ANNUAL REPORT-2006/07:

MINE HEALTH AND SAFETY INSPECTORATE

Mine Health and Safety Inspectorate

Annual Report 2006 – 2007

PREFACE

This document is a report by the Chief Inspector of Mines on health and safety at mines and the activities of the Mine Health and Safety Inspectorate, compiled as required by Section 49(1)(j) of the Mine Health and Safety Act, 1996 (Act No. 29 of 1996).

The Mine Health and Safety Inspectorate (MHSI), established in terms of the Mine Health and Safety Act, 1996 (MHSA) has the responsibility of protecting the health and safety of persons working at mines or affected by mining activities.

The Chief Inspector of Mines also has the responsibility of leading the tripartite structures formed in terms of the MHSA as the chairperson to the Mine Health and Safety Council (MHSC) and the Mining Qualifications Authority (MQA).

The MHSC is made up of representatives from the state, employee and employer organizations and was established for advising the minister on safety and health issues and promoting a health and safety culture in the mining industry. The MQA is a sector Education and Training Authority for the minerals and mining sector and is responsible for attending to the education and training needs of the mining industry. The activities of the two bodies are intricately intertwined with that of the MHSI and their account is captured in their respective reports.

1. GENERAL INFORMATION

1.1.Submission of the annual report to the executing authority

The Honourable Buyelwa Sonjica, MP
Minister: Department of Minerals and Energy
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 2006-07 reporting period. This report is in accordance with the requirements of Section 49(1)(j) of the Mine Health and Safety Act, 1996 (Act No.29 of 1996).

Yours sincerely

TE Gazi
Chief Inspector of Mines
Mine Health and Safety Inspectorate

1.2. Chief Inspector of Mines Overview /Executive Summary

Introduction

It is with great honour and pleasure to present the report on the state of health and safety in South African mines and the activities of the Mine Health and Safety Inspectorate (MHSI) for the financial year ended 31 March 2007.

Current Health and Safety Performance

In line with government's objective of achieving a better life for all South Africans, the Mine Health and Safety Inspectorate is responsible for ensuring that the mining operation's impact on the health and safety of employees and host communities are minimised.

At the *Mine Health and Safety Summit* of 2003 it was decided that it was imperative that the South African industry's safety statistics become comparable with international trends. An agreement was reached in 2005 between the employers, labour and the DME to implement new fatality milestones based on the actual fatality rates of Australia, the USA and Canada. This requires South Africa's safety statistics to decline by 20% per year. The milestones will be revised at the end of 2009.

For the first time in the history of the South African mining industry, there were less than 200 fatalities recorded during the reporting period, namely 199. However, the fatality rate stayed the same as in 2005, at 0.20 per million hours worked. The injury

rate for the industry as a whole, increased by 1.72% (4.06 to 4.13). In accordance with these milestones, the platinum industry did well by registering a drop of 21.43% in fatality rates (0.14 to 0.11). However, the gold sector still presents a problem, with an increase of 9.68% in fatality rates (0.31 to 0.34) and a 2.48% increase in injury rates (6.85 to 7.02). The higher gold rates can be attributed to the increasing risk due to the mining of remnants and the increasing depths. Fatality rates in coal mines increased by 23.08% (three actual fatalities more) and the injury rates by 38.51%. However, the higher injury rates can largely be attributed to under reporting of previous years that were identified and rectified in 2006. The analysis of the accidents according to casualty classification reveals that in 2006, 40% of accidents were classified as General. The General category includes accidents as a result of slipping and falling, burning and scalding, fall of material, etc. Falls of ground account for 27% and machinery and transportation and mining accidents, for 29% of all accidents. Miscellaneous accidents were responsible for 2% of the total and conveyance accidents and accidents involving machinery, responsible for 1% each.

Disaster-type Accidents

During the year five in-stope workers were fatally injured in a deep level gold mine in Gauteng. A magnitude 2.3 seismic event caused the multiple fatalities. The inquiry into this disaster is continuing. The occurrence of mine disasters is on the decrease, a phenomenon that has manifested for the past number of years. The decrease can be attributed to improved mine design, planning procedures and ore extraction methods. The MHSI have also launched extensive efforts to dramatically increase its capacity to conduct inquiries into such accidents, the result of these high level inquiries is that improved accident preventative measures have been introduced.

During the year amid the regression of rock related accidents from the previous year, there has been a significant decrease in rock related fatal accidents subsequent to the implementation of preconditioning and in-stope roof bolting. However, there is an alarming increase in fatal accidents categories other than rock related in the gold sector.

Illegal and criminal miners remain a large threat to employee's health and safety at the mines. Illegal miners access current operations through various means and threaten viability of certain operations. Illegal miners are armed and threaten management and employees as well as their families. SAPS intervention is playing an imperative role in providing safety and security. The MHSI, together with other DME branches are seeking remedies to address this problem.

Policy and Legislation

The Mine Health and Safety Inspectorate, as a state representative in the Mine Health and Safety Council's tripartite structures, has provided extensive advice to the Minister on the continued development of a revised regulatory framework for the industry. Acceptance of these recommendations led to the promulgation of new regulations and guidelines for mandatory codes of practice at mines. The following Mine Health and Safety Act regulations were completed during the reporting period:

- Under Water Mining
- Winding Engine Drivers and Onsetters
- Water Storage and Pumping
- Orepasses and Drawpoints

- Exit Certificate and Record of Hazardous Work
- Emergency Preparedness and Response
- Process Plants
- Regulation 28.12.A (Recognition of MQA Qualification for acceptance to Mine Overseer and Mine Managers Certificates of Competency)
- Flammable Gas Regulations

Guidelines for mandatory codes of practice approved during the reporting period are for:

- Diving operations procedure manual for Underwater Mining Operations
- Design, development/construction, safe operation and maintenance of draw points, tipping points, rock passes and box fronts
- Safe Operation of Monorail Systems
- Combat Rockmass Failure Accidents in Massive Mining Operations
- Emergency Preparedness and Response

Human Resource Development

The Implementation of the restructuring of the Mine Health and Safety Inspectorate is pending following a revision of the structure by a Steering Committee appointed by the Director General.

In spite of challenges, the MHSI has, continued to develop the skills and knowledge of its staff members. A total of 32 staff members within the MHSI underwent training during the year, comprising 17 managerial and administrative courses and 15 technical courses. Training is also geared towards addressing transformation issues that are a serious problem in the industry due to its job reservation legacy.

The MHSI has also embarked on the process of addressing the skills shortages and past imbalances within the mining sector with the following interventions: A Bursary Scheme whereby 8 students (5 females and 3 males) from previously disadvantaged areas were offered bursaries to study towards engineering, surveying and mining. To provide diplomats and graduates an opportunity to be employed and also to address the skills shortage within the MHSI, a Learner Inspectorate Programme is in the process of being developed. Various accredited training providers are to be requested to assist with this two-year internship programme.

Staffing

The establishment of the Mine Health and Safety Inspectorate provides for 326 posts and the vacancy level is currently at 21%. The high vacancy rate is mainly due to problems with recruiting representative mechanical and electrical engineers and also because newly created posts in Head Office are still awaiting the outcome of a job evaluation before advertising can commence.

Since 1 April 2006 the MHSI lost 39 staff members due to resignations, retirements, etc. The job reservation legacy of the past resulted in a serious challenge to meet employment equity targets as clearly reflected at the end of the reporting period where women accounted for only 31% of the total staff complement. Of these a number are in junior positions whilst males account for 69% and are mostly in senior

positions. Two women have been appointed Principal Inspectors in the Northern and Western Cape Regional offices of the MHSI.

The MHSI is well aware of the challenge to address imbalance of gender representation. The training and bursary scheme mentioned above is aimed at addressing this imbalance.

Small-scale Mining

Since the promulgation of the Mineral and Petroleum Resources Development Act, 2004 (Act No. 28 of 2004), the issuing of mining permits to SMME's has increased dramatically and has stretched the regulatory capacity of the Inspectorate to its limits. In the light of this development, the MHSI had to match this increasing activity by conducting more inspections on these kinds of operations and continue to offer training and assistance to small-scale miners. Most of these operations are concentrated in the diamond (other mines) sector, and are thus located in the Northern Cape and North West Regional operations.

HIV/AIDS and Occupational Health

The Department of Minerals and Energy, labour and the employers, together in partnership, are committed to combating the HIV and AIDS epidemic in the mining industry. It is for this reason, that the Mining Industry Tripartite HIV and AIDS Committee will observe the 2007 World AIDS Day by holding an event at a venue still to be announced on 1 December 2007.

The purpose of this event is to:

- encourage individuals/ mineworkers to become aware of their health status, including HIV status;
- reduce the further spread of HIV Virus in the mining industry and the associated communities;
- reduce and manage the impact of HIV and AIDS on all stakeholders;
- reduce and manage the economic impact of HIV and AIDS in the mining industry;
- and improve supportive systems to those living with HIV and AIDS

Most large mining houses have comprehensive HIV and AIDS programmes in place; they also promote continuous VTC (Voluntary Testing and Counselling) on all mines using several initiatives. Other mining groups utilise outside organisations for VTC and the supplying of treatment. Smaller mines, which do not always have such intensive programmes in place, utilise the Department of Health personnel to help with informal sessions.

A number of cases of Multi Drug Resistant (MDR) and Extremely Drug Resistant (XDR) TB have been reported in various Regions. TB injections remain a concern and the Thibela (TB Prevention) programme was introduced to mitigate the number of infections.

MQA skills development

The MQA actively support The *Broad Based Socio-Economic Empowerment Charter for the South African Mining Industry*. It focuses its resources on the Human Resources Development components of the Charter. It is also committed to providing the much needed and appropriate support to mining companies as they seek to meet the targets of the Charter.

In the preamble of the Charter, the scarcity of relevant skills has been identified and recognized as one of the barriers to entry into the mining sector by historically disadvantaged South Africans (HDSAs). The scarcity of skills issue has also been identified by the JIPSA (Joint Initiative for Priority Skills Acquisition) initiative. The MQA conducted empirical research to identify the scarce and critical skills for the Mining and Minerals Sector and the findings of the research are now guiding the various skills development strategies within the MQA.

MQA projects focus on EE and BEE transformation, upskilling employed workers, supporting unemployed workers, assisting with the transitional support for unemployed workers and finally assuring the quality of training and learning in the workplace.

In the past year stakeholders signed an "ABET Statement of Intent" to re-affirm their commitment to the development of previously disadvantaged South Africans.

All stakeholders are committed to create an enabling training and development environment, which will empower mine workers subscribing to the objectives of the Charter. That the MQA flagship programmes i.e. ABET, Bursary Scheme and the Graduate Development Programme, are well resourced, and have a significant impact in the sector by placing skills in the hands of a wide spectrum of mine workers.

TE GAZI
CHIEF INSPECTOR OF MINES

1.3. Legislative Mandate

The Mine Health and Safety Inspectorate was established in terms of the Mine Health and Safety Act, 1996 (Act No. 29 of 1996) for the purpose of executing the DME's statutory mandate of safeguarding the health and safety of mine employees and communities affected by mining operations.

1.4. 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 in the mining sector.

2. PROGRAMME PERFORMANCE

2.1. Service Delivery Objectives and Indicators

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

Outcomes/ Impact	Key Activities	Measures	Targets 2006/2007	Actual performance 31 March 2007
Strategic Objective 1. Actively contribute to sustainable development				
(a) Reduce impact of mining on public health and the environment	Survey Audit and Inspection of rehabilitation sites of ownerless and derelict mines	% of planned rehabilitation sites signed off % of rehabilitation sites audited	90 % of working agreement	Achieved
(b) Specific Occupational Health and Safety problems addressed	Identify, investigate and address specific health and safety problems, e.g. mine water, criminal mining and burning coal mines	Number of cases identified % of identified cases resolved/ addressed	100%	100% of cases are addressed
(c) Public Health and environmental hazards dealt with at source	(i) Record of decision regarding mining/prospecting authorisation processes	Turnaround time of applications	3 weeks	Time frames are being achieved
	(ii) Record of decision regarding environmental management plans (EMP)	Turnaround time of applications	3 weeks	Time frames are being achieved
	(iii) Reduce public risk exposure	% of mines with public risk management strategies	Identify 80% of sites with hazard implications Address 80% of these	100% of complaints received are being addressed
	(iv) Input to land usage development	Turnaround time of applications	3 weeks	Time frames are being achieved
Strategic Objective 2. Redress Past Imbalances and bridging the gap between the first and the second economy				
(a) Sufficient	(i) Influence MQA	% of National		From the 12

and appropriate skills and human resource development strategies for the mining sector	to address the needs of the mining industry	Skills Development Strategy Targets achieved	As per MQA business plan	NSDS indicators, the MQA exceeded 9 indicators and 3 not met. 2 indicators not met due to low number of WSP/ATRs not approved to do evaluation criteria not met 1 indicator not met due to the process that MQA is currently undertaking with regards to accreditation of institutions that manages the new venture creation qualification. Accreditation still underway
	(ii) Alignment of the Sector Skills Plan (MQA) for mineral programmes	Sector Skills Plan aligned and complete	As per MQA business plan	The MQA Sector Skills Plan was approved by MQA Board and the Dept of Labour in March 2006
Strategic Objective 3.Implement Minerals and Energy Economic Policies and Legislation				
(a) Alignment of DME State Owned Enterprises and Public Entities to government policy	Provide governance, oversight and support to MHSC (MRAC, MOHAC, SIMRAC, HR, Audit/Risk) and MQA (ETQA, SGB, SSP, Learner ships, Audit, Finance, Risk and HR)	% Compliance to shareholder compact	100%	Unqualified audit report achieved
Strategic Objective 4. Govern the Minerals and Energy Sectors to be Healthier, Safer and Cleaner				
(a)	(i) Finalise and	Promulgated		96% scheduled

Occupational diseases and injuries eliminated	promulgate MHSA regulations	MHSA Regulations	100%	for completion by end of financial year
	(ii) Monitor enforce compliance to MHSA and regulations	% of planned audits performed 20% reduction in injuries 20% reduction in fatalities 20% reduction of exposure to hazards causing occupational diseases	80% of planned audits performed 20% reduction in injuries 20% reduction in fatalities 20% reduction of exposure to hazards causing occupational diseases	102% achieved Increased by 1.72% 0% reduction (from 201 to 199) Collection and analysis of data a problem and progress in achieving required results slow
	(iii) Conduct investigations and /or inquiries	% of investigations and /or inquiries completed Average days for completion % of completed investigations and/ or inquiries done according to set guidelines	100% of investigations performed 3 months 100% compliance	Investigations 75% achieved Inquiries 59% achieved 3 months 100% compliance
	(iv) Conduct examinations for Certificates of Competency	Number of Certificates issued % of candidates examined	100% as required 100% as required	1609 certificates issued 6424 candidates assessed
	(v) Promotion of implantation of research results	Number of workshops held on research results	20	33
	(vi) Ensure compliance with international obligations ILO176	% Compliance in defined areas	100%	No report from ILO to say not compliant

	(vii) Participation in international forums and standard setting	Number of forums attended	20	21
	(viii) Monitor, track and provide data on occupational health and safety	Disseminate statistics	Monthly	Average of 937 statistical reports circulated monthly
	(ix) Promote health and safety in the mining sector	Number of promotions held (workshops, seminars, expos, etc)	Monthly newsletters and regional expos	Newsletters: 5674 Regional Expos: 1 Workshops & Conferences: 489
Strategic Objective 5. Review, Develop and Maintain appropriate structure, systems and Skills Resources				
(a) An effective and efficient MHSI	(i) Human resource development and capacity building, e.g. Bursary Scheme, Graduate development Programme, Identification of mentors, coaches and understudies, Intern Programme	Number of vacancies Staff turnover Number of bursars Number of mentors Number of coaches Number of understudies	10% vacancy rate 10% staff turnover DME EE Targets: African 65% White 27.68% Asian 1.59% Coloured 5.73% Male 55% Female 45% Disabled 2%	21% vacancy rate (due to the restructuring new posts created) 13.5% staff turnover 8 Bursars (5 female, 3 male) African 56.06% White 40.53% Asian 0.38% Coloured 3.03% Male 68.94% Female 31.06% Disabled 1.52%
	(ii) Align of systems between Branches	Database alignment	60%	0% (Not achieved due to a delay in upgrading of magic systems)
	(iii) Develop appropriate MIS	Occupational Hygiene database Occupational Medicine database Occupational	60%	URS developed but delay in implementation due to lack of resources

		Safety Web based data capturing		
(b) Alignment of processes, structures and systems to achieve objectives and mandates	(i) Review organisational architecture and structure	Alignment of structure to meet objectives	80%	Revised Head Office structure to be approved by DG
	(ii) Integration of OHS Inspectorates (DME, DoL and DOH)	Alignment of structure to meet objectives	As DoL (Lead agent) Implementation Plan	Discussions ongoing
(c) Develop and retain appropriate skills	(i) Develop a training programme	Improved skills profile	Develop training and development plan with set targets	MHSI HRD Programme has been approved by the DG in August 2006
	(ii) Develop retention and recruitment strategy	Monitor turnover rate	Develop and implement retention plan	HRD Programme includes a Bursary Scheme, Learner Inspector Programme as well as a Training & Development Plan for Inspectors

Table 2.1.1: Service Delivery Achievements

3. STATE OF SAFETY AND HEALTH AT MINES

3.1 Occupational Safety

In terms of the requirements of the MHSA regulations, employers must report certain accidents and dangerous occurrences that occur at a mine to the regional Principal Inspector of Mines. The data is then captured onto the South African Mines Reportable Accidents Statistical System (SAMRASS).

In 2006, for the first time in the history of mining in South Africa, less than 200 fatalities were reported in a calendar year. At 199 fatalities, the provisional fatality rate per million hours worked, was 0.20, on par with the previous year (201 actual fatalities).

Labour statistics

The Mineral Economics Directorate of the DME is responsible for the collecting and publishing of the labour figures for the South African Mining industry.

For the purposes of the Inspectorate, two types of labour figures are collected: the number of persons in service (used for the calculation of SIMRAC levies), and the number of persons at work (used for the calculation of rates). The number of persons at work excludes persons on sick or vacation leave, and therefore represents the actual number of workers at risk of being injured. For the reporting period, the total number of persons at work in South African mines was reported as 457 335 (further details in Annexure B), which reflect a 2.41% increase from the 446 555 reported in 2005. Between the years 2005 and 2006, labour in gold mines decreased by 3.58%, whilst the labour in platinum mines increased by 9.96%. Overall, the labour increased by 2.41%, mainly as a result of the substantial increase in labour in platinum and smaller mines, such as iron ore 6.47%, limestone 3.98%, clay 6.23% and other mines 5.04%. A detailed table of labour is available in Annexure B of this report.

3.1.1 Analysis of Accident Trends

At the *Mine Health and Safety Summit* of 2003 it was decided that it was imperative that the South African industry's safety statistics become comparable with international trends. An agreement was reached in 2005 between the employers, labour and the DME to implement new fatality milestones based on the actual fatality rates of Australia, the USA and Canada. This requires South Africa's safety statistics to decline by 20% per year. The milestones will be revised at the end of 2009.

3.1.1.1 Accident Trend Analysis by Region

Commodity	Fatalities					Injuries				
	Actual		Rates/million hours		Rates % change	Actual		Rates/million hours		Rates % change
	2005	2006*	2005	2006*		2005	2006*	2005	2006*	
Total (average)	**201**	**199**	**0.20**	**0.20**	**0**	**3985**	**4159**	**4.06**	**4.13**	**1.72**
Western Cape	2	0	0.12	0	-100	14	9	0.82	0.51	-37.8
Northern Cape	8	6	0.14	0.11	-21.43	90	56	1.58	0.98	-37.97
Free State	25	27	0.25	0.28	12	695	693	6.84	7.11	3.95
Eastern Cape	0	2	0.00	0.39	100	4	13	0.84	2.56	204.76
Kwazulu Natal	4	1	0.20	0.05	-75	22	17	1.12	0.80	-28.57
Mpumalanga	23	22	0.16	0.15	-6.25	285	360	2.02	2.47	22.28
Limpopo	10	9	0.14	0.12	-14.29	177	222	2.55	3.01	18.04
Gauteng	60	77	0.29	0.39	34.48	1107	1018	5.36	5.14	-4.1
North West	69	55	0.19	0.14	-26.32	1591	1771	4.36	4.54	4.13

***Provisional figures**

Table 3.1.1.1: Fatality and injury rates per million hours worked per region

To enhance the comparability of the South African mining accident statistics with other countries, it was decided in 2006 to use only rates per million hours worked when reporting on national figures. However, this presents a problem in the South African context, as mines are not legally required yet to report the actual number of hours worked by its labour. A conversion factor of 2 200 hours worked per person, was thus devised, on the assumption that each person works 49 weeks and 45 hours per week. This does not provide for overtime and is consequently not 100% correct.

Although fatality rates for the country as a whole stayed the same as in 2005 (0.20), regions where gold forms a large part of the production registered increases. The Free State increased by 12% and Gauteng by 34.48%, although Gauteng's injury rate dropped by 4.1%.

3.1.1.2 Accident Trend Analysis by Commodity

In accordance with the milestones, the platinum industry did well by registering a drop of 21.43% in fatality rates (0.14 to 0.11). However, the gold sector presents a problem, with an increase of 9.68% in fatality rates (0.31 to 0.34) and a 2.48% increase in injury rates (6.85 to 7.02). The higher gold rates can be attributed to the increasing risk due to the mining of remnants and the increasing depths.

Fatality rates in coal mines increased by 23.08% (three actual fatalities more) and the injury rates by 38.51%. However, the higher injury rates can largely be attributed to under reporting of previous years that were identified and rectified in 2006.

	Fatalities					Injuries				
	Actual		Rates		Rates %	Actual		Rates		Rates %
Commodity	2005	2006*	2005	2006*	change	2005	2006*	2005	2006*	change
Total	201	199	0.20	0.20	0	3985	4159	4.06	4.13	1.72
Coal	16	19	0.13	0.16	23.08	181	250	1.48	2.05	38.51
Gold	105	113	0.31	0.34	9.68	2338	2311	6.85	7.02	2.48
Diamonds	7	4	0.16	0.09	-43.75	69	44	1.55	1.02	-34.19
Copper	0	2	0.00	0.23	100	17	19	1.93	2.22	15.03
Chrome	6	2	0.35	0.12	-65.71	52	52	3.08	3.13	1.62
Iron-ore	2	2	0.12	0.11	-8.33	18	25	1.07	1.40	30.84
Granite DS	0	0	0.00	0.00	0	19	7	2.95	1.13	-61.69
Limestone	5	5	0.50	0.48	-4	29	17	2.90	1.63	-43.79
Platinum	47	40	0.14	0.11	-21.43	1155	1345	3.54	3.75	5.93
Clay	3	2	0.10	0.06	-40	49	30	1.68	0.97	-42.26
Other	10	10	0.17	0.16	-5.88	58	59	0.98	0.95	-3.06
* Provisional figures										

Table: 3.1.1.2: Fatality and injury rates per million hours per commodity, 2005 – 2006

Attached as Annexure B are the following:

Table 1 Persons at work per commodity
Table 2 Labour: Contractors v/s Establishment
Table 3 All Mines: Accident data 1984 - 2006
Graph 3.1.1.1: Gold Sector Fatality Rates v/s Milestones
Graph 3.1.1.2: Gold Sector Injury Rates
Graph 3.1.1.3: Platinum Sector Fatality Rates v/s Milestones
Graph 3.1.1.4: Platinum Sector Injury Rates
Graph 3.1.1.5: Coal Sector Fatality Rates v/s Milestones
Graph 3.1.1.6: Coal Sector Injury Rates
Graph 3.1.1.7: Other Sectors Fatality Rates v/s Milestones
Graph 3.1.1.8: Other Sectors Injury Rates
Graph 3.1.1.9: Diamond Sector Fatality Rates v/s Milestones
Graph 3.1.1.10: Diamond Sector Injury Rates
Graph 3.1.2.1: Accident Class Contribution
Graph 3.1.2.2: General Accidents Class Contribution
Graph 3.1.2.3: Falls of Ground Accident Rates
Graph 3.1.2.4: Machinery and Transportation Accident Rates

3.1.1.3 Accident Trend Analysis by Casualty Classification – all mines

	Fatalities					Injuries				
	Actual		Rates			Actual		Rates		
Commodity	2005	2006*	2005	2006*	Rates % change	2005	2006*	2005	2006*	Rates % change
Total (average)	**201**	**199**	**0.20**	**0.20**	**0**	**3985**	**4159**	**4.06**	**4.13**	**1.72**
Fall of ground	83	85	0.08	0.08	0	1103	1087	1.12	1.08	- 3.57
Machinery	9	15	0.01	0.02	100	266	274	0.27	0.27	0
Transportation & mining	48	46	0.05	0.05	0	767	873	0.78	0.87	11.54
General	43	34	0.04	0.03	- 2.5	1668	1772	1.70	1.76	3.53
Conveyance accidents	2	2	0.00	0.00	0	21	22	0.02	0.02	0
Electricity	2	6	0.00	0.01	0	37	27	0.04	0.03	- 25
Fires	1	0	0.00	0.00	0	10	11	0.01	0.01	0
Explosives & accessories	8	5	0.01	0.00	0	47	26	0.05	0.03	- 40
Heat sickness	2	0	0.00	0.00	0	15	2	0.02	0.00	- 100
Miscellaneous	3	6	0.00	0.01	0	51	64	0.05	0.06	20

Table: 3.1.1.3: Fatality and injury rates per casualty classification (rates per million hours worked), 2005 – 2006 * (Provisional figures)

The fatality rate for accidents involving machinery has increased substantially by 100% (0.01 to 0.02), as six more fatalities were reported. The injury rate for transportation and mining (0.78 to 0.87) has also shown a marked increase of 11.54%, with actual injuries increasing from 767 to 873. General accidents such as slipping and falling, fall of material/rolling rock, burning and scalding, falling in/from, is still the largest cause of injuries and increased once again by 3.53% in 2006 (1668 to 1772 actual injuries). However, a drop by 40% in accidents as a result of explosives and accessories, as well as a significant reduction in heat sickness (15 to 2), was noted.

3.2 Occupational Health

3.2.1 Occupational Hygiene

The mining industry has a large workforce, which is exposed to different contaminants like dusts, fibres, chemicals, noise, thermal stresses and radiation. Regulation 9.2(2) of the Mine Health and Safety Act, read with Section 12 of the MHSA, requires the employer to establish, maintain, and record occupational hygiene measurements.

The information below is collected to help assess the magnitude of the hygiene problems, so that corrective action can be planned and prioritised. This also shed light on whether current interventions are bearing fruit. The information is further utilised as lead indicators for the industry silicosis and noise milestones.

3.2.1.1. Occupational Hygiene Measurements

(a) Airborne Pollutants Exposures

COMMODITY	Number of Persons Exposed to Airborne Pollutants per Exposure Classification Band			% Persons Exposed to Airborne Pollutants per Exposure Classification Band		
	A	B	C	A	B	C
GOLD	1494	4238	206818	0.7	1.99	97.3
COAL	7730	1462	1246	74.06	14.01	11.94
CHROME	128	0	56	69.57	0	30.43
COPPER	527	0	34	93.94	0	6.06
DIAMONDS	0	23	0	0	100	0
IRON-ORE	0	76	0	0	100	0
MANGANESE	181	3	0	98.37	1.63	0
PLATINUM	126	110	2267	5.03	4.39	90.57
OTHER	2243	514	2951	39.29	9.00	51.69
TOTAL	12429	6426	213372	5.35	2.77	91.88

Table 3.2.1.1 (a): Exposures to Airborne Pollutants per Exposure Classification band per commodity.

Exposure Classification Band:

A = Exposures ≥ the OEL or mixtures of exposures ≥1

B = Exposures ≥ 50% of the OEL and < OEL or mixtures of exposures ≥ 0,5 and <1

C = Exposures ≥ 10% of the OEL and < 50% of the OEL or mixtures of exposures ≥ 0, 1 and < 0, 5

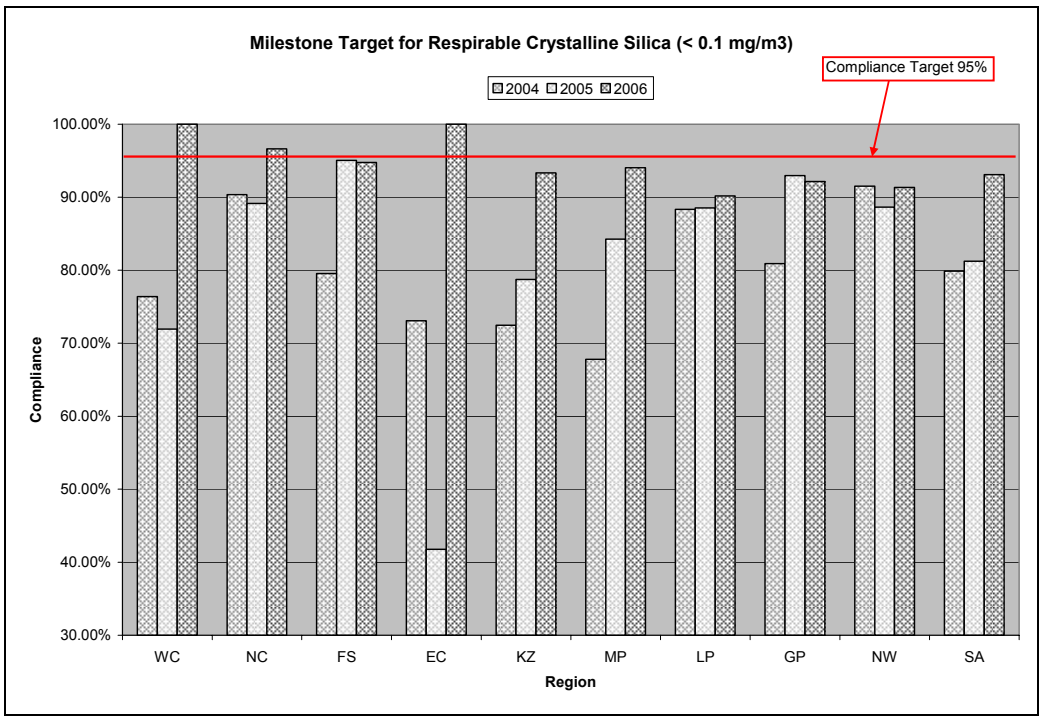
The total numbers of people exposed to A and B classification (5.35% and 2.77%) bands have come down during the current year (15.07% and 25.72% in 2005). This can be attributed to better awareness by the mines due to the workshops and information sharing around the industry milestones. It appears that the message is filtering through to all aspects of monitoring.

REGION	Number of Persons Exposed to Airborne Pollutants per Exposure Classification Band			% Persons Exposed to Airborne Pollutants per Exposure Classification Band		
	A	B	C	A	B	C
WESTERN CAPE	0	16	1613	0.00	0.98	99.02
NORTHERN CAPE	298	0	30	90.85	0	9.15
FREE STATE	448	530	52	43.5	51.46	5.05
EASTERN CAPE	0	20	1017	0.00	1.93	97.98
KWAZULU-NATAL	87	16	21	70.16	12.9	16.94
MPUMALANGA	8015	1822	1177	72.77	16.54	10.69
LIMPOPO	1476	116	132	85.61	6.73	7.66
GAUTENG	1945	3344	206954	0.92	1.58	97.51
NORTH WEST	160	562	2376	5.16	18.14	76.76
TOTAL	**12429**	**6426**	**213372**	**5.35**	**2.77**	**91.88**

Table 3.2.1.1 (b): Exposures to Airborne Pollutants per Exposure Classification band per Region

Very few samples were collected in some regions as indicated in Table 3.2.1.1. above. Measures will have to be put in place to ensure that all mines comply

with reporting requirements



Graph 3.2.1.1: Achievement against milestones for respirable crystalline silica based on statutory returns received from mines

The Cape regions have reached the required target of 95% compliance. This is attributed to the low silica content in these regions. All the regions have been showing an improvement overall, except the Free State and Gauteng, where there was a slight drop as compared to 2005. Both these regions have deep level gold mines, where control measurements are not easy to implement. The national figures have shown an improvement and the target should be achieved by 2008.

(b) Noise Exposures

COMMODITY	Number of Persons Exposed to Noise per Exposure Classification Band			% Persons Exposed to Noise per Exposure Classification Band		
	A	B	C	A	B	C
GOLD	5458	39500	23929	7.92	57.34	34.74
COAL	2	19609	5674	0.01	77.55	22.44
CHROME	396	7022	339	5.11	90.52	4.37
COPPER	9	4239	915	0.17	82.1	17.72
DIAMONDS	0	322	606	0	34.7	65.3
IRON-ORE	104	2894	832	2.72	75.56	21.72
MANGANESE	0	17	86	0	16.5	83.5
PLATINUM	16622	54981	2538	22.42	74.16	3.42
OTHER	70	6358	2228	0.81	73.45	25.74
TOTAL	**22661**	**134942**	**37147**	**11.64**	**69.29**	**19.07**

Table 3.2.1.2 (a): Exposures to Noise per Exposure Classification band per Commodity

Exposure Classification Band:

A = Exposures ≥ 105 dB $L_{Aeq, 8h;}$

B = Exposures ≥ 85 ≤105 dB $L_{Aeq, 8h;}$
C = Exposures ≥ 82 dB $L_{Aeq, 8h}$ and < 85 dB $L_{Aeq, 8h;}$

A great reduction in the number of category A exposures is recorded compared to 2005 for many commodities. However, the total almost doubled (11.64 compared to 5.94 in 2005). This can be attributed to the new sampling strategies for noise, as promulgated on 14 December 2005. Whereas in the past all categories were reported annually, starting in 2006 only A & B categories are reported per year. The C categories are reported every second year.

REGION	Number of Persons Exposed to Noise per Exposure Classification Band			% Persons Exposed to Noise per Exposure Classification Band		
	A	B	C	A	B	C
WESTERN CAPE	2	42	72	1.72	36.2	62.1
NORTHERN CAPE	0	1722	1723	0	49.99	50.01
FREE STATE	0	2709	809	0	77	23
EASTERN CAPE	0	3	14	0	17.65	82.35
KWAZULU/NATAL	36	2159	914	1.16	69.44	29.4
MPUMALANGA	2949	25463	6094	8.55	73.79	17.66
NORTHERN	7785	19212	2291	26.58	65.6	7.82
GAUTENG	3641	30148	23259	6.38	52.85	40.78
NORTH-WEST	8248	53484	1971	12.95	83.96	3.09
TOTAL	**22661**	**134942**	**37147**	**11.64**	**69.29**	**19.07**

Table 3.2.1.3(b): Exposures to Noise per Exposure Classification band per region

(c) Thermal Stress Exposure

COMMODITY	Number Persons Exposed to Heat per Exposure Classification Band				% Persons Exposed to Heat per Exposure Classification Band			
	A	B	C	D	A	B	C	D
GOLD	139	26883	13634	7674	0.29	55.62	28.21	15.88
COAL	0	1104	4529	255	0	18.75	76.92	4.33
CHROME	52	4	485	4392	1.05	0.08	9.83	89.03
COPPER	786	545	0	1693	25.99	18.02	0	55.99
DIAMONDS	102	0	162	0	38.64	0	61.36	0
IRON-ORE	119	0	1390	1315	4.21	0	49.22	46.57
MANGANESE	0	117	2877	369	0.00	3.48	85.55	10.97
PLATINUM	1052	5052	10787	39403	1.87	8.97	19.16	70
OTHER	216	2222	2305	3067	2.77	28.45	29.51	39.27
TOTAL	**2466**	**35927**	**36169**	**58168**	**1.86**	**27.07**	**27.25**	**43.82**

Table 3.2.1.3 (a): Exposures to Heat per Exposure Classification band per commodity

Heat Stress Exposure Classification Band:
A = WB > 32,5 °C or DB > 37,0 °C or Globe temperature > 37,0 °C
B = 29.0 >WB≤ 32,5 °C and DB ≤ 37,0 °C Globe temperature: as for DB
C = 27, 5 >WB≤ 29, 0 °C and DB ≤ 37, 0 °C Globe temperature: as for DB

Tables 3.2.1.3 (a) and (b) shows that 1.86% of workers are in category A. This is not a big shift from 2005 (0.75%). The data also reflect the highest concentration of exposed workers as being in the North-West and Limpopo regions. These results

may not be a true reflection of conditions on the ground. Thermal stresses are unfortunately not receiving the same attention as airborne pollutants and noise at the moment. The Inspectorate will increase efforts in this regard and ensure that more accurate reporting is achieved for all stressors in the future.

REGION	Number Persons Exposed to Heat per Exposure Classification Band				% Persons Exposed to Heat per Exposure Classification Band			
	A	B	C	D	A	B	C	D
WESTERN CAPE	0	995	11	431	0	69.24	0.77	29.99
NORTHERN CAPE	119	542	4427	369	2.18	9.93	81.13	6.76
FREE STATE	0	2807	1425	1214	0	51.54	26.17	22.29
KWAZULU-NATAL	0	0	531	32	0	0	94.32	5.68
MPUMALANGA	139	8717	5278	5632	0.7	44.1	26.7	28.49
LIMPOPO	1156	739	475	7552	11.65	7.45	4.79	76.11
GAUTENG	0	17075	13439	6855	0	45.69	35.96	18.34
NORTH-WEST	1052	5052	10583	36083	1.99	9.57	20.05	68.38
TOTAL	**2466**	**35927**	**36169**	**58168**	**1.86**	**27.07**	**27.25**	**43.82**

Table 3.2.1.3(b): Exposures to Heat Stress per Exposure Classification band per Region

COMMODITY	Number Persons Exposed to Cold Stress per Exposure Classification Band				% Persons Exposed to Cold Stress per Exposure Classification Band			
	A	B	C	D	A	B	C	D
GOLD	0	422	286	0	0	59.6	40.4	0
COAL	69	129	3336	244	1.83	3.41	88.3	6.46
CHROME	0	0	61	61	0	0	50	50
DIAMONDS	0	0	667	0	0	0	100	0
IRON-ORE	0	691	0	0	0	100	0	0
MANGANESE	0	0	897	0	0	0	100	0
PLATINUM	0	0	533	0	0	0	100	0
OTHER	343	114	1604	239	14.91	4.96	69.74	10.39
TOTAL	**412**	**1356**	**7384**	**544**	**4.25**	**13.99**	**76.16**	**5.61**

Table3.2.1.3(c): Exposures to Cold Stress per Exposure Classification band per commodity

Cold Stress Exposure Classification Band:
A = Temperature $\leq$ - 30, 0 °C
B = 5, 0 °C $\geq$ Temperature $\leq$ - 30, 0 °
C = Temperature > 5, 0 °C

REGION	Number Persons Exposed to Cold Stress per Exposure Classification Band				% Persons Exposed to Cold Stress per Exposure Classification Band			
	A	B	C	D	A	B	C	D
NORTHERN CAPE	6	691	1184	0	0.32	36.74	62.95	0
FREE STATE	0	16	505	0	0	3.07	96.93	0
EASTERN CAPE	0	0	17	0	0	0	100	0
KWAZULU-NATAL	62	22	1643	34	3.52	1.25	93.3	1.93
MPUMALANGA	69	205	3511	354	1.67	4.95	84.83	8.55
LIMPOPO	32	0	191	132	9.01	0	53.8	37.18
GAUTENG	243	422	272	0	25.93	45.04	29.03	0

NORTH WEST	0	0	61	24	0	0	71.76	28.24
TOTAL	**412**	**1356**	**7384**	**544**	**4.25**	**13.99**	**76.16**	**5.61**

Table 3.2.1.3(d): Exposures to Cold Stress per Exposure Classification band per region

General

1. Collection of data remains a challenge. Not all the mines submit their returns in time or in the accepted formats.
2. Workshops are held within the industry, where these problems are addressed and the correct reporting format is explained.
3. Audits are conducted on the mines to ensure that sampling is carried out in the prescribed manner.
4. The submission shortfalls will be addressed by the implementation of the integrated information management system.
5. During the year new Occupational Exposure Limits (OELs) for the industry where promulgated.

3.2.2 Occupational Medicine

Annual Medical Report

In terms of Section 16 of the Mine Health and Safety Act, Act 29 of 1996, every Occupational Medical Practitioner at a mine must compile an Annual Medical Report covering employees at that mine, giving an analysis of the status of the mentioned employee's medical conditions as far as occupational diseases are concerned, based on records of medical surveillance.
For the reporting period 226 mines have submitted their Annual Medical Reports.
Collaboration between the different stakeholders is once again highlighted and needs to be upheld in order to make a difference in the prevention/elimination of occupational diseases in the mining industry. This then forms part of set milestones for the year 2013.

The total medical examinations that was done for the reporting period:

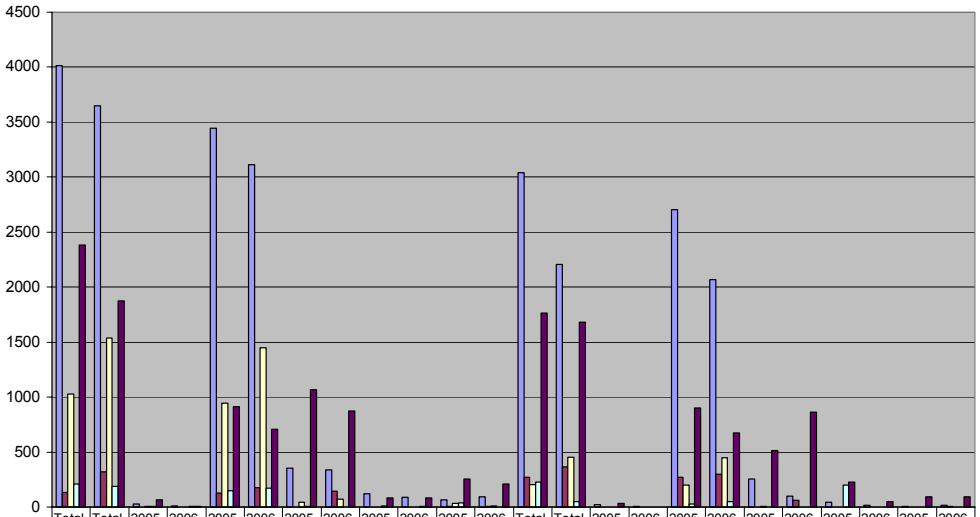
	2005	2006	Diamonds		Gold		Platinum		Coal		Others	
			2005	2006	2005	2006	2005	2006	2005	2006	2005	2006
Employees	340163	375599	14243	9654	126370	132444	77600	116601	66233	47998	55717	68902
Initial Medial Examinations	125544	157828	3132	2946	28240	47326	47188	55509	21988	17973	24996	34074
Periodic Medical Examinations	253698	265450	8041	4811	108768	104011	57297	90909	43771	32471	35821	33248
Exit Medical Examinations	51879	54195	2813	4013	20976	16215	15014	22418	6982	5867	6094	8664

The above table represents the total of all medical examinations that were done and reported on, as per various commodities. This information was gathered from the annual medical reports received for the reporting period.

Occupational diseases as reported in the annual medical report:

DISEASES	SUBMITTED												CERTIFIED											
	2005	2006	Diamonds		Gold		Platinum		Coal		Others		2005	2006	Diamonds		Gold		Platinum		Coal		Others	
	Total	Total	2005	2006	2005	2006	2005	2006	2005	2006	2005	2006	Total	Total	2005	2006	2005	2006	2005	2006	2005	2006	2005	2006
Pulmonary Tuberculosis	4015	3648	30	12	3442	3115	355	338	121	88	67	95	3039	2204	23	3	2705	2067	257	102	46	15	8	17
Asbestos Related Lung Cancer	1	5	0	0	1	1		3		1			0	1		1	0	0						
Chronic Obstructive Pulmonary Disease		8				4				1		3		0				0						
Cardiorespiratory Tuberculosis	10		0		1	0			9				194				0				194			
Dysbarism		31				31								31				31						
Noise Induced Hearing Loss	2380	1875	66	3	911	705	1065	874	85	83	253	210	1763	1681	34	2	899	675	513	861	225	47	92	96
Obstructive Airways Disease	208	186	4	8	148	169	8	1	11	7	37	1	225	52	0	0	25	51	1		199	1		
Asthma	9		0		6						3		7				6						1	
Coal Workers Pneumoconiosis	142	29	0		0		90		48	29	4	0	14	5					2		12	5		
Asbestosis	62	34	7		3	1	37	12	3	4	12	17	32	10	0		1	1	29	7	1	1	1	1
Hard Metal Pneumoconiosis		149				149								43				43						
Occupational Asthma	5	21	0	10	1	6	2				2	5	1	3		0	1	1	0					2
Occupational Lung Disease	59	23	3		52	23			0		4		23	5	0		22	5			1			
Chronic Dermatitis		1				1								0										
Progressive Systemic Sclerosis	1	1	0		1	1							0	0			0							
Platinum Salt Sensitivity	4	4	0				4	4					4	3					4	3				
Pneumoconiosis	4	7	0		4							7	1	0			1							
Repetative Strain Injuries	4	26	4	1								25	0	0	0									
Silico-Tuberculosis	132	320	0		126	175		141	1	1	5	3	272	363			272	299		60	0			4
Silicosis	1031	1536	5		944	1450	45	74	2	2	35	10	207	452	0		201	450	5	2	0		1	
Stannosis	1	0	0		1							0	0	0			0				0			
Hand-Arm Vibration Syndrome	1	1	0						1	1			1	1	1							1		
GRAND TOTAL	**8069**	**7905**	**119**	**34**	**5641**	**5831**	**1606**	**1447**	**281**	**217**	**422**	**376**	**5783**	**4854**	**58**	**6**	**4133**	**3623**	**811**	**1035**	**678**	**70**	**103**	**120**

OCCUPATIONAL DISEASES CAPTRUED FROM ANNUAL MEDICAL REPORTS: 2005 AND 2006



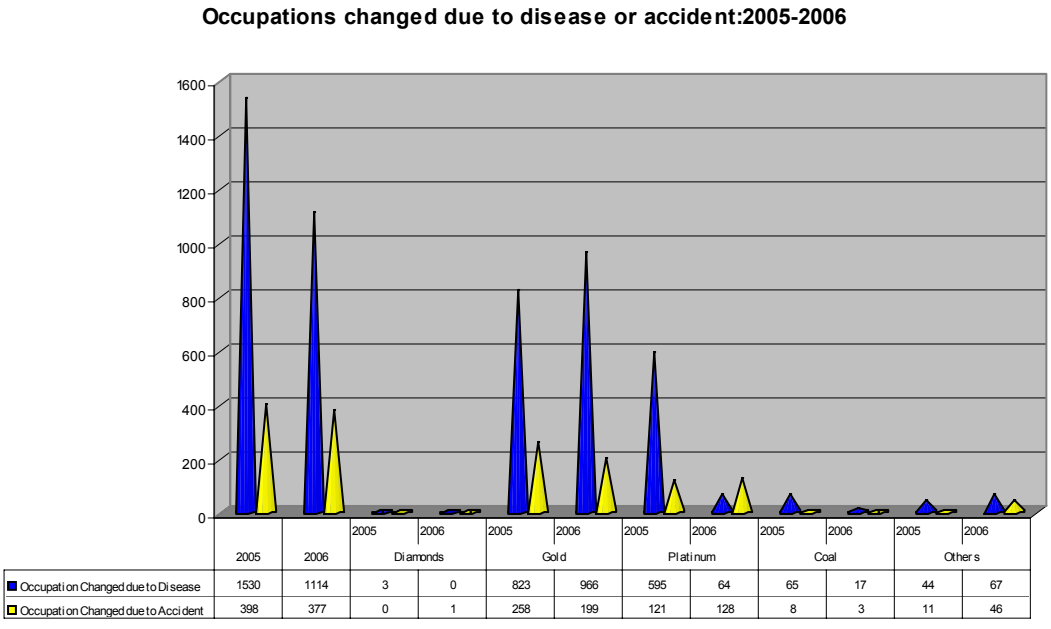
	Total 2005	Total 2006	2005 Diamonds	2006 Diamonds	2005 Gold	2006 Gold	2005 Platinum	2006 Platinum	2005 Coal	2006 Coal	2005 Others	2006 Others	Total 2005	Total 2006	2005 Diamonds	2006 Diamonds	2005 Gold	2006 Gold	2005 Platinum	2006 Platinum	2005 Coal	2006 Coal	2005 Others	2006 Others
	SUBMITTED												CERTIFIED											
Pulmonary Tuberculosis	4015	3648	30	12	3442	3115	355	338	121	88	67	95	3039	2204	23	3	2705	2067	257	102	46	15	8	17
Silico-Tuberculosis	132	320	0		126	175		141	1	1	5	3	272	363			272	299		60	0			4
Silicosis	1031	1536	5		944	1450	45	74	2	2	35	10	207	452	0		201	450	5	2	0		1	
Obstructive Airways Disease	208	186	4	8	148	169	8	1	11	7	37	1	225	52	0	0	25	51	1		199	1		
Noise Induced Hearing Loss	2380	1875	66	3	911	705	1065	874	85	83	253	210	1763	1681	34	2	899	675	513	861	225	47	92	96

Disease rate per 1000 persons at work:

	SUBMITTED 2005	SUBMITTED 2006	CERTIFIED 2005	CERTIFIED 2006
PULMONARY TUBERCULOSIS	8,99	7,98	6,80	4,82
SILICO TUBERCULOSIS	0,29	0,69	0,61	0,79
SILICOSIS	2,31	3,36	0,46	0,99
OBSTRUCTIVE AIRWAY DISEASE	0.46	0,41	0,50	0,11
NOISE INDUCED HEARING LOSS	5,33	4,11	3,95	3,67

Figure: 3.2.2.1: Occupation changes due to diseases or accidents:

	2005	2006	Diamonds		Gold		Platinum		Coal		Others	
			2005	2006	2005	2006	2005	2006	2005	2006	2005	2006
Occupation Changed due to Disease	1530	1114	3	0	823	966	595	64	65	17	44	67
Occupation Changed due to Accident	398	377	0	1	258	199	121	128	8	3	11	46



The above graph shows the total of employees that had to change their employment due to an accident or an occupational disease. This means that some employees had to move from underground to surface employment as a result of the accident and/or the illness.

South African Mines Occupational Diseases Database (SAMODD)

The objective of SAMODD is to monitor prevalence and occurrences of occupational diseases in the SA mining industry together with morbidity and mortality of diseases SAMODD data is collected from the mines in either hard copy or electronic format.
As a result of under reporting, the current data does not indicate a proper representation of health status of current miners and health trends. The Department of Minerals and Energy is currently awaiting promulgation of regulations, which will enforce reporting from all mines.

Medical Appeals

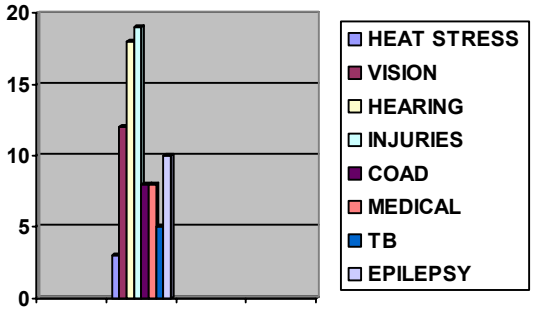
In terms of Section 20 of the Mine Health and Safety Act, Act 29 of 1996, an employee can appeal against any decision of unfitness or any findings contained in an exit certificate. The following medical appeals were lodged for the reporting period:

HEAT STRESS	3
VISION	12
HEARING	18
INJURIES	19
COAD	8
HYPERTENSION/DIABETIS	8
TUBERCULOSIS	5
SILICOSIS	0
OTHER DISEASES	0
PNEUMOCONIOSIS	0
EPILEPSY	10
TOTAL	83

The decision made by the Medical Inspector on appeals is indicated in the table below.
From a total of 83 appeals, which were all found to be unfit for any occupation on a mine, the following was found/reclassified:

FIT FOR SURFACE AS WELL AS UNDERGROUND	9
FIT FOR SURFACE WORK ONLY	20
UNFIT	30
COMPENSATION MATTERS	24

The 24 cases for compensation matters were referred to the Workmen's Compensation Commissioner.



The above table indicates that the majority of appeals are due to injuries sustained whilst on duty and hearing loss. Chronic obstructive airway disease is in third place.

4. ACTIVITIES OF THE INSPECTORATE

4.1 National Overview

The Inspectorate is responsible for regulating health and safety in the mining sector and its activities entails monitoring of operations by conducting audits and inspections, investigating accidents and health related occurrences, enforcing of legal requirements, processing of land use applications, conducting examinations for industry qualifications, etc. The head office components are responsible for development of policy and legislation, offering specialist support to the regions, administrative and technical support and training.

Increased activity is experienced in the mining industry as a result of better commodity prices and the government's strategy of opening up opportunities for new entrants amongst others. This requires the Inspectorate to also increase its resources in order to deal with the new challenges adequately. The increase in both the demand for residential land and mining permits and rights have a tremendous effect on the work load of the inspectorate as this results in increased land-use applications coupled with complaints by communities due to residential and mining areas getting closer to one another.

During the reporting period, the MHSI staff managed to achieve most of the targets that were set. With respect to the head office functions, the streamlining of activities is being improved through the restructuring and it is envisaged that notable results with respect to policy and legislation matters, strategy implementation, employment equity, skills development, etc will be realised in the future. Retaining skills and attracting new recruits continues to be a problem.

4.2 Regional Operations-Coal

4.2.1. Deputy Chief Inspector of Mine's Overview

4.2.1.1. General

The Chief Directorate consists of KwaZulu-Natal, Limpopo and Mpumalanga regional offices. The labour force is approximately 94 000 or 20% of the labour force in the mining sector. The major commodity mined is coal, however platinum group metals, gold, copper and industrial minerals are also mined.

4.2.1.2. Occupational Health

The most prevalent diseases in the coal sector were pulmonary tuberculosis at 1.56 per thousand employees; noise induced hearing loss at 1.47 and coal workers pneumoniosis at 0.51 per thousand employees.

In the coal sector, about 0.01% or 2 employees are exposed to noise levels greater than 105 dB. While about 19609 or 77,55% of the employees are exposed to noise levels greater than 85 dB but less than 105 dB. Lastly, 5674 employees or 22,44% are exposed to noise levels less than 82 dB. The strategy will be to eliminate the number of employees exposed to noise levels greater than 105 dB and at less than half the number of employees exposed to noise levels greater than 85 dB but less than 105 dB.

The compensation paid out by the coal sector for occupational diseases excluding noise induced hearing loss was R1.53 million and R1.98 million in 2005 and 2006, respectively. (*Information from Medical Bureau of Occupational Diseases*).

4.2.1.3. Accidents

It is with regret to report the loss of 19 employees in the coal sector for the calendar year of 2006. The corresponding fatality rates per million hours worked was 0.16 and 0.13 in 2006 and 2005 respectively. The coal sector fatality rate regressed by 20% year-on-year. This implies that the coal sector did not achieve the national mandate of reducing the fatality rate by at least 20% year-in-year.

Fatal Accidents Classification

Year	Falls of Ground	Mine Equipment	General	Total
2006	3	12	4	19
2005	4	10	2	16
2004	4	13	3	20
2003	6	12	2	22
2002	6	6	7	19

The number of people killed due to falls of ground accidents went down from 4 to 3 between 2005 and 2006. Equipment or machinery accidents have been a significant risk factor in the coal sector since 2005. The number of people killed due to machinery has remained static. Three people were killed and one injured when an 80-ton truck drove over a light delivery vehicle at Kleinkopje Colliery.

To minimise further loss of life of personnel due to the collisions between heavy earth mining machinery and other vehicles, the MHSI decided to issue an instruction to mines to review the risk, health and safety management system. A further challenge is that enforcing the Mandatory Code of Practice for Self-Propelled Mobile Machinery is not achieving the desired results. The Inspectorate will have to focus more on implementation of these codes of practice.

4.2.1.4. Challenges

Currently the enforcement and audit strategies are based on lagging indicators such as level of occupational diseases, compensation, injuries and fatalities. It is important for Inspectors to start utilising leading indicators within the next two years. This will enhance the work of the Inspectorate by provocatively focusing on high-risk mines and areas before an indication occurs as opposed to the current *Mondas Operande*. This will also assist the total sector in achieving the national targets sooner than 2013.

Most regional offices have experienced a high vacancy rate. The same remarks are applicable particularly in the KwaZulu-Natal mining sector. The smaller mining companies are faced with daunting rates of attracting and retaining electrical and mechanical engineers. The bigger mining companies can afford to pay premium salaries for these skills, while the smaller companies find it difficult to retain these skills.

There were 3 incidents where 8 illegal miners were killed in the Barberton area. The bigger challenge is the risk posed by illegal miners in the health and safety on legitimate operations. The illegal operations will have to be strategically converted to small-scale mines whilst others will have to be rehabilitated. Across all regions there were reports of drownings in borrow pits of persons and livestock. The Department of Transport has been requested to ensure that they communicate with the surrounding communities and adequately rehabilitate the sites.

4.2.1.5. Achievements

Congratulations to Greenside Colliery for achieving the Safety Achievement Flag for Collieries 2006/2007 as well as Fairview Mine for achieving the Safety Achievement Flag for Shallow to Deep Gold/Platinum Mines for 2006/2007. Middelburg Mining achieved 5 million fatality free shifts (FFS), Grootegeluk Coal Mine achieved 4 million free fatality shifts and, Brandspruit and Optimum Colliery each achieved 3 million fatality free shifts.

The third category of achievement were Glisa Colliery for achieving 16 000 fatality free production shifts (FFPS) followed by Kriel North West Shaft 13 000 FFPS. South Witbank Colliery achieved 9 000 FFPS. There were four Collieries that achieved 7 000 FFPS, 2 achieved 5 000 FFPS and 5 achieved 3 000 FFPS and 2 and 1 mines achieved 2 000 and 1 000 FFPS respectively.

4.2.1.6. Concluding remarks

The coal-mining sector will have to put strategies in place to eradicate pulmonary tuberculosis and noise induced hearing loss. The coal sector failed to achieve a reduction of fatality rates by at least 20% per annum. This implies that the coal sector will have to reduce the fatality rate by at least 43% in 2007. In 2005, the sector was able to achieve the lowest fatality rates and this goes to show that it is achievable if we focus on the end goal of eliminating occupational diseases, injuries and fatalities.

The contribution made by the management and staff members in the regional offices must be commended. We had our challenges and we rose to the occasion.

4.2.2 Regional Report KwaZulu-Natal

4.2.2.1 Overview of the Region

The year 2006 was relatively a better year compared with 2005 in terms of serious and fatal injuries sustained by mine employees in the region there was a reduction of over 50%. Little progress has been made in the small scale or informal mining sections but a massive challenge still lies ahead for us in ensuring that required services are provided to this sector and that it is properly and effectively regulated.

Major mining operators have either been scaled down or closed. Smaller or medium size operations are on the increase resulting in challenges in terms of compliance requirements and enforcement. Most of the operators appear to have less adequate technical expertise and insufficient financial resources allocated for health and safety issues, which is negatively impacting on the health and safety of mine employees in the region.

The new Mineral and Petroleum Resources Development Act has provided a platform whereby the inspectorate meet with prospective operators in order to make them aware of the requirements of the Mine Health and Safety Act prior to commencement of mining operations. There is an initiative to organize small and medium size operators into a form of associations in order to share expertise, experience and resources; however there has been little progress in this area compared to 2005.

A zero tolerance approach is still the major regional office strategic approach to ensure compliance with health and safety measures and reduction or eradication of accidents and occupational diseases in identified health and safety hot spots. In addition to this approach more focus will be given to auditing of Health and Safety management systems.

4.2.2.2 Inspections and Audits

Category	Inspections	Audits
Planned	305	126
Actual	215	91
% Compliance	61%	72%

Mine Safety

The following is a brief summary, progress and challenges:

All the coal mines and most of the quarries and brickworks audited are showing good performance in terms of audits and inspections conducted. Newly commenced coal mines appear to be struggling but have shown some commitment in ensuring compliance improvement.

Other challenges include availability of rock engineers in the region in dealing with rock engineering aspects of mining especially with the new slope stability codes of practice, this has however improved slightly.

Mining Equipment

The audit topics considered were mainly surface audits, underground audits, trackless mobile machinery and statutory inspections.

The following is a brief summary, progress and challenges:

The main challenge is still related to the lack of technical expertise (scarcity of artisans and engineers in the region, which appears to be a national challenge), skills and funds by small mine operators in the region.

A lack of training centres still poses a challenge in terms of skills development especially of scarce engineering skills required by the mines in the region. Mines identified to be having lower compliance scores have been given more attention in order to have them back on track. There is some improvement in this regard.

There has been some improvement in mining equipment personnel within the regional inspectorate. Inspectorate achievement of operational plans and also focusing in priority areas is limited by the current staff complement and availability. Increase in staff complement will go a long way in ensuring achievement of the regional operational objectives.

Occupational Hygiene

The audit topics considered were mainly on noise, illumination, airborne pollutants, thermal stress and hazardous chemical substances.

The following is a brief summary, progress and challenges:

There has been a general improvement in occupational hygiene issues except submitted occupational hygiene returns, which need parallel sampling to confirm some of the results which seem not to match the actual conditions on the mine. The linking of occupational hygiene exposures to medical surveillance records has improved in some mines, more improvement is expected as a result of newly established occupational health working groups, which include mine management, employee representatives, Occupational Medical Practitioners and hygienists.

Appointment of Occupational Hygienists in smaller operations has improved in the region. Occupation Hygiene is still a scarce skill taking into account legislative requirements and availability of these professionals.

Occupational Medicine

There is a marked improvement generally compared to the previous years. There are still sections that need improvement like occupational health training, appointments, health and safety policies and comprehensive occupational health promotion programmes that still need to be developed at the mines. Scarcity of occupational medicine professionals or medical doctors qualified in occupational medicine still poses a challenge in the achievement of occupational health milestones or improvement of health conditions of mine employees.

Reasons for non-achievements of Targets:

There are a number of challenges that we faced in the 2006/2007 financial year that resulted in some of the targets not being achieved:

- Relocation of the regional office which resulted in a number of inspectors taking early retirement, logistical issues relating to the relocation;
- Vacant posts for some of the inspectors in the region;
- No targets adjustments were made in the light of situational changes, these targets were based on the original targets based on full staff complement; and
- Targets were also based on the regional offices' previous location, which has changed in the last quarter of the year.

4.2.2.3 Total Accidents Reported

Fatal Accidents	**2**
> 14 day reportable accidents	**26**
1 to 13 day reportable accidents	**2**

It is surmised that the mines do not revealed all accidents by reporting it to this office. This office has started to audit mine records to establish compliance.

There has been a steady decrease in the actual number of accidents in the region for the last six years. Year 2002 and 2006 being relatively the better years with the least number of fatal accidents and year 2003 being the worst year. There has been more than 50% improvement in year 2006 compared to 2005 especially, with fatal accidents remaining reduced to 2 from 4 in 2005 and injuries showing an increase of 13% from the previous year in terms of numbers. Most contributors to the causes of accidents were transport and mining equipment related accidents, conveyor belts and falls of ground accidents.

A number of factors appear to have contributed to a non-significant decrease in the number of accidents. These include less technical expertise and sufficient financial resources by small operators, inadequate training, inadequate staffing especially supervisors and engineers and other technical staff and high labour turnover negatively affecting retention of experienced personnel within the organizations.

4.2.2.4 Investigations and Inquiries

	Investigations	**Inquiries**	**Total**
Initiated	**26**	**2**	**28**
Completed	**24**	**2**	**26**
% Completed	**92**	**100**	**92**

Most of the accident investigations and inquiries have been completed. Most delays experienced are as result of logistical problems regarding availability of legal representatives and other issues.

4.2.2.5 Disaster Type Accidents

No disaster type accidents occurred during the reporting period

4.2.2.6 Statutory Notices

Section 54 notices	Section 55 Notices
49	6

A total of 49 section 54 and 6 section 55 Notices have been issued to mines respectively. Issues of concern included the following:

- Appointments of qualified mining professionals as requires by the Act;
- Guarding of moving parts of the machinery;
- Hazard Identification, Risk Assessment and Training;
- First Aid Equipment, Rescue and Emergency Procedures and Preparedness;
- Issuing of protective equipment and hygiene facilities;
- Submission of occupational hygiene returns and codes of practice documents; and
- Medical surveillance issues.

4.2.2.7 Administrative Fines

No. of fines recommended by inspector	**23**
Value recommended	**Nil**
No. set aside by Principal Inspector	**Nil**
Value set aside	**Nil**
No. imposed by Principal Inspector	**Nil**
Values of fines imposed	**Nil**
Appeals	**Nil**
Value of fines paid	**Nil**

The recommended fines could not be processed due to the registration system in head office not functioning properly. This was brought to the attention of the responsible persons without any positive results. The use of administrative fines is still cumbersome to implement taking into account the system of appeals and legal challenges, resulting in most inspectors not effectively using this legal enforcement measure**.**

4.2.2.8 Examinations

Qualification	Exam Boards	Number of Candidates	Certificates Issued
Mine Overseers	-	-	-
Blasting	6	6	3
Onsetter	-	-	-
Lampsman	2	2	2

4.2.2.9 Land Use Applications and Complaints

	Received	Completed	Percentage
Township Developments	9	7	77
Mining and prospecting permits/rights	96	68	70
Closure certificates	0	0	0
Environmental Management	0	0	0
Complaints	16	11	69

Due to the relocation of this office from Dundee to Durban and the associated problems such as Inspectors operating from two locations and IT problems to connect this office to the network resulted in this backlog.

4.2.2.10 Topical Issues and Matters of Interest

Machinery and Mining equipment related accidents

The use of conveyor belts, trackless mobile machinery and state of repair of mining equipment is a cause of concern. Some mines have been instructed to ensure appointment of engineers to be in charge of mining equipment and machinery.

Submission of Occupational Hygiene Measurements

Improvement has been noted compared to previous years, parallel sampling required to confirm some of the submitted results.

Submission of Occupational Hygiene Related Cop's

An improvement has been noted in this area with an increase in submission rates.

Noise Induced Hearing Loss, Tuberculosis and Lung Related Cases

There are still cases that are diagnosed, even though they are not at the reportable stage. It has been noticed in quarries that there is still a tendency of deterioration in hearing ability compared to the previous audiometric test results. There are still new cases diagnosed, most employees are provided with TB medication or treatment which appears to be well complied with. Working groups have been established with the mines to ensure alignment of processes on the mine to ensure achievement Mine Health and Safety summit milestones

HIV and AIDS Initiatives

Good initiatives have been noted on the number of mines in the region.

4.2.2.11 Strategy Adopted to Improve Status Quo

- **Falls of Ground Accidents and Highwall and Bench Stability**

There has been an improvement in the implementation of new falls of ground regulations in the region. A cause of concern is the increase in the number of falls of ground incidents and the accidents. The strategy will still include the analysis of these accidents and incidents and the inspectorate activities of current strategies effectiveness to determine the root causes and based on the outcome and devise effective strategies to combat falls of ground accidents and incidents. Strategy will also include evaluating and auditing mine's management systems especially in relation to falls of ground prevention.

- **Transport and Mining Equipment Related Accidents**

Lack of adequately qualified competent persons or engineers is still a problem but has improved to a large extent; most mines are still being instructed to appoint suitably qualified persons based on risk of operations. There has been good improvement in the maintenance and the state of repair of mining equipment used by some of the mines in the region. Transport and equipment related accidents still account for a major portion of reported accidents in the region. More effort is still required in this area. Ensuring appointment of engineers in mining operations with the power rating exceeding 2500 kilowatts has been a challenge and still continues to be a challenge taking into account, the availability of this type of skill in the country. Appointment of suitably qualified engineers will assist the mines dealing with mining equipment related challenges.

- **Coal Mines Explosions and Fires**

Current initiatives and measures in place appear to be effective in dealing with fires and explosions, but there is always scope of improvement in this regard. No incidents of methane ignitions or flashes were reported in the period under review. New strategies will be implemented to include other disciplines in dealing with explosion prevention.

- **Emergency Preparedness**

Improvement in this critical area is required, taking into account the size of most operators in the region. Auditing and reassessment of measures currently in place on the mines for preparedness by mines to handle emergency situations is ongoing. There were incidents where rescue operations were required in the region, a different approach is required in the light of some shortcomings which were identified in this area. We need to increase the number of mines belonging to Mine Rescue Services, in collaboration with mines in the region to ensure that there is a stand-by team available in case of emergencies to deal with rescue operations.

- **Link of Occupational Hygiene Exposures to Medical Surveillance Records.**

Mines in the region are beginning to understand the importance of having a link of occupational hygiene exposures measurements and the results of medical surveillance. Lack of communication between occupational hygienists and occupational medical practitioners appears to be improving.

- **Mines compliance with occupational hygiene issues**

There has been some continued improvement of environmental conditions in underground and surface operations. Problems have been experienced at smaller

mines especially hard rock quarries and brickworks in terms of the appointment of occupational hygienists. Submission of quarterly occupational hygiene exposure returns, which is critical in dealing with occupational diseases is still a major challenge but with a slight improvement. Administrative fines have been recommended to those mines that are continuously not submitting their returns.

- **General strategy in addressing challenges facing the region**

  The challenge is to reduce the number of both injuries and fatal injuries in the region. The region will continue to embark on an initiative of zero tolerance to non-compliance. Progress has also been made on areas of Small Scale Mining and dealing with occupational diseases by mines. More co-operation from employers, mine employees, communities affected by mining operations and the inspectorate will continue to ensure that there are effective ways or strategies in dealing with health and safety relating to mining operations in the region.

4.2.3 Regional Report - Limpopo

4.2.3.1 Overview of the Region

The Limpopo Region is situated between the Gauteng region in the south, Zimbabwe in the north, the Mozambique border in the east, Mpumalanga Region in the south east, Botswana border in the west and the North West Region in the south west.
The region is blessed with a large variety of minerals being mined both underground and opencast with coal, copper and platinum being the main commodities. There are also numerous brickworks, sand, borrow pits, crushers and quarries in the region.
With the increase in commodity prices there has been a corresponding increase in prospecting activity and there are numerous proposed new mines in various stages of feasibility study.

4.2.3.2 Inspections and Audits

The frequency of inspections and audits are determined from the analysis of accident statistics at specific mines. Mines with higher accident rates are inspected/audited on a more regular basis.
Targets for both inspections and audits were not achieved because of staff shortages and time taken to train new staff members.

Category	Inspections	Audits
Planned	1026	615
Actual	697	503
% Compliance	68%	82%

4.2.3.3 Total Accidents Reported

Fatal accidents decreased to 8 in 2006 in comparison to 10 in 2005. This is a decrease of 20% in 2006, which augments the decrease in fatal accidents reported in 2005.
The 14-day reportable accidents increased to 222 indicating a 13.3 % increase in comparison to 2005.

It is believed that the 1 to 13 day reportable accidents are not a true reflection of what is transpiring on the mines in this region and is cause for concern.
Fall of ground type accidents were responsible for 7,5% of the total reportable accidents in 2006 indicating a decrease from 18.52% of the total accidents for the previous seven years, however they are still responsible for 33.68% of the deaths.
Transport and mining type accident are responsible for 25.26% of the total reportable accidents in 2006 indicating an increase from 16.99% of the total accidents for the previous seven years. They account for 25.26% of the deaths.
General types of accidents are responsible for 34.69% of the total reportable accidents in 2006 and are responsible for 30.53% of the deaths.

Fatal Accidents	**8**
> 14 day reportable accidents	**222**
1 to 13 day reportable accidents	**128**

4.2.3.4 Investigations and Inquiries

	Investigations	**Inquiries**	**Total**
Initiated	**145**	**8**	**153**
Completed	**145**	**7**	**152**
% Completed	**100%**	**87.5%**	**99%**

4.2.3.5 Disaster Type Accidents

No disaster type accidents were experienced in this region.

4.2.3.6 Statutory Notices

Section 54 notices	**Section 55 Notices**
107	**437**

During this reporting period, officers from this region issued 107 orders to stop unsafe and unhealthy practices (section 54) and 437 orders to comply with health and safety requirements (section 55) to the employers of the mines.
Issues of concern included the following:

- sealing or barricading abandoned areas;
- appointment of appropriately qualified professionals;
- hazard identification and risk assessment;
- medical surveillance;
- lack of training;
- ineffective dust suppression; and
- treated all winch related accidents as fatal accidents – in loco inspection and full inquiry.

4.2.3.7 Administrative Fines

No. of fines recommended by inspector	**One**
Value recommended	**N/a**
No. set aside by Principal Inspector	**One**
Value set aside	**N/a**
No. imposed by Principal Inspector	**Nil**
Values of fines imposed	**N/a**
Appeals	**N/a**
Value of fines paid	**N/a**

Even though no administrative fines were imposed during the year, there has been a noticeable improvement when mines, shafts and working places are stopped. This is considered to be more effective and an immediate response is obtained. There is still an amount of R275 000 in fines imposed in this region that is outstanding due to the appeal process.

4.2.3.8 Examinations

The region also conducts examinations for mining qualifications and the table below reflects the number of examination boards, candidates and certificates issued. The low percentage pass rates reflect the training proficiency in this region.

Qualification	**Exam Boards**	**Number of Candidates**	**Certificates Issued**
Mine Overseers	14	126	5
Blasting	22	239	86
Onsetter	7	7	2
Lampsman	12	12	12

4.2.3.9 Land Use Applications and Complaints

	Received	**Completed**	**Percentage**
Township Developments	142	138	97%
Mining and prospecting permits/rights	12	12	100%
Closure certificates	9	7	78%
Environmental Management	390	379	97%
Complaints	1	1	100%

4.2.3.10 Topical Issues and Matters of Interest

Tshikondeni Colliery

On 18 September 2006 two persons were trapped by a fall of ground. A third person was slightly injured.

After numerous attempts, in arduous ground conditions, by rescue brigades, the two trapped persons passed away before being extracted.

4.2.3.11 Strategy Adopted to Improve Status Quo

The following are some of the strategies introduced in the region in order to improve health and safety: -

- special tripartite groups tasked to meet the industry milestones of 2008 and 2013 related to noise induced hearing loss and eradication of pneumoconiosis.
- identifying, from analysis, the main leading indicators on all large mines to enable inspectors to plan their inspections and audits to be more proactive and thus prevent or minimise the high-risk incidents.
- tripartite meeting to discuss accident trends and interventions to be introduced to improve the mines safety strategies and commitment.
- involving the top echelon of management in inquiries.

4.2.4 Regional Report - Mpumalanga

4.2.4.1 Overview of the Region

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

There are 42 underground coal mines operating in the region, most of which employ continuous miners to carry out bord and pillar conventional mining. Of the 28 open pit collieries, most operate by means of dozing, although a large number utilize draglines to remove the overburden. Loading is by means of mechanical shovels onto haul trucks.

The 14 gold and platinum mines are mostly underground mines and 90 other mines (chrome crushers, quarries, sandworks, brickworks, lime, granite and manganese).

Labour stats (average) : Coal - 40000 ; gold - 7600 ; platinum - 4000 ; other - 7500.

4.2.4.2 Inspections and Audits

During the period under review, the following number of inspections and audits were conducted:

Category	Inspections	Audits
Planned	1078	585
Actual	788	361
% Compliance	73%	68%

Inspections and audits were planned for a full staff compliment, therefore 100% compliance could not be attained due to a shortage and frequent turnover of inspectors, duties involving examinations, MQA and the large number of

administration work received. Several inspectors were also on study leave or training courses for obtaining the GEC and MECC qualifications.

4.2.4.3 Total Accidents Reported

Fatal accidents	26
> 14 day reportable accidents	359
1 to 13 day reportable accidents	244

With very few exceptions, fatal and serious accidents are reported immediately telephonically or the following day. Reporting of >14 day accidents is generally done by means of submission of Samrass forms within one months, and <14 day accidents are reported monthly.

Sasol did an audit on the reporting of accidents and found that between the Sasol mines they did not report 28 accidents to the office of the DME in Witbank. They duly corrected the situation reporting 28 accidents from previous years in the year 2006/2007.

During an audit at Khutala Colliery the medical inspector found that the mine did not report 25 accidents from previous years. An administrative fine was issued to the mine and the accidents were reported.

These two incidents caused the reportable accidents to be 53 more than the actual number of accidents.

4.2.4.4 Investigations and Inquiries

	Investigations	**Inquiries**	**Total**
Initiated	187	32	219
Completed	122	25	147
% Completed	65.2%	78%	67%

More time is spent on investigations, as there is a concern regarding the quality of some mine investigations in that they mainly tend to focus on the injured and the immediate supervisor as the cause of the accident. Mine management is continuously encouraged to rather focus on all the system failures during the investigation to prevent recurrence of the accidents.

Inquiries cannot always be completed in the stipulated time due to the fact that attorneys for all the parties involved must be available on the same date.

Challenges:-

- To eradicate the FOG accidents by cultivating a positive attitude, innovative methods of support systems, initial examinations and mine procedures.

- To gain confidence to conduct inquiries properly and efficiently by means of inspectors' training in the legal process of conducting inquiries.

- There is generally insufficient retraining of TMM operators following accidents. The result is that similar accidents re-occur frequently.

4.2.4.5 Disaster Type Accidents

No disaster type accidents were reported.

4.2.4.6 Statutory Notices

Section 54 notices	Section 55 Notices
139	229

General problems experienced were:

- Small opencast mines (especially those operating for a short period only) not complying with minimum legal requirements and a general resistance to providing change house facilities.
- Lack of first aid training.
- Insufficient ventilation provided in the last through road.
- Lack of health and safety training.
- Hearing protection devices not provided to employees.
- Insufficient stonedusting.
- Problems associated with lamprooms (records, appointments, etc.)
- Codes of practice - not available, not complying with guidelines, etc.
- Lack of proper risk assessments and hazard identification.
- Compliance with regard to FOG code of practice.
- Poor control of explosives.
- Poor control of contractors.
- Mine preparedness to handle emergency situations.
- PTOs and task analysis not conducted properly.
- Inadequate electrical protection.
- Inadequate machine guarding.

4.2.4.7 Administrative Fines

No. of fines recommended by inspector	8
No. set aside by Principal Inspector	2
No. imposed by Principal Inspector	6
Value of fines Imposed	R820 000-00
Appeals	1
Value of Fines Paid	R420 000-00

The administrative fine system has been used effectively to achieve the level of compliance required at the mines. This tool is only used as a last resort to ensure that the relevant mines do comply with the provisions of the Mine Health and Safety Act. Five admin fines were imposed after fatalities occurred.

4.2.4.8 Examinations

The regional inspectorate also conducts examinations for industry qualifications and the table below reflects the number of Examination Boards, Candidates and Certificates Issued during the reporting period.

Qualification	Exam Boards	Number of Candidates	Certificates Issued
Mine Overseers	27	410	48
Blasting	28	270	119
Onsetter	3	14	12
Lampsman	7	7	7

Challenges: -

- This office does not have the facility to host these examinations and the venues for this purpose is not readily available in the Witbank region.
- The actual examinations (management, invigilating and forwarding of documents) take up valuable time of the inspectors, which should be spent on the core business of this office being health and safety in the mining community.
- Candidates for examinations for statutory certificates are often extremely poorly prepared and often fail to attend.

4.2.4.9 Land Use Applications and Complaints

	Received	Completed	Percentage
Township Developments	90	84	93
Mining and prospecting permits/rights	520	516	99
Closure Certificates	0	0	0
Environmental Management	510	507	99
Complaints	20	15	75

Problems experienced when investigating a complaint received, is that the initial information received from the complainant is insufficient as well as the time consumed waiting for feedback from a mine or other relevant party. Co-operation and communication between mines and communities affected by mining operations also causes problems. More collaboration and consultation with other stakeholders could alleviate these problems considerably.

4.2.4.10 Topical Issues and Matters of Interest

- **Informal/illegal miners**

During October 2006 and January 2007 reports of illegal miners trapped in an ownerless mine in the Barberton area, were received.

It appeared that the illegal operations are conducted in the workings of the Barberton Gold Mines. The illegal miners access the current operations through adits and interconnecting tunnels between the ownerless and Barberton mines. It is estimated that there could be about 400 adits in the surrounding mountains connecting into the mines. According to management some of the known adits and tunnels were previously sealed off, but the illegal miners sometimes managed re-establishing entry though drill and blast operations.

It appears that illegal mining is so serious that it could threaten the mine's existence. Illegal miners recently caused an underground fire in the old workings that necessitated the withdrawal of all mine employees. Illegal miners are armed and threaten management and employees as well as their families at home.

The following recommendations should be considered in preventing harm as a result of illegal or informal mining: -

- Discussions should be held with the DME, SAPS and mine management to determine effective measures for preventing illegal mining operations. Initial discussions were held during March 2007 to deliberate further on the concern.
- Mine management should continue with the sealing of the access points.
- The DME should compile a policy on the handling of illegal/informal mining operations and the Mineral Policy and Promotion sub-directorate should also be engaged in the process.
- The mining industry should be requested to implement effective explosives handling measures.
- The small-scale mines section could be involved in identifying possible viable mining projects with the aim of improving the level of employment in the affected areas.
- The DME should continuously strive to identify and rehabilitate all the derelict mines that could pose a danger to the neighbouring communities.

➢ **Exit Medical Examinations: Contractors**

Exit medical examinations of contractors still remain a problem due to their disappearance from site after completion of work. A general feeling is that a central database is necessary for the control of contractors. This will also ensure that comprehensive occupational medical history is maintained and can more easily be monitored which at this stage is impossible.

During the reporting period Mpumalanga Region had four deaths on the mines due to natural causes, which includes myocardial infarctions. As most of the mining employees are on medical aid schemes of late and primary health care is no longer provided by the mine occupational health centres, the Inspectorate had a concern with regards to the monitoring of chronic ailments of mining employees. A request was put to all mines in the region to forward some statistics to the DME office on the total number of chronic ailments diagnosed on the mines.

Statistics were submitted by only 25 mines and covered a total of 14 537 employees. The breakdown of chronic diseases is as follows:

Hypertension cases	787	(5.41%)
Diabetes	163	(1.12%)
Epilepsy	10	(0.07%)

Recently some of the mines started monitoring chronic ailments again in order to ensure that employees take their medication and are well controlled. This measure seems to have a positive impact on the compliance of chronic patients to take their medication regularly.

- **Compensation payment by MBOD**

There is currently a great delay in certification and compensation payment of occupational lung diseases with the MBOD as their computer system has been out of order since last year and no cases are being finalised.

- **HIV and AIDS awareness programmes**

a. All Sasol mine employees are now covered by Medical Aid and the mine hospital has consequently closed down. Their own general practitioners now treat people on HAART. Active VCT and HIV and AIDS awareness are ongoing at their 12 shaft clinics with their SHARP (Sasol HIV and AIDS Response Programme) initiative. Training for peer educators with shaft SHARP committees are ongoing to keep the awareness process on track.

b. The Eyesizwe mines continue to promote VCT and employees tested positively are put on ARV and monitored closely. Extra awareness was promoted during a one day HIV/Aids information session for all employees on the various mines. Topics covered were: message of support; HIV and AIDS treatment, HAART and the law; disclosure and acceptance and positive living; nutrition and health support group information.

c. Anglo Coal mines have a comprehensive HIV and AIDS programme in place and maintained for the past few years with very good results. They also promote continuous VCT on all mines, using several initiatives. Anglo Coal has set targets that more than 90% of employees should know their HIV status by December 2007 and that more than 80% of employees have been retested by 31 December 2007. The group also aspires to reduce HIV incidence (subject to VCT) to less than 1.5% in 2007 and to less than 1.25% in 2008.

d. The other mining groups utilise Life Worx (an outside organisation) and who is responsible for VCT and supplying of treatment. The smaller mines do not always have such intensive programmes in place and some utilise Department of Health personnel to help with informal sessions.

- **Milestones**

Various initiatives and strategies on health milestones have been implemented in a number of mines in the region. The initiatives are aimed at ensuring compliance to limits of both noise and silica hazards encountered at mines.

The challenge in the region has been to keep in place, and maintain, engineering controls consistently at mines. Some systems put in place for either noise or dust reduction tends to be abandoned due to lack of continued maintenance.

4.2.4.11 Strategy Adopted to Improve Status Quo

Tripartite meetings are held quarterly to inform the stakeholders (management, health and safety representatives, union representatives and DME staff members) on the health and safety challenges to promote awareness on the new legislation and the achieving of health and safety milestones.

The Inspectorate did not only take critical actions on serious transgressions but also commended all the managers, and their staff, that continue to maintain acceptable working conditions at their mines.

4.3 Regional Operations- Gold and Platinum

4.3.1 Deputy Chief Inspector of Mines Overview

4.3.1.1 General

The Regional Operations: Gold and Platinum (i.e. Free State, Gauteng and North West) labour force is approximately 336 000 and represent over 70% of the mining industry labour force in South Africa. The major commodities mined in the Regional Operations: Gold and Platinum are Gold, Platinum Group Metals (PGMs) and Chrome.

During the year under review three Principal Inspector of Mines were appointed. Change management cascaded down to middle managers that were also promoted. Promotions within the regional operations were mostly internal.

During the year under review amid the regression of rock related accidents from the previous report there has been a significant improvement of rock related fatal accidents category subsequent to the implementation of preconditioning and in-stope roof bolting. However, there is an alarming increase on fatal accidents other than rock related.

The promulgation of the Minerals and Petroleum Resources Development Act (MPRDA) has increased the regulatory responsibilities in the regional operations on mandatory consultations and inspections.

4.3.1.2 Occupational Health

The number of natural deaths has increased as compared to 2005. During the year under review a substantial number of employees opted for voluntary HIV testing and that the programme for providing ARVs to the affected employees is gaining momentum. The objective of this intervention is to reduce the incidence and impact of HIV and AIDS.

During the year 2006 a number of cases of Multi Drug Resistant (MDR) and Extremely Drug Resistant (XDR) TB occurred in the regional operations. The increase in TB cases is alarming. The Thibela (TB Prevention) programme was introduced to mitigate the number of infections.

The mines are also in the process of installing muffles on their drilling machines to reduce the noise level from 120 dB (A) to 103dB (A).

4.3.1.3 Accidents

During the year 2006 the Regional Operations: Gold and Platinum experienced 142 fatal accidents in which 157 miners lost their lives. This is a 2% regression as compared to the results achieved in 2005.

The fatality rates for the Free State, Gauteng and North West for 2006 are 0.28, 0.39 and 0.14 respectively and injury rates are 7.11, 5.14 and 5.55 following the same order.

A new strategy was also adopted whereby the management team of a mine where a fatal accident occurred is summoned to the office of the Principal Inspector of Mines

to give a presentation on actions submitted by the mine during the inquiry together with progress and challenges related thereto.

4.3.1.4 Challenges

Underground mine water pumping at Margaret shaft is complicated by the liquidation of the Stilfontein Gold Mining Company. Various processes and meetings by Government task teams together with legal advisors are busy with negotiations in an effort to solve the problem. All the affected mines continue to contribute and participate in the pumping process.

Illegal and criminal miners (Amazamazama) remain the biggest threat to the employee's health and safety at the mines. Access control for the mines that are interconnected is critical. The SAPS intervention is playing an imperative role in providing safety and security, albeit the underground environment contributes to the volatility hereto.

Mining expansion in the Rustenburg area is not proportional to the number of Engineers produced annually and thus, Inspectors are being head hunted with remuneration offers they can't refuse. Retaining skills and attracting qualified and/or experienced new recruits is eminent to achieve the Mine Health and Safety Summit goals and milestones and an introduction of chapter 14 of the Mine Health and Safety Act of 1996 further contributed to the exodus of experienced Rock Engineers to more favourable mining environment with more lucrative remuneration offers.

4.3.1.5 Achievements

During the year 2006 the Free State region achieved the unprecedented two fatal free months in October and December. Gauteng region achieved the unprecedented 31 days fatal free days amid the month of December 2006 and January 2007. North West Region achieved lower fatality and injury rates as compared to 2005.

4.3.1.6 Concluding remarks

Though this arduous process is befitting to applaud the Regional Operations: Gold and Platinum staff especially the 20 members of the respective REXCO (Regional Executive Committee) teams who have during the year under review exhibited their efforts in providing excellent service delivery. To all the stakeholders in the mining related industry that have unequivocally proved that rock related accidents can be, will be and must be eradicated. However, there is always room for improvement.

4.3.2 Regional Report – Free State

4.3.2.1 Overview of the Region

The main commodities in this region are:

- gold, employing 41 400 people working underground;
- diamonds, employing 1 750 people working underground;
- coal, employing 2 178 working underground and open pit strip mining; and
- other small mines, employing 4 030 people, working in open pit quarries and diggings.

4.3.2.2 Inspections and Audits

During the year under review, officers of this region conducted 1 523 underground inspections, 621 small mines and surface inspections. 36 Slimes dams were inspected and 164 statutory inspections were conducted. In addition, 50 inspections at medical centres were conducted. A total of 186 audits were done on various systems.

Category	Inspections	Audits
Planned	2268	140
Actual	2197	186
% Compliance	97%	130%

4.3.2.3 Total Accidents Reported

Fatal Accidents	27
> 14 day reportable accidents	695
1 to 13 day reportable accidents	351

During the year the Free State Region experienced 25 fatal accidents in which 27 miners lost their lives. A total of 1 046 accidents were reported of which 695 where the injured could not resume their normal duties for less than 13 days.
Falls of ground accidents decreased from 29% to 23% of the total accidents, while machinery related accidents increased from 22% to 27% of the total figure.

4.3.2.4 Investigations and Inquiries

During the year under review the officers of this region conducted 191 accident investigations and 25 accident inquiries.

	Investigations	Inquiries	Total
Initiated	191	25	216
Completed	191	25	216
% Completed	100%	100%	100%

4.3.2.5 Disaster Type Accidents

This region can gladly say that no disaster type accidents occurred during the period under review.

4.3.2.6 Statutory Notices

Mining:

- Hanging wall support installation not to standard.
- Temporary support installation not up to standard.

- Brows must be demarcated and supported.

Machinery:

- Scraper and mono-rope winch installations not to standard.
- To prevent the unauthorised operation of self propelled mobile machines.
- Manually operated rail switches shall be operated from a safe position clear of the track.
- Statutory book entries not up to date.

Occupational Hygiene:

- Environmental conditions in work places do not comply with legislation.
- Environmental conditions are conducive to heat stroke.
- Refuge bays not to standard.
- To implement control measures to ensure that respirable dust levels are kept to the legal limit.
- The issuing of faulty gas measuring instruments to underground workers.

During the year under review the officers of this region issued 661 orders to stop unsafe and unhealthy practices (i.e., Section 54) and 489 orders to comply with health and safety requirements (i.e., Section 55) to the employers of the mines.

Section 54 Notices	**Section 55 Notices**
661	489

4.3.2.7 Administrative Fines

A total of 6 administrative fines were recommended of which the Principal Inspector imposed 3. Two fines were paid to the amount of R33 000. One appeal was lodged to an amount of R20 000. * R50 000 for the previous financial year was only paid in during this financial year.

No. of fines recommended by inspector	6
No. set aside by Principal Inspector	3
No. imposed by Principal Inspector	3
Values of fines imposed	R53 000
Appeals	1
Value of fines paid	R83 000*

The region did not impose many fines. However, there is a noticeable improvement when shafts or working places are stopped until instructions are carried out.

4.3.2.8 Examinations

The regional inspectorate also conducts examinations for industry qualifications and the table below reflects the number of Examination Boards, Candidates and Certificates Issued during the reporting period.

Qualifications	Exam Boards	Number of Candidates	Certificates Issued
Mine Overseers	51	302	22
Blasting	33	292	219
Onsetter	20	120	107
Lampsman	5	5	5

4.3.2.9 Land Use Applications and Complaints

As can be seen from the numbers listed in the table below, the land use related workload is quite high in this region. The officers manage however to complete the reports within a turnaround time of two weeks.

	Received	Completed	Percentage
Town Developments	36	22	61
Mining and prospecting permits / rights	86	80	93
Closure certificates	29	24	83
Environmental Management	169	164	97
Complaints	11	10	91

4.3.2.10 Topical Issues and Matters of Interest

Illegal mining is becoming a bigger problem and the deaths of 5 illegal miners were reported to this office during the year.

During this period, 28 cases of Multi Drug Resistant (MDR) and 2 Extremely Drug Resistant (XDR) TB occurred in the region. The increase in TB cases is alarming.

The worst month for fatal accidents was August in which 20% of the total fatalities in the region occurred. After interventions were put in place, employers required presenting Accident Prevention Strategies at the regional offices. October and December 2006 were “Fatal Free” months.

4.3.2.11 Strategies Adopted to Improve Status Quo

This region launched the following projects during the year in an effort to improve the status quo:

- employer participation when fatal accidents occur;
- arial support in all work places;
- designing ergonomically friendly underground locomotives and guard cars;
- eradication of all alpha quarts bearing dust;
- support parameter investigation;
- diamond mine design;
- drop raising best practices;
- shaft best practices;
- explosives control; and
- increased visibility of Inspectors

- working groups
- management discussions

4.3.3 Regional Report – Gauteng

4.3.3.1 Overview of the Region

The major commodity mined in the region is gold, which is mined in the large, deep mines of the West and Far West Rand and the old mining areas of the Central and East Rand. Diamond mining is carried out at the underground Cullinan Mine and numerous, small surface operations. Chrome and platinum is mined in the Brits district. In addition, there are a large number of hard rock quarries, clay quarries and sand mines. The labour force in the region is approximately 96 200 persons.

4.3.3.2 Inspections and Audits

During the year under review, officers of this region conducted 2 001 underground inspections, 580 audits and 1 327 surface inspections of small mines. 34 slimes dams were inspected and 230 statutory inspections were conducted. In addition, 84 medical inspections were carried out.

The underground inspections and audits carried out were only 70% of those planned as a result of the shortage of inspectors. Surface inspection compliance was 95% of the target, because it is possible to conduct more than one surface inspection per day.

Even though the region is short staffed, every effort is made to increase inspector visibility on the underground mines. Audits of safety systems on the mines have revealed alarming shortcomings at some mines.

Category	**Inspections**	**Audits**
Planned	4419	904
Actual	3611	580
% Compliance	82%	64%

4.3.3.3 Total Accidents Reported

During the year mines in the region had 66 fatal accidents in which 77 persons were fatally injured. This is a 30% regression when compared to the results achieved in 2005. 1 625 reportable accidents were reported by the mines in the region, which is a 2% regression on the achievements of 2005.

Of concern is the number of fatal accidents that occurred on small mines and surface operations. These mines accounted for a total of 15.58% of the fatalities that occurred, but account for a fraction of the labour force.

Fatal Accidents	77

> 14 day reportable accidents	1037
1 to 13 day reportable accidents	588

4.3.3.4 Accident Investigations and Inquiries

Mines are reporting accidents and incidents to the responsible inspectors on a daily basis. This allows for such occurrences to be investigated very soon after the event. Risk profiles of working areas are being carried out so that the “hot spot” areas can be identified and targeted.

	Investigations	**Inquiries**	**Total**
Initiated	276	66	342
Completed	276	42	318
% Completed	100%	64%	93%

4.3.3.5 Disaster type Accidents

Five in-stope workers were fatally injured as a result of a seismic event at TauTona Mine on 23 October 2006. A magnitude 2.3 event caused the multiple fatalities and damage in a Carbon Leader stope panel. The epicentre of the event was located approximately 50 metres in the hanging wall of the panel.

Rescue operations commenced immediately after the event and continued until 28 October 2006 when the bodies of the last two workers were retrieved. The inquiry is still continuing.

4.3.3.6 Statutory Notices

During the year under review, officers of this region issued 236 orders to stop unsafe and unhealthy practices (sect 54) and 272 orders to comply with health and safety requirements (sect 55) to the employers of the mines.

Section 54 notices	**Section 55 Notices**
236	272

4.3.3.7 Administrative Fines

The officers of the region recommended two administrative fines. The Principal Inspector had the fine reduced and the second one set aside. Inspectors tend to resort to the issuing of sect 54 notices to stop a working place. This action has an immediate punitive effect.

No. of fines recommended by inspector	2
No. set aside by Principal Inspector	1
No. imposed by Principal Inspector	1

Values of fines imposed	R10 000
Appeals	2
Value of fines paid	R10 000

4.3.3.8 Examinations

An additional 1 Mine Overseers board per month has been conducted during the past year in Gauteng to address the imbalances of the past and to assist the mines to comply with the Equity Act. A total of 149 boards were conducted, 1 543 applicants assessed and 367 certificates issued from April 2006 to March 2007.

Qualification	Exam Boards	Number of Candidates	Certificates Issued
Mine Overseers	65	790	62
Blasting	58	508	207
Onsetter	23	240	95
Lampsman	3	5	3

4.3.3.9 Land Use Applications and Complaints

A large portion of inspectors' time is spent dealing with the applications for land use. Understaffing of the Mine Health and Safety Inspectorate in the region, make it impossible to comply with the two-week turn around time required. An increasing amount of time is being spent on the complaints emanating from the encroachment of residential development on established mining activities. This has a direct impact on the number of inspections and audits accomplished in the region.

	Received	Completed	Percentage
Township Developments	**152**	**160**	**105%**
Mining and prospecting permits/rights	**109**	**101**	**93%**
Closure certificates	**5**	**4**	**80%**
Environmental Management	**149**	**129**	**87%**
Complaints	**71**	**65**	**92%**

4.3.3.10 Topical Issues and Matters of Interest

Rising water in the Witwatersrand Compartments

The programme to install bulkhead plugs to safeguard the current workings of ERPM on the East Rand is nearing completion. The water continues to rise behind the plugs in the old workings across the Central Rand. A decision on how this water is to be handled when it reaches surface has still to be made.

Grootvlei Gold Mine continues to pump large volumes of water from the adjoining mines to allow mining to continue.

Harmony (Randfontein Operations) has been able to put measures in place to improve the quality of the water that is being discharged from the mine.

Gautrain Rapid Rail Link

Work has finally commenced on this project, which is scheduled to take 55 months for completion. Only certain sections will be ready for the 2010 Soccer World Cup.

4.3.3.11 Strategies Adopted to Improve Status Quo

The following are some of the strategies that have been adopted to improve health and safety in the region:

- the implementation of in-stope roof bolting where possible;
- the implementation of preconditioning for deep level mines;
- the review of mandatory codes of practice, standards and procedures;
- audit inspections of safety management systems and the implementation thereof;
- monitoring the compliance with the rail bound equipment code of practice;
- compliance with the enforcement policy;
- monitoring emergency preparedness and response at the mines;
- participating in working groups to monitor and mitigate occupational diseases;
- supporting the “stay out and stay alive” campaign to safeguard dangerous mine openings; and
- discussions: tripartite IVPO

4.3.4 Regional Report – North West

4.3.4.1 Overview of the Region

The North West Region is made up of two distinguishable mining areas, namely the Klerksdorp area where the main commodities mined are gold, uranium, alluvial diamonds along the Harts and Vaal rivers and the Rustenburg area where Platinum Group Metals (PGM) and Chrome are predominantly being mined. The region has a variety of other commodities like Iron Ore, Dimension Stones (Granite and Slate), Lime, Fluorspar, Vanadium, fissure diamonds and Clay that are also being mined. The Gold, Uranium, PGM, Chrome and Fissure Diamond mines are predominantly made up of labour intensive underground operations. There are numerous slate and granite quarries with the rest being open pit operations. The total labour force in the region at the mines is estimated at 189 874 employees.

4.3.4.2 Inspections and Audits

Planned targets for inspections and audits were not achieved due to vacancies and under staffing of the region. Other workload factors contributing to this are; land use applications and complaints.

Category	Inspections	Audits
Planned	3704	1992
Actual	2078	1203
% Compliance	56%	60%

4.3.4.3 Total Accidents Reported

During the year of 2006 the North West Region experienced 51 fatal accidents in which 53 persons lost their lives. Fall of ground accidents contribute 41.5%, Transport and Mining 24.5%, Explosives 13.2% and Mud rushes 7.6% to these fatalities. In comparison to 2005 a 25% decrease in fatal accidents was experienced in the region.

Fatal Accidents	53
> 14 day reportable accidents	1749
1 to 13 day reportable accidents	1001

4.3.4.4 Investigations and Inquiries

The accident reporting systems at the various mines are continuously audited to ensure compliance. Medical centres and hospitals are also visited from time to time to compare statistics with accidents reported.

	Investigations	Inquiries	Total
Initiated	1749	53	1802
Completed	1637	35	1672
% Completed	93%	66%	92%

4.3.4.5 Disaster type Accidents

No disaster type accidents were experienced in the region from April 2006 to March 2007.

4.3.4.6 Statutory Notices

Section 54 instructions were issued for poor baring, poor ventilation in stopes, substandard support, substandard rail switches and tracks, locomotive braking systems not complying with standards, lock-out procedures and systems not available, unsafe electrical systems. All section 54 instructions issued, resulted in the stopping of the work place or equipment until the situation was rectified.

Section 54 notices	Section 55 Notices
186	42

4.3.4.7 Administrative Fines

No. of fines recommended by inspector	3
No. set aside by Principal Inspector	3
No. imposed by Principal Inspector	0
Values of fines imposed	0
Appeals	0
Value of fines paid	0

4.3.4.8 Examinations

An additional 1 Mine Overseers board per week have been conducted during the past year in Rustenburg to address the imbalances of the past and to assist the mines to comply with the Equity Act. A total of 270 boards were conducted, 2 240 applicants assessed and 411 certificates issued from April 2006 to March 2007.

Qualification	Exam Boards	Number of Candidates	Certificates Issued
Mine Overseers	104	974	115
Blasting underground	98	966	272
Blasting opencast	15	28	16
Onsetter	49	253	165
Lampsman	4	19	8

4.3.4.9 Land Use Applications and Complaints

A large portion of inspectors' time is spent dealing with the applications for the various land uses detailed below. Understaffing of the Mine Health and Safety Inspectorate in the region, making it impossible to comply with the two-week turn around time required. An increasing amount of time is being spent on the complaints emanating from the encroachment of residential development on established mining activities. This has a direct impact on the number of inspections and audits accomplished in the region.

	Received	Completed	Percentage
Township Developments	180	144	80%
Mining and prospecting permits/rights	568	512	90%
Closure certificates	15	13	87%
Environmental Management	517	489	95%
Complaints	50	43	86%

4.3.4.10 Topical Issues and Matters of Interest

Fire - Simmer and Jack Gold Mine: Stilfontein

A fire occurred on 23 March 2006 where 10 employees were trapped underground. From the plans that were available during the inspection in loco, it was evident that there was no second escape route available for the trapped employees. The proto teams accessed the trapped employees by opening up an advanced scraper gully that was obstructed by loose rock. The opening up took about 10 hours and all the employees were rescued safely. It was fortunate that the stope was down casting supplied air to the working face. Due to the face configuration, the fouled air was bypassing the area where the employees were trapped. Fresh air was leaking through the obstructed intake to the trapped employees. The cause of the fire was suspected to be arson.

High Pressure Gas Pockets at Northam Platinum and Impala Platinum Mines

Northam Platinum Mine

Two employees have already succumbed due to high-pressure gas pockets whilst busy drilling at the face. The initial one was quite extensive in that the jumper pierced through the upper body of the assistant rock drill operator. The jumper broke in three pieces and one of the pieces fatally injured the assistant. The hole was drilled to a depth of approximately 0.6 meters. No explosives or misfires were involved.

With the second incident, the machine pushed the operator approximately 5 to 7 meters away from the initial position where he was sitting whilst drilling. The incident occurred on a Friday and the injured subsequently died on Sunday. The accident was not immediately reported as management was under the impression that the employee would go to work on Monday. No in loco inspection was conducted and the face was blasted as normal.

Training centres and training material were audited at the mine to verify whether the problem was addressed and employees were trained concerning hazard identification and precautions to be taken to prevent further recurrences of similar accidents. Photos were used at the training centre on the identification of acid replacement, which the Geologist affirms that the high-pressure gas pockets are associated with. Precautionary measurers currently taken are to issue employees with rubber bullet vests, full-face shields and hip and thigh protection. DDT drill rig machines are also currently on trial at the mine which will allow the rock drill operator and his assistant to sit at the back out of the line of drilling and away from the drilling machine.

A thorough investigation and risk assessment has being conducted to identifying the types of rock associated with these high-pressure gas pockets and how to deal with it in a safe manner. A workshop has been scheduled with the mine to analyse the outcome of the investigation and risk assessment. Further investigations will be conducted if required.

Impala Platinum Mine.

Sporadic incidences with high-pressure gas pockets had been experienced with only minor face injuries. An investigation is still in progress to establish whether there are

similarities in the type of rock and conditions found at other platinum mines where these high-pressure gas pockets are found.

4.3.4.11 Strategy Adopted to Improve Status Quo

The following are some of the strategies adopted by the region to improve the Status Quo:

- the business and strategic planning of the region is being reviewed and aligned to support the achievement of the health and safety milestones;
- quarterly workshops are scheduled with the bigger mines. The progress on the reduction of accidents and health and safety incidents are reviewed and their health and safety programmes assessed;
- involvement of unions in health and safety management at mines is encouraged and promoted;
- a risk profile is compiled for every mine, high risk areas identified and targeted; and
- codes of practices and risk assessments are scrutinised and shortcomings addressed.

4.4 Regional Operations – Other Mines

4.4.1 Deputy Chief Inspector of Mines Overview

4.4.1.1 General

The Regional Operations: Other Mines, (i.e. Eastern Cape, Western Cape and the Northern Cape), labour force is approximately 34 984 and represents 7.64% of the mining industry labour in South Africa.

The major commodities mined in these regions are diamonds, iron ore, manganese, lime, sandstone, salt, gas and kaolin. During the year under review two new Principal Inspector of Mines were appointed, in the Western and Northern Cape regions, both female, a first for the MHSI.

The promulgation of the Minerals and Petroleum Resources Development Act (MPRDA) has increased the regulatory responsibilities in the regional operations on mandatory consultations and inspections.

4.4.1.2 Occupational Health

A joint Occupational Hygiene and Occupational workshop was organised and held in Cape Town in March 2007 by the Western Cape regional office where best practices were shared.

According to reports from the occupational hygienists, mines are making big strides to control dust. The increase in TB cases is alarming concerning 9 reported cases of XDR (Extremely Drug Resistant) TB in the region.

New hauling and loading machinery in the Northern Cape are air-conditioned with noise proof cabins; operators are discouraged from working with open windows. This practise has reduced the exposure to dust, noise and thermal stress.

4.4.1.3 Accidents

The fatality and injury rates in both the Western and Northern Cape regions have dropped between the period 2005 and 2006. In the Western Cape the fatality rate has dropped from a high of 0.12 in 2005 to nil in 2006. In the Northern Cape it dropped by 21.43%, from 0.14 in 2005 to 0.11 in 2006.

Injury rates in these regions have dropped by 37.8% in the Western Cape and by 37.97% in the Northern Cape. Unfortunately both rates have increased in the Eastern Cape, the fatality rate by 100% (two more fatalities) and the injury rate by 204, 76% (nine more reportable injuries)

The following table reflects the fatality and injury rates of regional operations:

	Fatalities					Injuries				
	Actual		Rates/million hours			Actual		Rates/million hours		
Commodity	2005	2006*	2005	2006*	Rates % change	2005	2006*	2005	2006*	Rates % change
Total (average)SA	**201**	**199**	**0.20**	**0.20**	**0**	**3985**	**4159**	**4.06**	**4.13**	**1.72**
Western Cape	2	0	0.12	0	-100	14	9	0.82	0.51	-37.8
Northern Cape	8	6	0.14	0.11	-21.43	90	56	1.58	0.98	-37.97
Eastern Cape	0	2	0.00	0.39	100	4	13	0.84	2.56	204.76

***Provisional**

4.4.1.4 Challenges

Compliance with small and scattered operations is a huge problem. These operations, in an endeavour to cut costs, do not appoint occupational medical practitioners as required by the MHSA. This leads to a host of other problems like the non-submitting of medical reports, which are being followed up by regional offices.

Illegal mining also still remains a problem in the region around areas like Namaqualand and the De Beers dumps around Kimberley. The SAPS intervention is playing an imperative role in providing safety and security. Some arrests were made as a result of the intervention form the police. Another challenge is the media reports emanating from the complaints of the different communities who live near mining operations. This problem was also addressed through consultative meetings, which were held with community representatives.

4.4.1.5 Achievements

During the reporting period the Western Cape had no fatal accidents and in the Northern Cape a couple of mines achieved well under the auspices of the MHSC

Award Scheme. De Beers Finsch achieved five million fatality free shifts, and Assmang Manganese were awarded with the Safety Achievement flag in the Category: Other Mines.

4.4.1.6 Concluding Remarks

The Regional Operations performed satisfactorily (but there can be improvement, especially in the Eastern Cape) during the reporting period though there was a lack of machinery inspectors in the Northern Cape. The team effort from inspectors played a big role and contributed positively to the reduction of occupational health and safety and the general good performance within regional offices.

4.4.2 Regional Report – Eastern Cape

4.4.2.1 Introduction

Occupational Health

In general, occupational hygiene and medicine conditions at mines continue to be acceptable.
Complaints from ex-miners in the Lusikisiki area regarding compensation, as reported on at meetings, have still not been resolved.
The Medical Inspector is engaging with the Departments of Labour and Health to address this matter.
Presently the region is assisting with the issuing of lung boxes to enable NIOH assess the lungs of deceased ex-miners for possible compensation.

Occupational Hygiene

The Inspector of Mines: Occupational Hygiene has performed in accordance with the annual plan, although the December shut down period curtailed audits and inspections at the year's end.
Occupational Hygiene reporting from mines can improve if there were more qualified hygienists in this region.
There has been an improvement of ablution/change house facilities at brickfields in the Port Elizabeth area where outstanding facilities have been provided.

Occupational Medicine

All mines requiring Occupational Hygiene surveys and medical surveillance comply with Sections 13 and 16 of the Mine Health and Safety Act.
Forty Annual Reports have been received in 2006 involving 1 977 employees and 17 diseases have been reported on SAMODD. Pulmonary TB, not linked to silica, is a problem in this region. No XDR TB has been reported to date.

Occupational Safety

The region performed poorly with respect to reportable injuries, when compared to 2005. In 2006 fourteen reportable accidents and two fatalities were reported.

4.4.2.2 Inspections and Audits

All Inspectors of Mines performed in accordance with the annual plan, with the December shut down period curtailing audits and inspections at the year's end.

Category	Inspections	Audits
Planned	**600**	**48**
Actual	**591**	**48**
% Compliance	**98.5%**	**100%**

4.4.2.3 Accidents Reported

Two fatal accidents occurred in this period:
At Pondoland Quarry a labourer, who was not normally employed in the crusher area, was fatally injured when he assisted with the removal of a rock stuck in the crusher and lost his balance, falling into the crusher was fatally injured.
At Denver Quarry a contractor who was cleaning the drum of the cement truck at a cement batching plant on the mine site slipped and fell to his death from an elevated position.

Fatal Accidents	**2**
> 14 day reportable	**14**
1 to 13 day reportable	**4**

4.4.2.4 Investigations and Inquiries

The two investigations still in progress are the reportable accidents, which occurred in March 2007.

	Investigations	Inquiries	TOTAL
Initiated	**3**	**2**	**5**
Completed	**1**	**2**	**3**
% Completed	**60%**	**100%**	**60%**

4.4.2.5 Disaster Type Accidents

The inquest/inquiry into the death of nine mine workers at Northam Platinum Mine, at which the Principal Inspector of Mines was appointed as Assessor was completed during the year and the report, as required in terms of Section 72(1)(b) of the Mine Health and Safety Act, was submitted to the Chief Inspector of Mines in September 2006.
The accident occurred in September 2004.

4.4.2.6 Statutory Notices

Section 54 notices were sent to mines for Annual reports not received, some of which will be followed by administrative fines. There were also four instructions that resulted in work place stoppages.

Section 54 notices	Section 55 notices
25	**64**

4.4.2.7 Administrative Fines

No administrative fines were imposed during the year. No deadly sins occurred. Compliance with safety was of a reasonable standard.

4.4.2.8 Examinations

Qualifications	Exam Boards	Number of candidates	Certificates Issued
Mine Overseers	**-**	**-**	**-**
Blasting	**1**	**1**	**1**
Onsetters	**-**	**-**	**-**
Lampsman	**-**	**-**	**-**

4.4.2.9 Land Use Applications and Complaints

All Record of Decision to the Director: Minerals Regulation regarding Mining Permits, Mining Licences, Other Land Usage and Environmental Management files were completed within the prescribed time periods.

	Received	Completed	Percentage
Township Developments	**32**	**33**	**100**
Mining & Prospect permits/rights	**4**	**4**	**100**
Closure Certificates	**3**	**3**	**100**
Environmental Management	**26**	**22**	**85**
Complaints	**1**	**1**	**100**

4.4.2.10 Topical Issues and Matters of Interest

The Western Coegakop Quarry has been re-opened to provide material for the completion of the Port of Ngqura infrastructure.
The construction of the 2010 Football Stadium has commenced. This project will consume large volumes of construction material provided by the mining industry in the Port Elizabeth area.
Coal prospecting continues in the Indwe/Lady Frere area of the Eastern Cape Region and applications are being received for the prospecting of coal bed methane in the Molteno coalfield.

4.4.2.11 Strategies Adopted to Improve Status Quo

The Eastern Cape Region has recognised the need for realistic and achievable planning of inspections and audits at mines. Currently each inspector must complete at least 10 Mine Inspections per month and four “Group” Audits, where each discipline participates, are planned at mines for each month. Inspections and audits must be of high quality, followed by comprehensive reports. Communication with the industry must take place regularly and the Region forwards monthly newsletters to all mines operating in the region. In addition, an annual “road show” is held in the Region where topical issues and legal requirements are presented to the industry role players.

In order to ensure that this coverage is comprehensive, it is essential that the restructuring, identified in 2004/2005, be rolled out to the Regions now that the process has been completed in Head Office.

4.4.3 Regional Report – Northern Cape

4.4.3.1 Overview of the Region

The Northern Cape region is a vast widely spread area with manganese, diamond and zinc underground mines, many opencast mines and diggers. The region was struck with many retrenchments last `year, including the bigger mines like the De Beers Group and some fissure mines which also stopped their operations due to financial pressures. Some mines may still shrink their labour figures e.g. in the Namaqualand Region due to issues around the Richtersveld community land claims – Alexkor.The labour figures on the whole still stand at approximately 29 000, though labour statistics remains a challenge in obtaining these statistics from the small scale mines. There are still possible retrenchments looming at Alexkor- Namaqualand.

Khumani around Sishen may counter this reduction.

Three mines maintained their millionaire status with De Beers Finsch achieving 5 million fatality free shifts and five others attaining their thousand fatality free production shifts.

The Northern Cape Mines Safety Competition was well supported as usual and the Health and Safety Day held at Blackrock (Assmang Manganese) was a success. Several innovations were displayed by different mines, which can lead to improvements in health and safety.

4.4.3.2 Inspections and Audits

The number of inspections were increased at the mines where non-compliance was common. The statutory equipment inspections was complied with just to the minimum due to lack of equipment inspectors in this region.

To address the challenges an increased effort is made to ensure that the mining inspectors also cover the machinery related operations. Mines, which had many accidents, are also targeted with more frequent planned and unplanned inspections and audits.

Category	Inspections	Audits
Planned	1910	10
Actual	1239	10
% Compliance	65%	100%

4.4.3.3 Total Accidents Reported

There was a considerable improvement, approximate of one-third in the reduction of accidents, observed which could be due to the increased efforts made with

inspections and audits. The common causes of accidents had a variety of factors and cannot be associated to a single cause.

The number of accidents remained the same for this year though the completion of these inquiries were long due to logistics associated with the mines .The post-mortem reports are still problematic and many inquiries are completed with outstanding reports.

The shortage of Inspectors: Mining Equipment continues to be a problem where many operations are highly mechanised. The region currently does not have a Senior Inspector: Mining Equipment and has only one inspector who is still undergoing training.

Fatal Accidents	**6**
> 14 day reportable accidents	**57**
1 to 13 day reportable accidents	**25**

4.4.3.4 Investigations and Inquiries

Most of the accident inquiries were completed within a period of 30 days and some took longer but are in the process of being completed.

	Investigations	**Inquiries**	**Total**
Initiated	**81**	**27**	**108**
Completed	**81**	**26**	**107**
% Completed	**100%**	**96%**	**95%**

4.4.3.5 Disaster Type Accidents

There were no disaster type accidents in the region for this reporting period.

4.4.3.6 Statutory Notices

A total of 159 notices were issued to stop unsafe and unhealthy practices during the reporting period. A total of 10 working places were stopped.

The main reasons for working places that were stopped is upgrading of guarding at conveyors on surface mines and improvement of ventilation systems in underground mines.

Section 54 notices	**Section 55 Notices**
102	**57**

4.4.3.7 Administrative Fines

All of the 10 fines, which were recommended, are in the initial process and will follow the usual course.
*The R3 000 that was paid in is from the previous financial year and was only paid in during this financial year.

Three main reasons for the fines were:

- No Hazard Identification and Risk assessment done
- No guards on moving parts of machinery
- Not reporting or late reporting of accidents

No. of fines recommended by inspector	**10**
Value recommended	**Nil**
No. set aside by Principal Inspector	**Nil**
Value set aside	**Nil**
No. imposed by Principal Inspector	**Nil**
Values of fines imposed	**Nil**
Appeals	**Nil**
Value of fines paid	**R3 000***

4.4.3.8 Examinations

The following were the numbers of candidates assessed during the year.

Qualification	Exam Boards	Number of Candidates	Certificates Issued
Mine Overseers	4	6	1
Blasting	26	41	39
Onsetter	2	2	0
Lampsman	1	1	1

With the vast distances involved in the region the testing of the candidates for all examinations, except the Mine Overseer's and Mine Managers examinations is done at the mines because it is difficult to transport the candidates to the departments offices.

4.4.3.9 Land Use Applications and Complaints

	Received	Completed	Percentage
Township Developments	2	2	100
Mining and prospecting permits/rights	90	88	99
Closure certificates	36	33	98
Environmental Management	83	83	100
Complaints	24	20	80

4.4.3.10 Topical Issues and Matters of Interest

A new iron ore mine owned by Assmang has been established next to Kathu in the NC. The mine is currently in the construction phase, which is managed by a Civil Engineering Contractor. This creates a challenge because the contractor who normally operates under the Occupational Health and Safety Act suddenly has to operate under the MHSA. This creates a grey area especially with issues like reporting of accidents, appointments e.t.c. because management of such operations are not clear around the differences in these two Acts and seemingly the employers do not include the requirements of the MHSA in their contract or maybe due to lack of understanding of the MHSA.

Some marine operations e.g. divers, the mines issue concessions to these contractors; the latter may operate for only two or three days in the month depending on the number of sea days. If an accident occurs e.g. bends, the divers who are usually from outside is sent back to his home without the contract manager reporting the accident to the mine. This then results in late reporting or non-reporting of such accidents.

4.4.3.11 Strategy Adopted to Improve Status Quo

Random multidisciplinary audits are conducted where injury trends are observed to be increasing and the occurrence of accidents is also observed to be increasing.
Trends in this region are downward which implies that this strategy is working.

4.4.4 Regional Report – Western Cape

4.4.4.1 Overview of the Region

This region comprises of a lot of small mines, mainly mining sand, clay for bricks and stone aggregate. Offshore there are three FA platforms positioned off Mossel Bay extracting gas and oil and 18 diamond diving boats. There are a total of 238 registered mines in this region. The Western Cape has got a labour force of approximately 8000 representing 1.7% of the mining industry labour in South Africa.

There were no fatal accidents recorded. A number of complaints especially on illegal mining were dealt with successfully.

The region experienced a fatal free year, as opposed to two fatal accidents for the previous year. Reported injuries remained more or less the same at eighteen (18) for the year. Inspections of medical files reveal that there are still mines doing once off Medical Examinations instead of Medical Surveillance.

4.4.4.2 Inspections and Audits

The reason for the discrepancy in compliance in the table below is that for 10 months of the year the region operated without a Principal Inspector of Mines. Inspectors acted in this post, which meant they were unable to complete their planned inspections. In addition the Medical Inspector was off sick for 10 months so none of these planned inspections took place.

Category	Inspections	Audits
Planned	674	4
Actual	520	2
% Compliance	77%	50%

4.4.4.3 Total Accidents Reported

Fatal Accidents	Nil
> 14 day reportable accidents	18
1 to 13 day reportable accidents	43

The number of the 14 Day Reportable Injury accidents remained stable at approximately the same rate as 2005, however the Region is pleased to report that no fatal accidents occurred as opposed to two in 2005.

No real accident trends developed during the course of the year. In order to ensure that the mines are reporting all their accidents to the Regional office, upon doing inspections Compensation Commissioner Register (COID) is called for and compared to the Department of Minerals and Energy accident returns.

4.4.4.4 Investigations and Inquiries

	Investigations	Inquiries	Total
Initiated	17	0	17
Completed	17	0	17
% Completed	100	Na	100

4.4.4.5 Disaster Type Accidents

No disaster type accidents occurred in this region during the period under review.

4.4.4.6 Statutory Notices

There was an increase in the number of statutory notices issued mainly as a result of inadequate guarding of machinery and excessive dust and spillage around crushing plants.

Section 54 notices	Section 55 Notices
7	11

4.4.4.7 Administrative Fines

No. of fines recommended by inspector	**1**
Value recommended	**R10 000**
No. set aside by Principal Inspector	**Nil**
Value set aside	**Nil**
No. imposed by Principal Inspector	**1**
Values of fines imposed	**R10 000**
Appeals	**Nil**
Value of fines paid	**R50 000***

R10 00 was paid by brickworks for the failure of guarding machinery with moving parts (Minerals Regulation 20.5). R5 000 was paid by a quarry for failure to guard moving parts of machinery and for failure to maintain all plant material and other things necessary for compliance with the regulations in good order (Minerals Regulation 20.5 and 2.10.5).

*The reason for the discrepancy in value of fines paid to that imposed is that one fine (R5 000) that was imposed in 2005 was paid in 2006, hence value paid more than those actually imposed. Another R35 000 from the previous financial year was also only paid in during this financial year.

4.4.4.8 Examinations

Qualification	Exam Boards	Number of Candidates	Certificates Issued
Mine Overseers	NA	NA	NA
Blasting	1	1	2
Onsetter	NA	NA	NA
Lampsman	NA	NA	NA

4.4.4.9 Land Use Applications and Complaints

	Received	Completed	Percentage
Township Developments	33	32	97%
Mining and prospecting permits/rights	137	137	100%
Closure certificates	1	1	100%
Environmental Management	97	97	100%
Complaints	9	9	100%

4.4.4.10 Topical Issues and Matters of Interest

As a result of the spate of ATMs that have been blown up in recent times an explosive audit was done of all the 26 mines in the region that use explosives. The focus was on the security in the use, storage and transport of the explosives on the mines. Liaison was also made with the local SAPS Inspector of Explosives.
No serious anomalies were detected however the accountability of excess accessories drawn from the manufacturer must be rectified so as to close the loop. Excess accessories (IEDs & pentolites) not needed are destroyed with the blast; however no record is available to this effect. Managers have been instructed to enter on the Blasting Report what and how many accessories remained and how they were destroyed.
Other instructions given included having the magazine fencing replaced, symbolic signs to be in place and mal-functional locks be replaced.
It was recommend to the Inspector of Explosives that in the interests of better security control a single centralised magazine be used to serve the quarries in the Southern Cape.

4.5 POLICY UNIT

The main purpose of the Policy Unit is to research and develop health and safety policies and legislation for the mining sector through established tripartite committees to promote and regulate the sector.

For that purpose, the newly approved structure of the Unit is made up of a Chief Director, Manager (Occupational Health) and Manager (Mine Safety) both on Director's level, one each of Rock Engineering, Medicine and Hygiene Experts and a number of policy developers in the different disciplines and an HIV and AIDS co-coordinator. One of the incumbents in the Unit will be absorbed into the new post of the Rock Engineering Expert and the other new posts of Experts will be advertised and filled in the next reporting period. The two vacant posts of Policy Developers should be filled within the first half of the following reporting period.

It must be highlighted that during this reporting period, some of the Unit members were in the process of handing-over their responsibilities in the different units, and, as a result, still being mainly involved in seeing some of their tasks in the respective Units/sections of the Mine Health and Safety Inspectorate to finalization as the completion of the MHSI restructuring process was drawing to a close.

4.5.1 Policy and Legislative Development

During the reporting period, some members of the Unit were actively involved in the development of Draft Regulatory Mechanisms (DRMs) and other policies in support of the Mine Health and Safety Act, 1996 (Act 26 of 1996).

By the end of the reporting period, a position paper on the Medical Surveillance of Contractors was nearing completion and studies on Compliance Challenges by Small Scale Miners and Illegal mining had been initiated.

Of the 76 topics initially identified for legislation only eleven (11) topics were still outstanding as at end of the reporting period. The table below depicts the status of the outstanding topics:

MINE HEALTH AND SAFETY ACT LEGISLATION OUTSTANDING

TOPIC	COP'S	Regulations	Standards	Status
Chairlifts		Yes	Yes	Comments received from employers on 20/09/06 (72-MRAC-2007). DRM finalized and to be considered by MRAC in April 2007.
Conveyor Belts	Yes	Yes		*Draft DRM completed and to be forwarded to MHSC for consideration*.
Electrical		Yes	Yes	Approved by MRAC on 14 February 2007. Forwarded to MHSC for consideration. Finalization dependant on Registration issue.
Hazardous Location (including Diesel Equipment, Explosive Protective Apparatus, and Light Metals)		Yes		New topic to cover light metals, diesel equipment and explosion protected apparatus. *Draft regulations completed and to be forwarded to MHSC with a State view concerning the definition of hazardous location in a coal mine including the distance of 180m from the face.*
Lifts		Yes	Yes	TTG have completed the regulations and to be considered by MRAC in April 2007.
General Machinery		Yes		*Draft regulations completed and to be forwarded to MHSC for consideration.*
Offshore Installations	Safety Case	Yes		TTG proposed regulations and guideline, so-called "safety case". On 14/06/06 MRAC agreed that safety case not be used. Workshop held with TTG on 08/09/06. DRM reviewed and completed by TTG and to be considered at MRAC in April 2007.

Shafts and Winders		Yes	Yes	Discussions held with TTG chair on 28/06/06 on how to expedite finalization. TTG met on 06 and 07 July and held a 5-day workshop at the end of July. TTG and LDC have scheduled several meeting in March in an attempt to finalise the DRM.
Vessels under Pressure		Yes		TTG proposed that DoL regulations be used. On 12/04/06 MRAC agreed that it was inappropriate to use DoL regulations. Draft regulations completed and to be considered by MRAC in April 2007.
Flammable Gas Regulations		Yes	Yes	DRM sent to MRAC on 31 January 2007 (04-MRAC-2007). Approved by MRAC on 14 February 2007 and referred to MHSC via MOHAC. Competencies dependant on Registration issue.
Chapter 10 and review of remaining Minerals Act regulations		Yes		A number of generally applicable regulations have been moved to Chapter 10. This generic topic is being addressed by MRAC as requested by Council. Still under consideration by TTG and the LDC.

The following guidelines were completed and printed and are being distributed to regional offices at the end of the reporting period:

- Guideline for the compilation of a Mandatory Code of practice to Combat Rockmass Failure Accidents in Massive Mining Operations
- Guideline for the compilation of a Mandatory Code of Practice for Safe operation of Monorails.

Guidelines for the compilation of the following COP's have also been completed and will be printed and distributed early the next reporting period:

- The Code of Practice for a Diving Operations procedure manual for Underwater Mining Operations; and
- Code of Practice for the Design, development/construction, safe operation and maintenance of draw points, tipping points, rock passes and box fronts.

The following table depicts further legislative topics that were dealt with during the reporting period and published in the Government Gazette (GG):

DATE	GG No.	GOV. NOTICE NO.	SECTION / REGULATION NO. AND / OR TOPIC

30/06/06	28988	GN No. R646	Reg 18.6: *Invitation to nominate persons as members of tripartite institutions*.
18/08/06	29144	GN No. 846	S. 98: *Payment of Levies by mines*. Repeals chapter 35 of Minerals Act regulations.
08/09/06	29214	GN No. 911	S.98: Chapter 8 - *Machinery and Equipment: Fans, Refrigeration and Air conditioning*. Repeals various regs in chapters 10 and 23.
5/10/06	29276	GN No. R989	S.98: Chapter 22: *Amendment to occupational exposure limits for airborne pollutants*.
15/12/06	29457	GN No. 1278	Item 4 of Schedule 4: *Repeal of various Minerals Act regulations relating to explosives*, wef 1/7/2007.
15/12/06	29458	GN No. R1279	S.98(1)(k): *Chapter 4: New explosives regulations, coming into force 1/7/2007*.
19/1/07	29544	GN No. 34	S.98: Chapter22: *Amend reg 22.14.1(1) and delete 22.14.1(7)*

4.5.2 The Technical Research Group (TRG) Meetings

Some of the Policy Unit technical personnel were involved with the validation of Unit Standards, Qualification and skills programmes with the MQA and a substantial number of unit standards were merged into various generic unit standards to conform to SAQA rules.

The review of the Qualifications Framework put more focus on Rock Engineering (TRG 3), Surface Mining (TRG 6), Occupational Safety (TRG 12), Small Scale Mining (TRG23), Generic Standards (TRG GS), Underground Hardrock (TRG 4) and Underground Coal (TRG 5) and, as a result, significant progress in these areas was achieved during the reporting period.

4.5.3 HIV and AIDS Issues

The Unit arranged and organised the highly successful high-profiled Mining Industry HIV/AIDS Tripartite summit, which was attended by government leaders from national and provincial offices across the country and labour and mining house corporate representatives. The summit took place at the Indaba Hotel in Fourways in November 2006.

It was held in line with the “Declaration of Intent on HIV and AIDS” that emerged from the Mining Health and Safety summit held in 2003 where all stakeholders in the industry unanimously agreed to maximise their efforts to tackle the pandemic in the industry.

Each tripartite partner presented their HIV/AIDS Strategic Plan and the following were discussed or explored:

- Progress update on HIV and AIDS programmes in the industry,
- The four pillars of the HIV/AIDS Strategic Plan i, e:
  - Prevention,
  - Treatment, Care and Support,
  - Research, Monitoring and Evaluation and
  - Socio Economic Development.

4.5.4 Interaction and Participation in other stakeholders' activities

Members of the Unit also participate actively within the EMTAC, RETAC and OHTAC and related sub-technical groups which gives specialist advice to SIMRAC on research project proposals, priorities and progress in engineering, rock mechanics and occupational health (medicine and hygiene). The respective committees sit on average three times per month.

One RETAC member in the Unit is also providing technical assistance to the presiding officer in the inquiry into the Tautona seismic disaster of October 2006, which was still in progress at the end of the reporting period.

Members of the Unit also participate significantly within other Committees and Associations and interact on regular basis with stakeholders, including the following, where they provide valued input in established forums with stakeholders:

- Association of Mine Resident Engineers,
- Department of Health
- Department of Labour
- SIMRAC and MQA,
- First National Battery,
- SABS - explosion protection standards, caplamp standards etc
- Regional Offices – discuss national health and safety milestones etc.

4.6 SPECIALISTS UNIT

The core business of the Specialist Unit is to provide a centre of excellence in order to provide specialist and technical services to the Mine health and Safety Inspectorate with particular focus on the regional components.
The unit is still in the process of recruiting appropriate staff to provide a full range of services that can be expected from it.

Some of the notable activities of the unit are summarized below.

- The Regional Operations Manager Gold and Platinum established an Inquiry Review Task Team, made up of members of the Unit and some members of the MHSI in the Gauteng regional office. The main aim of the team is to

assess and devise solutions to improve and standardize the current format for accident investigations and inquiries.
A member of this unit was appointed as the presiding officer for the mine accident at Tautona Goldmine, which occurred on 23 October 2006, where five workers were fatally injured by a rockfall after a seismic event. The fall of ground was of such an extent that it took the rescue operations a period of five days to recover all the bodies of the deceased workers. The investigation to this accident was completed by the end of November 2006 and a pre-inquiry meeting was held with all representatives on 4 December 2006.

- Support was provided to Gauteng Region - Mine Equipment (East) in preparation for an investigation of the failure of ropes terminations at South Deep. An action plan was drawn up and assistance was given to withdraw a previously issued section 54 notice requesting three (3) dead turns on the winding drum in all circumstances.

- The unit is part of the task team comprised of the Department of Labour, the Specialist Unit and Rand Mutual, whose responsibility is to investigate claims lodged by the ex-miner workers.

- The unit is involved in assisting with the classification of certain deaths as due to natural causes or mine injuries.

- Some members of the unit are actively involved with committees established for the development of legislation and other safety standards, especially related to mining equipment.

  At present this Unit is actively involved in revision and development of the following national standards:
  - SANS 10208 “Design of structures for the mining industry” – four (4) parts.
  - SANS 536 “High pressure water bulkhead”
  - SANS 1589 “The braking performance of trackless mining machines”
  - SANS 10293 “Condition assessment of steel wire ropes on mine winders”
  - SANS (no number yet) Shaft closure requirements

  SANS 273 “The design, manufacturing, maintenance and safe operation of chairlifts in mines” was sent for public comment and distributed to the relevant regional personnel. This standard will soon be published by STANSA.

  - SANS 10108 - “The classification of hazardous locations and the selection of apparatus for use in such locations” was published.
  - ARP 0108 - “ Regulatory requirements for explosion protected apparatus” was published.
  - SANS 10086-2 - “The installation, inspection and maintenance of equipment used in explosive atmospheres in *mines*”. Awaiting publication by STANSA.

- SANS 10868 - “Compression ignition engine systems and machines powered by such engine systems, for use in mines and plants with explosive gas atmospheres or dust atmospheres or both”. Four Standards have been published.
- SANS 10266:2003 – “The safe use, operation and inspection of Man-riding Belt Conveyors in mines”. Awaiting publication by STANSA.
- SANS 1438 - “Helmet light assemblies for miners”. This standard is being developed and will include the latest Light Emitting Diode technology used in portable and caplamps. The milestone date for completion is July 2007.
- SANS 10282 - “The Maintenance of Helmet Light Assemblies”. The revision of this standard has been completed but not yet published by STANSA.

The following Chief Inspector Instructions were developed and issued: -

- Rack and Pinion Elevators
  The above instruction was issued after a number of fatal accidents to give guidance to regional inspectors on the licensing of Rack and Pinion elevators and Raise Climbers.
- Vehicle Detection Systems for Opencast Heavy Earth Moving Trackless Mobile Machinery
  Seven persons were fatally injured in four accidents when heavy earth moving trackless mobile machines and light vehicles collided at opencast mines. This instruction was issued in order to give guidance to mine personnel on the implementation of personnel and vehicle detection systems and the use of separate service roads for small vehicles traveling on opencast haul roads.
- Automatic Teller Machine (ATM) Explosions
  A total of 53 ATM’s were damaged or totally destroyed in explosions during 2006. The Chief Inspector of Explosives confirmed that in 99,9% of ATM explosions commercial mining explosives were used. All regional Principal Inspectors were instructed to perform a systems audit on explosives security, use and control of explosives at all mines to gauge compliance with current explosives legislation.
- Guidance for the Compilation of A Mandatory Code of Practice for the Safe Operation of Monorail Installations
  The Chief Inspector of Mines issued the above guideline to regional Principal Inspectors in March 2007 and they were instructed to distribute copies of the guideline to mines. Employers must now draw up a Code of Practice for the safe operation of monorail installations on the mines.

This Unit administers the examinations for Engineers, Winding-Engine Drivers and Locomotive Drivers.

- **Engineers examinations for 2006**

Date of Examination	Candidates Enrolled	Candidates Written	Candidates Passed	% Passed
June 2006				
Plant Engineering	169	148	19	12,9%
Legal Knowledge	135	115	25	23,5%
November 2006				
Plant Engineering	171	140	36	25,7%
Legal Knowledge	140	131	24	22,4%

22 Full certificates were issued – June 2006
33 Full certificates were issued – November 2006

- **Winding-Engine Drivers examinations for 2006**
  Seven examination boards were held during the year
  Forty-eight candidates were examined
  Thirty-nine Certificates of Competency were issued

4.7 Mine Survey

Mine surveying, cartography and draughting services.

The main functions of this directorate are the continuous monitoring of mine surveying standards and practices in order to promote a culture of safety and health on mines, the safe utilisation of undermined land for development purposes, the safe and optimal exploitation of mineral resources as well as the rendering of mapping and draughting services. Additionally, the identification of hazards and risk control together with the training of new personnel became imperative functions.

4.7.1 Surveying matters

- The directorate is rendering a continued service to the regional offices with regard to the maintenance of surveying and mapping standards and the monitoring of compliance by mines with the relevant regulations and requirements in order to ensure a safe mining environment and the protection of surface structures and underground workings.

- Auditing of the departmental copies of mine plans in all regions is an ongoing function.

- There was an increase in both the number of underground and opencast mine surveying inspections and physical checks. Surface and underground protection in shallow mines received further attention. Underground

inspections and check measurements were particularly concentrated on in restricted mining areas, where underground and surface structures are to be protected. Serious irregularities were revealed in a number of cases.

The following table shows a comparison of tasks completed during the year:

	2005/2006 Actual	2006/2007 Planned	2006/2007 Actual
Mine survey inspections (underground and surface mines)	529	507	485
Underground control measurements	251	229	224
Special tasks (control surveying projects)	46	85	85
Regional files received and completed			
❑ Carried over from previous year	10	-	20
❑ Received during the year	661	-	868
❑ Completed during the year	651	-	876
❑ Carried over to next year	20	-	27
Miscellaneous tasks (Examinations, projects, etc.)	51	-	21

Regional files include applications for exemptions and permissions, surface utilisation applications including applications for undermining of surface structures, land use applications (township establishments, roads, railways and other rights affected by past, present and future mining operations).

4.7.2 Mapping Services

4.7.2.1 Management of mine survey data

The Sub-Directorate: Mapping and GIS, strives to maintain and promotes a sustainable data management of the country's defunct and current mines, inter-alia, prescribed mine plans, maps and related spatial survey data for the lasting benefit of the nation, future land use applications and ensuing possibilities of arising mining activities.

Indexing and storage of recently closed and current mine plans is an ongoing process.

4.7.2.2 Scanning of defunct mine plans

Several mine plans have been scanned, including the cadastral maps showing the undermined areas. A project plan is to be developed to monitor different phases along the data capturing and other procurement processes involved.

4.7.2.3 Technical draughting

An ongoing mapping and technical draughting services of the sub-directorate includes modern Survey, Mapping and Geographic Information Systems (GIS) technology, which place great emphasis on survey data linkages, database

management, spatial queries, data manipulation, specialized analysis and large format scanning and printing.

The sub-directorate has, in recent years, accomplished technological advancements on Mapping and GIS software (Arc view) and related equipments in producing the following maps and/or plans:

Processing of mine dump models, volumetric calculations for earthworks, rehabilitation of the closed mines.

Updating of undermined areas on topo-cadastral maps, which will later be integrated on NMPS.

The country's provincial maps, which depict active mines, closed mines, mineral points and related cadastral data has been developed, with few of them being finalized.

4.7.3 Rehabilitation

The Directorate: Mine Surveying is constantly involved in practical surveying projects at old discard dumps of defunct asbestos mines in the Northern Cape, Limpopo and Mpumalanga regions. This is done in order to verify rehabilitation earthwork carried out by contractors who are paid out of State funds.

Northern Cape

1. Corheim Asbestos Mine (Earthworks Complete)

Rehabilitation of this area commenced during April 2006 and was regularly monitored during the year. The final invoice for earthworks dated 28th August 2006 was received, verified and sent to the Mine Environmental Directorate for processing. An on-site visit was undertaken during December 2006, which showed that the site still needs to be vegetated.

2. Hartland Asbestos Mine (Earthworks Complete)

Rehabilitation of this area commenced during June 2006 and was regularly monitored during the year. The final invoice for earthworks dated 28th August 2006 was received, verified and sent to the Mine Environmental Directorate for processing. An on-site visit undertaken during December 2006 showed that the site is completely rehabilitated but still needs to be vegetated.

3. Asbes Asbestos Mine (ongoing)

Rehabilitation of this area commenced during June 2006 and was regularly monitored during the year. Progress on this project has, however, been extremely slow. Invoices for earthworks dated 31st August, 29th September and 7th December 2006 were received, verified and sent to the Mine Environmental Directorate for processing. An on-site visit was undertaken during January 2007 to assess the progress. Final verification surveying is scheduled for March 2007.

4. Bestwell Asbestos Mine. (Earthworks Complete)

Rehabilitation of this area commenced during April 2006 and was regularly monitored during the year. Invoice for earthworks dated 28th July, 25th August, 29th September, 27th October and 8th December 2006 were received, verified and sent to the Mine Environmental Directorate for processing. An on-site visit undertaken during January 2007 showed that the site is completely rehabilitated but still needs to be vegetated.

5. Heuningvlei Asbestos Mine along the Bute Road (Earthworks Complete)

Rehabilitation of this area commenced during April 2006 and was regularly monitored by surveyors during the year. Invoice for earthworks dated 28th July, 25th August, 29th September, 27th October and 30th November 2006 were received, verified and sent to the Mine Environmental Directorate for processing. An on-site visit undertaken during January 2007 showed that the site is completely rehabilitated but still needs to be vegetated. Some old asbestos dumps near the Heuningvlei Village, which were previously covered, are, however, showing signs of erosion.

6. Bute Asbestos Mine and polluted haulage roads (ongoing)

Rehabilitation of this area commenced during June 2006 and was regularly monitored during the year. Invoices for earthworks dated 25th August, 7th October, 27th October and 30th November 2006 were received, verified and sent to the Mine Environmental Directorate for processing. An on-site visit and verification survey was undertaken during January 2007. Earthworks are still being done on the Northern dumps and should be completed by March 2007.

The following sites in the Kuruman/Hotazel area have been surveyed for volumetric purposes but are still to be rehabilitated: **Langley, Strelly, Winstead, Mansfield and Bosrand Mines**. **Jabolo Mine** dumps volumes will be surveyed during May 2007.

7. Limpopo

Penge and Weltevrede Asbestos Mine dumps volumes will be surveyed during June 2007

4.8 Support Services Unit

The Support Services Unit, formerly known as Management Support and Internal Control has been established in line with the recommendations made following the MHSI review conducted in 2003. The newly restructured section is made up of the following functional areas; Management Information Systems, Administration, Training, Legal Services and Mine Health and Safety Promotion.

The purpose of the Support Services Unit is to implement, monitor and maintain administrative and technical support systems for the Mine Health and Safety Inspectorate.

The main functions of the Support Services Unit are to:

- plan and co-ordinate training and development within the MHSI
- promote the MHSI
- provide a legal support service to the MHSI
- provide an administrative support service to the MHSI
- provide a management information service to the MHSI

4.8.1 Management Information Systems

The South African Mines Reportable Accident Statistical System (SAMRASS) is a database, which captures and stores accident data that occur at mines. The data is then used for analysing the safety performances of the mining industry and various industry stakeholders.

The roll out of the Magic 9 platform for SAMRASS has now been completed in the regions and the system is now centralised to head office, which eliminates problems with downloading of information from the regions.

The databases continue to be plagued with network and server problems, which hamper the Departments' ability to provide accurate and reliable statistical reports.

The requests from stakeholders for certain changes to be made to SAMRASS have not been carried out due to a capacity limitation in Directorate: SDM. However, funds have been made available in next year's budget for an improved Management Information System to be developed.

The South African Occupational Diseases Database (SAMODD) is used to capture occupational health data from mines to analyse the state of health in the mining industry.

SAMODD, in the Magic 9 platform, is currently in the process of being rolled out to the regions. The data is still collected from mines and manually put on to the system. SAMODD is still not regulated so the mines continue to supply this information on a voluntary basis resulting in an inconsistency in the data available.

4.8.2 Internal Control

The Internal Control Sub-Unit has been established in the MHSI for the purpose of identifying shortcomings and irregularities in the Inspectorate's business processes.

During the reporting period, audits to determine the current state of controls ate the regional offices were conducted at eight of the nine regional offices.

The audits have revealed amongst others that:

- Data provided through the monthly business plan reports is not reliable. Therefore there is a need for periodic reporting system to be reviewed and improved upon.

- Processes and activities vary from region to region, for example, what constitute and audit and how is accounted for in our reports differs per region. This requires for standard operating procedures to be developed for all critical activities to ensure consistency.

The unit is currently developing a new monthly reporting system that will be implemented in the new financial year.

The Sub-Unit will continue with monitoring of the accuracy of data reported by conducting regular audits in the various directorates.

This Sub-Unit, following the restructuring initiative now reports directly to the Chief Inspector of Mines.

4.8.3 Administration

4.8.3.1.1 Staffing: MHSI

The establishment of the Mine Health and Safety Inspectorate provides for 336 posts of which 260 are currently filled and 76 are vacant.

The demographics of the staff for the MHSI on 31 March 2007 was as follows:

Gender	African	White	Asian	Coloured	Total
Male	95	82	1	5	183
Female	50	24	0	3	77

Since 1 April 2006 the Mine Health and Safety Inspectorate lost 39 staff members due to resignations, retirements, etc.

4.8.3.1.2 Staffing: Support Services Unit

The establishment of the Support Services Unit provides for 36 posts of which 24 are currently filled and 12 are vacant.

The demographics of the staff on 31 March 2007 was as follows:

Gender	African	White	Asian	Coloured	Total
Male	6	3	0	0	9
Female	10	5	0	0	15

4.8.3.2 Administrative Fine Account

The Administrative Fines Account statement on 1 April 2006 reflected a credit balance of R 1 299 433. Payments totalling R 566 000 were received for fines issued by the MHSI during the year.

The following payments were made from the accounts to finance the activities as indicated:

- R 193 475 Payments towards the Mine Health and Safety EXPO in the North West Province.

- R 131 917 Levy payments that were incorrectly paid into the Administrative Fines Account.

The account closed the financial year on a credit balance of R 1 561 731, 09

4.8.3.3 Exemptions

A total of 29 applications requesting exemptions from legal requirements and permissions for working on Sundays by mines were received during the reporting period. Twenty-seven of these were approved and two decisions are outstanding.

4.8.4 Training

In spite of challenges, the MHSI has during the reporting period, continued to develop the skills and knowledge of its staff members. A total of 32 staff members within the MHSI were trained, comprising 17 managerial and administrative courses and 15 technical courses. Training is also geared towards addressing transformation issues that are a serious problem in the industry due to its job reservation legacy. The MHSI has also embarked on the process of addressing the skills shortages and past imbalances within the mining sector. The Director-General approved the Mine Health and Safety Branch HRD Programme in August 2006. The following interventions have been initiated: A Bursary Scheme whereby 8 students (5 females and 3 males) from previously disadvantaged areas were offered bursaries to study towards engineering, surveying and mining. To provide diplomats and graduates an opportunity to be employed and also to address the skills shortage within the MHSI, a Learner Inspectorate Programme is in the process of being developed. Various accredited training providers are to be requested to assist with this two-year internship programmes.

4.8.4.1 Examinations

Qualifications	Applicants	Certificates Issued
Mine Managers	787	80
Mine Overseers	603	252
Mine Surveyors	422	10
Winding Engine Drivers	48	39
Engineers (Mech + Elec)	97	55

4.8.5 Legal Services

4.8.5.1 Finalised Legislation

The following are a list of legislation finalized during the reporting period, but not yet promulgated

- Under Water Mining
- Winding Engine Drivers and Onsetters
- Water Storage and Pumping
- Orepasses and Drawpoints
- Exit certificate and record of hazardous work
- Emergency preparedness and response
- Process Plants
- Regulation 28.12.A (Recognition of MQA Qualification for acceptance to M/O and MMC of Competency)
- Flammable Gas Regulations

4.8.5.2 Promulgated Legislation

The following legislation were promulgated during the reporting period

Regulations	**GN No**	**Date**
Invitation to nominate persons as members of tripartite institutions	28988 in GN no R646	2006/06/30
Payment of levies by mines. Repeals Chapter 35 of Minerals Act Regulations	29144 in GN no 846	2006/08/18
Machinery and equipment: Fans, refrigeration and air-conditioning. Repeals various regulations in Chapters 10 and 23	29214 in GN no 911	2006/09/08
Amendments to occupational exposure limits for airborne pollutants	29276 in GN no R989	2006/10/05
Repeal of various Minerals Act regulations relating to explosives, w.e.f. 1-7-2007	29457 in GN no 1278	2006/12/15
New explosives regulations, coming into force 1-7-2007	29458 in GN no R1279	2006/12/15
Amend reg 22.14.1 (1) and delete 22.14.1 (7)	29544 in GN no 34	2007/01/19

4.8.5.3 Pending Legislation

The following legislation is expected to be finalised shortly

Regulations
- Chairlifts - Conveyor Belts - Electrical - Hazardous Location (including Diesel Equipment, Explosive Protective Apparatus, and Light Metals) - Lifts - General Machinery - Offshore Installations - Shafts and Winders - Vessels under Pressure - Chapter 10 and Review of remaining Minerals Act regulations

4.8.6 Mine Health and Safety Promotion

4.8.6.1. MHSC Award Scheme

The Sub-Unit Mine Health and Safety Promotion is responsible for administering the MHSC Award Scheme.

The Safety Achievement Flag for 2006/2007 has been awarded to the following mines:

- Greenside Colliery: Collieries
- Assmang Manganese: Other Mines
- Blyvooruitzicht Mine: Deep to Ultra Deep Gold/Platinum Mines
- Fairview Mine: Shallow to Deep Gold/Platinum Mines

In the category Million fatality free shifts, 34 mines achieved a million of which 13 mines achieved 2 million and more fatality free shifts. Of the latter 9 achieved 3 million and more fatality free shifts.

In the category Thousand Fatality free production shifts, 27 mines achieved a thousand, of which 23 achieved two thousand and more fatality free production shifts. Eleven of these achieved 4 thousand and more fatality free production shifts.

4.8.6.2. Exhibitions

In the drive to promote awareness of available safety and health products and information at mines and communities where mines are located, a biennial EXPO is held and the Klerksdorp region hosted the 2006 EXPO on 4 October 2006 at the Oppenheimer Stadium at Vaal Reefs in Orkney. The sub-unit also attended 10 smaller exhibitions, which were held at specific mines, Electra Mining and Noshcon (both International events), as well as the Northern Cape Mine Managers Association Safety Health and Safety Day (an Annual event).

Annexure A

Organogramme

Annexure B
Additional Statistics

1. Persons at work per commodity

	2005					2006					
	U/G	SURFACE	OPENCAST	SEA	TOTAL	U/G	SURFACE	OPENCAST	SEA	TOTAL	%deviation
COAL	27623845	27333	9731	0	55720	17576	27912	9912	0	55400	*-0.57*
GOLD	131013	23764	388	0	155165	128435	20955	218	0	149608	*-3.58*
DIAMONDS	5084	9951	3904	1361	20300	3845	9032	5841	977	19695	*-2.98*
COPPER	1307	2527	167	0	4001	1269	2533	83	0	3885	*-2.90*
CHROME	4903	2540	241	0	7684	4962	2393	200	0	7555	*-1.68*
IRON ORE	0	4740	2908	0	7648	0	5152	2991	0	8143	*6.47*
GRANITE DS	14	1791	1125	0	2930	0	1478	1328	0	2806	*-4.23*
LIMESTONE	0	3505	1047	0	4552	0	3450	1283	0	4733	*3.98*
PLATINUM	112555	32275	3528	0	148358	124091	35992	3046	0	163129	*9.96*
CLAY	0	12345	904	0	13249	0	13257	817	0	14074	*6.23*
OTHER MINES	3346	19814	3528	260	26948	3232	20447	4334	294	28307	*5.04*
TOTAL	**276878**	**140585**	**27471**	**1621**	**446555**	**283410**	**142601**	**30053**	**1271**	**457335**	*2.41*
* Persons at work.											
# As from 1996, statistics for Namaqualand Mines are included in the figures for the Northern Cape Region.											

2. Labour: Contractors v/s establishment

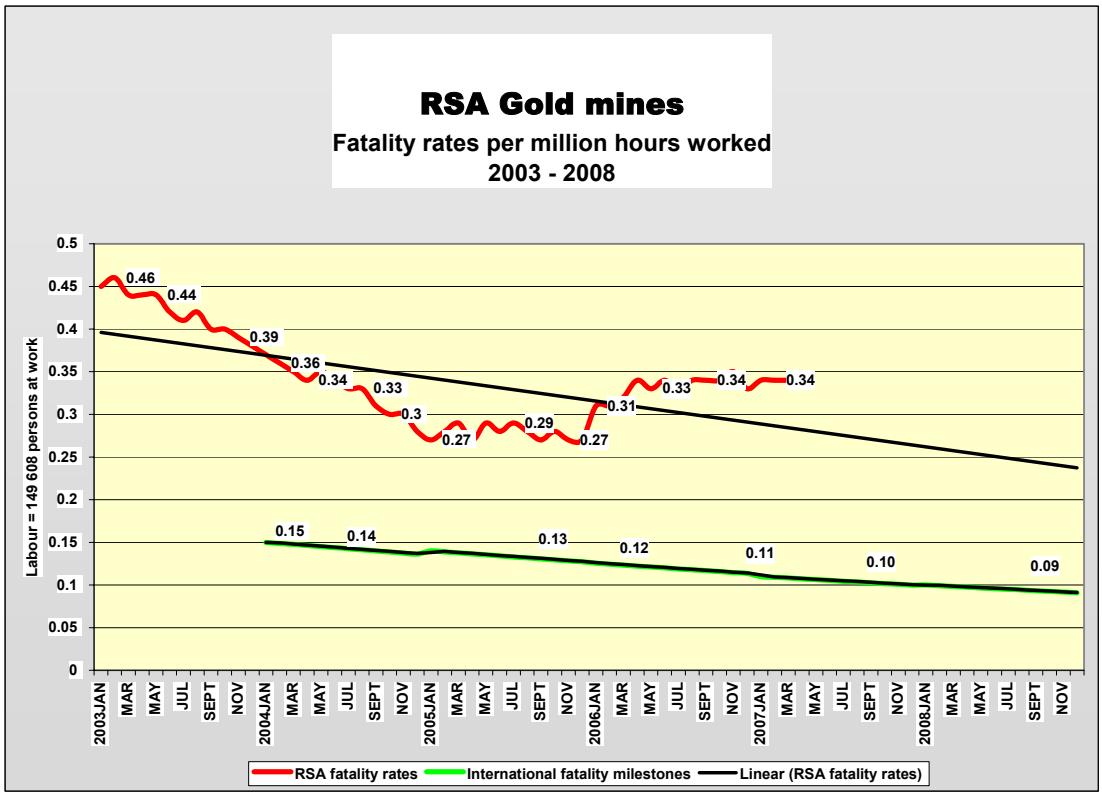
	Establishment					Contractors					Grand Total	
	U/ ground	Surface	O/cast	Sea	Total	U/ ground	Surface	O/Cast	Sea	Total	Grand Total	% Contractors
Coal	12934	15402	4094	0	**32430**	4642	12510	5818	0	**22970**	**55400**	41.5
Gold	108785	16025	62	0	**124872**	19650	4930	156	0	**24736**	**149608**	16.5
Diamonds	2762	6042	5358	131	**14293**	1083	2990	483	846	**5402**	**19695**	27.4
Copper	544	1595	41	0	**2180**	725	938	42	0	**1705**	**3885**	43.9
Chrome	3167	1370	126	0	**4663**	1795	1023	74	0	**2892**	**7555**	38.3
Iron Ore	0	3141	2152	0	**5293**	0	2011	839	0	**2850**	**8143**	35.0
Granite DS	0	1295	927	0	**2222**	0	183	401	0	**584**	**2806**	20.8
Limestone	0	2672	1107	0	**3779**	0	778	176	0	**954**	**4733**	20.2
Platinum	76775	21697	477	0	**98949**	47316	14295	2569	0	**64180**	**163129**	39.3
Clay	0	11464	577	0	**12041**	0	1793	240	0	**2033**	**14075**	14.4
Other	2179	13405	3535	114	**19233**	1053	7042	799	180	**9074**	**28307**	32.1
Total	**207146**	**94108**	**18456**	**245**	**319955**	**76264**	**48493**	**11597**	**1026**	**137380**	**457335**	**30.0**

3. All Mines-Accident Data 1984 - 2006

YEAR	FATALITIES	FATALITY RATE*	Fat.rate/ mill. hours	INJURIES	INJURY RATE*	Inj.rate/ mill.

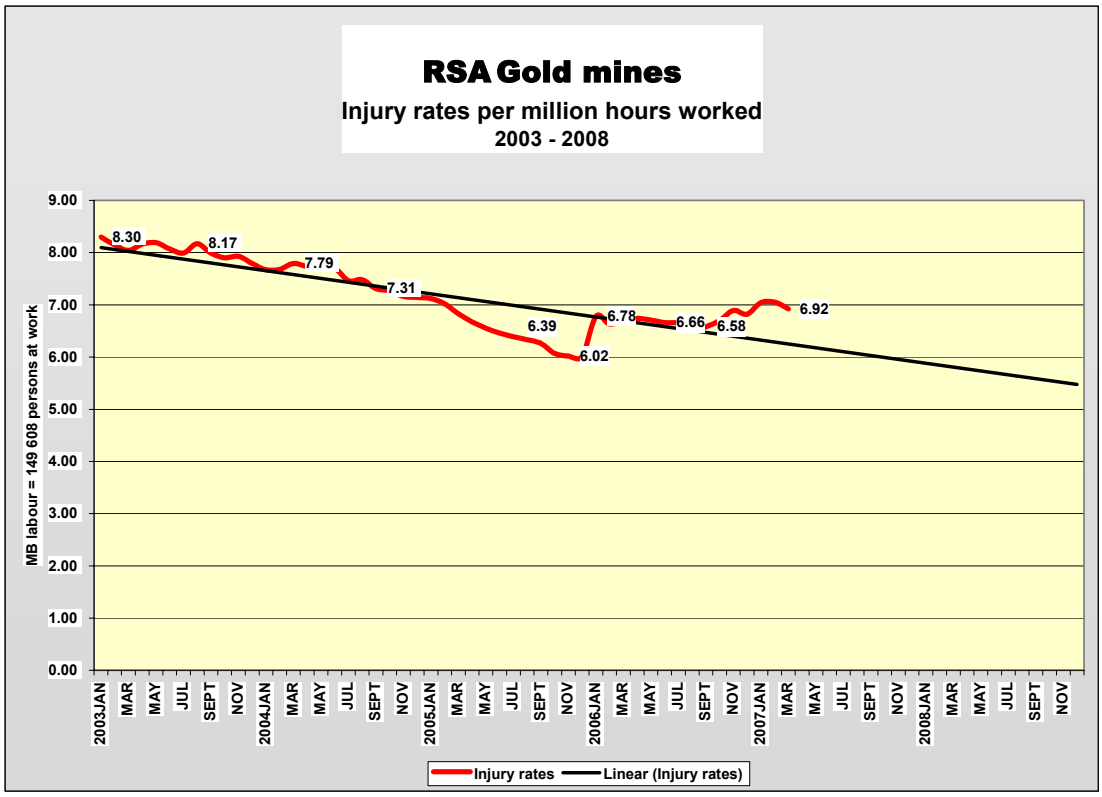
						hours
1984	774	1.12		15 745	22.81	
1985	737	1.04		15 080	21.34	
1986	855	1.20		13 315	18.68	
1987	756	1.07		11 478	16.26	
1988	677	1.00		10 374	15.36	
1989	744	1.12		10 657	16.02	
1990	684	0.98		9 830	14.09	
1991	602	0.95		9 058	14.24	
1992	551	0.94		8 795	15.00	
1993	586	1.08		8 524	15.66	
1994	482	0.95		7 934	15.71	
1995	533	1.02		7 717	14.76	
1996	463	0.94		7 426	15.00	
1997	415	0.86		7 095	14.66	
1998	366	0.85		6 059	14.12	
1999	309	0.76	0.34	5 488	13.42	6.10
2000	285	0.72	0.33	4 733	11.93	5.26
2001	288	0.75	0.34	4 728	12.34	5.61
2002	290	0.75	0.34	4 461	11.52	5.24
2003	270	0.65	0.29	4 301	10.32	4.69
2004	246	0.56	0.25	4 268	9.66	4.39
2005	201	0.45	0.20	3 985	8.90	4.06
#2006	199	0.44	0.20	4 160	9.10	4.13

Graph 3.1.1.1: Gold Sector Fatality Rates v/s Milestones

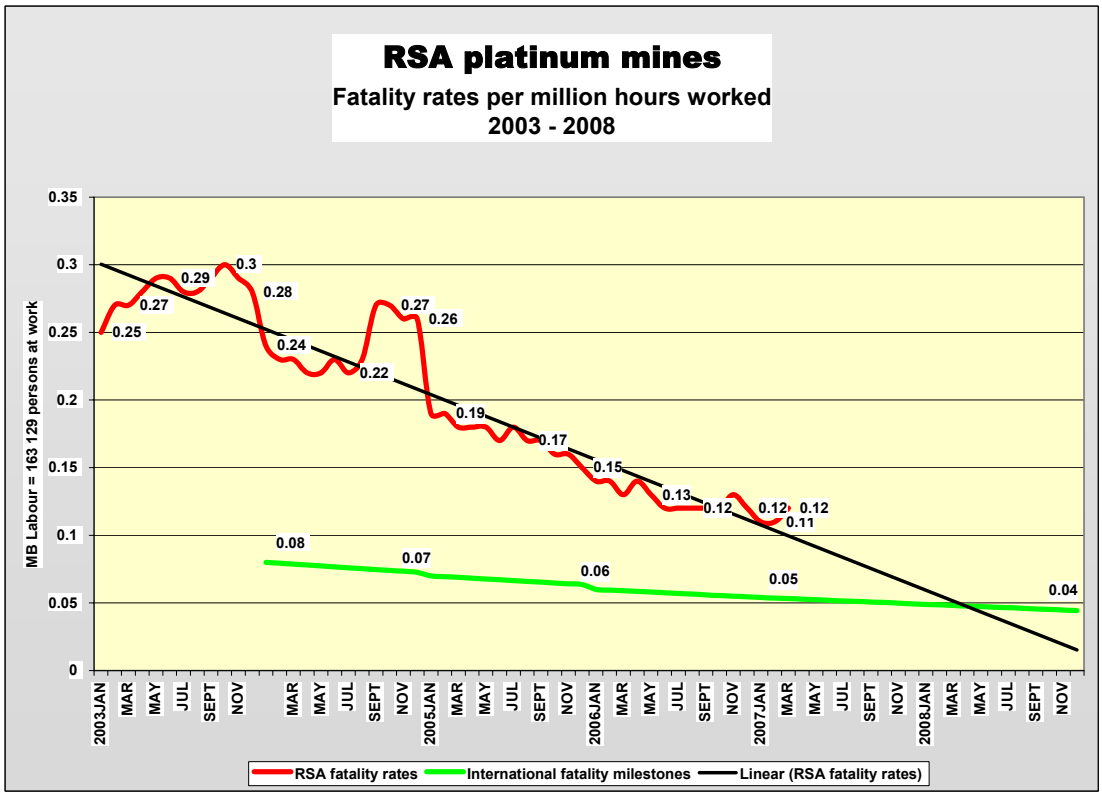


Although the trend line still indicates a drop in fatality rates since 2003, during the last two years, rates have steadily been increasing again and are moving away from the international milestones. The injury rates have also been increasing since last year.

Graph 3.1.1.2: Gold Sector Injury Rates



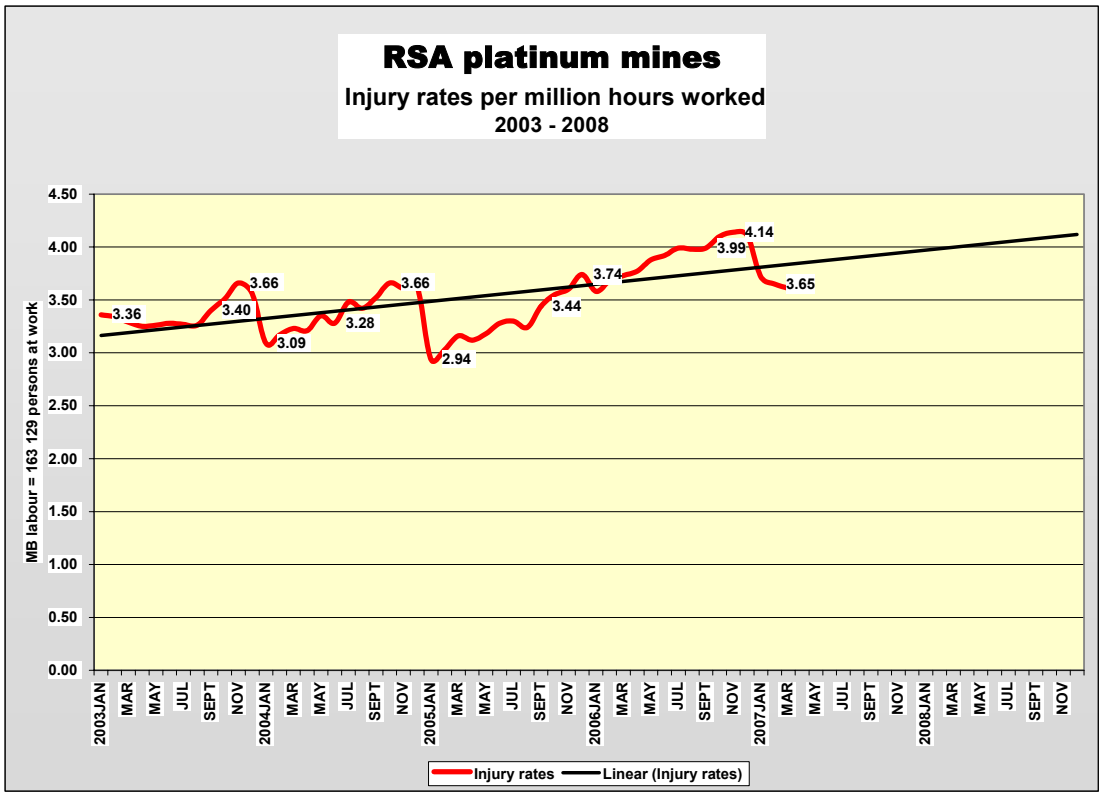
Graph 3.1.1.3: Platinum Sector Fatality Rates v/s Milestones



Fatality rates in platinum mines have steadily been dropping since 2003, and if this trend continues, parity with international milestones could be reached during 2007.

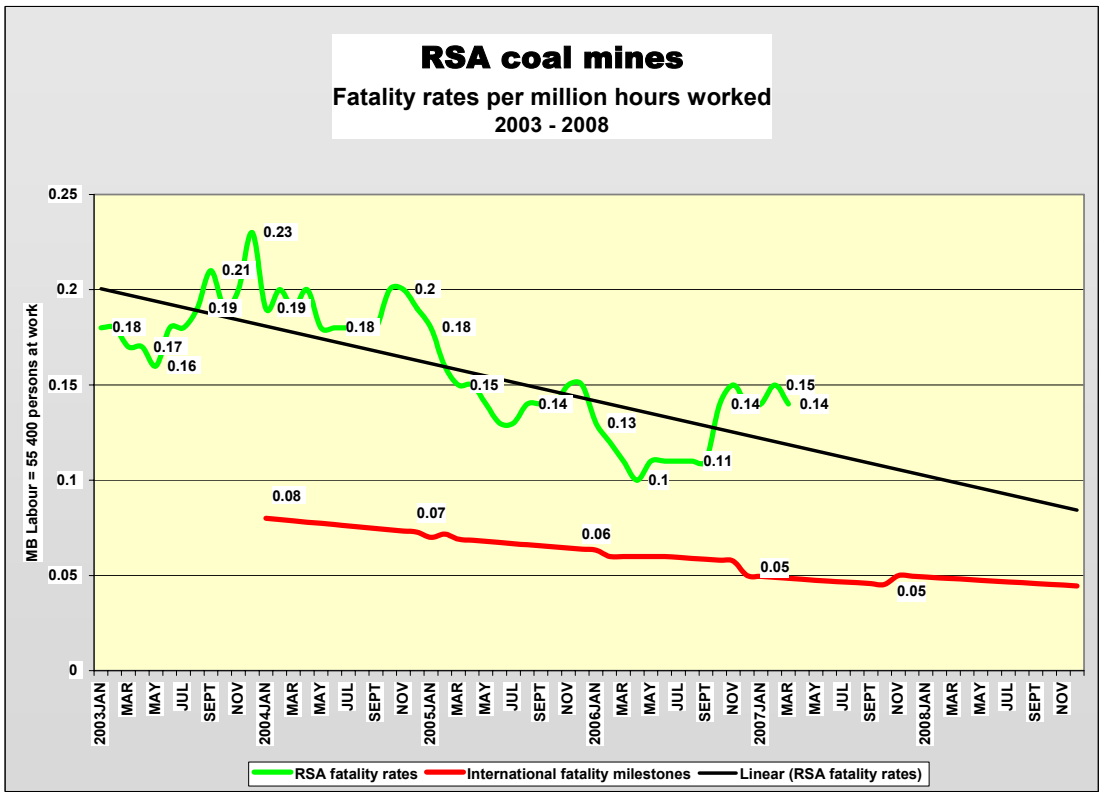
Graph 3.1.1.4: Platinum Sector Injury Rates

However, injury rates have steadily been increasing since 2003.

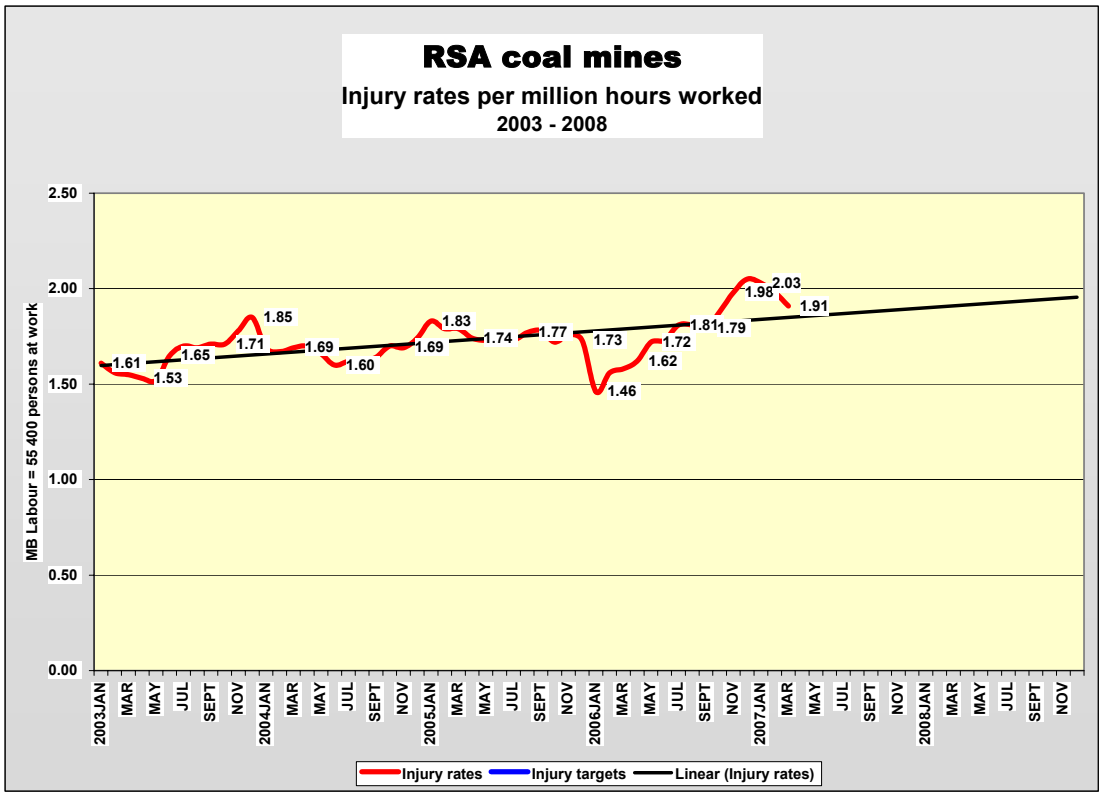


Graph 3.1.1.5: Coal Sector Fatality Rates v/s Milestones

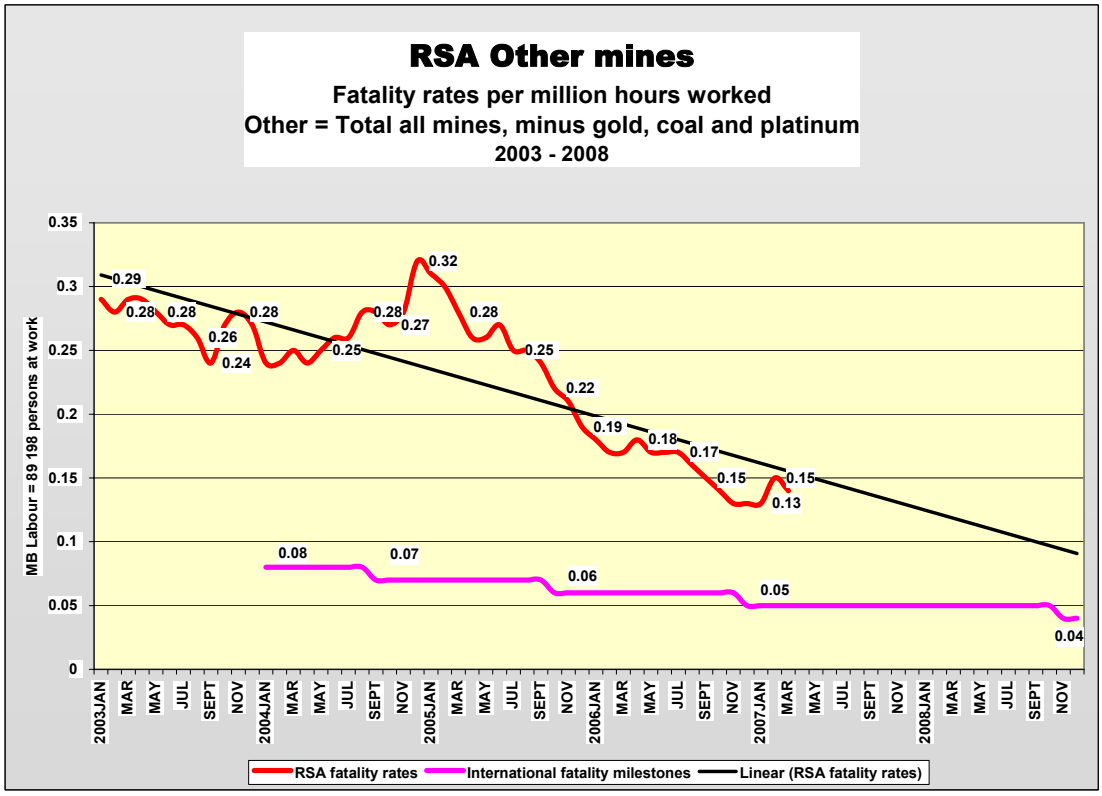
Except for the last part of 2006, the trend line for coal fatalities still indicates a decline since 2003.



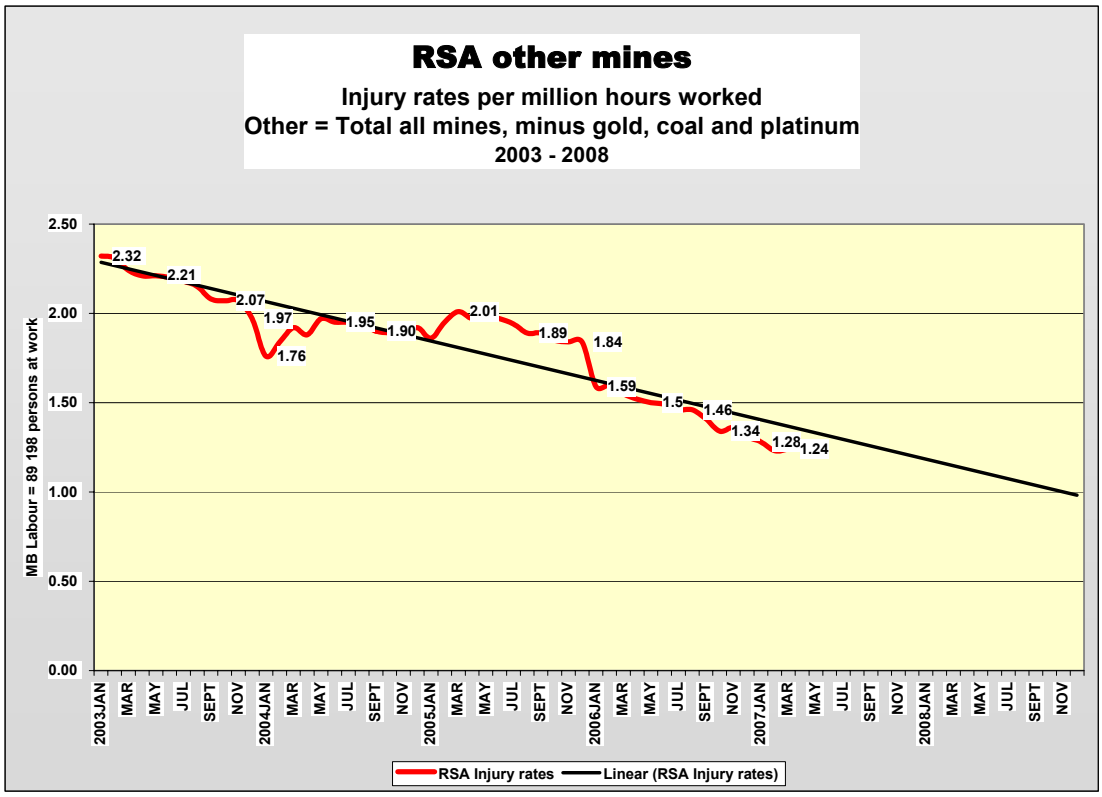
Graph 3.1.1.6: Coal Sector Injury Rates



Graph 3.1.1.7: Other Sectors Fatality Rates v/s Milestones

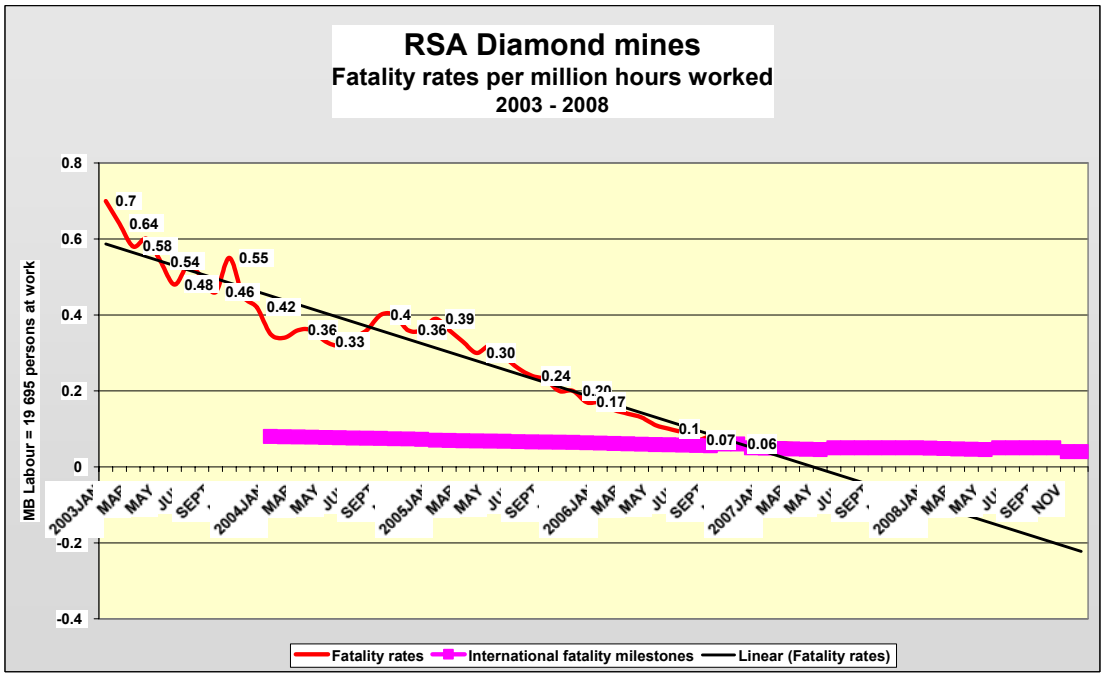


Graph 3.1.1.8: Other Sectors Injury Rates



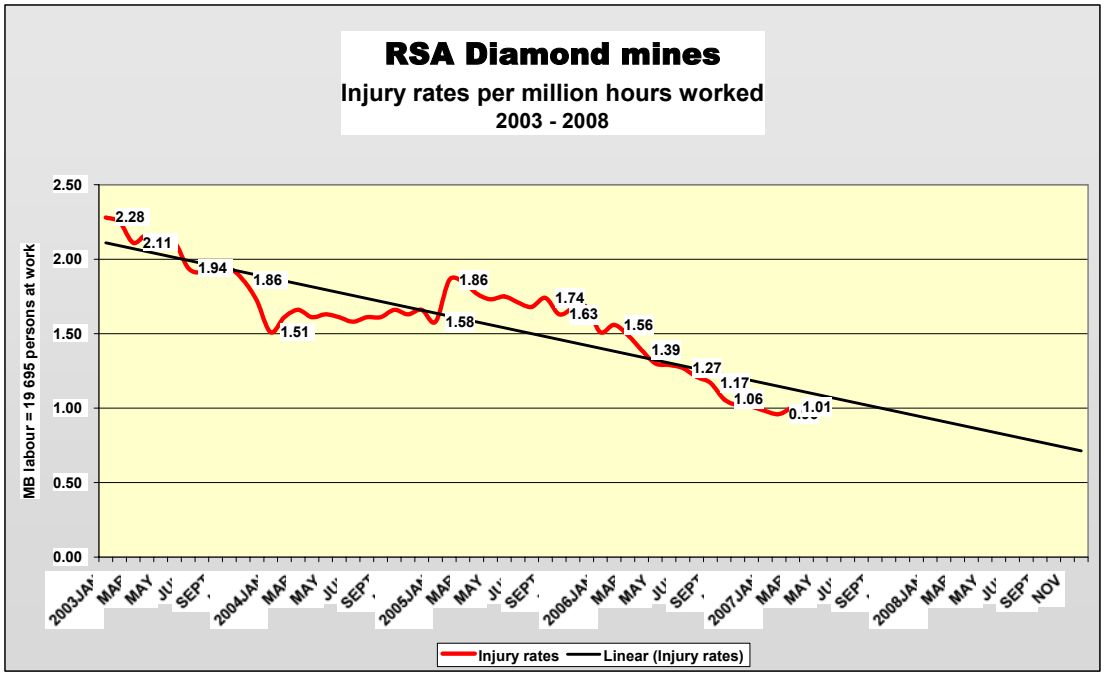
Other mines are performing well and both fatalities and injuries are steadily declining.

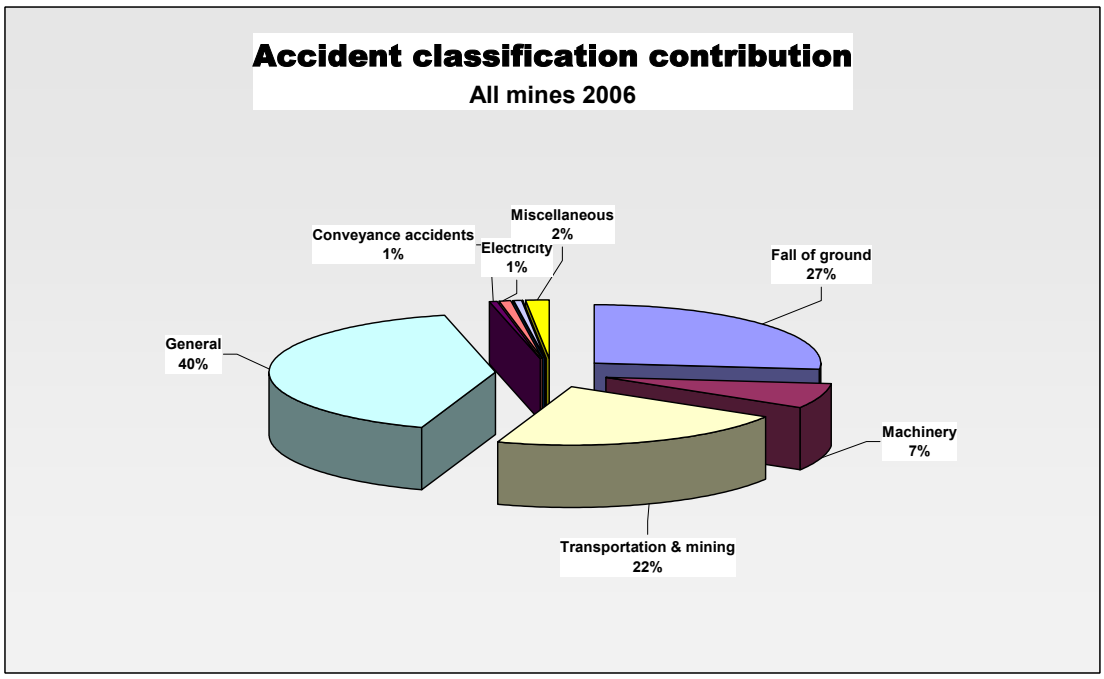
Graph 3.1.1.9: Diamond Sector Fatality Rates v/s Milestones



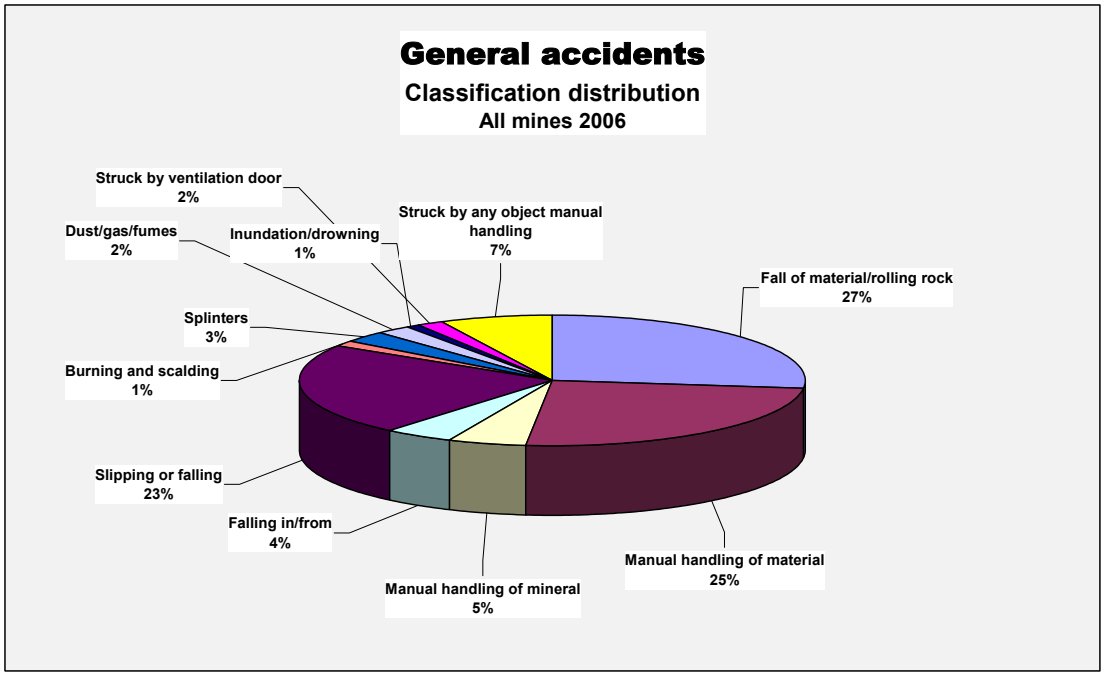
Diamond mines are performing well and the fatality rates have already reached par with international milestones. Injuries are also dropping steadily.

Graph 3.1.1.10: Diamond Sector Injury Rates

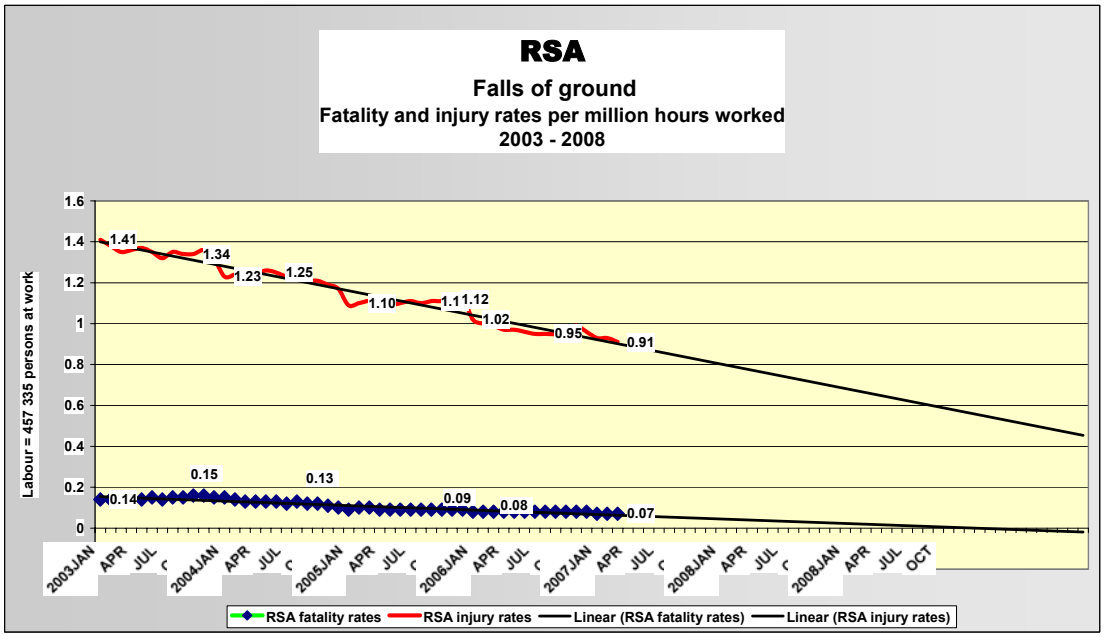




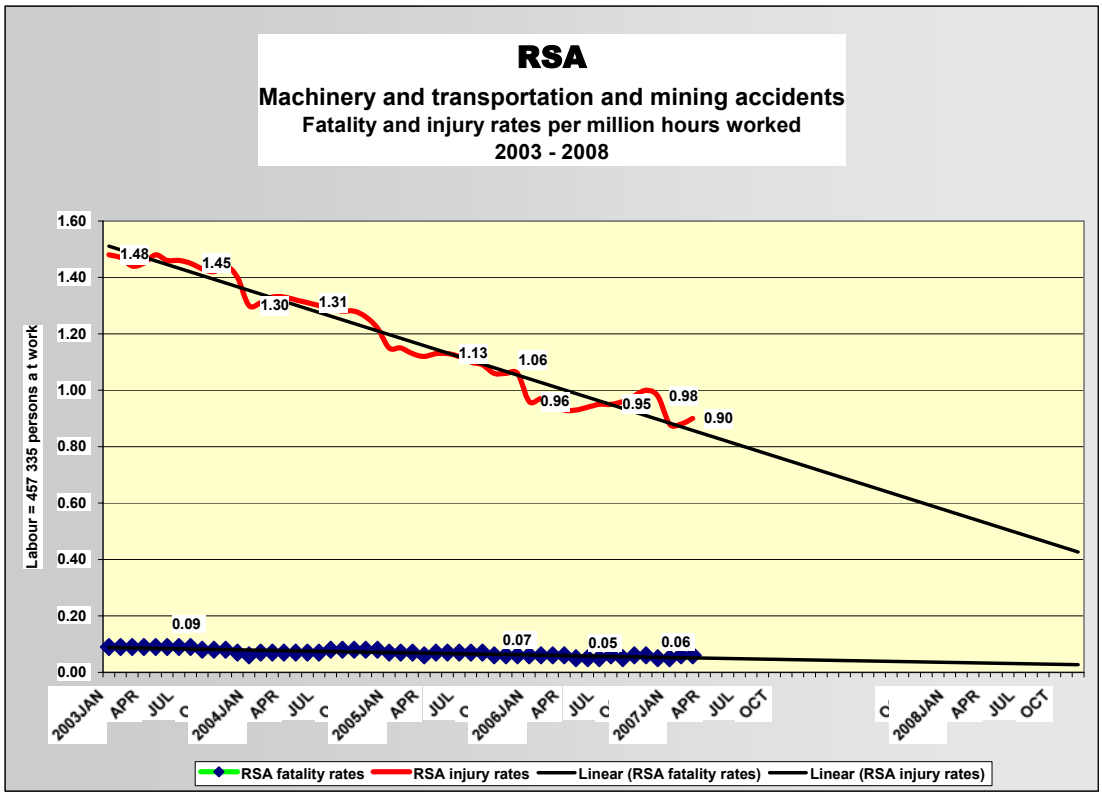
Graph 3.1.2.1: Accident Class Contribution



Graph 3.1.2.2: General Accidents Class Contribution



Graph 3.1.2.3: Falls of Ground Accident Rates



Graph 3.1.2.4: Machinery and Transportation Accident Rates

Annexure C

Acronyms

Annexure D

Contacts List