The ICCL Meeting Industry perspective

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Key matter

- The fact that the ICCL meeting took place!
  - Representatives of international regulatory agencies have met in Australia and our regulators have had an opportunity to meet with them, hear of the situation elsewhere and the direction of policy, and to form networks
  - Thanks to ALGA and CRC CARE for funding and assisting in organisation, and to the organising committee

Disclaimer

A personal view

Matters that I think might be of interest to the Australian industry, noting

- a National Remediation Framework for Australia is being prepared
- Recent concerns regarding emerging contaminants (PFCs)
- Victorian review of how contaminated sites are managed

Nature of the meeting

- **Policy** - not detailed technical discussions

- Frank discussion – not reported, non threatening environment
- Able to understand the regulatory approaches being taken by various countries, and issues that arise
- Encourages a common world view and consistency

Overall view

- The Australian contaminated site industry is at a similar stage of development to many other developed countries
- We are successfully creating value from our old industrial sites
- We are successfully remediating thousands of sites

Overall view

- Good capability – assessment and remediation technology
- Good networks and able to draw on international knowledge
- Our risk-based approach to land management is similar to other countries

- Funding of contaminated sites is decreasing in the developed countries, increasing in the developing countries

Where do we stand out?

- The audit system
- CRC CARE

What are the most interesting developments?

- Evolution in policy to consider sustainability
- Alternative approaches to identification, assessment and remediation of sites

- Particularly relevant as Australia is developing a National Remediation Framework to accompany the NEPM

Evolution in regulation

- Much discussion
- **Policy is not stagnant – it is evolving** to reflect knowledge and understanding, and world issues – such as GFC, climate change and global warming. Four stages:
  1. Growing Awareness of the problem
  2. Complete Removal
  3. Risk Based Land Management
  4. **Risk Informed and Sustainable Remediation**

- Some countries proceeding further: sustainable management and use of the subsurface (*cf* at the land surface)

- This can affect approaches and decision

Sustainable risk based remedial strategy

- **Now an important theme recognised in the ICCL**
- Encouraged by SuRF, NICOLE, Common Forum, ICCL, various conferences, ALGA, various champions
  - Now general acceptance of the concept
- Various views on what it means and scope
  - Sustainable Remediation, Green Remediation, Sustainable Development, Ecological Sustainable Development
  - No problem – depends on the regulatory agency and policy – what is mandatory/determined by the agency, and what by the proponent
  - Some jurisdictions promote their view – healthy debate

The approach

- In essence:
  - Consult with stakeholders to determine where the balance should lie in benefits/trade offs
  - Encourages a broader more holistic view of remedial strategy and flexible approach:
    - clean up works (short term)
    - final condition (long term)
    - cost and resources consumed vs resources/values restored – proportional response
  - Consider: Environmental, Social and Economic issues

Countries are now adopting this approach

Our National Remediation Framework will adopt the principles of sustainability

Comment

Must not adopt an approach that trades off primary requirements:

- protection of health
- Reduction in risk
- Reduction in mass of contaminant

- Audit of methods at SustRem showed <40% accounted for primary effects – instead focussed on tonnes of GHG
- LCA not suitable – focus on secondary effects

- Not much discussion on
  - How to build stakeholder consensus
  - Social justice, licence to operate

Some principles

- Make land and groundwater suitable for proposed use (do not clean up for all uses)
- Clean up contamination on the basis of guidelines/standards that are based on a scientific evaluation of risk
  - **Risk for both remediation works, final land condition, and failure**
    - Needs regulators with a strong scientific understanding
    - "Noise": dioxins, asbestos
- Allow various strategies to avoid exposure:
  - Clean up, containment, control land/groundwater use, time
  - Full clean up is not the norm for large and complicated sites
  - Tension: how do we formulate policies and guidance on strategies that do not involve full clean up and rely on controls or a higher level of risk to achieve a "sustainable" outcome?

My view: we need to formally consider the use of institutional controls in developing policy and remedial strategies – borrow from other countries where appropriate

Some observations

To achieve more sustainable remediation strategies:

- USEPA is encouraging **innovation**
- Some countries allow **long time and natural degradation**
- Some countries **integrate methods – eg groundwater recirculation to contain, use subsurface as a heat sink/source, and encourage degradation**

- **We should encourage innovative methods to achieve more sustainable solutions**
- **But consider risk of failure, and contingency**

Integration of town planning and environment protection

- One country – integrate planning and contaminated land in a single Act
- Should we consider this?
  - Planning agency – used to dealing with qualitative and complex issues where trade offs are needed – such as social, economic and environmental
  - But may further weaken environmental protection – already weak under our Government
- **My view: needs to be a closer integration of planning and contaminated land - but not at expense of weakening environmental protection!**
- **Perhaps: change the Environmental Protection Act to <u>Environmental Protection and Sustainable Development Act</u>**

Expansion of concept

Some countries expanding concept to:

- 3 or 4 dimensions (including depth and time)

Protecting “ecosystem services”

- **Supporting services**
- Ecosystem services "that are necessary for the production of all other ecosystem services". These include services such as nutrient recycling, primary production and soil formation.[16] These services make it possible for the ecosystems to provide services such as food supply, flood regulation and water purification.
- **Provisioning services**
- Products obtained from ecosystems, eg food, crops, water, energy
- **Regulating services**
- waste decomposition and detoxification
- **Cultural services**
- Recreation, and aesthetic experiences

Identification of contaminated sites

- Some countries
  - Have undertaken a comprehensive identification of sites – historical review
  - Identified high risk sites, undertaking a program to clean up these sites – **now can claim largely finished!?**

Implications for Australia

We can expect

- There are many potentially contaminated sites (> 150 000?)
- There will be many sites (>75 000?) where our risk-based criteria are exceeded
- There will be a number of sites (>5 000?) where the contamination is serious
- Some of these will have been cleaned up, some will not

- Our approach to the identification of these sites varies with the State – reliance on local Councils, or self reporting – not a systematic comprehensive approach
- We don't understand the level of risk of all of these sites, need for action, magnitude of the problem, level of investment.

- Why not? devalue land? too big and costly a problem to manage? liability for government?

- Our approach: identify, assess and clean up at the time when land use change

Does this satisfy a Duty of Care?

My view: we should have a better knowledge of our contaminated sites, the magnitude of the problem, and what response we are prepared to make

Further

- Only a small percentage (maybe < 5%) of sites pose a high risk
- Our current system does not distinguish high risk sites:
  - Eg if cancer risk > 1 in 100 000 – "unacceptable"
  - **We only recognise a single acceptable risk level**
- "Unacceptable" is untenable if we accept that people will be living on sites with greater risk

We should

- **Distinguish a serious (acute) risk level - as other countries**
- **Recognise that our criteria are aspirational targets, moderate exceedances pose a low risk**
- **Consider setting criteria:**
  - **Above which response is required**
  - **Below which response is not required or can wait until land use changes**

This would:

- Help rationalise our current approach of not systematically identifying sites and requiring action
- Assist in responding to situations where contamination is found in the community
- Provide a sensible response in terms of investment, use of resources, sustainability and international competitiveness

But – would require investment by Government

Question

- Is our acceptable risk for cancer of 1 in 100 000 too stringent?
- If we dropped this to 1 in 10 000 might reduce clean up by 90%
- A health regulator estimated that we are probably spending $50million per life saved – far beyond what we would invest elsewhere
- Many of our criteria are far below the levels where we could expect to see health effects distinguishable from background
- Water industry – introduced epidemiology (vs toxicology)
- A site where only a few people affected – very different from drinking water and air where millions can be affected

"Proportional response"

Some countries have introduced the concept of **"Proportional Response"**

Not a concept we discuss – we have a single risk level

But we have:

- Clean up to the extent practicable
- Remediation to the extent necessary
- Monitored natural attenuation
- Auditing of risk to beneficial uses

My view: we should consider a <u>proportional response</u>

Business approach

Some countries have developed policy on the basis of a business approach:

- What is overall return to the country from remediating and developing contaminated areas, how does this affect regulatory policy?
- Australia generally does not take a business approach, other than perhaps in the case of a new large brownfield development
- Business principles are not used as justification for development of overall policy, or to justify remediation or investment in research
- Reflects our Government's problem with politicisation, difficulty/suspicion of basing policy on science, rational argument and business principles
- **My view: we need to consider business principles when formulating policy and remedial strategies**

Brownfields

- Considerable discussion last week.
- Widely accepted that we should be developing our Brownfields – not Greenfields
- “Sealing” land – denies ecological use

Some countries eg:

- Targets to reduce sealing of land (ha/person/year)
- 90% of Brownfields to have permits for development by 2020
- Incentives – eg 150% tax concession, other dispensations and facilitation measures

Brownfields

- Funding often not important – eg where value created
- Importance of the “deal maker” eg mayor of city
- Recognition of “life cycle” of sites – use may change in future

Emerging contaminants

- A feature of discussions last week.
- Setting up website to encourage sharing of data/knowhow
- We only recognise and look for a very small number of contaminants – thought to be greatest risk
- Thousands of chemicals that could pose a concern, but we don't look for them and don't know how to assess them
- Evolving science - more sensitive analytical and assessment methods could show presence and effect (*cf* dioxins)
  - PFCs, dioxane, fire retardants
- Contaminants with particular issues:
  - Lead, TCE, B(a)P, asbestos
  - Asbestos – toxicity based on cumulative dose: fibres/mL/year
- Important issues we don't know how to address:
  - Bioavailability (eg B(a)P)
  - Toxicity of mixtures

My view: CRC CARE is important – encourages science over perception and media hype

Research and development

- USA stands out as being a powerhouse for R&D and knowledge development
- Australia's approach is (largely) to import knowledge from North America
- Australia has CRC CARE: very important in developing guidance and applying methods in Australia – cooperative work involving regulatory agencies, industry and researchers
- Fostering industry networks, trialling methods, developing rational science-based approaches
- **My view: CRC CARE is very important**

Our audit system

- Some countries have third party auditing
- Our system attracts interest

Advantages:

- reduces Government cost and liability
- Expert pool, allows timely competitive approach
- Provides peer review
- Provides pooling of knowledge – team approach - better outcome
- Provides knowledge exchange – transfer from one consultant to another and to regulatory agency

My view: audit system is very important

Conclusion

- ICCL meeting has been very valuable
- Allows our regulators to better understand the policy issues and the direction being taken by other countries
- Particularly important as Australia is developing a National Remediation Framework