FLASHPOINT

Spring 2014

Remediation sites prioritised and H&S reforms continue

NZ INSTITUTE OF HAZARDOUS SUBSTANCES MANAGEMENT

USEFUL ORGANISATIONAL CONTACTS

NZ Institute of Hazardous Substances Management
(formerly the Dangerous Goods Inspectors Institute)
www.nzihsm.org.nz
The official home of professionals committed to the safe management of hazardous substances and dangerous goods.

The NZIHSM is a 'not for profit' industry association specialising in improving safety, health and (site) environmental performance, particularly the safe management of hazardous substances in the community.

Responsible Care NZ
Box 5557 Wellington 6145
Responsible Care NZ works with industry partners to implement the Hazardous Substances legislation.

Worksafe (MBIE)
www.worksafe.govt.nz
Government agency formed to povide compliance advice and enforcement of hazardous substances. Responsible for hazardous substances certiicates.

EPA
www.epa.govt.nz
The EPA administers the HSNO Act and supplies extensive information on working with hazardous substances.

Ministry for the Environment
www.mfe
The Ministry provides policy, publications, technical reports and consultation documents on HSNO legislation.

Department of Building and Housing
www.dbh.govt.nz
The Government agency that maintains the Building Act and the Building Code.

Local Government NZ
www.lgnz.co.nz/lg-sector/maps/
Local Authorities have responsibility for policing building controls. Some local authorities are contracted to Department of Labour to provide enforcement of hazardous substances legislation.

Government legislation
www.legislation.govt.nz

If you know of other agencies which could be useful to members, please let us know at office@nzihsm.org.nz.

Heath & safety reform begins!

It was once said that the group most capable of unity is the human race, and perhaps this is why we are the most dominant player on our planet today! Conversely, it was also said that the group most capable of disunity is the human race, and given our recent mastery of technology, tools, chemicals and weapons these could, if misused, also lead to our destruction like others of the dominant players before us.

This 'unity' should usually start with a common goal, which in the case of the NZIHSM is the "The protection of communities, people and the environment against the adverse effects of hazardous substances, while maintaining the benefits of these."

Similarly, in the latest round of inclusion of all safety items within a single compliance certification and enforcement brief under Worksafe, could read: "The protection of communities, people and the environment against the adverse effects of hazards, while maintaining the benefits of these" – with chemicals being possibly the single most dangerous player amongst the hazards due to their ready availability and use.

Does this quest for unity, or a common goal, mean that we should all think the same? Hell no! Some of the brightest ideas developed by humans have come from left field or even an apple on the head!

With this in mind, the NZIHSM will continue to gather all relevant ideas that enable us all to enjoy the fruits of our success whilst protecting against the adverse effects of these based on our combined over 30 years of New Zealand-based experience. We look forward to our members, new Minister, Crown agencies and other involved parties continuing to assist us with this endeavour, as it begins, again!

Thanks and best regards

John Hickey
Institute President

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Flashpoint

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Transfer to Worksafe:

Business as usual!

The development of a new regulatory framework for health and safety, including the management of hazardous substances, continues apace. The Health and Safety Reform Bill had its first reading in Parliament on 13 March, 2014 and was referred to the Transport and Industrial Relations Select Committee.

Submissions closed in May and the Committee's report back is due later this year. Over 200 submissions have been made, including many from HSNO test certifiers.

At the same time, The Ministry of Business, Innovation and Employment is working on the development of regulations to support the new Health and Safety at Work Act. This is an integral part of the Government's Working Safer package of reforms that aims to reduce New Zealand's workplace serious injury and death toll by 25 percent by 2020. Consultation on these regulations closed on 1 August.

The Government's intention is for the new Act and regulations to be in place by 1 April, 2015. Under this regime, the requirement to address and manage risks from hazardous substance to people's health and safety in the workplace will be the responsibility of WorkSafe NZ. The corresponding provisions currently administered by the Environmental Protection Authority will be removed from the HSNO Act. The assessment and approval of new hazardous substances for introduction in New Zealand will remain with the EPA to administer under the HSNO Act.

In anticipation of these new functions coming to WorkSafe NZ, the EPA has, in the interim, delegated the equivalent HSNO powers to WorkSafe NZ (see Box 1).

This will enable WorkSafe to commence its new functions from 1 September, 2014, in advance of the new Act and regulations. By bringing forward the date, the longer-term transition to the new regulatory framework will be considerably smoother. WorkSafe NZ will by then be geared-up, resourced and have the necessary systems and processes in place for a seamless transition. This will provide greater certainty and benefit to industry as well as the regulatory agencies.

During the period of delegation (from 1 September, 2014 through to when the new legislation is in effect), WorkSafe NZ will be adopting, as far as practicable, the same systems and processes currently used by the EPA. This means, that in seeking an approval or any other engagement with Worksafe NZ on HSNO matters, you should see little change.

Various applications forms and guidance material will be on the WorkSafe website, along with the statutory registers that are required to

be maintained under the HSNO Act.

Similarly, the numerous HSNO approved codes of practice that relate to workplace activities are moving to WorkSafe NZ (e.g. Code of Practice for Existing Stationary Container Systems up to 60,000 Litres), and will be available on the WorkSafe NZ website.

All existing approvals given by the EPA, whether to an individual or organisation (e.g. approval as a test certifier, a CSL holder, or a waiver or compliance plan etc), are unaffected by the delegation. These approvals remain valid until any expiry date specified in the approval.

The EPA's hazardous substance information line (0800 376 234) will be transferred to WorkSafe NZ, and callers will continue to hear the same dulcet tones of Antony Kitchener. Other staff from the EPA's hazardous substances team are also moving to WorkSafe NZ, so a high level of experience and continuity can be assured.

A dedicated email **hsinfo@worksafe.govt.nz** has been set up to receive queries from test certifiers, industry and other stakeholders.

Hazardous substance certification and approvals are not the only type of approval or registration that WorkSafe NZ is responsible for.

To receive the new HSNO functions and integrate them within its existing regulatory

obligations, a Certification, Approvals and Registrations team has been established as part of the High Hazards and Specialist Services Group at WorkSafe. The CAR team will have responsibility for:

- HSNO test certifications;
- controlled substance licences;
- HSNO sites and equipment approvals;
- occupational diving certifications;
- amusement device registrations;
- asbestos removal certificates of competency;
- adventure activity registration;
- forklift driver training certificates of competency;
- certificates of competency for equipment inspections;;
- certificates of competence for powder-actuated tools.

For more information on the transfer of functions, WorkSafe NZ has published a series of Frequently Asked Questions, available at: **www.worksafe.govt.nz**

NZIHSM News

In this period of H&S regulation change, specific items that NZIHSM are providing voluntary assistance for in amongst other items include:

- High hazards Guidance Group:
- HASANZ: An association of safety associations
- HSNO Guidance Group:
- Class 1 Fireworks
- Australian DGCI (Sydney)
- any members who also want to assist are welcome to contact us at office@nzihsm.org.nz

Again thanks for your efforts to date and if you have any queries, please do not hesitate to contact us directly on office@nzihsm.org.nz

Best regards
John Hickey
NZIHSM

Lack of data protection hurting NZ agriculture

Farmers and growers are missing out on technologies available overseas due to New Zealand's weak protection of scientific information or data.

New Zealand has one of the worst data protection regimes in the developed world, which results in a myriad of problems for farmers and growers who cannot access fit-for-purpose products they need to farm productively.

Lack of data protection is a particular headache for growers of minor crops and farmers of minor species. Minor crops are most fruits and vegetables with the exception of grapes, apples, and kiwifruit, while minor species include deer and goats.

Farmers and growers cannot access products they need because manufacturers cannot make a dollar from the high cost of registering a product, including conducting field tests and trials, when a competitor can copy the first registration at minimal cost.

A lack of protection also removes the incentive for manufacturers to update old labels with new information, because the information is quickly copied at no cost to competitors.

"New Zealand currently has five years' protection for new agrichemicals," says Agcarm chief executive Graeme Peters.

"Agcarm has seen numerous examples of off-patent products which will not be registered for sale in New Zealand because suppliers cannot assemble a business case to support registering them. Equally, companies are reluctant to invest in researching New Zealand solutions to New Zealand pest and disease control problems."

Long payback

In a small market like New Zealand, the payback period is simply too long to make launching new chemicals and veterinary medicines attractive under such a short protection period. With older chemicals such as organophosphates and carbamates being removed from the New Zealand market, it's vital that new products emerge, he said.

"The availability of new technology has been made more urgent by the Environmental Protection Authority

Description of legislative changes for data protection

Category	Current	Agcarm asked for	Government proposal
New actives – one use	Five years	10 years	Five years
New actives – multiple uses	None	Not requested	Five years. Plus one year per use up to three.
New uses and new formulations	None	10 years	Three years
Review of older products	None	10 years	None

phasing out approvals of about 30 older technologies in coming years."

Organophosphates are considered an important tool for biosecurity, which is crucial for New Zealand producers to stop pest threats at the border. The pressure is on farmers and growers to find alternative 'softer' chemistries.

In many cases, these alternative new generation chemicals – often with more specific targeting properties – exist, but they are less likely to be marketed in New Zealand.

Developing new technology is expensive due to the cost of assembling thousands of pages of data proving that a product works, is safe for people and the environment, and residues in produce are well below acceptable limits. The data supplied in support of an application represents a significant investment – costing hundreds of thousands of dollars.

Before any agrichemical or veterinary medicine is used in New Zealand, approval must be granted by two regulators: the EPA and the Ministry for Primary Industries. Assembled from laboratory tests and field trials, the regulators use the data to assess how a product is made and works, and its impact on humans and the environment.

This must be done before a product can be sold in the New Zealand market.

In most cases, this data is not protected from competitors. Consequently, they can produce identical

An example of how data protection is withholding technology:

Nufarm has a number of ideas and projects that are on hold due to New Zealand's weak data protection laws.

Nufarm regrets carrying out some projects due to competitors very quickly entering the market with no data, and often with substandard formulations.

An example is a product called Pro-Gibb. It took four years and over 40 trials to develop for use in pasture and results in 30-40 percent more dry matter production at certain times of the year, giving higher productivity and economic gains to the rural economy. It can grow extra dry matter at times of critical feed shortages for around seven cents per kilogram.

Within six months of registration of Pro-Gibb, the first competitor with a different formulation entered the market and undermined Nufarm's Pro-Gibb value proposition. Nufarm subsequently spent more R&D money and another two years proving that Pro-Gibb grows significantly more pasture than the next best imitation product.

The generic products do not work as well as Pro-Gibb, denting farmer confidence in the new technology and Nufarm's investment in promotion to and education of farmers. In a fair policy framework, competitors should demonstrate the efficacy or otherwise of their products.

products and obtain regulatory approval by the relevant regulator. This is done by cross-referencing the data provided by the original applicant without having to incur the cost of producing the data.

Due to the high cost of launching a new product, versus the minimal cost of registering a generic, innovators struggle to make a fair return and choose not to invest.

An imminent law change increasing the protection of data will mean that some products will get protection for information supplied to regulators. Legislative changes, due to be passed next year, will allow three year's protection for some new agrichemicals and veterinary medicines.

One to three year's data protection for new uses and reformulations is a step in the right direction but won't be enough to improve access. A 10-year data protection regime would be beneficial for New Zealand agriculture because it would encourage the introduction of modern, innovative, and potentially lower risk plant science and animal health technologies into New Zealand.

"Ten years of data protection will increase the availability of modern technology for farmers and growers, boosting yields and profitability and is particularly important in New Zealand because it is a small market," said Mr Peters.

Ten to 15 years of data protection is common in other developed countries. So while the Government is making a step in the right direction, a leap to 10 years protection would enable New Zealand farmers and growers to access products similar to their international counterparts.

After all, an agricultural nation like New Zealand should allow farmers the best products available.

Why not let them have it!

Graeme Peters is the CEO of Agcarm, the industry association for companies that manufacture and distribute crop protection and animal health products.

New safety umbrella entity

NZIHSM is part of a new umbrella association for workplace health and safety professions in New Zealand.

The Health and Safety Association of New Zealand was launched recently by George Adams, chair of the Independent Forestry Safety Review and of the Occupational Health Advisory Group set up by WorkSafe NZ. HASANZ aims to raise professional standards across the occupational health and safety sector to provide healthier and safer workplaces for New Zealanders.

It has been created in response to the findings of the Taskforce on Workplace Health and Safety following the Pike River mining disaster. The Government's resulting Working Safer package of reforms (2013) included a commitment to set up a representative body for health and safety professionals to help prevent serious harm and fatalities at work.
"Business wants clarity on how to deliver against the new accountabilities for workplace health and safety and that, on occasions where they need external advice, will entail the ability to identify, select and to trust a professional or a professional organisation," said George Adams.

Founding member organisations include: the Australian/NZ Society of Occupational Medicine, Human Factors and Ergonomics Society of NZ, Maintenance Engineers Society of NZ, NZIHSM, NZ Institute of Safety Management, NZ Occupational Health Nurses Association, NZ Occupational Hygiene Society, NZ Safety Council, NZ Society of Physiotherapists (Occupational Group) and Occupational Therapy NZ.

Who is doing the checking?

Chemicals are a wonderful thing and it could be argued that humankind's rapid development over the past 100 years has primarily been through finding the time to think, while machines, chemicals, energy and clean water have allowed us to specialise and have some 'free-time' rather than undertaking all of the tasks required for a hunter-gatherer society.

Of course, all things must be balanced and while chemical use can have many advantages, care must be undertaken to ensure that the disadvantages are minimised.
In other words, care must be taken to ensure that the HSNO Act purpose (with NZIHSM addendum) is fulfilled namely:
"To protect people, communities and the environment against the adverse effects of hazardous substances and new organisms, (while maintaining the benefits of these)."

While some toxics can be useful where they control humankind's food and dwelling bacteria and insect competitors, care must be taken to ensure that the adverse effects are minimised. To do this without banning everything, some risk criteria needs to be set up and decisions made on what is an acceptable risk for humans.

One method is to check the chemical characteristics against some fundamental criteria risk, such as:
• How toxic are they (do they control or destroy)?
• Are they resistant to degradation?
• Are they able to spread quickly to water and air?
• Are they able to accumulate in body fats and oils?
• Are they able to be passed on from mothers to young?

Chemicals that have all of the above criteria are almost impossible to contain and accumulate up the food chain to inhabit the Earth's predominant predator – yes unfortunately, mankind!

In May 2001, 91 countries ratified the Stockholm Convention on Persistent Organic Pollutants Treaty, which banned 12 such chemicals and many others, such as some of the organochlorides and organophosphate family of insecticides, were reviewed. While killing insects, they also can accumulate up the food chain and ultimately effect all life, including humans. Chloro-fluro carbons, which make good refrigerants but also destroy the earth's Ozone sunscreen layer, were also being reviewed to ensure that CFCs are disposed of safely.

Fortunately the CFC campaign was successful and was particularly good for New Zealand which is strongly affected by the ozone hole. (See how fast we sunburn without sunscreen!)

The Ministry for the Environment and the EPA set the rules on how all of these toxic chemicals should be handled which is positive.

But who is checking that these rules are actually carried out prior to the catastrophic event happening, especially now that test certifiers are being relocated to workplace roles only?

That is a very good question?

The Ten Sustainments

Hazardous substances made easy!

There has been significant discussion lately on how difficult the management of chemicals and hazardous substances is and polarised positions from "Let them run free!" to "They should be banned altogether" have emerged.

Strangely I actually disagree with both of these positions and believe that, in general, 'Chemicals have been a great tool for the Upright Ape' and that we should 'Embrace the benefits but control the adverse effects to maintain a sustainable lifestyle for us all!'

But how do we do this and is it not just too hard?

The Hazardous Substance Act requirements should be SIMPLE and we will try to explore these in simple terms as follows:

What is a hazardous substance?

There are nine classes of hazardous substances and two dangers. They either poison or burn. The two major categories of hazardous incidents are:
(i) Flammable (Class 1-5 regulations);
(ii) Poison/toxic (Class 6,8,9 regulations)

The hazardous classifications are:

THE FLAMMABLES
Class 1 explosive;
Class 2 flammable gas;
Class 3 flammable liquid;
Class 4 flammable solid;
Class 5 oxidisers.

THE TOXICS
Class 6 toxic;
Class 7 radioactive (separate legislation);
Class 8 corrosive (acid/base);
Class 9 eco-toxic (toxic to the environment).

The benefit of these classifications is that from their definition you can see their adverse effect (eg: Class 1 explodes, Class 3 burns, Class 6 poisonous to humans, Class 9 environmental toxic).

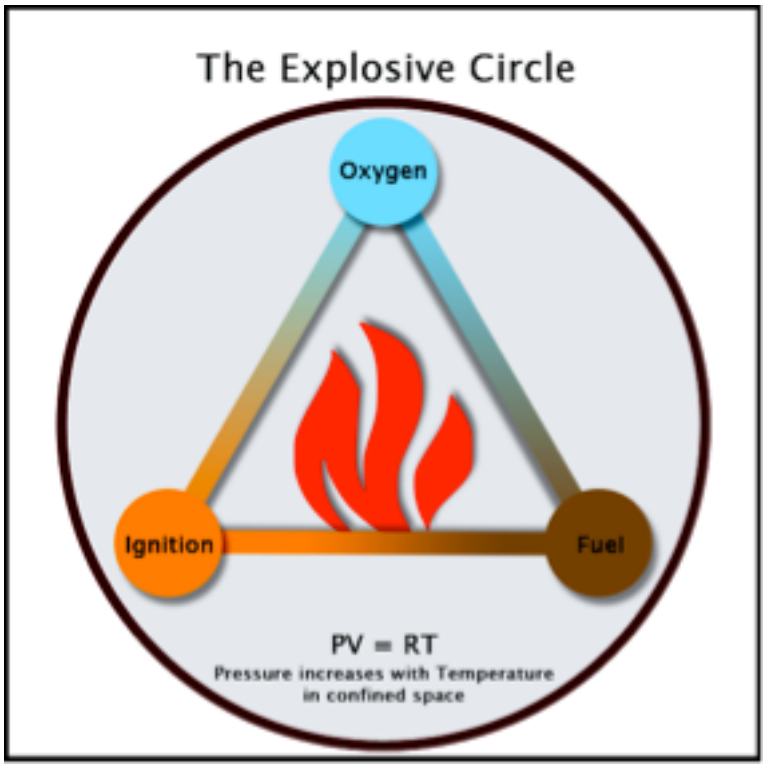
How do you control the 'adverse effects' ?

Class 1-5 controls (flammables)
To start a fire (or a BBQ) you must have fuel, an ignition source and air (oxygen)
So to control the likelihood of a flammable incident you must control fuel, oxygen, ignition or monitoring of %LEL (lower explosive level) and the 10 sustainments.

Class 6,8,9 controls (toxics)
Toxics or ecotoxics are poison to people or the environment so to control these you need to stop them getting to people or the environment. So, to control toxics you need personal protective equipment, safe storage and the 10 sustainments.

The sustainments

The ten sustainments are –
To control against the adverse effects of hazardous substances while using them for good, one should have:
1 **Substance register** (a list and properties/dangers of chemicals present).
2 **Security**



precautions (fences or cabinets to keep the kids out).
3 **Segregation** requirements (safe distances from explosions or toxics).
4 **Signage requirements** (tell us what the danger is).
5 **Separation** (keep incompatible chemicals separate or risks guarded).
6 **Secondary Containment** (put a saucer under the cup (bund under tank) to capture spills).
7 **Safety Systems** (emergency plans, ventilation, HaZone diagrams, risk).
8 **Suits** (personal protective equipment, glasses, gloves, overalls).
9 **Supervision** (approved handler, compliance test certification, enforcement).
10 **Sewerage** (waste streams, disposal, clean air & water before release).

The above are a short summary of the HSNO Act system of controls and these could easily be also applied to other safety systems such as the Health, Safety and Employment Act and Pressure Equipment, Cranes and Passenger Ropeways regulations.

Of course, legislation concerning nature must be consistent with nature, and while we may rename chemicals to hazardous substances or now just substances, natural processes must still be followed.

John Hickey
Chartered engineer
Certifier
President NZIHSM

Miracle escape

Australian firefighters and truckies are lucky to be alive after being exactly in the right place to survive two explosions that shattered a police car's windscreen a kilometre away, and destroyed a Mitchell Highway road bridge, a rail bridge and a fire appliance.

A double B semi-trailer carrying over 50 tonnes of ammonium nitrate rolled and crashed into the Angellala Creek bed on the Queensland tablelands.

Four firefighters and two truck drivers got the crashed driver from his truck and were treating him only 30 metres away when the explosions occurred.

The crashed truck (bottom) became a twisted colection of bits of metal, the nearest fire truck was shredded where it stood, and the two main artery bridges were wrecked. The other fire truck was damaged.

The four firefighters and the three truck drivers were hospitalised with varying degrees of injury.

A 2km exclusion zone was set up while investigations were underway and new tracks had to be formed for light road traffic. Rail traffic was suspended indefinitely.

Incident reports still tied in legislative knots

The recent special effect accident at Eden Park was particularly worrying for the firework industry in New Zealand.

The fireballs have been a standard of the special effects industry for the last 70 years and are made by a low explosive that deflagrates the bottom of the mortar, throwing a flammable powder into the air. Fuels such as coal dust, sawdust, dairy creamer, charcoal, vegetable gums, flour (you name it, it's been tried), then burns with the oxygen in the air creating the fireball.

When protection of the ground is not significant, liquid such as a petrol diesel mix can be used.

I was very fortunate to obtain video footage showing every one of the fireballs. After viewing it back and forth multiple times it was very clear that three of the fireballs did not operate as intended.

Normally a soft lift throws the flammable powder to burn in the air, but in three it functioned so quickly that the explosion appeared in only one frame of the video. Two were in one frame and one in a subsequent frame, obviously due to a delay in the firing system.

The remaining nine fireballs that did work can be seen with the powder pushed out of the mouth of the mortar, igniting as it rose in the air from the residual flame of the propellant at the bottom and creating excellent fireballs.

Such an immediate violent explosion, can only have one explanation – the explosives used had a high pressure exponent. This means that for this particular propelling explosive, any confinement above a modest confinement will lead to a vastly accelerated rate of reaction. This is a knife edge,

Nine fireballs and the residual smoke from the three violent explosions that did not create fireballs.

a tiny change in the particle size, composition, weight of confining the material can push it over the edge and a violent explosion ensues.

The original gunpowder, which we now call black powder as used in cannons has a low pressure exponent. That is why it is used for fireworks, particularly star shell mortars. These mortars are not close fit round the shell – in fact, are a very loose and sloppy fit – and quite variable in how much slop there is.

Using black powder means that the rate of reaction stays pretty constant no matter if the shell is very sloppy or almost tight.

We would have expected that such an explosive would have been used for these fireballs. Clearly it was not and an explosive with a high pressure exponent must have been used. We can only speculate as to what it was and this is information that is crucial to the operation of these fireballs so frequently used in New Zealand.

However, we now come to the crux of the matter that every time there is an accident this nature, the industry is not allowed access to the crucial report information.

Many years ago someone was killed by an explosion in the steel mortar, which ruptured it flinging a piece into the crowd. I spent some considerable effort seeking the report, before finally obtained a redacted version that told me virtually nothing about fine details.

It took some years before steel mortars were finally banned, certainly a favourable outcome, but one that seeking industry input early on in the process by divulging information would have led to industry voluntary adopting this process long before it was made a legal requirement.

Some 12 years ago in Invercargill, a fireball blew in a very large window, severely cutting someone who nearly bled to death, and injuring a number of other people. The report on this was never released in spite of its relevance to the industry that continued using fireballs.

Similarly today, Worksafe is beholden to the historic legislation still extant, which does not permit them to release the results to industry. We have approached them on the matter and it is well aware that releasing critical information on the cause an accident is crucial to increased safety, it is nevertheless tied by legal requirements.

This certainly needs the attention of the Minister equipped with a large sword for attacking the Gordians knot of legal restraints, which are preventing the release of crucial safety information to this industry.

– Anthony Lealand
CEO Firework Professionals Ltd

Uncle Archie

Hello HS PRACTITIONERS!

Election

Our tri-yearly democratic election party is now over, and 'normality' returning to the nation. Some have thought Archie should have been more vocal during the election process rather than adopting his usual quiet demeanour. Archie blames our president and editor for this stance who decided that long-term safety issues would not add much value to an already raucous process. Chickens!

Re-election

On that note, we have a new Minister which has slowed the policy analysts slightly, but only slightly, and all indications are that the reforms instigated by the Pike River tragedy are set to continue, apace.

Worksafe progress?

The new Worksafe department is moving and seems to have appointed half of its inspectors directly from Britain to implement the new Australian regulations.

Health & Safety Reform Bill

Following the Watercare and Pike River reports and the 2004 NOHSA report that estimated the death toll from exposure to hazardous substances at between 700 to 1000, the new Health & Safety reform bill is progressing at pace, with the readings of the H&S Reform bill and the H&S Regulation updates happening simultaneously over the next six months. While a quick response is laudable, on consideration that the initial HSNO Act and regulations took 12 years to implement, uncharacteristically Archie would issue caution to ensure that the good-bit baby doesn't get thrown out with the fire-water.

H&S Reform Bill detail

As the Pike River report expressed concern that many hazardous substance controls were ignored, it is surprising that hazardous substances do not appear to be mentioned in the goal of the proposed H&S Reform Act either.

In fact, hazardous substances are not mentioned at all with the Australian simplified substances only being used for all items to be controlled. Has anyone mentioned that most things, including air, are substances.

Toxics, ecotoxics

Environmental ecotoxics do not get a mention in the new H&S legislation. Archie believes that all substances with toxic properties should be checked as inevitably these affect all people, although it is positive to see that some very-toxic Class 6s are now being considered for some test certifier compliance checking. Watch this space …

A happy knowledge and safety-filled world

The current government sentiment that ALL people that handle hazardous substances should be trained, is positive. However, cancelling the only qualification, namely approved handlers, on the grounds that one days training every five years may be too onerous for industry, and reliance on everlasting safe practice by a self-trained workforce may be slightly optimistic!

If you want to send your comment, you can send it to archie@NZIHSM.org.nz.

The ideas expressed in this column are not necessarily the views of the NZIHSM or Flashpoint and in some cases the NZIHSM frankly does not approve!

Remediation priorities set

A new initiative will identify and rank priority sites for clean-up under the Government's contaminated sites remediation programme.

More than $31 million public money has been spent on cleaning up toxic sites since 2008 and the Government has announced its top 10 sites to be worked on next.

The big numbers are on the Kopeopeo Canal near Whakatane. An additional $2.4 million of remediation work has been approved for cleaning up sediment contaminated by stormwater from the local sawmill, which treated timber using pentachlorophenol. The PCP contained dioxins as an impurity. The total project cost is over $11,00

Environment Minister Amy Adams said that in order to qualify for the fund, applicants, in most cases are regional councils, are required to contribute a minimum of 50% towards the cost of remediating a site.

The 10 priority sites are: Prohibition mine, West Coast; Alexander mine, West Coast; Kopeopeo canal, Whakatane; Calwell slipway, Port Nelson; Te Mome stream, Seaview; Miramar gasworks; Onehunga aquifer; **R**otowaro carbonisation plant, Waikato; Masterton gasworks; Rudolf Steiner School, Christchurch.

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