

MITIGATING OFF-STRATEGY RISK MINING INDUSTRY RISK CHALLENGES AND SOLUTIONS



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INTRODUCTION

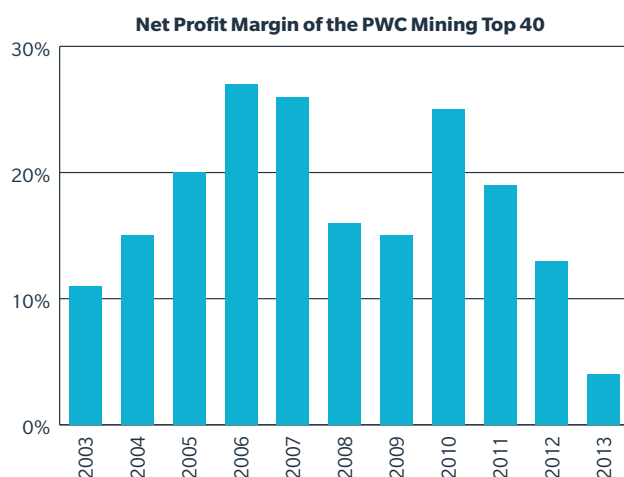
2014 was a tumultuous year for the global mining community – with 2015 shaping up to prove equally challenging. Global demand for a range of commodities has stuttered – while the investment boom of 2007 to 2012 has begun to deliver a wall of new supply, bringing disequilibrium to the supply/demand balance for certain commodities.

This tough commercial environment translates directly into increased vulnerability to risk challenges: heightening the importance of sound risk strategies, and exacerbating the potential impact of perils, both familiar and evolving.

In this context, Marsh's Mining Practice is focused on two clear goals – reducing risk-related costs for our clients, and building the resilience of our clients' businesses.

The headwinds for mining companies can be illustrated in numerous ways – counting multi-billion dollar write-downs, tracking the collapse in mining foreign direct investment, shrinkage in exploration budgets, capex reductions, project cancellations, mines entering "care and maintenance", or even the bankruptcies of operations at the wrong point of the cost curve. The scale of the challenge is clear, with the net profit margin of the world's most successful mining groups declining at a shocking average of 7% per annum since the post-crisis rebound of 2010.

MARKET CONTEXT



Source:

PWC. "Mine 2014: Realigning Expectations"

http://www.pwc.com/en_GX/gx/mining/publications/assets/pwc-mine-2014-realigning-expectations.pdf

Accessed 12 January 2015.

Commodity demand growth has been inhibited by the protracted post-financial crisis recovery of developed economies, and the delicate task of re-balancing the economy of the world's leading commodity consumer, China. Meanwhile, a combination of factors have created an over-supply of several major commodities in the short term. In the case of iron ore, the "Big Five" iron ore miners have invested nearly US\$150 billion in the expansion of output since 2006, and, as a consequence, are forecast to double production to 1.2 billion tonnes per annum by 2020. This rapid escalation in supply is a key contributor to forecast over-supply of 177 million tonnes of seaborne ore in 2015, weighing heavily on prices. The copper market has likewise been dominated by recent supply expansions, and is also expected to be in surplus in 2015. The seaborne thermal coal market, meanwhile, continues to endure the disruptive impact of shale gas, as well as low oil costs, and is anticipated to endure a third year of prices ranging deep into the cost curve.

COST CONTROL

In this context, cost control is both a primary tactical management imperative for mining company management, and a key factor in defining strategy.

TACTICAL COST CONTROL



Major Head-Count Reductions – Anglo American plc. is targeting a headcount reduction of 60,000 by 2017 from the year-end 2013 base.¹



Focusing Exploration Expenditure – SNL Metals & Mining estimates global total non-ferrous metals exploration budgets dropped to US\$11.36 billion in 2014, from US\$15.19 billion in 2013.²



Reviewing Supply Chains – Switching to Lower Cost Suppliers – Rio Tinto Coal Australia saving US\$5.5 million by sourcing underground roof supports from China, and US\$2 million by sourcing hydraulic cylinders from China.³



Focus on Operational Asset Optimisation – Maximising Productivity – BHP Billiton productivity agenda to deliver cumulative production growth of 16% across 2014-2015.⁴

STRATEGIC COST CONTROL



Divestment of Marginal or Non-Core Assets – De-merger of Sibanye, BHP Billiton's spin-off of "South32".



Idling Capacity – Various mines entered "care and maintenance" regimes in 2014 as a direct consequence of economic viability, ranging from the less competitive mines of global majors – such as Vale's Integra mine complex in New South Wales⁵ and Anglo American's Peace River Coal operation – to the assets of cash-constrained juniors, such as the Dufferin gold mine⁶, which closed within four months of opening.



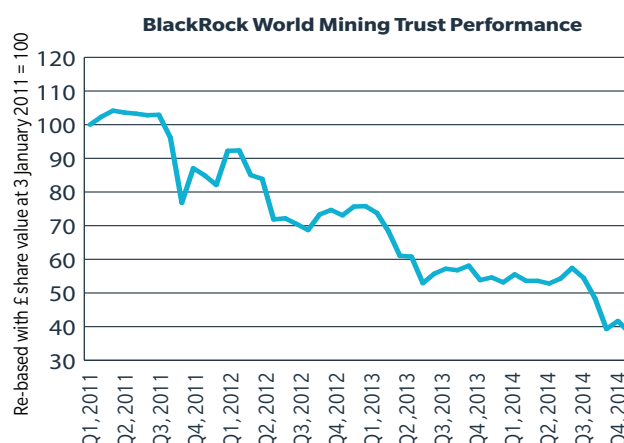
Continued Capital Expenditure Discipline – Estimated US\$66 billion annual expenditure by the 20 largest mining companies in 2015 – a 33% reduction on 2013.⁷

While cost control is a key concern, the on-strategy risk landscape for mining companies remains equally challenging when viewed in more rounded terms.

ON-STRATEGY RISKS

- Identifying economic resources.
- Effective project appraisal and investment decision-making.
- Project delivery – securing capital and delivery on schedule and on budget.
- Delivering optimal operational efficiency – securing cost curve positioning.
- Managing declining ore grades.
- Logistics/route to market efficiency.
- Commodity price exposure.
- Optimising commercial outcomes.

As these on-strategy challenges have evolved, so too has investor sentiment – deteriorating consistently and materially for three consecutive years.



Source: Yahoo Finance.

"BlackRock World Mining Trust PLC (BRWM.L)",
<https://uk.finance.yahoo.com/q/hp?s=BRWM.L>,
 Accessed 16 December 2014.



As the industry grapples with these key strategic challenges, the demand to manage off-strategy risk effectively is only heightened. Our theme for 2015 therefore takes its cue from the focus of the industry on cost discipline and operational delivery, and the need to cost effectively and comprehensively address the broad world of off-strategy risk.

WE HAVE SET OURSELVES TWO CLEAR GOALS:

REDUCING YOUR COSTS

- Minimising your insurance costs.
- Making the most efficient use of your capital – optimising the balance of retained versus transferred risk.
- Further informing your risk decision-making with enhanced data analytics.



BUILDING THE RESILIENCE OF YOUR BUSINESS

- Reducing the probability of outages and loss events through focused risk engineering.
- Reducing the severity of loss events through business continuity planning.
- Minimising the risk of an uninsured loss.
- Supporting the prompt recovery of insured losses.

This document will explore key areas of risk and how we can work to support you in the effective and efficient mitigation of these risks – fostering the greater concentration of resources on your core business.

Matthew Gooda

Global Mining Practice Leader

At every stage in
operations...

...off-strategy risk is present...

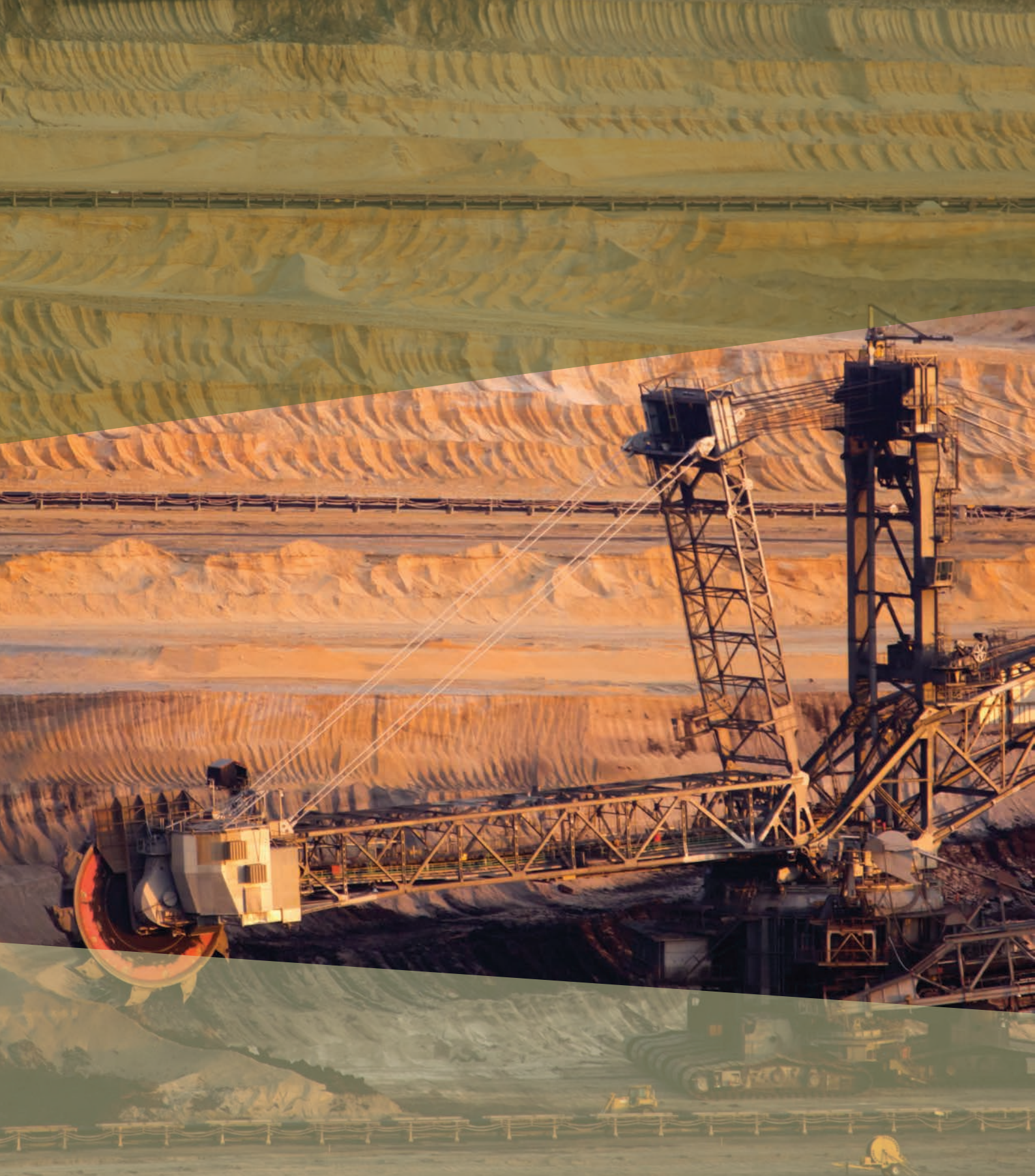
Debt financing	Loss of critical team members delays fund raising/design/execution.
	Erroneous statements mislead investors.
Equity financing	Managing investors' insurance demands. Insurance cost benchmarking.
	Insurance noncompliance delays release of funds.
Exploration	Environmental impairment – dam failures, material spills in transit.
	Kidnap/hostage taking.
	Failure to specify adequate site protection results in costly retro-fitting.
Project appraisal	Surety and bonding requirements.
	Critical path exposed to loss events during import of key items.
Construction and project delivery	Labour disturbances delay construction/production and/or damage plant.
	Natural perils or technical loss event damages plant/delays project.
	Failures during commissioning result in damage/protracted delay.
Operations	Critical inputs fail (for example, water, power).
	Safety – injury to personnel, third parties, investigations, regulatory sanction, delays.
Expansion	Operational events – technical losses, breakdown, fire, natural perils, geotechnical risk.
	Consumables supply chain fails.
	Transit loss hits imports and/or product delivery.
New country entry	Pandemic – labour force, supply chain and route-to-market impacts.
	Political instability/terrorism/war.
Acquisitions	Appropriation of assets and/or licences.
	Governance – investigations, environmental compliance, anti-corruption, fraud.
Disposals	Work force health – industrial disease exposures.
	Downstream dependencies – route-to-market/customer facilities lost or impaired.
Closure and remediation	Assumption of responsibility for unfunded/uninsured legacy liabilities.
	Warranties given – securing a “clean exit”/backing for warranties received.
	Loss of social and regulatory license to operate.

...with the potential to impact assets, earnings, and stakeholders.

We support risk identification, quantification, and management as critical processes...

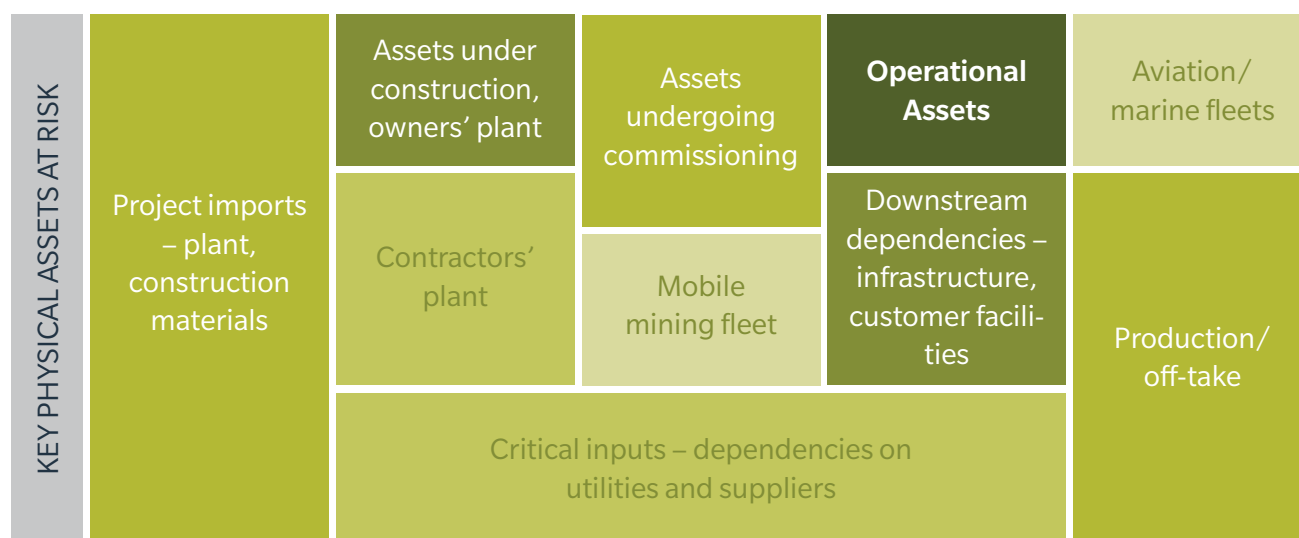
...and the optimal financing or transfer of residual risk – at every stage of your operations.

Assets	Supply chain risk assessment	Owner-controlled construction all-risks (CAR) insurance.
		Property damage.
Cash-flow/ earnings	Construction/ operational risk assessments	Business interruption (BI).
		Marine/project cargo.
People	Business continuity planning	Supply chain, dependency insurances.
		Political violence insurance, terrorism cover.
	Physical risk control	Delay in start-up, advance loss of profits.
		Specie.
	Country/political risk assessment	Credit/structured finance solutions.
		Kidnap and ransom.
Third parties	Due diligence	Key-man cover, personal accident travel.
		Workers compensation, employers liability.
Environment	Risk and governance controls	Third-party liability general liability, auto liabilities.
		Aviation/marine hull liabilities, charterers liabilities.
Shareholders	Loss scenario quantification/ business interruption quantification	Management liabilities – directors and officers, public offering of securities, pension trustees.
		Environmental impairment liability.
		Warranty and indemnity insurance.
		Crime.
	Risk finance optimisation	Surety products.



PROTECTING PHYSICAL ASSETS AND CASHFLOW

Cash generative assets, and the projects from which they grow, are at the heart of every mining company. It is unsurprising that protecting operational assets, projects, and the cash flows that depend on them accounts for the majority of the risk transfer expenditure of the Marsh mining client portfolio.



Protecting the cashflow of a metals, minerals, or mining company requires protecting the assets which generate earnings – whether a future stream of earnings to be derived from a project, or the earnings of an operational mine.

SPECIFICATION

The chain of off-strategy, physical risk management begins with the specification of plant. At this stage, insurable risk management is a predominantly contractual and due diligence process, focused on the assignment of responsibility for design, fabrication, and supply errors in contract – and the negotiation of appropriate insurance requirements with suppliers, design contractors, and engineering, procurement, and construction management (EPCM). While commercial pressures may restrict the protection that can be secured in a contract, risk management efforts at this early stage can pay dividends at a later date.

CASE STUDY

After a client's control failure and grounding of a recently commissioned reclaimer boom at a coal handling plant, a tightly worded contract, suitable design contractors, and an engineering, procurement, and construction management (EPCM) professional indemnity (PI) policy provided full protection. While the mine was able to recover for reinstatement costs and business interruption losses from its own insurance programme, the contractual position and PI policy protection in place allowed the company to recover amounts which fell beneath its own deductible, and allowed its insurers to recover losses from the party at fault, off-setting the impact on its own insurance programme.

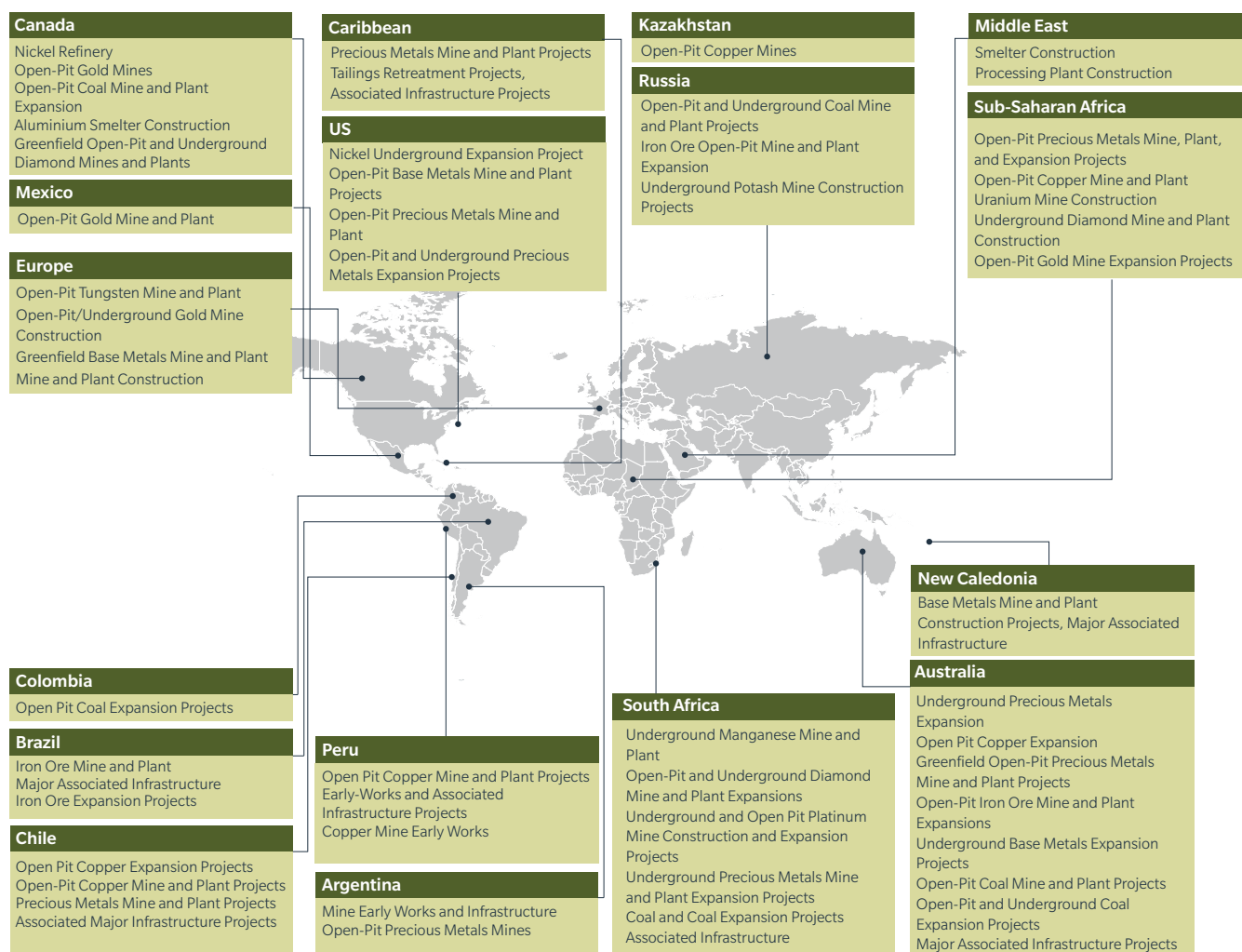
The specification stage is the most appropriate opportunity to address fixed protection systems for assets and risk considerations posed by even basic design features, such as plant layout. Marsh Risk Consulting (MRC) has extensive experience of reviewing plant design to provide advice on the completeness of protection specification and the risks inherent in design concepts.

As physical items are sourced, fabricated, shipped, and stored, further risks begin to accrue; not only of physical loss or damage incurring replacement costs, but also of delays to commissioning and therefore earnings if critical path items are lost or damaged. Project cargo insurance programmes provide crucial financial protection during often complex transits to remote sites – and risk surveys throughout this process are a vital component of risk minimisation. Marsh can work with clients’ insurers and specialist surveyors to manage and coordinate the delivery of risk surveys across a complex and

extended transit. In the case of project critical transits, marine delay in start-up coverage can provide protection to both mining clients and their financiers by covering delay in earnings attributable to the loss or damage of insured cargo, and Marsh’s Marine Practice is accustomed to working closely with mining companies to develop and place appropriate insurances.

Construction works present a unique array of risk management challenges; physical exposures to natural perils, the risks associated with rapid change programmes, the prevalence of hazardous processes, the potential for fabrication errors, and the heightened risk of break-down associated with a newly commissioned plant. The management of third party providers adds a further layer of complexity to the risk management challenge. Construction all-risks (CAR) policies provide the backbone of coverage for assets during this phase, again potentially supplemented by delay in start-up coverage or advance loss of profits coverage to protect cashflows.

A SELECTION OF MARSH’S METALS, MINERALS AND MINING CONSTRUCTION PROJECT EXPERIENCE



CASE STUDY

A typical CAR claim was triggered by cracking during the construction of an access bridge that was critical to a mining company's ship-loading facilities. The failure was attributed to design errors, requiring redesign works and multi-million dollar reconstruction activity. The claim brought into focus a key area of construction policy coverage – the extent of coverage for design defects. This complex area presents various options to an insurance buyer, ranging from no cover at all through to full cover for the rectification of the design defect, as well as any damage it caused. While the latter is very appealing to project financiers, it is not always attainable at commercially reasonable costs, so careful cost/benefit analysis of competing coverage options is essential.

DIFFICULTIES TYPICALLY ARISE FROM:

- Operational activities occurring during construction, which may fall outside the scope of a construction insurance policy.
- Partial handover and deviations in practice from contractual handover procedures.
- Production ramp-up (before, after, or straddling handover), which may require BI coverage to be insured alongside delay in start-up insurance.
- Requirements to cover long or extended commissioning periods.
- Phased handover of modular contracts versus turn-key contracting.
- Lack of common understanding between insured and insurers of the criteria for the acceptance of new assets by operational insurers – and operational underwriter sensitivity to “un-proven” plant.

Marsh addresses these difficulties through early engagement in the delineation of handover criteria within both contract and insurance documentation, and by applying a formal “12 Point Plan” to manage out the potential risks of disputed coverage.

COMMISSIONING RISKS

Notwithstanding the fact that the majority of mining plants are founded on well-proven technologies, the transition of projects to operations is a period of peak exposure for many projects. Hot testing and commissioning, and subsequent ramp-up to full capacity, can expose design, material, and workmanship defects.

Loss events during commissioning and ramp-up have ranged from structural failures, such as the cracking of thickener ponds, to the highly technical mechanical breakdown and insulation failures of gearless mill drives.

Construction and operational asset insurances also have several distinct features – for example, a construction policy may carry lower deductibles to account for the lower risk tolerance of contractors, and an operational policy may be more likely to provide coverage for earnings and may also be underwritten by different insurers. In this context, de-marking a clear handover of plant from construction to operational phase insurances can be as difficult as clearly de-marking a handover from contractor to owner.



OPERATIONAL INSURANCE AND BUSINESS INTERRUPTION

Off-strategy risk events that have affected Marsh mining clients' operational assets straddle a broad range of perils:

In each case, focused risk consulting engineering can reduce the probability of a loss and reduce the probable impact...

...and risk can be transferred to property damage/business interruption insurers

Geo-technical failures.	MARSH ADDED VALUE: <ul style="list-style-type: none"> • Risk identification. • Risk quantification and analytics. • Strategic risk and enterprise risk management programme support. • Business continuity management, including pandemic preparedness. • Supply chain risk management. • Crisis management. 	MARSH ADDED VALUE: <ul style="list-style-type: none"> • Manuscript policy wordings informed by deep industry experience and global industry knowledge sharing. • Unique mining facilities providing pre-committed insurance capacity – maximising competition for client risks. • Leverage – the largest placement portfolio of mining client business. • Global servicing capability. • Extensive mining claims preparation and recovery expertise.
Natural catastrophe perils – from flood to earthquake.		
Tailings dam stability failures.		
Technical risks and breakdown events, both electrical and mechanical.		
Structural failures.		
Employee or contractor inexperience or negligence.		
Process control failures.		
Gas, dust, and steam explosions.		
Supply chain failures.		
Downstream infrastructure failures.		

The high value of throughput for mineral processing plants and downstream infrastructure means that, in practice, it is often operational plants which suffer high-value losses and, as a consequence, complex or disputed claims.

CASE STUDY

A major copper producer faced significant losses following the collapse of a ship-loader. As this dedicated logistics infrastructure served a remote mine-site, the mine's conventional route-to-market was wholly impaired. An emergency mitigation plan was implemented – opening up an alternative export route using road networks, rail, and multiple alternative ports. Costs incurred included the construction of alternative concentrate storage areas – necessary in the short term to avoid the costs attendant to a mine shut-down – as well as extra handling facilities and the costs associated with the major truck and haul, rail, and multi-port export operation.

While the company managed to avoid a plant shut-down, a complex claim remained regarding the increased costs of the logistics operation. While no production was lost, sales were deferred due to a period of lower selling prices in a declining copper market. The property damage loss and both aspects of the business interruption loss – increased costs and price-differential loss – were recovered from the Marsh operational insurance placement.

HUMAN INFECTIOUS AND CONTAGIOUS DISEASE

2014 saw a return of interest to the subject of contagious disease coverage, as Ebola spread throughout Guinea, Liberia, Sierra Leone, and Angola – and was introduced into Nigeria by an international mining company employee. Marsh provides both supply chain risks analysis and business continuity planning services, including specific consulting oriented towards pandemic, to regional mining clients. Business interruption coverage for losses consequent on an outbreak of the disease can fall within the scope of “non-damage BI” risks, which insurers typically manage their exposure very carefully. Marsh would be happy to discuss best practice in terms of policy extensions in this regard.

PROTECTING OFF-TAKE, MARINE PHYSICAL AND CONTRACTUAL EXPOSURES

By tonnage, the bulk of insured transit exposures for many commodity producers are made up of production delivered on a “cost, insurance, and freight” (CIF) basis. In this context, risk management comprises both careful selection of tonnage and an appropriate survey programme to provide assurance. The historic evolution of marine insurance law and the allocation of liabilities in marine exigencies is such that a commodity producer cannot only concern itself with risks of damage to cargo. General average (GA) is a key risk exposure for mining companies selling on a CIF basis – under the GA regime, cargo owners and vessel owners contribute to actions taken to save a vessel and cargo relative to the value of their interests at risk; in other words, cargo owners may find themselves responsible for the larger share of vessel repairs required mid-voyage.

CASE STUDY

The experience Marsh has of mining company cargo claims, includes a case where the ship-owner made a declaration of GA before a vessel had left its loading berth. This impeded export capacity through the dedicated terminal. This resulted in a GA insurance claim exceeding US\$10 million, ultimately recovered from the ship-owner in a complex subrogation action.

This case clearly highlights the significance of both cargo risk management, risk transfer, and the ability to manage the potentially competing interests of specialist service providers, such as cargo owners, vessel owners, charterers, insurers, and GA adjusters in the context of complex claims.

While GA risks are at their greatest for bulk commodity and precious metals producers, diamond and gemstone producers also face transit and storage exposures requiring specific expertise and risk transfer products. Goods in transit and vault risks are addressed by specie insurance products, with more than US\$1 billion of risk transfer capacity available for mining clients in respect of any one event.

US\$1bn +
SPECIE CAPACITY AVAILABLE



LABOUR AND COMMUNITY RELATIONS, TERRORISM, AND POLITICAL VIOLENCE

Poor labour relations and local social and economic impacts can spill over into strikes, mine blockades, damage to assets, and interruption to earnings. Mobilising large workforces within remote regions can create significant strain (both for the remote labour force and host communities), and externalities, such as high inflation and the political context, can exacerbate the challenges inherent in managing labour relations.

Within the Marsh mining construction client portfolio, multi-million-dollar-damage has been caused to project works, mobile plant, and project camps by rioting and striking employees and contractors, as well as indigenous communities following a break-down of good community relations.

The Marsh CAR policy form can provide comprehensive cover against these risks. Risk exposures to operational assets are heightened by the risks of appropriation of productive assets – considered in the “Supporting Commercial and Corporate Activity” section of this report.

Strikes within South Africa have provided a particularly prominent example of the need to carefully structure coverage straddling the perils of terrorism, riot, strike, and civil commotion. Damage attributable to the strikes has been limited, resulting in what are generally attritional losses only in this regard. Several mining jurisdictions feature prominently, however, in hot-spots for focused, localised terrorism, with mining assets in Colombia and Papua New Guinea, in particular, having been subject to attack. Terrorism, sabotage, and political violence perils have typically broken out of core PD/BI products by insurers.

Marsh seeks to protect its clients’ positions by exploring the maximum extent of coverage possible under core PD/BI programmes, as well as developing stand-alone products to address the following perils:



Marsh has used its leading terrorism client portfolio to secure a highly efficient terrorism coverage facility that includes business interruption risks, and features committed follow insurer capacity at fixed discounts to open market pricing.

The Mobile Asset and Commodity Expropriation (MACE) Insurance Facility also provides cost-effective and rapid access to meaningful primary limits of indemnity (US\$100 million) in respect of political violence perils, as well as forced abandonment and a broad range of government actions which can otherwise deprive owners of the use and economic benefit of both fixed and mobile assets.



PROTECTING PEOPLE, THIRD PARTIES, AND THE ENVIRONMENT

In recent years the mining industry has achieved measurable gains in safety, industrial health, socio-economic, and environmental performance in many parts of the world. For example, there was a 45% reduction in South African mine worker fatalities in the five-year period from 2009 to 2013. Mining is now ranked the sixth least injurious of 16 industry groups in Ontario, Canada; a province with 33 mining operations spanning gold, base metals, platinum, iron ore, industrial minerals, and diamonds, as well substantial underground mining operations.

However, mining and mineral processing remain hazardous activities should risk controls fail. 2014 provided several salutary reminders of the perils associated with mining and the potential harm that arises from control failures: An underground coal explosion and fire claimed the lives of 301 mine workers and rescue crew in Soma, Turkey, and the Americas suffered four significant impoundment failures.

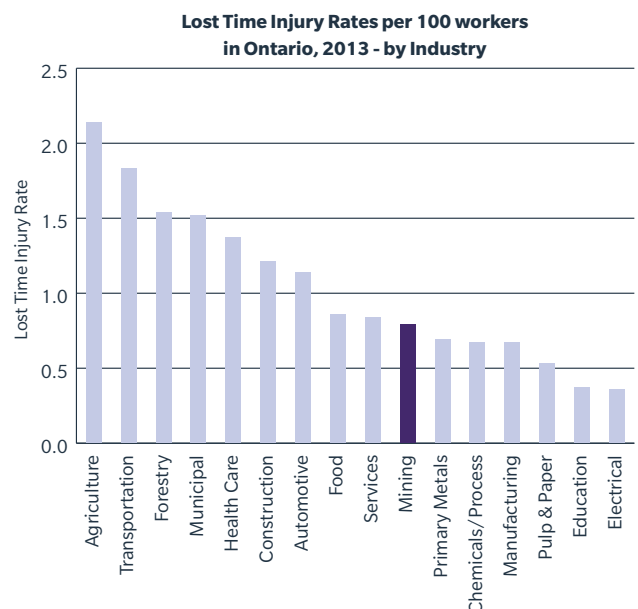
The Imperial Metals Mount Polley Dam failure breach resulted in the release of an estimated 25Mm³ of water, tailings, and construction materials. Imperial Metals have made a clean-up provision of C\$67.4 million in respect of the event – the company also suffered a 41% reduction in equity valuation as a consequence of the event, and the Mount Polley plant has entered “care and maintenance”.



Source:

Department of Mineral Resources, Republic of South Africa.
“Annual Reports: 2009 - 2013”

<http://www.dmr.gov.za/publications/annual-report.html>



Source:

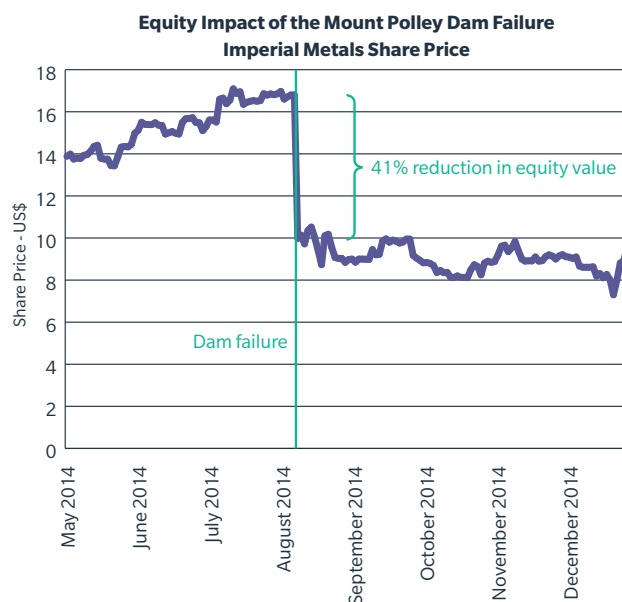
Workplace Safety & Insurance Board, Ontario, Canada.

By the Numbers: 2013 WSIB Statistical Report, July 2014.

Grupo Mexico has reportedly reached an agreement with regulators to set aside US\$150 million to meet clean-up expenses following the spill of 40,000 cubic meters of copper sulphate acid solution from the Buenavista mine. The company faces fines in respect of environmental violations estimated at a further US\$3 million. Criminal complaints were promptly filed in relation to the incident.

The Herculano dam failure in Minas Gerais, Brazil resulted in three fatalities.

Duke Energy incurred costs of US\$20 million in the first five months of a clean-up operation after the collapse of a drainage pipe under a 27-acre ash waste pond resulted in the release of c.74,400 tonnes of coal ash and 27 million litres of contaminated water into the Dan River in North Carolina, United States.

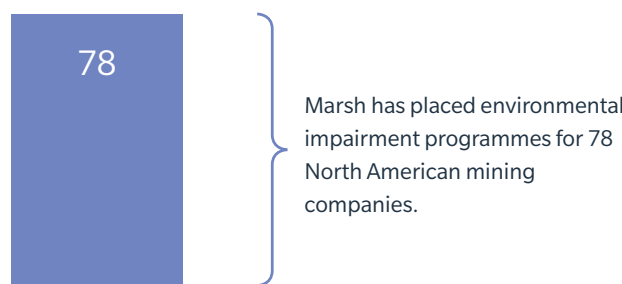


Source: Yahoo Finance.

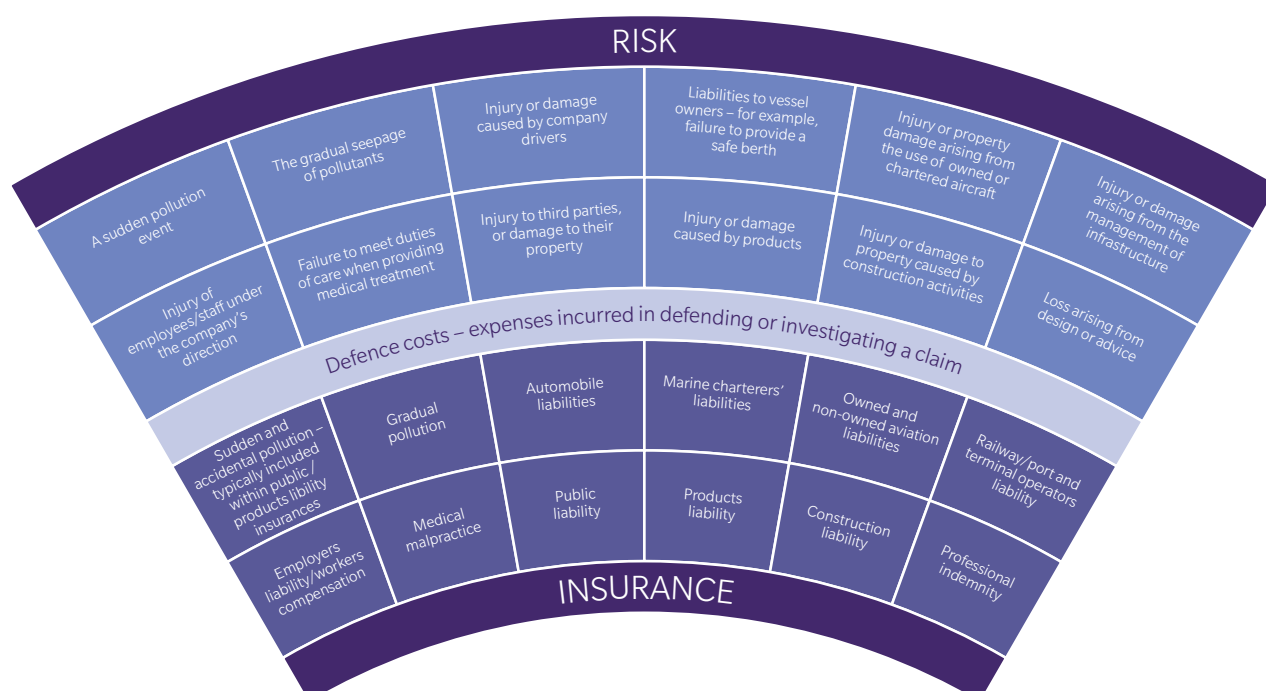
"Imperial Metals Corp. (IPMLF) "

<https://uk.finance.yahoo.com/qbc?s=IPMLF&t=1y&l=on&z=l&q=l&c=>

Accessed 16 January 2015.



The main mechanism by which risks of harm are insured is the coverage of legal liabilities that attach to a company (or its staff and management) for such harm – and coverage for defence costs associated with contested claims of injury or damage.



While insurance products generally provide comprehensive risk transfer for liability risks, effective risk management provides primary protection for mining and mineral processing companies. Marsh Risk Consulting services include enterprise risk management consulting services, oriented to the design and implementation of enterprise-wide risk control culture and systems, as well as focused employee welfare consulting services.

In practice, the occurrence of a major risk event can impact a range of stakeholders. A recent loss event at a mineral company's ship-loading facility resulted in damage to third-party vessels, (public liability/terminal operators liability), employee injury (workers compensation claims), claims from chartered vessel owners for failure to provide the warranted "safe berth" (charterers liability claims), allegations of environmental impact

(public liability sudden and accidental pollution coverage), and investigation costs in respect of management liabilities. The event clearly highlights the importance of carefully dove-tailing liability insurance products to avoid gaps in coverage, as well as the ability to manage complex claims events affecting multiple insurers with potentially competing interests.



SUPPORTING COMMERCIAL AND CORPORATE ACTIVITY

Off-strategy risk extends beyond risks originating with a physical event or activity to include risks associated with corporate activities such as new country entry, mergers, acquisitions, and divestments, as well as credit, fraud risks, the duties of management to a range of stakeholders, and coverage of dependencies on key individuals.

MANAGEMENT LIABILITIES

Management and staff of mining companies face a broad array of professional obligations against a background of increasing regulatory complexity and volatile economic conditions.

They not only require protection should they as individuals face allegations of failures to meet the standards of care required of them in professional life, but companies also require coverage to the extent that they themselves indemnify employees.

THERE ARE SEVERAL COMMON SOURCES OF MANAGEMENT LIABILITIES:

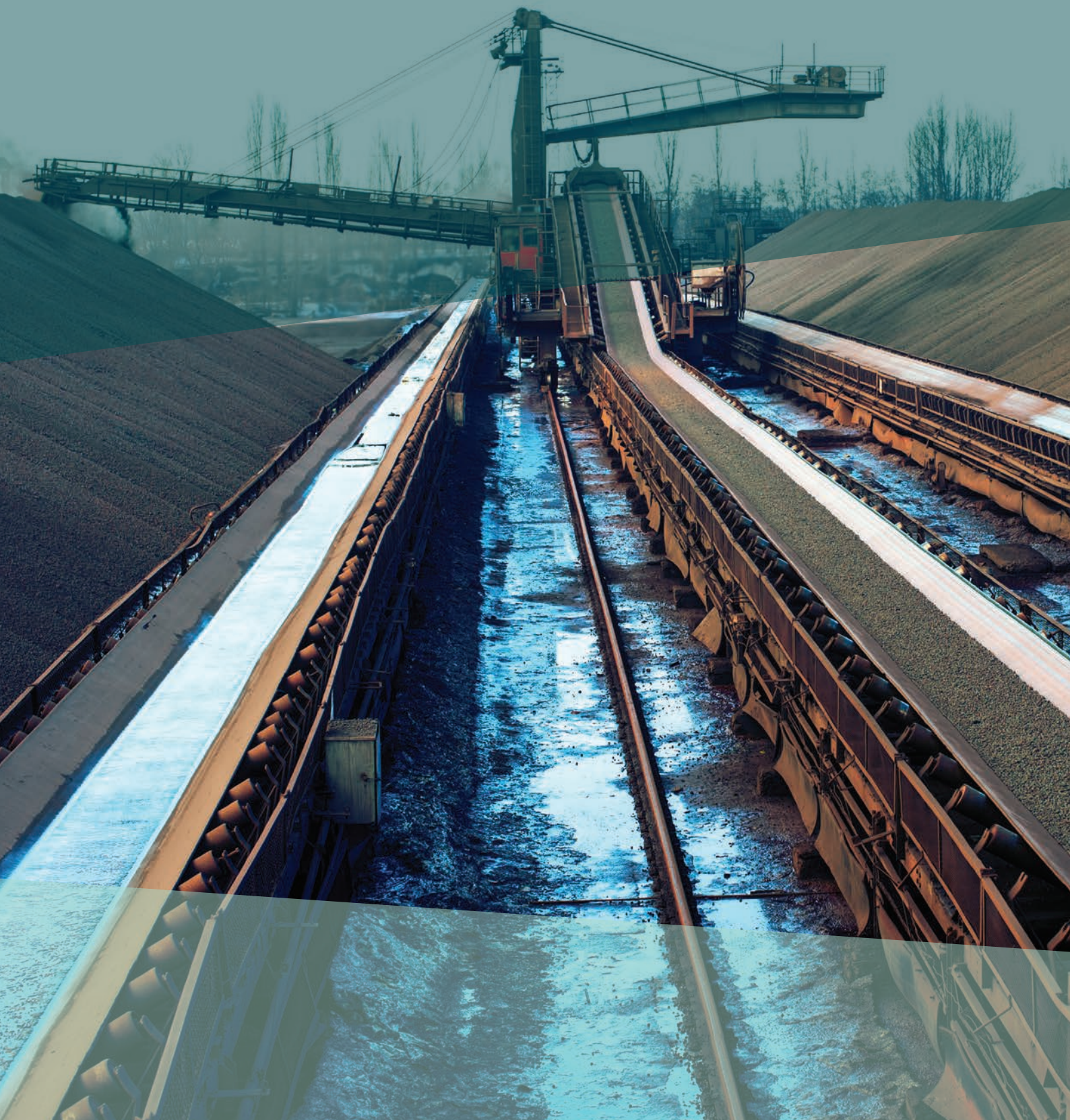
- Strategic decision-making – mining projects can take years to come to fruition, creating significant exposures to changing external conditions. Reserves and potential reserve assessments and disclosures also mean mining executives are required to make statements and decisions in areas that remain subject to uncertainty. If plans change over time, this can lead to shareholder lawsuits and put decision-makers in the spotlight.
- Fund raising – as mining is extremely capital-intensive, many companies are forced to regularly access debt and capital markets. While IPOs are an obvious risk, heavily discounted rights issues and secondary offerings can significantly dilute equity and create an adversarial shareholder community. Debt offerings and restructurings are not risk free, as discovered by issuers facing reduced terms in recent years.
- Mergers, acquisitions, divestitures, and share offerings bring close regulatory, media, employee, and investor scrutiny. The pressure to increase reserves and project pipelines in mature markets means the mining industry is seeing a high level of mergers and acquisitions activity.
- Environmental liabilities and site rehabilitation – in many cases, directors and employees are at risk of criminal prosecution for any pollution incidents that result from their operations.
- Employment practices – often centering around equal employment opportunities, sexual harassment, wrongful termination, and discrimination, employers face significant potential liabilities from employment practices liability (EPL) lawsuits, which can not only result in financial impacts, but also damage to reputation.
- Specific fiduciary obligations – mining company management may be exposed to specific fiduciary obligations, such as those incumbent on pension fund trustees.

The implementation of appropriate risk management and corporate governance standards, and the effective management of financial risk within the balance sheet, are critical to delivering shareholder value. Failure to do so can result in crippling law suits.

The increased availability of litigation funding and cost insurance means that law suits are only likely to increase; this is exacerbated by the development of securities class actions in previously “safe” jurisdictions.

The Marsh approach to management liability risks relies on specific client reviews to ensure that each client’s insurance coverage matches its individual risk profile and risk transfer objectives. Marsh’s Global Advisory Board keeps abreast of vital industry news, such as new legislation, and provides for innovative product solutions.

The extensive Marsh mining and general client base supports benchmarking tools which allow us to review our clients’ individual exposures and advise on the buying patterns of their peers, model likely shareholder damages after hypothetical stock price reductions, and benchmark a client’s programme relative to risk to understand the economic value of each layer of insurance bought.



POLITICAL RISKS

Vulnerability to government intervention is a hallmark of the mining industry, with often substantial foreign investment directed to the development of fixed assets and infrastructure in a host state. Mining investments typically have extended return periods, creating exposure to changing political environments within host nations, and can represent both a highly visible and valuable stream of earnings subject to risks that, in the worst case, can culminate in the appropriation of assets.

INSURABLE POLITICAL RISKS

Expropriation
Forced abandonment
Contract frustration
Currency inconvertibility
Forced divestiture
Licence revocation
Contract repudiation
Arbitration award default
Business interruption

Political risks insurances not only provide risk transfer, but can also play a role in the management of the underlying risk. In particular, the World Bank's Multilateral Investment Guarantee Agency (MIGA) can cite cases where its advocacy has helped deter adverse government actions. Marsh Ltd is a registered broker with MIGA.

Our political risk specialists are drawn from the worlds of banking and political risk underwriting, and include professionals with decades of experience working with the mining industry — for both private insurers and government agencies in the export credit and investment arena.

We are familiar with the commercial needs of the private market and the policy requirements of bilateral and multilateral entities. This enables us to tailor and structure policies to address specific project risks within a host country. Our extensive network of relationships helps us find sufficient cover for all project sizes — even when adverse press may be focused on mining operations in countries where our clients operate or where they are planning to start projects.

As well as placing political risk cover for a broad range of mining companies throughout the world, we also place cover for lenders providing finance to mining projects and to contractors hired to construct and operate mines.

A high-profile mining company had obtained a precious metals concession in a Latin American country experiencing government instability, civil unrest, and controversy relating to concessions the government was granting. Marsh, together with the company's financial adviser, negotiated the coverage with the underwriters of a private sector insurer and the Overseas Private Investment Corporation. The policy was carefully tailored to address the specific risks that characterised the country granting the concession. Marsh advised the client throughout the six-month process on the structuring optimal coverage and policy wording. The resulting policy protected the client against:

- Expropriatory actions that could result in an outright taking of the investment, or deprive the investor of its fundamental rights.
- Damage to (or abandonment of) assets resulting from politically motivated violence, including war, civil war, civil strife, terrorism, or sabotage.
- Business interruption.
- Currency inconvertibility.



MERGERS AND ACQUISITIONS

Both corporate buyers and sellers are at risk of not creating adequate value in the acquisition or disposal process. Common factors behind lack of success for either party are:

BUYERS	SELLERS
Overpayment.	Purchase price disputes.
Unfunded post-deal completion issues – such as uninsured legacy liabilities.	Failure to secure a “clean exit” – post-deal completion issues, such as warranty and indemnity claims, impair the success of divestiture.
Problematic warranty and indemnity claims.	

Understanding the cause of these issues, and the impact that they have, can mean the difference between:

- A more efficient price, versus overpayment or post-close surprises.
- Clear sale and purchase agreements, versus ambiguities in respect of un-considered risks.
- Smoother, faster integration, versus delays and unrealised synergies.
- Effective diligence and corporate governance, versus control failure.

Risk and insurance due diligence lowers the level of uncertainty, and reduces the risk of surprises after a deal closes – warranty and indemnity insurance can then provide coverage for residual risks, providing buyers with access to secure funding for warranties and indemnities received, and supporting a seller's clean exit.

Marsh's Private Equity and Mergers & Acquisitions practice (PEMA) works to provide risk and insurance advice that complements traditional financial, legal, and commercial due diligence. Our advice enables clients to better understand the risks in any given transaction and factor them into negotiations and pricing.

IN SUMMARY, WE REPRESENT BUYERS AND SELLERS TO:

BUYERS	SELLERS
Identify risk and insurance issues that affect the financial negotiations, such as large retentions, self-insurance, etc.	Identify potential transaction issues that may influence the deal.
Evaluate current and historic insurance programmes to determine the quality and the extent of remaining insurance limits as well as the solvency of historic insurers.	Compile high-quality, consistent, and robust information for potential buyers.
Identify and resolve insurance and risk issues in the sale and purchase agreement.	Mitigate or remove issues that buyers could use to negotiate price reductions.
Develop pro-forma insurance cost projections.	Ensure the sale and purchase agreement reflects the manner in which insurances will and will not respond.
Determine the adequacy of reserves in respect of risks formerly retained by a target company.	Identify changes to the seller's current insurance programme necessitated by divestment.
Place a range of transactional risk solutions, which provide cover against a number of deal obstacles that can lead to purchase price disputes.	Consider the use of insurance to solve any specific warranty, tax, litigation, or environmental issues.

TRADE CREDIT

Recent years have seen three key trends emerging in the commercial processes of mining and minerals companies:

- Major shifts in customer base as commodity markets orientate further towards an Asian customer base – with the increasing establishment of sales and marketing hubs in Asia, and the introduction of new credit risks to mining client portfolios.
- Increasingly sophisticated product blending to capture the incremental value associated with particular feedstock and smelter characteristics – increasing the focus on specific customers.
- Increased mining company interest in trading around natural long positions, rather than traditional price-taking.

Each of these trends has an impact upon the credit risk exposure borne by mining companies. Additional factors, such as the closure of older steel capacity, may also accelerate credit consolidation.

- Credit insurance can mitigate these risks, and Marsh designs solutions that allow your company to extend credit without increasing the risks associated with bad debt.
- It can help you sell confidently to new customers in a variety of regions.
- It can enable you to offer competitive payment terms by transferring credit risks to an insurer.

Credit insurance also has a role to play in reducing financing costs. Credit insurance has helped clients improve their financing arrangements with trade finance banks by supporting increased lending, improving pricing, and obtaining other improvements in financing terms. Programmes may also be designed to support the sale of accounts receivables to financial institutions in a simple format to improve certain key financial ratios, including cash flow, leverage, and return on assets. Banks that understand trade credit insurance may also be able to provide more flexible financing for larger customers, privately owned customers (without full financial disclosure), and others by using the unique capabilities of the insurance market as opposed to capital market solutions or on-balance-sheet lending.

SURETY

Surety requirements are a common non-insurance alternative to the risk exposure that a principal will not carry out an obligation to a third party. Remediation and reclamation bonds provide a common mining example.

MARSH'S SURETY PRACTICE IS STRUCTURED TO REFLECT COMMON SURETY REQUIREMENTS:

- Construction surety - providing in-depth industry knowledge, solutions, project analysis, contract review and day-to-day construction bond execution services. Examples of these bonds include construction and environmental performance, payment, supply, maintenance, and warranty bonds.
- Commercial surety can obtain the best capacity at the lowest cost for general corporate surety needs – including surety required by judicial processes, financiers, mine reclamation, and to support self-insured workers compensation arrangements in certain jurisdictions, and custom tax guarantees.
- International surety operates in the context of international trade, negotiating surety credit to replace letters of credit, thereby creating additional bank lending capacity for clients. Examples of these bonds include advance payment, trade guarantees, construction, performance, warranty, and maintenance bonds.

PLACEMENT, CONSULTING, AND TRANSACTION SERVICES INCLUDE:

- Financial analysis and benchmarking.
- Surety risk profile analysis.
- Bond approval and execution.
- Contract review and analysis.
- Bond placements and negotiations.
- Indemnity analysis and negotiations.
- Surety captive feasibility studies.
- Surety company proposal analysis.
- Bond claim advice.
- Strategies to increase surety capacity.
- Strategies to reduce surety costs.
- Subcontractor risk management analysis.
- Surety submission preparation.
- Surety stress test.
- Surety rate benchmarking.
- Bond form language review and analysis.
- Surety bond list reports.



MARSH'S MINING PRACTICE

Marsh's Mining Practice comprises 269 colleagues engaged in the servicing of metals, minerals, and mining risks worldwide. Marsh's Mining Practice has a unique breadth of experience – more than half of the major mining companies listed in the finance section of Mining Journal entrust insurance arrangements to Marsh's Mining Practice.

Placing insurance for

US\$594bn

of total mining companies' property and earnings values.

US\$34bn

of insurance capacity purchased annually on our clients behalf.

269 colleagues

servicing metals, minerals, and mining risks worldwide.

29.5%

of copper world mine supply is generated by mines for which Marsh places insurance.

30%

median PD/BI rate reduction secured for Marsh's Mining Practice clients from 2011 to 2014.

US\$600m

of mining property and casualty insurance premium is placed by Marsh's Mining Practice per annum.

100%

of sampled copper clients (representing 29.5% of world mine supply) would recommend Marsh's services to a peer group mining company.

US\$122bn

of underground insurable values are protected by US\$6.4bn of underground insurance capacity purchased annually by Marsh on our clients' behalf.

Offices in 130 countries

provide our global servicing network – supporting your operations in all geographies.

BENCHMARKING CAPABILITIES

The size and diversity of our global mining client portfolio has enabled Marsh's international placement division, Bowring Marsh, to develop a market-leading and award-winning bench-marking tool – the Risk Analysis Modelling Platform (RAMP).

Using data points such as critical catastrophe exposures, deductibles, key sub-limits, loss limit, loss ratio, commodity production profile, and mining method (open pit or underground), RAMP enables us to provide important in-depth management information on a confidential basis.

FEATURES AND BENEFITS OF RAMP:

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 mining peers.
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 (that is, comparing specified quarters and/or years).	The ability to provide quick "ball-park" estimates for either new or renewing business based on historical trends.

CLAIMS MANAGEMENT

At Marsh, we recognise that a prompt and comprehensive claims settlement is the ultimate deliverable of the insurance product. Our team includes more than 100 claims professionals worldwide with experience of mining risks and the complexity associated with mining claims – particularly complex business interruption and contingent business interruption claims. Marsh's Claims Practice provides:

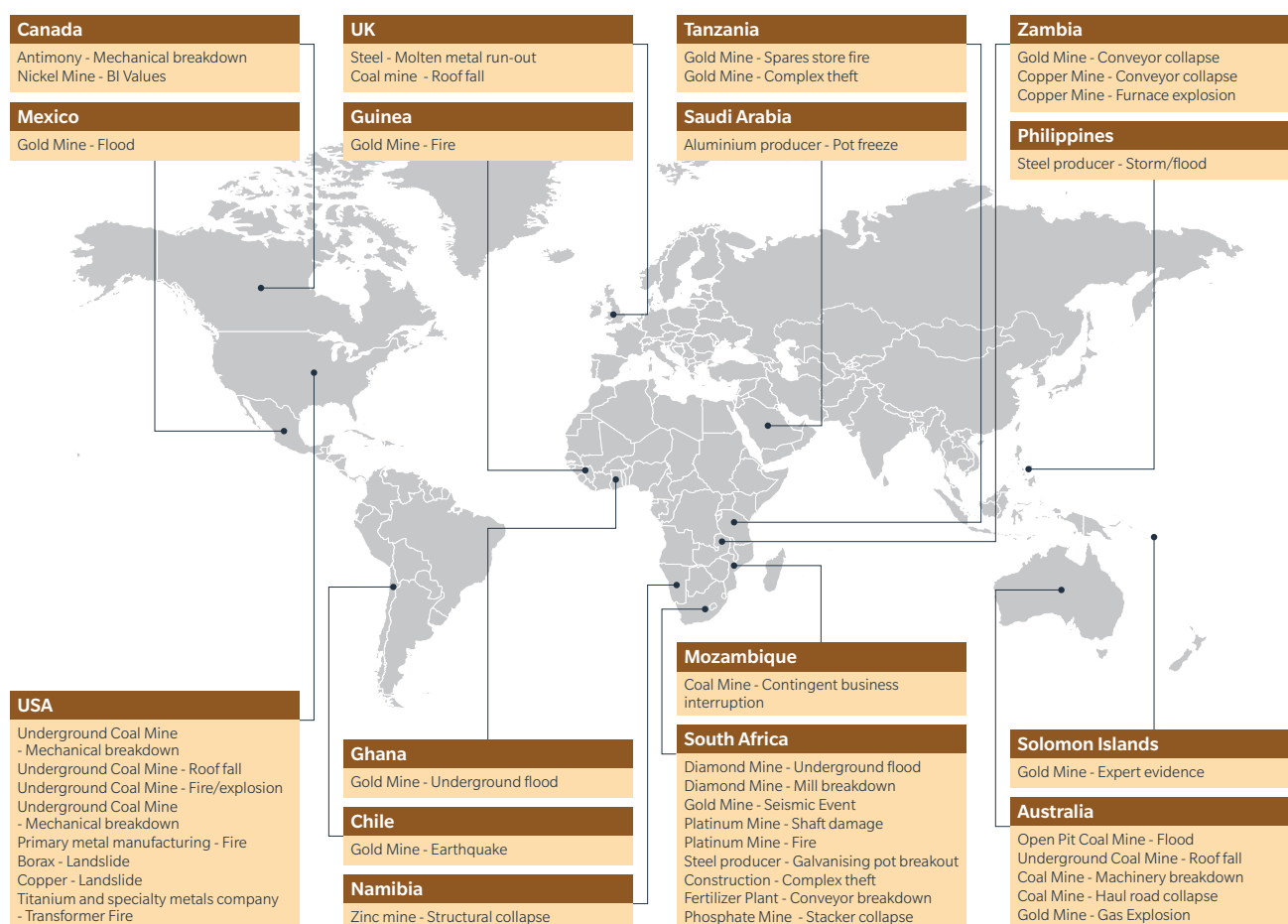
- Scenario testing – reviewing potential policy response ahead of loss, to support coverage development.
- Developing claims protocols – in our experience of major mining losses, an agreed process for claims handling can provide vital support to a smooth and efficient settlement process.
- Claims advocacy – our claims advocates support the negotiation of challenging claims and provides guidance to clients on policy interpretation and best-practice presentation of claims. Our claims advocates also support “lessons learned” post loss reviews and pre-loss coverage reviews.

In addition, the Claims Practice is supported by the Forensic Accounting and Claims Services (FACS) Team, which is a leading provider of insurance loss measurement, accounting, engineering, and claim preparation and advisory services. Our strengths are our people – a highly experienced team of accountants, loss adjusters, forensic engineers and other professionally qualified experts; a number of whom have transferred skills to support corporate clients rather than the traditional insurance market. Our core business is the measurement and quantification of the material damage, business interruption, and increased costs of working losses in large or complex claims.

When a major or complex loss occurs, our professionals provide insurance claims accounting and preparation services, helping our clients prepare and submit claims to expedite a superior recovery. Our team of professionally qualified experts also provides parity with the numerous third parties appointed by insurers on major claims. We engage with these third parties on an expert-to-expert basis.

The FACS team has significant mining and mineral processing experience, gained in more than 150 mining engagements ranging from bulks to precious metals, and from Australia to Zambia.

SELECTED FACS MINING AND MINERALS CLAIMS ENGAGEMENTS



MARSH RISK CONSULTING

With more than 70 years' experience of working with clients in the mining industry, MRC provides advice, analytics, tools, research, and solutions for a wide range of risk issues and is perfectly positioned to help mining companies better understand their risk profile and find appropriate protection.

Our dedicated professionals combine in-depth knowledge with leading industry thinking and advice to meet mining companies' day-to-day needs and keep them ahead of their risk exposures.

THE MARSH POSITION – SOLUTIONS FROM MRC



ENTERPRISE
RISK SPECIALISTS

BUSINESS
CONTINUITY
SPECIALISTS

FORENSIC
ACCOUNTANTS

PROPERTY LOSS
CONTROL
ENGINEERS

WORKFORCE
STRATEGIES
SPECIALISTS

MRC OFFERS THE FOLLOWING SERVICES TO HELP MINING COMPANIES MANAGE THEIR RISK EXPOSURES:

Strategic risk management – We support mining company executives by using a structured methodology to identify, define, and assess risks to their business strategy, financial performance, and operational effectiveness.

Enterprise Risk Management (ERM) – An ERM framework supports the alignment of strategy, processes, people, technology, and knowledge, with the purpose of evaluating and managing the daily uncertainties a mining company faces, minimising the occurrence of risk events and thereby total cost of risk.

Supply chain management – We help mining companies understand potentially critical failure points throughout the supply chain – of critical importance given the long lead times for many critical items – and to achieve more adaptive and resilient supply chains for our clients by:

- Helping clients understand their key risk exposures not only in their own supply chains, but also those of their suppliers.
- Providing options and alternatives via a risk management plan that reduces the potential exposure to their business (including pricing and modelling).
- Helping clients execute a risk strategy in collaboration with key suppliers.
- Providing risk transfer options for critical risk exposures in the supply chain.



RISK FINANCE OPTIMISATION

Risk finance optimisation is the process of modelling risk to inform risk finance decision-making and identify the optimal balance of risk transfer and risk retention to achieve efficient risk financing. The process begins with the identification of risk tolerance and risk appetite, before the construction of stochastic risk models to help you understand the potential volatility of each line of coverage and the optimal balance between retained and transferred risk at any retention level or for any “layer” of risk, allowing the effective appraisal of the value and cost effectiveness of insurance.

- We use state-of-the-art actuarial techniques for our modelling; however, we enhance the modelling with industry and line-of-business specific loss distribution and real-time pricing data, which significantly improves the quality of the analysis.
- We calculate the economic cost of risk (ECOR), which is putting a price to the cost of retaining risk on your own balance sheet. This enables an assessment of how and where insurance programmes can add value in terms of costs but also volatility reduction.
- The results enable you to structure the right blend of own and third-party capital for your future insurance solution.
- The results allow the review of your current insurance programme’s financial efficiency.
- Many of our clients achieve significant reductions in their total cost of risk (TCOR) by optimising their insurance programme thereafter.

BUSINESS INTERRUPTION (BI) REVIEWS

Setting up an effective BI insurance programme requires an in-depth risk assessment of both the operational and financial dimensions of the business. The outcome of the assessment determines the breadth and basis of cover, the BI sum insured, indemnity periods, and essential cover extensions. Other components that need to be considered include supply chain dependencies, redundant capacity, changing customer demands, and market trends. Marsh’s business interruption insurance reviews utilise our in house FACS team to examine a mining company’s existing BI insurance programme and ensure the key exposures have been carefully examined.

CRISIS MANAGEMENT

Mining companies often operate in extreme conditions, making significant investments to access deposits that increasingly require large capital expenditure sums and a sophisticated level of skill and technology to exploit economically. In such a challenging context, failure to effectively manage the occurrence of a significant risk event can threaten the business. Effective crisis management protects the company and both the management and board’s credibility, as well as other stakeholders in the company. Marsh’s crisis management advice can help minimise an organisation’s risks, reduce costs, and create an opportunity to enhance brand value, human capital, and public trust.

ASSET VALUATION

Our FACS valuation group can introduce an electronic data capture and asset tagging system, which utilises handheld computers with integrated barcode scanners to verify and value all tangible assets on site. When combined with our proprietary asset register software, we can provide our mining clients with a detailed verification and valuation of assets at unit level that will support any assets/revenue audit.

BUSINESS CONTINUITY MANAGEMENT (BCM)

Business continuity management consists of identifying threats to an organisation and developing business continuity plans that respond from initial events through to full recovery. These plans are developed by prioritising business operations, identifying tolerable downtimes, assessing financial and non-financial impacts to the business, and outlining recovery strategies in the event of an interruption.

Marsh can review and audit existing plans to identify gaps and areas for improvement and also provide a range of plan scenario testing to ensure that clients’ BCM arrangements remain fit for purpose.

Our BCM experts can also visit key supplier locations and assess their existing continuity preparations, identifying risks in the supply of critical products and services to our mining clients.



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The information contained herein is based on sources we believe reliable and should be understood to be general risk management and insurance information only. The information is not intended to be taken as advice with respect to any individual situation and cannot be relied upon as such.

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GRAPHICS NO. 14-1430

