Exploding onto the scene
Serious dust suppression

Nominations are now open for the 7th Annual Australian Mining Prospect Awards
Safety is everyone’s right

Ensuring a safe working environment within a mine should be a number one priority.

It is a reasonable expectation for miners that when they enter a mine, they will come out at the end of their shifts, tired but none the worse for wear.

It is also reasonable to expect that a miner should not have to fear for their lives every time they enter the shaft or step foot into the pit.

From gargantuan vehicles traversing the mine site, to fast moving heavy machinery to the fact that much of the profession works far underground, the dangers of the mine site are nigh on endless.

It is the responsibility of a mining company to ensure that their workers can carry out their jobs without the concern of injury or worse.

But there is also the expectation that miners will carry out their jobs to a level that does not endanger them or their fellow workers.

Following a rash of fatal incidents across the world, from China, to the US and even right in our own Western Australia, the question of what are acceptable levels of safety on mine sites has surfaced again.

While mining accidents are a common occurrence throughout Africa and in China, the general consensus is that mining in countries like Australia and the US is certainly less risky when compared to the former.

Recent events at Leinster and in West Virginia however, have proven that mining is a dangerous profession, with the onus of providing a safe working environment lying squarely on the government and mining companies.

After the underground explosion in West Virginia, much needed greater scrutiny is being paid to companies that delay in assessing safety violations or accidents as it should have always been.

Correcting these violations or further in-depth investigations into the root causes of the incidents is needed.

Following two rock fall and vehicle incidents last year at the Leinster mine, it should not have been inevitable that another accident would have occurred.

In this issue, we have looked at steps that miners, industry bodies and the Government have taken to redress some of these problems.

From the enacting of a safety levy on all mines to finance more safety inspectors, to raising safe workplaces standards and implementing new technology such as requiring the installation of proximity sensors on all mine vehicles, a raft of new standards are being enacted.

But is it enough?

What is needed to effectively ensure that the issue of working in a safe environment should not be the number one concern for miners?

ON THE COVER

On the front cover is a view from behind a fog cannon as it creates a mist curtain over a stockpile.

New to Australia, the cannons are used to suppress dust from a variety of sources such as stockpiles on the front cover, during reclaiming and transport as well as during the loading and discharging of ores from ships.

One of the innovative uses for the cannons has been its role in dust suppression during blasting.

Considering the amount of dust and airborne particles thrown up into the air during blasting, the number of options to suppress and prevent it are fairly limited.

While some operations do not take any suppressant measure, others heavily wet the soil in the blast area to the point where it is damp enough to minimise the levels of dust and other airborne particles being ejected into the air.

The fog cannons operate by blasting water particles up to distances of 250 metres. Currently being prepared for trials at an iron ore mine in Western Australia, the outcomes and the potential for a dry and dusty country like Australia will be an interesting one.
Having a **Blast**

A company has gone outside the traditional canon of dust suppression.

The aftermath of blasting creates a number of unique problems. One of the major, although more overlooked, problems is how to deal with all the dust that is immediately thrown upwards or outwards.

While some mines have had success using traditional methods which employ extensive wetting of the site prior to blasting, making the soil damp enough requires large amounts of water as well as the additional logistical problems of transporting and spraying.

A more strategic approach was required to suppress and control the level of airborne dust particles.

Wet Earth is tackling this problem head on through the use of fog cannons.

Nicholas Marks told *Australian Mining*.

Despite being used overseas, the cannons have not been utilised within Australia to date, Marks saying Wet Earth is currently preparing for trials at an iron ore mine in Western Australia.

International tests have shown the fog cannons’ ability “to suppress up to 95% of airborne particles via a mist curtain that is spread to distances of up to 250 metres.”

The fog cannons also have automatic rotation of 330 degrees with adjustable elevations of between 0 and 45 degrees.

By being directed at the source of the dust the mist curtain is able to rapidly suppress the emitted dust before it can disperse and become airborne.

With a number of fog cannons directed at a blasting site, the airborne particles can be close to fully suppressed after blasting.

The long distance of 250m is needed as “anything below 80 metres simply will not cover the area required to effectively suppress the levels of dust raised,” Marks explained.

The water consumption of the fog cannons vary depending on the model, ranging from 15 litres per minute up to 680 litres per minute.

As well as blasting, the fog cannons can be used to suppress dust of ore stockpiles, discharging ships, during reclamation, crushing, dumping and the loading/unloading of trucks.

The fog cannons come with the option of an intrinsically safe version for explosive atmospheres.

Chemicals can also be added to the spray to increase the performance of suppressing airborne dust.

Wet Earth
Nicholas Marks
02 6062 3301
www.wethearth.com.au