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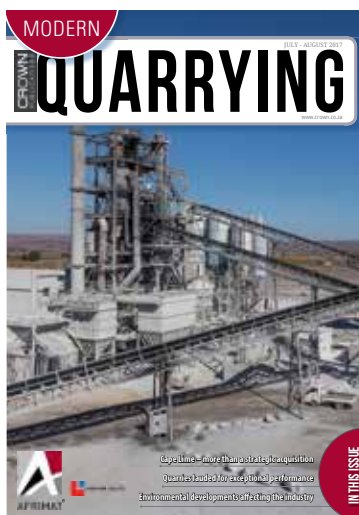
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<p>Editor Dale Kelly dalek@crowm.co.za Mobile: 0834199162</p> <p>Advertising Bennie Venter benniev@crowm.co.za</p> <p>Design & layout Adèl JvR Bothma</p> <p>Circulation Karen Smith</p> <p>Publisher Karen Grant</p>	<p>Published quarterly by: Crown Publications cc P O Box 140 Bedfordview, 2008 Tel: +27 11 622 4770 Fax: +27 11 615 6108 www.crown.co.za</p> <p>Average circulation 2 521</p> <p>Printed by: Tandym Print</p> <p>www.modernquarryingmagazine.co.za</p>	 
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THE HEART OF EVERY GREAT MACHINE

Railroading the Charter is a huge blunder

The Mining Charter is disempowering, to say the least, and does nothing more than change a few white faces for faces of colour. And for Minister Mosebenzi Zwane to say the final version is "a true reflection of the views of the majority," is not true.

The important party to these discussions was left out, and I can't imagine what the Minister was thinking. What was his logic?

If, as he says, whites have been the only beneficiaries, he surely can't change this equation by the substitution of a few blacks, while the deprivation of the population of the benefits of the country's mineral wealth, stays the same.

'Radical transformation' to my mind means housing for all, education and medical care, derived from the country's mineral wealth for these needs.

It has been more than a decade since the introduction of the first Mining Charter, and the story of black entrepreneurs taking over mining companies is still a problematical one. The first Mining Charter, which was drawn up in consultation with mining houses was signed in 2004. The very heart of its failure and that of many empowerment consortiums was funding. The third Mining Charter addresses the issue of BEE partners, which in the past found them in trouble due to falling commodity prices, with no capital to pay off the debt; and they had to sell their shares.

The nature of the industry is cyclical and granting shares to people who don't have capital is a dangerous move.

Webber Wentzel's Jonathan Veeren says that obtaining funding for BEE deals is going to be difficult because mining companies have not shown consistent dividend flows for some time. "Changing the regulatory framework every 10 years is not going to work. It will discourage investment."

By railroading this Charter, there will be even more uncertainty over transformation and a possible judgement that will go against the whole spirit of transformation. The Mining Charter needs the industry's buy-in which it clearly hasn't had.

The Chamber of Mines has applied to the High Court of South Africa, for an interdict to prevent the implementation of the Reviewed Mining Charter, which was published by the DMR in mid-June. Its application points out that while its members are totally committed to the transformation objectives of the MPRDA, they are opposed to the DMR's Mining Charter as it attempts to subvert those objectives by the "unlawful publication of instruments which purport to give effect to such objectives, but that in fact undermine them."

It believes that if the Charter is implemented in its current form, "it will destroy the very industry whose survival is necessary to give effect to the objectives of the MPRDA."

It seems as if the Minister is exercising powers which reside exclusively with Parliament, which he has usurped. As Ron Derby, the editor of Business Day writes: "Mining charters need to get everyone's buy-in, and not be imposed by any one party – especially one whose voice is as fractured as the ANC is right now."

It is an incredible blunder not to open the door to the views of the mining industry which employ the bulk of this country's unskilled labour force.

"The vast and systemic damage which the threatened enforcement of the 2017 Charter has and continues to inflict upon the financial and reputational interests of not only the Chamber's members, their employees and investors, but also the country as a whole, requires urgent redress," the Chamber urges.

The Charter seems to be taking from one group of shareholders and giving to another. Where is the value-add and growth in the economy? There are so many uncertainties.

The trust between business and government needs to be restored. And to achieve this, confidence needs to be restored. It seems to me as if Minister Zwane has only added to the distrust between government, business and labour. Let us hope that that this Charter is not considered an unlawful exercise of power, and that a degree of confidence can be restored to the mining industry and its investors.



Dale Kelly

Chamber applies for Charter interdict

The Chamber of Mines has applied to the High Court of South Africa, Gauteng Division, for an urgent interdict to prevent the implementation of the Reviewed Mining Charter, as published by the Department of Mineral Resources (DMR) on Thursday, 15 June.

An application to have the Reviewed Mining Charter reviewed in terms of the Promotion of Administrative Justice Act (PAJA) will follow in due course. The application notes that the Chamber and its members are fully committed to the transformational objectives of the MPRDA. However, they are opposed to the DMR's Mining Charter as it "attempts to subvert those objectives by the unlawful publication of instruments which purport to give effect to such objectives but in fact undermine them."

It further notes that should the DMR's Charter be implemented in its current form, it will "destroy the very industry whose survival is necessary to give effect to the objects of the MPRDA." The application further argues that the publication of the 2017 Charter was so obviously beyond the powers of the Minister and that, in publishing the 2017 Charter, the Minister has purported to exercise powers which reside exclusively with Parliament, which he has sought to usurp.



The Chamber's application further notes that the DMR's 2017 Charter is "so confusing and confused, and so contradictory in its core provisions, that not only are the mining companies who are supposedly obliged to comply with the 2017 Charter perplexed as to what they are required to do, but legal experts themselves are confused and find themselves unable to provide clear advice to their mining and investment clients as to the meaning and effect of the 2017 Charter."

The application concludes that: "In summary, the 2017 Charter represents a most egregious case of regulatory overreach. The act of publication was and is harmful not only because of the content of the 2017 Charter, and the vague and contradictory language employed to convey that content, but also because of the clear threat to the separation of powers which that act presents. "The vast and

systemic damage which the publication and threatened enforcement of the 2017 Charter has and continues to inflict upon the financial and reputational interests of not only the Chamber's members, their employees and investors but also the country as a whole, requires, it is submitted, urgent redress. Such redress, in the short term, can only be had by way of an urgent interdict. In due course, this court will be asked to set aside the 2017 Charter as an unlawful exercise of power. But in the interim, and in order to avoid further harm and hopefully restore a degree of confidence not only in the mining industry as an investment opportunity but also in this country's institutions, urgent relief is necessary", the Chamber says.

For further information on why the DMR's Charter is bad for mining, bad for South Africa, go to <http://miningcharter.chamberofmines.org.za/>.

Aspasa broadens member representation

The country's leading quarrying and mining industry representative association Aspasa, is rebranding to reflect a growing and diverse membership base. It has taken a decision to retain the Aspasa acronym only and will no longer be known as the Aggregate and Sand Producers Association of Southern Africa. This is being phased out over the new few months as the branding becomes aligned with the name change.

The Association's work in representing the industry in creating a safe, sustainable, fair and level playing field for its members has led to organisations outside of the quarrying industry requesting assistance and membership. As a result, Aspasa has decided to act broadly in the entire opencast and related mining industries, and wherever similar operations face the same challenges.

Aspasa director Nico Pienaar explains further: "As a result, we have adopted the salt and dimension stone mining industries as well as incorporating the Coal Ash Association into our care. We are also open to any other opencast mining operations applying for membership and which agree to uphold our strict standards in terms of being legally compliant with current legislation."

www.aspasa.co.za



Aspasa director Nico Pienaar.

48th IQSA conference done and dusted

The 48th Annual Conference and Exhibition of the Institute of Quarrying Southern Africa (IQSA) held for the first time at the Coastlands Hotel in Umhlanga, KZN, incorporating the Aggregate and Sand Producers Association of South Africa (Aspasa), has been a successful one.

The conference themed *Can technology Save the World?* was attended by some 260 delegates with almost 30 exhibitors offering a range of expertise on their products and services to the industry. Several new products and technologies were launched by the exhibitors.

Sponsors always play a vital role in supporting the Institute and this year the conference was sponsored by African Drill and Blast; AfriSam; Atlas Copco; Blasting and Excavating; Blurock Quarry; Brauteseth Blasting; Caldas Engineering; Laduma Blasting; Lafarge; Malleo Equipment; Midmar Crushers; PPC; and Weir Minerals Africa. The jackets were sponsored by Raubex with a Hawaiian craft beer evening function hosted by African Explosives, for delegates, spouses and exhibitors.

As always, the true benefit of the conference is networking and many of the suppliers were pleased that decision makers were there from various operations throughout the country. It is always great to see the camaraderie between the different operations.

Looking back, I have attended this conference for 28 years in a row – how time flies – and it is always good to greet old friends and meet new ones. Of course, I haven't aged at all but my goodness how everyone else has! Chatting to some 'oldies', we reminisced about the formal cocktail party which was hosted by Osborn for many, many years; and the monkey-suit dinner which gave a lot of us the opportunity to escape and explore the pubs in Durban or more likely to hold up the bar at Derby's Corner in the Elangeni until the early hours of the morning. It always was, and still is, a key calendar event for the year.

Having said that, I was a little disappointed in a few of the papers, which were product-related. The keynote

speakers were excellent, especially Theo Venter, who discussed the political landscape today, which he says is 'disconfoculated'. The keynote speaker on the first day was futurist Pieter Geldenhuys who looked at Business Unusual citing predictions he made at the conference some 13 years ago with incredible predictions for the future, many of which are happening as we speak. It was great listening to Aspasa's well-known and respected auditors Alan Cluett and Marius van Deventer, and to hear how our quarries have developed into industry-leading role players. Jacqueline Raputsoe from AEL presented an excellent paper on Initiating System Conversion, together with Weir's JD Singleton who gave a case study on the importance of total cost of ownership experienced by some of his customers.

What I miss most is hearing about the challenges faced by our quarries. I recall a marvellous paper presented many years ago on Honeydew quarry in terms of its many challenges in starting up and the problems experienced by the community. It would be lovely if our operations would look at sharing this kind of information – because many of the challenges are the same. These haven't changed; in fact they are far worse given the DMR's inconsistency in applying its rules and regulations. It would have been beneficial to have had someone from the DMR chat to us about their own challenges, which are many.

The Best Paper Awards for 2016 went to Bronwyn Parker from EOH Legal Services on *Mining and Environmental Law, Current Issues 2016*; with the Best Student Paper going to PPC's Thabile Ntibane on *Geological Optimisation* – both of which were presented at the Institute's mid-year conference last September.

Simon Tose from AEL has taken over from Deon Bosman as Institute chairman and says one of his key drives during his term of office is to work towards upgrading and improving training for its members, something which in my opinion, has been sorely lacking over the years. MQ wishes him well for his 2017/2018 tenure.

Report and photographs by Dale Kelly



Deon Bosman hands over the chain of office to incoming chairman Simon Tose.



The Best Student Paper entitled *Geological Optimisation* went to PPC's Thabile Ntibane. The award was presented by IQSA outgoing chairman Deon Bosman.



Photographed at the AEL-sponsored Hawaiian evening: Tobie Wiese together with Ria and Gert Coffee.

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Email: polokwane@elbquip.co.za</p> | <p>Botswana:
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SRK achieves Top Five status

SRK Consulting SA has been rated in the top five companies in South Africa's consulting engineering (mining and infrastructure) segment in the recent Top 500 Companies Awards. The awards survey over 3 000 businesses and honour those who excel in their sectors in terms of best practice standards as well as implementing strong social, empowerment and development policies.

Conducted by Topco Media and the University of Cape Town's Development Policy Research Unit, the survey singles out the five top firms in each of 100 different economic segments; the top 500 companies currently have a collective turnover of R3,5-trillion.

"Being ranked so highly among peers was gratifying and humbling," says SRK MD Vis Reddy. "We are certainly known as innovators and perfectionists in our efforts to create value for our clients' businesses, and we work hard to stay at the cutting edge of what is an increasingly competitive and demanding field. It is also vital that business promotes equity and social transformation, so it is fitting that the awards recognise this in their adjudication."

The Top 500 Awards consider employment profiles and diversity in management and control, as well as commitment to corporate social investment, employment

equity and skill development. As an independent network of consulting engineers and scientists, SRK is owned and managed by its staff and invests significantly in fostering talent in a culture of excellence.

www.srk.co.za



SRK managing director Vis Reddy.

New rock engineering chair for Wits

As a leading school in the field of rock engineering, the Wits School of Mining Engineering has recently appointed Professor Rudrajit Mitra as Centennial Chair of Rock Engineering. Mitra joins Wits from the University of New South Wales (UNSW) in Sydney, Australia, where his position included Director of Undergraduate Studies in the School of Mining Engineering since 2012.

Previous holders of the Chair include well-known local experts in the field such as Professor Dick Stacey and Professor Nielen van der Merwe. According to the Head of the Wits School of Mining Engineering Professor Cuthbert Musingwini: "The Chair has been vacant for two years before the appointment of Professor Mitra, because we needed to make the right appointment."

The Chair is supported by the Centennial Trust, established by the school in its centenary year of 1996. The research activities of the Chair are supported by a 2014 donation of R1,9-million by global miner Gold Fields.

www.wits.ac.za/miningeng



The Wits School of Mining Engineering's Centennial Chair of Rock Engineering, Professor Rudrajit Mitra.

Bell implements succession plans

Bell Equipment's board of directors has appointed its COO and executive director Leon Goosen, as CEO designate to succeed Gary Bell upon his planned retirement. The appointment follows an extensive internal, local and international search process by an external service provider to identify candidates, who were assessed by a sub-committee of the board.

Goosen, aged 45, was a partner at Deloitte & Touche in South Africa and Namibia prior to joining Bell in 2007. He has held the position of executive director since January 2009 and has been COO since December 2014.

"We are delighted to be able to appoint at the helm of Bell Equipment a successor of Leon's calibre," Bell Equipment Limited chairman John Barton says. "As CEO, Leon has worked very closely with the board and Gary over the past eight years, and has made a considerable contribution to the strategic direction of the group."

Bell CEO Gary Bell says that in the past years Goosen has stepped up to his operational role and his knowledge and understanding of what is a very complex business has developed particularly well. "The executive team at Bell is very supportive of his appointment. I take this opportunity to congratulate Leon on his appointment and I have every confidence that he will lead the business to greater heights in the years ahead as we roll out our agreed plans.

"In an effort to ensure a smooth transition and retain the Bell family linkages, it is envisaged that I will continue to play a meaningful role on the board and, along with Ashley Bell's presence on the board, we can steer the business and retain the all important family culture and sentiment that is core to the Bell business today," he adds.

A date for the final appointment to the CEO position will be taken in due course.

www.bellequipment.com



Bell Equipment CEO designate Leon Goosen.

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Manufacturing insight for Canadian students

A group from Canada's University of British Columbia's Mining Engineering faculty recently visited the Multotec Group manufacturing facility in Spartan, just outside of Johannesburg. The visit for the students, from the graduating class of 2017, provided the ideal platform from which to interact with a leading South African manufacturer who supplies both capital equipment as well as consumables to the minerals processing sector.

Training facilitator at Multotec, Brent Combrink says that the modern manufacturing industry is often not understood by university graduates and students from tertiary institutions. For this reason, Multotec believes it is important to provide opportunities such as facility visits so students can see this side of the industry that they have studied. "Exposure to real world manufacturing environments is a valuable tool and not only will it assist in consolidating what has been learnt at tertiary education centres, it will also allow students to understand the types of employment opportunities that this sector can offer."

The group's facilities, spread over several properties, are equipped with state-of-the-art design technologies, including 3D prototyping, computational fluid dynamics, computer-aided drawing and trajectory modelling among others. Combrink says visiting the various sections allowed students to get a real feel for the manufacturing sector.

"This type of visit is not unusual for Multotec and we host these types of facility tours for many of the South African universities and tertiary institutions as well as our customers," he concludes.

www.multotec.com



The Canadian group of students from Canada's University of British Columbia's Mining Engineering faculty pictured at the Multotec Group manufacturing facility in Spartan.

BME assists mining students

To ensure that needy and deserving students are not unfairly prejudiced by their circumstances, the School of Mining Engineering raises money from the private sector and other sources; this year, that fund will be boosted by a R70 000 donation from leading blasting specialist BME.

"It is always heartening to see how the School and its alumni have over the years rallied to support students from underprivileged backgrounds, so that they can focus on their studies in a conducive and enabling environment," says BME marketing manager Hayley Wayland. "As BME, we value the opportunity to play our role in leveling the educational playing field and ensuring the skills our industry needs."

The creation of this support facility for selected students – through which funds are made available for basics like meals, transport, text books and reasonable accommodation – has helped address the drop-out rate of students arriving without sufficient resources.

"Our thanks go to the School and all those involved in ensuring that the funds are well-directed. It is clear that they are making a huge difference to these students' lives, as a higher proportion now progress to the next year of study – and finally to graduation. That, of course, is the result we all want to see."

She said that dropping out is not only devastating to the student and their future opportunities, but it represents a failure to build upon the years of educational investment in young people. "All that effort and investment, which has brought them to the point of university acceptance, is potentially wasted for lack of a supportive living environment."

BME has therefore supported the School and its students in this way for the past five years.

www.bme.co.za

BME marketing manager Hayley Wayland.



Cape Lime – more than

The acquisition of Cape Lime in April 2016, is one of Afrimat's larger to date.

At the sum of R276-million, this acquisition is another extension of the group's diversification strategy aimed at leveraging off its core business, not only in new markets but by also offering new products in existing markets.

Dale Kelly met up with Cape Lime managing director Gerhard Terblanche at the company's Vredendal operation in the Western Cape.

The history of Cape Lime dates back to 1946 when the first vertical shaft kiln was commissioned by Cape Lime Company Ltd on the farm Langevallei near Robertson in the Western Cape. Today, Langvlei has three kilns in operation calcining dolomite, which is mined and crushed on site. It also boasts the only pressure hydrator in South Africa.

The Vredendal operation came into existence in 1981 when the dolomitic aggregate operation was expanded to include the mineral filter plant. Further expansion included the erection of the high-grade dolomite blending plant for

the glass industry in 1983 and the processing of high-grade limestone in 1993. A fluid bed calciner was commissioned in 2004, producing quality white lime.

Cape Lime was purchased from private owners and the empowerment group Dormell. "We are pleased to retain the expertise within the business. The company is well run and efficient and this makes integration into the Afrimat group of companies that much easier," said Afrimat CEO Andries van Heerden at the time of the acquisition.

Terblanche, who says he is part of the furniture, continues heading up the operation in his quiet and efficient way. He joined Cape Lime in 1997 when it was

owned by Trans Hex and says he was there for the wrapping up the loss-making Trans Hex lime division. "We tried to salvage the shaft kiln that had been erected by Trans Hex and struggled for about 18 months to get it going but in hindsight it would never have worked, and the best decision was to shut down the division and cut back on our costs.

"I have taken some interesting risks in my career, coming from De Beers into the then Trans Hex-owned Cape Lime, and I remained on when a lot of people decided to abandon ship. It was a long and stressful period during which we carried out due diligence studies for several interested parties, but I am glad I stayed on."

Cape Lime is known for exceptional quality mineral products supplied to various niche markets such as manufacturing industries producing chemicals, filler, glass, paint and food products. Its products are also used for water purification, soil treatment, effluent treatment, building and construction. The mineral deposit

The limestone quarry at Cape Lime.



a strategic acquisition

is among the best quality of its kind in South Africa.

"We are far from the market which is one of our biggest disadvantages, but it has also forced us to look at a different segment of the market. There is a huge market on the Reef for acid mine drainage and transportation is a major cost factor," he says. "It is the same for fluid gas desulphurisation (FGD) on the new coal-fired power stations for which there is a market of hundreds of thousands of tons of limestone and lime. And again transport is a problem. So we have come to terms with the fact that we can't compete in the general lime and limestone market. Luckily we have a quality orebody and we are focusing on the niche end of the market."

The operation is a limestone and dolomite mine similar to any quarrying operation but the difference is at least 80% of the material that is quarried and crushed goes through secondary and tertiary beneficiation steps.

The raw materials are supplied mainly into the glass industry. "We supply the three big role players with their dolomite and limestone requirements. This is not exclusively; we do have competition in these markets. Our dolomite supplied to PFG is the only suitable source in South Africa with the alternative being in Namibia," Terblanche tells *Modern Quarrying*. "We also supply part of Consol and Nampak's glass requirements on the limestone side.

"The limestone and dolomite at Cape Lime is processed through the same primary crushing plant alternatively, depending on the requirements for the secondary steps. The three crushing stages consist of the primary crushing plant which is a Telsmith jaw crusher, the secondary is a Sandvik and the tertiary is an Osborn 38H," he says. "The secondary and tertiary crushers have closed loop screening and the plant is set up in such a way that you can use a couple of diverters in the chute work to produce any of the G products in the same set up.

"The primary crushing plant hasn't changed much over the last few years, but the 'latest' addition is the Sandvik crusher in the secondary application, which I must say, is a wonderful machine. It has been running trouble-free for 10 years," he says.

The operation has its own workshop, but wear and tear is minimal because of the low silica content of the material. The plant is able to run for



The aggregate stockpiles.



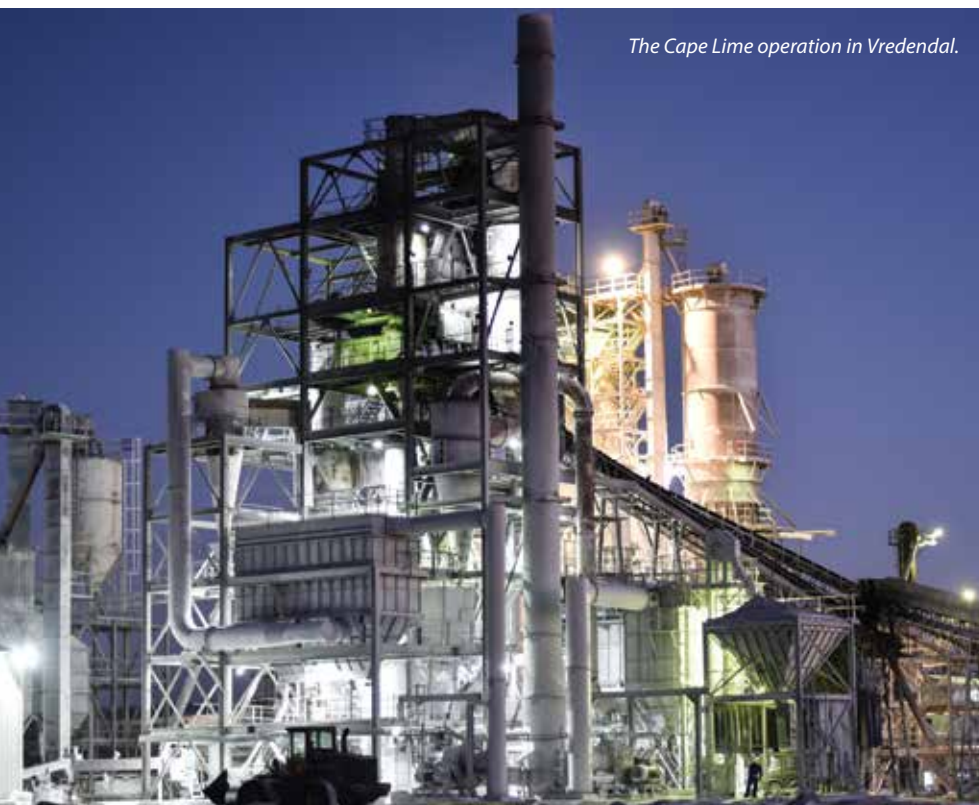
Old and new: The fluid bed calciner (FBC) on the left with the old shaft kiln pictured on the right.



Limestone feed stockpiling.



The high grade limestone at Cape Lime is among the best of its kind in South Africa.



The Cape Lime operation in Vredendal.

about six to seven years on a set of liners where some aggregate producers are fortunate if they can get six weeks use from their liners.

“From the primary crusher, everything is stockpiled depending on the source, whether it is limestone or dolomite,” he says.

Aggregate is sold from the primary stockpiles and we feed the secondary process plants from the other stockpiles.

“High grade dolomite is crushed and screened in the secondary plant utilising HSI crushers down to -1,0 mm. The same applies for the limestone which goes through the secondary limestone process plant where we reduce it to two sizes: -1,0 mm which goes to the glass industry, and 1,0-6,0 mm which is fed to the fluid bed calciner kiln. We draw off some ultrafines from the -1,0 mm fraction with an air classifier to supply clients in the effluent treatment industry. The limestone is fed to the kiln and calcined at roughly 900° to convert the calcium carbonate (CaCO₃) to calcium oxide (CaO).

“Some of the calcium oxide is sold as quick lime with the majority being hydrated. It is reacted with water to produce a dry white calcium hydroxide (Ca(OH)₂) powder. It is very alkaline and applications of hydrated lime is in water treatment and minerals processing such as copper, zinc, gold and uranium, which require lime to maintain pH levels. One of the main applications in South Africa is in the steel and minerals processing industries, and that is where we can’t and don’t want to compete because of the distance from markets and scale of operation.

“Therefore we are focusing on the white lime market which is in the calcium hypochlorite (Ca(ClO)₂) sector as well as applications where low impurity levels in the lime is a necessity. Our focus is thus on the import replacement of lime,” Terblanche says, adding that the company is working on a new product line which still needs a few changes, but which he believes will be very successful. He is hopeful that these innovations will enable further expansion leading to the construction of a second kiln.

On the mining side the overburden stripping is outsourced and drilling and blasting is carried out by Afrimat Contract Drilling. Loading, hauling and crushing is done by Cape Lime as is all internal transport.

The operation is utilising a fleet of Mercedes 14 m³ twinsteers. Terblanche

says ADTs are not suitable because of the distance between the two quarries; the dolomite operation being about 1,5 km and the limestone another 6,0 km from the crushing plant. "We have found the Mercedes twinsteers also give us the best efficiency.

"There are Hitachi excavators in both quarries, with the limestone operation having the larger machine due to the fracturing and hauling distance. The fracturing of the dolomite and limestone is two worlds apart. We are using double the explosives charge on the limestone, but this still produces far larger fragments and this is a huge cost factor in the production cycle."

Asked about the life of the mine, he says the life of the dolomite is in excess of 50 years, while the limestone at current production levels is over 30 years.

What is exciting is the proposed project for the establishment of mining limestone between Vanrhynsdorp and Klawer along the N7, for which Cape Lime

acquired the mining rights in 2011. "It is a higher grade than we are currently mining with some 29-million proven tons, running at 98% calcium carbonate and low in iron," he says.

"The hauling distance to our current crushing facility is currently just not feasible. However, establishing a crushing facility on the new mining site is a huge advantage in terms of the overburden stripping ratio; changes the economics."

The Cape Lime operation has some exciting times ahead, and as Van Heerden said at the time of the acquisition: "We are confident that the quality of these assets, coupled with the marketing strength of Afrimat, will ensure that the investment is quickly recuperated."

Growth through diversification is much more than the philosophy of the Afrimat group. It has clearly become one of the most respected construction materials and industrial minerals supply companies in Southern Africa.

Afrimat has, for the past few years,

made strategic acquisitions in order to diversify the group away from the traditional aggregates business. The acquisitions have ensured that the group has a more evenly-distributed revenue stream and good margins across the business.

Another recent acquisition is the Diro iron-ore mine in the Northern Cape, which the company hopes will start production shortly. With the operation's 1-million t/year capacity, Van Heerden says the mine has excellent potential for growth.

To date, its portfolio includes 25 commercial quarries, three dolomite mines, four clinker operations; two limestone mines and one iron ore mine. Added to this are five sand and gravel mines as well as mobile crushing and drilling and blasting. In the concrete-based products sector, it has nine concrete brick and block factories and 16 readymix batching sites.

www.afrimat.co.za

Report by Dale Kelly and photographs courtesy Afrimat and Cape Lime

Hitachi excavators are utilised in both quarries.



Quarries awarded for exceptional performance

A major criterion for Aspasas's ISHE auditor (Marius van Deventer) and the About Face Environmental auditor (Alan Cluett) is to transfer experience and knowledge to the operations they visit. And this they have clearly achieved given the results from member operations in term of health and safety, and environmental excellence. The 2016 awards were presented at the recent IQSA/Aspasa conference in Umhlanga, KwaZulu-Natal.

Both auditors thanked Aspasa for the privilege of working with the people who make up the industry and congratulated members for their hard work and dedication over the years. "We have seen the snowball effect in the improved knowledge and physical

conditions at the operations, and they are just getting better and better; being able to issue these awards is a privilege for both of us," Cluett says.

Van Deventer agrees: "Our audit process is not easy and is not taken lightly as it first and foremost focuses on legal compliance, industry requirements and

policies, standards and procedures. Our ISHE and About Face audit protocols for health & safety and environmental have been established as a leading practice by the GAIN group (Global Aggregates Information Network)". Note: GAIN was founded by UEPG in 2010, driven by the conviction that international sharing of experience and best practice promotes a more efficient and sustainable aggregates industry globally.

Awarding the trophies, both auditors said that it is more difficult to single out the top performers as there are so many people and operations that are credit worthy. "We've done over 100 audits in 2016 where almost 50% of the members achieved a score of above 90%. The average score of the 2016 audits was 84,54%, which in itself, is an excellent achievement," Van Deventer says. The awards were presented to the following recipients:

ISHE Health & Safety	
Award	Recipient
Top Performer 2016	AfriSam Newcastle
Top Independent Performer	Midmar Crushers
Consistency in Achieving Showplace (5 years running)	AfriSam Newcastle
	AfriSam Umlaas Road
Most Improved Operations	Raumix Crushco
	Raumix Alpha Sand
Safety Manager Award for Outstanding Commitment	Raumix, Johann Pretorius
Safety Practitioner Award for Excellent Performance	Midmar Crushers, Laurencia Maphumulo
	Lafarge Olivehill, Ellen van der Westhuizen
	AfriSam KZN, Lucretia Jansen van Rensburg
Health and Safety Representative	Afrimat Brewelskloof, Sikumbuzo Madliwa
Management Safety Commitment	Afrimat, Maria Pienaar
	SPH, Danny de Villiers
	Afrimat, Letisha van der Berg
Senior Management Commitment to Health & Safety	Drift, Trevor McAdam
Health & Safety Provider Excellence	Noshcon, Paul Chamen
Best Operations Manager	AfriSam Newcastle, Kobus Meyer

About Face Environmental	
Top Performer 2016	AfriSam Rheebock
Top Performer Runner Up	PPC Mooiplaas
Top Performer Independent Quarries	Midmar
Top Performer Runner Up Independent Quarries	IT5 Sivel Droogehoudt
Top Performer Non Quarrying	SPH Aggeneyns
Top Performing Group	SPH-Kundalila
Best Physical Condition	AfriSam Newcastle
Most Improved Operation	Drift Supersand Laezonia
Environmental Excellence	Rietspruit, Rynhard Brits
	Lafarge South Africa, Maanda Nengome

Cluett says there were so many participants in the environmental audits and that “unfortunately not everybody comes out tops.” But then there are operations that really made a concerted effort and the following operations were awarded a Special Mention Certificate:

- Afrimat Marble Hall
- Afrimat Qwa Qwa
- Afrimat Scottburgh
- Afrimat Ulundi/Umfolozzi
- Dorning Crushers
- Lafarge Qala
- Lafarge Richards Bay
- Lafarge Tygerberg
- Platistone
- Raumix Crushco
- SPH-K Bridgetown

Special Mention also went to the following environmental practitioners:

- Raubex Kimberley, Andre Stoltz
- SPH-K, Anthea Sheldon
- SPH-K, Danny de Villiers
- Afrimat, Louis de Wet
- Krokodil Sand, Mart-Marie Joubert

Special Mention for Consultants included: SHE Group, Droogehout, Rion Rossouw; and Noshcon’s Paul Chamen and Ronelle Affinand.

Independent auditor and consultant for the Aspasa ISHE audit, Marius van Deventer.

AfriSam Umlaas Road was recognised for Consistency in Achieving Showplace for 5 Consecutive Years. Petrus Slabbert takes the award for achieving an audit score of 95% and higher.



Independent environmental auditor and consultant for the About Face Environmental audit, Alan Cluett.



Top Independent Performer 2016: Bronwyn Moore takes the award for Midmar Crushers, which achieved a score of 97,05% and over third-highest score for 2016.



Danny de Villiers takes the award for SPH Kundalila being the Top Performing Group. His team achieved the highest average score out of 13 participating quarries.



Darius van Pletzen takes the award for Top Environmental Performer Runner Up, PPC Mooiplaas.



Rynard Brits takes the award for Environmental Excellence at Rietspruit Crushers.



AfriSam Newcastle’s Kobus Meyer was not only recognised for his achievement as Best Operational Manager for 2016, but the operation also achieved Consistency in Achieving Showplace Status for 5 Consecutive Years and Top Performer for 2016. This is the third consecutive year that this operation has received this award, achieving the highest score of 97,18%. The awards were presented by Aspasa’s chairman Gert Coffee.

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More about the audits

The following is a brief summary from both auditors:

Health & Safety: Over 100 ISHE audits have been conducted year-to-date and audit results achieved confirm the commitment towards a safe and healthy workplace, even in strenuous financial challenges. The majority of the top performers maintained their status; however, for lower scoring smaller operations, it is still a challenge to implement and maintain a sustainable and health environment.

The audit protocol was again revised for the 2016 ISHE audits and some changes were made to accommodate new legal requirements and industry standards. A review of the audit document for the 2017 audit was held and it was clear that members required more focus on the link between occupational health and hygiene requirements.

The day of the audit is seen as an educational process and Aspasa strives to contribute in a positive manner to improve the safety awareness of every operation. Some members register this

day as part of their in-house training on their Workplace Skills Plan, hence the wording ISHE = Integrated Safety and Health Education.

The audit process also focuses on possible Section 54s and 55s that may be issued by DMR inspectors, and this information is shared to members as identified through all regional DMR inspections and audits. Interpretation of legal requirements is still a challenge from region to region, with varied ideas of enforcement by the inspectorate.

The main focus of the ISHE audit is the implementation of the documented system and the condition of the facilities and installations at the quarry. The majority of the time spent on the audit is the physical inspection, talking to various employees and verifying the implementation of the systems.

Some findings that still need attention include:

- Too many serious accidents and incidents are taking place. Not all injuries are correctly classified and operations must be careful in not reporting correctly to the DMR.



Stockpile labelling at AfriSam Ferro (Alan Cluett).



Well maintained diesel tank at IT5 Sivel Droogehout (Alan Cluett).

Midmar Crushers' pedestrian walkways and garden (Alan Cluett).



Stormwater and erosion control at Rietspruit Crushers (Alan Cluett).



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- With promulgated changes in legislation, it is often required to revise legal appointments. It was found that too many errors are made on legal appointments that can result in findings from DMR inspectors. Some operations employ the services of legal practitioners and lawyers to assist in these appointments and some of the documents developed refer to incorrect regulations or repealed regulations, and are not revised with the new regulations.
- Own inspections, pre-start checklists on plant and machinery, and follow-up on non-conformances are still a challenge as numerous possible Section 54s were identified through the audits. TMMs are allowed to be used, even with a No-Go identified on a checklist by an operator. For some, the checklist has become a hassle and a paper exercise and is not a reflection of what the condition of the plant and equipment reflects.
- Improvements are shown in the compliance to lockout and isolation requirements, but registers and permits are not always completed as required by COPs.
- The compliance to machine guarding standards have received a lot of attention over the last few years and still counts a lot on the audit protocol,



Final face rehabilitation in working quarry, Lafarge Ninians (Alan Cluett).

with operations demonstrating major improvements. However, Aspasa still finds non-conformances in this regard.

- Dust prevention and limiting the exposure to silica containing dust needs attention throughout the entire industry. DMR inspectors have

reported the concern on reportable lung diseases and possible occupational diseases, and actions will be taken against those not complying with legal exposure limits.

Stricter control over the compliance to rules and standards must be applied to ensure and maintain a safety and healthy

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Showplace Quarry, AfriSam Newcastle (Marius van Deventer).

working environment. Legal compliance workshops are again being arranged for all members to understand and use the MH&SA and Regulations with confidence.

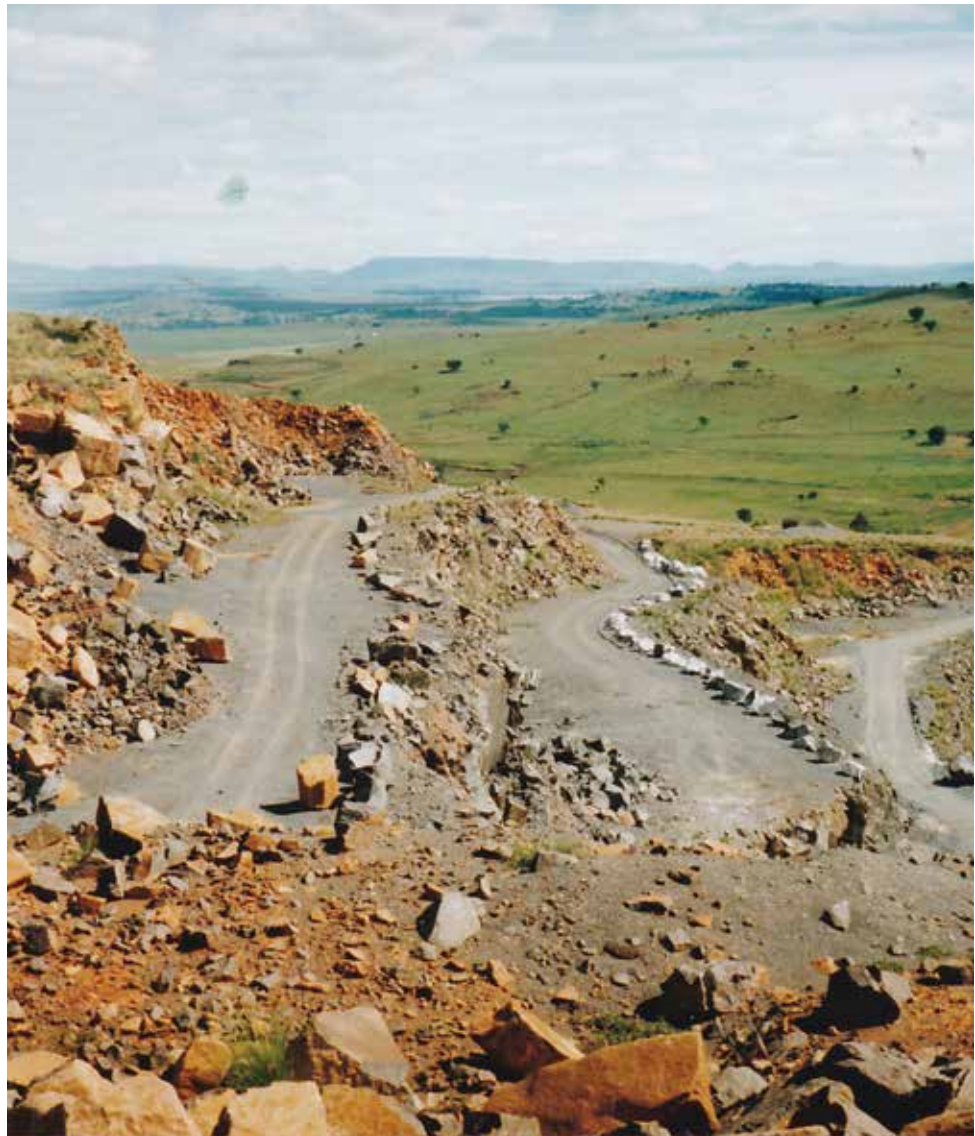
About Face Environmental: The 2016 audit programme includes a training and awareness session that specially discusses environmental legislation, the responsibilities of individuals and management in relation to the legal requirements, and includes a discussion and presentation on bad and good practice.

As in 2015, the 2016 audit was upgraded with additional emphasis placed on legal compliance and on physical aspects. Legal compliance increased to 12%, physical to 32% (30%) and monitoring 9,0%, ie a combined 52% compared with a combined $\pm 42\%$ in 2015.

The 2016 audit results have confirmed the continuing improvement of member environmental management systems and a greater commitment to environmental awareness and stewardship. This is reflected in the improved scores and the greater number of Showplace Awards in 2016.

However, there is still a lot to be done on the physical side at a number of operations where system documentation has resulted in a more flattering overall score.

The Aspasas About Face 2017 audits are being run in two parallel sessions, one focusing on the operation's management system and documentation, and



This is the Newcastle operation in 1985 (Alan Cluett).

the second focusing on physical aspects. By splitting the audit into the two parallel sessions, additional time is available for inspection of physical aspects including monitoring results – water and fall-out dust, stormwater control, alien vegetation removal, waste handling and disposal, hazardous substance and liquid chemical storage.

Training on the Aspasas About Face 2017 and ISO 14 001:2015 has been offered country wide.

Table 1 summarises the 2016 audit results. Nine operations achieved above 99% for the audits with the highest score being 99,60%. At these operations, both physical and system documentation satisfy the audit criteria almost completely.

Table 1: Year-on-Year Achievements

Grading/ Year	2012	2014	2015	2016
Participation <50%	0	0	1	0
One Fish Eagle	2	4	1	1
Two Fish Eagles	6	3	3	2
Three Fish Eagles	4	4	2	10
Four Fish Eagles	25	12	3	7
Five Fish Eagles	24	36	13	64
Showplace	15	36	13	64

Report by Dale Kelly and photographs courtesy Aspasas

Environmental developments affecting our industry

The South African aggregate industry is a critical supplier of primary construction materials utilised by all South African citizens in their daily lives. Over the last 25 years, the aggregate industry has functioned in a continually evolving environmentally-aware society where legal prescription has been increasing at an almost exponential rate. This paper briefly discusses some of these environmental legal requirements and proposes a mechanism for the early identification of requirements, associated risks and their successful mitigation.

by Alan Cluett (Pr.Sci.Nat) and Colleen Cluett (M.Sc)

In November 1992, the then Anglo-Alpha established the first Aggregate and Cement Industry Environmental Department. Reporting to the technical director of the group, the incumbent was given free reign to lead the company forward in the 'new industrial discipline' of environmental management.

At this time, environmental legislation was limited to components of the Water Act (1956); the Environment Conservation Act (1989); elements of the Conservation of Agricultural Resources Act (1983); the Atmospheric Pollution Prevention Act (1965) and a handful of miscellaneous regulations contained in assorted uncoordinated Acts, Provincial Ordinances

and Municipal By-laws. Environmental management, from a legal perspective, was relatively simple. South Africa was in fact seriously lagging behind the rest of the industrialised world in environmental management as a function of the economic sanctions imposed on the country due to apartheid.

In 1994, following the first democratic elections in the country, economic and other sanctions were lifted. South African products enjoyed unprecedented access to international markets but were soon to be subjected to a different form of sanction, a little-understood or prepared-for sanction, namely, environmental sanction.

Suddenly South Africa had to align her environmental processes and legislation with her competitors in the new-world market, opening up to her in the post-apartheid period.

Environmental legislation is applicable to all surface mines.



In 1996, the International Standards Organisation (ISO) released its ISO Environmental Management Series including the ISO 14 001 Environmental Management System. South Africa was represented on the ISO panel through Technical Committee 207 (TC2207)¹. Although enthusiastic participants, the South African Committee (TC207) were likened to a volume control on a TV – much noise but no effect on the picture.

¹ Alan Cluett was a contributor to TC207.

Environmental legislation

With the 1994 elections, a new world of opportunity opened up for South Africa and South African businesses. Economic sanctions were a thing of the past; however, environmental sanctions were the new operating constraint.

In 1996, we saw the introduction of the Constitution of South Africa with Section 24 effectively ensuring the right

of all to an environment that is not detrimental to their health or wellbeing, for both present and future generations.

From 1998, South Africa saw the introduction of a constant and mounting stream of new environmental legislation, all subordinate to the Constitution that serves to give effect to this basic right. These Acts include, to name a few:

- The National Water Act, 1998 (NWA) as amended.
- The National Environmental Management Act, 2003 (NEMA) as amended.
- The Mineral and Petroleum Development Act, 2002 (MPRDA) as amended.
- The National Environmental Management: Air Quality Act, 2004 (NEM:AQA) as amended.
- The National Environmental Management: Waste Act, 2008 (NEM:WA) as amended.

Of course, these Acts came with numerous

regulations of which a number are applicable to our industry. In fact, there are more than 27 Acts of Parliament with environmental legislation that may be applicable to most surface mining industries. There are a number of regulations that are equally applicable and, in themselves, carry severe penalty for non-compliance.

Consider, for example GN R59 (10 July 2014) made under NEMA, namely: GN R549: Regulations to Phase-out the Use of PCB Materials and PCB Contaminated Materials, 2014.

The sub-regulation of GN R549 states:

10. Offences and Penalties

(1) A person is guilty of an offence if that person contravenes Regulation 3, 4, 5(1), 5(5), 6(1), 6(2), 6 (4), 7, 8 or 9 of these regulations.

(2) A person convicted of an offence in terms of Sub-Regulation (1) is liable to a fine not exceeding R10-million or to imprisonment for a period not exceeding 10 years, or to both such fine and imprisonment.

There are dire consequences of non-compliance with legal requirements as well as personal liability for restoration/rehabilitation costs and possible compensation to affected parties.



Consider also Regulation 704 (4 June 1999) of the National Water Act, 1998, Regulations on Use of Water for Mining and Related Activities aimed at Protection of Water Resources.

Sub-Regulation 4 defines where a mine may locate mining-related infrastructure relative to 'any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked,' clearly defining the '1:100-year flood line or within a horizontal distance of 100 m'.

Of course it is little known that Regulation 704 was preceded by similar regulation contained in Regulation 287 of 1976, which made the following restriction: 'plus the maximum precipitation to be expected over a period of 24 hours with a frequency of once in a 100 years ...'

Environmental legislation is currently one of the most complicated and dynamic fields of legislation in South Africa. It is applicable to all surface mines and Aspasa members to a greater or lesser degree. It is a critical business success factor that is ignored or played down at the personal risk of anyone or a combination of the following persons if convicted in a court of law: the 'owner', the 'person in control of the land', anyone 'directly responsible' or 'indirectly responsible' or 'negligent'.

Environmental sanction

A workshop was recently hosted by the Department of Mineral Resources (DMR) in KwaZulu-Natal and included presenters from different fields of government: the Department of Mineral Resources; the Department of Water and Sanitation; the Department of Environment Affairs; and the newly-formed Department of Mineral Resources Directorate – the Directorate Enforcement and Compliance.

At this workshop, reference was frequently made to 'Ten/Ten', that is the environmental penalty applicable to individuals in their personal capacity if convicted in a court of law; namely, to a fine not exceeding R10-million or to imprisonment for a period not exceeding 10 years, or to both such fine and imprisonment.

Cluett Consulting points out that this reference to 'Ten/tTen' omits a significant portion of the potential sanction/penalty if convicted; that is, the additional requirement to cover the costs associated with remediation or possible compensation for affected parties. The latter could run into several millions of rand in the event of, for example, a diesel spill from a 23 000 l tank.

In terms of the Mineral and Petroleum Development Act (2002), Sections 45, 46, 47 and 93 are often overlooked or forgotten:

- **Section 45:** Minister's power to recover costs in the event of urgent remedial measures.
- **Section 46:** Minister's power to remedy environmental damage in certain instances.
- **Section 47:** Minister's power to suspend or cancel rights, permits or permissions.
- **Section 93:** Orders, suspensions and omissions.
- **Sections 45 and 46** are consistent with legislation contained in the NEMA, the NWA, the NEM:AQA, NEM:WA and other environmental legislation. While Sections 47 and 93 have far more consequence to the organisation, operation, its management and employees than a more

understood and better experienced Mine Health and Safety Act (1996) Section 54 or Section 55 has.

The consequences for non-compliance with mining and environmental legislation are severe and should best be well understood and addressed.

Directorate Enforcement and Compliance

In October 2016, a new Directorate reporting directly to the Director General of the DMR was established, namely the Directorate Enforcement and Compliance. The new Directorate is named by persons of high qualification whose mission is enforcement and compliance. The organogram for the Directorate is not currently available to the public but is interpreted by Cluett Consulting as looking somewhat like *Figure 1*.

Salaries, derived from the human resource advertisements placed on the DMR web page are included in *Figure 1*, and give an indication of the calibre of persons who populate the Directorate.

Personal experience gained by the authors at the DMR Environmental Practitioners Workshop held in Durban on 9 March 2017, are summarised in a quotation from one of the Directorate members present: "I am a person you do not want to see at your operation. I am the person you

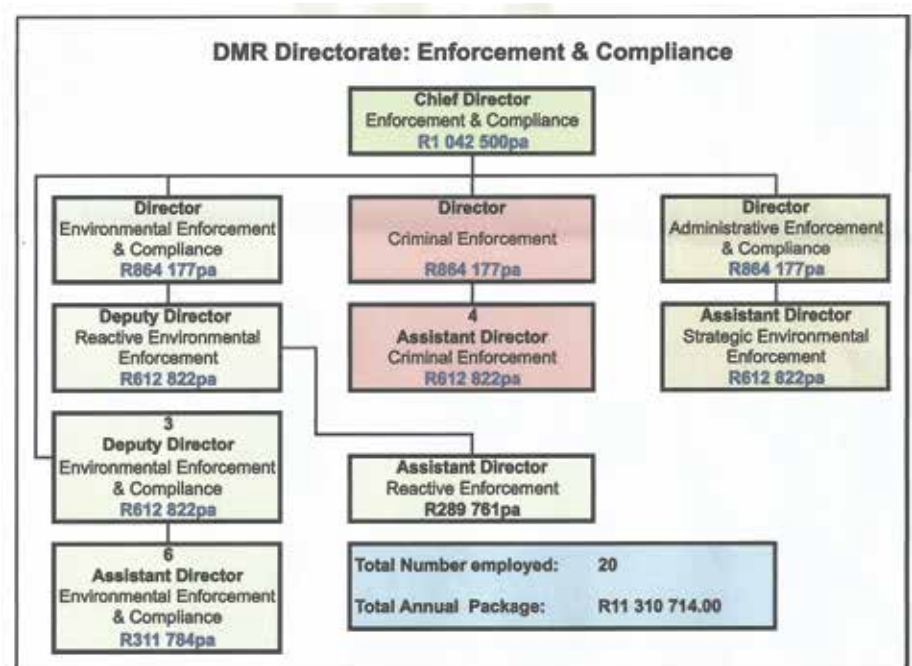


Figure 1: DMR Directorate: Enforcement and Compliance (Cluett Consulting).

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do not want to receive a letter from. I am the person you do not want to receive a telephone call from."

“ Clearly the intention of the Directorate is not benevolent. ”

Our industry is familiar with the role and powers of the Principal Inspector and the subordinate departmental inspectors armed with possible Section 54s and 55s. Beware that surface mines will soon experience a new breed of Environmental Management Inspectors (EMI) – Green, Blue and Brown Scorpions responsible for conservation and bio-diversity; marine and water; and pollution; EIAs and waste respectively; and from the DMR's Environmental Management Resource Inspectors (EMRIs) – to exploit an already-used quote: persons 'you do not want to see at your operation'.

Managing your risk

Realising the new potential threats to you and your business brought about by the increase in legislation and policing thereof, what options are open to you and your business to identify, prioritise and manage these risks to acceptable levels?

Clearly an environmental risk management system is necessary. In this regard, there are a number of Environmental (Risk) Management Systems available. None of those currently available can match the Aspasa About Face Environmental Management Programme for operations engaged in surface mining in South Africa.

The Aspasa About Face Environmental Management Programme has been born and raised out of the needs of the South African industry identified by our predecessors as early as 1994, with the launch of a rudimentary About Face RSA programme. Since 1994, the programme has evolved. In 2000 it was aligned with the ISO 14 001:1996 EMS. From 2012, the system has been upgraded annually to keep pace with national, provincial and local authority environmental legal requirements and international and local best practice.

The Aspasa About Face 2017 Programme has been updated to conform with the latest ISO 14 001:2015 EMS framework and has been expanded to include a manual to facilitate

Ten/Ten' is the environmental penalty applicable to individuals in their personal capacity if convicted in a court of law, to a fine not exceeding R10-million or to imprisonment for a period not exceeding 10 years, or to both such fine and imprisonment.



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Zimbabwe:
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implementation. The Aspasa About Face 2017 audit programme tests performance against the latest standards and by year end, Aspasa will possibly be the first South African industry association to have audited all participating members against the ISO 14:001:2015 framework.

The Aspasa About Face Environmental Management System has adapted the ISO 14 001:2015 framework to the South African mining industry. It is a unique programme that, if fully implemented by Aspasa member operations, it will:

- provide a fail-proof mechanism to keep pace with dynamic environmental requirements;
- enable participating member operations to set their own goals within the context of the legal and organisational requirement;
- enable operations to identify and assess their individual (site specific) risks associated with their activities at their operations;
- enable top management to prioritise those risks according to legal requirements and environmental needs;
- enable management to train subordinate management and employees in their respective responsibilities;
- enable communication of environmental needs upwards, downwards and laterally within the operation/organisation;
- enable meaningful management reviews; and
- ensure continued (environmental) performance improvement.

In conclusion, the risks faced by the surface mining industry in South Africa are broad, varied and dynamic. However, so are the opportunities, including opportunities for impact minimisation (such as of water, waste and energy), product and cost optimisation, and opportunities to engage with and establish best practice within the industry, within South Africa and internationally, in environmental management and surface mining.

Your Environmental Management System is a tool to manage these risks and optimise these opportunities.

www.cluett.co.za

ABOUT THE AUTHORS

Alan Cluett holds a B.Sc in Geology and Economics from the University of Natal and a B.Sc Honours in Mineral Economics from RAU. He has successfully completed courses in Environmental Management Systems, Environmental Law and Environmental Auditing through the University of the North West.

Alan is a Life Member of the Geological Society of South Africa; a Fellow of the Institute of Quarrying; and a professionally registered Natural Scientist – Pr.Sci.Nat – in the disciplines of Geological Scientist and Environmental Scientist.

He has 36 years of experience in the quarry and cement industry and has been the Aspasa About Face auditor since 2012. In 2000, he became the first recipient of the Institute of Quarrying's Caernarfon Award.

Alan is a director in Cluett Consulting (Pty) Ltd, along with his daughter Colleen.

Colleen Cluett holds a B.Sc Honours in Environmental Science and an M.Sc in Ecology from the University of the Witwatersrand. Her Honours Thesis was completed on an assessment on mine rehabilitation in the cement industry.

Colleen has successfully completed courses in Environmental Management Systems and Environmental Law through the University of the North West. She worked for three years in the Kruger National Park for a Duke University Educational Programme before joining Alan to form Cluett Consulting.

Colleen has conducted more than 50 Aspasa About Face audits and numerous training sessions on environmental management and the About Face audit protocol across the country.

She is managing director of Cluett Consulting (Pty) Ltd.





Newly-branded Aspasa looks to the future

Aspasa has grown to reflect a diverse membership base and has expanded its services to include other opencast sectors of the mining industry. As such, it will no longer be known as the Aggregate and Sand Producers Association, but rather retain the Aspasa acronym only.

Tightening mine legislation and widespread calls for quality materials have led to increasing numbers of opencast mining operations signing up for membership of Aspasa. The Association, which had previously represented South Africa's formal sand and aggregate quarrying industry, has recently broadened its member base to include closely allied operations where minerals are mined in a similar way to quarrying operations.

Aspasa director Nico Pienaar says the move is necessary to accommodate growing numbers of opencast mining operations seeking assistance with compliance to health, safety and environment legislation, as well as a strong requirement for improved quality management.

Membership of the Association requires strict standards to be applied and is subject to both environmental, as well as health and safety audits. Those joining need to be legally compliant in terms of the relevant laws pertaining to mining.

"These have been recognised globally to be at the forefront of requirements and have played an important role in improving standards on local operations and making them more sustainable," he says. "We want to share our expertise and assist the industry where possible and as a result we have broadened our membership to include members from the salt mining, lime, dimension stone and clay mining industries, as well as ash resellers and any other opencast or similar type of operations that are legal operators.

"These operations also want to be part of a larger industry that speaks with a unified voice to address challenges and issues that are facing them individually or as unified industry. These include assistance with tax-related issues, legislation, skills development and labour issues. They now have the opportunity to be part of a dynamic association with representation on all relevant government, mining, regulatory and other organisations relating to the opencast mining sector," Pienaar confirms.

In addition, traditional sand and

aggregate quarry membership is also increasing due to tightening material controls in the building and construction industries. "There is a move across all industries towards tighter standards and the Association plays a pivotal role in disseminating this type of information and where necessary providing training and support to our members."

As a result Aspasa provides regular email updates to keep members informed, as well as using its comprehensive website as a source of information and news of the industry. Various downloads are also available for use by members.

Enhanced training drive

The Association has increased its involvement in training, education and skills development through the establishment of highly-skilled committees in various fields. A well-trained workforce has the potential to turn an ordinary business into an exceptional one, according to Pienaar, who has launched a series of training workshops aimed at setting the opencast industry on a sustainable growth path through targeted training. The training is tailored to the needs of industry following extensive communication with its members.

"An investment in training for levels of staff, from junior recruits and general

labourers to managers and directors, has the potential to provide massive returns on investment provided that the training is appropriate," Pienaar maintains. "We have already conducted a needs analysis and developed the coursework. Now it is up to individual operations to do the same to identify the type of training they require in their own operations and dovetail this with our workshop programmes. Where training courses do not cover their requirements, they can put forward a request and it can either be arranged on a one-on-one basis or be developed provided there is enough demand."

He says that training requirements should be derived from a review of an individual's key performance indicators and development plans. "This should be overlaid with the company's organisational needs analysis and a strategy compiled that is based on the company's needs and available skills and skills potential. Once this has been satisfied then companies should use the opportunity to send staff on specially-developed training courses provided by the Association.

"The markets in which we operate, the way we do things and the way we sell and market our products is changing. Likewise, buyers have new requirements for us and they require tighter standards, lower prices, higher quality products and

faster turnaround times. Therefore, it stands to reason that if we do not continuously change with the times, we will be left behind and the world will pass us by," Pienaar says.

"Training ensures that we keep up to date with these requirements and gives us access to techniques and technologies that can assist us to compete, adapt and improve our offerings in such a way that we can become market leaders able to compete with the best-of-the-best. We are therefore encouraging those in the opencast mining sector to make use of our training opportunities, as well as other short courses and further education and training to set companies and the industry on a new path of growth."

He adds that companies should also measure returns on training investments to see whether the training has indeed had an impact and improved the KPIs of those who attended the course. Additional evaluation may also be required to determine whether the individual's expectations are being met by training courses attended, as this will have a bearing on their job satisfaction and future performance within the organisation.

If the training meets these requirements it can be deemed as successful and an asset to the company. It will also have delivered a return on investment that is

in line with the company's initial expectation. Further training can therefore be justified, both in terms of outcomes and the monetary value that such training will add (or save) the organisation.

"Training is one of the most important business tools at our disposal and we encourage our members to make use of the courses that we have prepared. Also, to provide feedback where additional courses are required in order to empower our members with the right staff to take their businesses and our industry forward," Pienaar says.

Fatigue management

Fatigue is widely acknowledged as a leading cause of accidents and fatalities on mines across the globe. To address this problem on quarries and mines, Aspasa is in the process of hosting a number of workshops across the country to assist in the practical identification and management of fatigue in line with the industry's code of practice (COP). Prepared by industry specialists Dr Andre van Jaarsveld and Alex Raymond, the workshop explains the COP and uses information gathered from three opencast site inspections, including large, medium and small-type operations, to share actual findings and solutions.

The two-day workshops have been held in Gauteng in June, and are scheduled for the Western Cape on 20-21 July and KwaZulu-Natal on 17-18 August. Further dates may be announced depending on requirements for outlying areas.

www.aspasa.co.za

For more information or to book seats at any of the workshops contact Mary Ann Sutton of Aspasa on (011) 791 3327, or Email: office@aspasa.co.za.

Report by Dale Kelly



Aspasa aims to share its expertise and assist the industry where possible and has broadened its membership to include members from the dimension stone industry, among others.

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Scania offers trusted used vehicle solutions

When looking for a used vehicle, potential buyers in the quarrying and construction sector often tend to think twice, as the uncertainty associated with the purchase of a second-hand truck that has operated in a quarrying environment, is a major inhibitor for potential buyers. However, when buying a vehicle from Scania Used Vehicles, the key word to keep in mind is trust.

This is according to Scania South Africa's National Used Vehicle sales manager Robert Melville, who says the company offers trusted used vehicle solutions to customers. "A common problem that many businesses have is that they are forced to tighten their belts due to the current economic conditions, meaning that not everyone can afford to buy top of the range, brand new trucks. As a result, more and more people are turning to second-hand or previously-owned trucks and the benefits that they offer."

These include:

- a more affordable purchase price;
- a lower depreciation rate; and
- the affordability of leading brands.

Discussing some of these benefits with Modern Quarrying he says that when one buys a second-hand truck the price is reduced simply because it is labelled as second hand. "Everyone knows that as soon as you drive a vehicle off the lot, it depreciates immediately, meaning that you won't be able to sell it for the purchase price. With a second-hand truck, depreciation is very low and in some instances non-existent."

He confirms that a used vehicle is more economical for smaller operations, and can be far more cost-effective on the initial purchase. "In addition, warranties and service plans can be provided giving longevity and peace of mind. You buy a Scania used vehicle for the same reasons you would buy a new one – built-in toughness, durability, reliability and low operating costs, all of which contribute to maximum uptime."

All Scania Approved vehicles need to have had a full repair and maintenance contract. "When a vehicle is traded in, it must be in a roadworthy condition, in decent mechanical order and cosmetically

clean, before our workshops carry out the check and repair process.

"The same specific requirements such as maximum uptime and optimal fuel consumption that one would expect when purchasing a new vehicle, are qualitative points when a customer is in the market for a used vehicle; both play an important role in any business," Melville says. "This is obtained by our thoroughly pre-inspected and maintained vehicles. When downtime does occur, we have our 24/7 Scania Assist on hand for unforeseen circumstances."

Scania Approved status means that the customer gets peace of mind with the knowledge that no aftermarket parts were fitted to the vehicle. "A Scania Approved vehicle has been thoroughly assessed and rated by our experienced technicians, just as new ones are."

There is no major different in warranty terms for a new used vehicle. However, it is dependent on the age of the vehicle. Scania offers a Drive Line Warranty that is honoured, provided the vehicle is serviced at a Scania Approved Centre.

"Knowing that the trucks have been checked by our experienced technicians builds trust in what can sometimes be a very uncertain decision," Melville adds.

Repair and Maintenance (R&M) contracts are available on a used vehicle, provided it has been on a R&M package previously, or has a low mileage with a complete service history. In addition, R&M contracts are determined by the mileage accumulated by the vehicle in a month, and the application for which the vehicle is used for.

"The Scania R&M programme provides a comprehensive support package that is inclusive in our total solutions offering," he explains, adding that the finance option available for used vehicles is a Financial Lease which can be anything from 24-26 months, depending on the vehicle's working conditions in a month. "We do, however, prefer that the vehicle does no more than 120 000 km within a single month."

In terms of the number of used vehicles sold, Melville says that in 2016 Scania sold about 65% and this figure is climbing. "Before the end of this year, I believe it will be around 75-80% as the trade-in ratio seems to be growing each year as customers restructure rather than grow their fleets. There has been a steady growth in used vehicle uptake in the construction sector."

www.scania.co.za



Scania South Africa's National Used Vehicle sales manager Robert Melville.



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LEMAITRE

Lesotho gets local cement plant

After years of supplying Lesotho with its cement and construction materials, leading supplier AfriSam recently commissioned a new cement blending and packing facility in Maseru to serve that market. Significantly, this is the first cement manufacturing facility established in the country.

Speaking at the official opening in February, Lesotho's Prime Minister Dr Pakalitha Mosisili hailed the plant as a "significant milestone for the region and a boost for local socio-economic development. In developed countries, one job in the cement industry creates ten times more upstream and downstream jobs. This figure may be four to five times higher in developing countries," he says.

The capacity of the plant – over 200 000 t/year of bagged cement – will meet the current local cement demand, while also being capable of producing specialised products for large infrastructure projects like the Lesotho Highlands Water scheme.

The main raw material for the plant – milled clinker – is railed to Maseru in bulk wagons from AfriSam's Ulco facility near Kimberley. This is beneficiated with pulverised fuel ash (PFA) from Lethabo power station near Vereeniging in the Free State province.

According to AfriSam's manager – strategic projects, Gavin Venter, the plant includes a sophisticated dual batch weighing system to accurately dose the milled clinker and the mineral components to predetermined ratios in the manufacture of the different cement products.

The plant has been designed to produce the standard range of products most commonly used by local customers, including AfriSam High Strength Cement (52,5 N) for specialist concrete applications; AfriSam All Purpose Cement (42,5 N) for concrete work, block-making,

plaster work and other applications; AfriSam Roadstab Cement (32,5 N) for road stabilisation; and AfriSam Starbuild (32,5 N) for applications not requiring high early-strength development.

"However, the plant can easily and quickly accommodate other blends specified by customers who have particular requirements," Venter says.

The plant's packing system is a 60 t/hour, four spout in-line European design utilised in series with a robotic arm palletiser to pack and stack the cement bags. Two stretch-wrap machines cover the palletised cement bags with a waterproof cover, so they do not need to be stored under cover; this also facilitates loading and unloading operations at the plant and larger customer sites.

Venter adds that environmental issues have been stringently addressed by equipping the plant with dust filters that prevent the generation of dust and create a dust-free operation.

During the construction of the plant – most of which was completed within six months – AfriSam made extensive use of local service providers and suppliers, including architects and civil contractors; local workers were also employed during the construction process. Today, the plant has created a number of new positions including plant management, operators and maintenance staff, as well as downstream employment opportunities.

Looking ahead, the company has plans for the plant to become a significantly larger cement manufacturing facility.

"AfriSam has already put plans in place to expand the current blending and packing facility to include a clinker grinding plant," Venter says. "This will expand the cement manufacturing process at this facility and will lead to further opportunities and benefits for the people of Lesotho."

www.afrisam.com

All cement types produced at the plant conform with international EN 197 standards.



The plant is designed to operate 24 hours a day, seven days a week and is able to produce 200 000 t of bagged cement a year.



The packer – a 60 t/ hour, four spout in-line European design – is utilised in series with a robotic arm palletiser to pack and stack the cement bags.



CDE meets the challenge

Brakpan-based brick and block manufacturer Multi Crete Bricks has seen demand soar after replacing its sand screw classifier with CDE EvoWash. Following the installation of a CDE EvoWash 72 on sister company site Analiza, "we just can't keep up with orders," says CEO Christo Niemand.



The plaster sand is claimed to be the best in the region.

Multi Crete has been supplying the South African construction industry for 16 years, delivering premier quality brick and block products nationwide as well as supplying customers directly at its Brakpan factory. The company not only ensures that the best raw materials are selected but also guarantees the best end product by overseeing production from start to finish.

In 2016, Multi Crete saw an opportunity to upgrade its sand screw washing plant to remedy the substantial loss of valuable fines that were ending up in the quarry's dam and take the lead in the local materials washing market. The company continues to produce its own bricks, blocks, and manufactured washed sands and has just added plaster sand to its offering, which the new EvoWash dual sand plant on the Analiza site has made possible.

Christo Niemand is a savvy and practical businessman, who relies on a combination of word of mouth and direct contact with experts who can demonstrate the value of their equipment in a 'seeing is believing' manner. In this spirit, the Multi Crete CEO, who manages 16 employees, as well as quarry staff, visited a nearby quarry with a CDE representative to witness the efficiency of the CDE materials washing equipment in action.

Convinced by the high-tech but user-friendly aspect of CDE installations, Niemand took the next step and challenged Nicolan Govender, CDE regional manager for Africa, to find the best-value-for-money washing solution that would significantly reduce the amount of lost fines, increase production levels and sand quality, and crucially allow for multiple sands to be manufactured at the same time, therefore boosting offer and

subsequently demand. The CDE EvoWash 72 dual sand washing plant ticked all of these boxes and Niemand says that he is now ready to upgrade his equipment even more to meet the ever increasing demand for Multi Crete products.

Niemand reflects: "The combination of a solid relationship with our local CDE experts and the commissioning of an ultra-performant EvoWash, has given Multi Crete's activities a positive boost. Our plaster sand is hands-down the best in the region and being able to produce two products at the same time, including plaster sand, is truly remarkable."

The Analiza quarry treats raw materials including crushed rocks, a mixture of granite, silica, some being heavily clay-bound. It now produces 23 t/hour of plaster sand and 19 t/hour of river sand. The EvoWash allows for two products to be produced at the same time and can also

Wide view from above conveyor 2.





to visit my customer and check on the EvoWash at Analiza regularly. It allows me to iron out any arising issues and keep the conversation going on how CDE can help to reach new performance requirements quickly and efficiently.

"It is very gratifying to witness the steady performance of a piece of equipment year after year. Multi Crete has become one of the best-performing sand washing operators in South Africa due to the upgrading of its installation to the CDE cyclone technology.

"It just makes business sense to improve plants that waste fines and water and ultimately affect a company's performance and ability to compete in a growing market. Multi Crete is proof that adopting our cyclone water-saving technology works," Warren adds.

"Swapping the Analiza sand screw classifier for a CDE EvoWash dual sand plant has turned out to be an excellent investment. We are saving water and time whilst increasing and diversifying materials production. We are now able to position ourselves on the local market as the leading suppliers of construction materials," Niemand confirms.

"As a bonus, we have been able to commit to safer operations as CDE equipment is both high tech systems and

simple to use, with well-conceived safety details that guarantee a comfortable working environment."

www.cdeglobal.com

The CDE EvoWash 72 dual sand washing plant ticked all the boxes for Multi Crete.



be set to alter the amount of finer sand in the end product, allowing the client to produce two off plus zero products (-2,0 mm + 0 and -6,0 mm + 0).

Niemand continues: "Our return on investment is good and we are already looking towards the future and to expand our range of products. We are considering adding complementary CDE equipment to our installation when we have addressed the issue of limited power and water supply."

Wayne Warren, CDE business development manager for Sub-Saharan Africa, looks back on a successful relationship with Multi Crete, based on regular meetings with Niemand and visits to the Multi Crete factory and the Analiza site: "Being based in South Africa means that I am only just a phone call or a short trip away from my customers. I have the opportunity

Bell/Liebherr change excavator arrangement

Liebherr-Africa (Liebherr) and Bell Equipment (Bell) have mutually agreed to dissolve the Supply and Distribution Agreement, through which Bell Equipment sells Bell-branded, Liebherr-manufactured equipment in Southern Africa.

The change will see Liebherr focus on providing and promoting excavators to a more diverse range of industries and customers. "Though our relationship with Bell has been very positive, we are excited about the opportunity this change brings about and look forward to increasing our presence in the bulk excavator market. Some new models, with increased customer value added, will be well received by the market," comments Tendayi Kudumba, GM: Earthmoving Equipment at Liebherr Africa.

Explaining the rationale behind the changes, Stephen Jones, Group Marketing director of Bell Equipment Company, says: "We have had a strong working relationship with Liebherr. Their products have been well suited to our markets and have performed admirably, but there is a need for both companies to ensure that they are best positioned for long term sustainability, especially in the turbulent southern African equipment market. For Liebherr

Africa to sell and support its own manufactured products makes sense and also allows it to further invest in structures aimed at customer support. Bell fully understands and supports this rational and is currently finalising an exciting alternative solution for this market segment.

"Bell will continue to support Liebherr machines that we have placed with our customers for as long as they are operational. We understand that one of the reasons our customers support us with equipment purchases is due to our ability to deliver on our 'Strong Reliable Support' maxim, and we have a clear obligation to continue to offer this to our customers for as long as required, irrespective of changes in associations between different OEMs," says Jones.

"Bell and Liebherr-Africa appreciate the importance of strong and seamless customer support and, through our respective and comprehensive support structures on the ground in the regions, we aim to ensure that our mutual customers have both the confidence and options for the support of their machines going forward," he adds.

www.bellequipment.com

Screen improves processing production

Faster, more aggressive screening technology is allowing mine processing contractor, Two Pedestrians Mining, to push production to new levels and radically shorten processing times on behalf of its clients in the mining industry.

According to Neel Rademeyer, who is the hands-on owner of Two Pedestrians Mining, the screening process is at the heart of production to provide the optimal production and sizing for final processing or stockpiling of product. The accuracy and speed with which this is achieved results in improved profitability for its clients.

Most recently the company has employed a newly acquired Powerscreen Warrior 1400X mobile screen to do duty in volume applications, where its heavy-duty processing power is able to make short work of run-of-mine materials even in rough terrain where its mobility simplifies the load-screen-dump cycle.

The machine has been a revelation in terms of its versatility and work rate. This is important as it means it can be deployed to a wide range of mining types wherever there is a requirement for mobile



JP Durandt of ELB Equipment with Two Pedestrians Mining operations manager, Arno Swart.

operations to work through large volumes of materials, whether it be coal, ore or aggregates.

"At present the Warrior 1400X is operating in the coal fields surrounding Delmas where its interchangeable decks can be set in accordance with the type and size of coal required. The processing of run-of-mine to 0 x 50 mm product requires that the screen can handle 0 x 600 mm feed," says Rademeyer. "The unique design of the 'punch plates' top decks have been a revelation to say the least. We have processed approximately 600 000 t on one set of punch plates and see no need to replace them yet. Amazingly, it can be offloaded and be operational on a site within 15 minutes as was proven at Wescoal recently."

Two Pedestrians Mining operations manager, Arno Swart, adds that due to its high ground clearance it is able to tram quickly to keep up with production. The high running position also lends itself to a cleaner operation with no need for ramps to access underneath the machines. Its conveyor height also allows us to stockpile materials up to four metres high which significantly enhances its ability over previous models.

"This additional height has improved our productivity substantially as the front-end loaders are able to fill the buckets to maximum capacity. Therefore, you achieve a reduction in diesel consumption and an improvement in safety. You now have a loader working slower, safer and more efficiently from bigger stockpiles," says Swart. "In terms of performance the Warrior 1400X is a beast that packs a whole lot of punch into a machine with a comparatively small footprint. Because of its aggressive screening nature, it leaves an impression at the mines where it has operated and is therefore in high demand whenever our customers want to boost production.

"Being of a modern design it is also quick and easy to maintain with easy access to service points. In the 2 700 hours that it has been running at our sites it has not had any serious

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problems. This is in line with our finding on the Powerscreen machines that in our experience simply outperform everything else," Swart adds.

Two Pedestrians Mining has had a long and beneficial relationship with ELB Equipment, the sole distributor of Powerscreen equipment in Southern Africa. Since starting the operation more than 20 years ago, the contractor has standardised its entire fleet on ELB Equipment's 'best of breed' machines from the world's top OEM brands.

"In terms of the durability of the numerous Powerscreen machines in our fleet, they are unquestionably reliable and the diesel consumption is the most economical in the market. This makes it easier for us to quote on a cost-per-hour basis and brings down operating costs considerably. With consumption of between 10-12 ℓ/hour, at an average production of 300-350 t/hour; the figures speak for themselves," Rademeyer says. "In terms of reliability, our Powerscreen machines have proven themselves over the years with the oldest Powerscreen Chieftain 1400 in our fleet having already clocked over 53 000 hours and still running. Likewise, ELB Equipment has given us the kind of support that we need in terms of technical advice, sales and support of their machines.

"The staff at the Middelburg branch are excellent and workshop manager Johan Herbst provides the kind of support that we, as contractors, cannot do without. ELB Equipment also trains our operators professionally, which makes it easier to get the best out of our machines," he says.

JP Durandt, area sales manager for ELB Equipment also complemented Two Pedestrians Mining for the professional way the machines are employed, operated and cared for by the operators and mechanical staff. "Through the years we have built up a special relationship with the owners and managers of the company and, very importantly, we have built up a special rapport with the operators and mechanical staff who are in regular communication with us regarding their machines.

"They tell us that they prefer the Warrior 1400X and similar machines from Powerscreen, saying that they work harder than other machines in their class, are easier to operate and maintain due to their easy-to-use controls," he adds.

www.elbequipment.co.za



The punch plates have been a revelation having processed approximately 600 000 t on one set with no need to replace them as yet.

The Powerscreen Warrior 1400X screen's efficiency is proving to be a drawcard for Two Pedestrians Mining customers.





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SCANIA

Weba solves crushing plant stoppages

A solid reputation, as the preferred supplier for transfer points on diamond operations, has seen South African OEM, Weba Chute Systems, service the mines in Botswana for the last 15 years.

Werner Baller, founder and CEO of Weba Chute Systems, says that the company does not rest on its laurels and he attributes its success to the philosophy of continuous improvement as well as its in-depth understanding of material movement across the full range of commodities.

"The ability to fully understand the complexities of crushing systems enabled our technical team to provide a fit-for-purpose solution in a retrofit application on one of the mines recently," Baller says.

Explaining the application itself, he says that the transfer point operates between a crusher and material stockpiles, and over the years various challenges have been encountered including high impact on the belt and excessive dust and spillage with associated high maintenance costs. In this section of the plant some 3 500 tph of kimberlite is transferred from the open pit to the stockpile, and although several modifications were done over time the plant stoppages caused by the ineffective transfer point had become a major problem.

"Due to our standing in this particular industry and our close relationships, Weba Chute Systems was called in to investigate and provide a long-term solution," Baller says. The company's team of skilled engineers visited the site with mine personnel to get a complete picture of the situation. Significantly, Weba Chute Systems is also known for resolving complex and challenging

transfer point issues; again, something Baller believes is because of the depth of experience and expertise that resides within the company.

The solution provided was a custom transfer point engineered to meet specific application requirements. Emphasis during the design stage was to mitigate the major issues of the past, one of which was the very high drop of 15 m which the material has to transverse before reaching the belt.

Weba Chute Systems' pragmatic approach to the dynamics of bulk materials handling not only eliminates the problems so often associated with conventional transfer chutes, but also results in significant savings.

Baller explains that this is why it is extremely important to understand how the material flow will function, in all conditions including wet and dry.

"Uncontrolled drops such as this result in high impact on the belt. It is through the absolute control of the material flow that we are able to reduce the impact of the product when it reaches the conveyor. This not only reduces wear on the belt but also reduces spillage and dust," he says.

Because each Weba Chute System is tailor made for its specific application, we are confident that the plant stoppages at this mine will become a thing of the past."

www.webachutes.com



An illustration of the Weba Chute System custom engineered transfer point at a diamond mine.

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Gert Coffee – Aspasa’s Man of the Year

Travelling around this past quarter, MQ has spoken to and met up with many interesting industry stalwarts with quarry dust in their veins; people who are well respected and regarded as mentors to the industry. No one more so than Gert Coffee, an industry leader who has made and continues to make a profound impact on the industry; a modest and humble man, quietly spoken, and a sound, capable leader.

At the recent Aspasa audit awards ceremony, he was given a special award by Aspasa director Nico Pienaar, for his contribution not only to the industry but to Aspasa in particular. “The person we are awarding is an industry leader who has come up with innovative solutions to some of the tough issues facing our industry and Aspasa as an organisation.

“Gert has supported Aspasa in its growth and its drive to develop into a leading association. He has supported our drive to expand our educational and training focus to the industry and has supported national issues through close negotiations with governmental departments on provincial and national issues.

“Despite the fact that he holds a very senior position at his company, he always has time to support the staff as Aspasa. As a very small team, it is difficult sometimes to find the motivation to stay positive, given the fact the industry often doesn’t see us as part of their teams,” Pienaar says.

“He has encouraged our office to perform at its utmost, helping us to steer clear of issues that detract from our focus of providing a valuable service to the industry; this has resulted in role players across the board wanting to become a part of Aspasa.”

He says Coffee has steered Aspasa’s strategic vision into a certain direction for the benefit of the entire industry. “There



Gert Coffee receives a special award from Aspasa director Nico Pienaar.

is nothing he doesn’t know about our industry; he is an expert in his field.

“For young members to mirror this man, they have to stay humble, they have to live this industry, never stop learning, and use him as a mentor – they can only benefit from this man’s vision and experience,” Pienaar says.

www.aspasa.co.za

IQSA diary

IQSA Golf Day: The Institute of Quarrying is holding its Annual Golf Day at the Irene Golf Club on 1 August. It is always a golf day not to be missed.

September conference: This event is taking place on 21 September at the Emperor’s Palace in Johannesburg. This will include a site visit to the AEL factory in Modderfontein. The IQSA is asking for abstracts for review, should anyone want to present a paper at the conference.

www.iqsa.co.za

MODERN QUARRYING



Aspasa's 2017 award winners
 The Institute of Quarrying is pleased to announce the winners of the 2017 Aspasa award for the best quarrying company in South Africa. The award is presented to the quarrying company that has made the most significant contribution to the industry in the past year.



Modern Quarrying eNewsletter

MQ’s regular eNewsletter is proving popular in the industry. The monthly eNews is sent out to MQ’s readers via email in the middle of the month. If you are not receiving it, please contact the editor directly on dalek@modernquarrying.co.za.

Our quarterly magazine is available on-line, and readers are updated via the website on the latest industry news. It’s as easy as visiting the website and to simply log on to register.

www.modernquarryingmagazine.co.za

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