each in the gold, platinum and other mines.

**Electricity (2%)**

- Two fatalities were reported in this classification: one in gold mines and one in the other mines.

**Explosives (1%)**

- One fatality was reported in this classification. It occurred in the other mines.

**Conveyance accidents (1%)**

- One fatality was reported in this classification in the platinum sector.

**3.1.3 Injuries Classified by Casualty Classification**

The table below reflects the number of reported injury accidents during the periods January to December 2012 and January to December 2013, as per the classification of the accident.

**TABLE 3.1.3: INJURIES CLASSIFIED BY CASUALTY CLASSIFICATION**

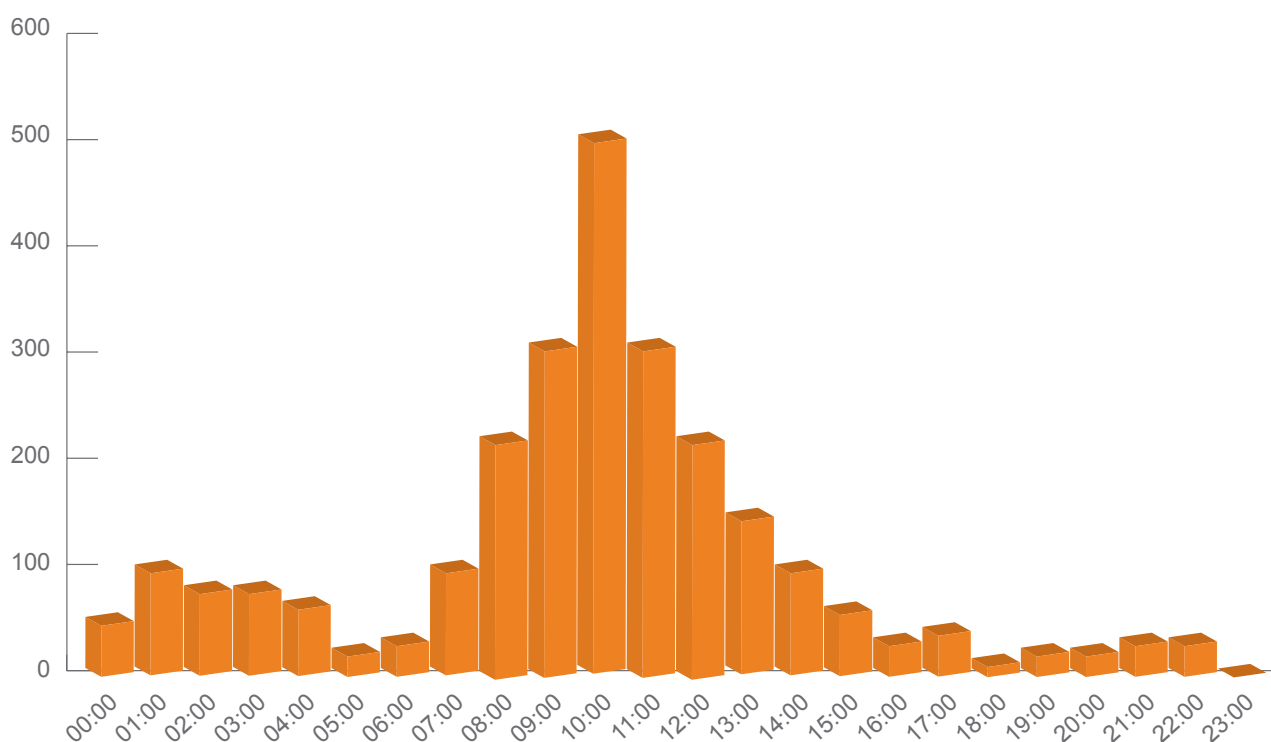
|                                  | Injuries                      |                               |
|----------------------------------|-------------------------------|-------------------------------|
|                                  | 1 January to 31 December 2012 | 1 January to 31 December 2013 |
| <b>FALL OF GROUND</b>            | <b>623</b>                    | <b>537</b>                    |
| Rock burst                       | 128                           | 101                           |
| Strain burst                     | 74                            | 52                            |
| Gravity                          | 421                           | 384                           |
| <b>MACHINERY</b>                 | <b>227</b>                    | <b>217</b>                    |
| Conveyor belts                   | 39                            | 41                            |
| Drives, belts, chains            | 18                            | 22                            |
| Portable power tools             | 132                           | 122                           |
| Other                            | 38                            | 32                            |
| <b>TRANSPORTATION AND MINING</b> | <b>583</b>                    | <b>570</b>                    |
| Locomotive                       | 56                            | 40                            |
| Locomotive drawn vehicle         | 58                            | 58                            |
| Re-railing                       | 26                            | 22                            |
| Coupling/uncoupling              | 37                            | 52                            |
| Scraper winch installation       | 119                           | 104                           |

|  | Injuries                      |                               |
|--|-------------------------------|-------------------------------|
|  | 1 January to 31 December 2012 | 1 January to 31 December 2013 |
| Other (transport)                                  | 5                             | 9                             |
| Endless rope vehicle                               | 0                             | 1                             |
| Single-drum winch                                  | 16                            | 25                            |
| Double-drum winch                                  | 17                            | 15                            |
| Rocker-arm shovel                                  | 25                            | 18                            |
| Personal transport                                 | 12                            | 12                            |
| Mono-rope/rail                                     | 10                            | 6                             |
| Hand tram  | 16                            | 16                            |
| Mechanical loaders                                 | 18                            | 19                            |
| Tractor/trailer                                    | 6                             | 9                             |
| Coal mining machines                               | 9                             | 4                             |
| Transporters                                       | 62                            | 51                            |
| Motor vehicles                                     | 25                            | 29                            |
| Transportation and mining lifting machines         | 33                            | 33                            |
| Transportation and mining mobile drilling machines | 24                            | 36                            |
| Other TMMs   | 9                             | 11                            |
| <b>GENERAL</b>                                     | <b>1 781</b>                  | <b>1 645</b>                  |
| Fall of material/rolling rock                      | 250                           | 362                           |
| Manual handling of material                        | 452                           | 440                           |
| Manual handling of mineral                         | 77                            | 56                            |
| Falling in/from                                    | 45                            | 43                            |
| Slipping and falling                               | 450                           | 418                           |
| Burning and scalding                               | 30                            | 35                            |
| Splinters  | 37                            | 25                            |
| Dust, gas and fumes                                | 285                           | 90                            |
| Inundation/drowning                                | 3                             | 2                             |
| Struck by ventilation door                         | 18                            | 23                            |
| Struck by any object manual handling               | 134                           | 151                           |
| <b>Conveyance accidents (s/w)</b>                  | <b>23</b>                     | <b>30</b>                     |
| <b>Electricity (not causing fires)</b>             | <b>18</b>                     | <b>27</b>                     |
| <b>Fires</b>                                       | <b>8</b>                      | <b>8</b>                      |
| <b>Explosives</b>                                  | <b>16</b>                     | <b>9</b>                      |
| <b>Subsidence/caving</b>                           | <b>3</b>                      | <b>0</b>                      |
| <b>Heat sickness</b>                               | <b>4</b>                      | <b>4</b>                      |
| <b>Miscellaneous</b>                               | <b>81</b>                     | <b>79</b>                     |
| <b>Total</b>                                       | <b>3 367</b>                  | <b>3 126</b>                  |

### 3.1.4 Accidents Classified by Time of Occurrence

Accidents classified by time of occurrence reflect that most of the injuries occurred during normal working hours.

**FIGURE 3.1.4: ACCIDENTS CLASSIFIED BY TIME OF OCCURRENCE**



### 3.1.5 Accident Classified by Location

The table below is a list of various locations at a mine where more than 20 injury accidents were reported during the period January to December 2013.

**TABLE 3.1.5: ACCIDENTS CLASSIFIED BY LOCATION**

| Location where >20 injury accidents occurred |     |
|--|-----|
| Workshops (surface)                          | 23  |
| Hostels                                      | 24  |
| Concentrator                                 | 27  |
| Crushing plant                               | 22  |
| Milling plant                                | 24  |
| Bord and pillar (conventional)               | 32  |
| Bord and pillar (continuous miner)           | 89  |
| Travelling road                              | 32  |
| Box hole or ore pass (mineral excavation)    | 22  |
| Centre gully                                 | 256 |
| Ledging stope                                | 24  |
| Stope entrance or travelling way             | 49  |
| Stope working face                           | 591 |
| Strike gully or cutting                      | 93  |
| Tip  | 51  |
| Travelling way (stope proper)                | 38  |
| Box hole or ore pass (mine development)      | 44  |



| Location where >20 injury accidents occurred |     |
|--|-----|
| Crosscut/drawpoint crosscut                  | 274 |
| Development or reef drive                    | 72  |
| Haulage (mine development)                   | 191 |
| Raise (including pole way)                   | 101 |
| Shaft station tip                            | 24  |
| Inclined shaft                               | 20  |
| Shaft station                                | 45  |
| Crosscut (transport systems)                 | 33  |
| Haulage (transport systems)                  | 54  |
| Opencast                                     | 48  |
| Surface working or processes                 | 29  |

The locations at which most of the accidents occur were bord and pillar (continuous miner) (89), centre gully (256), stope working face (591), tip (51), crosscut/drawpoint crosscut (274), haulage (191) and raise (including pole way) (101).

### 3.1.6 Enforcement

#### 3.1.6.1 Section 54 Instructions

Section 54 instructions of the MHSA are issued if an IOM has a reason to believe that any occurrence, practice or condition at a mine endangers or may endanger the health and safety of any person at the mine. The inspector may give any instruction necessary to protect the health and safety of persons at that mine.

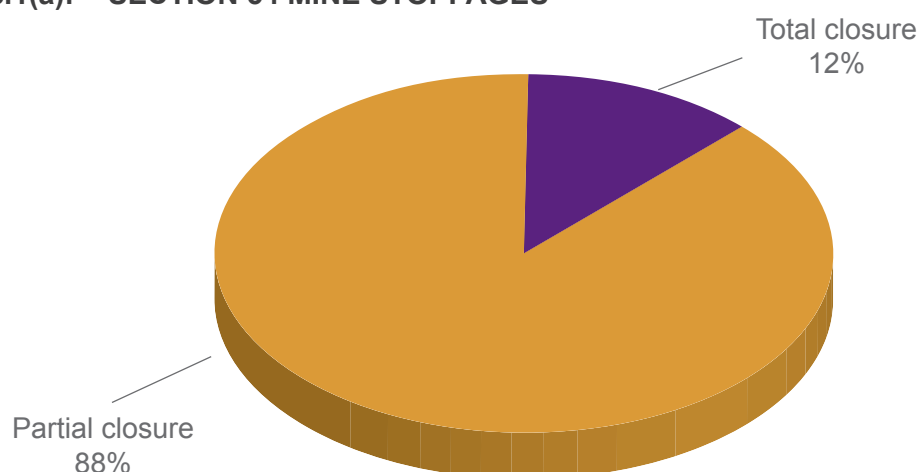
An IOM's instruction may result in the following scenarios:

- Halt the operations at the mine or part of a mine.
- Halt any act or practice at the mine or part of a mine.

The employer must take steps as set out in the instruction to rectify the occurrence, practice or condition.

The graph below depicts the percentage of Section 54 instructions resulting in total closure versus partial closure, during the period January to December 2013.

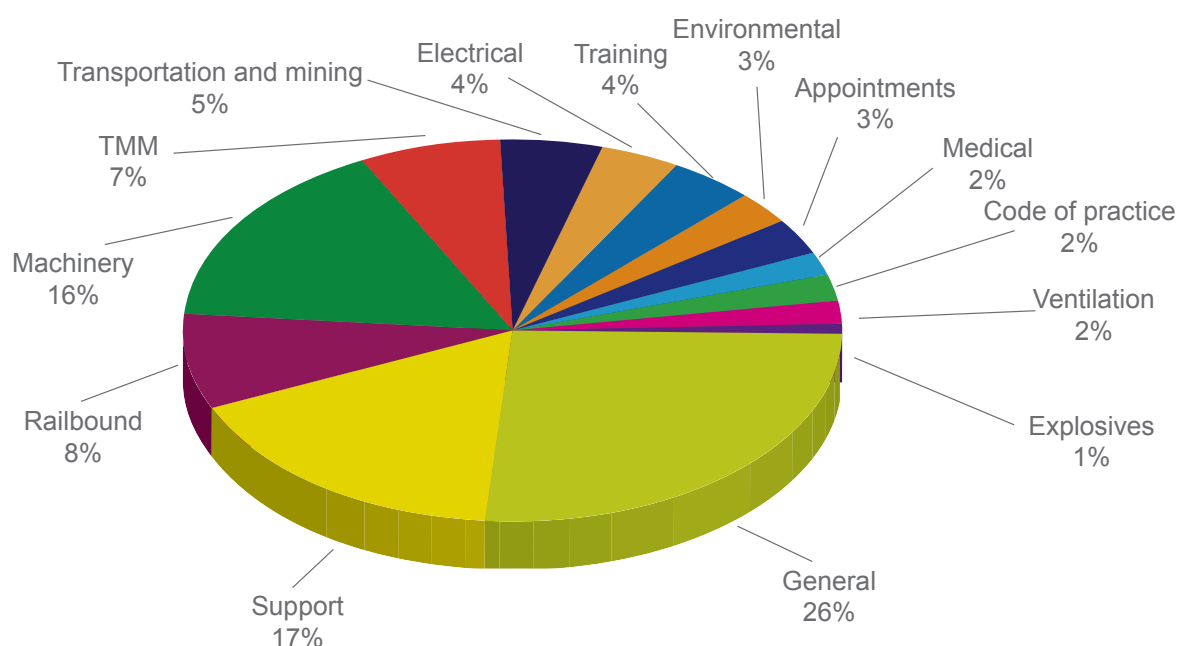
**FIGURE 3.1.6.1(a): SECTION 54 MINE STOPPAGES**



During 2013, the total number of Section 54 instructions issued can be classified as follows: 12% were total stoppages of mines and the remaining 88% were issued to halt specific parts of working places, or practices or conditions at a mine or part of a mine. Most of the total stoppages were for small privately run mines, where there were no appointments, no medical files, no training for employees, no medical surveillance and no mandatory codes of practice.

The main areas that were covered by the instructions issued are shown on the graph below.

**FIGURE 3.1.6.1(b): SECTION 54 INSTRUCTIONS ISSUED**



For 2013, general safety (26%) accounted for most of the instructions issued, followed by support (17%) and machinery (16%).

### 3.1.3.2 Section 55 Instructions

The majority of Section 55 instructions issued during the period January to December 2013 to order compliance with the MHSA covered the following issues:

- **Occupational hygiene:** Poor risk assessments, lacking and unhygienic ablution facilities, lacking statistics, poor dust control, inappropriate PPE, no gas monitoring instruments issued, as well as mandatory codes of practice (COPs) that were inadequate or not implemented.
- **Occupational medicine:** Lacking medical surveillance, TB programmes, COPs on minimum standard of fitness, training with regard to appeals, AMRs and investigations of occupational diseases
- **Mine equipment:** Lack of compliance to the machinery regulations on TMMs, lack of mandatory COPs, and risk assessment, no legal appointments, unsafe equipment and lack of compliance to the machinery regulations on conveyor belts and general machinery.
- **Mining:** Lack of mandatory COPs, safe working standards and practices, and mine plans not being updated

## 3.2 Occupational Health

Overall improvement in compliance has been noted in the statutory reporting in terms of the actual number of mines that submitted Occupational Hygiene Statutory Returns and AMRs.

There is an improvement in the number of AMRs received for 2013/14. The analysis of occupational health data is based on AMRs received. Some mines still do not comply with statutory reporting as per the requirement of the MHSA.

The overall number of occupational diseases reported has increased by 808 cases. Statutory reporting has improved in that 53 more AMRs have been received for 2013, compared to the previous period. Similarly, the number of reported pulmonary tuberculosis (PTB) cases increased significantly by 417, NIHL cases increased significantly by 314, cases of coal workers' pneumoconiosis (CWP) increased by 39, other diseases increased by 14 cases, silico-tuberculosis (Sil+TB) cases increased by 23 and silicosis cases increased by 10. The only decrease was noted in asbestosis, which decreased by nine cases.

Some of the measures to improve the occupational health of mine employees include the development and review of guidelines and guidance notes.

To improve health and occupational health performance, it is necessary to shift from minimum statutory compliance to a significant commitment of a multidisciplinary effort in improving compliance and mine environment conditions.

The medical surveillance of employees for 2013 reveals a decrease of 20 597 initial medical examinations conducted, an increase of 24 829 periodic medical examinations conducted and a decrease of 722 exit medical examinations conducted when compared to the previous reporting period.

The occupational hygiene stressors remain a challenge, although a slight improvement has been recorded in terms of compliance from 2012 to 2013. The overexposure to occupational hygiene stressors in the A-classification band has shown a slight improvement in some of the stressors, while a challenge in the B-classification band remains. An upward trend has been noted towards achieving 95% compliance in silica dust results that are below the OEL. Some regions and commodities still have noise exposures in the A-classification band. There is a reduction in thermal stress exposures for both cold and heat, especially in the A-classification band, where most of the commodities and regions have no employees exposed.

Gold mines showed an increase in the total number of reported occupational diseases. The number of reported PTB, silicosis and NIHL cases increased slightly when compared to the previous reporting period.

In the platinum mines, the total number of occupational diseases and reported PTB cases increased. The number of silicosis and NIHL cases decreased. There has been no change in the number of reported cases of CWP and asbestosis. No cases of Sil+TB were reported in 2013, while one case was reported during the previous year.

The coal mines showed that the number of reported cases of occupational diseases, such as PTB, NIHL, CWP, silicosis and asbestosis, increased.

Diamond mines have shown an increase in reported occupational diseases from 29 to 41 cases in the current reporting year.

The total number of occupational diseases reported on other mines increased by 53 cases. NIHL cases increased, PTB cases decreased, while silicosis, Sil+TB, CWP and asbestosis cases increased.

In February 2010, the DMR and the MHSC commissioned the National Institute for Occupational Health (NIOH) to conduct a study to determine the extent of TB/HIV co-infection in the mining sector, assess the availability of TB/HIV services and identify gaps in the provision of services for TB/HIV infected and affected employees. The outcomes of the study culminated in the development of the HIV/AIDS, TB and Silicosis (HATS) Summit Action Plan (SAP), comprising milestones which were signed by principal stakeholders in November 2011.

One of the milestones required mines to submit annual reports on HIV and TB to the DMR. It is precisely for this reason that the DMR 164 Form was designed and circulated together with an instruction from the CIOM, requesting mines to submit TB/HIV data.

TB, HIV and AIDS are major threats to the world of work as they affect the most productive segment of the labour force and reduce earnings in all sectors, especially in the mining sector through declining productivity, increasing labour costs and loss of skills, as well as experience.

### 3.2.1.1 Occupational Hygiene Measurements

#### 3.2.1.1.1 Airborne Pollutant Exposures

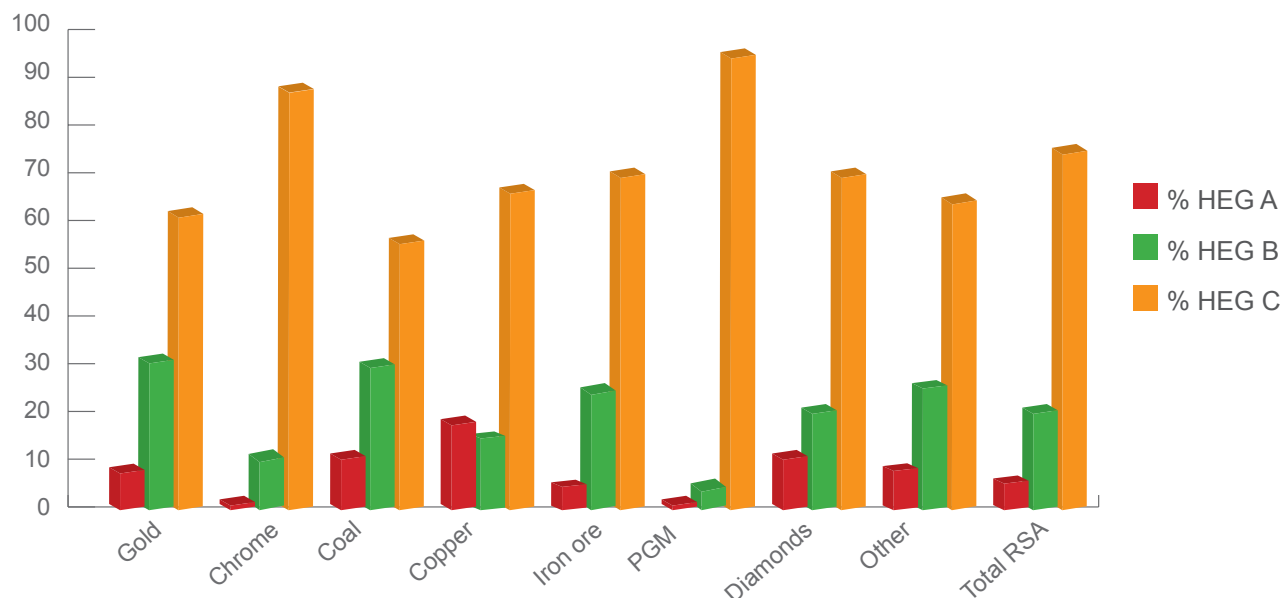
##### **Note:**

The exposure classifications are based on the Air Quality Index (AQI) due to exposure to multiple pollutants in the mining environment.

The AQI of multiple pollutants is determined by dividing the dust concentration of each pollutant in the mixture by its OEL and adding the results. The sum should not be greater than a unit.

The percentage of exposures depicted in the following graph represents the percentage of exposures within a homogeneous group from which samples were collected and does not reflect the total percentage of exposed employees in the mining industry.

**FIGURE 3.2.1.1(a): PERCENTAGE EXPOSURE TO AIRBORNE POLLUTANTS PER CLASSIFICATION BAND PER COMMODITY IN 2013**



Exposure classification bands

A = Exposures  $\geq$  the OEL or mixture of exposures  $\geq 1$

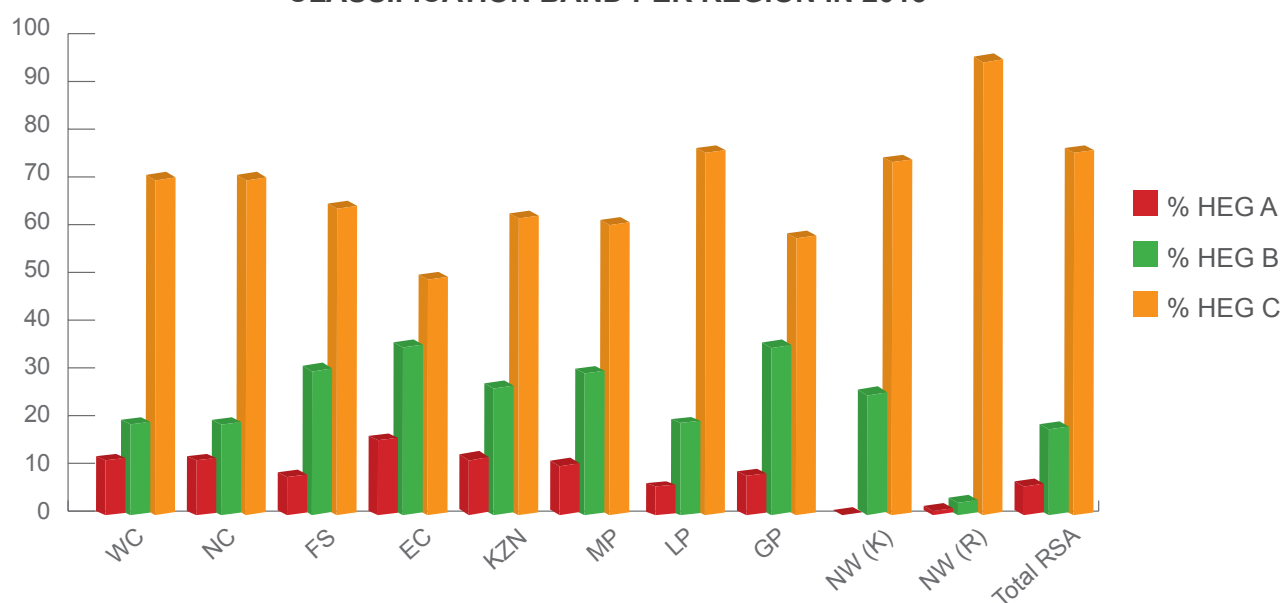
B = 50% of the OEL  $\leq$  exposures  $<$  OEL or  $0.5 \leq$  mixtures of exposures  $< 1$

C = 10% of the OEL  $\leq$  exposures  $<$  50% of the OEL or  $0.1 \leq$  mixtures of exposures  $< 0.5$

When looking at the commodities in the A- and B-classification bands, there is an overall decrease in exposures in the A-band (6.7% in 2012 to 5.3% in 2013) and a decrease in the B-band (27.6% in 2012 to 19.2% in 2013). Based on the above figures, it is evident that the mines have to ensure that the controls in place should be improved and constantly evaluated for effectiveness.

There should be a greater focus on diamond, coal, gold and other mines.

**FIGURE 3.2.1.1(b): PERCENTAGE EXPOSURE TO AIRBORNE POLLUTANTS PER CLASSIFICATION BAND PER REGION IN 2013**



WC: Western Cape • NC: Northern Cape • FS: Free State • EC: Eastern Cape • KZN: KwaZulu-Natal • MP: Mpumalanga • LP: Limpopo • GP: Gauteng • NW (K): North West: Klerksdorp • NW (R): North West: Rustenburg

Exposure classification bands

A = Exposures  $\geq$  the OEL or mixture of exposures  $\geq 1$

B = 50% of the OEL  $\leq$  exposures  $<$  OEL or  $0.5 \leq$  mixtures of exposures  $< 1$

C = 10% of the OEL  $\leq$  exposures  $<$  50% of the OEL or  $0.1 \leq$  mixtures of exposures  $< 0.5$

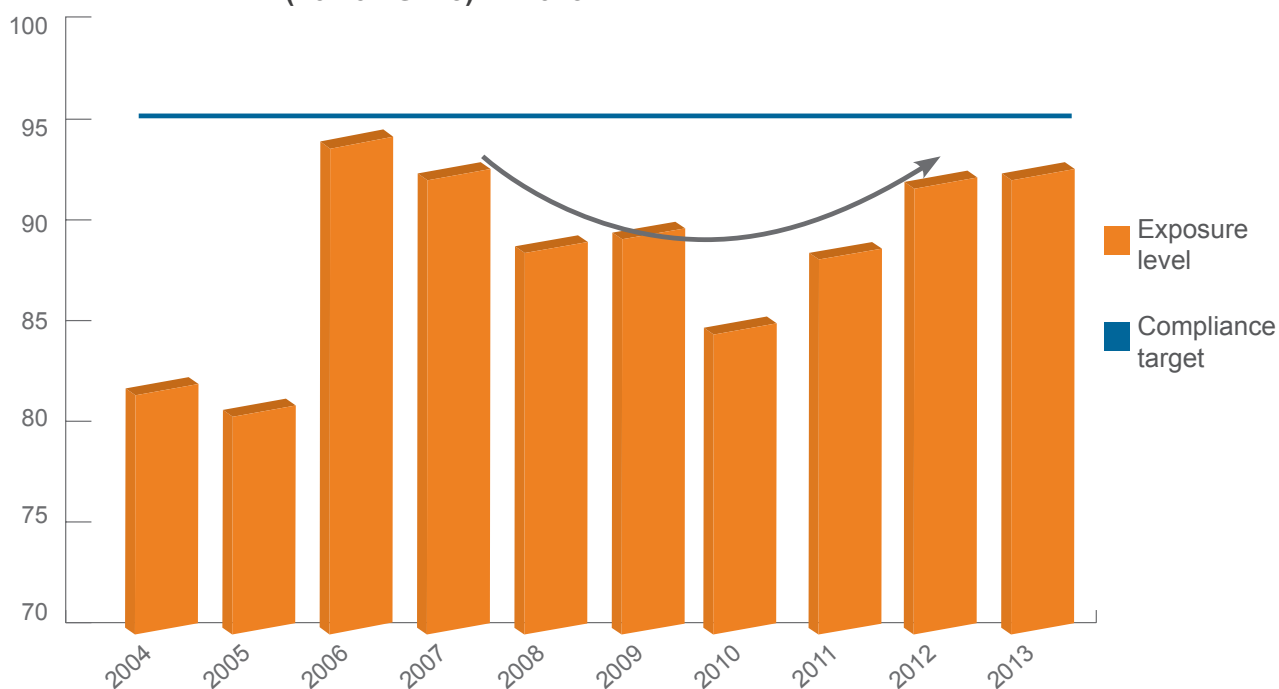
There is a noticeable reduction in the overall exposures to airborne pollutants in the A- and B-bands, where the A-band decreased slightly from 6.7% in 2012 to 5.3% in 2013 and the B-band decreased from 27.6% in 2012 to 19.2% in 2013. However, the Eastern Cape and Mpumalanga have shown the highest increase in exposures in the A-band of 15.9% and 10.3% in 2013 compared to 2.6% and 4.7% in 2012 respectively. It is imperative for mines with increases in exposures to review their risk assessments, monitoring and evaluation of the effectiveness of the controls that are in place to reduce exposure to airborne pollutants.

### Industry Targets and Milestones on Silicosis

At the 2003 Mine Health and Safety Summit, the South African mining sectors tripartite stakeholders set the following milestones and targets relating to occupational health:

- By December 2008, 95% of all exposure measurement results had to be below the occupational exposure limit for respirable crystalline silica of  $0.1\text{mg}/\text{m}^3$ . These results are individual readings and not average results.
- After December 2013, using present diagnostic techniques, no new cases of silicosis would occur among previously unexposed individuals. Previously unexposed individuals are individuals unexposed prior to 2008. That is equivalent to a new person entering the industry in 2008.

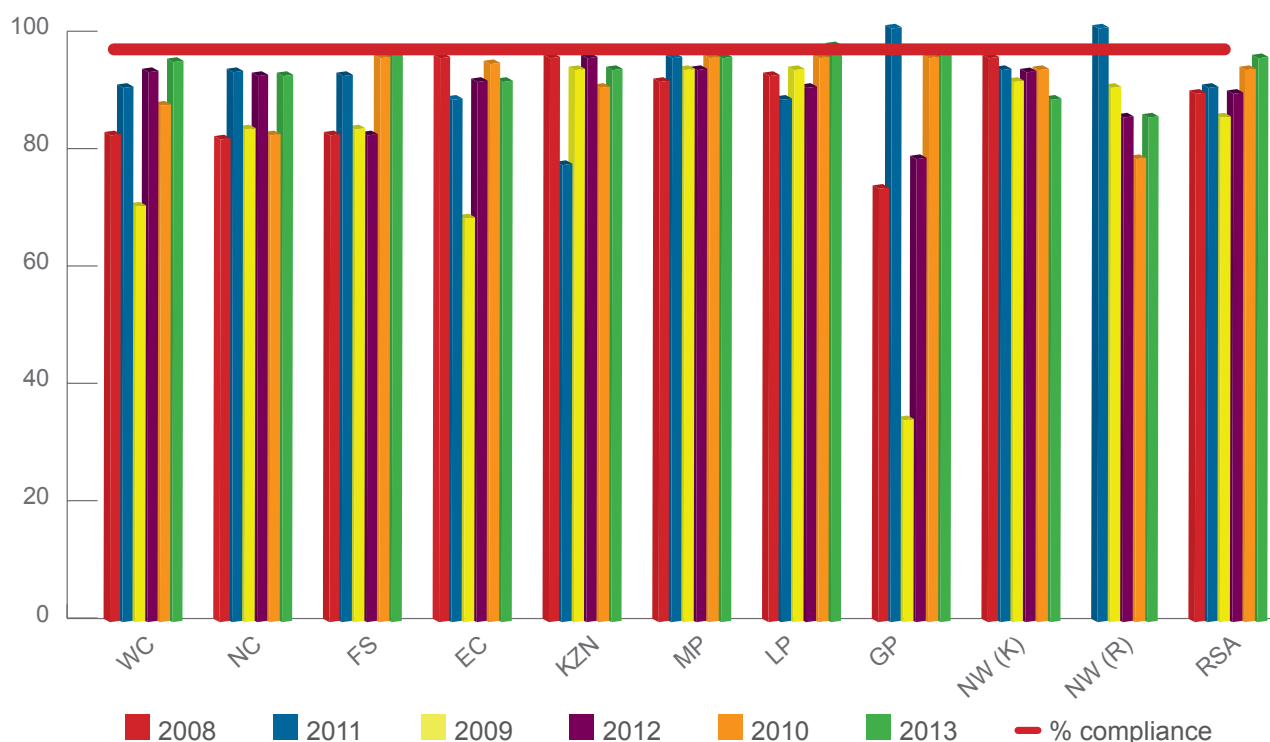
**FIGURE 3.2.1.1.1(c): PERCENTAGE COMPLIANCE TO RESPIRABLE CRYSTALLINE SILICA (<0.10MG/M3) IN 2013**



There is an improvement in compliance towards reaching the 95% target from 2010 to 2013, indicating a reduction of exposure of employees to dust containing silica in the work environment.

There were 7 400 samples below the  $0.1\text{mg}/\text{m}^3$  out of a total of 7 842 samples taken. This resulted in a 94.6% industry achievement for the current reporting period, which equates to an improvement of 2.6%, when compared to 2012 at 92%. More effort is still required to reduce and eventually eliminate silica dust exposures.

**FIGURE 3.2.1.1(d): PERCENTAGE COMPLIANCE TO RESPIRABLE CRYSTALLINE SILICA (<0.10MG/M<sup>3</sup>)**



There is noticeable improvement towards achieving 95% compliance from all regions, with the exception of the Eastern Cape and North West: Klerksdorp regions when compared to 2012. The regions should make a concerted effort to improve the dust control measures that are in place in order to reduce all individual readings to below the 0.1mg/m<sup>3</sup> OEL for respirable crystalline silica. The adoption of best practices provided by Mine Occupational Safety and Health (MOSH) initiatives will assist a great deal towards the reduction of exposure.

### 3.2.1.1.2 Noise Exposure

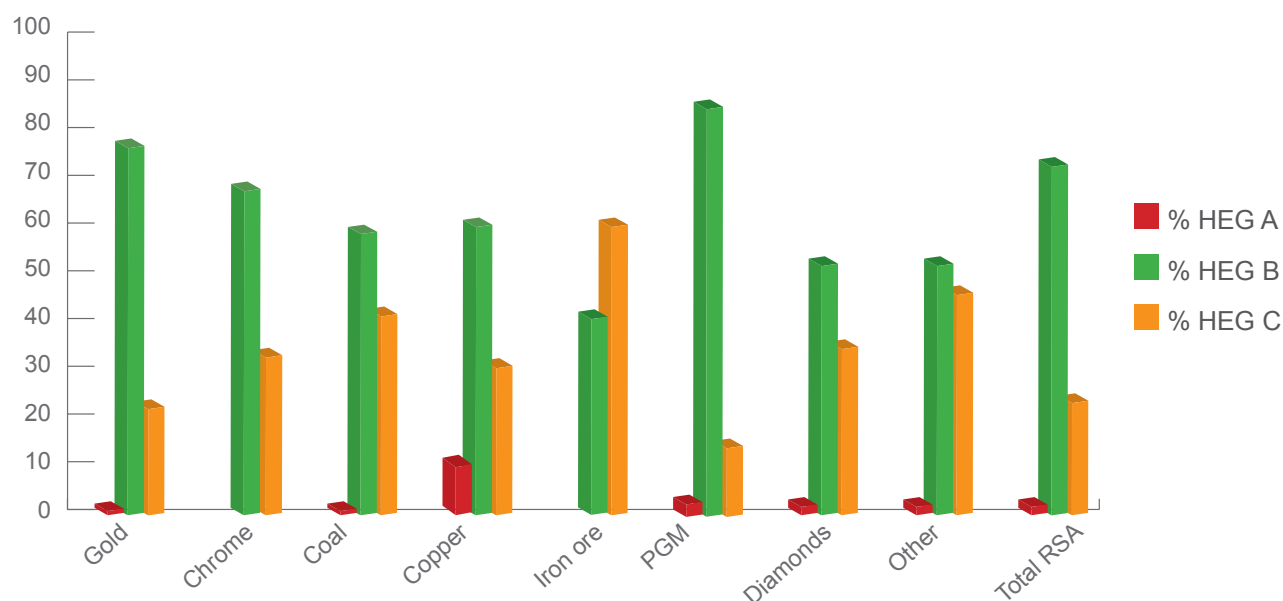
**Note:**

- The occupational exposure limit for noise is 85 dB (A) based on an eight-hour exposure shift.
- No special precautions except monitoring are required for the C-band.
- The implementation of the hearing conservation programme is required for the A- and B-bands.
- Persons in the A- and B-bands are overexposed.

### Industry Targets and Milestones on NIHL as Set in 2003:

- After December 2008, the hearing conservation programme, which was implemented by the industry, was to ensure that there would be no deterioration in hearing greater than 10% among exposed individuals.
- By December 2013, the total noise emitted by all installed equipment in any workplace must not exceed a sound pressure level of 110 dB (A) at any location in that workplace (including individual pieces of equipment).

**FIGURE 3.2.1.1.2(a): PERCENTAGE EXPOSURE TO NOISE PER EXPOSURE CLASSIFICATION BAND PER COMMODITY IN 2013**



Exposure classification band:

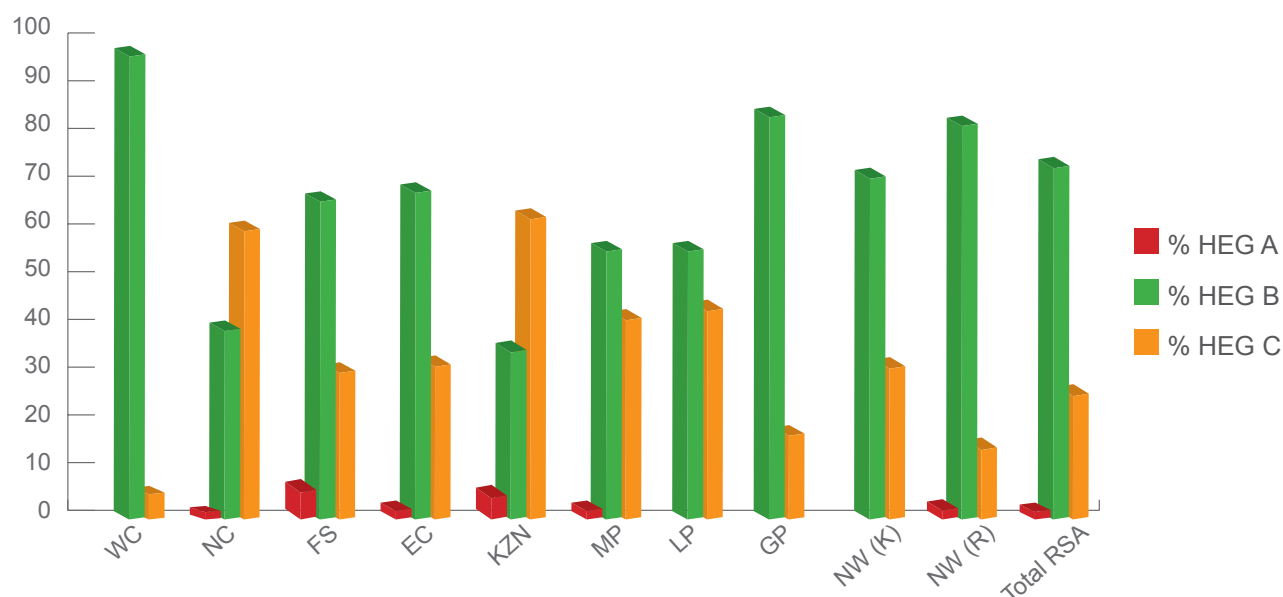
A = Exposures  $\geq$  105 dB LAeq, 8h

B = 85 dB LAeq, 8h  $\leq$  exposures < 105 dB LAeq, 8h

C = 82 dB LAeq, 8h  $\leq$  exposures < 85 dB LAeq, 8h

There is a growing concern that there are still exposures in the A-classification band in all the commodities with the exception of chrome and iron ore. It is also noted that copper has the highest percentage of exposures in this classification, which necessitates that hearing conservation programmes be revisited and reevaluated. The guideline is also clear on what is required in terms of monitoring the employees in the A-classification band with regard to six-monthly audiograms. This is to ensure that administrative controls are implemented.

**FIGURE: 3.2.1.1.2(b): PERCENTAGE EXPOSURE TO NOISE PER EXPOSURE CLASSIFICATION BAND PER REGION IN 2013**



Exposure classification band:

A = Exposures  $\geq$  105 dB LAeq, 8h

B = 85 dB LAeq, 8h  $\leq$  exposures < 105 dB LAeq, 8h

C = 82 dB LAeq, 8h  $\leq$  exposures < 85 dB LAeq, 8h



The overall regional exposures in 2013 in the A- and B-bands are 1.92% and 73.38% respectively when compared to the previous year's exposures of 3.8% and 69.7%. The highest exposures in the A-classification band are in the Free State at 5%, KwaZulu-Natal at 4.16, North West: Rustenburg at 2.35%, and Mpumalanga at 2.20%. Gauteng and Western Cape maintained zero exposures in the A-classification band when comparing 2013 to 2012. The mines must still strive to reduce and eventually eliminate the risk of workers' exposure in the A- and B-classification bands as prescribed in the Chief Inspector of Mines Guideline for the Compilation of a Mandatory Code of Practice for an Occupational Health Programme for Noise, Reference Number DME 16/3/2/4-A3, taking into account the sound attenuation of equipment as per the milestone set in 2003.

### 3.2.1.1.3 Thermal Stress

Monitoring is conducted on an annual cycle period in compliance with Regulation 9.2(7). Accurate and

meaningful results are to be representative of all full working shifts for that thermal environment, as obtained from this monitoring.

The employer must ensure that, in defining any particular thermal environment, the precautions listed below are heeded.

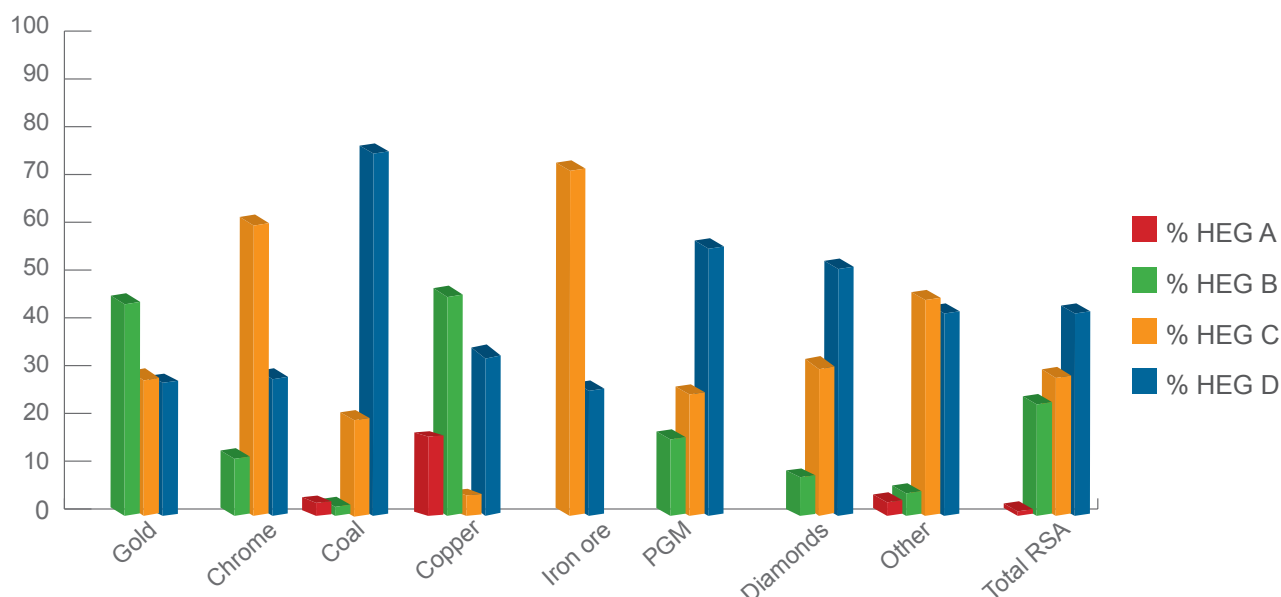
- Care should be exercised to detect trends where the thermal environment changes, especially from "cool" to "hot", or from "hot" to "abnormally hot". This is clearly indicated by regular monitoring, even if only on a random basis, and "cool" environments should not be excluded, especially when marginal. The specific protocol would be dictated by prevailing circumstances, and, therefore, cannot be stipulated or prescribed.
- Seasonal drifts could be crucial, and relying on winter temperatures, may lead to an underestimation of the risk and vice versa. Environmental monitoring should take this into account.

#### (a) Heat Stress

##### Note:

For the purpose of defining the thermal environment from a heat stress management point of view, dry- and wet-bulb, globe temperatures, whirling hygrometers or any other suitable instrumentation may be used. This information may be extracted from existing databases that are continually updated. Regular monitoring, even on a daily basis, is recommended under certain circumstances

**FIGURE: 3.2.1.1.3(a): PERCENTAGE EXPOSURE TO THERMAL STRESS/HEAT PER CLASSIFICATION BAND PER COMMODITY IN 2013**



Heat stress exposure classification band:

A = WB > 32.5 °C or DB > 37 °C or globe temperature > 37 °C

B = 29.0 °C < WB ≤ 32.5 °C and DB ≤ 37 °C globe temperature as for dry bulb

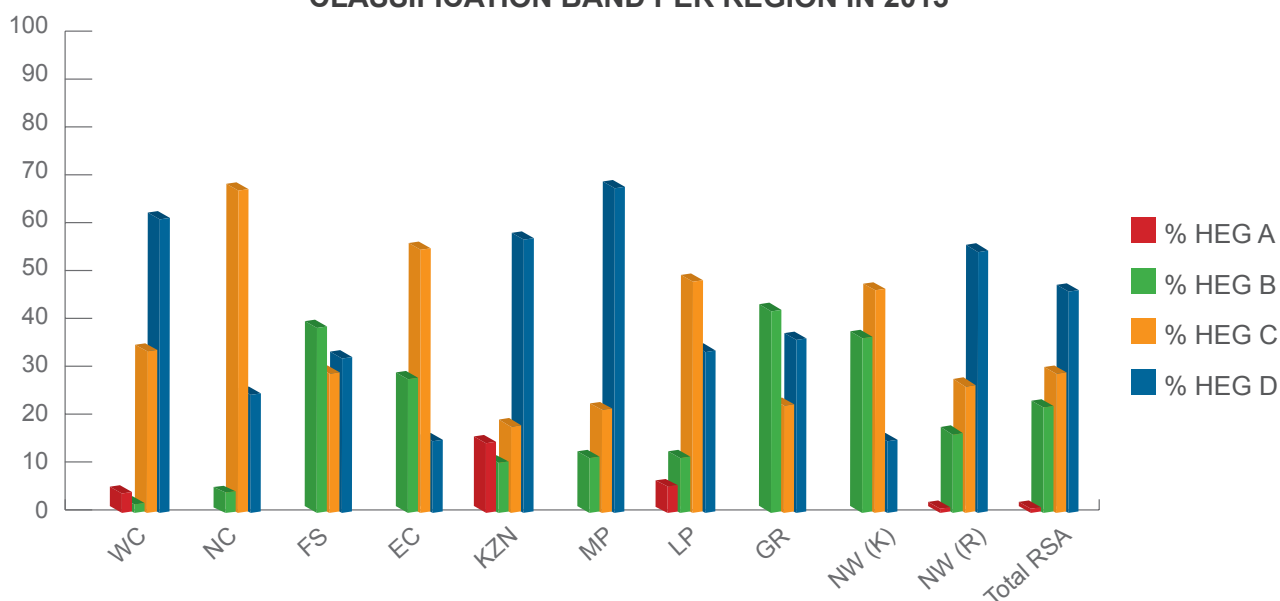
C = 27.5 °C < WB ≤ 29.0 °C and DB ≤ 37 °C globe temperature as for dry bulb

D = WB ≤ 27.5 °C and DB ≤ 32.5 °C globe temperature: as for dry bulb



The copper mines still have high exposures at 16%, followed by other mines at 3.6%, then coal mines at 2.0% respectively in the A-classification band. There is a need for the industry to continuously monitor the thermal environment and ensure that heat stress management programmes are adhered to.

**FIGURE: 3.2.1.1.3(b): PERCENTAGE EXPOSURE TO THERMAL STRESS/HEAT PER CLASSIFICATION BAND PER REGION IN 2013**



Heat stress exposure classification band:

A = WB > 32.5 °C or DB > 37 °C or globe temperature > 37 °C

B = 29.0 °C < WB ≤ 32.5 °C and DB ≤ 37 °C globe temperature as for dry bulb

C = 27.5 °C < WB ≤ 29.0 °C and DB ≤ 37 °C globe temperature as for dry bulb

D = WB ≤ 27.5 °C and DB ≤ 32.5 °C globe temperatures: as for dry bulb

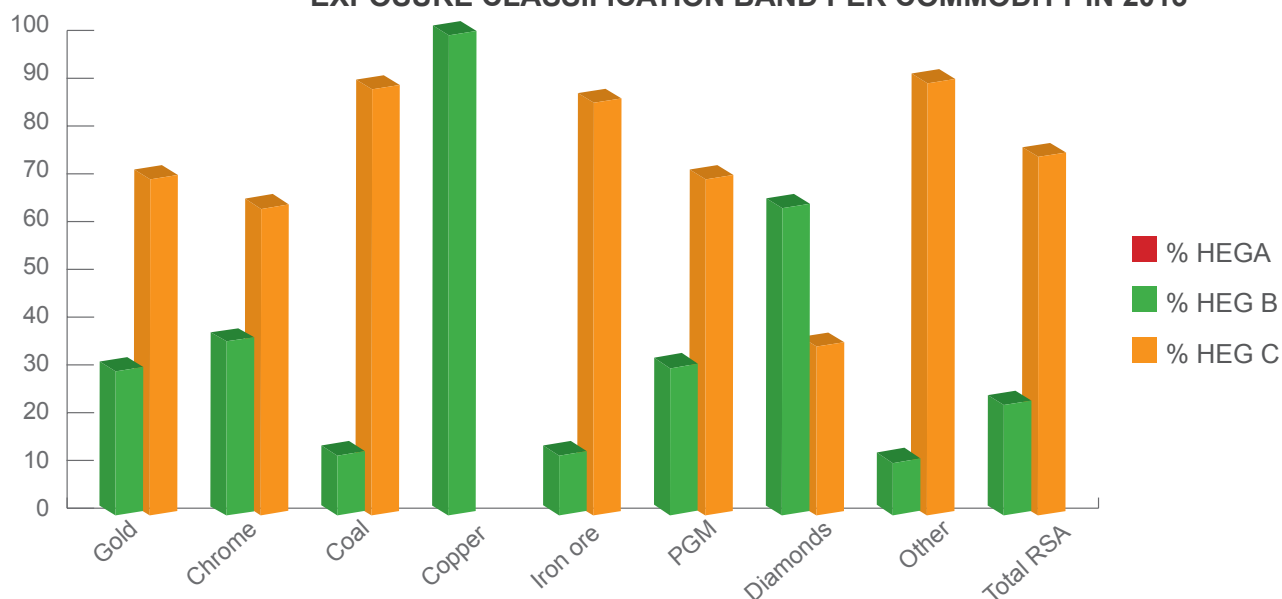
In general, heat exposures have reduced from 1.4% in 2012 to 0.8% in 2013 in A-classification band and from 48.98% to 24.06% in B-classification band. KwaZulu-Natal, Limpopo and Western Cape had exposures of 14.2%, 4.8% and 2.1% respectively in 2012 and still in 2013 these regions show heat exposures of 12.59%, 6.53% and 1.88% respectively in the A-classification band.

#### (b) Cold Stress

##### Note:

- Temperature ranges are given in terms of equivalent chill temperature.
- Cold stress management (CSM).
- Thermal monitoring for cold stress should be conducted during the coldest quarter (June to August), as determined by risk assessment.
- For defining the thermal environment from a CSM point of view, dry-bulb temperatures and velocity, using any suitable instrumentation, may be used. This information may be extracted from existing databases that are continually updated. Regular monitoring, even on a daily basis, is recommended under certain circumstances.

**FIGURE: 3.2.1.1.3(c): PERCENTAGE EXPOSURE TO THERMAL STRESS/COLD PER EXPOSURE CLASSIFICATION BAND PER COMMODITY IN 2013**



Cold stress exposure classification band:

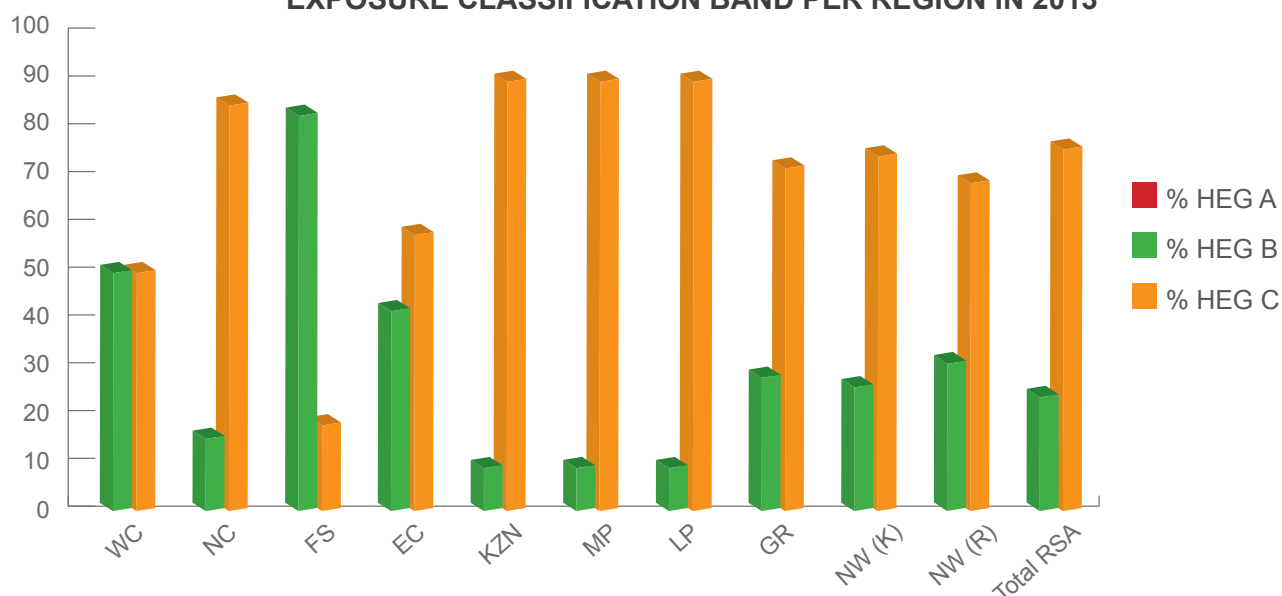
A = Temperature  $\geq -30.0^{\circ}\text{C}$

B =  $5.0^{\circ}\text{C} \leq \text{Temperature} < -30.0^{\circ}\text{C}$

C = Temperature  $> 5.0^{\circ}\text{C}$

Generally, there were no employees' exposures in the A-band across all commodities in 2013. The mining industry must continuously maintain zero exposure in the A-band and focus on reducing exposures in the B-band

**FIGURE: 3.2.1.3(d): PERCENTAGE EXPOSURE TO THERMAL STRESS/COLD PER EXPOSURE CLASSIFICATION BAND PER REGION IN 2013**



Cold stress exposure classification band:

A = Temperature  $\geq -30.0^{\circ}\text{C}$

B =  $5.0^{\circ}\text{C} \leq \text{Temperature} < -30.0^{\circ}\text{C}$

C = Temperature  $> 5.0^{\circ}\text{C}$

There are no exposures in the A-classification band across all regions. All regions should focus on reducing exposures to cold stress in the B-classification band and ensure adherence to CSM programmes. There is a need for the mines to lower exposure of employees even further as prescribed in the Chief Inspector of Mines Guideline for the Compilation of a Mandatory Code of Practice for an Occupational Health Programme (Occupational Hygiene and Medical Surveillance) Thermal Stress, Reference Number 16/3/2/4-A2.

### General

There are still challenges in the statutory reports received from some mines, where information required is either inadequate or inaccurate to provide a meaningful analysis of the status quo in the mines. Adherence and interpretation of the airborne pollutants guideline with regards to classification and monitoring of homogeneous exposure groups (HEGs) remains a challenge.

The analysis of data that has been received indicates a continuous improvement in some of the exposures to occupational hygiene stressors. There is a need for the industry to share best practices of controls that are put in place to ensure reduction of exposure, which will eventually lead to the achievement of employees' zero harm to health. Monitoring, evaluation and maintenance of controls is very crucial if this achievement is to be realised.

## 3.2.2 Occupational Medicine

The Inspectorate commits itself to rendering a comprehensive service in the protection and promotion of the health of employees in the mining industry, maintaining the highest professional and moral standards.

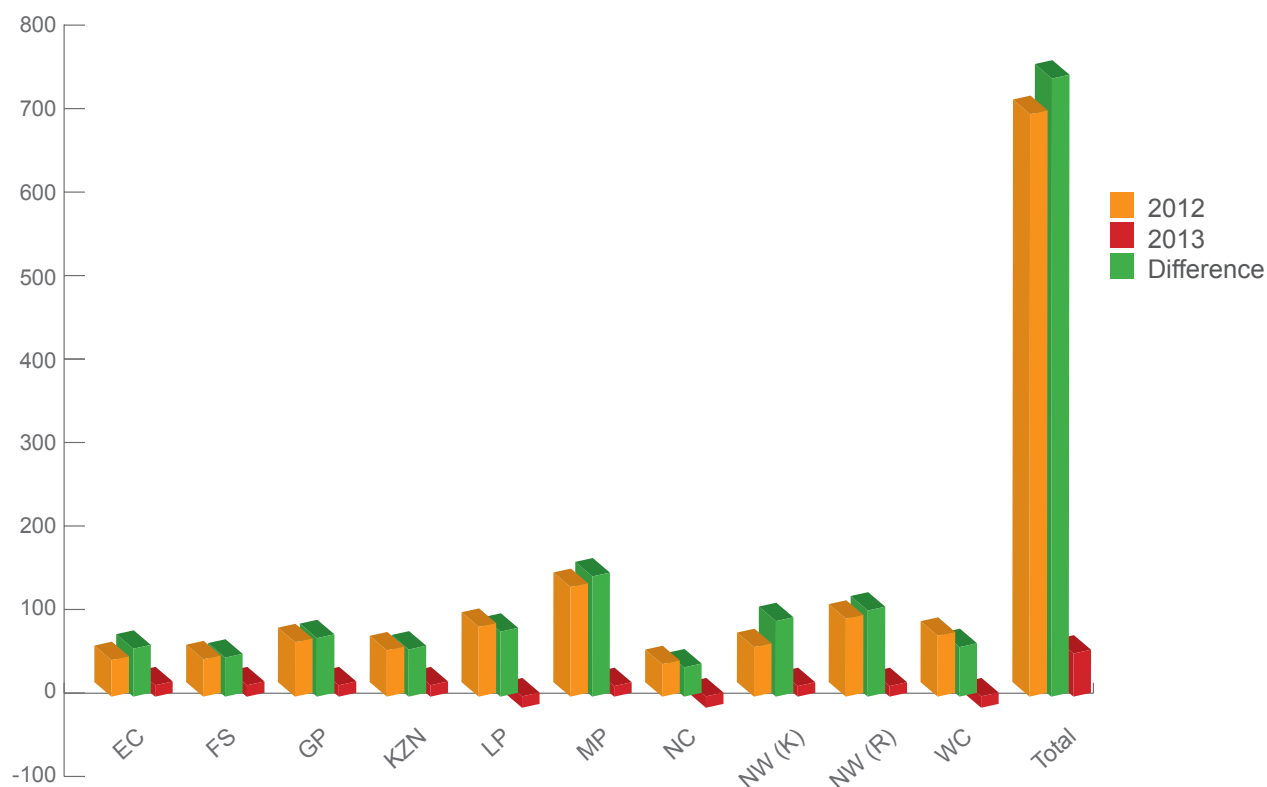
In terms of Section 2 of the MHSA, as amended, the employer must ensure safety by compiling an annual report on health and safety at the mine, which includes statistics on health and safety that must be kept in terms of this Act and the AMR referred to in Section 16 of the MHSA.

### 3.2.2.1 Annual Medical Reports

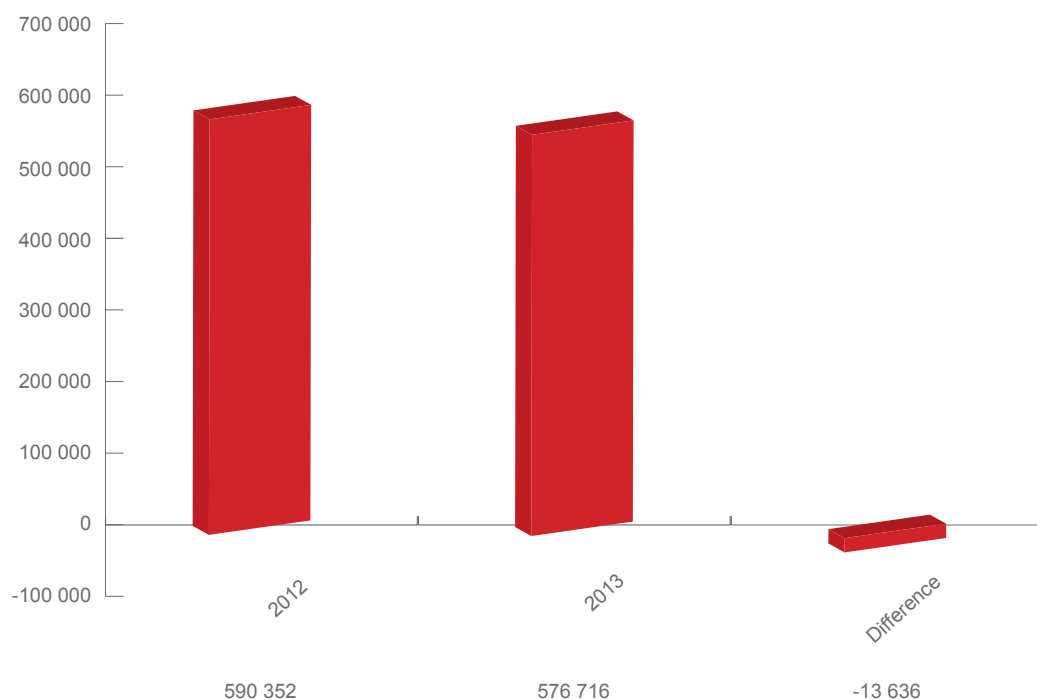
Every occupational medical practitioner (OMP) at a mine should compile an annual report that covers employees at that mine and analyses the employees' health status based on the employees' records of medical surveillance, without disclosing the names of the employees (Section 16, MHSA). The AMR must be given to the employer, who must deliver a copy of the report to each of the health and safety committees, or if there is no health and safety committee, the health and safety representatives and the medical inspector.

The CIOM issued an instruction to direct every employer to submit a copy of the AMR to the medical inspector through the relevant regional office on or before the end of February each year.

A total of 761 AMRs were received for the 2013 reporting period, which increased statutory reporting by 53 AMRs when compared to the 708 reports received during 2012. Despite an increase in the number of AMRs received, the submissions from Limpopo decreased by six, submissions from Northern Cape decreased by four and AMRs received from the Western Cape decreased by 14 when compared to the previous reporting year. The following graph shows all AMRs received per region.

**FIGURE 3.2.2.1: ANNUAL MEDICAL REPORTS RECEIVED PER REGION IN 2012 AND 2013****3.2.2.1.1 Total Employees Covered in Annual Medical Reports**

Section 11(4) of the MHSA requires every employer to periodically review the hazards identified and risks assessed, including the results of occupational hygiene measurements and medical surveillance, to determine whether further elimination, control and minimisation of risk is possible. The graph below shows that the total number of employees covered in the AMRs for 2013 decreased by 13 636 when compared to the total number of employees covered during the previous reporting period.

**FIGURE 3.2.2.1.1: TOTAL EMPLOYEES COVERED IN AMRs IN 2012 AND 2013**

### 3.2.2.1.2 Medical Surveillance Conducted

Section 13(1) of the MHS Act requires the employer to establish and maintain a system of medical surveillance of employees exposed to health hazards if required to do so by regulation or a notice in the *Government Gazette*, or if, after assessing risks in terms of Section 11(1), it is necessary to do so. Every system of medical surveillance must be appropriate, consider the health hazards to which the employees are or may be exposed, be designed so that it provides information that the employer can use to determine measures to eliminate, control and minimise the health risk and hazards to which employees are or may be exposed, or prevent, detect and treat occupational diseases. It should also consist of an initial medical examination and other medical examinations at appropriate intervals.

The graph below shows that the total number of initial medical examinations decreased by 20 597, the periodic medical examinations increased by 24 829 and the exit medical examinations decreased by 722 when compared to the previous reporting period.

**FIGURE: 3.2.2.1.2: MEDICAL SURVEILLANCE CONDUCTED IN 2012 AND 2013**

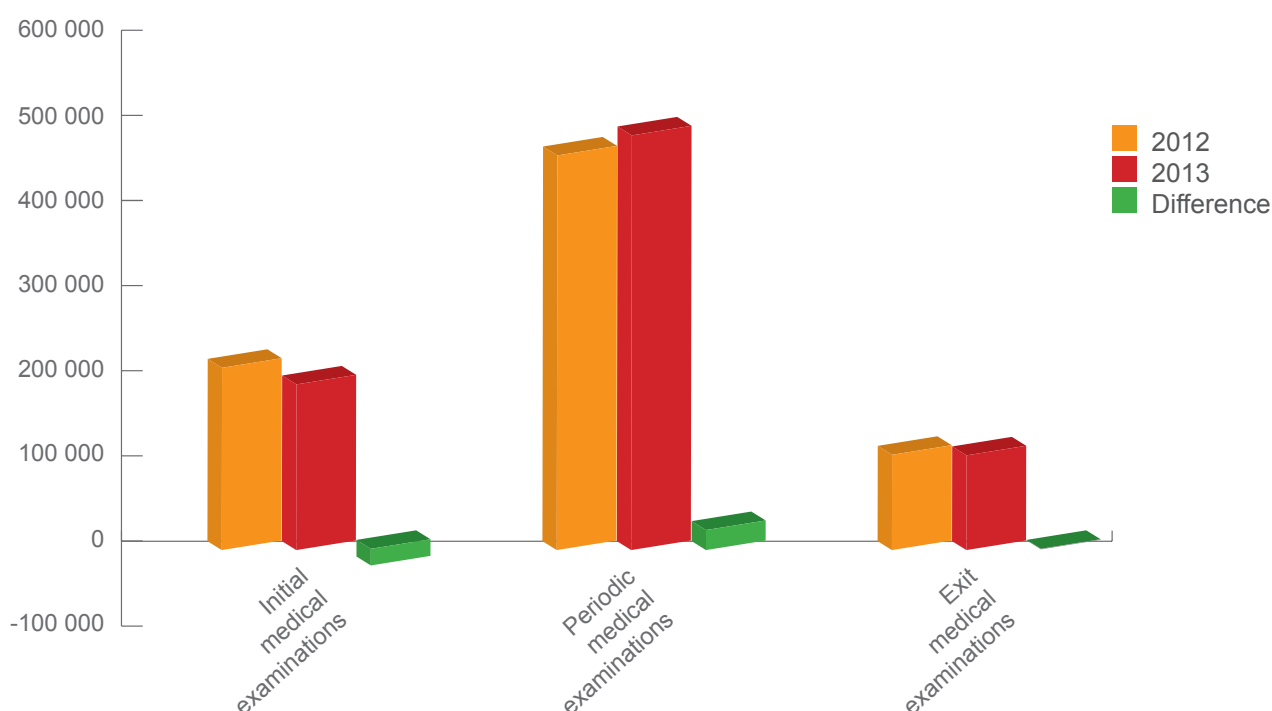


TABLE 3.2.2.1: OCCUPATIONAL DISEASES REPORTED FROM THE AMRs PER REGION IN 2012 AND 2013

| Region        | 2012<br>Sil  | 2013<br>Sil  | 2012<br>PTB  | 2013<br>PTB  | 2012<br>Sil+TB | 2013<br>Sil+TB | 2012<br>NIHL | 2013<br>NIHL | 2012<br>CWP | 2013<br>CWP | 2012<br>Asb | 2013<br>Asb | 2012<br>Other | 2013<br>Other | 2012<br>Total | 2013<br>Total |
|---------------|--------------|--------------|--------------|--------------|----------------|----------------|--------------|--------------|-------------|-------------|-------------|-------------|---------------|---------------|---------------|---------------|
| Eastern Cape  | 0            | 2            | 1            | 0            | 0              | 0              | 0            | 0            | 0           | 0           | 0           | 0           | 0             | 0             | 1             | 2             |
| Free State    | 583          | 483          | 635          | 775          | 65             | 51             | 203          | 170          | 0           | 0           | 0           | 0           | 52            | 106           | 1 538         | 1 587         |
| Gauteng       | 321          | 309          | 455          | 646          | 38             | 3              | 193          | 173          | 0           | 0           | 0           | 0           | 42            | 74            | 1 049         | 1 205         |
| KwaZulu-Natal | 4            | 6            | 65           | 65           | 0              | 0              | 22           | 15           | 9           | 1           | 0           | 0           | 58            | 1             | 158           | 89            |
| Limpopo       | 10           | 6            | 58           | 45           | 0              | 0              | 84           | 132          | 4           | 8           | 11          | 0           | 7             | 4             | 174           | 195           |
| Mpumalanga    | 79           | 41           | 318          | 335          | 2              | 1              | 140          | 308          | 71          | 111         | 3           | 6           | 58            | 70            | 671           | 872           |
| Northern Cape | 4            | 0            | 43           | 39           | 2              | 0              | 44           | 151          | 0           | 1           | 0           | 0           | 9             | 6             | 102           | 197           |
| North West:   |              |              |              |              |                |                |              |              |             |             |             |             |               |               |               |               |
| Klerksdorp    | 141          | 362          | 353          | 403          | 18             | 93             | 19           | 96           | 0           | 0           | 0           | 0           | 183           | 165           | 714           | 1 119         |
| North West:   |              |              |              |              |                |                |              |              |             |             |             |             |               |               |               |               |
| Rustenburg    | 278          | 220          | 901          | 940          | 1              | 1              | 366          | 339          | 2           | 4           | 5           | 1           | 28            | 25            | 1 581         | 1530          |
| Western Cape  | 0            | 1            | 9            | 7            | 0              | 0              | 4            | 5            | 0           | 0           | 0           | 0           | 1             | 1             | 14            | 14            |
| <b>Total</b>  | <b>1 420</b> | <b>1 430</b> | <b>2 838</b> | <b>3 255</b> | <b>126</b>     | <b>149</b>     | <b>1 075</b> | <b>1 389</b> | <b>86</b>   | <b>125</b>  | <b>19</b>   | <b>10</b>   | <b>438</b>    | <b>452</b>    | <b>6 002</b>  | <b>6 810</b>  |

TABLE 3.2.2.1 (a): OCCUPATIONAL DISEASES REPORTED FROM THE AMRS PER REGION: 2012 AND 2013

| Region        | 2012<br>Sil  | 2013<br>Sil  | 2012<br>PTB  | 2013<br>PTB  | 2012<br>Sil+TB | 2013<br>Sil+TB | 2012<br>NIHL | 2013<br>NIHL | 2012<br>CWP | 2013<br>CWP | 2012<br>Asb | 2013<br>Asb | 2012<br>Other | 2013<br>Other | 2012<br>Total | 2013<br>Total |
|---------------|--------------|--------------|--------------|--------------|----------------|----------------|--------------|--------------|-------------|-------------|-------------|-------------|---------------|---------------|---------------|---------------|
| Eastern Cape  | 0            | 2            | 1            | 0            | 0              | 0              | 0            | 0            | 0           | 0           | 0           | 0           | 0             | 0             | 1             | 2             |
| Free State    | 583          | 483          | 635          | 775          | 65             | 51             | 203          | 170          | 0           | 0           | 0           | 0           | 52            | 106           | 1 538         | 1 587         |
| Gauteng       | 321          | 309          | 455          | 646          | 38             | 3              | 193          | 173          | 0           | 0           | 0           | 0           | 42            | 74            | 1 049         | 1 205         |
| KwaZulu-Natal | 4            | 6            | 65           | 65           | 0              | 0              | 22           | 15           | 9           | 1           | 0           | 0           | 58            | 1             | 158           | 89            |
| Limpopo       | 10           | 6            | 58           | 45           | 0              | 0              | 84           | 132          | 4           | 8           | 11          | 0           | 7             | 4             | 174           | 195           |
| Mpumalanga    | 79           | 41           | 318          | 335          | 2              | 1              | 140          | 308          | 71          | 111         | 3           | 6           | 58            | 70            | 671           | 872           |
| Northern Cape | 4            | 0            | 43           | 39           | 2              | 0              | 44           | 151          | 0           | 1           | 0           | 0           | 9             | 6             | 102           | 197           |
| North West:   |              |              |              |              |                |                |              |              |             |             |             |             |               |               |               |               |
| Klerksdorp    | 141          | 362          | 353          | 403          | 18             | 93             | 19           | 96           | 0           | 0           | 0           | 0           | 183           | 165           | 714           | 1 119         |
| North West:   |              |              |              |              |                |                |              |              |             |             |             |             |               |               |               |               |
| Rustenburg    | 278          | 220          | 901          | 940          | 1              | 1              | 366          | 339          | 2           | 4           | 5           | 1           | 28            | 25            | 1 581         | 1 530         |
| Western Cape  | 0            | 1            | 9            | 7            | 0              | 0              | 4            | 5            | 0           | 0           | 0           | 0           | 1             | 1             | 14            | 14            |
| <b>Total</b>  | <b>1 420</b> | <b>1 430</b> | <b>2 838</b> | <b>3 255</b> | <b>126</b>     | <b>149</b>     | <b>1 075</b> | <b>1 389</b> | <b>86</b>   | <b>125</b>  | <b>19</b>   | <b>10</b>   | <b>438</b>    | <b>452</b>    | <b>6 002</b>  | <b>6 810</b>  |

### 3.2.2.1.3 Occupational Diseases Reported in the AMRs in 2012 and 2013

A total of 6 810 occupational diseases were reported in the AMRs during 2013, resulting in an overall increase of 808 cases when compared to the 6 002 occupational diseases that were reported during the previous reporting period. The increase could be related to the increase of 53 AMRs that were received.

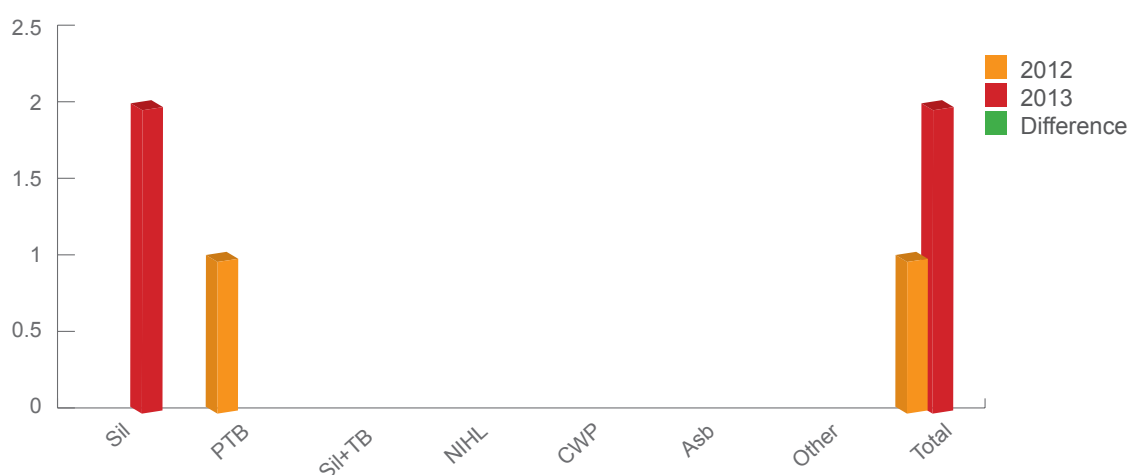
#### 3.2.2.2.1 Analysis of Medical Surveillance Trends

##### 3.2.2.2.1.1 Occupational Disease Trends by Region

###### (a) Eastern Cape

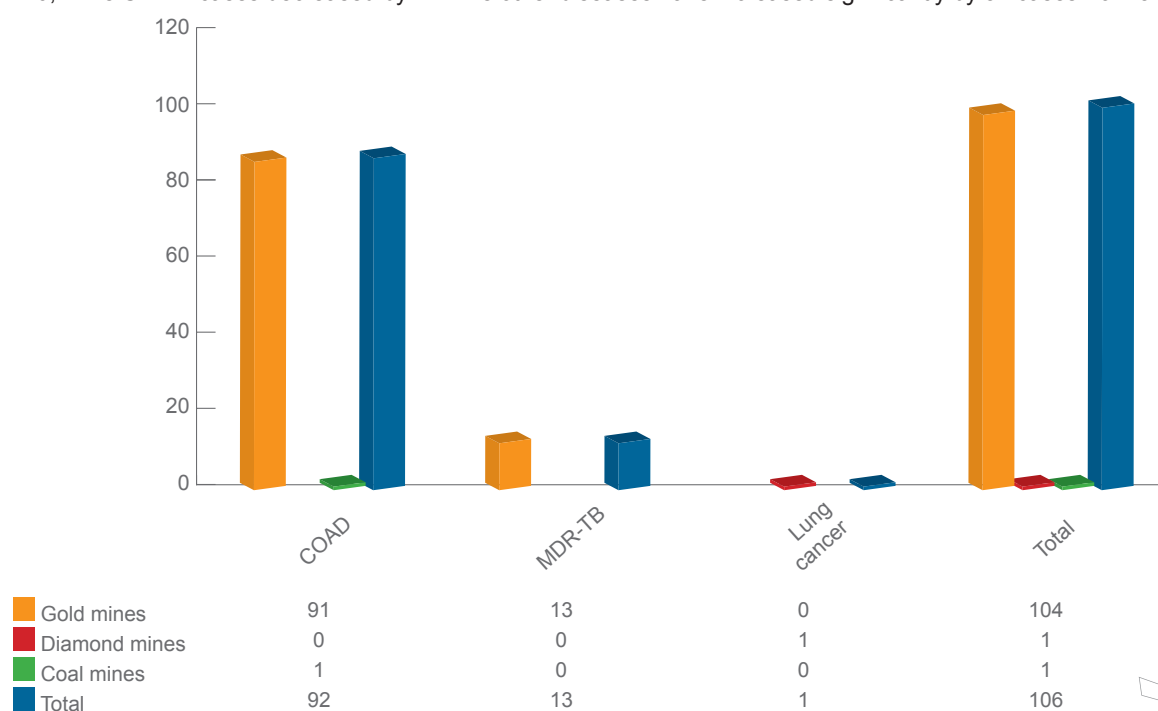
The region reported two occupational diseases during 2013, as opposed to one that was reported during the previous year. The AMRs submitted increased by 14 when compared to 2012.

**FIGURE 3.2.2.2.1(a): OCCUPATIONAL DISEASES REPORTED IN THE EASTERN CAPE REGION'S AMRs: 2012 AND 2013**

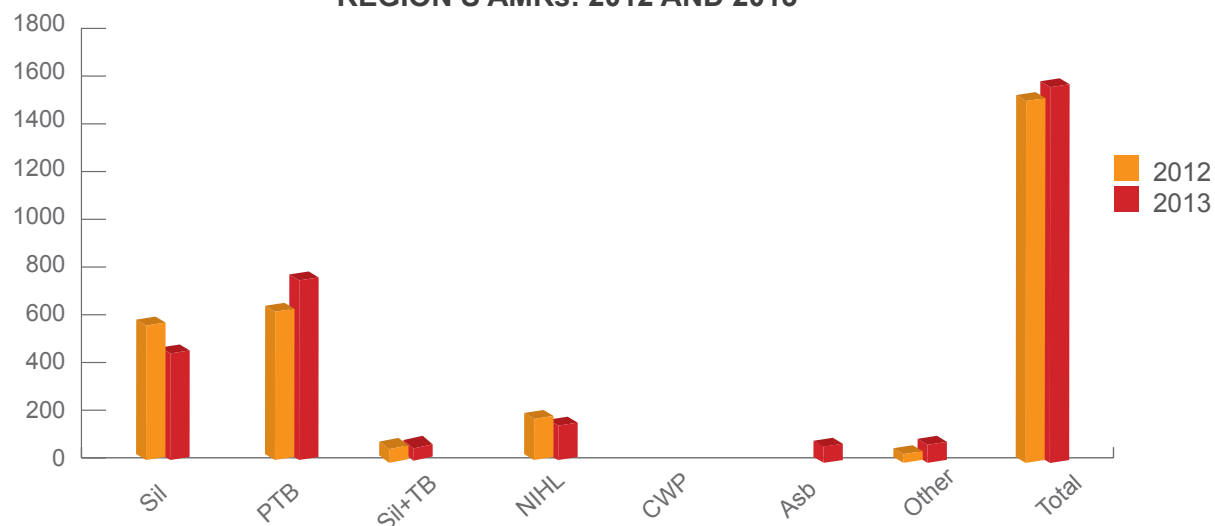


###### (b) Free State

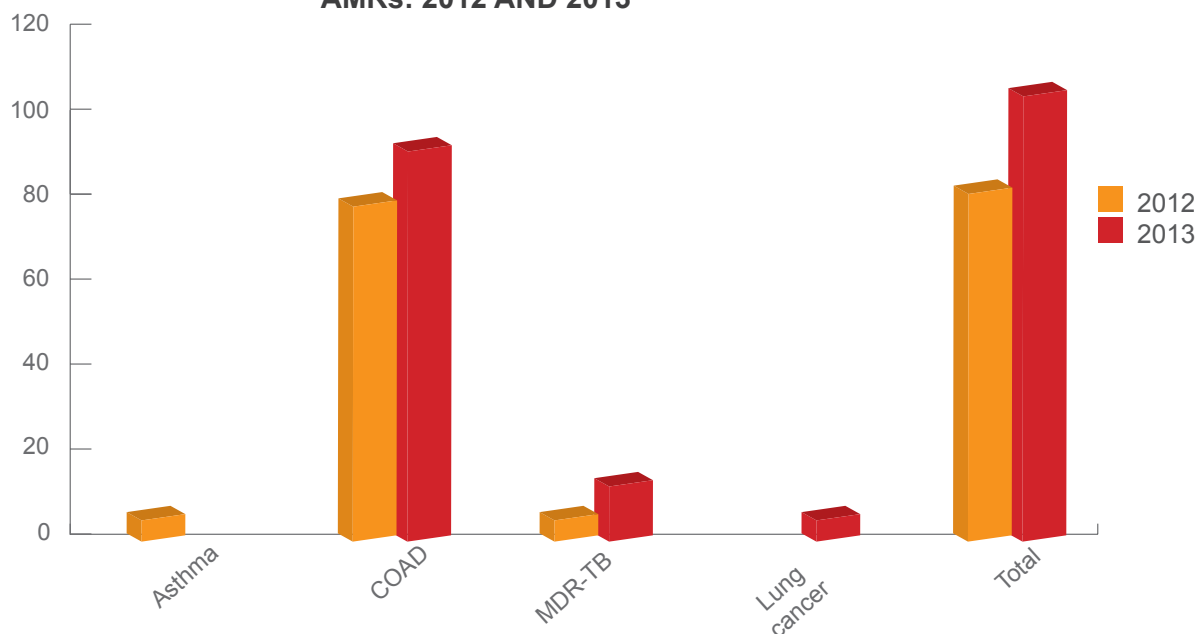
The reported occupational diseases increased by 49 cases when compared to the previous year and silicosis cases decreased by 100 cases. The NIHL showed a slight downward trend of 33 cases. The number of PTB cases increased by 140, while Sil+TB cases decreased by 14. The other diseases have increased significantly by 54 cases from 52 to 106.



**FIGURE 3.2.2.2.1(b1): OCCUPATIONAL DISEASES REPORTED IN THE FREE STATE REGION'S AMRs: 2012 AND 2013**



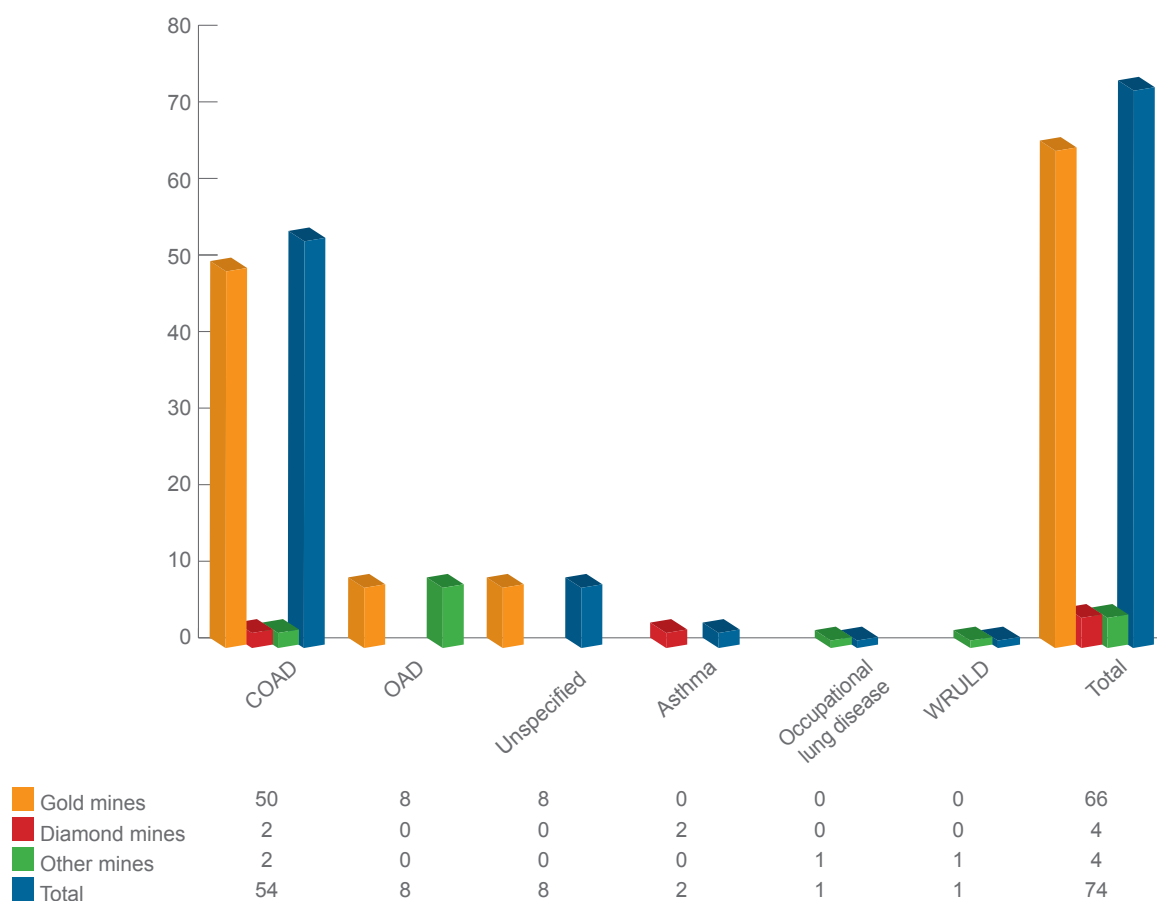
**FIGURE 3.2.2.2.1(b2): OTHER DISEASES REPORTED IN THE FREE STATE REGION'S AMRs: 2012 AND 2013**



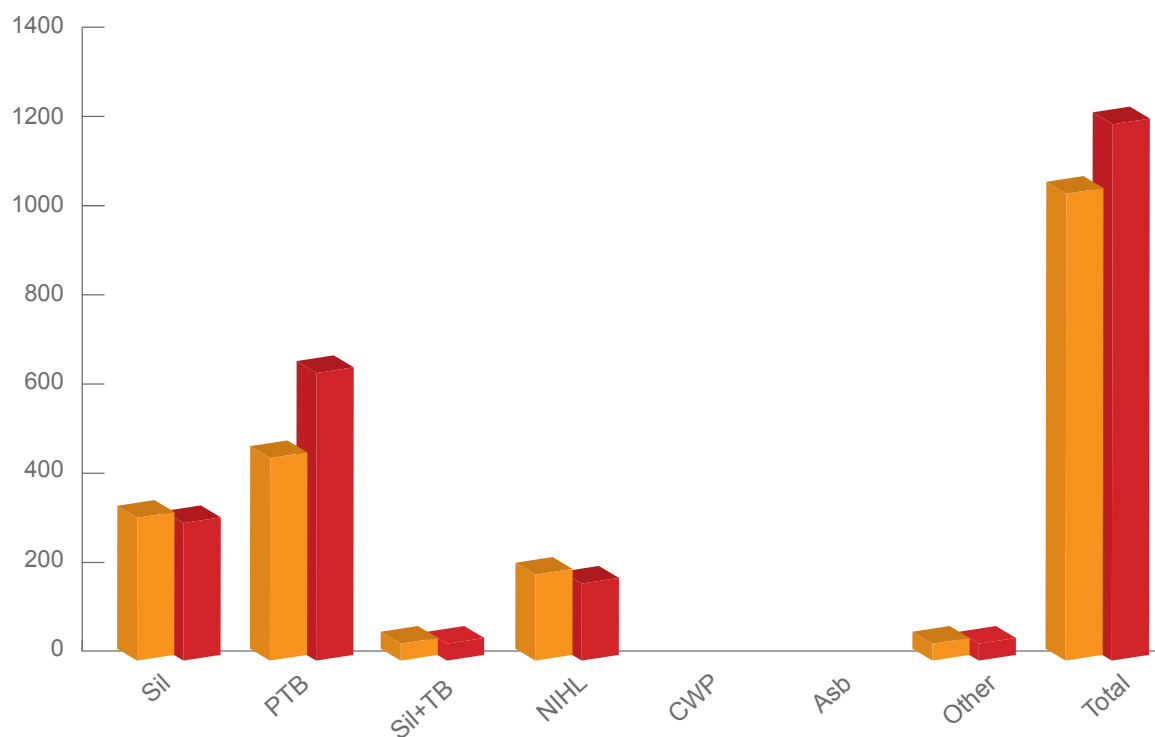
**(c) Gauteng**

Occupational diseases reported increased by 156 cases when compared to the previous year. Silicosis decreased by 12, NIHL by 20, and Sil+TB by 35 cases, while PTB cases increased significantly by 191. The other diseases increased slightly by 32 cases from 42 to 74.

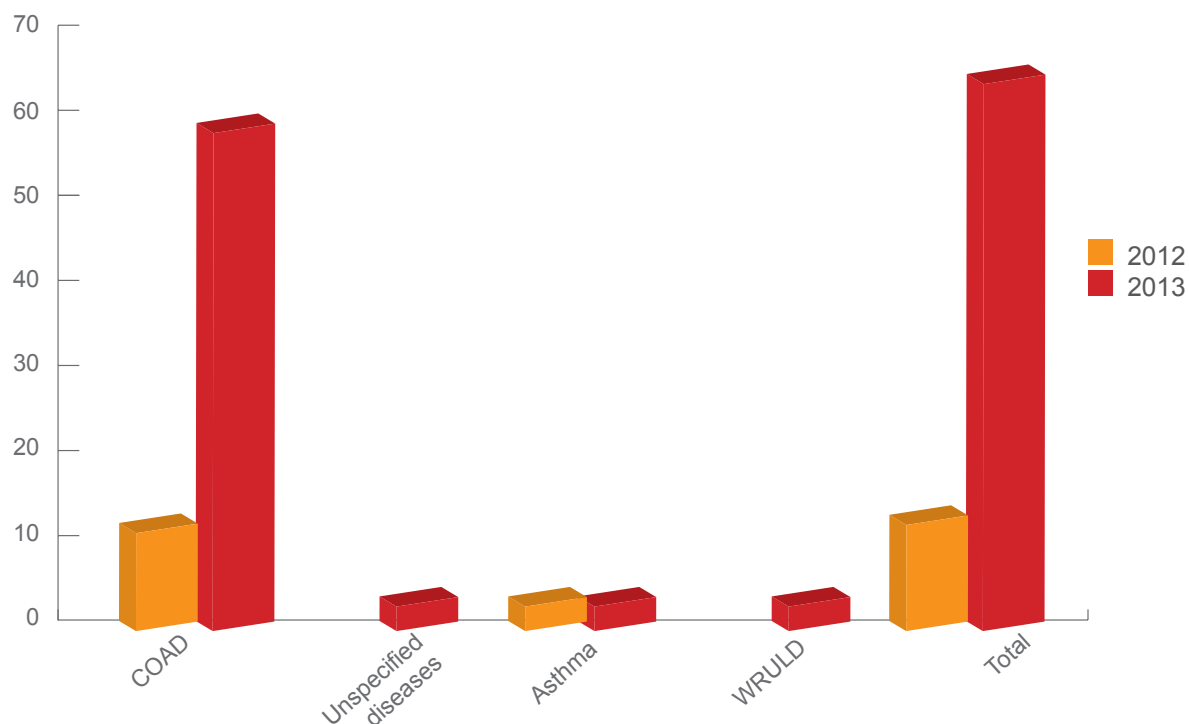




**FIGURE 3.2.2.2.1(c1): OCCUPATIONAL DISEASES REPORTED IN THE GAUTENG REGION'S AMRs: 2012 AND 2013**

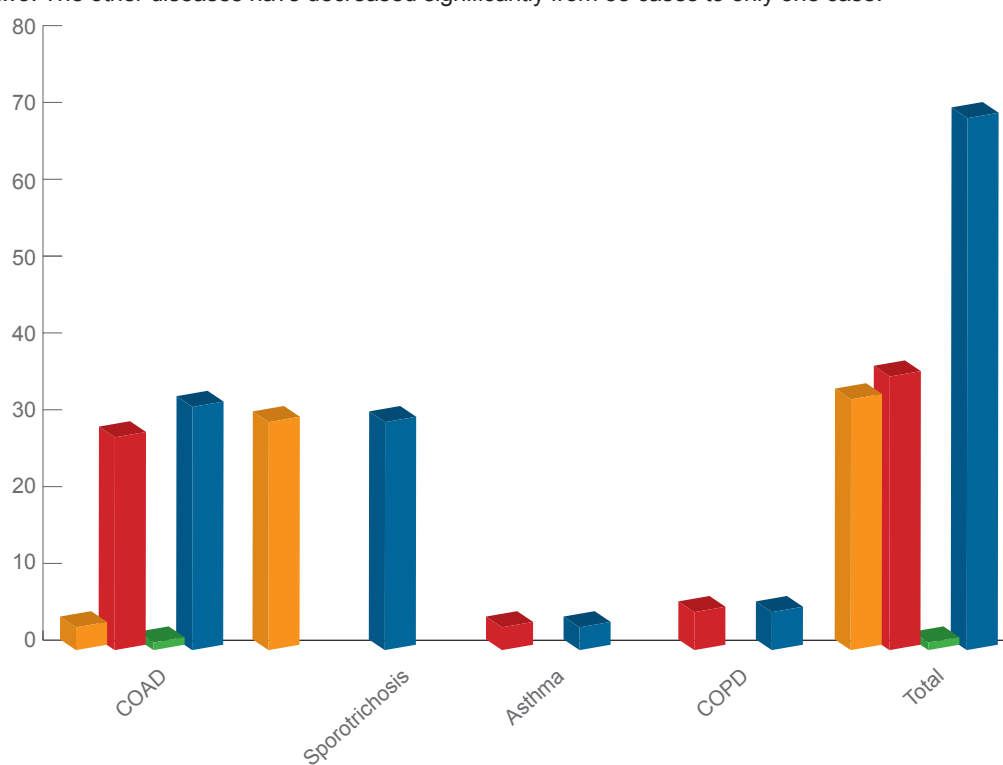


**FIGURE 3.2.2.1(c2): OTHER DISEASES REPORTED IN THE GAUTENG REGION'S AMRs: 2012 AND 2013**



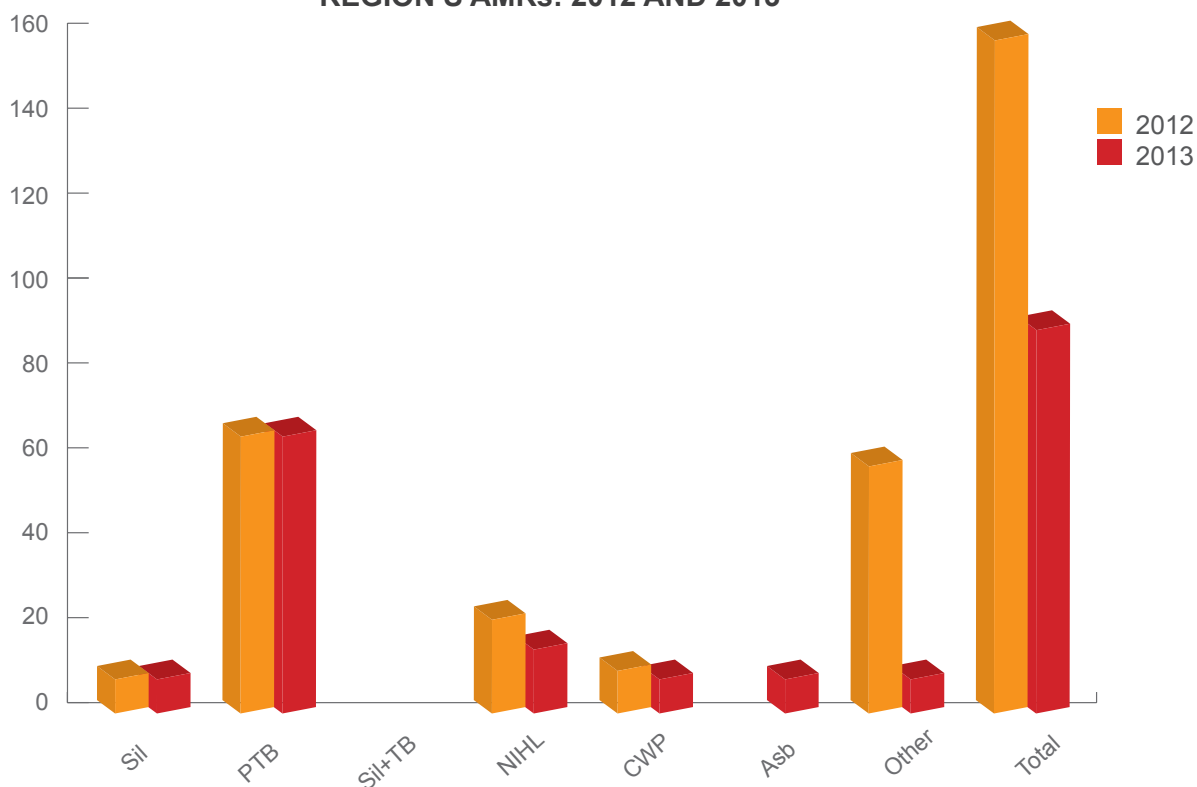
**(d) KwaZulu-Natal**

The total number of reported occupational diseases decreased by 69 cases compared to the previous year, while the total number of AMRs submitted by the mines in the region increased by one during the 2013 reporting year. The number of PTB cases remain unchanged at a total of 65 cases, NIHL cases decreased slightly by seven cases and silicosis cases increased by two. The other diseases have decreased significantly from 58 cases to only one case.

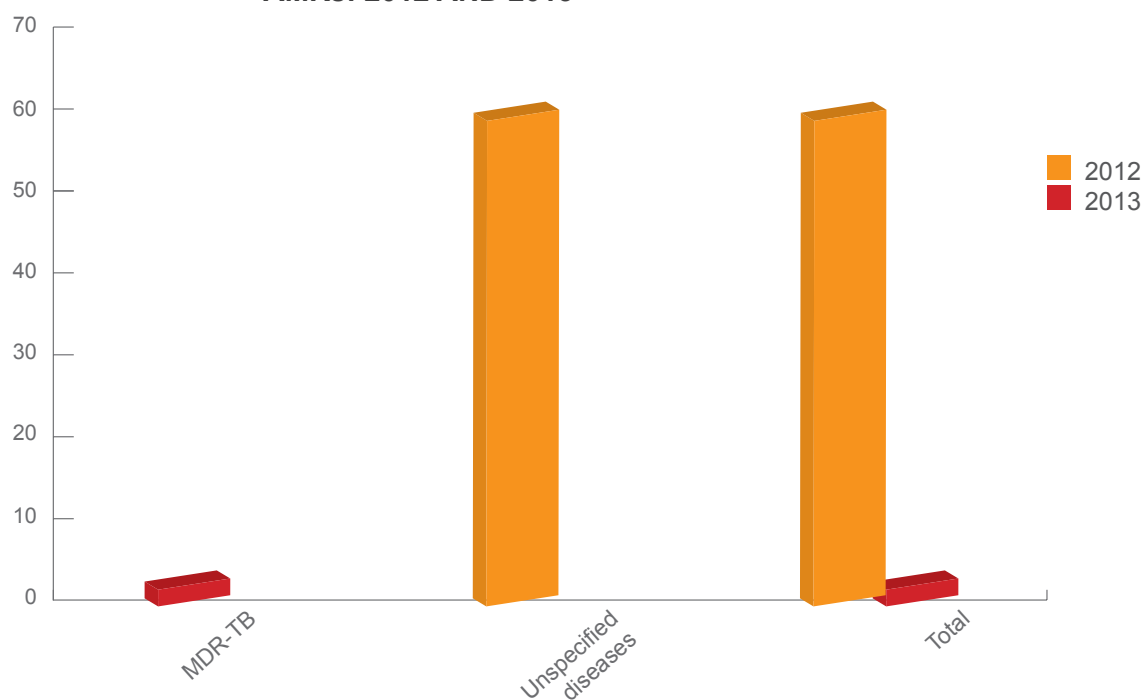


|               |    |    |   |   |    |
|---------------|----|----|---|---|----|
| Gold mines    | 3  | 30 | 0 | 0 | 33 |
| Diamond mines | 28 | 0  | 3 | 5 | 36 |
| Other mines   | 1  | 0  | 0 | 0 | 1  |
| Total         | 32 | 30 | 3 | 5 | 70 |

**FIGURE 3.2.2.2.1(d1): OCCUPATIONAL DISEASES REPORTED IN THE KWAZULU-NATAL REGION'S AMRs: 2012 AND 2013**

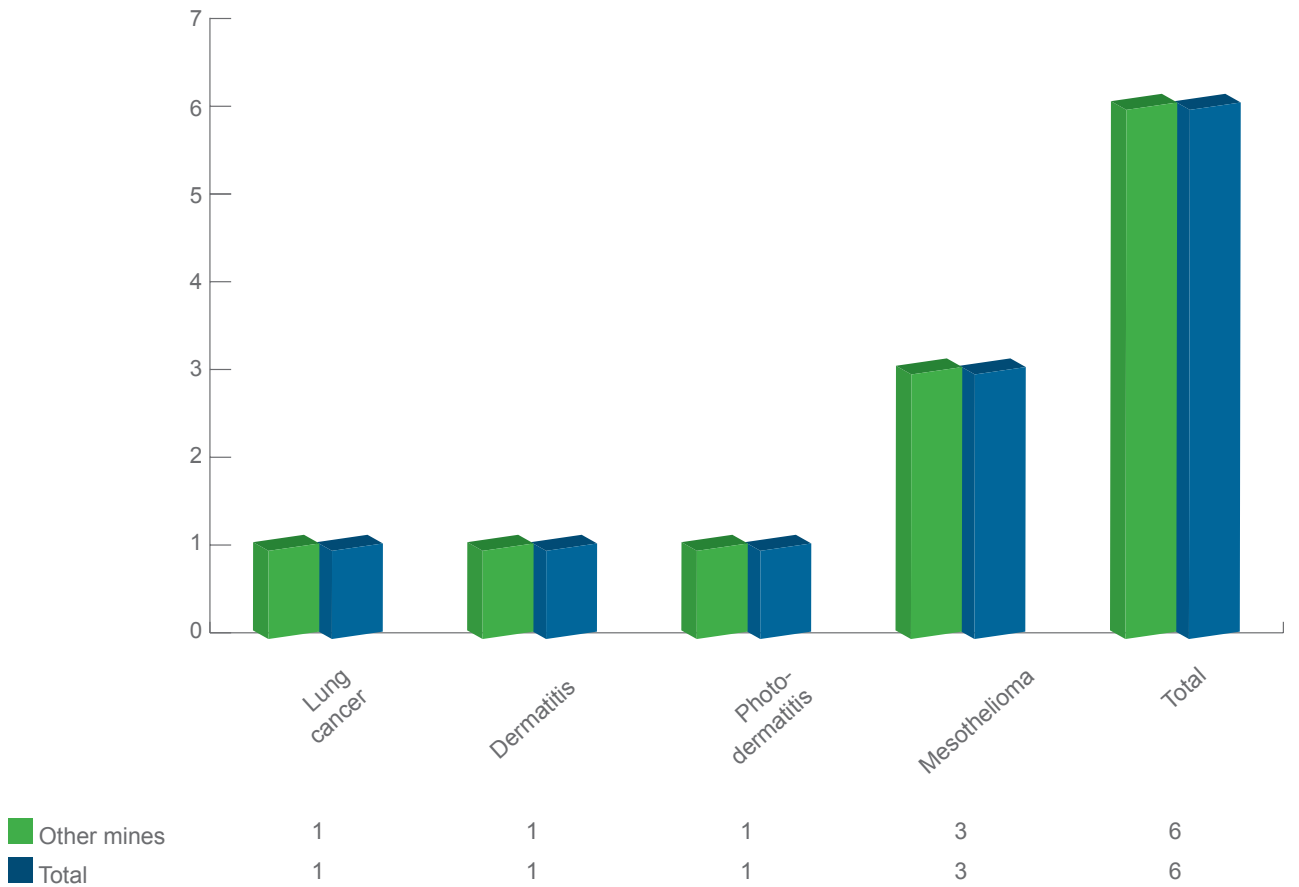


**FIGURE 3.2.2.2.1(d2): OTHER DISEASES REPORTED IN THE KWAZULU-NATAL REGION'S AMRs: 2012 AND 2013**

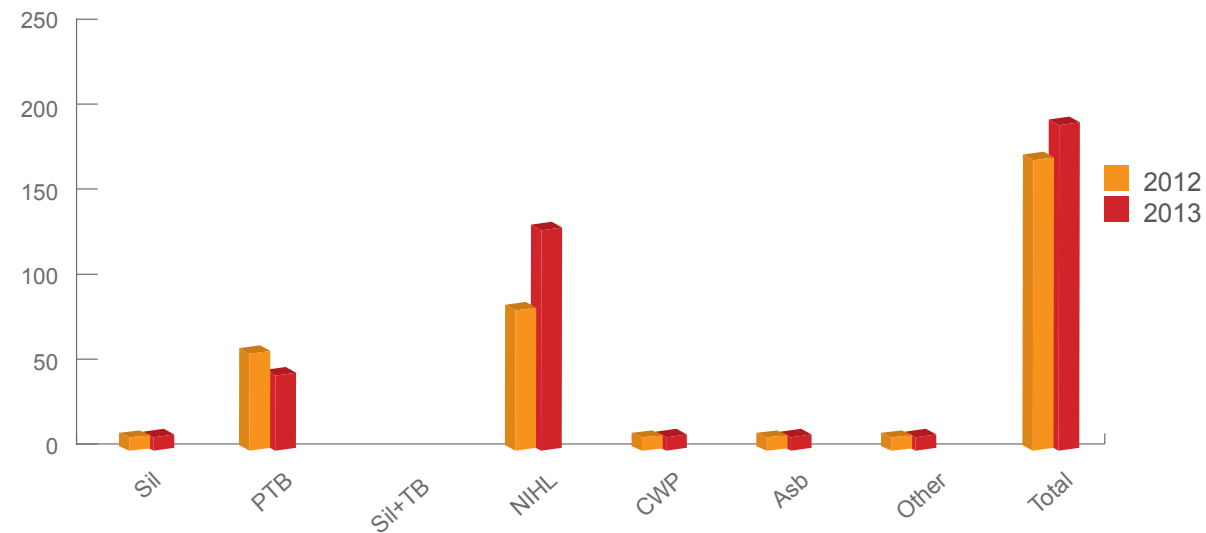


(e) Limpopo

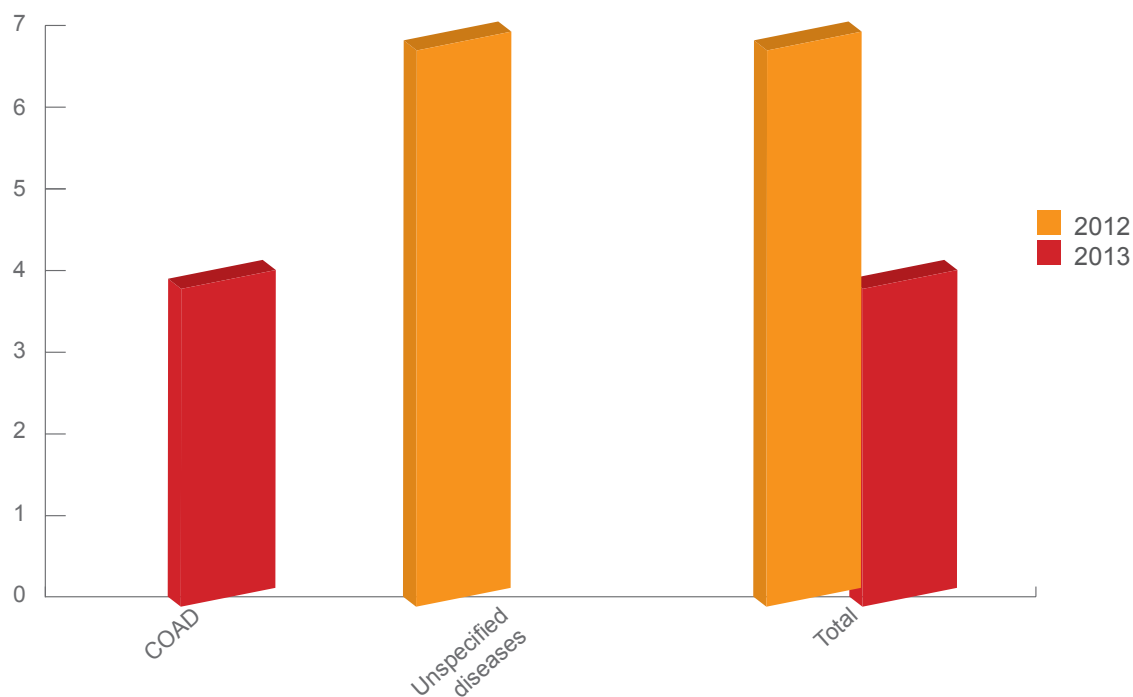
There is an increase of 21 reported occupational diseases compared to the previous year. Silicosis cases decreased by four, PTB cases decreased by 13, NIHL cases increased by 48 and CWP cases increased from four cases to eight. The other diseases reported decreased from seven cases to four.



**FIGURE 3.2.2.2.1(e1): OCCUPATIONAL DISEASES REPORTED IN THE LIMPOPO REGION'S AMRs: 2012 AND 2013**



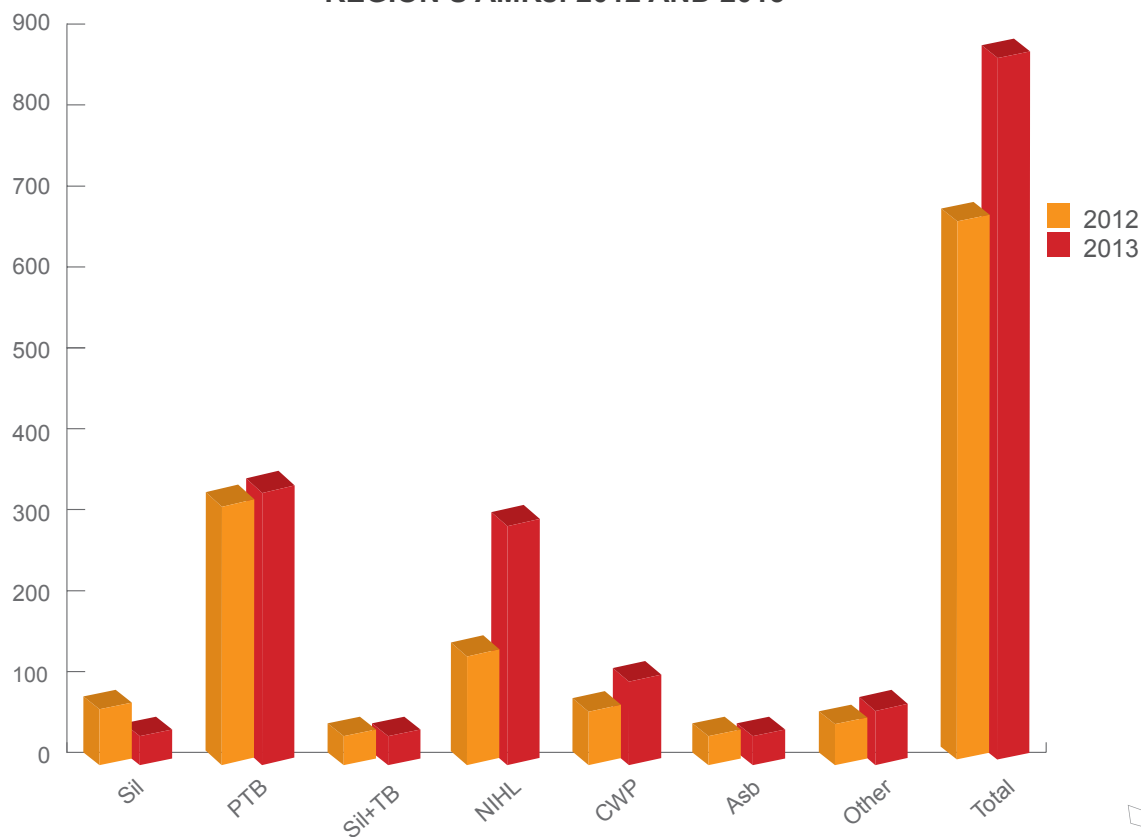
**FIGURE 3.2.2.2.1(e2): OTHER DISEASES REPORTED IN THE LIMPOPO REGION'S AMRs: 2012 AND 2013**



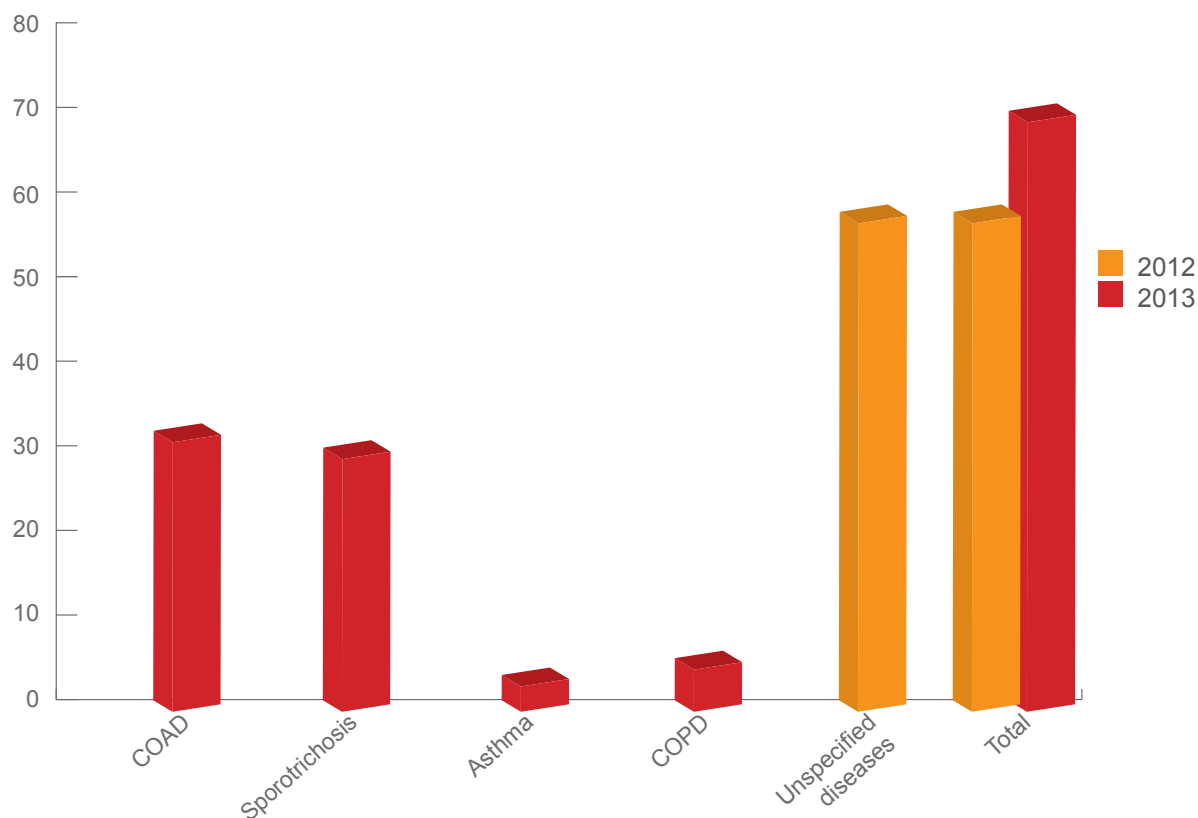
**(f) Mpumalanga**

The region received 13 more AMRs, resulting in a significant increase by 201 reported occupational diseases compared to the previous year. Although silicosis showed a decrease by 38 cases, NIHL increased significantly by 168 cases. In the current reporting year, CWP cases increased by 40 and PTB cases increased by 17. The other diseases increased by 12 cases from 58 to 70.

**FIGURE 3.2.2.2.1(f1): OCCUPATIONAL DISEASES REPORTED IN THE MPUMALANGA REGION'S AMRs: 2012 AND 2013**



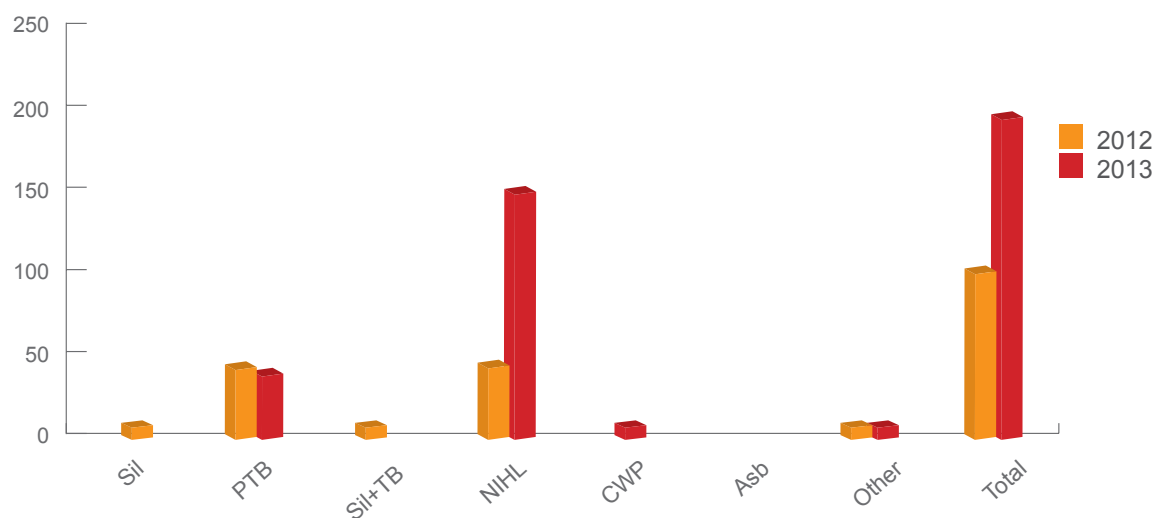
**FIGURE 3.2.2.1(f2): OTHER DISEASES REPORTED IN THE MPUMALANGA REGION'S AMRs: 2012 AND 2013**



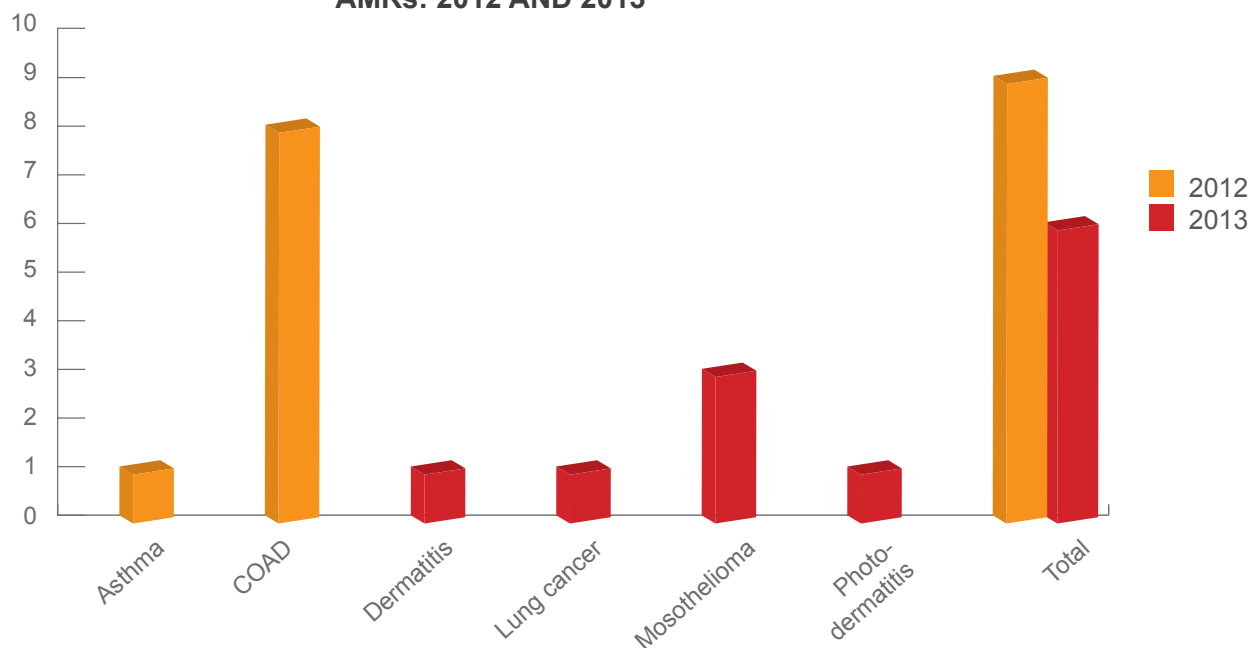
**(g) Northern Cape**

There is a significant overall increase of 95 occupational diseases reported in the current year in spite of the decrease in received AMRs. The number of reported PTB cases decreased by four, while the reported NIHL cases increased significantly by 107. The other diseases have decreased from nine cases to six.

**FIGURE 3.2.2.1(g1): OCCUPATIONAL DISEASES REPORTED IN THE NORTHERN CAPE REGION'S AMRs: 2012 AND 2013**

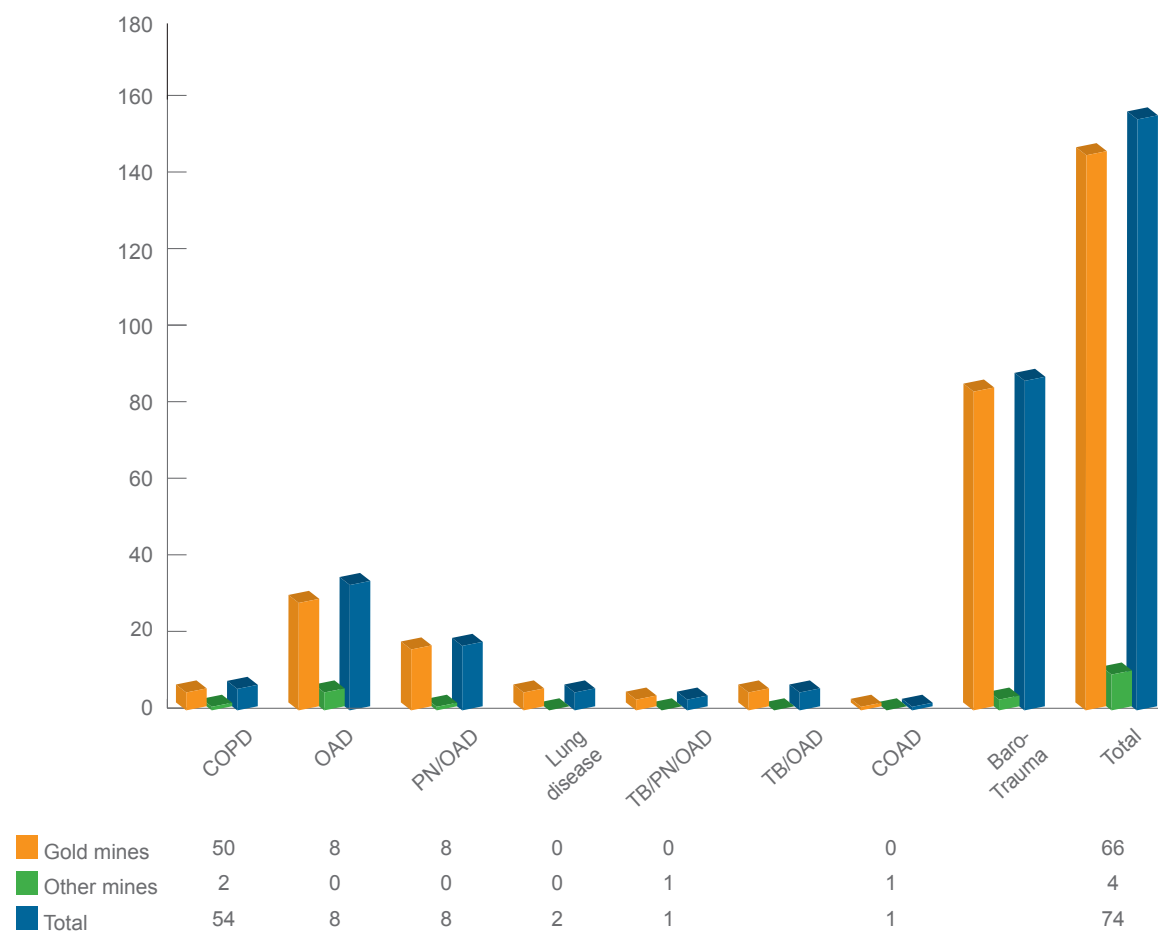


**FIGURE 3.2.2.2.1(g2): OTHER DISEASES REPORTED IN THE NORTHERN CAPE REGION'S AMRs: 2012 AND 2013**

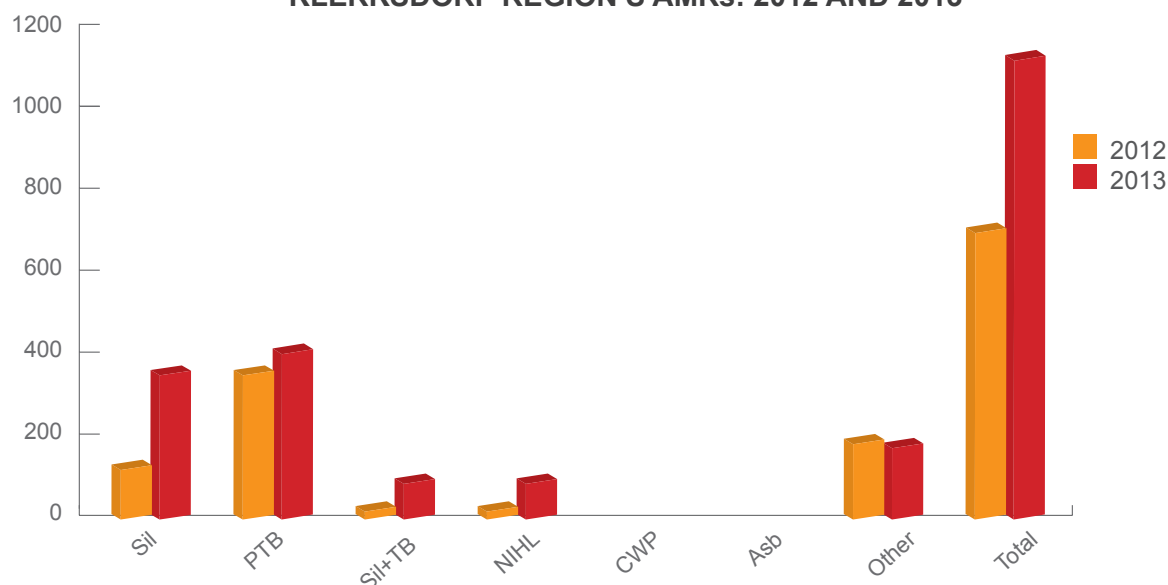


**(h) North West: Klerksdorp**

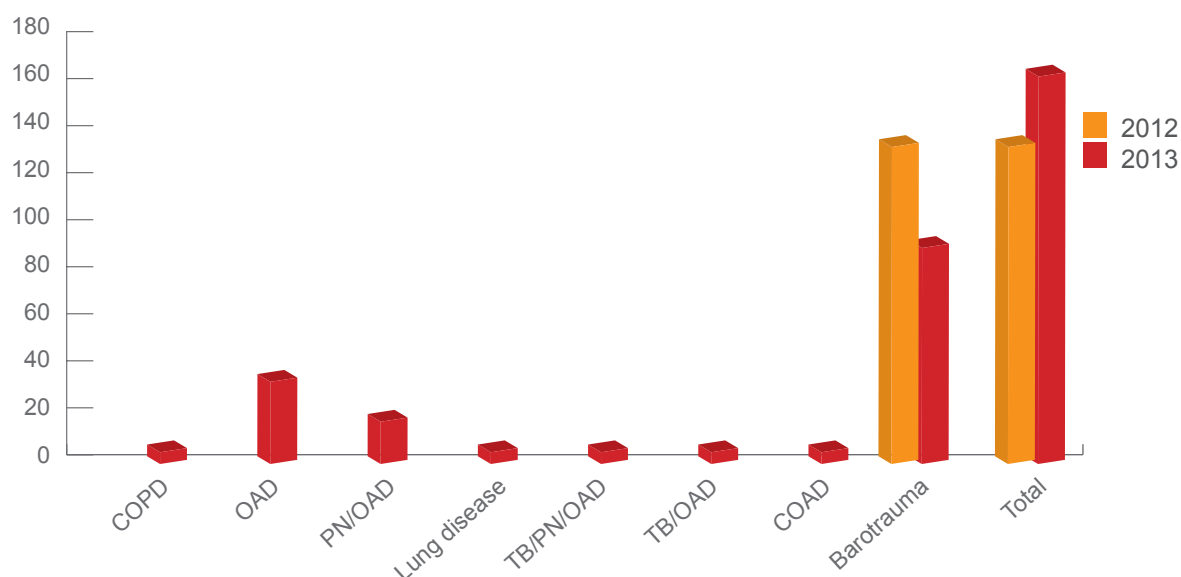
The region received 32 more AMRs compared to the previous reporting year. The reported occupational diseases increased significantly by 405 cases compared to 2012. The reported silicosis increased by 221 cases, Sil+TB increased by 75 cases, PTB increased by 50 cases and NIHL increased by 77 cases. The other diseases decreased by 18 cases from 183 to 165.



**FIGURE 3.2.2.2.1(h1): OCCUPATIONAL DISEASES REPORTED IN THE NORTH WEST: KLERKSDORP REGION'S AMRs: 2012 AND 2013**



**FIGURE 3.2.2.2.1(h2): OTHER DISEASES REPORTED IN THE NORTH WEST: KLERKSDORP REGION'S AMRs: 2012 AND 2013**

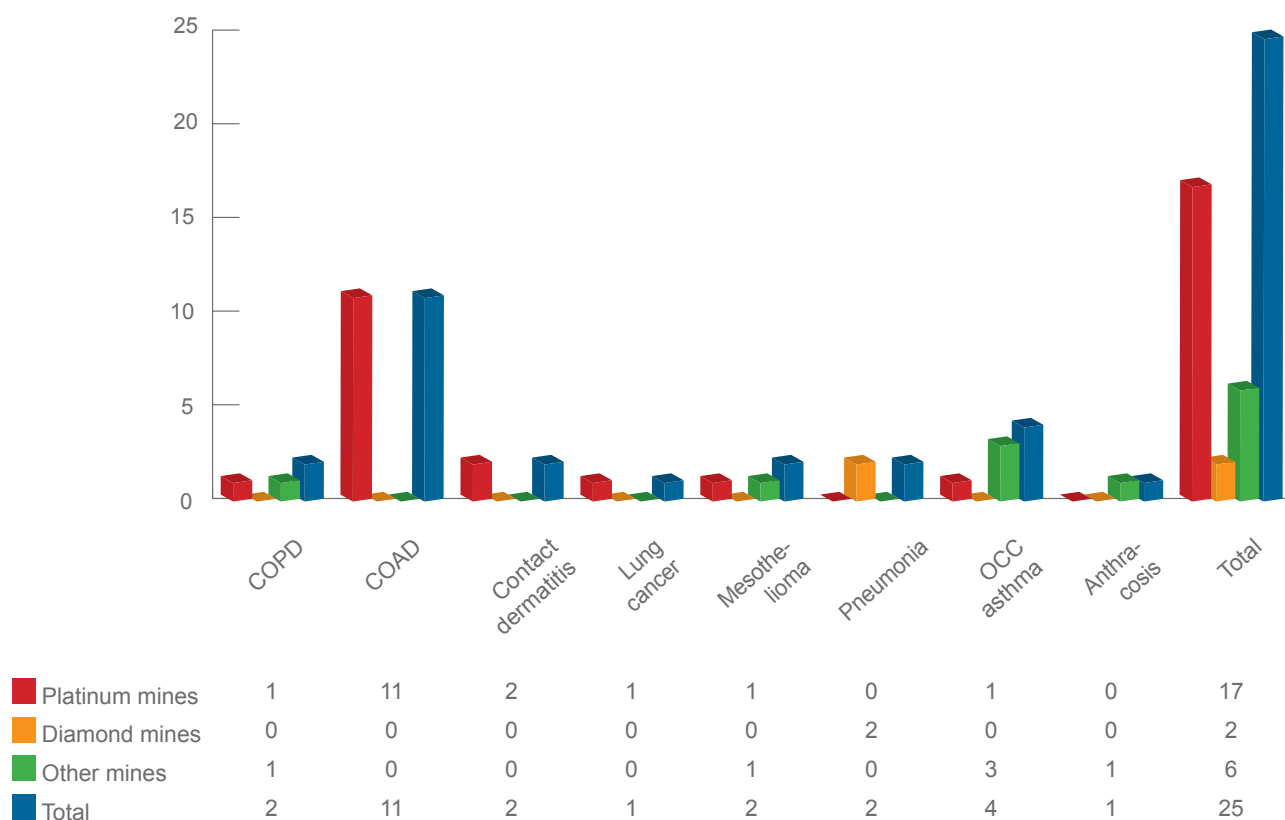


**i) North West: Rustenburg**

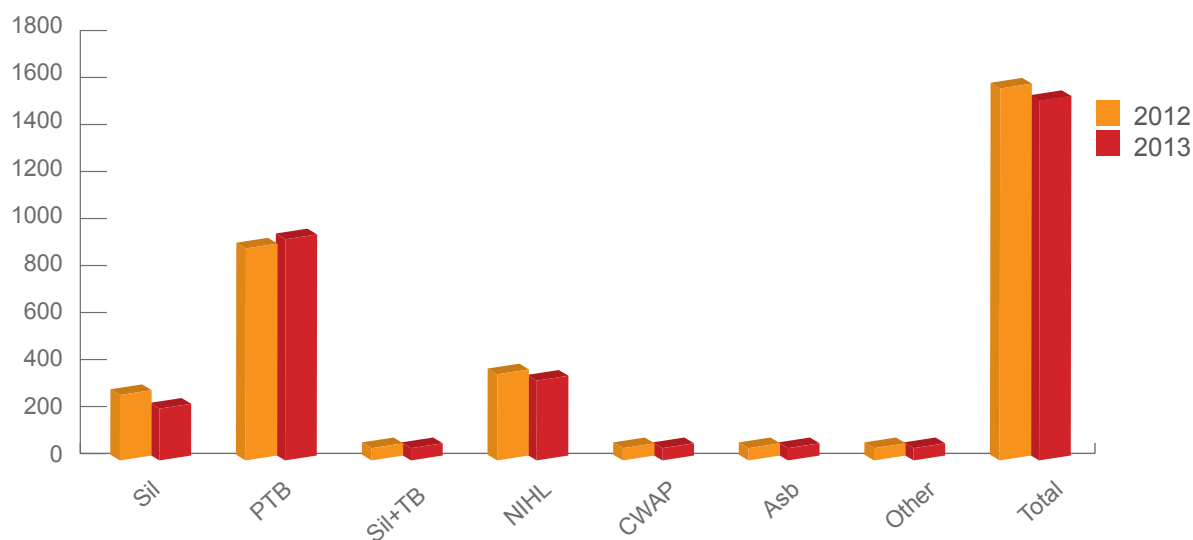
Ten more AMRs were received from the region, improving the statutory reports to 106 AMRs when compared to the 96 reports received during the previous reporting period. There has been an overall decrease of 51 in the number of reported cases of occupational diseases. The number of reported PTB cases increased by 39 when compared to 2012.

Silicosis and NIHL decreased by 58 and 27 cases respectively. The other diseases have decreased slightly by three cases from 28 to 25.

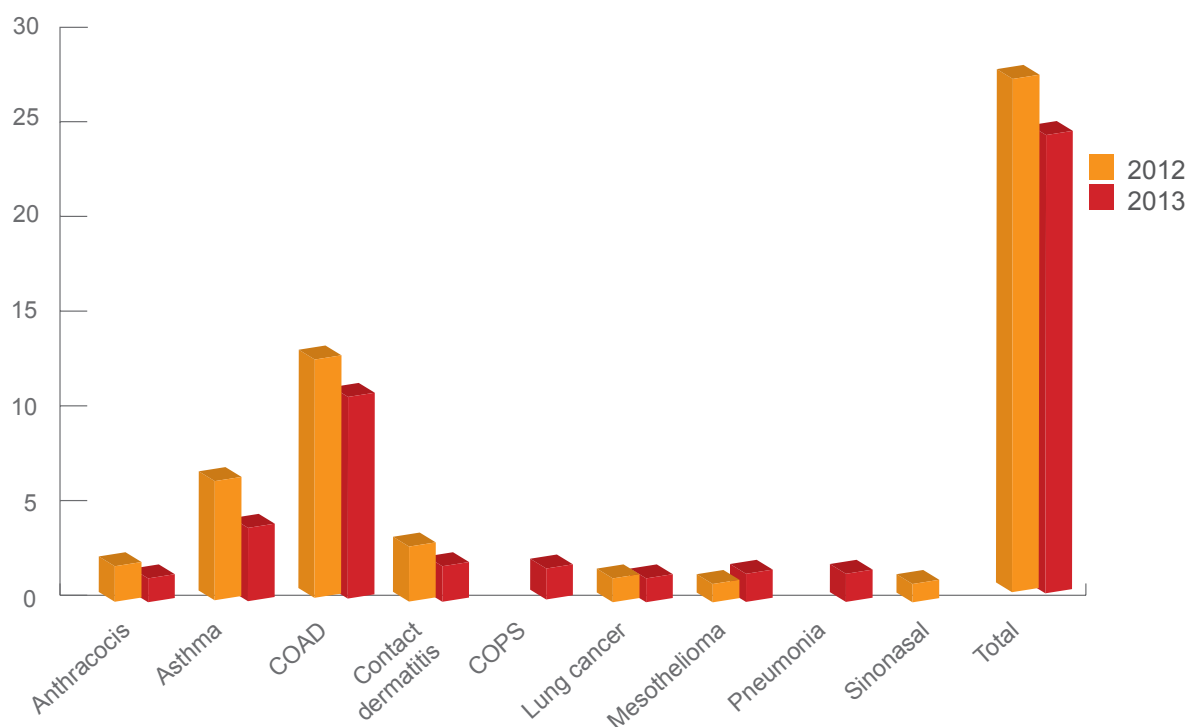




**FIGURE 3.2.2.2.1(i1): OCCUPATIONAL DISEASES REPORTED IN THE NORTH WEST: RUSTENBURG REGION'S AMRs: 2012 AND 2013**



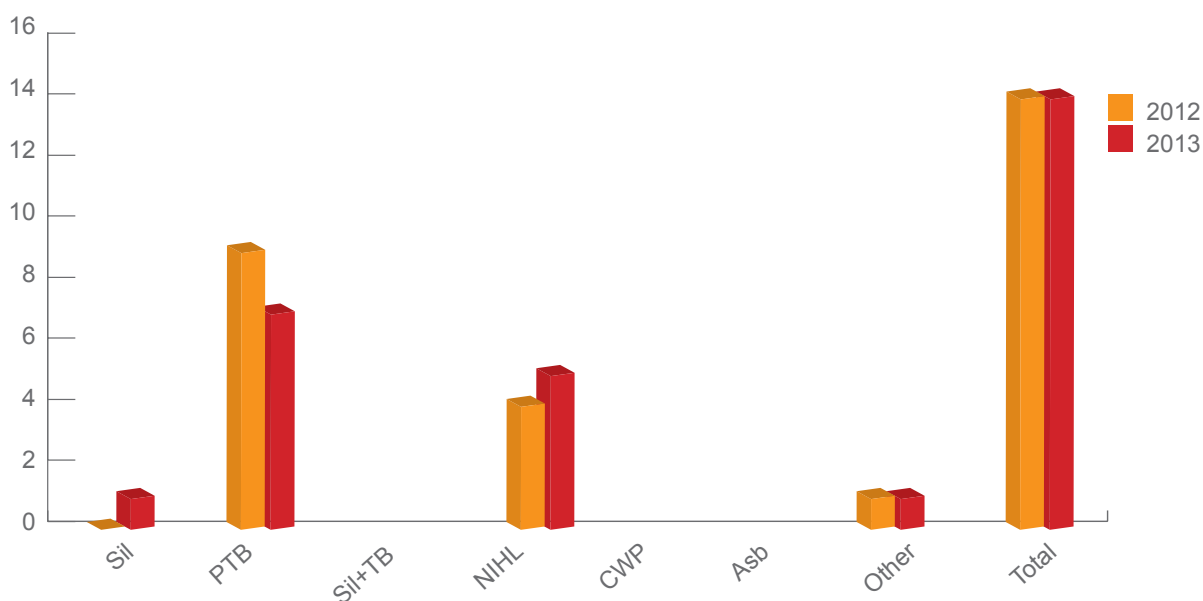
**FIGURE 3.2.2.2.1(i2): OTHER DISEASES REPORTED IN THE NORTH WEST: RUSTENBURG REGION'S AMRs: 2012 AND 2013**



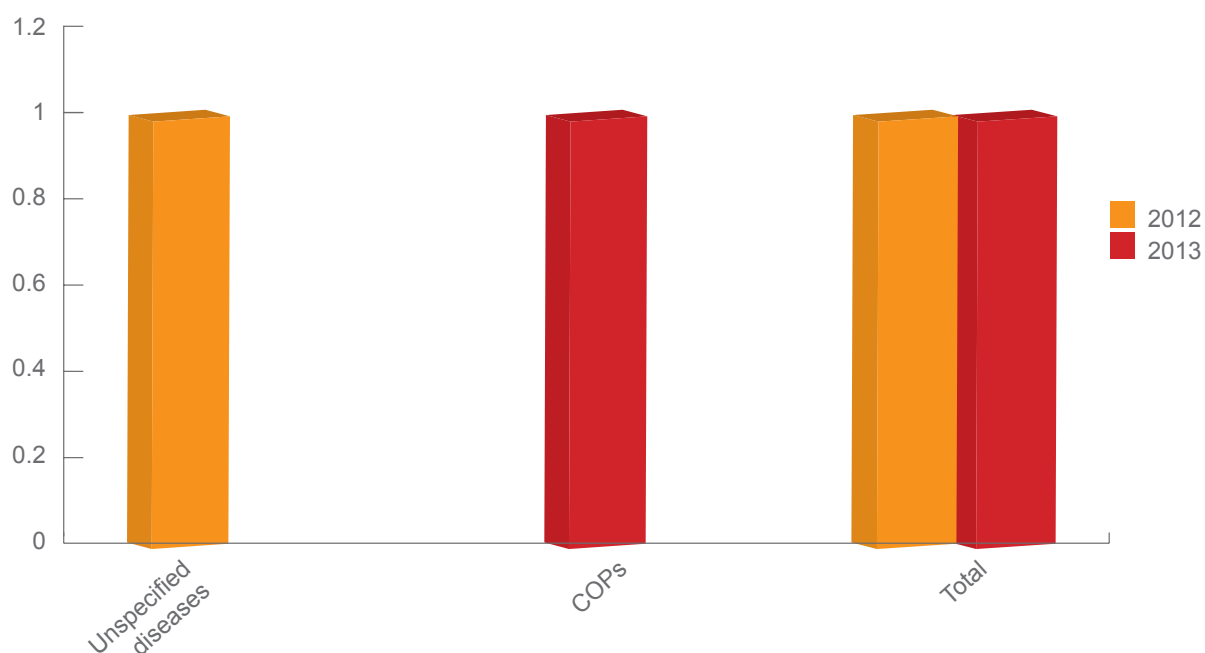
**(j) Western Cape**

Although the region has received a decreased number of AMRs by 14 reports compared to the previous year, the number of reported occupational diseases has remained unchanged at a figure of 14 cases.

**FIGURE 3.2.2.2.1(j1): OCCUPATIONAL DISEASES REPORTED IN THE WESTERN CAPE REGION'S AMRs: 2012 AND 2013**



**FIGURE 3.2.2.1(j2): OTHER DISEASES REPORTED IN THE WESTERN CAPE REGION'S AMRs: 2012 AND 2013**



### 3.2.2.2.2 Occupational Diseases per Commodity

The overall total number of occupational diseases reported has increased by 808 cases as shown in the following table. Statutory reporting has improved by 53 more AMRs that have been received for the 2013 reporting year compared to the previous year. The number of reported PTB cases increased significantly by 416, the NIHL cases increased significantly by 314, CWP cases increased by 39, other diseases increased by 15, Sil+TB cases increased by 23, and silicosis cases increased by 10 compared to the previous reporting year. The only decrease noted is in asbestosis, which decreased by nine cases.

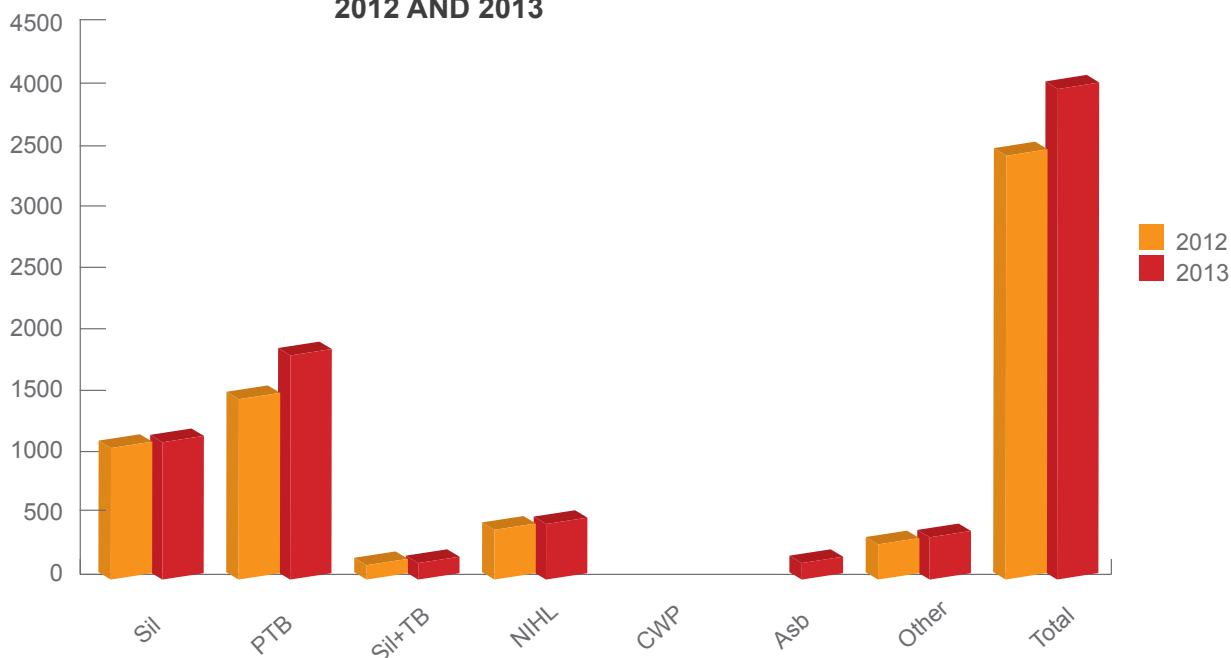
TABLE: 3.2.2.2 (1): OCCUPATIONAL DISEASES AS REPORTED ON ANNUAL MEDICAL REPORTS PER COMMODITY: 2012 AND 2013

|                | 2012  | 2013  | 2012  | 2013  | 2012   | 2013   | 2012 | 2013 | 2012   | 2013   | 2012  | 2013  | 2012 | 2013 | 2012 | 2013 | 2012  | 2013  | 2012  | 2013  |
|----------------|-------|-------|-------|-------|--------|--------|------|------|--------|--------|-------|-------|------|------|------|------|-------|-------|-------|-------|
|                | Sil   | Sil   | PTB   | PTB   | Sil+TB | Sil+TB | PTB  | PTB  | Sil+TB | Sil+TB | NIHL  | NIHL  | CWP  | CWP  | Asb  | Asb  | Other | Other | Total | Total |
| Gold mines     | 1 115 | 1 164 | 1 529 | 1 529 | 1 900  | 1 900  | 1 22 | 1 22 | 140    | 140    | 422   | 471   | 0    | 0    | 2    | 0    | 298   | 358   | 3 486 | 4 035 |
| Platinum mines | 277   | 217   | 895   | 895   | 949    | 949    | 1    | 1    | 0      | 0      | 368   | 354   | 6    | 7    | 0    | 1    | 17    | 17    | 1 565 | 1 544 |
| Coal mines     | 5     | 8     | 212   | 212   | 269    | 269    | 0    | 0    | 0      | 0      | 95    | 230   | 68   | 116  | 6    | 3    | 73    | 42    | 456   | 671   |
| Diamond mines  | 4     | 11    | 8     | 8     | 6      | 6      | 2    | 2    | 3      | 3      | 10    | 14    | 0    | 0    | 0    | 0    | 5     | 7     | 29    | 41    |
| Other mines    | 19    | 30    | 194   | 194   | 131    | 131    | 1    | 1    | 6      | 6      | 180   | 320   | 12   | 2    | 2    | 15   | 45    | 28    | 466   | 519   |
| Total          | 1 420 | 1 430 | 2 838 | 2 838 | 3 255  | 3 255  | 126  | 126  | 149    | 149    | 1 075 | 1 389 | 86   | 125  | 10   | 19   | 438   | 452   | 6 002 | 6 810 |

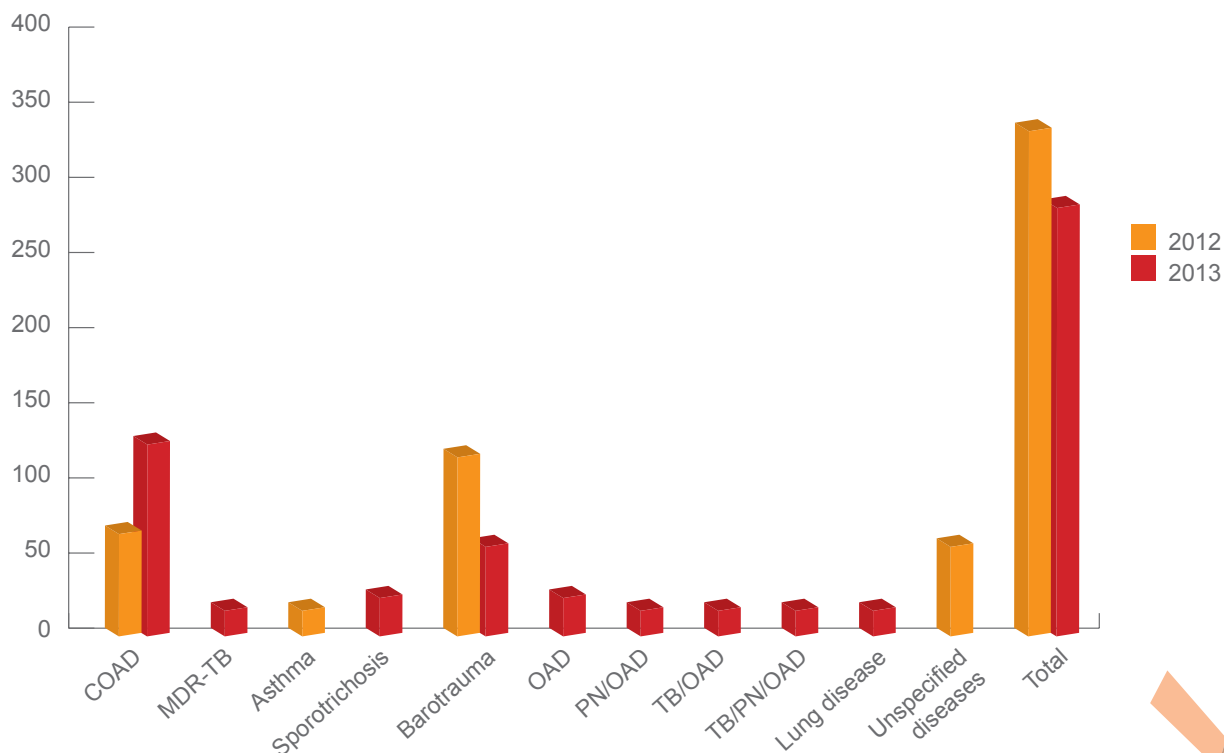
**(a) Gold Mines**

There is an overall increase of 549 cases in the total number of occupational diseases reported from five regions (Free State, Gauteng, Limpopo, Mpumalanga and North West: Klerksdorp) compared to the previous reporting year. The number of PTB cases increased significantly by 371, both silicosis and NIHL cases increased by 49 respectively. The other diseases reported increased by 60 cases from 298 to 358.

**FIGURE 3.2.2.2(a1): OCCUPATIONAL DISEASES AS REPORTED IN GOLD MINES' AMRs: 2012 AND 2013**



**FIGURE 3.2.2.2.1(a2): OTHER DISEASES AS REPORTED IN GOLD MINES' AMRs: 2012 AND 2013**

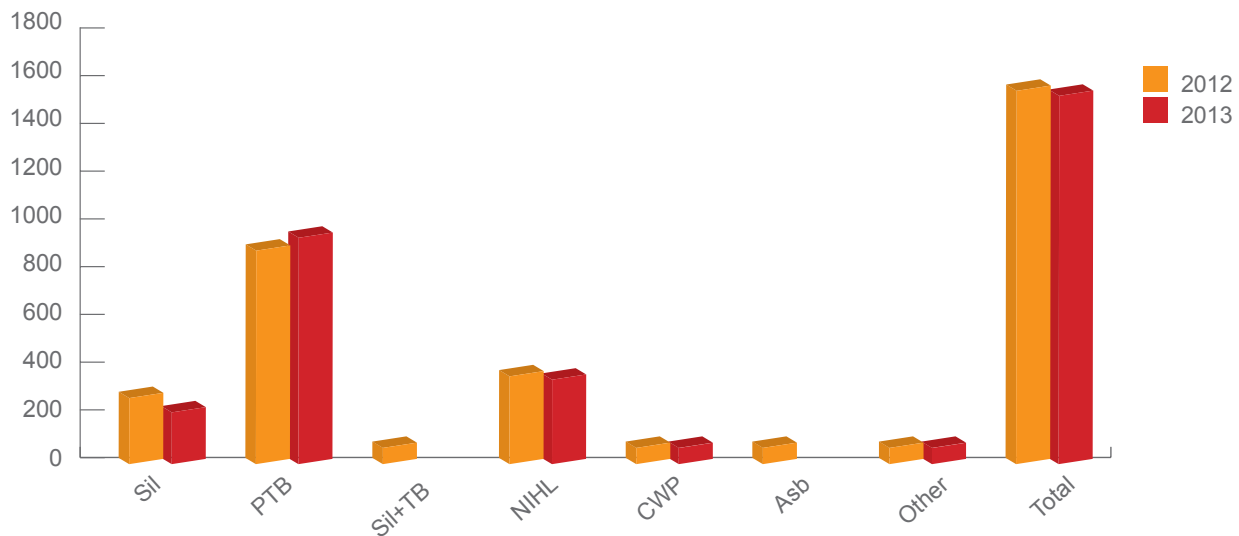


**(b) Platinum Mines**

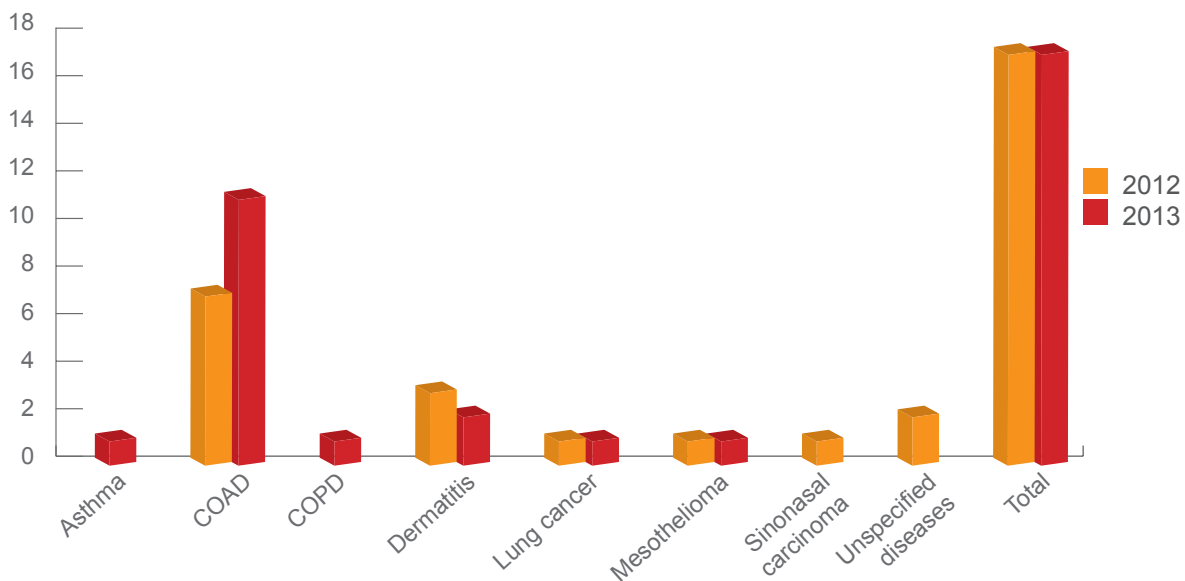
There is an overall decrease of 21 cases in the total number of occupational diseases reported from three regions (Limpopo, Mpumalanga and North West: Rustenburg) compared to the total number of occupational diseases reported from the same regions during the previous year. While the number of PTB cases has increased by 54, the number of silicosis cases decreased by 60, and the number of NIHL cases decreased by 14. The number of CWP cases has increased by one case and no asbestosis case was reported, while one case was reported during the previous year. There were no Sil+TB cases reported in 2013, while one case was reported during the previous year. More focus should be on the management of PTB cases.

The number of other diseases reported remains unchanged at 17 cases during the previous and current reporting year.

**FIGURE 3.2.2.2(b1): OCCUPATIONAL DISEASES AS REPORTED IN PLATINUM MINES' AMRs: 2012 AND 2013**



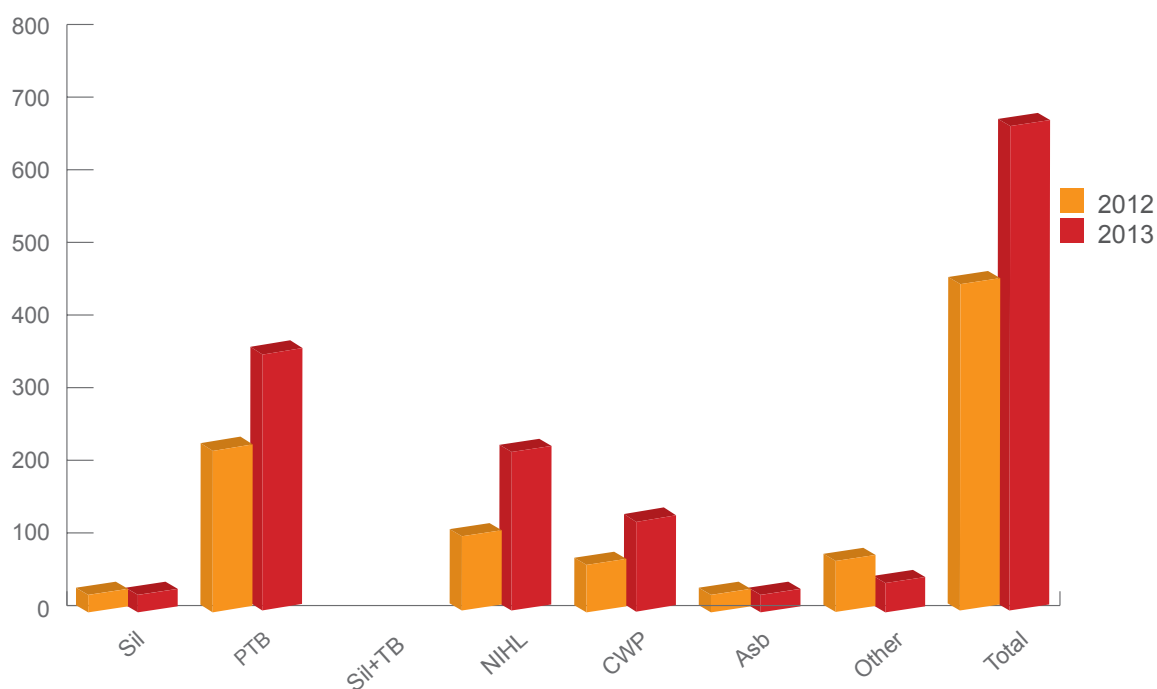
**FIGURE 3.2.2.2(b2): OTHER DISEASES AS REPORTED IN PLATINUM MINES' AMRs: 2012 AND 2013**



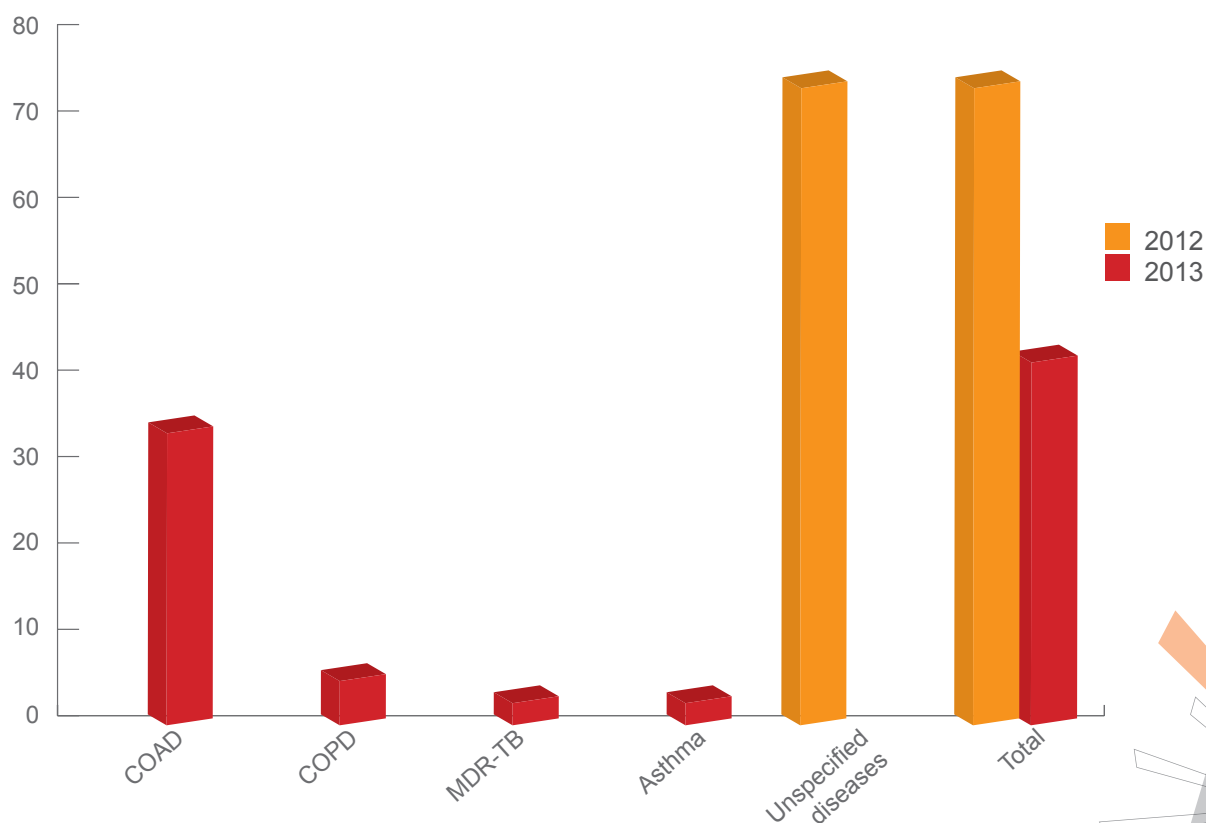
**(c) Coal Mines**

There has been an overall upward trend by 215 cases in the total number of occupational diseases reported from four regions (Free State, KwaZulu-Natal, Limpopo and Mpumalanga) compared to the total number of occupational diseases reported from the same regions during the previous year. The number of reported NIHL cases increased significantly by 135, and the PTB cases increased by 57 compared to the previous year. The number of CWP cases increased by 48, while the number of silicosis and asbestosis cases showed a slight increase of three cases. The other diseases reported decreased by 31 cases from 73 to 42.

**FIGURE: 3.2.2.2(c1): OCCUPATIONAL DISEASES AS REPORTED IN COAL MINES' AMRs: 2012 AND 2013**



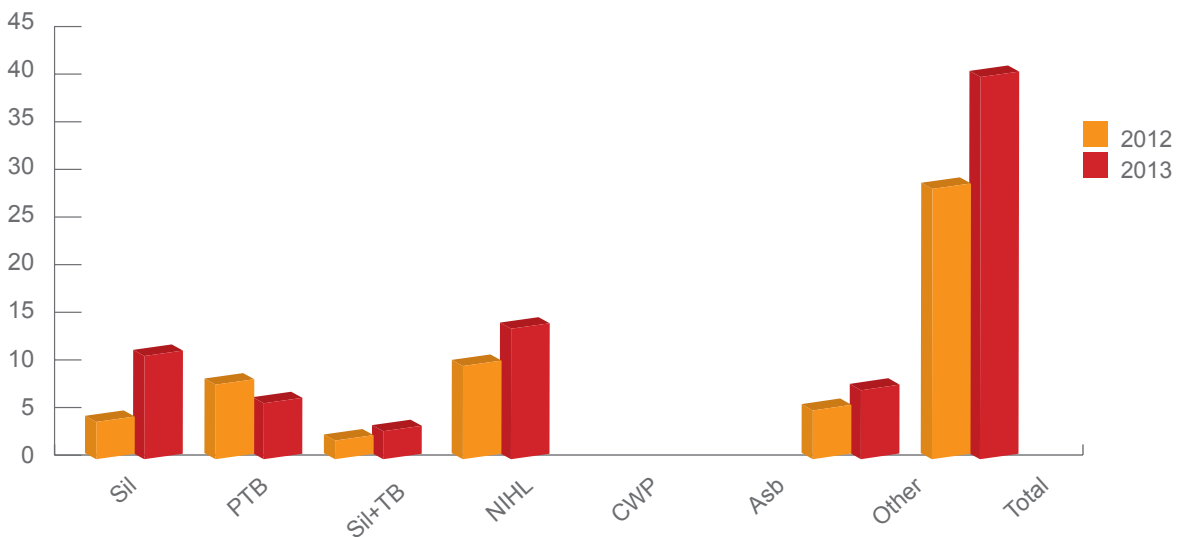
**FIGURE 3.2.2.2(c2): OTHER DISEASES AS REPORTED IN COAL MINES' AMRs: 2012 AND 2013**



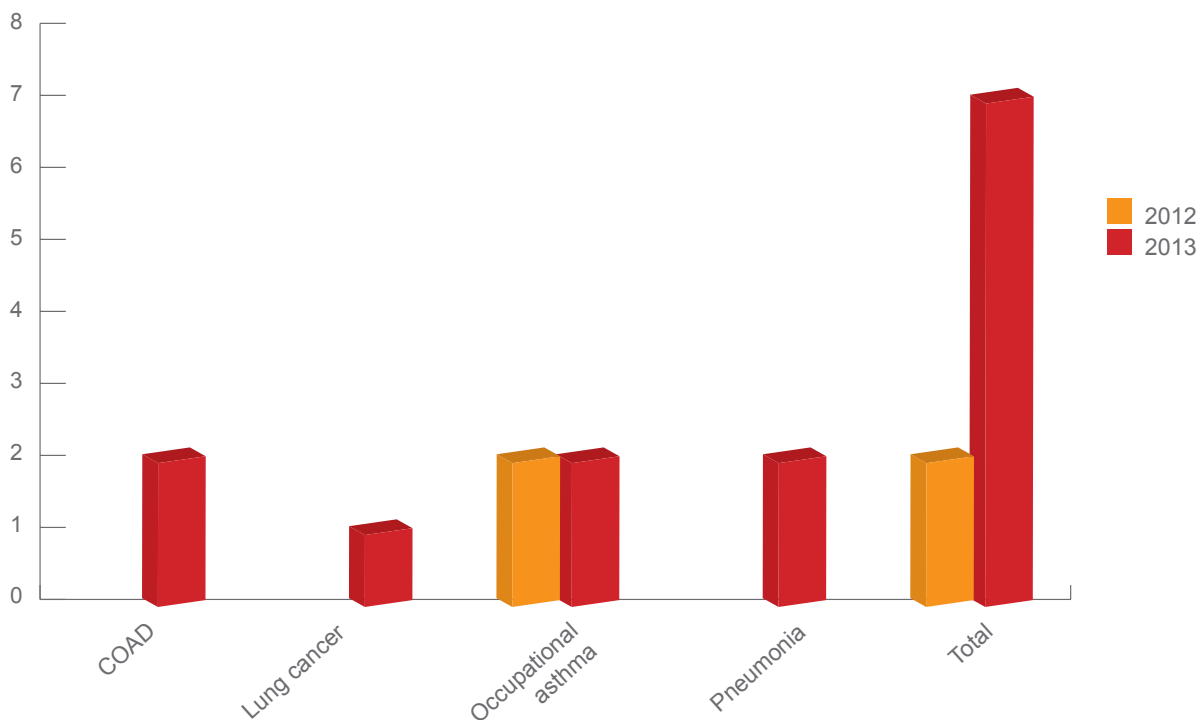
**(d) Diamond Mines**

There is a slight overall increase of 12 cases in the total number of occupational diseases reported by five regions (Free State, Gauteng, Northern Cape, North West: Klerksdorp and North West: Rustenburg) compared to the number of occupational diseases that were reported from two regions (Gauteng and Free State) during the previous year. The number of silicosis cases has increased slightly by seven, the NIHL cases increased slightly by four, and there is an increase by one Sil+TB case compared to the previous year. The other diseases reported have increased by two cases from five to seven.

**GRAPH 3.2.2.2.2(d1): OCCUPATIONAL DISEASES AS REPORTED IN DIAMOND MINES' AMRs: 2012 AND 2013**



**GRAPH 3.2.2.2.2(d2): OTHER DISEASES AS REPORTED IN DIAMOND MINES' AMRs: 2012 AND 2013**

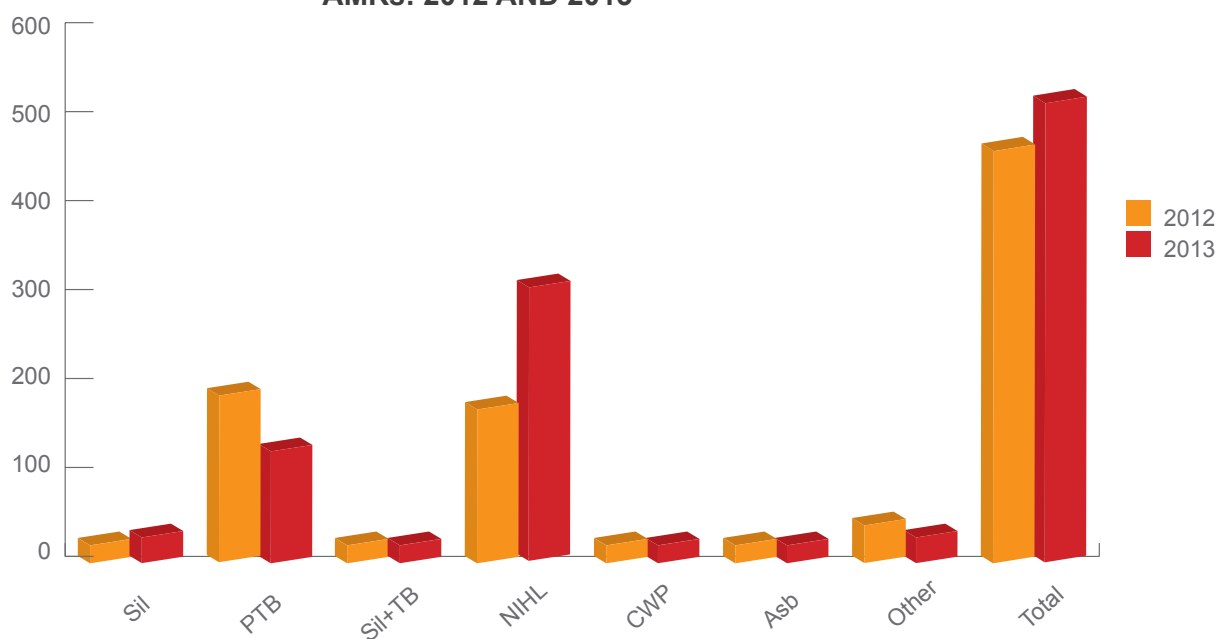




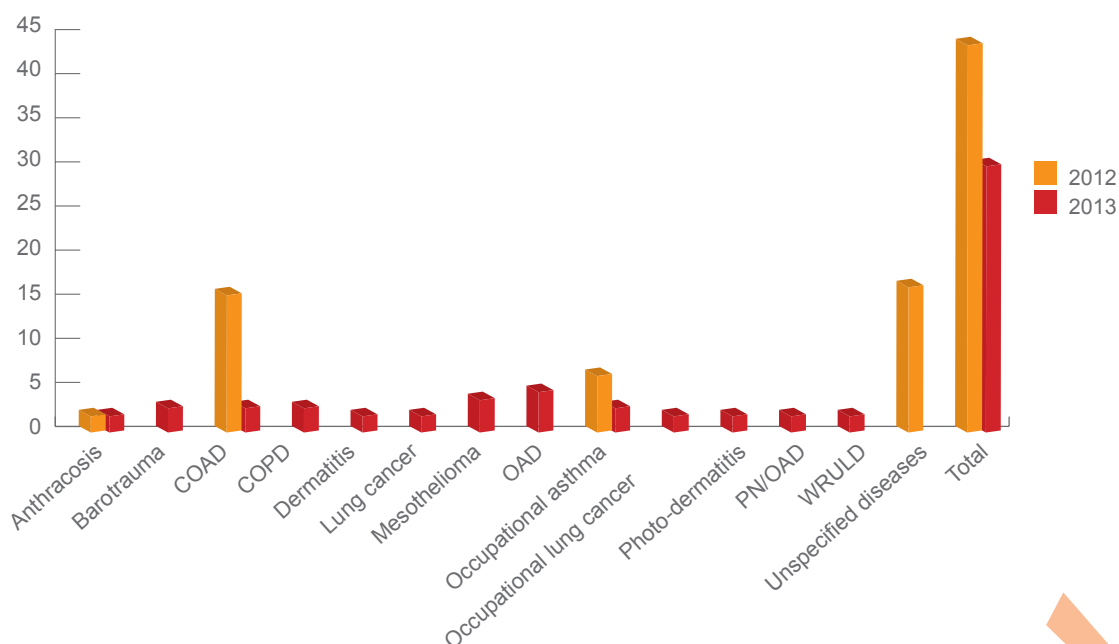
**(e) Other Mines**

There has been an overall increase by 53 cases in the number of occupational diseases reported from all 10 regions compared to the number of occupational diseases reported from the same regions during the previous reporting year. The number of reported NIHL cases has increased significantly by 140. While the reported PTB cases show a downward trend by 64 cases, the silicosis cases have increased slightly by 11, and the Sil+TB have increased by five cases. Both the CWP and asbestosis cases show a slight decrease by 10 and 13 respectively. The other diseases reported have decreased by 16 cases from 44 to 28.

**FIGURE 3.2.2.2(e1): OCCUPATIONAL DISEASES AS REPORTED IN OTHER MINES' AMRs: 2012 AND 2013**



**FIGURE: 3.2.2.2.2(e2): OTHER DISEASES AS REPORTED IN OTHER MINES' AMRs: 2012 AND 2013**



### 3.2.2.3 Medical Inspector's Report

Section 20 of the MHSA states that employees may appeal to the medical inspector against a decision that the employee is unfit to perform any particular category of work or any finding of an occupational medical practitioner contained in an exit certificate.

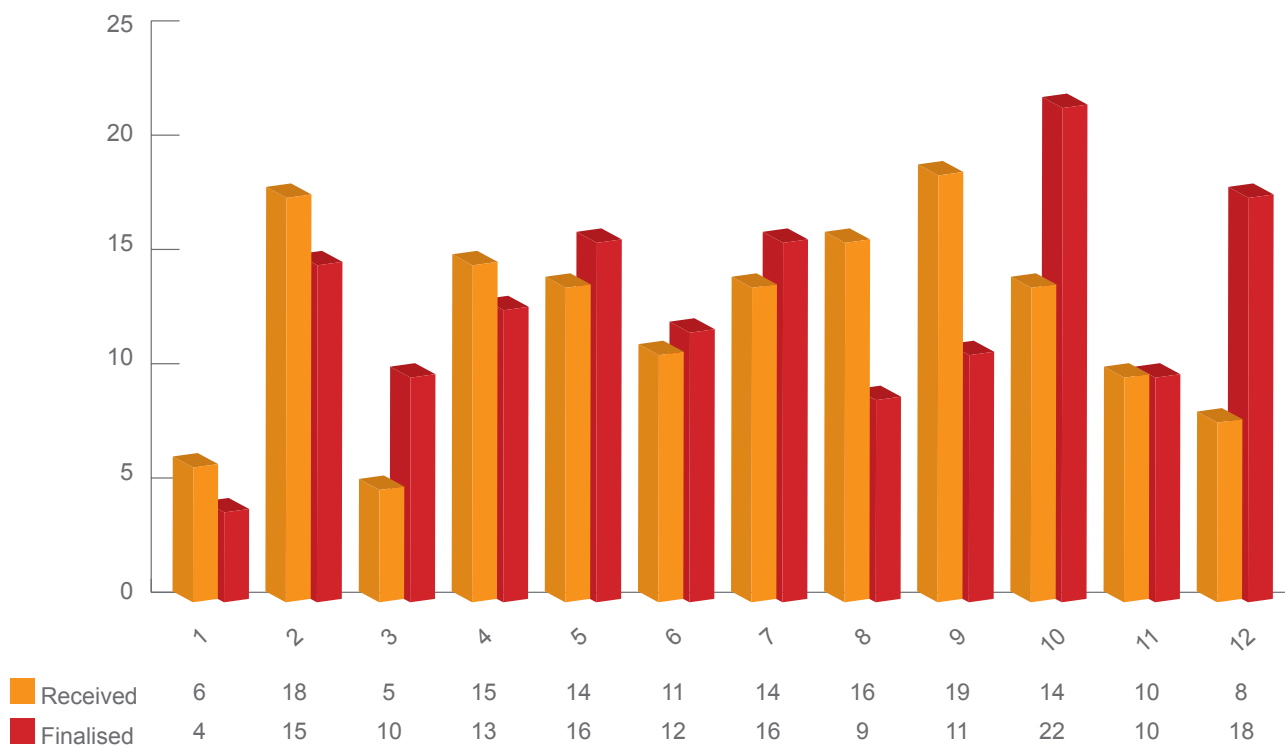
An appeal under Section 20 must be lodged with the medical inspector:

- within 30 days of the decision or finding of an occupational medical practitioner;
- within 90 days of the date of issue of an exit medical certificate; or
- within such period as the medical inspector may allow on good cause shown.

A total of 150 appeals, compared to 102 appeals in 2012, were received for 2013 and 156 were completed in 2013, in comparison to 123 appeals in 2012.

A breakdown of the appeals indicates that the number of appeals varies from month to month. More appeals are handled in some months. This is because more reports are received from second-opinion doctors. This means that, in a particular month, the medical inspector might be finalising the backlog of the previous months and not necessarily the appeals that were received in that month. The number of appeals received for the reporting period increased from 102 to 150. This could be because efforts have been made during the year to promote Section 20 to employees.

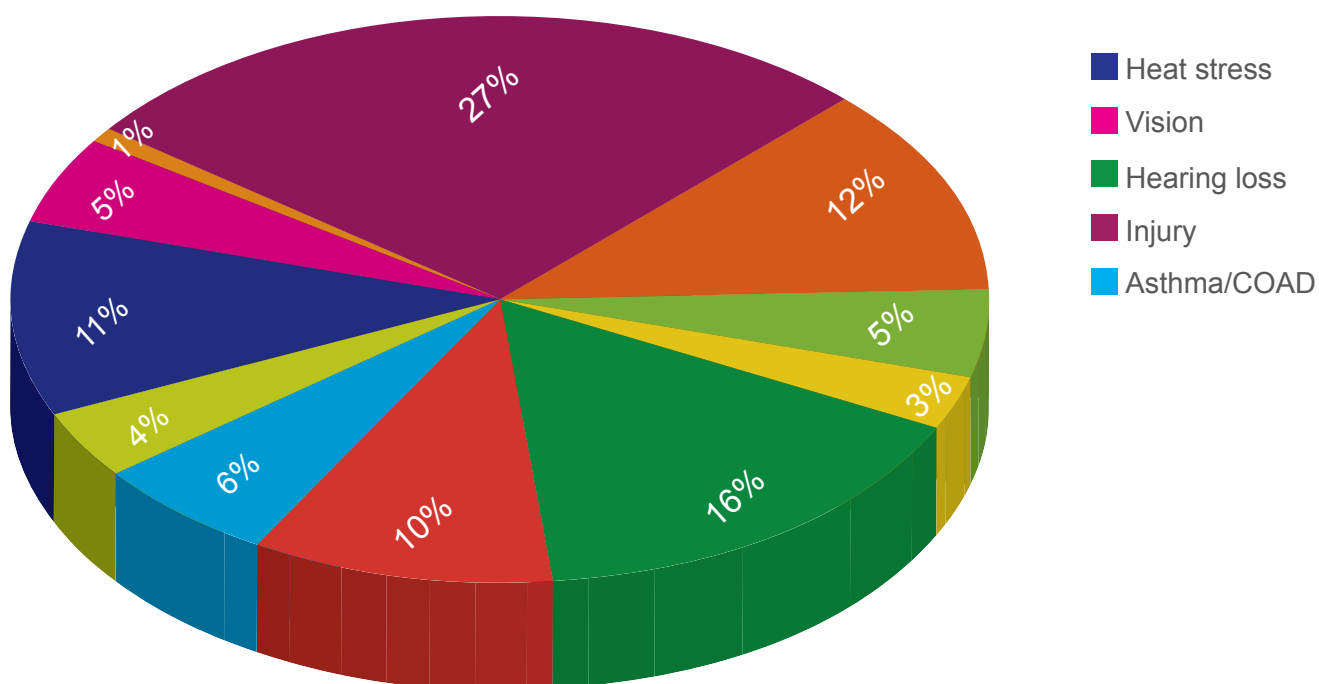
**FIGURE 3.2.2.3 (a): APPEALS RECEIVED AND FINALISED (JANUARY TO DECEMBER 2013)**



**TABLE 3.2.2.3(a): APPEALS RECEIVED AND FINALISED (JANUARY TO DECEMBER 2013)**

|              | Received   | Finalised  |
|--------------|------------|------------|
| January      | 6          | 4          |
| February     | 18         | 15         |
| March        | 5          | 10         |
| April        | 15         | 13         |
| May          | 14         | 16         |
| June         | 11         | 12         |
| July         | 14         | 16         |
| August       | 16         | 9          |
| September    | 19         | 11         |
| October      | 14         | 22         |
| November     | 10         | 10         |
| December     | 8          | 18         |
| <b>Total</b> | <b>150</b> | <b>156</b> |

**FIGURE 3.2.2.3(b): DISEASES (JANUARY TO DECEMBER 2013)**



**TABLE 3.2.2.3 (b): DISEASES (JANUARY TO DECEMBER 2013)**

|  |            |
|--|------------|
| Heat stress                                      | 8          |
| Vision   | 5          |
| Hearing loss                                     | 23         |
| Injury   | 15         |
| Asthma/chronic obstructive airway disease (COAD) | 9          |
| Diabetes/hypertension                            | 6          |
| Tuberculosis                                     | 17         |
| Silicosis  | 8          |
| Asbestosis                                       | 1          |
| Other diseases                                   | 40         |
| Epilepsy   | 18         |
| <b>Total</b>                                     | <b>150</b> |

### 3.2.2.3.1 Diseases Captured for the January to December 2013 Period

In 2013, appeals were lodged against the following diseases: hearing loss, epilepsy, tuberculosis, injuries and other diseases. Most mines emphasise chronic diseases, as these tend to affect the health and safety of employees. Other diseases in this case refer to weight problems, cardiovascular diseases, musculoskeletal problems, cancer, other pulmonary problems, underage, allergies, psychiatric disorders and HIV-related illnesses. Tuberculosis cases mostly involve multi-drug-resistant tuberculosis (MDR-TB), which is treatable, but takes longer to treat. Some employees do not respond well to TB treatment and end up with fibrosis or the destruction of lung tissue, hence the incapacity.

Many OMPs are reluctant to use their discretion when it comes to deciding on the fitness of employees. Most

of them usually resort to advising employees to appeal so that the medical inspector can be the one who has to make the decision. Concerns arise from employers if an OMP's decision is set aside by the medical inspector. The medical inspector has a right in terms of Section 20 of the MHSA to set aside, vary or confirm the decision of the OMP.

The medical inspector will set aside or vary the decision of the OMP if there is an indication that the OMP has acted unfairly in his or her decision by, for example:

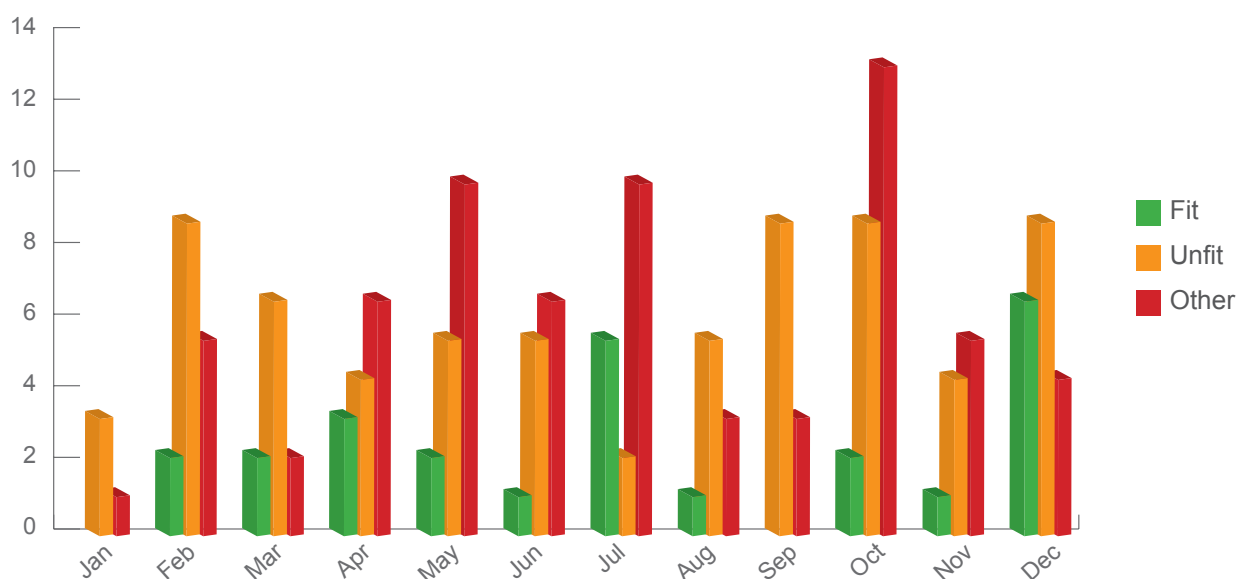
- not treating each individual case on its own merit;
- not adopting a holistic approach and basing their decisions on a single factor; and
- confusing medical issues with HR issues.

When determining the outcome on any appeal, numerous factors are taken into consideration. The final decision is based on the following:

The employee's medical history

- The working environment
- The fitness status of the employee
- The employee's experience in that particular job
- Second-opinion findings
- Best practice
- Minimum standards of fitness guidelines

The minimum standard of fitness guideline advises that OMPs make use of a holistic approach and consider employees' experience and other factors before a decision on the fitness status of a person is made. OMPs should take into consideration that a guideline is not cast in stone and is there to guide the OMP, but does not mean that other factors should not be considered.

**FIGURE 3.2.2.3.1(a): APPEAL FINDING FOR THE PERIOD JANUARY TO DECEMBER 2013**

Of the appeals completed for the reporting period, approximately 16% of the employees were found to be fit, while approximately 42% were found to be unfit. Another 42% comprised complaints, compensation issues and labour-related matters, which did not require a decision on the applicant's fitness status. In most of the cases where the applicant was found to be fit, he or she had to comply with certain conditions. The rest were cases that were actually declared to be fit by the OMP, but were disputed and the fitness was confirmed by the medical inspector. Some employees dispute the fact that they are fit and prefer to be declared unfit for compensatory gain, which results in the lodging of unnecessary appeals.

**TABLE 3.2.2.3.1(a): APPEAL FINDINGS JANUARY TO DECEMBER 2013**

|   | Jan      | Feb       | Mar       | Apr       | May       | Jun       | Jul       | Aug      | Sep       | Oct       | Nov       | Dec       | Total      |
|---|----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|-----------|-----------|-----------|-----------|------------|
| Fit   | 0        | 2         | 2         | 3         | 2         | 1         | 5         | 1        | 0         | 2         | 1         | 6         | 25         |
| Unfit   | 3        | 8         | 6         | 4         | 5         | 5         | 2         | 5        | 8         | 8         | 4         | 8         | 66         |
| Other (complaint, compensations, withdrawn and suspensions) | 1        | 5         | 2         | 6         | 9         | 6         | 9         | 3        | 3         | 12        | 5         | 4         | 65         |
| <b>Total</b>  | <b>4</b> | <b>15</b> | <b>10</b> | <b>13</b> | <b>16</b> | <b>12</b> | <b>16</b> | <b>9</b> | <b>11</b> | <b>22</b> | <b>10</b> | <b>18</b> | <b>156</b> |

### 3.2.2.3.2 Challenges to the Appeal Process

The turnaround time to finalise the appeals is a challenge that arises during the appeal process. The turnaround time is affected by issues beyond the medical inspector's control. These can be divided into three categories.

#### Employee Challenges

- Incomplete forms (for example, no name or contact details of OMP or employee representative)
- Inappropriate reasons for the appeal are given
- Delay in sending relevant supporting documents
- Extremely late submission of appeals
- Not being aware that a Section 20 appeal has been lodged on their behalf
- Non-cooperation of employees (such as reluctance to go for a second opinion)

#### Employer Challenges

- Medical incapacity procedure used to address labour-related issues
- Delay in sending relevant medical records when requested by the medical inspector's office
- Not informing employees of their rights to Section 20 appeals in time
- Not providing reasons for incapacitating an employee

#### Service Provider Challenges

- Reluctance of specialists for a second opinion to work with the state
- Requesting to be paid up front
- Inability to provide early appointments for the employee (appellant)
- Delay in getting reports after assessments are done

Employees and their representatives still believe that they should appeal when an employee has a labour dispute regarding employment or when they want to prove that they are unfit for compensation purposes.

Since the DMR does not have jurisdiction over the departments of Labour or Health, such issues are referred to the relevant authority. Complaints received through the appeal process are also handled and those requiring further investigations are referred to the regional inspectors for assistance.

#### Reporting on TB, HIV and AIDS

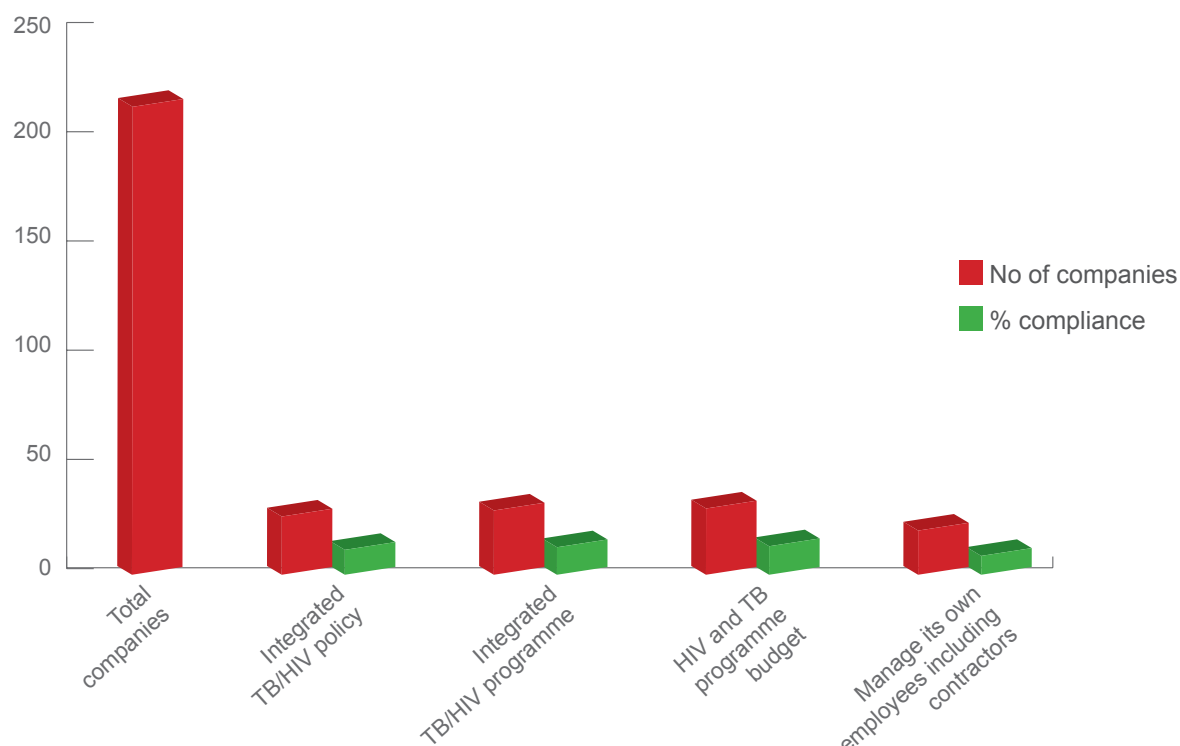
This report includes all mines that reported using DMR 164 TB and HIV/AIDS reporting forms. The goal of using DMR 164 forms is to monitor HIV/AIDS and TB management programmes offered by the mining companies to decrease the burden of TB and HIV/AIDS on employees affected by both diseases. The objectives of collaborative TB and HIV/AIDS activities are to establish mechanisms for the integration of TB and HIV/AIDS programmes, which include, but are not limited to the following:

- Decreasing the burden of TB in people living with HIV
- Decreasing the burden of HIV in TB patients

The following graphs are based on TB and HIV data submitted by 233 mines covering all regions. Out of the 233 mines that submitted reports, 29 are affiliates of the Chamber of Mines, while the rest are small- to medium-sized mines that are not affiliated with the Chamber of Mines.

The DMR 164 report on HIV and TB form has three sections that need to be completed. The first part covers general information on compliance status, the second part covers the co-infection of HIV and TB, and the third part covers HIV counselling and testing (HCT) provided.

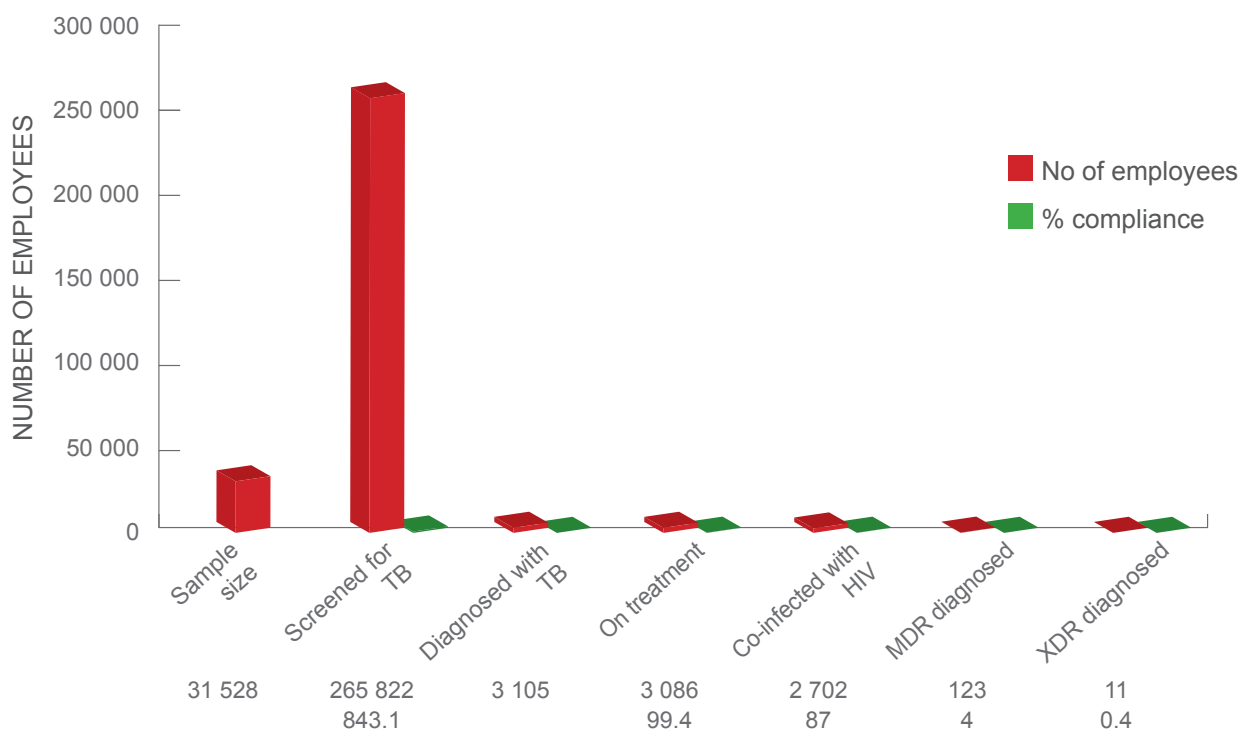
**FIGURE 3.2.2.3.1(b): COMPLIANCE FOR ALL MINES**



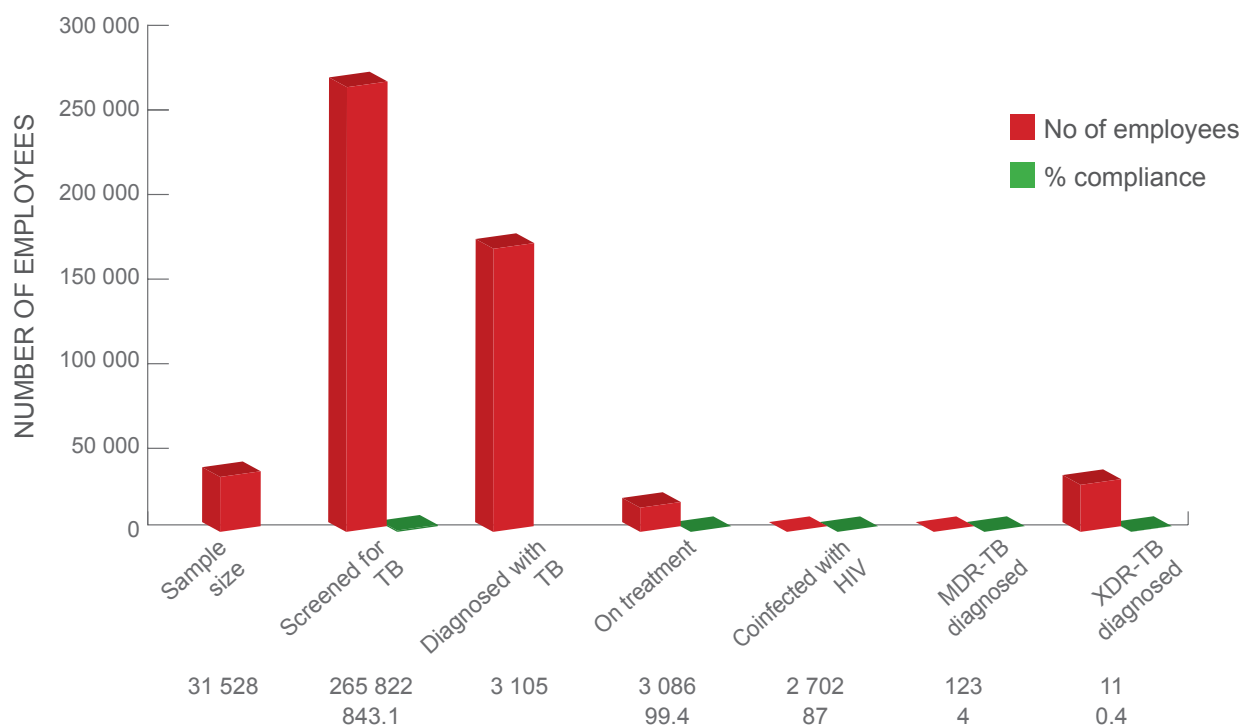
**TABLE 3.2.2.3.1(b): COMPLIANCE FOR ALL MINES**

| Measures  | All mines   |
|---|---|
| Integrated TB/HIV policy  | Of the 233 mines, 29 (12.4%) have integrated TB/HIV policies in place   |
| Integrated TB/HIV programme   | Of the 233 mines, 32 (13.7%) have integrated TB/HIV programmes in place   |
| HIV/TB programme budget   | 33 mines (14.2%), have a HIV/TB programme budget  |
| Manage its own employees, including contractors (HIV and TB management and treatment) services) | 22 mines (9.4%) manage their own employees, including contractors (they are referred to public health facilities) |

The graph above shows that compliance is low and yet the large mining companies have better compliance, but overall compliance diminishes significantly when the data of small- and medium-sized mines is considered. There are indications that most small- to medium-sized mines are still struggling to align their policies and programmes with the NSP for HIV, other sexually transmitted infections and TB, which requires integrated policies and programmes for HIV and TB. Some have policies in place, but they exist separately and are not integrated as required.

**FIGURE 3.2.2.3.1(c): TB AND HIV CO-INFECTION FOR ALL MINES****TABLE 3.2.2.3.1(c): TB/HIV DATA BASED ON HCT SERVICES**

| Indicators  | All mines   |
|---|---|
| Number of employees screened for TB                                     | Of the 423 032 employees, 308 403 (72.9%) were screened for TB                  |
| Number of employees diagnosed with TB                                   | 3 593 employees were diagnosed with TB  |
| Number of employees on TB treatment                                     | 3 483 employees (97% of those diagnosed) are on TB treatment                    |
| Number of employees co-infected with HIV and TB                         | 2 905 employees (75.2% of the total population) are co-infected with HIV and TB |
| Number of employees diagnosed with MDR-TB                               | 149 employees (4.1%) are diagnosed with MDR-TB                                  |
| Number of employees diagnosed with extremely drug-resistant TB (XDR-TB) | 11 employees (0.3%) are diagnosed with XDR-TB                                   |

**FIGURE 3.2.2.3.1(d): WELLNESS: HIV/AIDS DATA FOR 2013****TABLE 3.2.2.3.1(d): HIV/AIDS DATA BASED ON SERVICES**

| Indicators  | All mines   |
|---|---|
| Number of employees counselled for HIV                | Of the 423 032 employees, 299 151 (70.7%) were counselled for HIV     |
| Number of employees tested for HIV                    | 192 557 (45.5%) of the total population were tested for HIV           |
| Number of employees tested HIV positive in 2013       | 17 384 employees (9% of those tested for HIV)                         |
| Number of employees on antiretroviral (ARV) treatment | 28 887 employees (6.8% of the total population) are on ARV treatment. |

Due to the stigma and discrimination associated with HIV/AIDS, data based on HCT services is from all mines that have completed and submitted a DMR 164 form. Based on the above, it is evident that HCT services have been identified as a key intervention required in achieving the goals of the NSP.





# ACTIVITIES OF THE INSPECTORATE

## 4. ACTIVITIES OF THE INSPECTORATE

### 4.1 Central and Coastal Regions

#### General

The Chief Directorate consists of the Eastern Cape, Northern Cape, KwaZulu-Natal and Gauteng regions. A wide variety of minerals is mined in these regions, the main commodities being diamonds, gold, manganese and iron ore. Mining operations occur on the surface, underground and offshore.

#### Topical Issues and Matters of Interest

##### Illegal Mining

Illegal mining activities experienced in the closed, defunct and liquidated gold mines around Gauteng continue to be a major challenge for the Department, mining companies, and local authorities. Because of the abovementioned major challenge, an Illegal Mining Forum was established in Gauteng.

The main purpose of the formation of the Illegal Mining Forum is to address challenges faced by the mining industry and communities with respect to illegal mining activities. The Illegal Mining Forum consists of representatives of the DMR, the South African Police Service (SAPS), the National Prosecuting Authority (NPA), mining companies, municipalities and organised labour. The Gauteng Illegal Mining Forum is chaired by the DMR.

Illegal mining operations, mainly involving sand and diamonds, have also increased in the Eastern Cape, Northern Cape and KwaZulu-Natal. Inspectorate staff met with district municipalities and the NPA in order to strategise methods of addressing this serious matter. When these mining operations are found, they should be reported to the local SAPS as criminal offences.

##### Acid Mine Drainage

Pumping of water from the mine voids in the Central Basin in Gauteng ceased in October 2008. The construction of a pumping and water treatment facility is currently in progress.

The water treatment plant in the Western Basin is currently treating approximately 21 million litres of mine

water per day. Further upgrades to the plant are in progress to increase the capacity to more than 30 million litres per day.

The water level in the Eastern Basin continues to rise by approximately 0.33 m per day and is currently 447 m below the surface. A pumping facility and water treatment plant, similar to the plant under construction in the Central Basin, are being planned for the Eastern Basin.

##### Labour Unrest

The gold mines in the area of responsibility were adversely affected by unrest towards the end of 2013. One of the mines closed down for an extended period, but since then, production has recommenced. Some of the mine employees have staged sit-ins underground and the DMR has made it clear that these sit-ins constitute a dangerous occurrence and they must be reported. Sit-ins also contravene the MHSA.

#### Strategy to Improve Health and Safety

A total of 286 Section 54 and 695 Section 55 notices were issued during the reporting period. Nine administrative fines were recommended. Five were imposed and four were disregarded. The value of fines imposed totalled R155 000 and the value of fines paid totalled R75 000.

Regional staff continues to do the following:

- Conduct and participate in tripartite structures established to deal with challenges relating to occupational health and safety, as well as those related to training and capacity-building in the mining industry
- Conduct and participate in occupational health and safety meetings with chief executive officers (CEOs) of mining companies to highlight occupational health and safety challenges regarding the mining operations they are responsible for
- Employ occupational health and safety strategies to combat health and safety incidents, including occupational diseases in the mining industry
- Participate in occupational health and safety summits, seminars and conferences of the mining industry

#### 4.1.1 Eastern Cape

##### Overview

The Eastern Cape is situated in the south-eastern part of South Africa and is surrounded by the following regions: Western Cape, Northern Cape, Free State, and KwaZulu-

Natal. The region is the second-largest of South Africa's nine provinces in terms of area (approximately 169 580 km<sup>2</sup>) and the third-largest in terms of population. Almost seven million people inhabit the province.

According to mineral regulations, there are approximately 422 registered mining operations in the Eastern Cape, which employ over 3 000 people in medium- and high-risk operations. Operational mining takes place in some 57 hard rock quarries, as well as many gravel and clay quarries to provide the necessary materials to the construction industry. Much activity continues in terms of the repair and upgrading of roads throughout the region, and these practices mainly use materials mined from borrow pits. The underground coal-mining operation in nearby Indwe halted production during the reporting period due to change-of-ownership matters.

#### 4.1.1.1 Inspections and Audits

Inspections were performed in accordance with the annual planning.

| Category              | Inspections | Audits |
|-----------------------|-------------|--------|
| Planned               | 348         | 44     |
| Actual                | 427         | 54     |
| Percentage compliance | 123         | 123    |

#### 4.1.1.2 Total Reported Accidents

One fatal accident occurred in the Eastern Cape during 2013.

|                                  |   |
|----------------------------------|---|
| Fatalities                       | 1 |
| > 14-day reportable injuries     | 0 |
| 1- to 13-day reportable injuries | 5 |

Period 1 January 2013 to 31 December 2013

#### 4.1.1.3 Investigations and Inquiries

The accidents requiring investigations occurred late in the reporting period and are still under investigation.

|                       | Investigation | Inquiries (including investigation) | Total |
|-----------------------|---------------|-------------------------------------|-------|
| Initiated             | 0             | 1                                   | 1     |
| Completed             | 0             | 1                                   | 1     |
| Percentage compliance | 0             | 100%                                | 100%  |

#### 4.1.1.4 Disaster-type Accidents and Outcomes of Inquiries and Investigations

No disaster-type accidents were reported.

#### 4.1.1.5 Statutory Notices

A total of 92 Section 55 notices were issued to mines. These were issued mainly due to the following aspects of non-compliance:

- Occupational hygiene: Statistics, dust control, appropriate PPE and lack of mandatory COPs
- Occupational medicine: Medical surveillance, training with regard to appeals, AMRs and investigations of occupational diseases
- Mine equipment: Lack of compliance to the machinery regulations on conveyor belts and general machinery, lack of mandatory COPs, risk assessment and legal appointments
- Mining: Lack of mandatory COPs and updating of mine plans

Three Section 54 notices were issued mainly because of a lack of the guarding of moving machinery.

| Section 54 notices | Section 55 notices |
|--------------------|--------------------|
| 3                  | 92                 |

#### 4.1.1.6 Administrative Fines

|                                    |    |
|------------------------------------|----|
| Number of fines recommended by IOM | 0  |
| Value recommended                  | NA |
| Number set aside by the PI         | 0  |
| Value set aside                    | NA |
| Number imposed by the PI           | 0  |
| Value of fines imposed             | NA |
| Appeals                            | 0  |
| Value of fines paid                | 0  |

#### 4.1.1.7 Topical Issues and Matters of Interest

##### Illegal Mining Operations

The incidence of illegal mining, mainly with sand, continues to spread in the region and inspectors have to face the threat of violence from perpetrators. One fatality was reported resulting from these illegal mining operations. Licensed operators have been requested to report illegal operations to the SAPS for further attention.

#### 4.1.1.8 Examinations

| Certificates   | Exam boards | Number of candidates | Certificates issued |
|----------------|-------------|----------------------|---------------------|
| Mine Overseers | 0           | 0                    | 0                   |
| Blasting       | 0           | 0                    | 0                   |
| Onsetter       | 0           | 0                    | 0                   |
| Lampsman       | 0           | 0                    | 0                   |

#### 4.1.1.9 Land-use Applications and Complaints

|                               | Received | Completed | Percentage |
|-------------------------------|----------|-----------|------------|
| Township developments         | 10       | 10        | 100%       |
| Mining and prospecting rights | 65       | 65        | 100%       |
| Mining permits                | 178      | 190       | 107%       |
| Closure certificates          | 10       | 11        | 110%       |
| Environmental management      | 78       | 80        | 103%       |
| Complaints                    | 1        | 1         | 100%       |

#### 4.1.1.10 Strategies to Improve Status Quo

Audits conducted during the reporting period continue to identify where employers need to focus attention and inspections are geared to follow up on problems identified during group audits. In order to improve the health and safety performance at mines, the following aspects received more focused attention:

- COPs
- Statutory appointments
- Safety berms at quarry crests
- Closure of old roadways
- Medical surveillance and AMRs
- Illegal swimming at quarries by ensuring tighter security levels, engagement with communities, mandatory warning notices and fencing
- Updating of mine plans
- Holding of tripartite stakeholder meetings
- Investigation of occupational diseases

### 4.1.2 Gauteng

#### Overview

The major commodity mined in the region is gold, which is mined in the large, deep mines of the West Rand and far West Rand. Apart from the Modder East operation of Gold One, gold mining in the East Rand has virtually stopped. Central Rand Gold, to the west of Johannesburg, is conducting small-scale underground mining in addition to carrying out open-cast mining operations. Open-cast gold mining operations are also being carried out in the Mogale City area.

Investigations by Gold One are in progress to evaluate the old mining areas of the far East Rand with the intention of recommencing mining in selected areas by the newly established Goliath Gold. Diamond mining is carried out at the underground Petra Mine in Cullinan, as well as numerous small surface operations.

Open-cast coal mining is being carried out in the Nigel district and there is extensive interest in prospecting for coal in the Bronkhorstspuit district. In addition to the operations detailed above, there are a large number of hard rock quarries, clay quarries and sand mines in the region. The labour force in the region is approximately 97 000.

#### 4.1.2.1 Inspections and Audits

During the reporting period, officers of the region conducted 2 014 inspections and 49 group audits. The audits have revealed legislative shortcomings at some mines.

| Category              | Inspections | Audits |
|-----------------------|-------------|--------|
| Planned               | 1 800       | 44     |
| Actual                | 2 014       | 49     |
| Percentage compliance | 112         | 111    |

#### 4.1.2.2 Total Accidents Reported

During the 2013/14 reporting period, 21 persons were fatally injured in 21 accidents in the mines in the region, compared to 31 in the 2012/13 reporting period. During the reporting period, 631 persons were injured, compared to 2012 when 797 persons were injured. This translates to a 32% improvement in fatalities and a 21% improvement in injuries.

|                                  |     |
|----------------------------------|-----|
| Fatalities                       | 21  |
| > 14-day injuries                | 631 |
| 1- to 13-day reportable injuries | 400 |

#### 4.1.2.3 Investigations and Inquiries

Mines report accidents and incidents to the responsible inspectors daily. This allows for such occurrences to be investigated soon after the event. Risk profiles of working areas have been carried out so that the “hot spot” areas can be identified and targeted. Specific types of accidents are targeted in an attempt to improve matters.

|                      | Investigations | Inquiries | Total |
|----------------------|----------------|-----------|-------|
| Initiated            | 445            | 18        | 463   |
| Completed            | 445            | 14        | 459   |
| Percentage completed | 100%           | 77%       | 99%   |

#### 4.1.2.4 Disaster-type Accidents

No disaster-type accidents were reported.

#### 4.1.2.5 Statutory Notices

During the reporting period, officers of the region issued 120 orders to stop unsafe and unhealthy practices (Section 54) and 949 orders to comply with health and safety requirements (Section 55) to the mines.

| Section 54 notices | Section 55 notices |
|--------------------|--------------------|
| 120                | 849                |

#### 4.1.2.6 Administrative Fines

No administrative fines were recommended by the officers of the region.

|  |   |
|--|---|
| Number of fines recommended by the IOM | 0 |
| Number set aside by the PI             | 0 |
| Number imposed by the PI               | 0 |
| Value of fines imposed                 | 0 |
| Appeals                                | 0 |
| Value of fines paid                    | 0 |

#### 4.1.2.7 Matters of Interest

##### The Rising of Water in the Witwatersrand Compartments

As reported in previous years, the pumping of water from the mine voids in the Central Basin, which extends from Roodepoort to Boksburg, ceased in October 2008. The water level has been rising steadily since and was some 175 m below surface at the East Rand Proprietary Mines' South-west Vertical Shaft at the time of reporting. This is where pumping was last carried out. The water in the basin is currently rising at approximately 32 m per day. The shaft's current water level is very close to the environmental critical level. The pumping and water treatment facility at the shaft, which had been under construction for a year, was commissioned. Pumping with associated water treatment was scheduled to commence on 9 May 2014.

Central Rand Gold has mining rights across much of the Central Basin and plans to mine up to a depth of 300 m below the surface. Should they wish to extend their mining to that depth, the company will have to bear the incremental cost of pumping that water out to that depth.

The water treatment plant on the old Randfontein Estates Gold Mine daily treats approximately 30 million litres of mine water from the Western Basin, an increase over previous years. The pumping of the increased volume of water to the treatment plant had the desired effect of lowering the water table in the mine void, but the substantial rains earlier in the year resulted in the water again decanting on the surface. There is currently still a small decant on the surface.

The water level in the Eastern Basin continues to rise at approximately 33 m per day and is currently approximately 313 m below surface at Sub Nigel No. 1 Shaft. A pumping facility and water treatment plant, similar to the plant at the South-west Vertical Shaft is being planned for the Eastern Basin at Grootvlei No. 3 Shaft, where pumping was last carried out. The tender for the construction of the plant is to be awarded in the near future.

##### Illegal Mining Issues

The illegal mining activities continue to be a major problem for the region. A number of illegal miners were fatally injured during the year.

Rival gangs, some of whom are armed with firearms, fighting for territory in the defunct mines, have worsened the problem. The SAPS ascribes a large number of murders in the mining areas to rivalry between illegal



mining gangs. Most of the illegal miners are also illegal immigrants.

Mine Rescue Services and local emergency services assisted in mine rescue and body recovery operations during the year.

The Minister visited the affected areas on a number of occasions during the year to acquaint herself of the situation and engage with the relevant stakeholders. Following such a visit, a task team was established to deal with illegal mining in Ekurhuleni, which is considered to be the centre of illegal mining activities. The Gauteng Forum continues to meet on a regular basis to develop strategies to control and eliminate illegal mining.

#### 4.1.2.8 Examinations

As can be seen from the table below, the success rate for candidates, especially for the Mine Overseers Examination, is very poor. Candidates are generally poorly prepared for the examinations. Some candidates' absence from the examination remains a problem.

The MHSI discontinued the examination and training of candidates for the Blasting Certificate examinations on 30 June 2009. This function was transferred to the MQA in accordance with the CIOM's instruction, but a process is being developed to revert it back to the MHSI.

Onsetter and Lampsman examinations are also conducted by the MHSI.

| Certificate    | Examination boards | Number of candidates | Certificates issued |
|----------------|--------------------|----------------------|---------------------|
| Mine Overseers | 50                 | 474                  | 41                  |
| Blasting       | 0                  | 0                    | 0                   |
| Onsetter       | 7                  | 46                   | 30                  |
| Lampsman       | 8                  | 8                    | 5                   |

#### 4.1.2.9 Land-use Applications and Complaints

The individual inspectors spend much time on processing applications for townships and new mining activities. As mentioned above, there has been a marked increase in applications for mining rights and permits, particularly for prospecting rights in the Bronkhorstspuit district.

An increasing number of complaints has emanated from townships that are adjacent to operating mines. The communities closer to mines complain of dust, noise and damages allegedly caused by mining activities. They also mention a lack of or inadequate engagement between mining companies and affected communities.

The complaints relating to the collective agreements in terms of Section 26.(1) of the MHSA, the election of health and safety representatives and changes in the systems of work at the mine without proper consultation with organised labour have increased tremendously. These complaints have been raised by organised labour.

|                               | Received | Completed | Percentage |
|-------------------------------|----------|-----------|------------|
| Township developments         | 63       | 67        | 106%       |
| Mining and prospecting rights | 142      | 126       | 89%        |
| Closure certificates          | 15       | 19        | 126%       |
| Environmental management      | 113      | 107       | 95%        |
| Complaints                    | 28       | 25        | 89%        |

#### 4.1.2.10 Strategies to Improve Status Quo

The strategies below have been adopted to improve health and safety in the region.

- In terms of certain high-risk areas or disciplines that need attention, the following aspects have been identified:
  - Seismically active areas:
    - Enforcing preconditioning
    - No persons permitted in the "No go" areas
    - No mining of pillars or remnants
    - Second outlets
  - Fall-of-ground active areas:
    - Implementation of hanging wall nets
  - Ore passes and mud rush accidents
  - Occupational hygiene/medicine-related issues
  - Engineering and shaft-related issues:
    - Hauling-related issues
    - Conveyors
- Ensuring that mines plan safely and maintain daily planning
- Encouraging mine management to be more proactive in the prevention of dangerous situations and to initiate their own action measures following an accident

- Increased systems audits by inspectors with follow-up underground inspections
- Increased interaction between inspectors, mine management and unions
- Monitoring emergency preparedness and response at the mines

### 4.1.3 KwaZulu-Natal

#### Overview

The region's mining industry employs approximately 20 000 employees and the majority of bigger mines are found in the northern part of KwaZulu-Natal. They are mainly coal mines. These mines still report methane explosions with the potential of resulting in a serious accident.

Recently, the region experienced a mine disaster that left six employees dead at Eskom's Ingula pumped-storage scheme near Ladysmith. The project aims to improve energy generation and security for South Africa, employing more than 3 500 workers, the majority of whom are contractors.

The recent suspected methane explosion at Springlake Colliery, which destroyed 400 kPa stopping walls, re-emphasises the need for the continuous monitoring of compliance and a vigorous approach to the prevention of methane and coal-dust explosions. Under normal circumstances, these stopping walls are designed to withstand pressure of up to 1 400 kPa.

#### 4.1.3.1 Inspections and Audits

| Category              | Inspections | Audits |
|-----------------------|-------------|--------|
| Planned               | 396         | 28     |
| Actual                | 598         | 67     |
| Percentage compliance | 151%        | 239%   |

#### 4.1.3.2 Total Reported Accidents

|                                  |    |
|----------------------------------|----|
| Fatalities                       | 9  |
| > 14-day injuries                | 44 |
| 1- to 13-day reportable injuries | 46 |

#### 4.1.3.3 Investigations and Inquiries

|                      | Investigations | Inquiries | Total |
|----------------------|----------------|-----------|-------|
| Initiated            | 45             | 4         | 59    |
| Completed            | 22             | 0         | 22    |
| Percentage completed | 49%            | 0%        | 37%   |

#### 4.1.3.4 Disaster-type Accidents and Outcomes of Inquiries and Investigations

The region had one disaster-type accident at a utility supply project in Ladysmith, the Ingula pumped-storage scheme, in which six workers were killed when a scaffolding platform broke loose from its four anchor points in a 990-m inclined shaft. Seven other workers sustained injuries when the gantry ran some 700 m down the steel-lined shaft, collided with two similar platforms and finally came to rest at the base of the excavation.

#### 4.1.3.5 Statutory Notices

| Section 54 notices | Section 55 notices |
|--------------------|--------------------|
| 117                | 84                 |

The reasons for the Section 54 and Section 55 notices were as follows:

- Collision avoidance systems be to installed on all mines' TMMs as a result of the risk assessment
- The employer must provide employees with adequate working clothes (PPE)
- The employer has to conduct a baseline risk assessment
- The employer must review COPs
- Stop using or operating the plant until water is available to suppress dust
- Stop the use of vehicles underground until items in the COP are complied with
- Institute systems for issuing and receiving self-contained self-rescuer (SCSR)
- Provide first-aid equipment at all work stations and include in the COP
- Clear all edges for 3 m, stop work beneath any area with ledges (working)
- Stop work where no fire-fighting equipment is available
- Pillar robbing is to be halted with immediate effect

- Proper issue-based risk assessment should be conducted and a rock engineer should complete a report that technically appraises this activity
- A competent person must declare the quarry safe before work can take place in the quarry
- Examination and safety training must be provided to all persons who declare the quarry safe

#### 4.1.3.6 Administrative Fines

|  |         |
|--|---------|
| Number of fines recommended by the IOM | 3       |
| Value recommended                      | R75 000 |
| Number set aside by the PI             | 0       |
| Value set aside                        | 0       |
| Number imposed by the PI               | 3       |
| Value of fines imposed                 | R75 000 |
| Appeals                                | 0       |
| Value of fines paid                    | R45 000 |

#### 4.1.3.7 Topical Issues and Matters of Interest

A methane explosion occurred in an underground coal mine in the Dundee area of the region. This resulted from methane that leaked from a sealed-off area when all three fans ventilating the mine were stopped for different maintenance issues. No allowance was made for drainage or clearance time before energising the power to non-flameproof electrical equipment underground. A starter of a submersible pump is believed to be the ignition source. No employees were underground at the time of the explosion.

#### 4.1.3.8 Examinations

No applications for any of the GCC examinations administered at the regional office were received.

#### 4.1.3.9 Land-use Applications and Complaints

|                               | Received | Completed | Percentage |
|-------------------------------|----------|-----------|------------|
| Township developments         | 37       | 28        | 76         |
| Mining and prospecting rights | 242      | 112       | 46         |
| Closure certificates          | 2        | 1         | 50         |
| Environmental management      | 70       | 55        | 79         |
| Complaints                    | 2        | 2         | 100        |

#### 4.1.3.10 Strategies to Improve Status Quo

The region will continue with zero-tolerance to non-compliance through the implementation of the OHS Improvement Strategy Action Plan. The administrative fines and recommendation to withdraw certificates of competency will be part of the enforcement strategy in the region.

Cooperation of mine employers, mine employees, communities affected by mining operations and the Inspectorate will continue to be encouraged to ensure that there are effective and efficient strategies for dealing with health and safety relating to mining operations in this region.

Tripartite meetings are driving health and safety issues in the region with stakeholders of the state, mine employers and organised labour. These issues are being disseminated to managers and safety representatives. Best practices, ideals and networking form a mutual interest when these workshops or meetings are held.

### 4.1.4 Northern Cape

#### Overview

The Northern Cape is situated in the central part of the Republic of South Africa, with its boundaries formed by Namibia to the north-west, Botswana and the province of North West to the north-east, the Free State to the east, the Eastern Cape to the south-east and the Western Cape to the south.

The Northern Cape is a very large region with vast distances between the mines. Diversified mining operations range from small-scale diggings, very large open-cast mines and underground operations. Mining methods range from simple to complex mining. The majority of the diggers are ignorant of the correct mining methods, as they come from farming backgrounds.

Most of the accidents in the region are machinery-related. A wide variety of minerals is mined in this region, the main commodities being manganese, iron ore and diamonds. Base metals, rose quartz, limestone, gypsum, tiger's eye, granite, feldspar and salt minerals, a number of brick works, quarries and sea operations, such as diving and offshore, are included.

There continues to be much activity throughout the region in the repair and upgrading of roads from materials mined from the many established borrow pits. Production levels at many operations have remained below expectation, because of the depressed global economy affecting their



operations. There is, however, an indication of increased mining activity, as new mines are being established due to a possible increase in demand for these minerals as the global economy improves.

#### 4.1.4.1 Inspections and Audits

| Category              | Inspections | Audits |
|-----------------------|-------------|--------|
| Planned               | 432         | 48     |
| Actual                | 619         | 49     |
| Percentage compliance | 143%        | 102%   |

#### 4.1.4.2 Accidents

|                              |     |
|------------------------------|-----|
| Fatalities                   | 2   |
| > 14-day reportable injuries | 67  |
| 1- to 13-day injuries        | 111 |

#### 4.1.4.3 Investigations and Inquiries

|                       | Inquiries<br>(Including investigation) | Investigations | Total |
|-----------------------|--|----------------|-------|
| Initiated             | 2                                      | 179            | 181   |
| Completed             | 2                                      | 167            | 169   |
| Percentage compliance | 100%                                   | 93%            | 93.3% |

#### 4.1.4.4 Disaster-type Accidents

No disaster-type accidents were reported.

#### 4.1.4.5 Statutory Notices

| Section 54 notices | Section 55 notices |
|--------------------|--------------------|
| 18                 | 49                 |

Eighteen Section 54 and 49 Section 55 notices were issued to mines. These were issued mainly on issues relating to the following:

- Occupational hygiene: Poor risk assessments, lacking and unhygienic ablution facilities, statistics, dust control, PPE and lack of mandatory COPs

- Occupational medicine: Medical surveillance and lacking COPs on minimum standard of fitness with regard to appeals
- Mine equipment: Lack of compliance to the machinery regulations on TMM and general machinery, lack of mandatory COPs, risk assessment and legal appointments
- Mining: Lack of mandatory COPs, safe working standards and updating of mine plans

#### 4.1.4.6 Administrative Fines

|  |   |
|--|---|
| Number of fines recommended by the IOM | 0 |
| Number set aside by the PI             | 0 |
| Number imposed by the PI               | 0 |
| Value of fines imposed                 | 0 |
| Appeals                                | 0 |
| Value of fines paid                    | 0 |

#### 4.1.4.7 Topical Issues and Matters of Interest

- Illegal diamond diggers and illegal sand mining are widespread in the Namaqualand and Kimberley areas. At this stage, the MHSI does not have the capacity to police these activities and has requested licensed operators to report illegal operations to the SAPS for further attention.
- Meetings were held with small-scale miners and communities concerning mining-related issues.
- Most of the underwater mining operations take place along the west coast of the Northern Cape region.

#### 4.1.4.8 Examinations

| Certificates   | Examination boards | Number of candidates | Certificates issued |
|----------------|--------------------|----------------------|---------------------|
| Mine Overseers | 5                  | 34                   | 0                   |

#### 4.1.4.9 Land-use Applications

|  | Received | Completed | Percentage |
|--|----------|-----------|------------|
| Township developments                            | 0        | 0         | 0          |
| Mining and prospecting rights and mining permits | 410      | 389       | 95         |
| Mine closures                                    | 70       | 48        | 69         |
| Environmental management                         | 108      | 97        | 90         |
| Complaints                                       | 13       | 10        | 77         |

#### 4.1.4.10 Strategies to Improve Status Quo

Audits and inspections conducted throughout the year continue to identify where employers need to focus attention. Inspections are geared to follow up on problems identified during group audits. Statistics are used and mines are risk-rated. The high-risk mines with poor health and safety systems are given attention. CEOs of problematic mines are requested to present plans on how they will improve their health and safety systems.

In order to improve the health and safety performance at mines, the following aspects were given more attention:

- COPs
- Statutory appointments
- Hygiene practices
- Safety berms and quarry crests
- Mine design and road traffic management plans
- Closure of old roadways
- Medical surveillance
- Prevention of illegal swimming at quarries through tighter security levels, as well as engagement with communities
- Mandatory warning notices and fencing
- Updating of mine plans
- Tripartite stakeholder meetings
- Equipment and TMM designs and tyre management

High-potential incidents and serious accidents are investigated and the implementation of recommendations is being monitored.

## 4.2 Central and Eastern Northern Regions

### General

The Chief Directorate consists of the Free State, Limpopo and Mpumalanga regions. The major commodities mined are coal, platinum, gold, copper and industrial minerals. Numerous base minerals are also mined and there is a large number of crushers, quarries and borrow pits.

The Free State, Limpopo and Mpumalanga regions employ 175 000 employees. This is a 1% decrease compared to the 2012 labour figure.

### Occupational Health Performance

In 2013, the Free State, Limpopo and Mpumalanga had an average exposure to airborne pollutants of 8%, 27% and 65% for the A, B and C HEGs respectively. The exposure levels in 2012 were 7%, 39% and 54% respectively. There was a 1% increase in the HEG A. This was of great concern. In the HEG B, there was a 12% decrease, which is commendable. All mines with employees in the HEG A and B have to put engineering controls in place to reduce employee exposure levels.

The Free State, Limpopo and Mpumalanga average compliance to respirable crystalline silica in 2012 and 2013 was 95% for both years. It is important to highlight that Limpopo and Mpumalanga achieved 96% while the Free State achieved 94%. It is commendable that some of the mines in Limpopo and Mpumalanga have achieved the milestone target of exposure to respirable crystalline silica. The mines in the Free State will have to put more engineering controls in place to reduce exposure of employees to respirable crystalline silica.

The average exposure to level of noise in the Free State, Limpopo and Mpumalanga in 2013 was 3%, 60% and 37% for HEG A, B and C respectively. While the exposure levels in 2012 were 1%, 67% and 32% for the respective HEGs, there was a regression of 2% in HEG A. This is of great concern, especially as the employees were exposed to noise levels greater than 105 dB. The mining industry has reached the end of the milestone period of 2013 and there are still employees in HEG A. Similarly, mining companies with employees in HEG A and B will have to put more effective engineering controls in place to reduce the exposure of employees to high levels of noise.

The Free State, Limpopo and Mpumalanga reported 2 654 cases of occupational diseases in 2013 compared

to 2 383 cases in 2012. The increase in the number of occupational diseases was 11%. The main occupational diseases reported in 2013 were silicosis (530 as opposed to 672 in 2012) and PTB (1 155 as opposed to 1 029 in 2012) and NIHL (610 as opposed to 427 in 2011). The Free State had the highest number of occupational diseases (1 587 cases). This was 23% of the total national number of occupational diseases in the mining sector.

Occupational diseases in the coal sector increased significantly by 47% from 456 in 2012 to 671 in 2013. The main occupational diseases were PTB (269 cases), NIHL (230 cases) and CWP (116 cases). The number of cases increased by 27%, 147% and 71% for PTB, NIHL and CWP respectively. The mining companies must improve their case findings and ensure that employees complete their medication courses. The mining companies must procure mine equipment that generates noise and dust levels that comply with the requirements of the Act.

The reduction of occupational exposure levels has become more important because there has been a significant reduction in occupational diseases in the past ten years. There is also a long lead time between exposure and the diagnosis of the occupational diseases.

## Occupational Safety Performance

It is with regret that we report that there were 41 fatalities in 2012, compared to 25 in 2013. This corresponds to a 39% reduction year on year. The reduction of fatalities was commendable and must be sustained in the future in order to achieve the goal of zero harm. The decrease in the number of fatalities in the Free State, Limpopo and Mpumalanga was 33%, 21% and 60% respectively. The accident analysis showed that FoGs fatalities contributed 32%, transportation and mining also contributed 32%, and general accidents contributed 28%.

The number of persons injured was 839 in 2012 and 740 in 2013. This corresponds to a reduction of 12%. The major accident contributors were general accidents, transportation and mining, and FoGs, which were 48%, 25% and 15% respectively. General accidents include manual handling of material, drowning and inundation by ore, slipping and falling.

The MHSI in the three regions, through the successful implementation of the OHS Improvement Strategy Action Plan, embarked on a strategy to improve health and safety attitudes and mindsets to enforce compliance with health and safety measures. The strategy addresses the issue of unacceptable loss of life and injuries at mines by putting more emphasis on roof fall

accidents, transportation- and mining-related accidents, investigations and inquiries.

## Topical Issues and Matters of Interest

During the year, various complaints relating to mines blasting close to communities have been received. Some of these complaints received considerable media attention. The complaints normally include damage to property due to blasting and dust.

The regions continue to experience a shortage in the availability of qualified rock engineers and certificated engineers. The high numbers in transportation, mining-related and roof fall-related accidents can be attributed to the shortage of these skills.

Mines continue to report accidents late or not report accidents at all. Another challenge is the repeat findings from inspections and audits.

## Achievements

Various mines in Limpopo and Mpumalanga qualified for safety achievements. The Department wishes to congratulate all mines that have achieved safety awards. These mines include the following:

### Free State

#### Limpopo

Bokoni Platinum, Dwaarsrivier Chrome, Grootegeluk Coal, Marula Platinum, Modikwa Platinum and Phalabora Copper

#### Mpumalanga

Optimum Colliery, Kriel Colliery, Mooiplaats Colliery, Zibulo Colliery, Delmas Coal, Forzando Colliery, Halfgewonnen Colliery, Weltevreden Colliery, Kleinkopje Colliery, Dorstfontein Colliery, Isibonelo Colliery, Woestalleen Colliery, Landau Colliery and Msobo Coal

This is an example that mines can operate without fatalities and many other mines must aspire to achieve the same results.

## Illegal Mining

The Chief Directorate also chairs the Barberton Stakeholder Forum on illegal mining. Although there has been a significant reduction in illegal mining underground, a lot still needs to be done since these activities are now moving into other areas in the country.

The Mpumalanga Illicit Mining Stakeholder Forum consists of the DMR, the Department of Home Affairs and Immigration, the Directorate: Priority Crime Investigation (Hawks), the SAPS Barberton, Crime Intelligence, the State Security Agency, the NPA: Assets Forfeiture Unit, the Department of Justice and Constitutional Development, the local municipality, the mining companies Galaxy Gold, Reefers Mining Gold, Barberton Mines, Evander Gold Mines, Transvaal Gold Mines Estates and Vantage Goldfields, and the Community Policing Forum.

The level of illegal mining has been significantly reduced in the Barberton area due to the great efforts and action taken by all the stakeholders at provincial and national level. The collective effort of all stakeholders is highly commendable. The latest development is that more and more employees are being enticed into activities of illegal mining during shift hours. This is because more employees are being apprehended for the possession of gold-bearing material compared to illegal miners. This is also clear evidence of the improvement in the security measures that are being implemented by mining companies.

## Strategies to Improve Status Quo

The Central and Eastern Northern regions will continue to embark on a zero-tolerance approach towards non-compliance through the implementation of the OHS Improvement Strategy Action Plan. This will be achieved through the following:

- Convening meetings with company CEOs and various stakeholder leadership to ensure that health and safety strategies are implemented
- Continuing to promote the use of proximity detection systems
- Focusing on strategies to reduce noise levels and exposure levels to respirable crystalline silica by engineering controls
- Focusing on the mines that have employees in HEG A, which will have to develop engineering controls to reduce the occupational exposure levels of those employees; this will also lead to the withdrawal of employees who are over-exposed to noise and silica dust
- Ensuring that mines improve the process of declaring working places to be safe before work commences
- Improving the number of TB patients that complete the treatment course
- Promoting HCT continuous support on efforts and initiatives to combat TB and HIV/AIDS
- Implementing COPs on emergency preparedness, the safe use of SCSRs, the safety of refuge bays and the availability of mine rescue services

## 4.2.1 Free State

### Overview

During the reporting period, the Free State had two major gold mining companies: Sibanye Gold and Harmony Gold. There are also two coal mines. A third one is still in the commissioning phase. The region also has four major diamond mines. The rest of the mines in the region are small-scale mines, which include gold, coal, diamond, aggregate, sand and bentonite mines.

#### 4.2.1.1 Inspections and Audits

| Category              | Inspections | Audits |
|-----------------------|-------------|--------|
| Planned               | 1 109       | 751    |
| Actual                | 1 428       | 800    |
| Percentage compliance | 129%        | 107%   |

Inspections and audits were conducted during the reporting period, but with audits there was a reduction towards the end of the year due to unforeseen circumstances.

#### 4.2.1.2 Accidents

|                                  |     |
|----------------------------------|-----|
| Fatalities                       | 8   |
| > 14-day reportable injuries     | 305 |
| 1- to 13-day reportable injuries | 33  |

#### 4.2.1.3 Investigations and Inquiries

|                      | Investigations | Inquiries | Total |
|----------------------|----------------|-----------|-------|
| Initiated            | 108            | 7         | 115   |
| Completed            | 87             | 3         | 90    |
| Percentage completed | 81%            | 43%       | 78%   |

Progress is being made with regard to turnaround times.

#### 4.2.1.4 Disaster-type Accidents

No disaster-type accidents were reported.

#### 4.2.1.5 Statutory Notices

| Section 54 notices | Section 55 notices |
|--------------------|--------------------|
| 105                | 440                |

The following issues were addressed in the Section 54 and Section 55 notices:

- Poor explosive control in some mines by responsible miners
- Ventilation and heat challenges
- Non-reporting of accidents in some mines
- Poor mine design and risk assessment procedures when there are changes in the method of mining
- Poor ground control and support of working places
- Non-adherence to recommended support standards recommended by the rock engineer in the procedures
- Poor rigging practices
- Mud and poor housekeeping in haulages and crosscuts
- Poor training of lamproom personnel at some mines
- Poor water management in box holes and drains
- Non-adherence to the guidelines issued by the CIOM in drafting the different COPs.

#### 4.2.1.6 Administrative Fines

No administrative penalties were imposed during the reporting period.

#### 4.2.1.7 Examinations

Due to poor failure rates, the number of examinations was reduced to two examinations per month, thus giving candidates an opportunity to better prepare themselves.

| Certificate    | Examination boards | Number of candidates called | Number of candidates attended | Certificates issued |
|----------------|--------------------|-----------------------------|-------------------------------|---------------------|
| Mine Overseers | 22                 | 358                         | 239                           | 38                  |
| Blasting       | 0                  | 0                           | 0                             | 0                   |
| Onsetter       | 10                 | 10                          | 10                            | 3                   |
| Lampsman       | 2                  | 4                           | 4                             | 2                   |

#### 4.2.1.8 Topical Issues and Matters of Interest

There are no topical issues or matters of interest for the reporting period.

#### 4.2.1.9 Land-use Applications and Complaints

| Category                      | Received | Completed | Percentage |
|-------------------------------|----------|-----------|------------|
| Township developments         | 25       | 23        | 92         |
| Mining and prospecting rights | 118      | 116       | 98         |
| Closure certificates          | 56       | 49        | 88         |
| Environmental management      | 86       | 85        | 99         |
| Complaints                    | 46       | 49        | 107        |

A total of 49 administrative work pieces, ranging from exemption and Sunday labour permissions to other permissions and approvals were received and were completed as they arrived.

#### 4.2.1.10 Strategies to Improve Status Quo

- Total mine stoppages for repeated offences. Inspectors to declare each working place fit for production (especially support).
- Mines to resolve issues with recognised labour unions on medical separations
- Administrative fines for repeated and serious offences
- Suspension of tickets for acts of gross negligence and repeated offences
- Mines to be tasked on the presentation of individual health programmes and treatment of employees on various diseases
- Rigorous monitoring of control of dust and hearing interventions presented by each mine
- Improving subcommittee/task teams

### 4.2.2 Limpopo

#### Overview

Limpopo has experienced an increase in the number of major mining operations. Many underground mines are operated by medium- to large-sized companies with the life of mines averaging between 15 and 20 years. Small- to medium-sized companies remain a challenge in terms



of the enforcement of compliance when compared to larger operations, which are generally well resourced.

Considering the region's expansion and, particularly, the serious capacity issues in the platinum and small mining sector, 2013 saw much improvement, with the region recording six fatalities, compared to 15 fatalities in 2012. This marks a 60% improvement. There was an improvement of 29% in reportable injuries, where 156 injuries were recorded during the year compared to 202 recorded during 2012 (the reportable accidents reflected do not include accidents that were reported late).

While accidents in the region appear to be improving, the issues relating to occupational diseases still need to be addressed. The effectiveness of efforts to control or eliminate health exposures at the source remains a concern. Some employers do not cooperate with occupational medical practitioners in terms of sending employees suspected of having occupational diseases to recommended referral centres for further investigation and confirmation of such diseases and, where required, isolating affected employees from the workplace.

The engagement and cooperation of the Inspectorate, employers and unions in terms of mine health and safety-related issues is continuously encouraged and promoted. This has led to the establishment of two tripartite forums that meet regularly. Issues are also discussed and leading practices shared.

#### 4.2.2.1 Inspections and Audits

| Category              | Inspections | Audits |
|-----------------------|-------------|--------|
| Planned               | 873         | 48     |
| Actual                | 1 028       | 170    |
| Percentage compliance | 117%        | 354%   |

The frequency of inspections and audits is determined from the analysis of accident statistics at specific mines and statutory instructions issued over the period. The displayed figures are based on the strength of the total staff complement.

#### 4.2.2.2 Total Reported Accidents

|                                  |     |
|----------------------------------|-----|
| Fatalities                       | 6   |
| >14-day injuries                 | 156 |
| 1- to 13-day reportable injuries | 132 |

The number of reportable accidents declined for 2013 when compared to the previous year. However, problems are still being encountered with mines not reporting accidents to the regional office. It is important that mines report accidents in the prescribed manner as the accidents and their respective days lost have a direct bearing on Safety in Mines Research Advisory Committee levies.

#### 4.2.2.3 Investigations and Inquiries

|                      | Investigations | Inquiries | Total |
|----------------------|----------------|-----------|-------|
| Initiated            | 70             | 9         | 79    |
| Completed            | 70             | 8         | 78    |
| Percentage completed | 100%           | 89%       | 99%   |

A concern regarding the quality of some mine investigations has been identified, as these investigations focus on the injured person and immediate supervisor, rather than the cause of the accident. Mines are encouraged to rather focus on system failures during these accident investigations.

#### 4.2.2.4 Disaster-type Accidents

No disaster-type accidents were reported.

#### 4.2.2.5 Statutory Notices

| Section 54 notices | Section 55 notices |
|--------------------|--------------------|
| 127                | 110                |

Section 54 and Section 55 instructions that were issued are related to the following:

- Installation of personnel detection systems
- Improving the safety of overhangs
- Poorly conducted early entry examinations
- Working under unsupported hangings
- Failure to use safety declaration books/registers
- Availability of PPE
- Inadequate gas monitoring instruments or instruments not used underground
- Provision and use of checklists
- Conveyor belt without guards/guards worn out/guards not replaced after maintenance
- Pre-start sirens not audible/not installed

- Use of unsafe lifting equipment
- Unlicensed operators operating TMMs
- Blasting procedures not in place/not implemented/not adhered to
- COPs not revised
- Dust suppression measures not in place
- Provision of latrines and change-house facilities
- Training not provided for contractors/contractor management not in place
- TB programmes not in place
- Occupational diseases not investigated
- Appointments not in place
- Hazard identification risk management and health risk assessments not done
- Poor housekeeping

#### 4.2.2.6 Administrative Fines

Even though no administrative fines were imposed during the reporting period, there has been a noticeable improvement in cases where mining operations, shafts and working places are stopped. This has been effective and an immediate response is obtained.

#### 4.2.2.7 Topical Issues and Matters of Interest

The use of conveyor belts, TMM and the general condition of mining equipment remains a cause for concern. The appointment of engineers to be in charge of machinery and equipment is pertinent and required at some operations. Where there are no permanently appointed engineers, this negatively impacts on the health and safety of mine employees.

#### 4.2.2.8 Examinations

| Certificate/<br>Qualification | Examination<br>boards | Number of<br>candidates | Certificates<br>issued |
|-------------------------------|-----------------------|-------------------------|------------------------|
| Mine Overseers                | 21                    | 280                     | 15                     |
| Lampsman                      | 4                     | 24                      | 21                     |

The region also conducts examinations for industry qualifications. The table above reflects the number of certificates issued during the reporting period. The low percentage pass rates in the Mine Overseers' examinations reflect the training proficiency in the region. High absenteeism rates at the examinations remains a concern.

#### 4.2.2.9 Land-use Applications and Complaints

|                               | Received | Completed | Percentage |
|-------------------------------|----------|-----------|------------|
| Township development          | 55       | 53        | 96         |
| Mining and prospecting rights | 307      | 340       | 111        |
| Closure certificates          | 73       | 70        | 96         |
| Environmental management      | 329      | 336       | 102        |
| Complaints                    | 8        | 4         | 50         |

The increase in both the demand for residential land and mining rights has a tremendous effect on the workload of the Inspectorate. Complaints emanating from communities living in close proximity to mining operations have also increased.

#### 4.2.2.10 Strategies to Improve Status Quo

The region believes that the visibility of inspectors, through inspections and audits, is a proactive way of encouraging mines to comply with health and safety standards. The strategy is to conduct purposeful inspections that reveal any failure in the mine's health and safety systems, and taking the appropriate action when necessary. The region will continue to embark on a zero-tolerance approach to non-compliance through the implementation of the OHS Improvement Strategy Action Plan and the effective implementation of the Administrative Fines System.

Cooperation from mine employers, mine employees, communities affected by mining operations and the Inspectorate will continue to be encouraged to ensure that there are effective and efficient ways and strategies in place to deal with health and safety relating to mining operations in the region.

The Inspectorate will continue to convene meetings with company CEOs and other stakeholder leadership to ensure that appropriate measures are put in place to enhance health and safety. Mines will be encouraged to adopt the use of personnel detection systems and the declaration of working places to be safe before work commences.

Although minimal improvement has been realised in dealing with occupational diseases, the effort and level of success by some mines is commendable and other

mines are encouraged to develop and implement similar strategies. The Inspectorate continues to support efforts and initiatives to combat TB and HIV/AIDS through various interventions.

### 4.2.3 Mpumalanga

#### Overview

A wide variety of minerals are mined in Mpumalanga, with coal being the main commodity. Gold, platinum and other base minerals are mined and there is a large number of crushers and quarries in the region.

The table below shows the present number of operating mines in the region:

| Type of mine     | 2012 | 2013 |
|------------------|------|------|
| Underground coal | 40   | 38   |
| Open-cast coal   | 86   | 88   |
| Gold             | 7    | 7    |
| Platinum         | 2    | 2    |
| Other            | 41   | 41   |
| Total            | 176  | 176  |

#### 4.2.3.1 Inspections and Audits

The following number of inspections and audits were conducted:

| Category              | Inspections | Audits     |       |
|-----------------------|-------------|------------|-------|
|                       |             | Individual | Group |
| Planned               | 807         | 416        | 47    |
| Actual                | 877         | 296        | 244   |
| Percentage compliance | 108%        | 71%        | 555%  |

The number of inspections and audits planned in the table above is based on the actual number of inspectors.

#### 4.2.3.2 Total Accidents Reported

|                                  |     |
|----------------------------------|-----|
| Fatalities                       | 11  |
| > 14-day injuries                | 277 |
| 1- to 13-day reportable injuries | 52  |

#### 4.2.3.3 Investigations and Inquiries

|                      | Investigations | Inquiries * | Total |
|----------------------|----------------|-------------|-------|
| Initiated            | 348            | 13          | 361   |
| Completed            | 398            | 7           | 405   |
| Percentage completed | 114            | 53          |       |

\* "c" and "d" classified accidents

The high percentages of investigations completed are due to the fact that some accident investigations were carried over from 2012 and completed in 2013.

#### 4.2.3.4 Disaster-type Accidents and Outcomes of Inquiries and Investigations

No disaster-type accidents were reported during this period.

#### 4.2.3.5 Statutory Notices

| Section 55 notices | Section 54 notices |
|--------------------|--------------------|
| 51                 | 49                 |

The Section 54 and 55 instructions issued covered the following matters:

- Mines that did not have change-house facilities
- Mines where employees worked without certificates of fitness
- Mines that did not comply with underground roof support standards
- Mines that did not have adequate ventilation
- Mines that had unsafe and unguarded machinery
- Mines that had unsafe electrical installations

#### 4.2.3.6 Administrative Fines

|  |          |
|--|----------|
| Number of fines recommended by the IOM | 2        |
| Value recommended                      | R750 000 |
| Number set aside by the PI             | 0        |
| Value set aside                        | 0        |
| Number imposed by the PI               | 2        |
| Value of fines imposed                 | R750 000 |
| Appeals                                | 1        |
| Value of fines paid                    | R750 000 |



#### 4.2.3.7 Matters of Interest

No matter of interest was reported for the reporting period.

#### 4.2.3.8 Examinations

| Certificate/<br>Qualification | Examination<br>boards | Number of<br>candidates | Certificates<br>issued |
|-------------------------------|-----------------------|-------------------------|------------------------|
| Mine Overseers                | 37                    | 279                     | 30                     |
| Lampsman                      | 3                     | 5                       | 5                      |

#### 4.2.3.9 Land-use Applications and Complaints

|  | Received | Completed | Percentage |
|--|----------|-----------|------------|
| Township developments                                  | 36       | 42        | 116        |
| Mining and prospecting rights and permits              | 354      | 388       | 109        |
| Closure applications                                   | 19       | 13        | 68         |
| Environmental management                               | 16       | 16        | 100        |
| Complaints   | 18       | 24        | 133        |
| Applications for approvals, exemptions and permissions | 976      | 1004      | 103        |

The high percentages completed are due to administrative work received during 2012 and only completed in 2013.

### 4.3 Western Regions

#### General

The Western Region consists of the following regions: North West: Klerksdorp, North West: Rustenburg and the Western Cape. A wide variety of minerals are mined in surface, underground and offshore mines.

During the period under review, the Chief Directorate: Western Regions, through the regional offices, conducted 2 234 inspections, 118 audits, 1 019 investigations and 21 inquiries against a target of 1 918 inspections, 120 audits, 1 284 investigations and 21 inquiries.

The number of fatalities for 2013 was 35, compared to 36 for the previous year. This translates to a 2% improvement.

A total of 1 646 injuries were dealt with in 2013, compared to 1 634 for the previous year. This translates to a 1% regression.

#### Strategies to Improve Status Quo

Due to a variety of challenges, the regions have adopted various means of improving the status quo. These include the following:

- Withdrawal of legal appointments of line supervision for non-adherence to standards
- Visits to secondary support crews and the submission of monthly reports
- Immediate withdrawal of machinery exceeding the set milestone targets through a series of inspections
- Involvement of original equipment manufacturers (OEMs) during audits and inspections on a monthly basis
- Instruction letter to mines for the procedure of circulating service department reports
- Increasing inspections and audits at high-risk mines
- Issuing stoppage statutory instructions to mines where repeat deviations are identified
- Conducting verification inspections prior to uplifting the instruction
- Placing greater focus on proper early entry examination and support standards compliance

#### Challenges

The issue of the safety of women in mining resurfaced when a female employee was brutally attacked and killed while working in one of the mining operations. Workshops have been held with women to address this issue.

#### Mine Unrest

There have been numerous protected strikes during the period under review. Three major companies on the Platinum Belt (Impala Platinum, Anglo Platinum and Lonmin Platinum) experienced a wage-dispute protected strike.

#### 4.3.1 North West: Klerksdorp

##### Overview

North-West: Klerksdorp is surrounded by the Free State, Gauteng and the Northern Cape. Gold is predominantly

mined and is made up of labour-intensive deep underground mining operations. Other minerals that are exploited in the region include uranium, diamonds, limestone, fluorspar, slate, talc, clay, pyrophyllite and alusite, which are commonly exploited with less labour-intensive surface operations.

The regional office enforces the requirements of the MHSA, with emphasis on the employer ensuring the safety of employees at the mines. This is done through monitoring compliance to the MHSA through a series of inspections, audits, investigations and inquiries. The regional office also participated in matters likely to affect the surrounding communities where mining activities take place by taking part in meetings of the Regional Mining Development and Environment Committee.

Regrettably, five mine fatalities were reported in 2013, compared to nine in 2012, which has resulted in a 44% year-on-year improvement. The regional strategy, which largely focused on the eradication of falls of ground mine accidents, has resulted in an 80% year-on-year reduction of such accidents.

#### 4.3.1.1 Inspections and Audits

| Category              | Inspections | Audits |
|-----------------------|-------------|--------|
| Planned               | 753         | 48     |
| Actual                | 965         | 158    |
| Percentage compliance | 128         | 329    |

#### 4.3.1.2 Total Accidents Reported

|                                  |     |
|----------------------------------|-----|
| Fatalities                       | 5   |
| > 14-day reportable injuries     | 319 |
| 1- to 13-day reportable injuries | 249 |

#### 4.3.1.3 Investigations and Inquiries

|                      | Investigations | Inquiries | Total |
|----------------------|----------------|-----------|-------|
| Initiated            | 229            | 7         | 236   |
| Completed            | 220            | 7         | 227   |
| Percentage completed | 96             | 100       | 96    |

#### 4.3.1.4 Disaster-type Accidents and Outcomes of Inquiries and Investigations

No disaster-type accidents were reported.

#### 4.3.1.5 Statutory Notices

| Section 54 notices | Section 55 notices |
|--------------------|--------------------|
| 99                 | 138                |

MHSA instructions issued were mainly on deviations from mine standards and procedures, poor contractor management and the unavailability of mine health and safety management systems. Most of the Section 54 instructions issued resulted in stoppages of workplace or equipment until remedial measures were presented to the office of the principal inspector.

#### 4.3.1.6 Administrative Fines

|  |          |
|--|----------|
| Number of fines recommended by the IOM | 11       |
| Value recommended                      | 0        |
| Number set aside by the PI             | 10       |
| Value set aside                        | 0        |
| Number imposed by the PI               | 1        |
| Value of fines paid                    | R120 000 |
| Appeals                                | 0        |

#### 4.3.1.7 Topical Issues and Matters of Interest

China Africa Precious Metals shafts formerly owned by Pamodzi Gold in Orkney are in the process of being re-established with the intention of safely restarting production operations in due course. The said shafts have been idling for a number of years, which has resulted in the accumulation of underground water and the build-up of underground stresses, which should be well managed to avert any potential accidents.

#### 4.3.1.8 Examinations

| Certificate/<br>Qualification | Examination<br>boards | Number of<br>candidates | Certificates<br>Issued |
|-------------------------------|-----------------------|-------------------------|------------------------|
| Mine Overseers                | 19                    | 184                     | 22                     |
| Onsetter                      | 10                    | 72                      | 67                     |
| Lampsman                      | 1                     | 5                       | 3                      |

Generally, a low percentage of certificates was issued, as most candidates are not adequately prepared for the examinations.

#### 4.3.1.9 Land-use Applications and Complaints

|                               | Received | Completed | Percentage |
|-------------------------------|----------|-----------|------------|
| Township developments         | 81       | 80        | 99         |
| Mining and prospecting rights | 135      | 135       | 100        |
| Closure certificates          | 50       | 50        | 100        |
| Environmental management      | 53       | 53        | 100        |
| Complaints                    | 10       | 9         | 90         |

#### 4.3.1.10 Strategies to Improve the Status Quo

The following strategies have been adopted to improve performance:

- More inspections and audits at high-risk mines
- Stoppage statutory instructions issued to mines, where repeat deviations are identified
- Conducting verification inspections prior to uplifting the instruction
- Conducting follow-up audits and inspections to monitor progress of action plans and presenting reports to the regional office
- Placing greater focus on proper early entry examination and support standards compliance
- Administration fine recommendations for repeat transgressions
- Withdrawal of legal appointments in cases of gross negligence for the purposes of re-training

### 4.3.2 North West: Rustenburg

#### Overview

Platinum Group Metals (PGMs) are predominantly mined in North West: Rustenburg. The region comprises labour-intensive underground operations. There are also numerous slates, granite quarries and open-pit operations. North West: Rustenburg is situated between North West: Klerksdorp in the south, Gauteng in the east, Limpopo in the north and Botswana in the west.

#### 4.3.2.1 Inspections and Audits

| Category              | Inspections | Audits |
|-----------------------|-------------|--------|
| Planned               | 613         | 48     |
| Actual                | 914         | 137    |
| Percentage compliance | 149         | 285    |

#### 4.3.2.2 Total Reported Accidents

|                                  |      |
|----------------------------------|------|
| Fatalities                       | 30   |
| > 14-day injuries                | 1321 |
| 1- to 13-day reportable injuries | 418  |

#### 4.3.2.3 Investigations and Inquiries

|                      | Investigations | Inquiries | Total |
|----------------------|----------------|-----------|-------|
| Initiated            | 1 049          | 20        | 1 069 |
| Completed            | 595            | 5         | 600   |
| Percentage completed | 56             | 25        | 56    |

The percentage for completed inquiries is low due to the fact that all inquiries planned for the fourth quarter had to be rescheduled due to striking employees in the Platinum Belt.

#### 4.3.2.4 Disaster-type Accidents and Outcomes of Inquiries and Investigations

For the third consecutive year, the region did not experience any disaster-type accidents. However, a massive FoG accident occurred at Anglo Platinum: Bathopele, which claimed the lives of two employees. Most of the investigations' outcomes indicate that although mines have adequate systems and procedures in place, adherence to these systems is still a major challenge for both employees and line management.

#### 4.3.2.5 Statutory Notices

| Section 54 notices | Section 55 notices |
|--------------------|--------------------|
| 183                | 237                |

Most of the instructions issued were mainly for the following issues:

- Non-adherence to support mine standards
- Poor ventilation controls
- Poor lock-out on machinery
- Poor early entry examination
- Substandard electrical reticulation
- Inadequate hazard identification and risk assessment

#### 4.3.2.6 Administrative Fines

|  |          |
|--|----------|
| Number of fines recommended by the IOM | 13       |
| Value recommended                      | -        |
| Number set aside by the PI             | 9        |
| Value set aside                        | -        |
| Number imposed by the PI               | 2        |
| Value of fines imposed                 | R500 000 |
| Appeals                                | 2        |
| Value of fines paid                    | R0       |

#### 4.3.2.7 Topical Issues and Matters of Interest

Unfortunately, there were a number of protected strikes in the region during the period under review. Northam Platinum: Zondereinde experienced a wage dispute, which resulted in a strike that lasted for almost 12 weeks. Three major companies in the Platinum Belt (Anglo Platinum, Impala Platinum and Lonmin Platinum) also experienced a wage-dispute protected strike, which began on 23 January 2014 and was still ongoing at the time of the end of the reporting period.

During the period under review, there have been a number of underground sit-ins by mine employees to try and force management to concede to their demands. These sit-ins impacted negatively on the health and safety of these employees, especially those who are on chronic medication.

Unfortunately, the issue of safety of women in mining again resurfaced as one female employee was brutally attacked and killed while working underground at one of the mining operations in the region. The regional office held two workshops with women in mining and employers respectively to address issues that are negatively impacting on the safety of women in mining.

The increasing number of TB and NIHL cases reported is also of great concern to the regional office. Deaths that are deemed to be medically related were also on the increase in 2013. The regional office will be supporting and promoting some initiatives of the National

Department of Health through engagements with key stakeholders to create awareness of TB and HIV management.

#### 4.3.2.8 Examinations

| Certificate/<br>Qualification | Examination<br>boards | Number of<br>candidates | Certificates<br>Issued |
|-------------------------------|-----------------------|-------------------------|------------------------|
| Mine Overseers                | 34                    | 393                     | 32                     |
| Onsetter                      | 12                    | 88                      | 42                     |
| Lampsman                      | 10                    | 67                      | 15                     |

#### 4.3.2.9 Complaints

|            | Received | Completed | Percentage |
|------------|----------|-----------|------------|
| Complaints | 54       | 30        | 56         |

MPRDA applications are processed at North West: Klerksdorp.

Due to the strike, relevant and affected employees were not available to address the complaints received.

#### 4.3.2.10 Strategies to Improve Status Quo

The following strategies were adopted by the region to improve the status quo:

- Withdrawal of legal appointments of line supervision for non-adherence to standards
- Verification visits by the CIOM and the responsible inspector, as a follow-up on commitments made to the office through presentations
- Visits to secondary support crews and the submission of monthly reports
- Immediate withdrawal of machinery exceeding the set milestone targets through a series of inspections
- Involvement of OEMs during audits and inspections on a monthly basis
- Establishment of a forum for part-time hygienists operating in small mines
- Monitoring of the diesel particular matters on all the mines employing TMM
- Instruction letter to mines for procedures of circulating service department reports

- Monitoring and evaluating the implementation of administrative programmes on TB and HIV/AIDS
- Ensuring the linkage between occupational noise exposure and medical surveillance through audits and inspections

### 4.3.3 Western Cape

#### Overview

The Western Cape Region has only one small underground mine, Steenkampskraal, which was dormant for a very long time, but is in the process of re-opening. The other mines are offshore oil and gas mines at Mossel Bay, sea diamonds on the West Coast, limestone for cement and other purposes, and sand, stone and clay for the construction industry.

#### 4.3.3.1 Inspections and Audits

All the mines in the region are planned for inspections on an annual basis, no matter how small they are. There are currently 210 operational mines. All the mines have some form of a risk management programme in place.

A risk matrix has been developed whereby mines are classified as small, medium or large according to their risk profile. The regular inspection frequency is having the desired effect of ensuring that mines are compliant in terms of physical conditions and making safety and health part of the operating culture.

| Category              | Inspections | Audits |
|-----------------------|-------------|--------|
| Planned               | 552         | 24     |
| Actual                | 576         | 23     |
| Percentage compliance | 104         | 96     |

#### 4.3.3.2 Total Accidents Reported

A total of 42 accidents were reported. The region reported no fatal accidents in 2013, in comparison to two fatal accidents in 2012. Furthermore, there were six reportable injury accidents, compared to 14 in 2012. Twenty-six accidents were reported where the injured returned to duty within 14 days. Ten non-casualty accidents were reported, mainly fires and runaway vehicles.

|                                  |    |
|----------------------------------|----|
| Fatalities                       | 0  |
| > 14-day injuries                | 6  |
| 1- to 13-day reportable injuries | 26 |

#### 4.3.3.3 Investigations and Inquiries

The injuries sustained in the > 14-day accident category were all of a minor nature and investigations were done in collaboration with the mines.

|                      | Investigations | Inquiries | Total |
|----------------------|----------------|-----------|-------|
| Initiated            | 6              | 0         | 6     |
| Completed            | 4              | 0         | 4     |
| Percentage completed | 67             | 100       | 67    |

#### 4.3.3.4 Disaster-type Accidents and Outcomes of Inquiries and Investigations

No disaster-type accidents were reported.

#### 4.3.3.5 Statutory Notices

The majority of the statutory notices were issued for inadequate guarding of machinery, training and risk management issues.

| Section 54 notices | Section 55 notices |
|--------------------|--------------------|
| 5                  | 14                 |

#### 4.3.3.6 Administrative Fines

No administrative fines were recommended.

#### 4.3.3.7 Topical Issues and Matters of Interest

There is a strong willingness by mine owners and managers in the region to comply with the requirements of the MHSA. Inspectors have contributed to a large extent in encouraging owners and managers not just to comply, but to establish a health and safety culture on the mines. The results of this are evident in the accident statistics.

Tripartite meetings have been introduced on a regional scale and have been attended with active participation.

#### 4.3.3.8 Examinations

No applications were received for examinations for certificates of competency during the reporting period.

#### 4.3.3.9 Land-use Applications and Complaints

The past year has seen a flood of wind energy facility applications. Because of the expansive nature of these proposed operations, they often occupy a farm on which sand or gravel is mined.

|                               | Received | Completed | Percentage |
|-------------------------------|----------|-----------|------------|
| Township developments         | 42       | 42        | 100        |
| Mining and prospecting rights | 59       | 59        | 100        |
| Closure certificates          | 8        | 8         | 100        |
| Environmental management      | 55       | 55        | 100        |
| Complaints                    | 0        | 0         | 100        |

#### 4.3.3.10 Strategies to Improve Status Quo

The inspectors are continuously motivated to influence the mines to improve the quality and effectiveness of risk management, training and behaviour-based safety. To ensure more visibility, the inspection strategy will ensure that a specific mine will see an inspector once every three months. The audit strategy will be changed so that inspectors conduct individual audits.

### 4.4 Chief Directorate: Technical Support

The Chief Directorate: Technical Support is responsible for the strategic leadership and management of activities in the following directorates: Mine Safety, Mine Surveying and Support Services.

Its mandate is to provide specialist and technical services to the Inspectorate, with particular focus on the regional component and other head office units.

Some of the key responsibilities for the chief directorate are as follows:

- Participate in specialist investigations and inquiries within regions when required
- Provide integrated professional advice and make recommendations from incidents, accidents and legislation to other government departments, the mining sector and other key stakeholders

- Ensure quality assurance of the performance of the Inspectorate by providing mentorship, knowledge transfer and the promotion of safety
- Ensure high-quality guidelines for COPs are distributed to the mining industry
- Provide technical and implementation guidance to the regional inspectors in areas of enforcement and administrative penalties
- Ensure the efficacy of the examination process for the certificates of competency
- Manage the examination process for the various certificates of competency
- Identify technical training needs that exist in the MHSI and recommend appropriate action
- Liaise with other government departments and other key stakeholders for the development of standards and specifications

#### 4.4.1 Directorate: Mine Safety

During the year, the directorate engaged in and achieved the following activities:

- Assistance in the smooth running of the tripartite forums in the regions
- Provision of up-to-date and relevant occupational health and safety statistics and information
- Involvement with the MHSC and various subcommittees in the development and revision of the legislative framework, including refuge bay regulations, conveyor belt regulations, electricity regulations and TMM regulations
- The preparation and issuing of two CIOM instructions on the protection of women mine employees, and extra caution and vigilance to minimise fatalities and injuries of mine employees during the last quarter of the calendar year
- The filling of vacancies by the Mine Safety Unit with suitable persons as technical advisors
- Developing a template for the quarterly reporting of the branch's performance, and presenting it to the PI for adoption
- Reviewing the examination procedure for the GCC for Engineers: Annexure E and developing a standard operation procedure for the packaging of exam papers for adoption
- Conducting training on the revised SAMRASS codebook and related forms in order to empower inspectors and mine employees
- Providing a monthly report on occupational health and safety with information on fatalities, injuries and occupational diseases



- Liaison with the regional offices to collate quarterly performance information and prepare the Mine Health and Safety branch's quarterly performance report for submission to the Director-General
- The evaluation of 4 000 candidates who had applied and written the examination for the various certificates of competency
- The monthly review of the statutory instructions issued by the inspectors in the regions
- The provision of inputs and support in the implementation of the enforcement guideline

#### 4.4.2 Directorate: Mine Surveying

The directorate continued to monitor mine surveying standards and practices to promote a culture of health and safety on mines, ensure the safe use of under-mined land for surface development, ensure the safe and optimal exploitation of mineral resources, and render mapping and draughting services. Additional key functions are hazard identification and risk control, and the training of new employees.

##### 4.4.2.1 Surveying Matters

The directorate provides a service to the regional offices to maintain surveying and mapping standards in terms of regulations and to monitor mine compliance. It also makes comments and recommendations on the safe use of land for township development, and inspects the administration of the departmental copies of mine plans kept at the regional offices.

Additional matters that were also given priority were underground check measurements in restricted mining areas, where surface structures are to be protected.

The following table shows a comparison of tasks completed:

| Activities   | 2012 actual | 2013 planned | 2013 actual |
|--|-------------|--------------|-------------|
| Mine surveying inspections (underground and surface mines) | 430         | 310          | 432         |
| Underground inspections (control measurements)             | 201         | 171          | 178         |

| Activities   | 2012 actual | 2013 planned | 2013 actual |
|--|-------------|--------------|-------------|
| Surface utilisation files received and completed   |             |              |             |
| • Carried over from previous year                  | 5           |              | 33          |
| • Received during the year                         | 502         |              | 310         |
| • Completed during the year                        | 471         |              | 340         |
| • Carried over to next year                        | 36          |              | 3           |
| Miscellaneous tasks (examinations, projects, etc.) | 496         |              | 753         |
| Permissions and exemptions                         | 108         |              | 118         |

Applications for exemptions and permissions, as well as surface utilisation, are received from the regional offices for comment and recommendations.

##### 4.4.2.2 Special Surveys

The Directorate: Mine Surveying is constantly involved in the following practical surveying projects:

- Assist PIs determine the distance over which surface mining operations have been conducted within a horizontal distance of 100 m of buildings and structures that require protection against such mining operations
- Manage fatal accident plans and mine boundary disputes
- Verify the accuracy of survey data and plans submitted by candidates undertaking the trial survey project, which is part of the Mine Surveyor's Certificate of Competency examination.

##### 4.4.2.3 Mapping Services

The Mapping Services Subdirectorates administers the archiving, retrieving and safekeeping of prescribed mine plans and survey records of mines that have closed down. It also serves clients who require information on the under-mining status of land for township development and other purposes, as well as making mine plans of closed-down mines available to mine owners or their representatives.

The Subdirectorates intends to create an electronic archive database of all mine plans and relevant survey information, which will ensure more efficient archiving and retrieving.

### 4.4.3 Directorate: Support Services Unit

#### 4.4.3.1 Administration

The establishment of the Support Services Directorate provides for 23 posts, of which 18 are filled and five are vacant. The demographics of the staff as on 31 March 2014 was as follows:

| Gender | African | White | Asian | Coloured | Total |
|--------|---------|-------|-------|----------|-------|
| Male   | 7       | 1     | 0     | 0        | 8     |
| Female | 7       | 3     | 0     | 0        | 10    |

#### 4.4.3.2 Mining Information Services

The subdirectorates is responsible for enforcing the provision of relevant systems to the core business of the MHSI for the purpose of storing and processing data with the aim of generating accurate and reliable information. Currently, the subdirectorates oversees the following databases:

- SAMRASS
- AMRs
- South African Mines Occupational Diseases Database
- Occupational Hygiene
- Examinations

The subdirectorates is in the process of developing a more integrated information system, the South African Mines Safety and Health Administration, which will provide for better planning, with all the information related to the MHSI stored in one place, thus leading to improved workflow and operational efficiencies.

#### 4.4.3.3 Promotions

##### Publications

During the reporting period, four editions of the quarterly newsletter were published and distributed to internal and external stakeholders.

##### Awareness and Promotional Activities

The subdirectorates participates in health and safety events to promote awareness within the mining industry and communities affected by mining activities.

During the reporting period, the subdirectorates participated in the following events:

- Three international and national conferences, and exhibitions
- One regional exhibition
- Five mining technical exhibitions

##### MHSC Award Scheme

The subdirectorates is responsible for the administration of the MHSC Award Scheme.

In the category of a million fatality-free shifts, 15 mines achieved a million fatality-free shifts. Of these, seven mines achieved two million or more fatality-free shifts, two mines achieved four million or more fatality-free shifts and one mine achieved five million or more fatality-free shifts.

In the category of a thousand fatality-free production shifts, 26 mines achieved 1 000 fatality-free production shifts. Of these, 19 mines achieved 3 000 or more fatality-free production shifts, 14 achieved 5 000 or more fatality-free production shifts, three mines achieved 10 000 or more fatality-free production shifts, and one mine achieved an exceptional 15 000 fatality-free production shifts.

#### 4.4.3.4 Training Subdirectorates

##### 4.4.3.4.1 Implemented Training

During the reporting period, the MHSI developed the skills and knowledge base of its staff as follows:

- A total of 81 MHSI officials attended technical and non-technical training courses
- Ten managers attended the AMDP and EMDP

##### 4.4.3.4.2 Training Interventions

##### Assistant Inspector Programme

Thirteen assistant inspectors recruited with electrical or mechanical engineering tertiary qualifications were undergoing inspector training at various regional offices of the Department during the reporting period. These assistant inspectors are preparing for permanent appointment as IOMs when they acquire their relevant GCC. Six out of 13 of the assistant inspectors attained their GCCs during the reporting period and they have been permanently absorbed within the MHSI as part of the human resources capacity pool. The other seven assistant inspectors are at various stages towards acquiring their GCCs



### Learner Inspector Programme

The Inspectorate had five learner inspectors during the reporting period. These learner inspectors had been recruited as bursary holders and completed their undergraduate qualifications. They are at various stages of training and were placed on a mining site for mine experiential training. Two learner inspectors completed their mine experiential training in mine engineering during the reporting period and were placed at the Limpopo and North West regional offices for inspector training. One learner inspector completed his mine experiential training in electrical engineering and was placed in the Gauteng regional office for inspector training. The other learner inspector who completed his mine experiential training in mine engineering was about to be placed in the Northern Cape regional office for inspector training at the end of the reporting period. An electrical engineering learner inspector resigned from the programme during the period under review.

The MHSI and MQA placed 50 learner inspectors at Anglo Gold Ashanti and Sibanye Gold for two years of experiential mine training. This training is a result of collaboration between the Department and the MQA, which are the sponsors of this training:

They have been placed in the following disciplines: nine in electrical engineering (heavy current), 11 in mechanical engineering, 14 in mine engineering, five in mine surveying and 11 in occupational hygiene.

### Bursary Scheme

The Inspectorate invested in 18 bursary holders during the reporting period. These students are pursuing the following mining-related qualifications at different tertiary institutions: electrical engineering (heavy current), mechanical engineering mine engineering and mine surveying. Fifteen of those bursary holders are funded by the MQA and are at various stages of completing their qualifications. The other three who were funded by the Department have completed their qualifications. They are currently undergoing experiential mine training in preparation for acceptance as GCC candidates, except for one who is attempting a BTech degree.

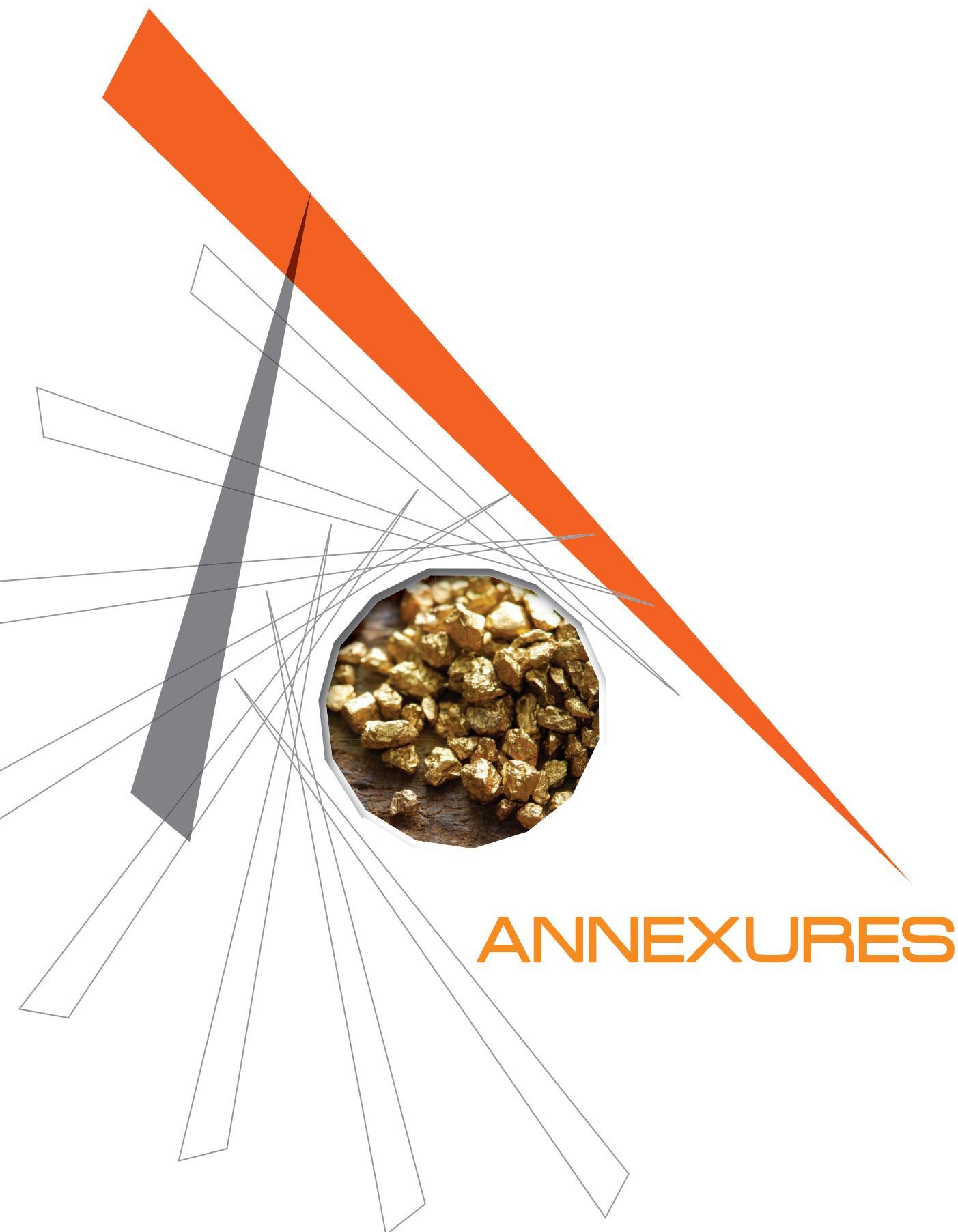
### 4.4.3.4 Examinations

The following table depicts GCC examinations that were recorded during the current reporting period:

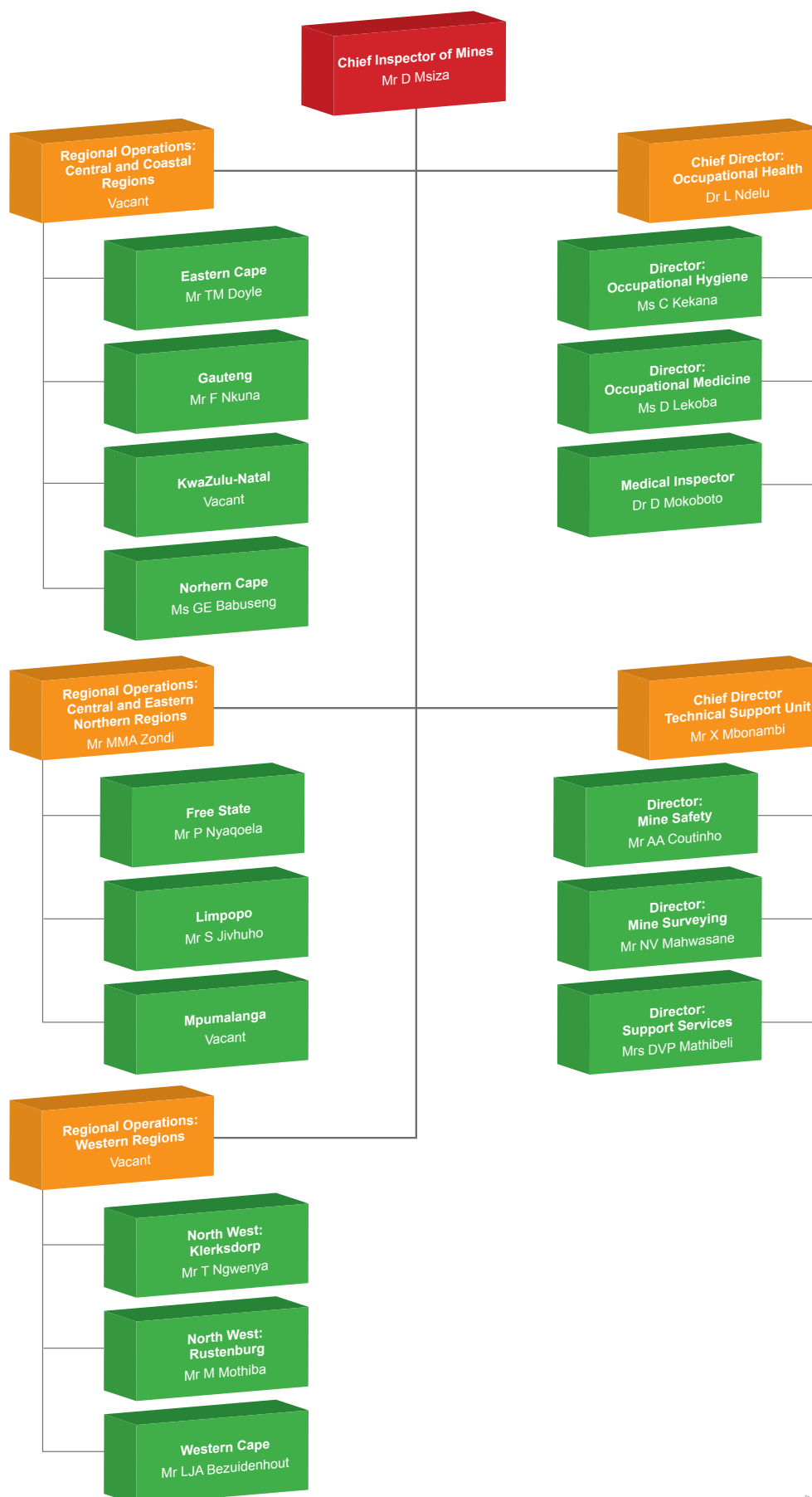
**TABLE 4.4.4.3: NUMBER OF WRITTEN CANDIDATES VS CERTIFICATES ISSUED PER EXAMINATION CATEGORY**

| Type of certificate                        | Number of candidates writing examinations | Certificates issued | Percentage pass rate |
|--|---|---------------------|----------------------|
| Mine Engineers (Electrical and Mechanical) | 862                                       | 103                 | 12%                  |
| Mine Managers                              | 710                                       | 73                  | 10%                  |
| Mine Overseers                             | 1 759                                     | 173                 | 10%                  |
| Mine Surveyors                             | 606                                       | 9                   | 1%                   |
| Winding Engine Drivers                     | 78  | 56                  | 72%                  |
| <b>Total</b>                               | <b>4 015</b>                              | <b>414</b>          |                      |

The Inspectorate is greatly concerned with the low pass rate in the certificate of competency examinations. Hence, the MHSI has collaborated with the MQA to investigate the underlying causes of the low pass rate and to also determine remedial measures which could be implemented without impacting on the standard of the examinations.



## ANNEXURE A: Organogram



## ANNEXURE B: Contact List

| POSITION   | OFFICIAL         | WORK TEL                     | WORK FAX     | ADDRESS                                  | EMAIL  |
|--|------------------|------------------------------|--------------|--|--|
| Chief Inspector of Mines   | Mr D Msiza       | 012 444 3639<br>012 444 3970 | 086 6931 613 | Private Bag X59<br>Arcadia 0007          | phumudzo.rambau@dmr.gov.za<br>sithembile.nzimande@dmr.gov.za |
| Deputy Chief Inspector of Mines:<br>Central and Coastal Regions            | Vacant           | 012 444 3649                 | 012 341 2271 | Private Bag X59<br>Arcadia 0007          | freda.seema@dmr.gov.za                                       |
| Deputy Chief Inspector of Mines:<br>Central and Eastern Northern<br>Region | Mr MMA Zondi     | 012 444 3663                 | 012 444 3165 | Private Bag X59<br>Arcadia 0007          | lindiwe.sekwati@dmr.gov.za                                   |
| Deputy Chief Inspector of Mines:<br>Western Region                         | Vacant           | 012 444 3661                 | 086 461 7230 | Private Bag X59<br>Arcadia 0007          | mokgadi.lesoka@dmr.gov.za                                    |
| Chief Director:<br>Occupational Health                                     | Dr L Ndelu       | 012 444 3163                 | 012 341 2271 | Private Bag X59<br>Arcadia 0007          | zanele.ngcobo@dmr.gov.za                                     |
| Chief Director:<br>Technical Support Unit                                  | Mr X Mbonambi    | 012 444 3676                 | 012 444 3165 | Private Bag X59<br>Arcadia 0007          | arista.muller@dmr.gov.za                                     |
| Director:<br>Mine Safety   | Mr A Coutinho    | 012 444 3612                 | 012 444 3165 | Private Bag X59<br>Arcadia 0007          | portia.sokhulu@dmr.gov.za                                    |
| Medical Inspector  | Dr D Mokoboto    | 012 444 3614                 | 086 693 4584 | Private Bag X59<br>Arcadia 0007          | perfunia.makhubela@dmr.gov.za                                |
| Director:<br>Occupational Medicine   | Ms D Lekoba      | 012 444 3785                 | 012 341 2271 | Private Bag X59<br>Arcadia 0007          | ncumisa.ncobo@dmr.gov.za                                     |
| Director:<br>Occupational Hygiene  | Ms CT Kekana     | 012 444 3646                 | 012 341 2271 | Private Bag X59<br>Arcadia 0007          | anesia.matjokane@dmr.gov.za                                  |
| Director: Mine Health and<br>Safety Legal Services                         | Mr G Ndamse      | 012 444 3274                 | 012 444 3131 | Private Bag X59<br>Arcadia 0007          | mmasello.maimela@dmr.gov.za                                  |
| Director:<br>Mine Surveying  | Mr NV Mahwasane  | 012 444 3789                 | 012 444 3135 | Private Bag X59<br>Arcadia 0007          | goitsemanj.sekwati@dmr.gov.za                                |
| Director:<br>Support Services  | Ms DVP Mathibeli | 012 444 3547                 | 086 710 1406 | Private Bag X59<br>Arcadia 0007          | daphney.sekgobela@dmr.gov.za                                 |
| Principal Inspector of Mines:<br>Eastern Cape                              | Mr TM Doyle      | 041 396 3900                 | 041 373 8171 | Private Bag X6076<br>Port Elizabeth 6000 | megan.singh@dmr.gov.za                                       |
| Principal Inspector of Mines:<br>Free State                                | Mr PH Nyaqcela   | 057 391 1372                 | 057 352 2270 | Private Bag X33<br>Welkom 9460           | mildred.mokupi@dmr.gov.za                                    |
| Principal Inspector of Mines:<br>Gauteng                                   | Mr F. Nkuna      | 011 358 9776                 | 011 339 6910 | Private Bag X5<br>Braamfontein 2017      | nokhaya.magudumana@dmr.gov.za                                |

| POSITION   | OFFICIAL            | WORK TEL           | WORK FAX                      | ADDRESS                             | EMAIL                           |
|--|---------------------|--------------------|-------------------------------|-------------------------------------|---------------------------------|
| Principal Inspector of Mines:<br>KwaZulu-Natal             | Vacant              | 031 335 9626       | 031 305 5803                  | Private Bag X54307<br>Durban 4000   | sindy.dlamini@dmr.gov.za        |
| Principal Inspector of Mines:<br>Limpopo                   | Mr S Jivhuho        | 015 287 4705       | 015 287 4740                  | Private Bag X9467<br>Polokwane 0700 | nancy.montana@dmr.gov.za        |
| Principal Inspector of Mines:<br>Mpumalanga                | Vacant              | 013 653 0500       | 013 690 2390                  | Private Bag X7279<br>Witbank 1035   | loraine.coetzee@dmr.gov.za      |
| Principal Inspector of Mines:<br>Northern Cape             | Mrs GE Babuseng     | 053 807 1735       | 053 832 8527                  | Private Bag X6093<br>Kimberley 8300 | rosy.thaba@dmr.gov.za           |
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## ANNEXURE C: Acronyms

|                |  |                |   |
|----------------|--|----------------|---|
| <b>AIDS</b>    | Acquired Immune Deficiency Syndrome                                    | <b>MQA</b>     | Mining Qualifications Authority                             |
| <b>AMDP</b>    | Advanced Management Development Programme                              | <b>MRS</b>     | Mine Rescue Services  |
| <b>AMR</b>     | Annual Medical Report  | <b>NIHL</b>    | Noise-induced hearing loss                                  |
| <b>AQI</b>     | Air Quality Index  | <b>NIOH</b>    | National Institute for Occupational Health                  |
| <b>ARV</b>     | Antiretroviral   | <b>NPA</b>     | National Prosecuting Authority                              |
| <b>CEO</b>     | Chief Executive Officer  | <b>NSP</b>     | National Strategic Plan                                     |
| <b>CIOM</b>    | Chief Inspector of Mines   | <b>OEL</b>     | Occupational exposure limit                                 |
| <b>COAD</b>    | Chronic obstructive airway disease                                     | <b>OEM</b>     | Original equipment manufacturer                             |
| <b>COP</b>     | Code of Practice   | <b>OHS</b>     | Occupational health and safety                              |
| <b>CSM</b>     | Cold stress management   | <b>OMP</b>     | Occupational medical practitioner                           |
| <b>CWP</b>     | Coal workers' pneumoconiosis   | <b>PERSAL</b>  | Personnel and Salary System                                 |
| <b>DMR</b>     | Department of Mineral Resources  | <b>PFMA</b>    | Public Finance Management Act                               |
| <b>EE</b>      | Employment Equity  | <b>PGM</b>     | Platinum Group Metals                                       |
| <b>EMDP</b>    | Emerging Management Development Programme                              | <b>PI</b>      | Principal Inspector of Mines                                |
| <b>FoG</b>     | Fall of ground   | <b>PPE</b>     | Personal protective equipment                               |
| <b>GCC</b>     | Government Certificate of Competency                                   | <b>PTB</b>     | Pulmonary tuberculosis                                      |
| <b>HATS</b>    | HIV/AIDS, TB and Silicosis   | <b>SAMRASS</b> | South African Mines Reportable Accidents Statistical System |
| <b>HCT</b>     | HIV counselling and testing  | <b>SAP</b>     | Summit Action Plan  |
| <b>HEG</b>     | Homogeneous Exposure Group   | <b>SAPS</b>    | South African Police Service                                |
| <b>HIV</b>     | Human Immunodeficiency Virus   | <b>SCM</b>     | Supply Chain Management                                     |
| <b>HR</b>      | Human Resources  | <b>SCSR</b>    | Self-contained self-rescuer                                 |
| <b>HRD</b>     | Human Resources Development  | <b>SETA</b>    | Sector Education and Training Authority                     |
| <b>HTC</b>     | HIV Counselling and Testing  | <b>Sil+TB</b>  | Silico-tuberculosis   |
| <b>IOM</b>     | Inspector of Mines   | <b>SLA</b>     | Service-level agreement                                     |
| <b>MBA</b>     | Master of Business Administration                                      | <b>TB</b>      | Tuberculosis  |
| <b>MDR-TB</b>  | Multi-drug-resistant tuberculosis                                      | <b>TMM</b>     | Trackless mobile machines                                   |
| <b>MHSA</b>    | Mine Health and Safety Act, 1996 (Act 29 of 1996)                      | <b>XDR-TB</b>  | Extremely drug-resistant tuberculosis                       |
| <b>MHSC</b>    | Mine Health and Safety Council   |                |   |
| <b>MHSI</b>    | Mine Health and Safety Inspectorate                                    |                |   |
| <b>MIGDETT</b> | Mining Industry Growth and Development Task Team                       |                |   |
| <b>MOSH</b>    | Mine Occupational Safety and Health                                    |                |   |
| <b>MPRDA</b>   | Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) |                |   |



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