

Previous services include development, design, implementation and auditing of Mining Safety Management Systems locally and abroad. Clients include blue chip organizations such as:

a) BHP Billiton (worldwide)

b) Exxaro

c) Harmony Gold

1. **a. Plants**
2. **b. Mines**

d) Anglo American (worldwide)

1. **a. Coal**
2. **b. Platinum**
3. **c. Gold**

e) Sasol Mining

1. **a. Coal**

f) Rio Tinto

g) Kumba Resources

1. **a. Coal**
2. **b. Iron Ore**

h) Canada

i) Latin / South America

1. **a. Grupo Hochschild (underground)**
 1. **i. Ares, Peru – underground gold & silver mine**
 2. **ii. Arcata, Peru – underground gold & silver mine**
 3. **iii. Pallancata, Peru – underground gold & silver mine**
 4. **iv. San Jose, Argentina -□ underground gold & silver mine**
5. **b. Glencore (underground)**
 1. **i. Mina Yauliyacu – zinc & lead mine**
 2. **ii. Mina Iscaycruz – zinc & lead mine**
 3. **iii. Min Santander – zinc & lead mine**
 4. **iv. Deposito de Concentrado – deposit of minerals in Port of Callao**
5. **c. Volcan (underground)**
 1. **i. Yauli Unit (underground)**
 1. **1. San Cristobal – zinc & lead mine**
 2. **2. Andaychagua – zinc & lead mine**
 3. **3. Carahuacra – zinc & lead mine**
 4. **4. Martunel – concentrator plant**
 5. **5. Mina Ticlio – zinc & lead mine**
 6. **ii. Paragsha – zinc & lead mine (Cerro de Pasco)**
 7. **iii. Chungar, Mina Animon – zinc & lead mine**
 8. **iv. Alpamarca Mine – zinc**
 9. **v. Rio Pallanga Mine – zinc**
 10. **vi. Rondoni Mine – zinc**
 11. **vii. El Pilar Mine – zinc**

12. **d. Pan American Silver (underground)**
 1. **i. Huaron, Peru – silver & zinc mine**
 2. **ii. Morococha, Peru – silver & zinc mine**
 3. **iii. Quiruvilca – silver & zinc mine**

j) Asia

k) the Pacific Rim

1. **a. Australia**
2. **b. Indonesia**
3. **c. Papa Nieu Guinea**
4. **d. China**
5. **e. Hong Kong**

Due to our expert mining technical and safety knowledge, we are currently appointed by various mining houses to facilitate all fatal accident investigations and analysis.

Previously we have also been directly involved with the investigation team that analyzed 2 previous methane related explosions which resulted in multiple deaths and injuries abroad. (Russia)

TYPICAL SAFETY AND RISK MANAGEMENT SERVICES DELIVERED TO CLIENTS TO DATE:

Risk Assessments, Consultancy and Audits

Of particular importance is the rapid risk reduction strategy and Fatality Prevention Systems that Expectra has developed for specific use in the mining industry to prevent and eradicate fatalities and manage and prevent Catastrophic Risks.

The following is a list of the recent projects which we have completed in association with Core Risk.

Sasol Mining

- Baseline Risk Assessment for the whole of Sasol Mining
- Safety Professional's Evaluation
- Trainer Effectiveness Programme
- MQA Accredited OHS Rep Skills Program
- Analysis of the SHE Risk Management Maturity at the South Shaft Mine to determine the gap between the current status and best possible practices towards Zero Harm.
- OHSAS 18001 safety system gap analysis audits, training and consultancy.
- Participated in the incident analysis into 2 methane related incidents in the underground workings at Sasol Coal Mining.
- 3rd Party Incident investigations and analysis of fatal injury accidents.
- Development of effective contractor management systems to prevent fatalities.
- Risk Assessment on the modifications to the continuous mining machines at the Secunda Collieries.
- Guiding and Participation in Implementation of a Behavior based Safety Programme tailored for SASOL Mining South Africa.
- Development and Implementation of a Software Package to facilitate effective Root Cause Analysis for Incidents.
- Development of SOP'S associated with Major Hazards: Safe Operating Procedure (SOP) for each task assessed. The SOP is a step by step procedure of the task and indicates the procedure, controls to be in place, permits required and inspections to be done.

Harmony Gold Group

- Fatal Risk Management Implementation:
Process and Cost Proposal for the Implementation of Fatal Risk Management within Harmony, GAP Analysis (Current scenario) as well as design and implementation that would be followed for the establishment of Fatal risk Management within Harmony **(Approximate project value: R4 500 000)**

Harmony Gold Plants

- Maturity Assessment: Identifying the organisational and operational strengths and weaknesses related to SHE Risk Management maturity based on the Expectra OBM™ process model
- Conducted various Issue Based, Baseline and Continuous Risk Assessments
(Approximate project value: R5 000 000)
- Development of Management standards and signing off on the key risks
- Performing of Bow Tie Analysis
- Review and adjust induction program to include site specific HIRAC
- Area specific management standards
- Identify and define Fatal Behaviour Protocols
- Determining the leading indicators for the critical controls
- Supply & configuration of our Risk Management Software System
- Finalize Sector Leaders implementation process in Plant, Engagement Application, Reporting Methodology, Incident information gathering and Trend analyses

Harmony Gold Mines

- Risk Assessment Training for Health and Safety Representatives, Team Leaders, Miners / Artisans, Shift Bosses / Foreman, Mine Overseers / Engineers
- Major hazard management plans
- Supply & configuration of a Risk management software system
- Issue based risk assessment of hazards related to equipment, workplace environment and processes.
- Identifying the Organisational & Operational strengths & weaknesses to SHE Risk Management Maturity on the Expectra OBM™ model
- Analysis of Shaft incidents: Identification of incidents related to shaft operations and classification of high potential incidents
- Assessment of the Catastrophic Hazards and associated Unwanted Events by means of Bow Tie Analysis, Identification of Catastrophic Hazards
- Preparation of emergency plans
- Issue Based Risk Assessment
- Major hazards bow tie analysis
- Critical task assessment
- Major hazard management plans

Exxaro

- Supervisor Development Programme: Addressing the knowledge, understanding and

application of SHE and management processes of supervisory personnel (Shift Bosses, Foremen and SHE professionals)

- Safety Professional Evaluation: Risk Competency Training for Tactical Level
- Maturity Assessment: Identifying the organisational and operational strengths and weaknesses related to SHE Risk Management maturity based on the Expectra OBM™ process model with the purpose of identifying challenges in the safety, strategy, systems, practices and with people's behaviour.

BHP Billiton

- **Australia, USA, Canada, Chile, Peru, South Africa**
- Safety Systems Gap Analysis, Safety Systems Review, development and, implementation.
- Training and compliance audits for benchmarking world wide
- Training the total workforce in BECSA (Billiton Energy Coal South Africa) on Risk Assessments and risk management (HIRAC)
- Implement the Train the Trainer Programme

Anglo Coal

- Baseline and Issue Based Risk Assessments for Anglo Goedehoop, Kleinkopje, New Denmark and Greenside Colliery (CTi's, and Risk Registers included)
- Safety Systems Review, Gap Analysis and certification audits on their internal Safety systems requirements and OHSAS 18001 requirements
- Development of a specific Fatality Prevention Safety System, Fatality Prevention Standards, Assistance with Implementation and evaluations/audits.
- Facilitating the development of a Fatality Prevention system, Standards, Templates and Audit Protocol
- Training the total workforce in Anglo Coal South Africa) on Risk Assessments and risk management (HIRAC)

Kumba Resources

- Doing a System Gap analysis, development of an integrated

Safety/Health/Environment/Quality Management system and certification.

- Support & Use of the NetTools® Risk Management Software Tool
- Development and Implementation of an Integrated Risk Management System (SHEQ) at Grooteegeluk Mine.
- Training the total workforce on Mini Hira/Continuous risk assessment techniques

Total South Africa

- Baseline Risk Assessment for Total Coal South Africa (Dorstfontein Colliery)
- Implementation of a Behavior based Safety Programme tailored for Total Mining South Africa
- Development and Implementation of a Software Package to facilitate effective Root Cause Analysis for Incidents and training on Accident/Incident analysis
- Training the total workforce for Total Coal on Risk Assessments and risk management (HIRAC)

Kuyasa Mining (Delmas Coal)

- Baseline Risk Assessment
- Training the total workforce at Delmas Coal) on Risk Assessments and risk management (HIRAC)
- Implement the Train the Trainer program

Kangra Holdings (Savemore)

- Baseline Risk Assessment
- Training the total workforce at Kangra on Risk Assessments and risk management (HIRAC)
- Implementing an Integrated Risk Management total solution at Kangra
- Implementing a behavior Based Safety Programme at Kangra.
- Implement the Train the Trainer programme

Anglo Platinum Rustenburg

- Provided assistance with the compilation of the Anglo Plats emergency planning for the various Rustenburg sites.

Impala Platinum

- Previously did third party incident/accident analysis, trend analysis and recommendations for improvement for Impala Platinum

Grinaker LTA (Contractor Company)

- Behavior Based Safety System Design and Implementation

Eskom

- Environmental Impact Assessment: Proposed 400MW (t) Pebble Bed Modular Nuclear Reactor Demonstration Power Plant.
(Approximate value: R1 500 000.00)
- Environmental Impact Assessment: Braamhoek Pumped Storage Scheme Power Station.
(Approximate value: R700 000.00)

Samancor

- Environmental Impact Assessment: Pelletizing Plant in Witbank.
(Approximate Value: R350 000.00)

Anglo Industrial

- Environmental Due Diligence assessment of Anglo Industrial, for purpose of notation on London Stock Exchange.
(Approximate Value: R150 000.00)

Sonae Board Mill

- Environmental Impact Assessment: Tafibra Wood Board Mill at Piet Retief.
(Approximate Value: R700 000.00)

EXAMPLES TRAINING EXPERIENCES

Expectra has trained more than 50 000 people in the mining industry locally and internationally (in-house and public courses) and has become renowned for the leading HIRAC (Risk Assessment) training provider in the mining industry.

Some of our clients include Sasol Mining, Delmas Coal, Eyesiswe, Kumba Resources, BHPbilliton, Anglo Coal and Anglo Platinum, to name but a few.

Many of our training programmes are delivered in the third world/developing countries, and our trainer have extensive experience in delivering training to low skills levels in the mining industry.

Our trainers all have strong mining industry experience base, especially coal mining, both in Engineering and Production Mining.

For this reason, the resources used by Expectra Global in Australia, will be from the South African operations

REFERENCES

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COMPANY

SCOPE OF WORK

VALUE OF SERVICES

OUTCOME

1

Parliament, Cape Town

Training & Consulting

R500,000

Learners accredited - certificates issued

2

Harmony Gold

Fatal Risk Management

R4 500 000

Successfully Implemented

3

Sasol Mining

MQA Accredited OHS Rep Skills Program

R4 500 000

Learners accredited - certificates issued

4

Sasol Mining

Various Risk Assessments

R 4 500 000

Successfully done

5

Eskom

Training & Consulting

R500,000

Learners accredited - certificates issued

6

Eskom

HIRAC Training

±R300,000

Attendees successfully trained. Certificates issued.

7

Total, Forzando

HIRAC Training

Behaviour Based Safety

R400,000

Attendees successfully trained. Certificates issued.

8

Kumba Resources,

Rosh Pinah Mine, Namibia

ISO14000 & OHSAS 18001

R600,000

Successfully obtained certification on both

9

Rand Water

Construction Regulations, Legal Training & Consultancy

±R300,000

Attendees successfully trained. Certificates issued.

10

SASOL Mining

HIRA Training both senior management and shop floor

± R3.5 million (7000 Employees)

Attendees successfully trained. Certificates issued.

11

ANGLO Coal

HIRA Training total workforce

± R4.5 million (12965 Employees)

Training Completed – Learners competent.

Certificate issued

12

DE BEERS

Venetia Mine

HIRA Training on operators and shop floor level

± R 250 000

(100 operators/workers)

Training Completed – Learners competent

13

BECSA

BHP Billiton

Hirac training total workforce and Train the trainer

± R2.5 million

(6 000 Employees)

Training Completed – Learners competent

Certificates issues

14

Group Hochschild, Peru,

Latin America

Hirac training total workforce and train the trainer

± R1.5 million

(4 000 Employees)

Training Completed – Learners competent

Certificates issues

