

MQA – THE TRANSITION

Blasting Certificate to Mine Overseer's
Qualification

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INTRODUCTION

- Request through SACMA Council to investigate:-
 - MQA requirements for Mine Overseers
 - Correct NQF level of qualification
- Complicated process to understand
 - SAQA – NQF – MQA – SGB - TRG – US
 - Blasting certificates
 - Accredited training service providers
 - Assessors / Moderators (Int. & Ext)
- Start with the old

1890's



Traditional Blasting Certificate

- 1 yr (300 shifts) Temp. Blasting
- 2 yr (600 shift) Perm. Blasting

to

- 154 shifts – Temp. Blasting (110)
- 312 shifts – Perm. Blasting (200)

to Transitional phase

- 79 shifts – Generic
 - 25 shifts – CM
 - 50 shifts – Blasting
- } Miner

Recent Blasting Certificate

- SAQA

- MQA to meet NQF requirements (1998)

- SGB

- TRG 3 – US
 - Training period 154 shifts
 - Legal requirement 1 July 2009
 - Implemented from 2007
 - Expires Nov 2009

- QCTO (Dept. of Labour – Occ. Award)

- Knowledge base
 - Practical skills
 - Work experience
- } 13/14 Months

Surface Blasting

- Same Basic process
- Examination through DME
- Unit Standards drawn up
- No transitional phase
- Kimberley – US route (DME Rejects)
- No accredited training service provider?

General remarks

- Positive change
- Training departments to be involved
- CTC still recognised training service provider – also External assessor and moderator
- Each mining house to register as TSP ?
- Availability of internal assessors and moderators?
 - End Blasting cert.

Current M/O's CoC

- Part A

- Plan reading
- Dust
- Gasses
- Ventilation

- Part B

- Mining Machinery
- Mining
- Shafts
- Law

- U/G Coal

- U/G Hard rock

Future M/O's CoC (MQA)

- NQF Skills Level 5/6
- 3 Categories:-
 - TRG 14 – Hard Rock Mining
 - TRG 15 – Underground Coal Mining
 - TRG 16 – Surface Mining
- TRG 26 – Generic Management
- TRG 29 – Decision MOTT (M/O Task Team)
- 4 Groups of Unit Standards

Overview – NQF (Skills) Levels

- ABET
- 1 – Grade 9
- 2 – Grade 10
- 3 – Grade 11 (Miner)
- 4 – Grade 12 (S/B)
- **5 – Certificate (M/O)**
- 6 – Diploma
- 7 – B Tech/BSc
- 8 – Honors Degree
- 9 – Masters Degree
- 10 – Doctorate Degree

M/O Categories

- Hard Rock
- Underground Coal
- Surface Mining

Unit Standards Matrix

Higher National Certificate in Mining Practice NQF L5

■ Fundamental US

(Credits)

- MiN-F001 Engineering Science (5)

■ Core US

- MiN-G001 Demonstrate knowledge & understanding of main components of mine surface infrastructure / layout & logistics (5)
- MiN-G002 Demonstrate knowledge & understanding of the types of energy sources used in a mine (5)
- MiN-G003 Demonstrate knowledge & understanding of water handling, treatment, pumping & storage in a mine (6)
- MiN-G004 Demonstrate an understanding of the different maintenance policies employed on a mine (4)

Unit Standard Matrix

■ Core US (cont)

- MiN-G005 Demonstrate knowledge of an integrated risk management system in the mining industry (6)
- MiN-G006 Demonstrate knowledge & understanding of Mine financial Practices (4)
- MiN-G007 Demonstrate an understanding of strata control theory & terminology relevant to the work of Mine Overseeing (8)
- MiN-G008 Demonstrate an understanding of mining related strata control issues relevant to the work of Mine Overseeing (8)
- MiN-G009 Implement COP on emergency preparedness & response in a section of a mine (4)
- MiN-G010 Implement & Maintain an Occupational Health & Safety system in a section of a mine (5)
- MiN-G011 Demonstrate knowledge & understanding pertaining to the application of Work & Method Study techniques (4)

(57/57)

Unit Standard Matrix

■ Underground Coal Specialisation Elective US

- MiN-C001 Recognise & interpret the main features depicted on mine plans for an underground mining environment (2)
- MiN-C002 Develop an integrated production plan (1 to 2 year horizon) & have an understanding of the 5 year & life of mine plan (10)
- MiN-C003 Demonstrate knowledge & understanding of horizontal transport systems & operations for UG Coal mines (7)
- MiN-C004 Demonstrate knowledge & understanding of the importance of equipment selection under different mining & seam conditions (5)
- MiN-C005 Demonstrate knowledge & understanding of the different mining methods that apply to coal mining (5)
- MiN-C006 Demonstrate a basic understanding of the beneficiation process in a coal plant by means of a flow chart (4)
- MiN-C007 Explain the effect of dilution in the run of mine (ROM) to the plant yield (3)

Unit Standard Matrix

■ Underground Coal Specialisation Elective

US(Cont)

- MiN-C008 Demonstrate an understanding of quality control processes involved to produce the end product (saleable coal) (4)
- MiN-C009 Strata control for Mine Overseers in Underground Coal Mines (8)
- MiN-C010 Design a mining layout to access a block of coal & extract coal safely & profitably (5)
- MiN-C011 Mining Geology & the functions of the Geology department is understood & demonstrated (4)
- MiN-C012 Demonstrate knowledge & understanding of the theory & practical application of roof bolt support (4)
- MiN-C013 Demonstrate knowledge & understanding of the various large excavation layouts to alleviate rock engineering problems through both strategic & tactical means (5)
- MiN-C014 Apply understanding of survey practices & techniques to mine (4)

Unit Standard Matrix

■ Underground Coal Specialisation Elective US(Cont)

- MiN-HR03 Demonstrate knowledge & understanding of mine access & egress (vertical & incline shaft) operations (8)
 - MiN-HR006 Describe the purpose & methods used in underground tunnel development (in rock) (5)
 - MiN-HR009 Describe the purpose & method of excavating abnormal or large excavations underground (6)
 - MiN-HR010 Describe excavation of shafts and declines (5)
 - OcH-G112 Demonstrate knowledge of airflow calculations & principles of airflow in a ventilation circuit (2)
 - OcH-G134 Demonstrate knowledge pertaining to uncontrolled explosions (4)
 - OcH-G138 Demonstrate knowledge of fan operating points for different configurations & influencing factors (4)
- (75/104)

■ General Elective US

- MiN-SE001 Apply understanding of survey practices & techniques in surface mines (4)
- MiN-SE002 Apply knowledge of the EMP to rehabilitation processes in surface mines (4)

Unit Standard Matrix

■ General Elective US (cont)

- MiN-SE003 Demonstrate basic knowledge of the mining inputs to a mining authorization (4)
- MiN-SE004 Operate a computerized mine planning & draughting system (4)
- MiN-SE005 Design a surface mine extraction layout & system (4)
- MiN-SE006 Design mineral lauding, hauling & storage systems (4)
- MiN-SE007 Design surface mine drainage systems (4)
- MiN-SE008 Design the services& reticulation for a surface mine (4)
- MiN-SE009 Design & oversee surface mine projects (4)
- MiN-SE010 Oversee the work of mining contractors (4)
- OcH-G088 Implement airborne pollutant control strategies (8)
- OcH-G139 Demonstrate knowledge pertaining to personal exposure to airborne pollutants (5)

Unit Standard Matrix

■ General Elective US (cont)

- OcH-G056 Evaluate extraction systems for efficiency & effectiveness
(3)
 - OcH-G113 Demonstrate basic knowledge of fans, fan measurements & performance (5)
 - OcH-G054 Manage a sanitation program (5)
 - OcH-G115 Demonstrate knowledge pertaining to the management of thermal stress (6)
- (5/72)

Representation

(TRG's & QCTO)

- Chairmanship of consultants
- > 80% Consultants
- No representation from the D.M.E. or Tertiary Institutions
- Mostly Hard Rock Training Officials
- Previously - odd line-rep. from coal
- CTC

1890's



2000's



QCTO

(Qualifications Committee for Trade & Occupations)

- Gazette
- Through MQA
- Unit Standards not in play – info used
- Chairmanship of training service provider
- Pilot for registration with Dept. of Labour
- Based on:-
 - Knowledge component
 - Practical Skills component
 - Work experience

QCTO Syllabus U/G Coal

- Coordinating availability of skills
 - Knowledge focus
 - Purpose and need for a social and labour plan
 - Principles of staff selection interviewing
 - Theory related to the identification and measurement of potential
 - Principles of competency assessment
 - Basic principles of training and development
 - Purpose and structure of the mining charter
 - Key elements of employing contracts
 - Practical skills
 - Conduct competency assessments
 - Conduct one on one coaching
 - Develop human resources compliments for a range of mining scenarios
 - Conduct staff selection interviews
 - Complete personal development plan

- Coordinating availability of skills (cont.)
 - Work experience
 - Perform coaching in the workplace
 - Conduct competency assessments for team members
 - Oversee the selection processes for operational staff
 - Participate in skills development committee meetings
 - Review the labour plans for designated area of the mine
 - Participate in Employment Equity committee meetings
 - Participate in selection processes for supervisory staff
 - Implement training and development plans and schedules.
- Ensuring operational mining resources availability
- Managing operational risk
- Optimising the performance of mining production teams and individual staff members
- Planning and controlling monthly production activities
- Ensuring the availability of approved mining layouts and production plans

CONCERNS

- Lack of industry involvement
- Starvation of future M/O's in industry
- Lagging for surface mining
- DME position re Surface blasting?
- Training facilities
- Availability of trainers

Training load/requirements

- Bridging period for blasting cert. transition?
- HPC identified – formal program
- Students exempted
- Others – core of industry?
- Educating current employees in preparation for promotional route – train the trainer.
- Evaluation of internal/external training facilities and infrastructure.
- Provide for own assessors and moderators
- Right of existence for CTC
- Extending CTC – COTC ?

NEXT STEPS

- QCTO - one up & one down
- Assessment of QCTO requirements –
Industry representation
 - Review panel – week central
 - Opencast panel?
- Industry's approach to
Training/Assessment facilities
 - CTC
 - Mine own (Staffing, Qualifications, JV's)
 - UJ – Study schools
 - Consultants
- Opencast/Surface Mining

