

SECTION B.4

RISK BASED CORRECTIVE ACTION: A COMPARISON BETWEEN BTEX AND ARD

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Risk Based Corrective Action: A Comparison between BTEX and ARD

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Summary

- RBCA is widely accepted by US regulators for BTEX
- In Australia, this is starting to happen for BTEX
- Application for ARD is not deliberate or consistent
- There are 4 critical differences

RBCA is widely accepted by US regulators for BTEX

- This was not the case 10 years ago
 - Gas station clean-ups were a major part of the Bioremediation business
 - Clean-ups were found to be relatively easy using biological methods, and cost effective compared to dig and dump
 - The more passive technologies were found to work
 - RBCA provided a framework for selecting natural attenuation

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In Australia, this is starting to happen for BTEX

- We tend to follow the US regulatory models
- The development of an ASTM has helped develop this outcome.
- Application is becoming more wide-spread.
 - But is considered by the public to be the "do nothing" option

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Application for ARD is not consistent

- The most recent example is the Mt Lyell remediation project
 - a century of copper mining
 - 2-3 T/day of copper to the river
 - now a government site
- Source identification and pathway analysis was done
 - Major studies

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Mt Lyell Cont.....

- Treatment technologies were evaluated
- Not carried out with the risk assessment model in mind
 - components can be seen upon review

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So what are the key differences ?

- Many BTEX sites are in metropolitan areas vs remote
 - The tanks were underground (not visible)
 - small sites vs large sites
 - nearby the regulators
 - many thousands of sites

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Key differences

- The direct benefits of the risk are better understood for BTEX
 - even though benzene is a known carcinogen
 - The benefits of a gas station close are better understood than the benefits of mining.
 - “Digging up the street is ugly”
 - “The landfills are already too full”
 - “ Remediation will put the price of gas up”
 - “I can’t see the leak”

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Key differences

- The deep pocket syndrome targets mining
 - The gas station owner/lessee is a small businessman/local community member
 - Mining companies must have a lot of money (after all they mine gold)
 - Mining is perceived as a polluter
 - make them pay for the damage they have done

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Key differences

- Consistency/understanding of the science
 - An ASTM has been published on the topic
 - defines the current status of the science
 - been through a peer review process
 - Work is continuing in the area
 - Source term quantification
 - fate and transport models being improved

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Key differences....

- Variation in Community Outrage
 - Encapsulates the previous points
 - Caused by a range of issues, both technical, social and of a long standing nature.
 - Very hard to manage in light of our history
 - | environmental legacies are not all historical
 - | we are not always trusted

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What do we do about it ?

- Recognize
 - Risk = f (hazard,outrage)
- and

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