



VOLUME 3
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MAY 99

New offices for MARCSTA

MARCSTA moved into new offices in Petroleum House, 3 Brodie Hall Drive Technology Park, Bentley on 19th April.

Readers are asked to note the full new postal address, and new phone numbers printed on the back panel of this issue.

The office is staffed full-time by Anna Verteramo and office hours are 8.30am to 5.00pm Monday to Friday.

MARCSTA expresses its appreciation to Terry Filpo of ERA Communications for providing three Commander phones at no cost.



Anna Verteramo



Lockdown stops lockout training

In late March Greg North of Mobile Skills Training delivered a MARCSTA induction to inmates at Canning Vale prison. He had between 6 and 11 students. Greg says they obtained the highest overall marks in any induction he has run. The Ministry of Justice wanted to provide an avenue of employment for people upon their release and at least an overview of what life was like in the mining and construction industries.

Because of prison hours the course ran over two days and had to be put on hold at one stage while three hiding prisoners (not on the course) caused a Code 3 Lockdown.

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E ditorial

First of all let me apologise to Juliana Warnock for not mentioning in the last issue that she attended the trial of the new look induction in Bunbury in December.

I have recently completed a project to map existing vocational courses taught in a particular industry (not mining) against the competencies in that industry's new national training package. Even though this was an industry which works with hazardous substances, the national package requires "critical underpinning knowledge" to deal with health and safety issues and key areas of technical knowledge, rather than writing health and safety and these key areas of technical knowledge directly into the skills assessment criteria. These key technical skill areas also played second fiddle to a range of generic business skills. So it was with some interest that I dipped into the mining industry national training package to see if it struck a more appropriate balance. You will see this written up in the article on page 4.

Last year in Melbourne I was fortunate enough to hear a young researcher, Bodil Alteren, who was working on safety in Norwegian mines. She has studied the effectiveness of a method called the Safety Element Method (SEM) in four mines. The method has been developed for internal assessment and goal setting within safety management in mining organisations. SEM emphasises consensus decisions through internal group discussions. Accident reports, documentation of SHE activities, interviews and questionnaires were used to audit the companies. To find out how valid the SEM was, company internal assessments were compared with the audit results and safety results. Interviews and questionnaires were also used to find out how the users viewed the SEM. To see if SEM brought about changes, internal reports from meetings and evidence from action plans was studied. She found that internal and external assessments ranked the companies the same way, providing the facilitator for the internal assessment was the researcher (taking care not to influence participants). This seemed to me to be good practical action research in mining, designed to find out if a particular approach to safety really worked. We have had some good action research in mining from postgraduate students at Curtin University and are seeing similar developments in WA through the researchers in Edith Cowan University's Pat Gilroy/SIA MESHTREC (mines safety research centre). Eight research projects in mining safety are currently running there.

The fruits of this research should result in even safer mining.

Geoff Taylor.



ANNUAL GENERAL MEETING

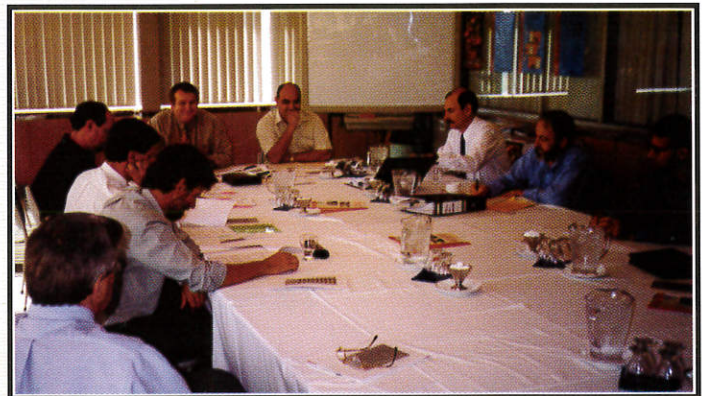
MARCSTA held its AGM at the Metro Inn in late March.

Greg Harris, Vic Roberts, Warren Claydon, Terry Condipodero, Joe Maglizza, Gary Tonkin, John Tootell, Peter Edwards, Reuben Barber, Gary Sharpe, John Lemon. Arthur Baker, Bruce Anderson, Paul Petali, Pat Gilroy from the Chamber of Minerals and Energy, and Geoff Taylor attended.

Paul Petali had been asked to review the constitution and suggest amendments. These were dealt with successfully in the meeting, and the revised constitution is now in operation.

This allows for the election of a paid executive officer.

The executive committee elected for 1999-2000 is: Chairman – Greg Harris, Vice Chairman – Terry Condipodero, Committee Members – Ross Graham, Warren Claydon, Ashley Gilbert, Joe Maglizza. A secretary and treasurer were not elected at the meeting.



Clockwise from left: John, Lemon, Arthur Baker, Bruce Anderson, Paul Petali, Greg Harris, Terry Condipodero, Warren Claydon, Vic Roberts and Joe Maglizza.



Clockwise from left: Joe Maglizza, Gary Tonkin, John Tootell, Peter Edwards, Reuben Barber, Gary Sharpe, John Lemon, Arthur Baker, Bruce Anderson and Paul Petali.

Further South Australian interest in MARCSTA

Tony Aveling gave presentations to the South Australian Chamber of Mines and Energy at Glenside, the Mining and Quarrying Occupational Health and Safety Committee executive and the Australian Mines and Metals Association in February.

He stressed that the training was nationally accredited and goes a long way towards meeting legal obligations. He explained how licensed providers of this training undergo rigorous assessment. The certificate of competence and card system was also outlined. Tony ended up by describing the two year validity period and arrangements for reaccreditation.



Members of the South Australian Chamber of Minerals and Energy

news and views...

NEW SCREENING TECHNOLOGY

PANSEP is the latest in the area of screening and classifying, according to *Australian Journal of Mining* for March. It can handle large volumes of slurry down to 100 micron, with minimal maintenance costs through a patented mesh tensioning system and the elimination of tracking systems, rollers, and vibrating mechanisms. Major applications in the gold, platinum, coal and copper industries include scalping the coarse fraction from cyclone overflows to eliminate both fine and coarse losses by shifting the cutpoint higher, and tramp, woodchip removal; and carbon screening in gold circuits. Another use is coarse particle removal prior to pumps thickeners and filters to eliminate line blockages. Jindex is the Australian agent. Ph: 02-9975 7900.

MERGERS AND PENDING MERGERS

Roche Bros, a member company is currently merging with AWP Contractors, another member company. CSR has sold AWP Contractors and CSR Contracting to the Downer Group, owned by New Zealand and Singapore interests.

Henry Walker, also a member company, has put in a bid for a friendly takeover of Eltin Ltd.

CONFERENCES AND EXPOS

- Minerals Sector Training and Education – Response to the Challenges of the 21st Century. Australian National University, Canberra 27th-29th September 1999. Run by AusIMM, ANU, University of Wollongong,

MARCSTA Members

Ausdrill Ltd

Australian Raised Drilling

AWP Contractors

BGC Contracting

Boral Contracting

Brambles Ltd

Brandrill Ltd

Charles Hull Contracting

Clough WA

Cook's Construction Ltd

CSR Readymix

Henry Walker Contracting

JR Engineering Services Pty Ltd

Macmahon Contractors

Monadelphous Group Ltd

NS Komatsu

Roche Bros

Skilled Engineering

Thiess Contractors

Total Corrosion Control

Westrac

This list is current at the time of going to press but for further information contact the Secretariat on 08-9355 1400, Freecall 1800 678 554 or Fax 08-9355 1499.

University of Canberra and Canberra Institute of Technology. Tel: 02-6207 4182.

- AIMEX Mining Show. Sydney 19th – 22nd October, 1999. Contact: 02-9422 2511.

- Explor '99. Conference on Rock Breaking. WMC Centre, Kalgoorlie, 7th – 11th November 1999. Run by AusIMM and WASM. Fax: 03-9662 3662.

USEFUL CD-ROM

Mining Journal offers a CD-ROM containing a text database of 18 years of articles from *Mining Journal*, *Mining Magazine* and *Mining Annual Review*. The cost is Stg295. Fax: +44 1 732 865747.

MINING IN AFRICA

Mining Engineering for January 1999 carries a useful three page review of political and security risk as it affects

exploration and development in Africa. It acknowledges that there are a number of countries where war and political instability are continuing. But it says that Sadiola Hill in Mali, Obouasi, Obotan and Tarkwa in Ghana, and Tanzania's Gold Pride and Bulyankulu projects are acceptably safe.

MEASURING SAFETY

Construction Industry Safework 2000 is a two year research project the *Earthmover and Civil Contractor* for February 1999 notes. It is sponsored by WorkCover NSW, A.W Edwards, Civil and Civic, John Holland Constructions, Leighton Contractors, Multiplex Constructions and Thiess Contractors. Ross Trethewey is the project coordinator at ACCI and the approach uses a "site safety meter" providing a site safety snapshot. Standardisation of the meaning of WI's, SWP's and JSA's is also part of the project.



Who's Who?

CHAIRPERSON

Greg Harris,
BGC Contracting

VICE CHAIRPERSON/ TREASURER

Terry Condipodero,
JR Engineering Services Pty Ltd

ADMINISTRATOR

Anna Verteramo

INDUCTION

Ross Graham

TRAINING

Joe Maglizza

PROMOTION

Warren Claydon
Ashley Gilbert

ACCREDITATION

Irene Ioannakis

MARCSTA MONITOR EDITOR

Geoff Taylor

MARCSTA POSTERS

Members and providers are encouraged to obtain supplies of these safety posters from the Secretariat. Developed by Bob Halse, the three posters now available feature manual handling, job safety analysis, and MSDS. These posters are one of the ways in which MARCSTA is putting the money it earns back into the industry.

National mining competencies

The national metalliferous mining industry training package has been developed by the national Mining Industry Training Advisory Board (MITAB). It contains seven areas of competencies. They are core, underground, open cut, metalliferous services, processing, geological survey, environmental management and mine management.

The open cut competencies for example contain the following areas:

- drilling, blasting and ground support
- loading and hauling
- dredging
- ancillary mine support
- stockpiling and preparation
- rehabilitation

The underground competencies contain these areas:

- drilling, blasting and ground control
- loading and hauling
- ancillary mine support
- stockpiling and preparation.

The core units are:

- Communicate in the workplace
- Work safely
- Plan and organise individual work
- Contribute to quality work outcomes
- Apply local risk control processes.

The package's intention is that these are kept in mind when assessing the other competencies.

Throughout the package each competency is then matched to the level (1-3) of key competencies required to perform it. The key competencies are:

- collecting, analysing and organising information
- communicating ideas and information
- planning and organising activities
- working with others and in teams
- using mathematical ideas and techniques
- solving problems
- using technology
- cultural understandings.

I thought it would be useful to compare the competencies in the core units *Work safely* and *Apply local risk control processes* with those in the MARCSTA general induction.

MARCSTA has a total of 18 learning outcomes. MITAB's *Work Safely* has six elements of competency with a total of twenty two assessment criteria. The six elements are OHS procedures, hazard and risk identification and response and accident response, personal safety measures, initial first aid, incident identification and reporting, and site security. MITAB's *Apply local risk control processes* has six elements of competency with nineteen assessment criteria. The six are identify hazards, assess risk, identify unacceptable risk, identify and decide on course of action, take action, and complete records and reports.

MITAB's module *Apply local risk control processes* really amplifies MITAB's element 2.2 in *Work safely*.

MARCSTA's Learning Outcomes 5 and 7, *Hazards* and *safety systems* lie closest to the intentions of MITAB's *Apply local risk control processes*.

MITAB's element 2.1 in *Work safely* includes the concepts in MARCSTA's Learning Outcome 8, *Tag out procedures*.

MITAB's element 2.3 in *Work safely* parallels MARCSTA's Learning Outcomes 1 and 2, *Duty of care* and *Acts, regulations, rules*, as well as Learning Outcome 9, *PPE, 13, Alcohol and other drugs* and 15, *Manual handling*. Element 2.4 parallels MARCSTA's Learning Outcome 18, *First aid*, while Element 2.5 parallels MARCSTA's Learning Outcome 4, *Accident reporting*.

Continued next page



CLOUGH GROUP

Currently in its eighth decade, the Clough Group is a multidisciplinary Australian company offering integrated engineering and construction contracting services to a diverse international client base.

Clough provides a total turnkey project development service to the oil, gas and petrochemicals, mining and minerals, infrastructure, manufacturing and property industries.

Founded as J.O. Clough and Son in 1919, the organisation has grown on the strength of its ability to capitalise on emerging business opportunities and to succeed in new and challenging markets. Many of Clough's greatest successes have been achieved in remote locations in Australia, Asia, the South Pacific and the Middle East where adverse conditions and lack of infrastructure have demanded special ingenuity. The company has also established a strong presence in the prominent offshore oil and gas province of Europe.

The Clough Group's operations include a network of strategically located offices

Continued from previous page

MITAB's modules appear to ignore consultation as an issue. Compare MARCSTA's Learning Outcome 3, *Safety representatives and committees*.

Environmental management is dealt with elsewhere in the MITAB package, but heat and cold stress, remote lifestyle, chemicals and fire are not specifically dealt with in the performance criteria in the core MITAB modules. The Range of Variables and (assumed) Knowledge in the MITAB module *Work safely* does include chemicals, environment and remote lifestyle.

In sum, MARCSTA's induction package parallels and in some areas goes beyond the national core OHS competencies.



and bases. Spread across this network is a workforce of over 4,000 personnel and an extensive fleet of specialist plant and construction equipment.

The Company's workforce includes over 600 engineering and technical staff who provide a skilled and flexible team capable of meeting demands of a wide variety of projects. A heavy emphasis on technical expertise, coupled with a commitment to career progression and equal employment opportunity, has resulted in a strong nucleus of skill and experience for the Group.

Safety is an ongoing priority for Clough, which has a comprehensive monitoring, awareness and education program throughout its operations. Clough has a strong commitment to maintaining a high standard of occupational health and safety for all employees, in all locations and on all projects, targets all operations to achieve a lost time injury frequency rate of zero.

For additional information on Clough please contact Mr Peter Collins, Director - Business Development on 9281 9281.

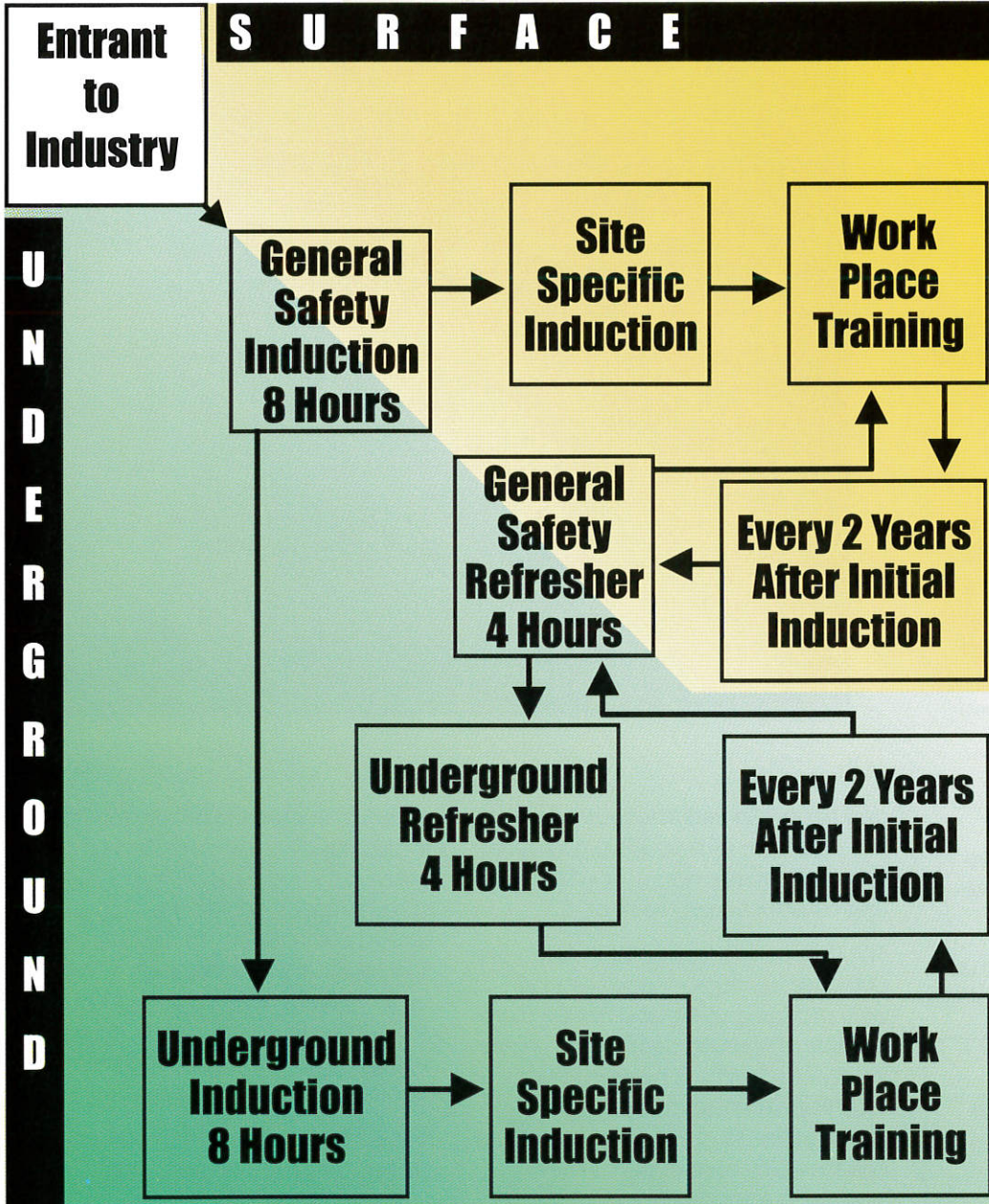




MARCSTA INDUSTRY



WORKING TOGETHER



MARCSTA provides two types of induction training, and refresher induction as well. The flowchart shows the links between the different types of MARCSTA training, and further workplace training. Site specific induction and workplace training are not provided by MARCSTA.

New products for members, providers and trainees

Members of MARCSTA and registered providers are now being issued with wall certificates.

A new guide for course facilitators has also been produced by Dr John Woods of Edith Cowan University.

MARCSTA's induction courses are very well supported by written material. The No. 9a version of the General Induction booklet is now in use along with the colour illustrated Underground Induction booklet in A4 page size.

▲▲▲ NEW TRAINING GUIDANCE

The Australian Drilling Industry Association has a new video out to assist with structured induction programs. Called *Welcome to the drilling industry*, the 20 minute video covers simple safety and operational matters. Broad-based, it is designed for common themes in the mineral, waterwell, environmental and geotechnical areas. It is \$95 to non-members. Contact Michelle 03-9781 2229, fax 03-9781 2699.

Three MOSHAB publications are also of interest. They are an approved code of practice under the Mines Safety and Inspection Act, the *Code of practice for surface rock support in underground mines*, *Adjustment of (airborne) exposure standards to extended work shifts*, and the *Draft guideline on geotechnical considerations for open pit mines*. Comment on the last publication closes on May 31.



TONY AVELING

Principal, Industrial Safety Advisory Services

Tony Aveling has been actively involved in the mining industry for the last 26 years. He has an in-depth understanding of the industry, developed through direct employment in operations, management and consulting to some of the largest mining companies in Australia.

Tony is currently Managing Director of Industrial Safety Advisory Services (ISAS), one of Western Australia's major providers of MARCSTA safety induction training. He was one of the first accredited providers of MARCSTA training courses.

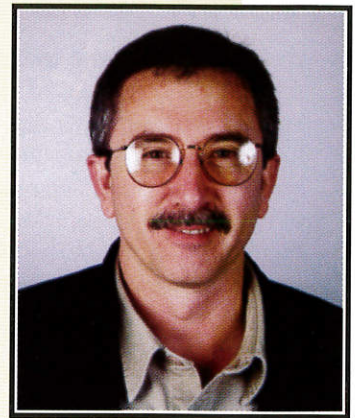
Tony has developed a successful training consultancy to the mining industry. His training team conducts MARCSTA safety training in general surface (every day of each week), refresher and underground inductions in the ISAS training facilities at Welshpool.

Tony has progressed through the mining industry from positions including haulpak driver and driller to management in both head office and remote locations including Newman, Koolan Island and Groote Eylandt (N.T.). He has a Bachelor of Arts degree in Training and Development. Over the last 10 years, he has had an intensive involvement in the training field, predominantly in the mining industry, throughout Australia as well as overseas. Clients have included BHP, Robe River Iron Associates, Woodside Petroleum, WMC, Hamersley Iron as well as major contracting companies.

He has developed and conducted nationally recognised competency based training programs which have been run for thousands of employees and managers, in Australia and overseas, over the last decade.

Right: Tony Aveling

Below: Tony meets one of the many visitors to the ISAS stand at Mienex in March.



MARCSTA REGISTERED PROVIDERS

- | | | | |
|-------------------|----------------------------------|------------------|--|
| Chris Annesley | TRACMIN | Joe Maglizza* | CSR Ltd |
| Tony Aveling | Aveling and Associates | Gary Maher | TRACMIN |
| Reuben Barber* | MacMahon Contractors | Jeff Mathews | Safety Paradigms (Aust) Pty Ltd |
| Tom Bateman | TRACMIN | Greg North | Mobile Skills Training |
| Carl Berglin | TRACMIN | Darren Ridley | TRACMIN |
| Alan Chester* (U) | Beaconsfield Joint Venture (Tas) | Gary Sharpe | Barmenco |
| Dale Cocker | Burnie TAFE | Shane Salt | Safety Resolutions |
| David Collins | D&S Safety and Training | Peter Stareczek* | Great Central Mines |
| Geoff Dodge | Opalrose Nominees Pty Ltd | Rennie Sterle | CY O'Connor College of TAFE |
| Peter Dowding | JR Engineering Services Pty Ltd | Wayne Sullivan | Wayval Safety Consultants |
| Joe Duyvestyn | Drillcorp | Peter Tredgett* | AWP Contracting |
| David Fitzgerald | Prism Business Development | Peter Tynan (U) | Tassmia Safety & Training Services |
| Helen Fleming | Goldmark Training Services | Dave Warner | IFAP |
| John Fletcher* | Newcrest Mining | Dave Watkins | Safety Skill Service |
| Ashley Gilbert* | Ausdrill Ltd | Chris Wilson | Management Consulting Services Pty Ltd |
| Ross Graham* | NS Komatsu | | IFAP |
| Ray Hargreaves | Aveling and Associates | Les Young | Industrial Safe Pty Ltd |
| Joe Knight-Smith | ITN Central West TAFE | Amanda Youngman | |
| John Joyce* | Grimwood Davies Pty Ltd | | |
| John Lemon* | Total Corrosion Control | | |
| Guy Lenoir | SOS | | |
| Bert Lundie | Baseline- New Era | | |
| Michael McCudden | Baseline New Era | | |
| Malcolm McFarland | IFAP | | |
| Nick McIntyre (U) | McIntyre Mining Services | | |

* denotes company trainer only. Remainder are commercial trainers. U denotes underground trainer as well. This list is current at the time of going to press but for further information contact Anna Verteramo at the Secretariat on Phone 08-9355 1400, Freecall 1800 678 554 or Fax 08-9355 1499.

FUTURE FOR LATERITIC NICKEL

World Mining Equipment in its March issue comments that Preston Resources see their acquisition of the Bulong project in WA as a way to acquire the engineering and technical skills needed to develop the larger Marlborough venture near Rockhampton before the end of 2000. Meanwhile while Inco is bearish about its Voisey Bay nickel project in Newfoundland the Newfoundland government has a consultant's report which sees it as profitable enough for Inco to deliver on its agreement for downstream processing in Newfoundland. Canadian Calliope Metals plans to use Sherritt Dynatec pressure leach methods for the Nakety lateritic deposit in New Caledonia. Inco and BRGM are pilot testing acid leach and solvent extraction on Boro ores from New Caledonia. Weda Bay Minerals on Halmahera in Indonesia have pilot tested pressure leach of nickel and cobalt at the Canadian Sherritt Dynatec plant, with a low leach residence time. Halmahera ore also contains recoverable scandium. Fluor Daniel and H.A. Simons have

just completed a feasibility study for Nord Pacific on the Ramu lateritic nickel cobalt project near Madang in Papua New Guinea. Dominion Mining has patented the Activox® technology for downstream nickel processing, and North Ltd have the rights to use it after acquiring the Yakabindie deposit from Dominion.

BLASTING AHEAD

World Mining Equipment in its March issue carries a two page review of five new developments in blasting. These include:

- Mine Site Technologies' (Australia) remote blasting system for open cut mines
- Instantel's Blastware II software package to monitor blasting from remote sites
- Geosonics' SSU 3000LC seismograph to quantify the performance of explosives and blast design
- Precision Blasting Services' Energy Efficiency software for ANFO mixing, and
- Maptek's 3D blast design package.

BETTER WEIGHING

P&H Mining Equipment has a loadweigh system accurate to 2% which operates on the shovel, not the haultruck, allowing weighing before emptying. This balances maintenance costs, efficiency and productivity, says *World Mining Equipment* for March.

ROCKFALL RELATED INJURIES

Australian Journal of Mining for March carries a six page article on continuous improvement in geotechnical design and practice based on cases from WMC's St.Ives Gold mine. It shows that a systematic approach to geotechnical design and practice has a positive impact on injuries and fatalities.

NEW EXPLOSIVES LEGISLATION IN QUEENSLAND

The Miner for March reports on new laws covering the manufacture, transport and use of explosives in mining, quarrying and construction, with greatly increased penalties. It broadens incident reporting requirements, and provides right of appeal to a magistrate. Bob Sheridan of the Mines Inspectorate

emphasised the importance of substitution and engineering as primary measures in the hierarchy of control of explosives risks.

AusIMM SERVICE AWARD

Hugh Jones, well known to many in the WA mining industry, received the AusIMM Perth Branch Service Award for 1998.

CD-ROM FOR STUDENTS

CIM Bulletin for January 1999 reports on the *Groundwork* CD-ROM for hands on learning about the importance of minerals and mineral exploration. It features quizzes, exploration games and case studies. It is available free to educators from W.D Sinclair. Email:sinclair@gsc.nrcan.gc.ca

GAOL FOR CONTRACTOR

Deliberately bringing in a person to drive a scraper with defective brakes and steering after his own employees refused has put a Queensland contractor in gaol for an 18 month sentence suspended after four months. The driver was killed when the unit rolled backwards off a low loader, the *Earthmover and Civil Contractor* for February reports.

TOP FIVE US VIOLATIONS

Pit and Quarry for January reports on the five most common sources of citations (like an improvement notice) by the US Mines Safety and Health Administration in quarries. They are:

- machinery and equipment
- electricity
- travelways (i.e access and egress)
- fire prevention
- loading, hauling and dumping.

PASTE FILL

The Miner for March and *Canadian Mining Journal* for December both report on the use of paste fill in underground mining. The first is at Henty Gold near Queenstown in Tasmania, and the second at the Enterprise mine at Mt Isa. Mining can be carried on right next to paste fill after only a few days curing. Paste allows recovery from crown pillars, reduces surface tailings, minimises treatment of underground water and encapsulates potentially acid-producing waste rock.

The Monitor is published by quarterly by:

MARCSTA
Suite 11,
Petroleum House,
3 Brodie Hall Drive,
Technology Park,
Bentley 6102

Freecall 1800 678 554
Phone 08-9355 1400
Fax 08-9355 1499

Monitor Editor:
Phone/Fax
08 9354 7590
Email
geoff@tower.net.au