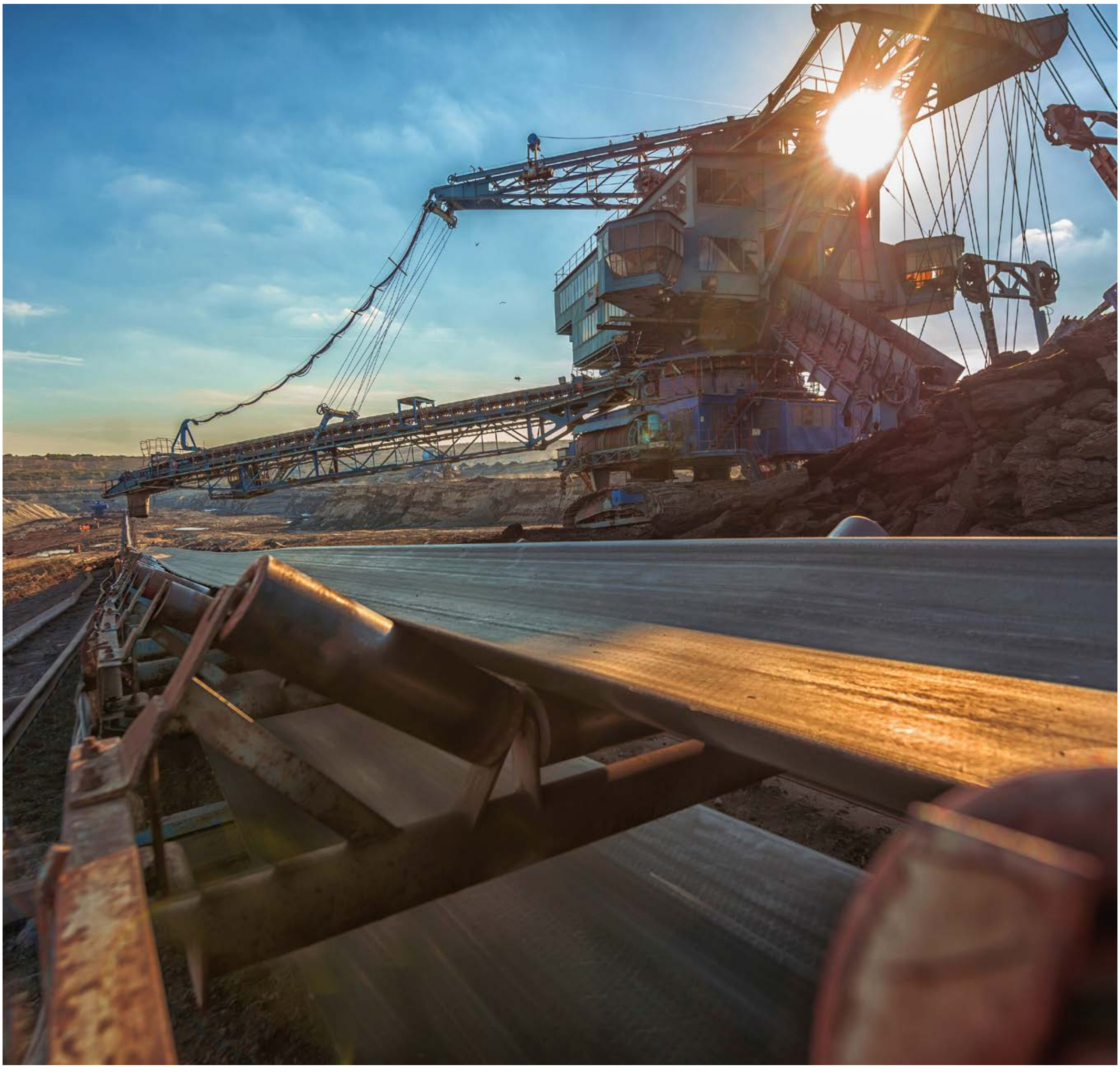
MARSH

MARSH REPORT March 2017

Mining Market Update



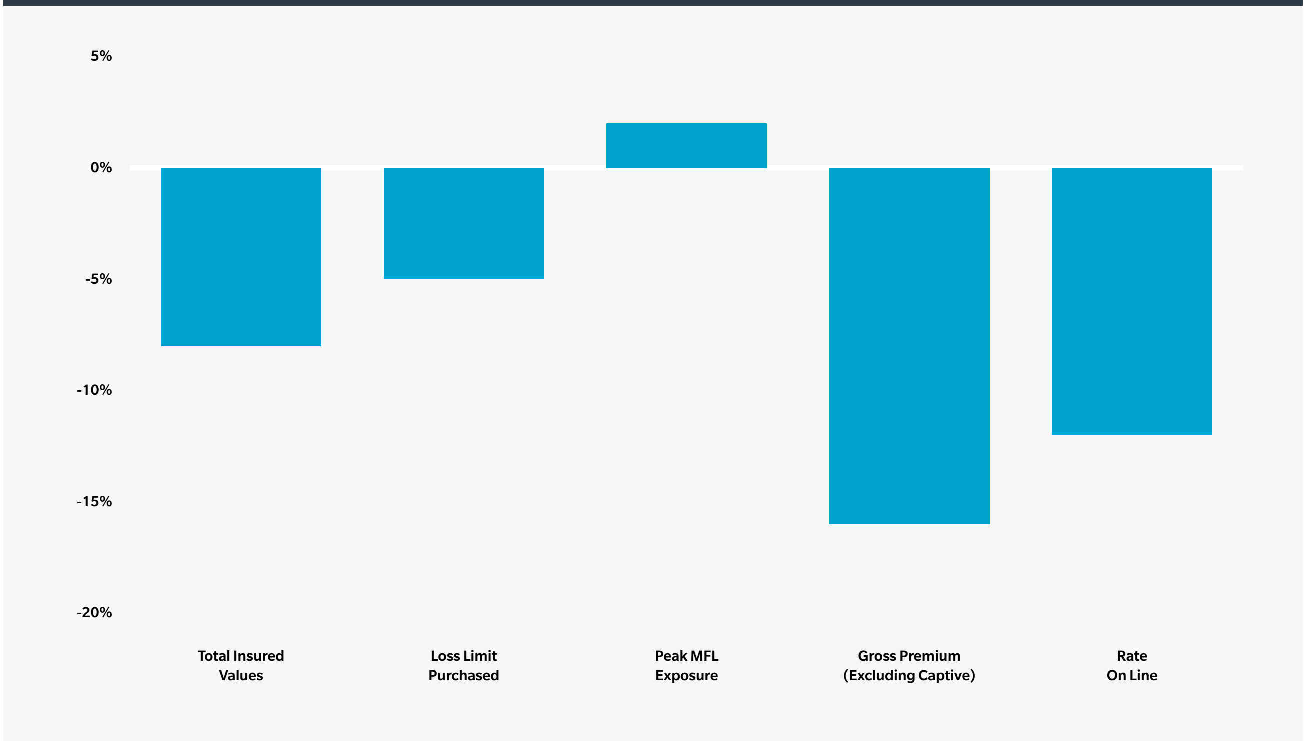
CONTENTS

INTRODUCTION

Following the close of the year, we are able to report that 2016 represented a further period of premium and rate declines for the international mining insurance markets, with reductions concentrated in physical damage/business interruption (PDBI) and terrorism risks, and with most regional markets also continuing the downward trend.

PDBI remains the largest spend for our mining clients by a meaningful margin, and within this market, renewals for a consistent group of Marsh mining clients saw underwriter total premium income decline by 16%. While slightly lower limits were purchased in a small number of cases, changes in exposure were mixed, with a modest increase in the highest maximum foreseeable losses (MFLs) recorded for this client group in the aggregate. Reductions in retention were relatively few in number, but in some cases meaningful. Savings have remained the focus of a majority of mining clients, although current market conditions have stimulated several interesting solutions to reducing retained risk at low up-front costs. Loss events drove isolated cases of meaningful premium increases, which, while few in number, nevertheless made a contribution to the overall outcome presented in Figure 1 below.

FIGURE 1 **Changes in Key PDBI Market Dynamics 2015 - 2016**
Source: Marsh Mining Data



We have previously noted that, in recent years, increases in insurance capacity have combined with reductions in premium base (insured values) to drive rate reductions at a pace that exceeds the influence of new insurance capital alone. At the close of the year, while we continue to anticipate increases in sums insured as the commodity markets recover, these are not yet a dominant theme. The insurance capacity available to mining companies, however, continues to increase. Marsh's sister-company, Guy Carpenter, reports a 5% increase in dedicated conventional reinsurance capital in 2016, with greater increases in the alternative reinsurance markets.

Within casualty markets, a heightened awareness of tailings dam risk has prompted a meaningful group of mining companies to review overall limits of liability purchased, with current market conditions allowing an attractive opportunity to meaningfully increase protection.

As 2017 develops, we anticipate a general context of modest rate declines, within which the strongest savings are available to those mining companies able to demonstrate continuous improvement in risk management performance.

INTERNATIONAL PROPERTY MARKET UPDATE

Rate reductions continued throughout the course of 2016 on the back of continuing positive results for most markets, an awareness of the availability of competitive capacity, and an absence of major losses. In the cases where it could be clearly evidenced, continuing improvements in clients' quality of risk management and loss prevention supported the positive re-evaluation of risks by underwriters.

Business interruption (BI) declarations began to reflect improved commodity market conditions in the second half of the year, having a slight but noticeable effect on reducing the overall rate of reductions.

The Samarco dam failure continues to draw attention to tailings management and design, with detailed information now a prerequisite to securing cover from certain insurers. Provided satisfactory detail can be presented and underwriters can properly assess risk without assumptions, terms are, however, broadly unaffected.

The internal controls of various insurers continued to be evident in the sometimes arbitrary fact that it can be more challenging for incumbent markets to continue with substantial year-on-year reductions than new entrants. This continues to present occasions of trade-off for insurance buyers, between the value of continuity and long-term relationships, versus immediate-term premium savings.

The following market commentary is not exhaustive, but focusses on those markets typically offering the most meaningful capacity or that are the most influential in the setting of terms.

AIG's appetite for broad cross-class risks for multinational, multi-commodity miners and junior mining companies continued throughout 2016. Mining business hubs were established in London, Houston, and Singapore/Melbourne during 2016; the London office has become the regional hub for the Europe, Middle East, and Africa (EMEA) region, and continues to service both existing accounts and new accounts from other parts of the globe.

In the second half of 2016, **Allianz** continued to reduce its mining exposures in some territories by purchasing reinsurance protection in the facultative market. While Allianz can, on occasion, exhibit a mixed approach to risks, its appetite can be broad and cross-class, with significant available capacity, varying interest, and expertise across its global network, and a strong corporate mandate for the underwriting of mining risk. Identifying the correct access point to Allianz remains important to getting the best outcome from the insurer.

Allied World Assurance Company (AWAC) remains a key primary and competitive market for mining risks, untraditionally competing for orders on larger primary layers in response to continued pressure on rates and an abundance of capacity, especially in the primary areas of programmes. AWAC recently announced its pending acquisition by **Fairfax Financial Holdings Limited**. Post-merger, Allied World will become a subsidiary of Fairfax and will operate as a separate, decentralised company within Fairfax's existing portfolio, continuing to operate "as is" under the Allied World brand.

While **Arch Re** writes mining accounts, its preference remains for high rate on line exposures or a solution that is not available from the traditional markets, such as captive aggregate protection or deductible buybacks. Capacity is stable at US$25 million.

In the last quarter of 2016, **Argo Group International Holdings**, an international underwriter of specialty insurance and reinsurance products, announced it had entered into an agreement to acquire **Ariel Re** for approximately US$235 million, and is expecting to close by the end of the first quarter of 2017. Ariel Re remains a solid supporter of mining risks, providing meaningful excess capacity. With the merger, we fully expect to see Ariel Re become more aggressive on its existing portfolio, as well as seek new business in 2017.

In 2016, **Aspen** made a big entrance into the mining space, with Erik Armellino leading a new and growing team writing surface and underground risks. Aspen will consider all commodities, and is exhibiting a technical but flexible approach to writing large or quota-share limits. It offers up to US$100 million on a limit basis for operational risks and on a probable maximum loss (PML) basis for construction risks. It is most effective on risks with manageable asset schedules, but will consider the largest risks. Aspen is gearing up with additional staff and we expect it to become a significant specialist mining market during the course of 2017.

AXIS continues to prefer excess of loss layers. In 2016, it opened a Miami branch to be more closely tuned to the development of its Latin American book. In addition, its international team continues to write via London and Singapore hubs. US risks can be considered in London or US offices.

Berkley Re UK Limited entered the market last year, underwriting on behalf of W.R. Berkley Insurance (Europe). It has grown its underwriting team and is typically looking to participate in the top third of programmes, offering a significant capacity of up to US$/€75 million, or GBP50 million per risk on an excess of loss basis. Line size can vary depending upon natural catastrophe exposures and maximum foreseeable loss levels.

Rate reductions continued throughout the course of 2016 on the back of continuing positive results for most markets, an awareness of the availability of competitive capacity, and an absence of major losses.

Bowring Marsh, in conjunction with Lloyd's syndicates, has renewed its mining facility, which provides up to US$21.5 million Lloyd's capacity on a line-slip basis.

Berkshire Hathaway is now a well-established direct mining insurer and continues to write a healthy mining book in Singapore, Canada, and Australia. It has recently opened a London office, and we expect to develop a mining book with Berkshire Hathaway in London in the coming quarters. Significant capacity of up to US$100 million is available.

Bowring Marsh, in conjunction with Lloyd's syndicates, has renewed its mining facility, which provides up to US$21.5 million Lloyd's capacity on a line-slip basis. The flexibility and pooling arrangement of this facility allows Lloyd's participating syndicates to offer larger consolidated participations, providing the benefits of Lloyd's A+ rating by mirroring traditional quota-share participations by an individual syndicate.

Chubb's appetite for excess layers is in part balanced by a carefully managed willingness to consider additional lines with lower attachment points. Capacity is accessible in Bermuda, London, and Miami, with the Bermuda office in particular focused on growing its mining portfolio. Chubb has coordinated with Starr Tech in some cases to provide excess capacity, complementing that which Starr Tech offers within primary layers. It has a total of US$200 million in capacity, which it deploys on excess layers for mining risks only.

Chubb tends to write excess of the highest PML and limit its line size to approximately US$100 million. It will, on some occasions, offer a smaller line (US$5 million) lower in the programme within the underground limit, provided this is not conflicting with any Starr Tech capacity.

In early October 2016, **Endurance Specialty Holdings Ltd** and **SOMPO Holdings, Inc.** announced a definitive agreement for the acquisition of 100% of the outstanding ordinary shares of Endurance by SOMPO. The acquisition is excepted to close before the end of March 2017. Endurance Specialty Bermuda has offered complimentary lines to either its London or US operations, and we expect this trend to continue post-acquisition.

With a flexible underwriting approach, **FM Global** offers significant capacity for mining risks, notably for Canadian and North American underground coal mining risks, but also with significant success in Australia in 2016. It offers broad wording, including terrorism and non-damage cyber coverage. Its participation in the mining sector remains subject to client participation in its hallmark risk engineering programmes.

Gavin Davis (former Montpelier Re underwriter) joined the Bermuda-based insurer **Hamilton Re** as Head of Property Insurance for Bermuda, tasked with building a portfolio to include property direct and facultative insurance. Hamilton Re is mainly focusing on North American property business in an excess of loss capacity with a US$25 million maximum line, but US$5 million for critical catastrophe. It will, however, entertain primary layers that are excess of a meaningful self-insured retention.

Hannover Re continues to underwrite a broad-based mining account over all commodities, including both surface and underground risks. It does, however, insist on the application of "price caps", limiting the values of commodities for the purposes of business interruption claims adjustment. Following the acquisition of **International Mining Industry Underwriters (IMIU)** by Hannover, on programmes where both IMIU and Hannover Re participate, the insurer's mutual preference is to combine the two capacities, which often results in IMIU providing longer "stretches". The IMIU engineers' reports continue to be highly valued by both clients and "follow market". IMIU typically writes the first US$75 million to US$100 million of a placement, with up to US$15 million of capacity. It has not shown the same flexibility in pricing as its competitors, and clients have been forced to weigh up the benefits of stability against savings.

With a decentralised underwriting authority model, **HDI Gerling** underwrites risks dependent upon a client's head office location. With a strong engineering focus, significant capacity is available for the right risks — excluding underground risks.

Houston Specialty is one of the leading primary mining insurers, particularly for larger global diversified miners, and remains focused on raising its profile and expanding its mining portfolio.

Ironshore announced early in December 2016 that it is being bought by **Liberty Mutual** from Fosun for approximately US$3 billion, with the acquisition expected to close in the first half of this year. Kevin Kelley will continue to lead the former Ironshore business within Liberty. In the mining space, we continue to see Ironshore aggressively utilising its US$35-million energy line and taking positions on large, meaningful layers on programmes. Ironshore Bermuda also has the ability to issue licensed paper in Canada, as well as Lloyd's paper through its coverholder agreement with Pembroke Syndicate 4000.

Liberty Specialty Markets has a technical and engineering focused approach, with account acceptance being dependent on a thorough engineering risk review. Capacity is available in excess of US$100 million for above ground risks. Liberty has been gradually more adventurous when assuming underground exposures and has, after a very rigorous risk assessment, supported some very sizeable programmes, although preference is for single non-catastrophe exposed locations.

Lloyd's has more than 30 syndicates writing mining risks. The trend for larger and mid-tier clients to prefer more quota-share participation and/or longer stretches continues to challenge the traditional Lloyd's model of multi-layered programmes, with this being one of the main drivers behind the creation of the Bowring Marsh Mining Facility. Lloyd's continues to show innovation and offers a trading mentality that many of its competitors find difficult to match: examples include deductible "buy downs" and "option to write" deals, aligned to commodity prices, that company market PDBI underwriters would typically not consider.

Mapfre's specialised mining underwriter based in London maintains a strong mining book, with final sign-off provided by its Madrid head office. Madrid continues to be the preferred access point for Latin American mining business. While it will occasionally venture into meaningful quota-share placements, Mapfre prefers excess of loss participation.

Markel continues to be a strong player in the mining space, and Markel Bermuda remains the main point of access for all mining accounts. While its maximum capacity remains unchanged at US$25 million, Markel has increased its critical natural catastrophe line to US$20 million.

With a dedicated mining team, **Munich Re CIP** maintains its risk-focused approach to large and technically complex risks. It will provide quota-share lead-type participation, provided that detailed risk exposure information is available, and is committed to supporting its long-term clients. Though the current soft market conditions have proved challenging to a degree, Munich Re CIP is proving capable of maintaining its participation on well-managed accounts. A good level of risk management information is required for review and assessment to ensure the team is able to deliver to its best.

Munich Re London is frequently positioned above sub-limited exposures and adopts a somewhat softer engineering focus than its CIP colleagues. Matching Munich Re London with strong large limit primary capacity continues to be a very effective way of producing a cost-efficient solution for many clients.

While not always the most cost-efficient solution, it can also “dovetail” with its Munich CIP colleagues to create a “Munich Re” quota-share stack in a programme, which gives the benefit of group concurrent “seamless” coverage.

The most recent entrant to the Bermuda market, **Neon Underwriting Group**, began underwriting property risks in Bermuda midway through last year, acting as an agent for its Lloyd’s Syndicate 2468. Chris Fisher (formerly the Head of Property at Ariel Re Bermuda) was appointed CEO of Bermuda. He is also responsible for property at the group, along with Dwayne Hunt (previously with Chubb Bermuda), who will assist in the underwriting of this portfolio. Neon recently announced increased capacity for 2017 of US$40 million for all risks and US$15 million for critical catastrophe. It can be offered as primary, excess, or quota-share for all occupancies, other than offshore energy business.

Novae completed a successful full year of writing North American property business in Bermuda. It has shown a clear appetite for mining risks on both hard rock and coal accounts, predominantly in an excess position. Novae will consider small complementary lines in primary layers if the retentions are significant.

Oil Casualty Insurance Limited (OCIL) continues to focus its efforts in the mining space, which remains the largest sector of its energy portfolio. This time last year, it increased its capacity to US$50 million and began looking at positions lower down in programme as well as quota-share. This has proven to be a successful strategy, especially as more programmes look to simplify structure and maximise quota-share participation.

Partner Re continues to take a technical and conservative approach, and has exhibited some rigidity regarding post-placement discussions. It has greater flexibility in respect of smaller, less catastrophe-exposed risks, and its preference continues to be for single-site operations rather than multisite, multi-commodity ones.

QBE’s exclusive facility with Bowring Marsh continues to offer reserved capacity for Marsh clients with up to US$80 million per insured capacity, with a line size of up to 20%. Using superior A+ security, the facility provides automatic capacity at lead terms.

R&V Versicherung AG has recently expressed a desire to re-enter the mining and power markets after a three-year withdrawal. For mining risks, it prefers to allocate capacity on a high-excess basis. Based in Zurich, staff changes have facilitated this shift in approach with the return of its previous underwriter.

SCOR has been a long-term specialist mining insurer. It is very active and strong, typically participating in large primary stretches or smaller quota-share programmes, both with significant underground coal and hard rock capacity. Its knowledgeable underwriters can be approached in regional and domestic markets. In what have been very difficult trading circumstances for most mining clients in recent years, SCOR has been one of the more understanding and flexible markets when establishing terms.

Spencer Pierce, previously the Head of AIG’s Energy operations, is leading the development of **Sompo Canopius**. It is aiming to become a lead market in the sector and has already made a clear commitment to the class by hiring an experienced specialist mining engineer. It will consider all commodities both above and below ground, offering up to US$25million of capacity, and is trading on the Lloyd’s platform.

Sirius International has now been in operation for over a year and offers up to US$50 million capacity on a primary and excess of loss basis for both general property and mining risks.

Starr Underwriting Agencies (CVS/1919) continues to expand its mining portfolio, and has been offering increased capacity to develop a larger profile. As with most of the specialist mining markets, the provision of detailed underwriting information has enabled it to overcome some of its previous hesitancy in writing certain coverages. CVS has a specialist mining engineer and is keen to provide engineering surveys on accounts it participates on.

Swiss Re Corporate Solutions’ (CorSo) energy team continues to be committed to providing competitive support to long-term clients during the current soft-market cycle. Its dedicated global mining team continues to provide solid and meaningful capacity to mining clients globally and remains a respected lead insurer in this sector.

Zurich Global Corporate UK continues to provide both direct and reinsurance solutions to a range of mining companies and acts as the single referral point for Zurich’s mining business within the EMEA region. Zurich writes all classes of mining risk, including underground risks. They have established and maintained a position as a key underwriter of the mining sector, providing stability and flexibility in approach and substantial capacity, supported by a strong risk engineering focus.

CASUALTY MARKET

The beginning of 2017 has seen a continued soft cycle, which shows little sign of hardening. Although additional international casualty capacity has eased, we have noted much interest from company insurers reviewing and relaxing their position on mining risks, whether that be in respect of pollution or employers' liability constraints.

The second half of 2016 saw the continuance of premium reductions. Reductions remain available, however, market response is becoming more and more dependent upon exposure profile than general market conditions. Insurers' appetite for mining risks has increased, with more markets considering the previous niche space of US operations, but in general the new capacity has not eased coverage restrictions.

Critical information on waste sites and tailings areas (including those not active) is still very much at the forefront of the markets' thoughts, following the "front-page" environmental losses of recent years.

Clients should ensure that up-to-date engineering reports are available to liability markets as standard when presenting to insurers or when providing renewal information. It is possible that any specific recommendations relating to notable environmental risk concerns may trigger restrictive conditions/potential warranties imposed while risk improvements are carried out.

Employers' liability continues to be an area of focus, with some markets restricting the coverage available to Latin American operations, following some problematic losses – either by way of sub-limiting or aggregating coverage (or both), depending on the territory.

Clients should ensure that up-to-date engineering reports are available to liability markets as standard when presenting to insurers or when providing renewal information.

Ample capacity remains available in the market as a result of the lack of significant loss activity.

TERRORISM MARKET

Ample capacity remains available in the market as a result of the lack of significant loss activity. Broadly speaking, rates continue to reduce, with the exception of specific territories that have seen major incidents, such as Turkey and Belgium, or those which have experienced political instability, such as Yemen, Libya, and Ukraine. Within these territories, there is a finite supply of political violence capacity and rates are increasing. For clients looking to obtain competitive premiums, excellent risk management, survey/ security reports, social, corporate, and economic responsibility programmes are key.

The number of anti-mining protests recorded in the first half of 2016 surpassed those recorded in the entirety of 2015. While no claims were reported in 2016, some mining companies were affected by political violence incidents, which posed operational threats and a moderate security risk to physical assets accompanying anti-mining protests. Meanwhile, political conditions deteriorated in certain African nations, such as the Democratic Republic of the Congo.

In April and May alone, more than 10 anti-mining protests disrupted mining operations around the world, with environmental protesters focusing on coal mines. Beyond coal mining in general, environmental activists are most likely to target specific projects perceived to be associated with deforestation, water pollution, or air pollution. Arson and sabotage attacks on mining equipment occurred regularly in some jurisdictions and some anti-mining protests led to violent clashes in Germany and parts of South America. Certain host states, such as the Philippines, have engaged in extensive programmes of mining license review, with similar activity having a marked impact on international operations in Thailand.

Indigenous rights activism remains a major factor in anti-mining protests outside of Europe. Statistics suggest that more than half of all anti-mining protests recorded outside Europe in the last year were orchestrated solely or in part by indigenous rights activists. North America has seen an increasing trend for environmental activists to co-operate with indigenous rights activists in tactical alliances to protest against extractive projects. Anti-mining activism poses an operational business interruption risk to the extractive industry, with protesters employing disruptive tactics such as demonstrations, blockades, and occupations.

DOMESTIC MARKET CONDITIONS

AUSTRALIA

At the beginning of 2016, we predicted that soft market conditions would continue for both property and casualty classes. These predictions came despite the emergence of headwinds, which compounded the effect of years of rate reductions, saw some insurers walk away, and resulted in the accumulation of losses experienced by some Australian insurers, mitigating our prediction of average rate reductions of between 5% and 10%.

Average rate reductions were achieved for property renewals, although the results for individual placements varied from the rollover of premiums to some significant rate reductions in excess of 20%. The factors that influenced the level of rate reductions included whether claims had been incurred, previous remarketing results, and the ability to introduce competition via innovative broking plans.

In particular, **FM Global** was able to provide competitive new business terms. Some incumbent insurers – **QBE**, **Vero**, and also **Chubb** (which ceased underwriting mining business) – were unable to renew all expiring participations on mining accounts and were therefore replaced accordingly at either the same or more competitive terms.

Last year saw several new placements either being operations divested from the major mining companies or new mine operations. The placement of these new business accounts attracted significant underwriting scrutiny. The lead insurer and supporting panel varied from account to account dependent on insurer appetite, risk profile, the commodity, and type of mining operations, with **Zurich** and **Vero** being competitive on several soft rock placements, along with **HDI** for hard rock. Support was obtained from the majority of our key domestic mining underwriters, including from **AIG, Swiss Re, Berkshire Hathaway Specialty Insurance, QBE, Liberty, AXA, CV Starr**, and **CGU**. Overseas markets were utilised for specific layers or risks.

The Samarco dam failure continues to impact the market with regards to additional underwriting requirements. It is now standard practice that clients will be requested to provide detailed information with regards to their tailings dam risk profiles and management controls.

Over the past few years, we've been successful in increasing sublimits and are now finding contingent BI exposures have reached underwriters' maximum limits, particularly for rail and port aggregation of risk. Most clients are able to obtain adequate sublimits for their exposure; however, this could prove to be a more meaningful constraint if commodity markets accelerate and maximum foreseeable loss estimates increase materially.

From a casualty perspective, 2016 saw premiums under pressure from significant competition among both traditional and new entrants to the mining market. The new placements mentioned above have been hotly contested by insurers, with competition applying equally to new operations and divested mines alike.

The largest reductions are still being seen on well risk managed, single-commodity/single-site mining companies. There is also downward pressure on deductibles, with worker-to-worker liability now being achieved regularly at US$100,000. We expect that rate reductions in 2017 will be harder to obtain, particularly on underground risks, where few alternative markets are available.

This year, we are likely to see a continuation of soft market conditions in terms of available capacity and coverage conditions; however, reasons and opportunities to push for significant rate reductions will become more difficult to generate, and we are expecting average rate renewals in the range of flat to 5% reductions for both property and casualty markets in the Australian domestic market.

CANADA

Canadian-based miners continue to receive mixed results from the domestic marketplace. The largest spend remains in the property space, where the market continues to be soft and awash with ample capacity. Meanwhile, casualty insurers might be more successful in turning liability pricing around tailings concerns, if not for the push from London-based competitors. Directors and officers (D&O) liability insurers are mandating renewal premium increases, as unprecedented levels of claim settlements and new claims affect underwriting results.

Property renewal rate reductions in 2016 were not as sizable as they were for the prior two years, although reductions in the range of 5% to the high teens were achieved. This, despite insurable value portfolios remaining flat or reducing slightly, was absent of insurable value increases due to mergers or acquisitions.

Domestic insurer capacity remains high, with multi-insurer property placements over-subscribed, and coverage enhancements are generally available for well-managed risk management accounts with good loss histories. Competition from London and European markets created further concern for domestic markets, especially downward pressure on deductibles.

Liability insurers continue to increase tailings due diligence, requesting engineering reports and recommending responses around this exposure – a spillover from incidents of prior years. Limited domestic primary layer capacity should have resulted in hardening prices, if not for the considerable interest of London-based markets. As a result, many clients received reductions in the range of 5% to 10%.

Last year saw the majority of mining clients explore liability limit increases to address risk management and board concerns around potential sudden and accidental pollution incidents.

We have also witnessed D&O insurers, in particular primary insurers, push mining clients for premium and retention increases, as settlements of past claims and a continuing trickle of new actions persist. A reversal of this trend is unlikely, so long as the commodities remain depressed. There remains ample excess D&O capacity to create some competitive tension in renewal placements.

General changes in the Canadian insurance market include Zurich's move towards consolidating its global corporate business with its domestic commercial portfolio. In doing so, it announced a Canadian leadership change for early 2017.

The **ACE** and **Chubb** merger has created a combined business with more appetite for mining business, though it remains dominant in the junior exploration space.

The announced **Liberty** acquisition of **Ironshore** should not show any near-term impact on domestic appetite for mining risks. **Allianz** continues its shift in focus on excess, non underground classes of mining risks.

SOUTH AFRICA

The South African mining property insurance market closed out 2016 with an underwriting loss due to a major underground fire claim at the beginning of last year. Apart from this loss, the remainder of the year has been benign in terms of claims.

The last quarter of 2016 saw chrome and manganese prices increase, which resulted in additional premium for insurers in respect of certain programmes.

We expect 2017 to be very similar to 2016 – with rates stabilising, but reductions in rates negotiable on accounts that have been claim-free, and increases in the gross profit sums insured.

In December, South Africa sustained an investment-grade credit rating despite concerns of a downgrade, which would have had a material deleterious impact on the domestic insurance industry. In fact, the local market remains vibrant. **Munich Re** has given authority to **Emerald** to underwrite property risks on its behalf. Munich Re will indemnify all claims obligations to Emerald in terms of its reinsurance contracts, and provides Emerald with the same rating as Munich Re. We expect that other local insurers will make the same arrangement with other reinsurers. New underwriting agencies are being created in South Africa, which will create more capacity and maintain the current soft market. **The Fairfax Insurance Group's** acquisition of **Zurich's** South African and Botswana operations has now been finalised, and it will now undoubtedly establish a domestic mining book.

AIG South Africa has transferred the underwriting of mining risks to its London office and will now be a non-admitted market in South Africa.

Increasingly, Canadian mining clients with operations in North Africa are accessing South African insurers for capacity, as terms are more competitive than those for local Canadian markets. Local markets have also successfully written mining risks in other international jurisdictions.

The South African casualty insurance market remains stable to soft. New entrants have proved less competitive than existing markets. During 2016, Marsh negotiated the automatic inclusion of pollution clean-up costs with no damage trigger, as clients both reviewed this risk exposure and, in many cases, sought to increase the liability limits they purchased due to the example of claims following the Samarco dam failure.

LATIN AMERICA

BRAZIL

As commodity prices recover, local mining operations have been buoyed by the reinstatement of several projects that were on stand-by, and the resumption of operations that were in care and maintenance. These include Vale's S11D mine, the world's biggest iron ore project at an estimated US$14 billion capital cost. In addition, the low value of the Brazilian Real to the US dollar has further supported exploration.

In contrast, the Brazilian insurance market for mining risks was challenging throughout 2016, and we expect this to remain the case in 2017. Domestic market leaders have demonstrated aversion to the mining industry after the high-profile Samarco dam failure, resulting in reductions in capacity, restrictive terms and conditions, and/or exclusions for tailing dams.

The local insurers that were habitually writing mining risks are in a continuous review of their guidelines; as a consequence, insurers providing leading terms continually change: **AXA** and **HDI** are now supporting leading terms in the sector. Other insurers - namely, Chubb, Mapfre, IRB, and Munich Re, - have been working as co-insurers and also with local reinsurance. International facultative reinsurance capacity is increasingly required to maintain the capacity needed by our mining clients.

The hardening of third-party liability markets continues, with insurers reviewing both individual contracts and portfolios as a whole, and again focusing on tailing dam exclusions. The market remains selective on underground risks, thereby restricting the competition, and deductibles are subject to review. Careful consideration should be given to ensure the suitability of all aspects of the insurance, as more and more insurers approve their own wordings with local authorities, leading to diminished standardisation.

The environmental liability market has become very spotted after the Samarco dam failure. There is little competition for this class, with only four insurers and a low appetite for mining risks. However, capacity remains available.

As a result of discussions between the mining industry and the Brazilian Government, we can expect to see heightened regulation, scrutiny, and efforts to improve the level of risk management. However, discussions are still taking place on how to structure the monitoring of these sites.

CHILE

The Chilean property insurance market for mining risks has become fully dependent on international capacity, as there is limited local capacity available. The Chilean quake catastrophe exposure requires capacity from international reinsurers to build material limits, and throughout 2016 this capacity was available at reduced rates. Reductions were typically between 10% and 15%, depending on the quality, loss record, and evidence of strong loss control.

The reduction in copper pricing is dramatically impacting the Chilean producers and their activity. BI sums insured have and remain depressed, and cost-cutting pressure remains standard.

The domestic insurance market continues to be selective for underground mining risks. Clients are increasing retentions in excess of deductibles as a way to achieve greater savings, exhibiting increasing confidence in the well-developed loss control and loss prevention programmes.

QBE has sold its local operations to a local investor, and **AXA** has opened a reinsurance office in Santiago.

The third-party liability markets remain soft, and employers' liability and pollution and contamination exposures continue to be focus areas – and remain subject to sub-limits.

PERU

The Peruvian insurance market has been following the international market trend in recent years, with lower rate reductions in the second half of 2016 compared to 2015. Domestic insurers are keen to avoid further reductions in rates and income, due to relatively poor results for local companies in 2015 and 2016.

While alignment to the international market has provided greater availability of broader coverages and increased limits, it has also led to increased deductibles, greater scrutiny for clients, and requirements for comprehensive information for underground risks and dams.

For large and medium-sized Peruvian clients, a combination of local and international markets is preferred, while for smaller mining clients with low premium volume and lower deductible targets, the domestic market is the only available option. While deductibles for local placements are usually lower than those in the international market, each year local insurers are aligning more towards international deductibles.

We have seen a mix of targets for clients in 2016 renewals, where some have preferred to improve coverage over rate reductions, while others have reduced their premium with the same coverages. In 2017, we expect more resistance to rate reductions from local markets and, potentially, international markets. Generally speaking, the local market remains competitive and, with the

The future of mining in the US, particularly for soft rock and iron ore, is trending positively for the first time in two years after commodity prices and debt levels stabilised in the second half of 2016.

increased capacity of insurers' treaties, the markets' exposure on large and medium mining risks has increased.

RIMAC remains a leader in the domestic market and offers broad capacity by using its automatic treaty. **La Positiva** has no more treaties for underground operations and can only write insurance for surface installations, although it can write underground risks on a facultative basis. Depending on the risk, **Pacifico** will write mining risks, while **Mapfre** remains an option for large risks with global support.

For liability risks, **Chubb** offers broader capacity, while local insurers place limits with small treaty support. Local market conditions remain soft relative to the international markets. However, domestic insurers are increasingly renewing mining portfolios on a rating basis in order to align with higher international market premiums. Rates have increased or at least remain stable. The tendency of local mining companies is towards increasing limits and broader coverage, such as the inclusion of environmental liability.

UNITED STATES

The future of mining in the US, particularly for soft rock and iron ore, is trending positively for the first time in two years after commodity prices and debt levels stabilised in the second half of 2016. Spot pricing and some long-term contract pricing has been moving upward since the third quarter of 2016. The majority of mines are now operating on a positive cash flow basis with debt restructuring efforts proving positive. Key producers are either emerging or planning to emerge from bankruptcy sooner than expected.

The evolving political landscape in the US has also materially buoyed investor expectations for the mining industry.

Within the insurance market, the continued abundant capacity and reduced demand has led to a competitive environment for property insurance, and rate reductions of 5% to 15% were achieved in the second half of 2016. Individual risks are still cautiously reviewed by underwriters, with particular focus on underground coal risks. Some mining companies have explored the notion of increased underground limits and, in fact, some have purchased additional limits on strategically important mines.

While there was ample capacity in the aggregate in 2016, there remains the potential that a significant loss could lead to a sharp decline in available capacity. Up until now, market conditions have meant that rate relief has been steady, despite some clients' attritional or modest claims activity. Insurers have been supporting their long-term clients and approximately US$200 million to US$250 million of underground, and US$1 billion of surface capacity remains available for US hard and soft rock producers.

Low BI values have led to ongoing reductions in the base programme premium. Nevertheless, insurers are offering additional capacity to maintain premium income which is putting pressure on rates.

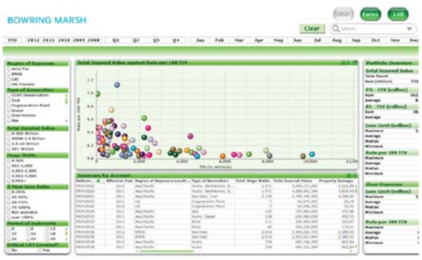
RISK ANALYSIS MODELLING PLATFORM (RAMP)

The size and diversity of our global portfolio has enabled us to develop a market-leading and award-winning Risk Analysis Modelling Platform. This helps us benchmark property damage and business interruption insurance programmes.

Using data points such as critical catastrophes, deductibles, key sub-limits, loss limits, loss ratios, principal ores and types of risk (open pit or underground), types of power generation, and cargo types, we can provide important in-depth management information on a confidential basis.

FEATURES AND BENEFITS OF THE RISK ANALYSIS MODELLING PLATFORM

FEATURE	BENEFIT
Consolidated global database providing historical rates, limits, deductibles, and programme structures.	A clear visual representation of how any insurance programme compares to that of others in the same industry.
Access to terms and conditions offered by both local and international markets.	The ability to compare local programmes (in the same region as the insured) to those available from international markets.
Provision of real time average and median rate analysis for any given timeframe (i.e. Comparing specified quarters and/or years).	The ability to provide quick "ball-park" estimates for either new or renewing business based on historical trends.
Quality printed output.	Aids executive decision-making.
Historical record of renewals for clients.	Enables elements of premium increases/decreases for divestitures/acquisitions.

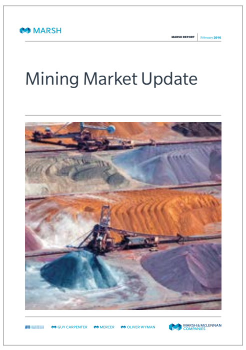


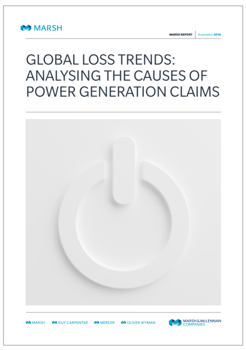
TAILORED REPORTS FOR CLIENTS

Using the Risk Modelling Analysis Platform (RAMP), Bowring Marsh develops confidential, tailored reports to compare local programmes, provide "ball-park" estimates based on historical trends, and a clear representation of insurance programmes.

THOUGHT LEADERSHIP

Marsh uses the combined knowledge and experience of our brokers and our proprietary claims data to provide regular, thought-provoking, industry-focused research papers for clients.





BOWRING MARSH FACILITIES

Bowring Marsh offers specially-negotiated facilities, specifically for mining clients, which facilitates the speedier quotation and placement of client risks.

MINING FACILITY	Offers up to US$21.5 million in capacity and writes all mining activities without exclusion – including underground, which can be difficult to place. It brings in new quality Lloyd's capacity and covers all perils without exclusion – including natural catastrophe.
QBE AND ARGO PROPERTY FACILITIES	Two facilities which offer up to US$80 million capacity per insured using superior A+ rated security.
TERRORISM AND POLITICAL VIOLENCE FACILITY	Offers long-term pricing stability and up to 50% of each slip with a discount of 10% off the lead market premium.
UK TERRORISM FACILITY	Jointly led by Catlin Syndicate 2003 and Talbot Syndicate 1183 and backed by other Lloyd's insurers, offers £250 million loss limit per insured available, with quick turnaround times and a broader definition of an act of terrorism when compared against Pool Re.

Detailed information on the above facilities is available from your usual Bowring Marsh contact, or from carl.j.hanson@marsh.com.

SPOTLIGHT

THE BOWRING MARSH ADVANTAGE

With the size of our portfolio and our global network of Bowring Marsh offices, we can offer a real advantage to clients who are in need of an international placement solution. Some of our attributes, which we live by and share include:

- Our energy.
- Our enthusiasm.
- Our global network.
- Our industry and technical knowledge.
- Our ability to have face-to-face negotiations with decision makers.
- Our proprietary facilities.
- Our Risk Analysis Modelling Platform.
- The results from our 2016 underwriter survey.

About Marsh

Marsh is a global leader in insurance broking and risk management. In more than 130 countries, our experts help clients to anticipate, quantify, and more fully understand the range of risks they face. In today's increasingly uncertain global business environment, Marsh helps clients to thrive and survive.

We work with clients of all sizes to define, design, and deliver innovative solutions to better quantify and manage risk. To every client interaction we bring a powerful combination of deep intellectual capital, industry-specific expertise, global experience, and collaboration. We offer risk management, risk consulting, insurance broking, alternative risk financing, and insurance programme management services.

Since 1871 clients have relied on Marsh for trusted advice, to represent their interests in the marketplace, make sense of an increasingly complex world, and help turn risks into new opportunities for growth. Our more than 30,000 colleagues work on behalf of our clients, who are enterprises of all sizes in every industry, and include businesses, government entities, multinational organisations, and individuals around the world.

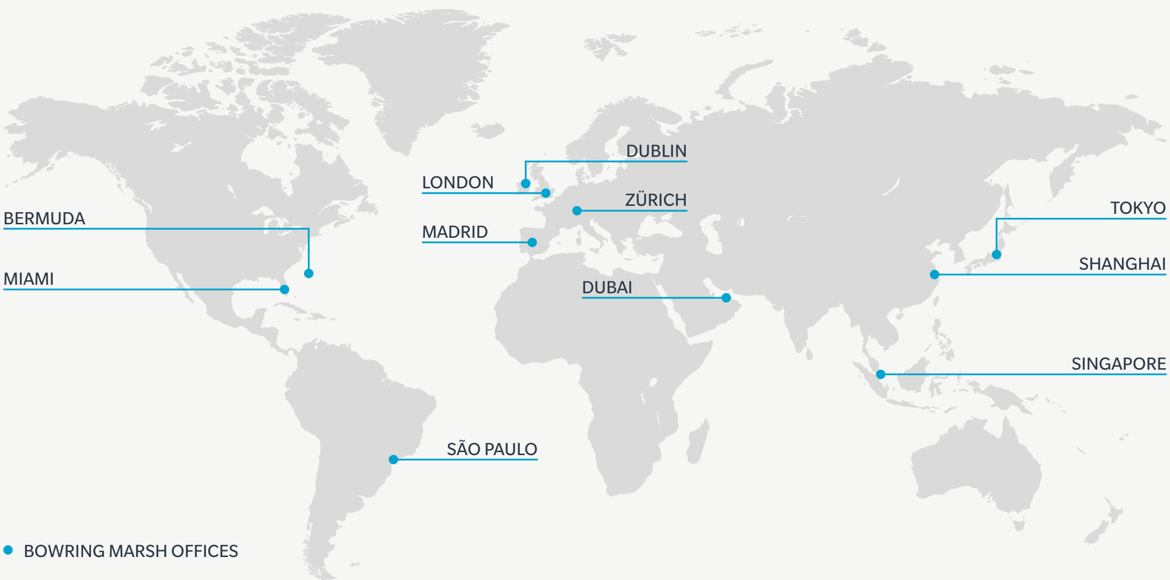
We are a wholly owned subsidiary of Marsh & McLennan Companies (NYSE: MMC), a global professional services firm offering clients advice and solutions in the areas of risk, strategy, and people. With 60,000 colleagues worldwide and annual revenue exceeding $13 billion, Marsh & McLennan Companies also include global leaders Guy Carpenter, Mercer, and Oliver Wyman.

Follow Marsh on LinkedIn, Twitter, Facebook, and YouTube.

About Bowring Marsh

Bowring Marsh is the dedicated, specialist international placement broker for Marsh. Working seamlessly with Marsh, Bowring Marsh provides you with risk transfer solutions, benchmarking, and claims advocacy wherever you are in the world through its global insurance placement network of 11 offices in the United Kingdom, Ireland, Continental Europe, Asia, the Middle East, Latin America, and Bermuda.

With more than 300 insurance brokers located across all the major international insurance hubs, Bowring Marsh provides international placement options that suit your business risk and exposures. We use our comprehensive portfolio experience, our in-depth knowledge of your risks, our ability to have face-to-face negotiations with decision makers, and our industry knowledge to innovate, customise, design, and place your insurance programmes with international insurers.



CONTACTS

INTERNATIONAL MINING PLACEMENT

TOM DAVIES
CEO of Bowring Marsh
tom.davies@marsh.com
+44 20 7357 1030

BERMUDA

AMANDA SZAKMARY
amanda.szakmary@marsh.com
+1 441 298 6653

DUBAI

KARIM SACY
karim.sacy@marsh.com
+971 4 508 0410

MADRID

MIGUEL MARTINEZ
Head of Office
miguel.martinezpaniagua@marsh.com
+34 91 456 94 48

MIAMI

MARCELO CORIA
Head of Bowring Marsh, Latin America
marcelo.coria@marsh.com
+1 305 341 5000

SAO PAULO

PAULA LOPES
paula.lopes@marsh.com
+55 11 3741 6309

SINGAPORE

ADAM RUSSELL
adam.russell@marsh.com
+ 65 6922 8551

LONDON

PAUL FORSTER
paul.forster@marsh.com
+44 20 7357 1116

TONY WALLER
tony.waller@marsh.com
+44 20 7357 3473

ZÜRICH

NICHOLAS BAILEY
nicholas.bailey@marsh.com
+41 44 285 9329

MARSH MINING PRACTICE

MATTHEW GOODA
Global Mining Practice Leader
matthew.gooda@marsh.com
+44 20 7357 3017

AUSTRALIA

JAMIE COUGHLAN
Australian Mining Practice Leader
jamie.coughlan@marsh.com
+61 7 311 54530

CANADA

ANDREW KWOK
Canadian Mining Practice Leader
andrew.c.kwok@marsh.com
+1 604 443 3588

SOUTH AFRICA

DEBBIE GERAGHTY
African Mining Practice Leader
debbie.geraghty@marsh.com
+2711 060 7759

UNITED STATES

RICHARD KIMBALL
US Mining Practice Leader
richard.kimball@marsh.com
+ 1 303 308 4563

BRAZIL

WELLINGTON ZANARDI
Brazilian Mining Practice Leader
wellington.zanardi@marsh.com
+55 11 3741 2483

CHILE

LUIS FERRADA
Chile Mining Practice Leader
luis.ferrada@marsh.com
+56 2 2450 5832

MEXICO

CARLOS ORDÓÑEZ
Mexican Mining Practice Leader
carlos.ordonez@marsh.com
+52 55 5999 4446

PERU

CÉSAR KAHATT
Peru Mining Practice Leader
cesar.kahatt@marsh.com
+51 1 604 1371

EUROPE

DAVID BENNING
European Mining Practice Leader
david.benning@marsh.com
+44 20 7357 5870

RUSSIA

ANDREI DENISSOV
C.I.S. Mining Practice Leader
andrei.denissov@marsh.com
+7495 787 70 80

INDIA

ANUJ SINGH
Indian Mining Practice Leader
anuj.p.singh@marsh.com
+1 244 049 205

HONG KONG

IAN BROWN
Asian Mining Practice Leader
ian.w.brown@marsh.com
+825 2301 7322

Notes

Notes

Notes