

## Murray & Roberts Cementation

World Class Implementers of Mining Projects

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### FROM THE DESK OF HENRY LAAS

The past 12 months have been a period of consolidation for Murray & Roberts Cementation with a great deal of focus on the full integration of the two companies, Murray & Roberts RUC and Cementation Mining, to create Murray & Roberts Cementation. The merger was implemented successfully and the business is now well positioned to participate in the growth opportunities presented by the South African mining industry.

The merger also resulted in the creation of a significant mining contracting company, with installed capacity in terms of human capital resources, leadership and other resources, giving us the ability to grow the business by at least 25 percent. This is a very favourable position to be in considering the short to medium project opportunities presented by the South African market. This should provide some comfort to mining companies who are becoming increasingly concerned about the capacity of mining contractors in South Africa.

Our vision is to be the first choice mining contractor in underground mining, and as such it is important for Murray & Roberts Cementation to engage mining companies very early in their project development phase, to ensure that capacity is optimally applied and project delivery enhanced. I am pleased to report that this model is supported by the major mining houses and that we are currently working hand in hand with many of them on several major projects that are still in the development (feasibility) stage.

As previously communicated to our clients, an important element of our strategy and service offering is to establish a design capability within Murray & Roberts Cementation. The benefit of this is to enhance the constructability of project designs. The demand for this service has exceeded our expectations and our

Mining Engineering service department is now well established, providing a broad range of services including design optimisation, participation in feasibility studies and consultation on certain technical disciplines. It is part of our plan to create more capacity in this department.

In order to ensure sustainability and to benchmark Murray & Roberts Cementation as a world class company, significant effort went into the development

of a Business Management System that comprises an ERP system as well as an enterprise wide risk management system. The ERP system (financial management, procurement and project cost control) will go live on October 1, 2006. The enterprise wide risk management system includes safety systems which we have developed over the past 12 months. These systems have been assessed by various mining companies and were seen to be some of the best

available in the South African mining industry. They are now being rolled out to project sites, and implementation is being supported by a behaviour change process.

Although we understand that reputation is important in a competitive business environment (especially in terms of project delivery and safety performance), we also understand that current performance is more relevant than past performance. In line with this, we recognise the demand for consistency in delivering to world class standards. Safety performance is critical in our business and we have therefore decided to use Impala Platinum as a benchmark for our safety performance, due to the fact that they are the only mining company in South Africa achieving a better safety result than ourselves.

I wish to thank the many executives in the mining industry who gave time to participate in our recent client survey. Your inputs were invaluable and the feedback extremely useful in providing guidance to our leadership team. We believe that this information will ultimately contribute to our ability to deliver a more professional and complete service.

I would like to take this opportunity to welcome Gavin Dyer to the executive team in his capacity as Human Capital Executive. I trust that Gavin will play an important role as a member of the leadership team, as we endeavour to provide the industry with a world class mining contracting service.

Finally, we would like to extend our condolences to the family of Alastair Douglas, the former managing director of Cementation Mining, whose recent and untimely passing has shocked the South African mining industry. Alastair was a highly respected mining engineer and a well-loved leader, and will long be remembered for his contribution to the industry.



# MINES NEED CONSISTENT QUALITY AND QUANTITY OF BACKFILL

"There is considerable demand for consistent quality and quantity of backfill in mining operations," Rob Bradley, manager mine engineering at Murray & Roberts Cementation, says. "This need relates to a number of issues, which include safety, ore extraction rates, reduction in ventilation costs as well as the traditional requirement of providing regional support in the stopes," he says.

Murray & Roberts Cementation has extensive experience in this technology and can offer its comprehensive experience and engineering capability to its clients.

Backfill is a mining method used to fill previously mined-out stopes with a suitable product. It is essentially used to provide regional rock support within a mining excavation in order to enable further operations. The method is believed to have started in South Africa in the 1930s, but capacity was limited. Murray & Roberts' experience commenced in 1980s.

"Each backfill operation is unique in terms of the business case, logistics, mining depth, strength required, materials used and the reason for the backfilling operation. We have extensive experience in a wide variety of applications," Rob says.

Backfilling is mostly used for regional support, and also offers potential advantages of improved ore extraction rates and lower injury risk, as timber support systems constitute a fire risk. It facilitates improved ventilation; in deep level mines it reduces energy costs by optimising refrigeration and ventilation services and infrastructure. Backfilling helps simplify logistics and reduces the risk of materials handling injuries when compared to conventional support systems.

Typically, a mine will define a need for a backfill operation. At this stage, Murray & Roberts Cementation consults with rock engineers and geologists from the mine and in some cases brings in its strategic partner,

NS Consultancy. "With an established mine, the necessary expertise in terms of geology and hanging wall conditions is on site. Greenfield operations require an in-depth understanding of the pumpability and flow characteristics of the available materials (rheology) and necessitate determining optimal mix designs through test work and engineering modeling. This is highly specialised work, requiring specialised instrumented pumping test loops, hence the value of having a close association with an organisation such as NS Consultancy," Rob comments.

Following these assessments and studies, Murray & Roberts Cementation completes the up front engineering, which takes factors such as client requirements, cost, geology and rheology into consideration. This process determines the specification of the material to be used for the backfill, the flow through the pipes and the strength characteristics of backfill required. Each application requires a specific solution. "This is not a case of a generic solution fitting all mines," Rob says.

From the rheological design and type of fill, the company designs the reticulation system, the mixing and pumping plant and quality control systems. Murray & Roberts Cementation will then build the plant and, if of value, operate it.

Backfill material is generally pumped into geofabric bags placed underground where support is needed, which have been attached to the hanging wall. Excess water from the slurry which has been pumped underground through the reticulation system drains out and solids remain in the bag, ultimately providing the support once cured. The product being pumped has custom designed properties which will depend on the strength required according to the rock, the depth and the size of the area.

Murray & Roberts Cementation has been involved in designing and building various backfill systems, some

to a depth of 2700 metres below surface and with a reticulation in excess of 34 km. A recent feasibility study undertaken has a backfill design reticulation of several hundred kms.

"Since this is a safety critical operation, risk assessments are undertaken prior to the design to ensure that all safety levels are met. The backfill solution is tailored to the mining method in place such as longhole mining or drift and fill," Rob explains.

The predominant and preferred backfill material is mine waste tailings often blended with cementitious binders such as Portland cement and slagment. This is an environmentally friendly option which allows mines to move some waste back underground. Where a strong backfill is not required, a lower cost binder such as fly ash could be added. Fills include cyclone-classified tailings, full plant tailings and semi-classified tailings, each with its own unique set of characteristic particle size distributions and self-draining and water reticulation characteristics, which affect pumpability and final strength development.

"Backfilling demands an engineered solution which needs to be supervised. Benchmarking and best practice are always used by Murray & Roberts Cementation," Rob says.

Test work is always undertaken to ensure that UCS (Unconfined Compressive Strength) development is determined. Tri axial stiffness tests are done to determine the strength of the material to ensure that particles bind correctly, while liquification tests are done to ensure the most appropriate binder content to ensure stability.

Actual pumping tests are also often carried out through pipeline test loops to optimise flow rates and minimize pressure losses to ensure that the appropriate fill, binder and rheology has been found.

Backfill material is generally gravity fed down the shafts, maintaining full flow conditions to minimise the wear. With careful consideration to maintaining full flow it is possible to have feeds from the stock tanks to more than one region simultaneously. The installation and size of barricades and bulkheads retaining the backfill within excavations depends on the type of fill being used as well as the excavation height. Materials of construction include steel wire rope, geofab material and wooden poles. Full structural designs are supplied at specification stage to ensure safety, and very high structures can be terraced for structural integrity.

"Where necessary, we can also establish pumping stations underground to boost flows to other areas, although this is not ideal. We can also build storage dams underground should it be required," Rob says. (Continued)

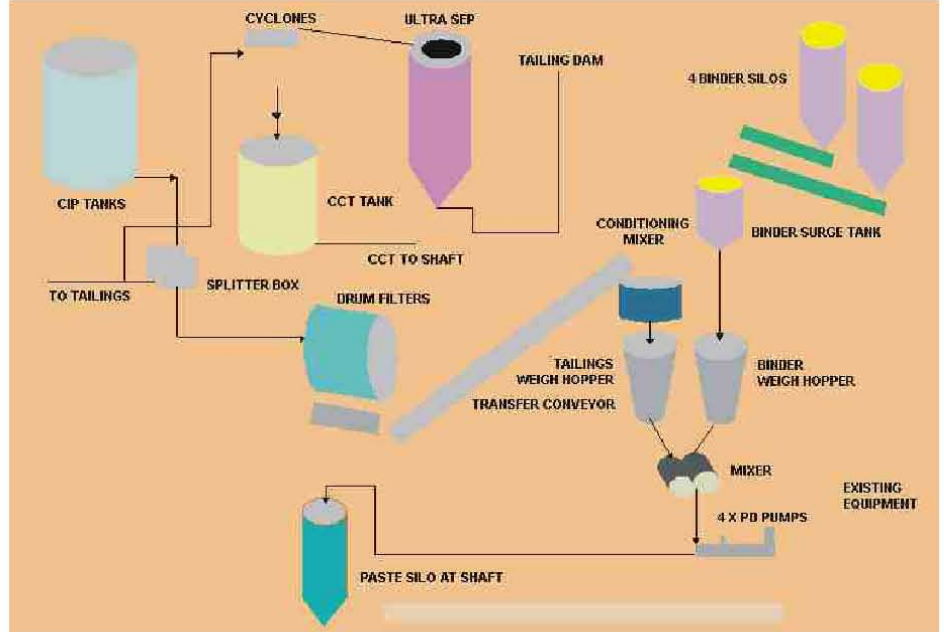


# MINES NEED CONSISTENT QUALITY AND QUANTITY OF BACKFILL CONTINUED

Backfill engineering is a complex topic and involves many engineering disciplines and practical smarts, all of which Murray & Roberts Cementation can integrate into a single package, which few others can do," he concludes.

## Types of backfill include:

- hydraulic fill 55 68% solids (1.54 1.75 Relative Density);
- high density fill 65 72% solids (1.75 1.84 Relative Density);
- paste fill 72 85% solids (1.82 2.0 Relative Density);
- tailings aggregate fill (tailings aggregate where small particles are added); and
- rock fill (this is the cheapest option and, although not technically a backfill, it is used.)



## ERP IMPLEMENTATION PROJECT

Enterprise resource planning (ERP) has become integral to the successful operation of large businesses across the board in recent years. Murray & Roberts Cementation together with Murray & Roberts Construction, Murray & Roberts Engineering Solutions, Murray & Roberts MEI and Murray & Roberts Marine is busy implementing the JDE Oneworld ERP system in the functional areas of finance, procurement and project costing.

We have made a non-negotiable commitment to switch over to the ERP system. The project kicked off in earnest in December 2005, and training on the functional modules is currently well underway. The first part of "Go Live" will start on October 1, 2006.

We have revisited, standardised and streamlined business processes across all participating companies. This included mapping the entire business process, as well as identifying and documenting processes and controls, in order to ensure the best possible business readiness. This is critical for successful implementation across all participating entities.

We have also put extensive effort into end-user readiness. End users have been given a better understanding of what the ERP solution is and how it will benefit them, through an information sharing session.

Going forward, end-users will become an integral part of the implementation activities, and will be ably supported by our project implementation team and well-trained super-users. However, it is the responsibility of each individual to attend training and ensure that they are well equipped to fulfil their responsibilities within our world class working environment.

With implementation of the ERP system imminent, we are already well advanced with defining and designing post "Go Live" and ongoing support functions for the ERP system. For more information and regular updates go to [www.erp.murrob.com](http://www.erp.murrob.com) or click on the ERP Project link on the Murray & Roberts Cementation intranet.

## ADDING VALUE IS SECOND NATURE TO MURRAY & ROBERTS CEMENTATION

An innovative approach backed by extensive experience and expertise allowed Murray & Roberts Cementation to provide a cost-effective solution for the equipping of a backfill hole at Cullinan Diamond Mine.

"The scope of work was to equip a raisebored hole measuring 1.8 metres in diameter to a depth of 730 metres below surface. We completed the raiseboring in September last year. The sole purpose of the hole was to allow underground access for backfill aggregate," Neil Lane, engineering service executive, Murray & Roberts Cementation, explains.

"In itself, the request to raisebore a hole to accommodate backfill pipes was unusual, but it proved to be a far more economical solution than installations in traditional shafts," he says. (Continued)



## ADDING VALUE IS SECOND NATURE TO MURRAY & ROBERTS CEMENTATION CONTINUED



Murray & Roberts Cementation has a well established track record for raiseboring and completed the hole to its final depth safely and cost-effectively. Use of its RVDS technology ensured that the hole was drilled to a deviation of only 0.01% over its depth of 730 metres. It was considered essential that the hole be straight, as the backfill pipe column is essentially free hanging.

"Traditionally, we would require human access to equip a hole with backfill pipes. This necessitates the provision of some in-shaft infrastructure. Firstly, this is

an expensive exercise and secondly, this shaft has a diameter of only 1.8 metres, which doesn't give one much room to move," James Collins, engineering manager for Murray & Roberts Cementation, says.

In the traditional method, support structures are established at the bottom of the shaft, and pipes are installed moving upwards.

The job entailed the installation of two 150 NB schedule 160 high pressure backfill pipes in the hole.

"We came up with a new method of installation whereby the pipes were installed from the surface and lowered by means of a hoisting system," Collins says.

Pipes were supplied in 9.144 metre lengths with a screw-on configuration with a double diameter double start, which supplies increased torque ability on the thread. The torque allows sufficient pre-tension in the joint to carry the required loads. A total of 77 pipes per column were installed.

A number of innovative engineering methods were implemented to accomplish this job. Firstly, a purpose designed crane system was engineered to accomplish the top down installation. Cranage was installed directly above the raisebore hole and collar support steel.

"We clamped the first pipe into position using a purpose designed hydraulic torque tool and continued the process until all 77 pipes had been installed for the first column. We then repeated the procedure for the second column. Our hydraulic torque tool ensured the effectiveness of each joint," Collins says.

Anchor steel will be installed at the shaft bottom to facilitate tensioning of the pipes between the bottom and the top support steel. "Backfill pipe columns are free hanging, and tensioning was essential to ensure that oscillation is dampened," Collins says.



The top support steel, which carries the greater load, comprised 1.1 metre deep plate girders with a rating of 900 kg/metre. "We used fairly substantial sections to facilitate the most appropriate support for the backfill pipe columns and to minimise deflection after we had tensioned the columns," Collins points out.

It was innovative thinking and experience that ensured an appropriate solution, particularly in terms of handling such large lengths and being able to rotate and lower pipes simultaneously under controlled conditions. At the end of the screwing function, it was also important to be able to apply the correct torque to a 150 NB pipe.

These systems were developed at the Murray & Roberts Cementation's Bentley Park workshops.

"Use of this method of equipping the raisebored hole with backfill pipe columns guaranteed that the job cost was a fraction of the conventional method cost. We also achieved significant time savings and ensured safety," Lane comments.

"This has never been done before. After successfully completing the contract at Cullinan during the first quarter of 2006, we were awarded a contract at Black Mountain using the same technique," he says.

The installation crew at Cullinan comprised six people and the entire contract was completed without a single lost time injury.

"This is a good example of solving a complex problem with a simple yet foolproof solution," Lane concludes.

## E-LEARNING SOLUTION SERVES BUSINESS IMPERATIVES AT MURRAY & ROBERTS CEMENTATION CONTINUED

The e-learning approach offers standardisation of training, which is ideal for core skills, and because the nature of Murray & Roberts Cementation's work involves contracts of fixed duration, there is a natural flow of employees through the company. Increasingly, employees are drawn from local communities resulting in a greater need for training than in the past.

The FOG programme is in line with standard MQA qualifications and requirements and comprises an element of apprenticeship and learnership programmes.

While all company technical skills training is co-ordinated through a central Training Academy near Carletonville, which includes accommodation for 105 semi-skilled people and 12 skilled people, Wakefield says that the satellite training facility at Kroondal has helped take learning to the employees on site. A second, larger e-learning facility is also planned at the academy. A bus service regularly collects candidates from surrounding sites, for training.

In terms of skills, safety, hazard identification and other important issues, Wakefield says he sees the industry increasingly moving towards simulator-type training, beyond mockups, which he sees as an extension of e-learning, used for decades in other industries and the military. Mining equipment suppliers already have invested in some equipment simulators and, once again, this demonstrates the potential to use modern technology to train people. For example, employees can already be trained to drive a load haul dumper in a simulator, eliminating the possibility of having an accident or damaging expensive equipment.

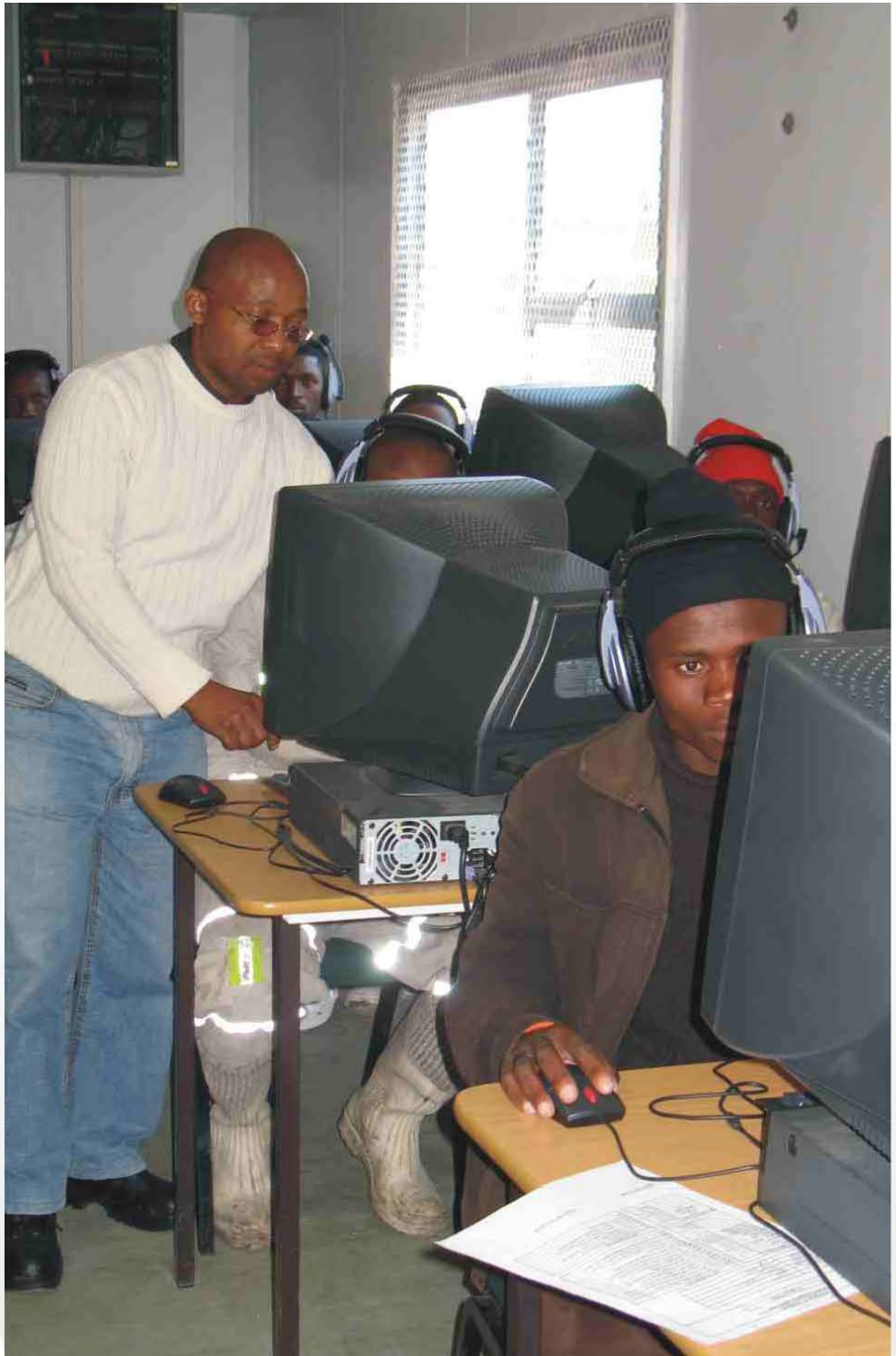
The e-learning package is primarily geared at skills training, but also comes complete with an HIV/Aids awareness training package. "We are planning that in the near future all company induction training will be in this format, too," Wakefield states.

The e-learning initiative falls within a strong imperative within Murray & Roberts Cementation to educate and train to grow its employees at all levels.

"To us, one of the most important challenges is how to get people to embrace change, which is essentially about diversity management," Wakefield states, noting that one of the aspects the company is trying to change at present is safety culture, which the e-learning programme is intended to support.

Factors contributing to ongoing change include the fact that the company is striving to mechanise operations for a number of reasons, including the safety imperative.

He comments that one of the biggest challenges with e-learning is the adaptability of people, but that apart from being a very convenient way to teach people,



computer literacy is also becoming vitally important for other aspects of the business operation and even in individuals' private lives.

An additional advantage of the e-learning system is that it will help feed into the greater company business risk system as part of its philosophy that being a learning organisation is important.

"Business is about risk management," Wakefield states. "We believe that one doesn't manage safety,

but that safety is an outcome of the correct application and ownership of training, behaviours and systems. E-learning is a productive tool which improves knowledge of workplace standards, correct behaviours and therefore, its potential is being exploited."

[www.cementation.murrob.com](http://www.cementation.murrob.com)

# E-LEARNING SOLUTION SERVES BUSINESS IMPERATIVES AT MURRAY & ROBERTS CEMENTATION



In today's fiercely competitive business environment, it is important that companies use the benefits of technology to their best advantage in order to stay ahead of the pack. This is as applicable with respect to training and development as it is to any other aspect of a successful business.

In a company which is focused on the growth and development of employees, as well as the management of business risk, e-learning can offer certain standardised and fast-track solutions.

Murray & Roberts Cementation has recognised this, and towards the end of last year the company implemented an e-learning initiative based at Kroondal Mine, where approximately R1 million capital has been invested to install equipment and software.

A total of 30 computers have been installed at Kroondal's e-learning centre, where trainees undergo a two-day programme. Trainees first complete the academic module which is then followed by on-the-job training underground, where they are assessed by moderators.

Tim Wakefield, technical director at Murray & Roberts Cementation, says that the company has invested significantly in this project, beyond just the purchase of hardware and software, in line with its larger training and education strategy. The skills shortage developing around hard mining implementation and the need to fast-track the development of historically disadvantaged South Africans is a strong motivator.

The focus of e-learning at Kroondal is primarily on fall-

of-ground (FOG) training, however, being an e-learning system, it is planned to offer training and education on any relevant topic.

Wakefield emphasizes that whilst a computer-based learning programme is not a substitute for the kind of training that allows people to ask questions and e

receive one-on-one attention, the system has definite advantages. "We need to expose a large number of people to further training and do it fast, and because the e-learning system is interactive, we believe the tool is optimal so that people can go at their own speed," he comments. "We all too often do not use proven technologies sufficiently," he adds.

Some 2 500 people who work underground at Kroondal, together with other employees at surrounding mines, need to be given the necessary training and be repetitively assessed competent in terms of the company's zero harm strategy.

"The system is an opportunity to fast-track learning," Wakefield says, adding that while it can be used to give people standards training, it can also be used to update the knowledge of people who have come back from time on leave, or when the company wants to put in place a specific intervention after a serious safety incident, for example. Another advantage of e-learning is that its graphic nature makes it easier to give people required and necessary training where literacy may be a problem. "Even those who have not had the benefits of a full school education are able to operate an ATM, and the skill set required is similar," Wakefield points out.

The decision to position a satellite e-learning facility at Kroondal was a strategic one. The contract at Kroondal itself is large, with many people on the job having similar roles requiring training for similar routine work. The location at Kroondal is also central to a number of other contracts on the western limb of the Bushveld PGM complex. Since about 70% of the company's workforce is currently located in this region, the location makes sense. (Continued)



# APPOINTMENTS & PROMOTIONS

The following personnel were recently promoted:

- Petrus Burger (business manager)
- Garth Oliver (mine manager)
- Johannes Ungerer (mine manager)
- Corrie. van der Merwe (business manager)
- Mathys Moolman (contracts manager)
- Gerrit Strydom (business manager)
- Wynand Kukard (master sinker)
- Hercilius Harmse (contracts engineer)
- Tom Peterson (technical assistant)
- Hugh Pretorius (risk co-ordinator)

- Thomas van Wyk (risk co-ordinator)
- Peter Odell (risk commercial manager)
- Hermanus Bekker (training manager)
- David Sheppard (mineral resources manager)

The following personnel recently joined the company:

- Martin Bevelander (manager surface drilling)
- Casper van Zyl (section manager)
- Abraham van Ghent (section manager)
- Lawrence Schultz (contracts manager)
- Gideon Oosthuizen (contracts manager)

- Theo Genis (contracts engineer)
- Louis Steyn (site engineer)
- Alan Kolesky (training manager)
- Adielah Miller (risk co-ordinator)
- Xolani Qamata (risk co-ordinator)
- Graham Pascoe (base behavioural safety co-ordinator)
- Sunette Smith (financial accountant)
- Basil Govinden (financial accountant)
- Sam Motho (contract engineer)

## INNOVATIVE SOLUTION FROM MURRAY & ROBERTS CEMENTATION

Murray & Roberts Cementation has come up with an innovative solution which combines new technology with old to provide a simple, cost-effective pre-sink method for use in shaft sinking operations.

Pre-sinking is carried out to establish a shaft in order for it to be equipped with permanent sinking infrastructure. A Scotch crane (or Derrick) has as its primary function the raising and lowering of equipment into a shaft.

Its operation is different to that of a winder in that it is able to lower and raise and swivel away from the shaft to place equipment adjacent to the shaft. Use of the machine allows the sinking of shorter shafts or pre-sinks extremely cost effectively.

"In terms of the law, we are allowed to lower unguided to a depth six times that of the excavated diameter of the shaft. Use of the Scotch crane requires limited civils infrastructure and it is simple and quick to install.

Using the Scotch Derrick, we are able to do a significant sinking operation while the balance of the infrastructure is being completed," James Collins, engineering manager, Murray & Roberts Cementation, says

"We have now refurbished an older generation pneumatically driven Scotch crane and equipped it with a hydraulically driven turntable, improving its performance. This innovation will be rolled out to other machines as and when major repairs are due," Collins says.

## VISIT US AT ELECTRA MINING AFRICA 2006

On the international calendar, Electra Mining Africa is the second largest mining show worldwide and attracts over 35 000 visitors.

This year, the exhibition will take place from September 11 to 15 at the Expo Centre, Nasrec, Johannesburg and Murray & Roberts Cementation will, once again, participate within the greater Murray & Roberts exhibit.

The stand design is such that seven Murray & Roberts' companies will be represented, each with individual display areas. There will be a Murray & Roberts corporate display area and a hospitality facility.

The main attraction on the stand will be a raisebore head placed on a rotating podium on the one corner of the stand. Several models will also be on display on the stand.

Government has again shown strong support for the show with the Department of Minerals and Energy (DME) confirming that Mining Week will run concurrently with Electra Mining Africa in 2006.

In addition to this, the DME will also host a conference/workshops during Electra Mining Africa 2006 and Murray & Roberts Cementation will be presenting papers at these events.



# Murray & Roberts Cementation

## Electra Mining 2006 - Hall 6 Stand C20

# APPOINTMENT OF GEOLOGIST INCREASES COMPETITIVE ADVANTAGE AT MURRAY & ROBERTS CEMENTATION

Murray & Roberts Cementation has appointed a qualified geologist to join its team. Martin Bevelander, who joined the company in January, holds a BSc Honours in geology from RAU and has 20 years' experience in mining exploration project management.

Martin has extensive experience in the mining exploration environment, and has worked for high-profile mining houses including Goldfields, JCI, Durban Roodepoort Deep and Anglo Platinum prior to joining Murray & Roberts Cementation.

The company's move in recruiting an in-house geologist is somewhat unusual for a mining contracting operation, but has been driven by a number of strategic factors.

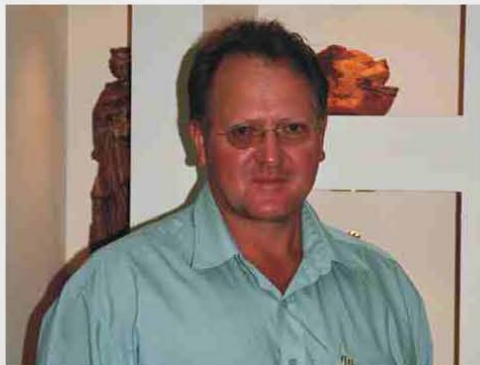
"The international exploration environment has changed in terms of environmental aspects, client expectations and the general exploration standard," comments Bevelander. "It is necessary for companies to address these topics, as well as embrace new technologies, both in drilling and the general geophysical exploration environment."

In the current business environment, the need to have the exploration drilling company integrated into an exploration project as a whole, adding support and technical advice, has become more necessary.

"In fact, the latest trend internationally is to have the exploration drilling team not as a contractor but as part of the exploration team," Bevelander points out.

His appointment will have a number of benefits for Murray & Roberts Cementation in terms of the expertise he will bring to its operation with his thorough knowledge of geology and understanding of exploration projects.

He will endeavour to keep the company in line with international standards in terms of the safety and environmental issues that exist around exploration drilling, as well as to facilitate an understanding of client expectations and of how to optimise exploration drilling programmes.



Having an in-house geologist will allow the company to understand critical aspects of exploration drilling programmes in a pre-emptive way, giving the contractor an edge in terms of project planning, optimisation and timing of exploration drilling activities.

In terms of clients' expectations, Bevelander points out that the modern exploration client is more demanding in the level of technical expertise they expect from a contractor, as well as in the levels of accuracy to which they expect a project to be managed.

"Timing in exploration these days is of critical importance. Companies are often faced with tight project feasibility study deadlines and the lack of good technical understanding can often result in time delays," he notes.

Bevelander reports: "Murray & Roberts Cementation is in the process of upgrading its fleet of exploration drill rigs to fill this need in the market. To this end, we committed a significant amount of capital expenditure towards the acquisition of six new, state-of-the-art, fully automated hydraulic surface exploration drill rigs. During late 2005 to early 2006 we took delivery of four LF 90s and two LF 230 Boart Longyear rigs. By acquiring state-of-the-art drilling technology, and focusing on its expertise in directional drilling and exploration drilling management as a whole, we will continue to be at the forefront of exploration drilling in this region of the planet."

He continues: "We are also looking forward to enhancing our standing and competitiveness within the larger exploration fraternity internationally, and expanding our previous expertise, which was in deep exploration drilling, into the shallower drilling, more dynamic exploration environment as well."

"We are in the process of bringing on board three-dimensional tomography, which will support and significantly optimise development and sinking of new shafts, and could potentially lead to significant time saving in project development," he says. Bringing on board expertise of a geological nature will position the company to make the best use of this technology.

The company's drive to expand its drilling activities even further into Africa culminates in the dynamic combination of the most advanced technology and capable manpower, of which Murray & Roberts Cementation has great depth.

Variable geological circumstances necessitate different and unique technical approaches towards exploration drilling, the success of which hinges on smooth integration with clients' expectations.

In addition to the technical and geological aspects of the job, Bevelander's interest is in the efficient management and optimisation of drilling programmes, with a view to providing clients with a top quality product, timely delivery and any additional geological support they may require.

His presence in the company could also position it to offer a one-stop exploration service to clients in the longer term. He views part of his personal challenge in the position as aiding the change management process with the fresh perspective he can bring in focusing on and developing long-standing relationships with clients, based on professional service and technical excellence, as well as in bringing the different disciplines together. His philosophy is simple... "Do it professionally and technically correctly first time round."

## Murray & Roberts Cementation World Class Implementers of Mining Projects