



**MHSC**

**Mine Health and Safety Council**

**PARLIAMENTARY PORTFOLIO COMMITTEE**

**ANNUAL REPORT 2018/19**

**8 OCTOBER 2019**

**THABO DUBE**

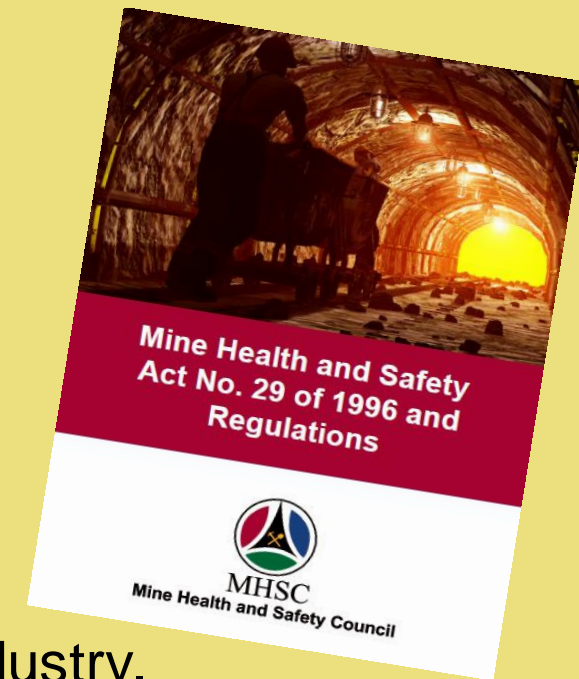
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# LEGISLATED MHSC MANDATE

- Advise the Minister on all occupational health and safety issues in the mining industry including legislation, research and promotion.
- Review and develop legislation for recommendation to the Minister (Focus on Regulations).
- Oversee research in relation to health and safety in the mining industry.
- Liaise with other bodies concerned with health and safety issues (MQA, State Departments and various Stakeholders).
- Promote occupational health and safety culture in the mining industry.



# Vision, Mission

## Vision Statement

To be the knowledge leader and trusted advisor to the Minister of Mineral Resources and stakeholders on Occupational Health and Safety matters, and to promote the transformation of Occupational Health and Safety in the mining industry towards the achievement of Zero Harm to Mine Employees and Mining Communities.

## Mission Statement

To promote a culture of Occupational Health and Safety in the mining industry by providing advice to the Minister of Mineral Resources, liaising with statutory bodies, fostering an effective tripartite partnership, and creating and disseminating information on leading practices to the mining industry.



# Values

## Values

The MHSC prides itself on a set of shared values that inform and guide the interaction between employees, stakeholders and the mining industry at large. The acronym “PRIDE” represent MHSC core values: Professionalism, Respect, Integrity, Delivery and Excellence

## Goals

MHSC is pursuing the following goals and all the strategic objectives will be linked to achievement of these goals:

- Zero Harm to employees and communities as a result of mining activities.
- Providing knowledge leadership in mining Occupational Health and Safety.

## Slogan

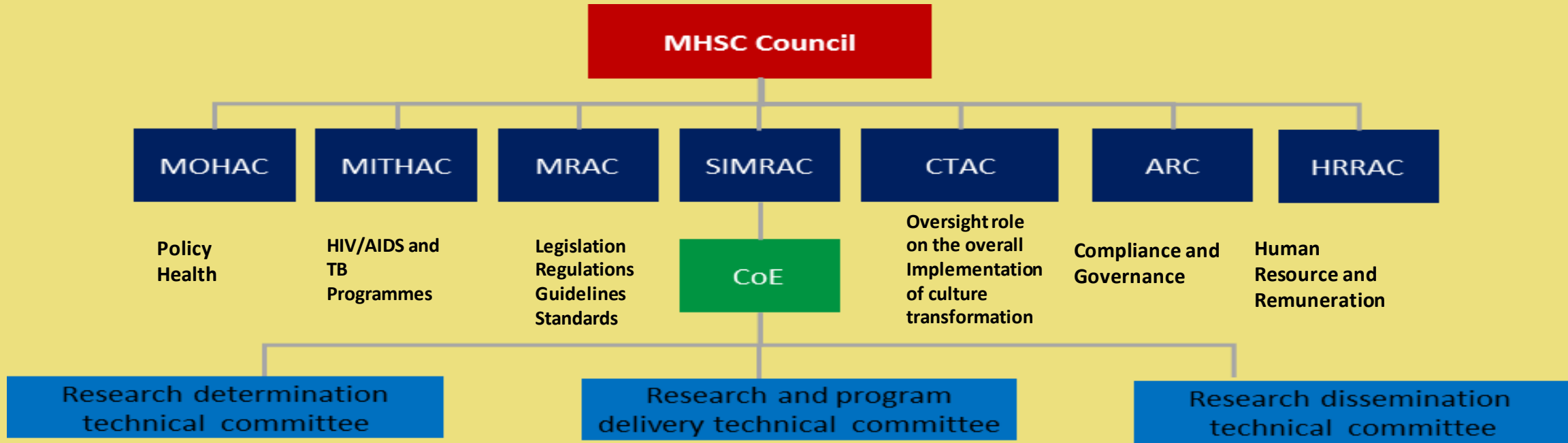
- Every mine worker returning from work unharmed every day. Striving for Zero Harm



MHSC

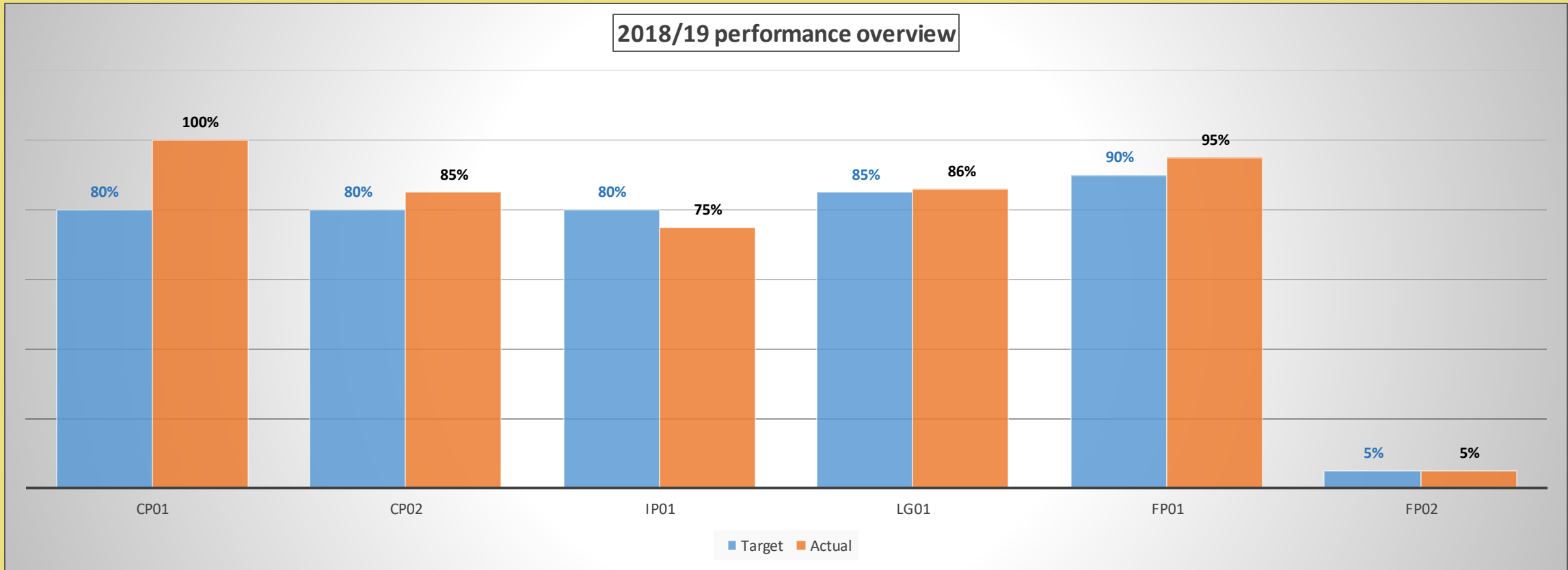
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# MHSC STRUCTURE



- Operational Technical Committees
- Strategic Oversight
- CoE functional body

# PERFORMANCE OVERVIEW



- **5 out of 6 strategic objective fully achieved**
- **98% overall achievement of strategic initiative**
- **94% collection rate of levies**

# MHSC ADVISORY NOTES TO MINISTER

LEGISLATION/REGULATIONS	CoE RESEARCH OUTCOMES ADVISORY NOTES ON	SUMMIT ACTION PLAN PROJECTS
Advisory Note on the revised Thermal Stress Reporting Forms as per Regulation 9.2.(7);	<i>Develop Methodologies for The Measurement of Diesel Exhaust Emissions (DEE) and Diesel Particulate Matter (DPM);</i>	<i>Guidance Note on Strengthening HCT (HIV Counselling and Testing) Uptake in the South African Mining Industry;</i>
<i>Examination Fees for Certificate of Competency;</i>	<i>Reproducibility of Digital X-Ray and Analog X-Ray Readings for Medical Surveillance in the South African Mining Industry to Determine the Reproducibility of Digital and Analog Chest Radiography for Detection of Silicosis and Silicosis Plus Pulmonary Tuberculosis;</i>	<i>Assessment of the Ergonomic Design of Self-contained Self-Rescuer (SCSR) Devices for Use by Women in Mining;</i>
<i>Guideline for Compilation of a Mandatory Code of Practice for the Management of Self-Contained Self-Rescuers in Mines;</i>	<i>Advisory Note on Minimum Standards for Confined Working Spaces at South African Mines; and</i>	<i>Guidance Note on HIV Self-Testing for the South African Mining Industry and</i>
<i>Mine Health and Safety Council's Regulatory Review Programme and</i>	<i>Guideline for the Compilation of a Mandatory Code of Practice for the Prevention of Flammable Gas and Coal Dust Explosions in Collieries.</i>	<i>South African Mining Industry Strategy on Reducing TB and HIV.</i>
<i>Guidance note Medicolegal investigations of mine deaths.</i>		





# LEGISLATIVE ADVICE, GUIDELINES



***Guidelines for South African Small Scales mining to comply with MHSA, Mandatory Code of Practice on Minimum Standards of Fitness to perform Work at Mine; Mandatory Code of Practice for the Management of Medical Incapacity due to ill-health and injury, Guidelines for the Identification and Adoption of Leading Practices***

# PROMOTE A CULTURE OF OCCUPATIONAL HEALTH AND SAFETY

## Hosted Events

1. Women in Mining Workshop
2. Health and Safety Awareness Campaign
3. 2018 Mine Occupational Health and Safety Tripartite Summit
4. MHSC HIV/AIDS Awareness Event
5. Theme based RTF Dissemination Initiatives
6. Occupational Health Dialogue

## POSTPONED EVENTS:

1. Commemoration of mining disaster
2. World TB Day



# PROMOTE A CULTURE OF OCCUPATIONAL HEALTH AND SAFETY

## PARTICIPATION

- Coal Safe Conference
- TB Conference
- Mining Indaba



# PROMOTE A CULTURE OF OCCUPATIONAL HEALTH AND SAFETY

MHSC to host a Tripartite OHS Summit Every 2 Years to review the state of health and safety at mines.

## Objectives:

- Review progress towards achievement of Summit milestones set in 2014
- Reflect and engage on current year's OHS performance
- Analysis of Recent Disasters to further mitigate identified risks
- Review of section 72 Inquiry Reports and use lessons learned to minimize repeat accidents
- Develop an action plan with interventions for addressing identified OHS challenges



# 2018 Tripartite Summit Resolutions

- **Culture Transformation Framework** – Equip leaders in the SAMI to include an OHS culture in all business decisions including adopting new technologies meant to improve OHS. The MHSC to facilitate implementation of the CTF.
- **Right to Refuse Dangerous work** – Train and empower employees for them to exercise this rights and put accountability measures for leaders to inculcate a culture that is enabling for employees to exercise their rights.
- **Falls of Grounds and Seismicity** – Implement recommendations from the Task Team established by the MHSC. Mines must implement recommendations made by rock engineers and convert this recommendations into instructions.



# 2018 Tripartite Summit Resolutions

- **Noise Induced Hearing Loss** – Focus on research and initiatives that will eliminate noise at the source. Conduct audits on STS reporting and make recommendations for implementation.
- **HIV/AIDS and TB** – Implementation and roll-out of TB and HIV treatment awareness campaigns as well as the incorporation of TB and ART interventions in Wellness Programmes. Strengthen collaboration with NGOs and DoH in implementing HIV/AIDS and TB programmes.
- **Occupational Lung Diseases** – Focus should be on preventative measures and not sampling or compliance. Establish measures to conduct Independent data verification reported by mines.
- **Fires and Explosions** – Mines must implement mandatory requirements from the CoP guidelines gazzetted.



# CAPACITY BUILDING FOR MHSC

- **Talent Management**
  - Proactive design and implementation of integrated talent management
  - Competency framework addressing new set of required skills that MHSC, 4IR
- **Building Capacity, Personal Growth, Succession planning**
  - Building Capacity for MHSC Employees, Members of Council and its Advisory Committees.
- **Performance Management and Evaluation**
  - Strengthening Performance Management and Implementing E-performance Management System
- **Employee Relations Management**
  - Conduct annual climate survey
- **Competitive Remuneration, Recognition and Reward**
  - Apply the pay philosophy in accordance with Corporate Governance best practices.
- **Effective and Efficient Leadership Development**
  - Evaluation and Realignment of the Organizational Structure and Leadership Development.



# INITIATIVES TO CURB ROCKBURSTS AND ROCKFALLS IN THE SAMI

Members agreed on the Following Initiatives to improve FOG related Incidents:

- **Analyses of Previous Data**
  - SAMRASS 3 reports, Major Contributors, Outcomes of Previous Research on FoGs by MHSC and other Research Institutions and Trends in Rock Related Incidents.
- **Sharing of Information and Dissemination of Previous Research**
  - Improved information Sharing Amongst Stakeholders,
  - Merging of the National Seismicity Network and Company/Mine Networks
- **Training**
  - Training of Unemployed Graduates on Rock Engineering and Seismology; Review of the OHS Representative Training, Plan for Shift Boss Training for Rock engineers; Consider Virtual Reality
- **Review of Roles and Responsibilities**
  - Re-asses the Role and Duties of RE on mines










# MHSC RESEARCH PROJECTS

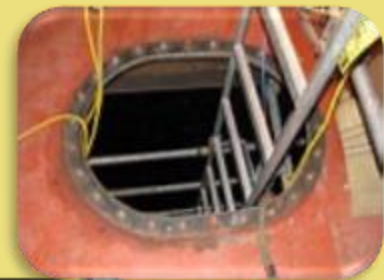
## 1. DEVELOP METHODOLOGIES FOR THE MEASUREMENT OF DIESEL EXHAUST EMISSIONS AND DIESEL PARTICULATE MATTER

- *Two or More Methodologies Combined to Obtain a Good Results of the Diesel Exhaust Emissions (DEE) and Diesel Particulate Matter (DPM) Exposure to Employees’.*

RECOMMENDED DEE AND DPM METHODOLOGIES	
	NIOSH 5040: DPM Sampling and lab analysis
	Airtec Real-time DPM and with lab analysis
	Sub-micron particle mass concentration (PMC) analysis: raw exhaust DPM
	Electrochemical gas sensors: raw exhaust gases
	Denuder tubes: environmental gas and DPM sampling with lab analysis

## 2. DEVELOP THE MINIMUM STANDARDS FOR THE MANAGEMENT AND MONITORING OF CONFINED WORKING SPACES AT MINES

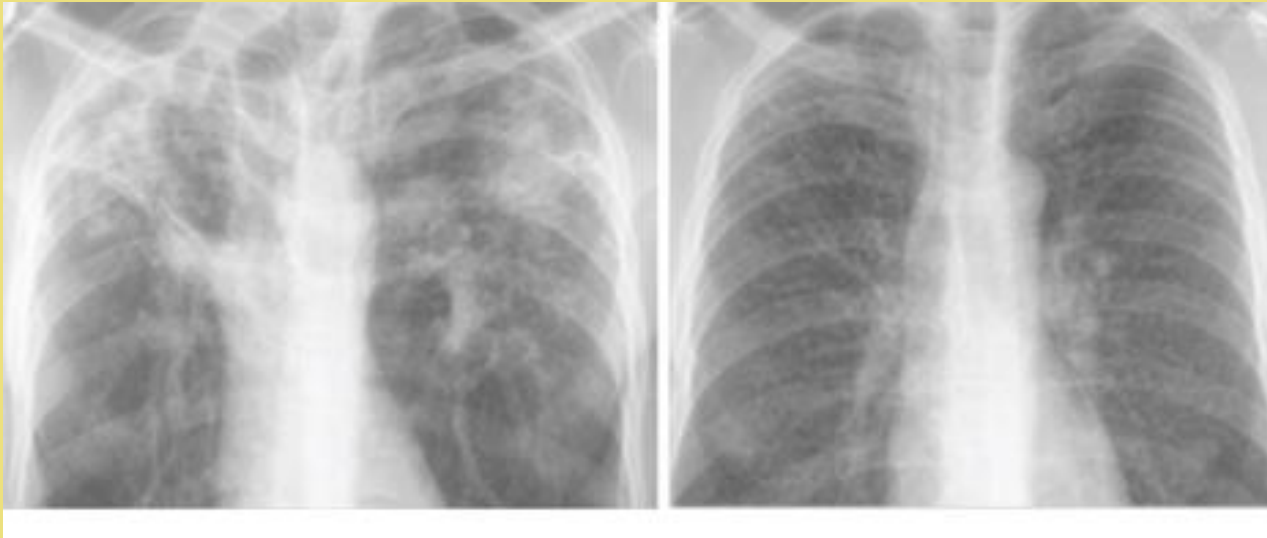
- Guideline to assist with Effective Prevention and Management of Confined Spaces Incidents in the Mines



# MHSC RESEARCH PROJECTS

## The Reproducibility of Digital and Analog X-Ray Readings for Medical Surveillance in the South African Mining Industry

The aim of the project was to determine whether medical surveillance chest radiography using the new digital technology gave similar results as the traditional analogue chest radiography in the identification of silicosis and pulmonary tuberculosis in the SAMI. The study concluded that soft-copy (digital images displayed on a suitable computer monitor) readings can be supported because it is equivalent to historic analogue film for reading silicosis.

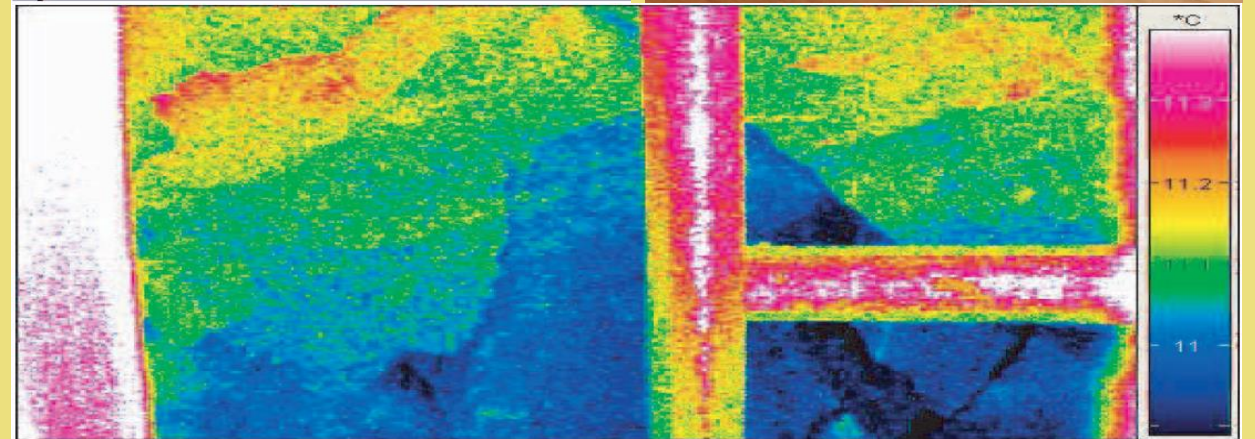
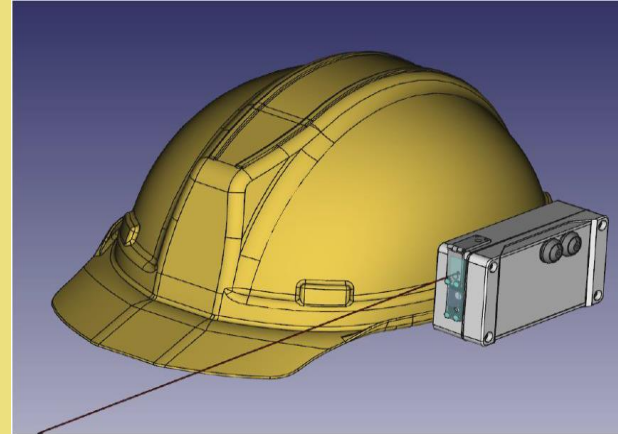


- A journal was published with guidelines to improve the quality of chest X-rays during medical surveillance
- MHSC to disseminate and implement the outcomes of the study in the SAMI in collaborations with ILO, SANAS and DoH.

# RESEARCH OUTCOMES WITH COMMERCIALISATION POTENTIAL

## ROCK MASS ASSESSMENT TOOLS

- The aim of the study was to identify & develop fit-for-purpose tools for efficient and accurate rockmass condition assessment.
- A prototype camera has been developed and can be utilised to assess rock mass condition.



# RESEARCH OUTCOMES WITH COMMERCIALISATION POTENTIAL

Assess the Feasibility of Developing Collision Management Systems for South African Mine.

The project was undertaken to:

- Evaluate different collision avoidance technologies,
- Analyse identified scenarios resulting in collisions
- Determine specifications for warning, retarding and stopping technologies based on a combination of simulation and testing and establish a test and simulation capability
- Develop standard verification methods to evaluate collision management systems.

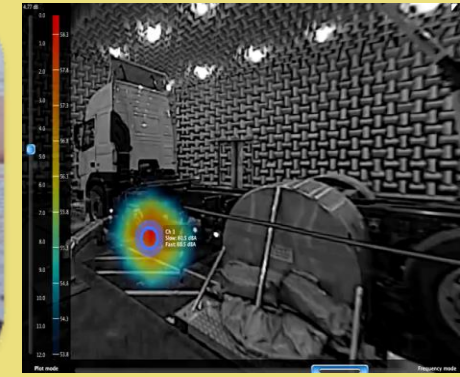


# SEED FUNDED PROJECTS

## 1. Acoustic laboratories at the University of Pretoria (UP)

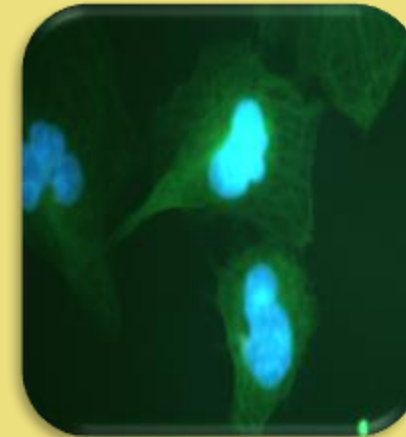
The camera will assist the SAMI to:

- Accelerate noise sources location by increasing the results accuracy
- Increase the effectiveness of analysing moving noise sources
- Increase the effectiveness of silencing strategies



## 2. Analytical laboratory services at the National Institute for Occupational Health (NIOH)

- The new 3D System is capable of providing particle localization present within different intracellular organelles.
- It is possible to create a 3-Dimensional representation of both nano- and micro-scale objects in the contexts of their surroundings matrices and hence determine the mechanisms of toxicity



# SEED FUNDED PROJECTS

## 3. Upgrading the Rope Testing Laboratory Information Management System (LIMS)

- Upgrading the existing LIMS will improve efficiency of the laboratory operations, resulting in shorter turn-around times.
- Safety critical rope condition information will be available in time to inform management decision making



## 4. Upgrade the 1000 tonne Compression testing machine by installing a hydraulic power pack capable of meeting the testing requirements of the Mining Industry

- Suitable modern version will restore the capability of the machine and enable the laboratory to meet the mine support testing requirements of the industry, especially in testing of full-size roof support packs of various designs



# SEED FUNDED PROJECTS

## 5. Breathing Simulator for Self-Contained Self Rescuers

Equipping the laboratory with an additional breathing simulators will improve the turnaround time for conducting mandatory tests on SCSR units.



## 6. Wits Drone Seed Funded Project

The UAV functionality will include the following:

- Monitor rock mass movement, assess air quality, position, map, communicate, and will have an integrated software for real-time decision making
- Providing mining management with real-time overview of the mine shafts, including the locations of mining staff,
- To assist search and rescue teams in case of emergency situations,
- Collecting evidence in active illegal mining operations.



# RESEARCH FACILITY TRANSFER TO MHSC KLOPPERBOS FACILITY

## 200 m Tunnels Explosion Suppression Testing

- Prevention of Methane and Coal Dust explosions at Mines



## 20 m Tunnels Explosion Suppression Testing

- Prevention of Methane and Coal Dust explosions at Mines



## Coal Dust and Methane Explosion Awareness

- Training of Mine Workers on Prevention of Coal Dust and Methane explosions



## Coal Explosibility Analysis Laboratory

- Determine if Various types of Coal are Prone to Coal Dust Explosions



## Conveyor Belts Fire Resistance Testing Facility





# FOURTH INDUSTRIAL REVOLUTION INITIATIVES 4.0

- **MHSC hosted fourth Industrial Workshop, Number of Recommended Quick Wins:**

- Wifi over Powerline Communication, Collision Management System (Proximity Detection Systems and Collision Avoidance Systems), Missing Person Locator, Unmanned Aerial Vehicle (UAV Drone)
- Collecting, Processing and Distribution of OHS Data in SAMI (Implementation OHIMS Database Integration i.e. Milestone reporting portal)
- MHSC to Promote Electronic Reporting in the SAMI. Wireless Gadget ( Real-time reporting from underground, tablets)
- MHSC conducted a study on impact on technology this study is still relevant to fourth industrial revolution. Understanding technology on Impact on employees ( reskilling workforce ).
- Enable all boardrooms to be technology friendly and support voice and data conferencing such that stakeholders could be part of the meeting in the comfort of their offices or homes.



# ENSURE FINANCIAL SUSTAINABILITY AND VIABILITY OF MHSC

- Ensure the collection of revenue to enable the MHSC to have adequate financial resources to deliver on its mandate.
- Target – 90% collection of revenue

## ACTUAL COLLECTION



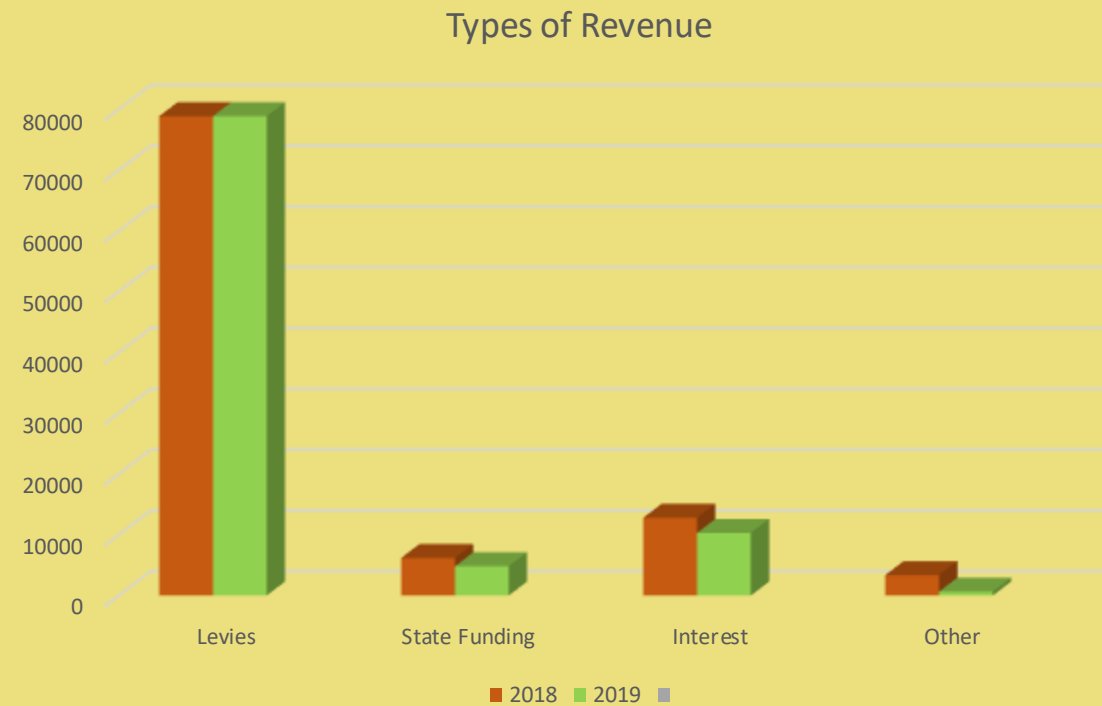
### Financial Sustainability

- New Levy Model approved by Council
- Aligned to Goal of Zero Harm
- Risk based model
- High risk commodities pay high levies
- Reward for achievement of zero harm



# FINANCIAL PERFORMANCE OVERVIEW

## REVENUE COLLECTION



# Statement of Financial Position as at 31 March

	Mar-17		Mar-18		Mar-19	
	R 000	%AGE	R 000	%AGE	R 000	%AGE
Revenue from Non Exchange Transactions	74,876	81.63%	78,875	77.96%	78875	83.37%
State Funding	0	0.00%	6,162	6.09%	4803	5.08%
Interest	14,446	15.75%	12,790	12.64%	10306	10.89%
Other	2,405	2.62%	3,352	3.31%	626	0.66%
<b>TOTAL REVENUE</b>	<b>91,727</b>	<b>100.00%</b>	<b>101,179</b>	<b>100.00%</b>	<b>94610</b>	<b>100.00%</b>
<b>EXPENDITURE</b>						
Personnel	32,606	28.53%	38,845	34.39%	49927	42.58%
Depreciation and Amortisation	3,192	2.79%	4,161	3.68%	5055	4.31%
<b>Research</b>	<b>39,609</b>	<b>34.65%</b>	<b>22,824</b>	<b>20.21%</b>	<b>11759</b>	<b>10.03%</b>
SIMRAC	16,888	42.64%	11,704	51.28%	11328	96.33%
Promotion of Health and Safety	381		3,053		431	
<b>SURPLUS FUNDING/ SPECIAL PROJECTS</b>	<b>22,340</b>	<b>56.40%</b>	<b>8,067</b>	<b>35.34%</b>		<b>0.00%</b>
Finance Costs	31	0.03%	46	0.04%	166	0.14%
Property Rental	2,062	1.80%	2,514	2.23%	2898	2.47%
Administrative Expenses	18,183	15.91%	15,281	13.53%	11922	10.17%
Audit Fees External	1,810	1.58%	1,868	1.65%	1715	1.46%
Audit Fees Internal	1,002	0.88%	599	0.53%	1263	1.08%
Corporate Governance	2,229	1.95%	5,063	4.48%	6310	5.38%
Legal Fees	1,936	1.69%	1,408	1.25%	2553	2.18%
International Travel	127	0.11%	1,357	1.20%	2167	1.85%
Regional Tripartite Forums	699	0.61%	7,935	7.03%	7514	6.41%
Dissemination	10,810	9.46%	11,043	9.78%	14006	11.94%
<b>TOTAL EXPENDITURE</b>	<b>114,296</b>	<b>100.00%</b>	<b>112943</b>	<b>100.00%</b>	<b>117255</b>	<b>100.00%</b>
<b>Deficit for the year</b>	<b>(22,569)</b>		<b>(11,764)</b>		<b>(22,644.99)</b>	



## Statement of Financial Performance 31 March

	Mar-17	Mar-18	Mar-19
	R 000	R 000	R 000
<b>Current Assets</b>	<b>198,239</b>	<b>171,173</b>	<b>158,307</b>
Inventories	259	56	138
Receivables from Exchange	1,101	1,579	1,582
Receivables from Non-Exchange	254	798	1,438
Cash & Cash Equivalents	196,625	168,740	155,149
<b>Non Current Assets</b>	<b>8,011</b>	<b>11,081</b>	<b>13,203</b>
Property Plant & Equipment	5,291	9,923	13,031
Intangible Assets	2,720	1,159	173
<b>TOTAL ASSETS</b>	<b>412,500</b>	<b>182,254</b>	<b>171,510</b>
<b>Current Liabilities</b>	<b>22,581</b>	<b>11,828</b>	<b>24,074</b>
Finance Lease Obligation	130	412	492
Operating Lease Obligation		30	213
Payables from Exchange	20,286	8,806	19,124
Provisions	2,165	2,579	4,244
<b>Non-Current Liabilities</b>	<b>14,800</b>	<b>5,887</b>	<b>5,543</b>
Finance Lease Obligation	7,400	723	322
Operating Lease Obligation		337	184
Employee benefit Obligation	848	720	742
Administrative Fines Liability	6,552	4,108	4,296
<b>TOTAL LIABILITIES</b>	<b>37,381</b>	<b>17,715</b>	<b>29,617</b>
(Deficit) for Year	(22,723)	(11,471)	(22,645)
<b>Accumulated Surplus</b>	<b>198,733</b>	<b>176,010</b>	<b>164,539</b>
<b>Surplus for the year</b>	<b>176,010</b>	<b>164,539</b>	<b>141,894</b>



# FINANCIAL SUSTAINABILITY

## Revenue Generation and Identification of New Revenue Streams Strategy

- **Current Income Stream**

- Levy Income
- Interest received from short term deposits

- **Potential New Revenue Streams**

- Royalties from Commercialized Research Projects
- Independent Sampling Testing Facilities Revenue ( South African & Foreign Exchange)
- Explosions Awareness Safety Training

- **Products and Services Sourcing Strategy**

- Limited Bidding
- Strategic Partnerships within the state and external identified partners
- Implementation of proper market research and costing analysis

- **Cost Containment Measures**

- Travel and Accommodation
- Appointment of Consultants
- Use of External Meetings & Conference Venues



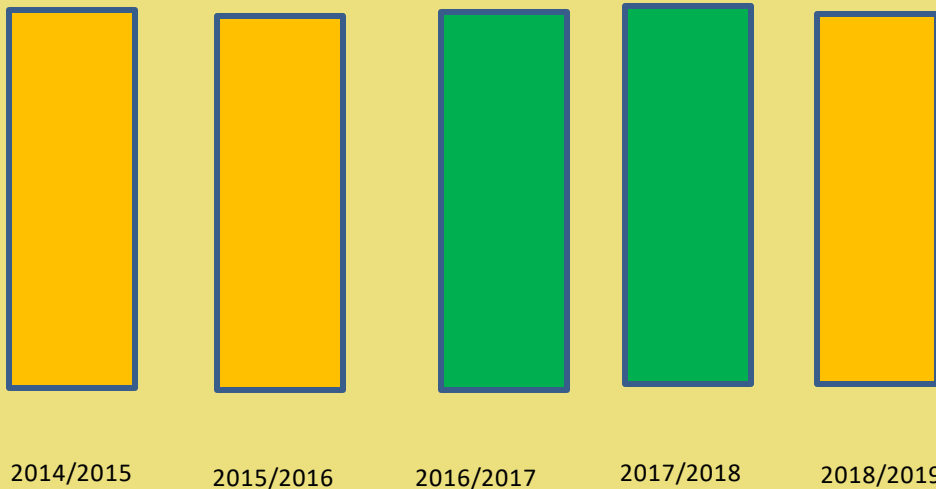
# NEW LEVY MODEL

- Approved for implementation on the 1<sup>st</sup> April 2020
- Basis of the Model;
  - Risk linked to Commodities;
  - Information must be easily available;
  - Based on Production and Labour figures;
  - 10% OHS Rebate to Mines who achieve 2014 Summit Milestones ( 5% Occupational Health; 5% on Safety)
- Pilot Phase- Invoicing to Mines September 2019- December 2019

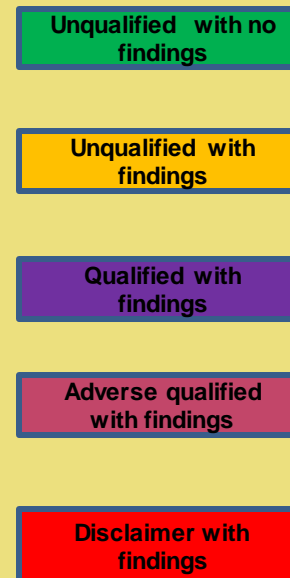


# AUDIT OUTCOMES

- Audit Outcome Trend**



## Types of Audits





# Audit Matters Highlighted By AGSA

- ✓ Procurement Related findings
- ✓ Contract Management findings
- ✓ Accounting related findings



# GOVERNANCE & COMPLIANCE

- **Appointment of the Social and Ethics Committee**
  - Focus on Organisation-wide Training on Ethics
- **Focus on Procurement and Contract Management Improvements**
- **Dedicated Compliance Office & Appointment of Compliance Officer**
  - Review of the compliance regulatory universe
  - Continuous Organisational Compliance Training
- **Improvements in the Continuous Review and Monitoring Efforts**





**MHSC**

**Mine Health and Safety Council**

**STRIVING FOR ZERO HARM  
EVERY MINERWORKER RETURN HOME UNHARMED  
EVERYDAY**