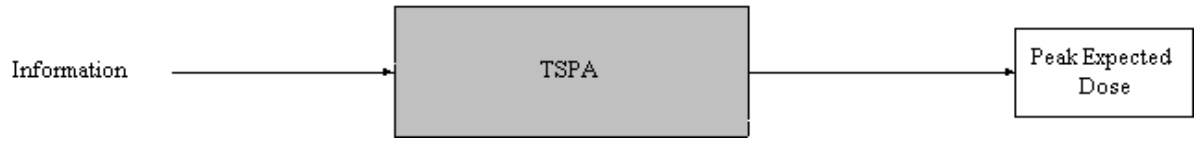
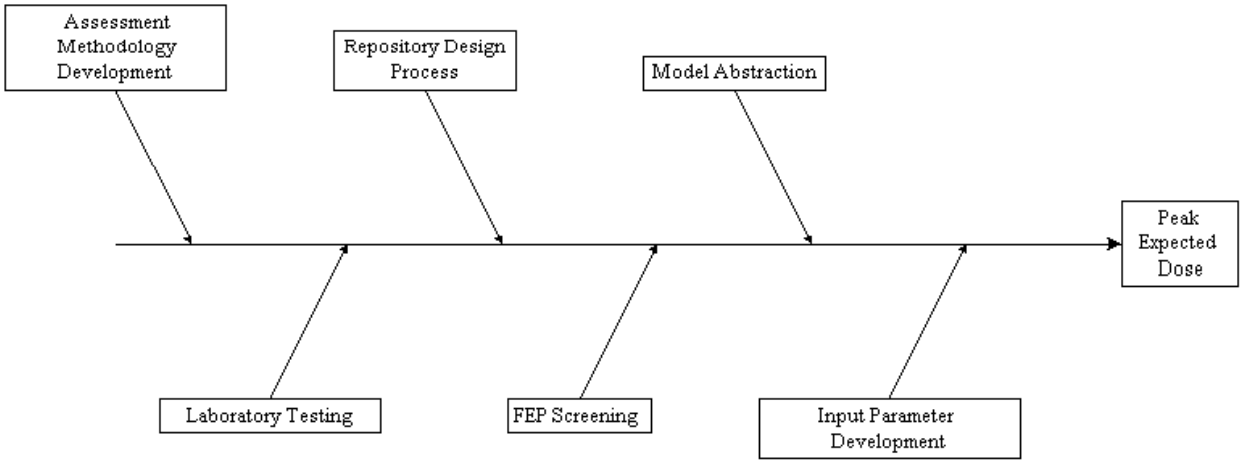
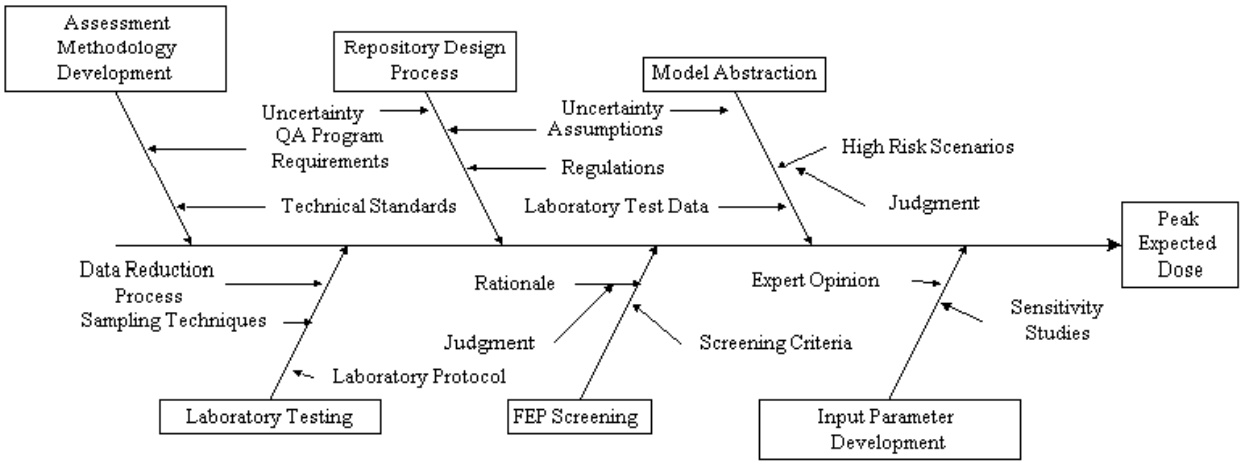


(a)

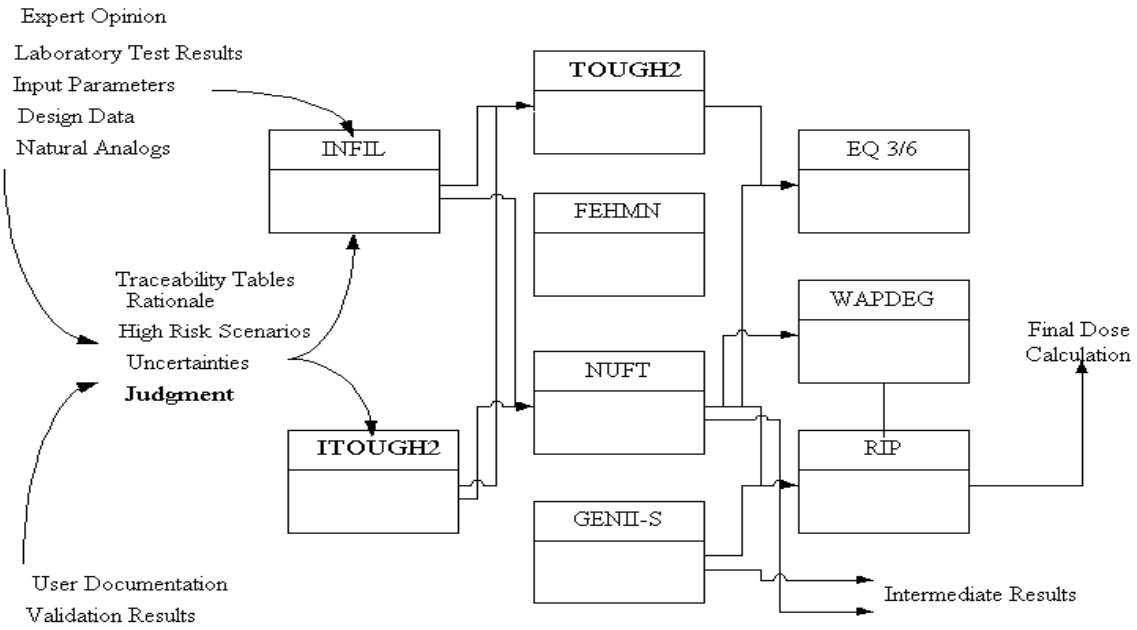


(b)

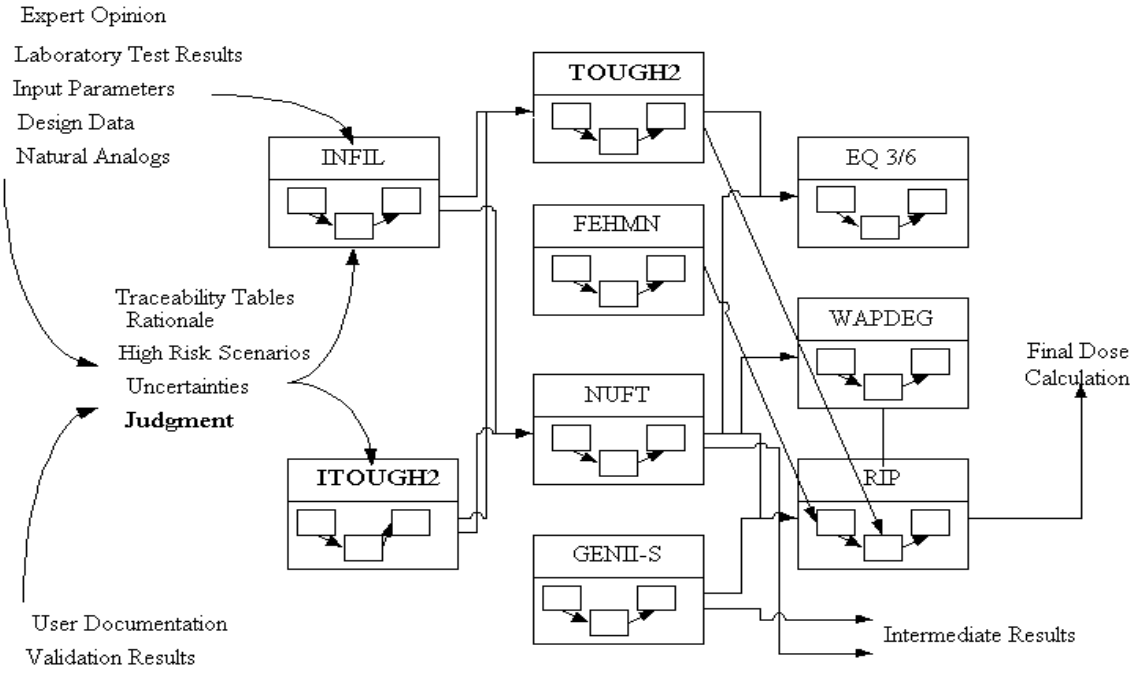


(c)

Figure 1. An illustration of degrees of Transparency of DOE's TSPA: (a) black box, (b) partially transparent, (c) transparent



(a)



(b)

Figure 2. An illustration of degrees of transparency of U.S. Department of Energy's Total System Performance Assessment code: (a) partially transparent, (b) transparent

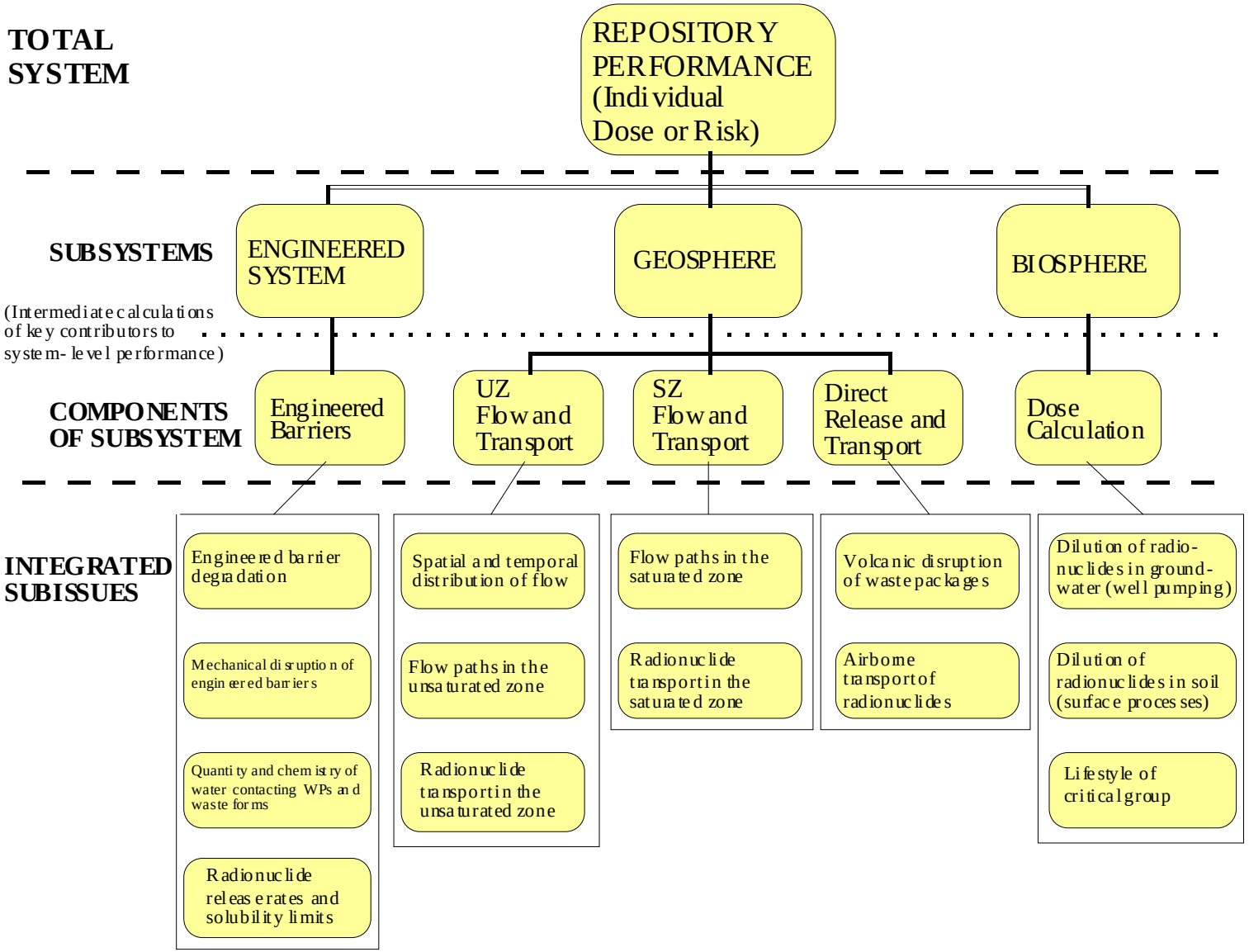


Figure 3. Flowdown diagram for total system performance assessment.

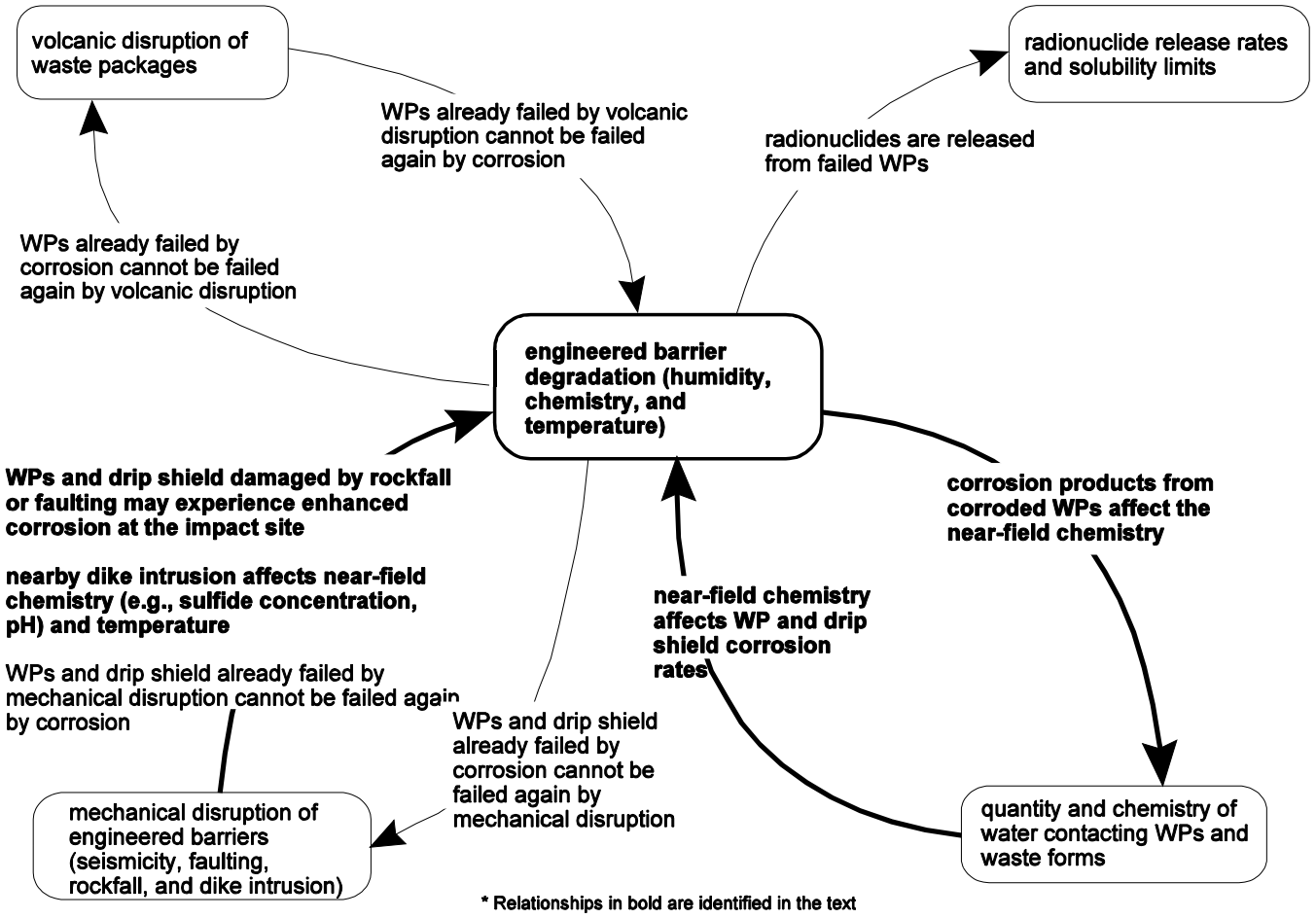


Figure 4. A diagram illustrating the relationships between "engineered barrier degradation" and other integrated subissues.

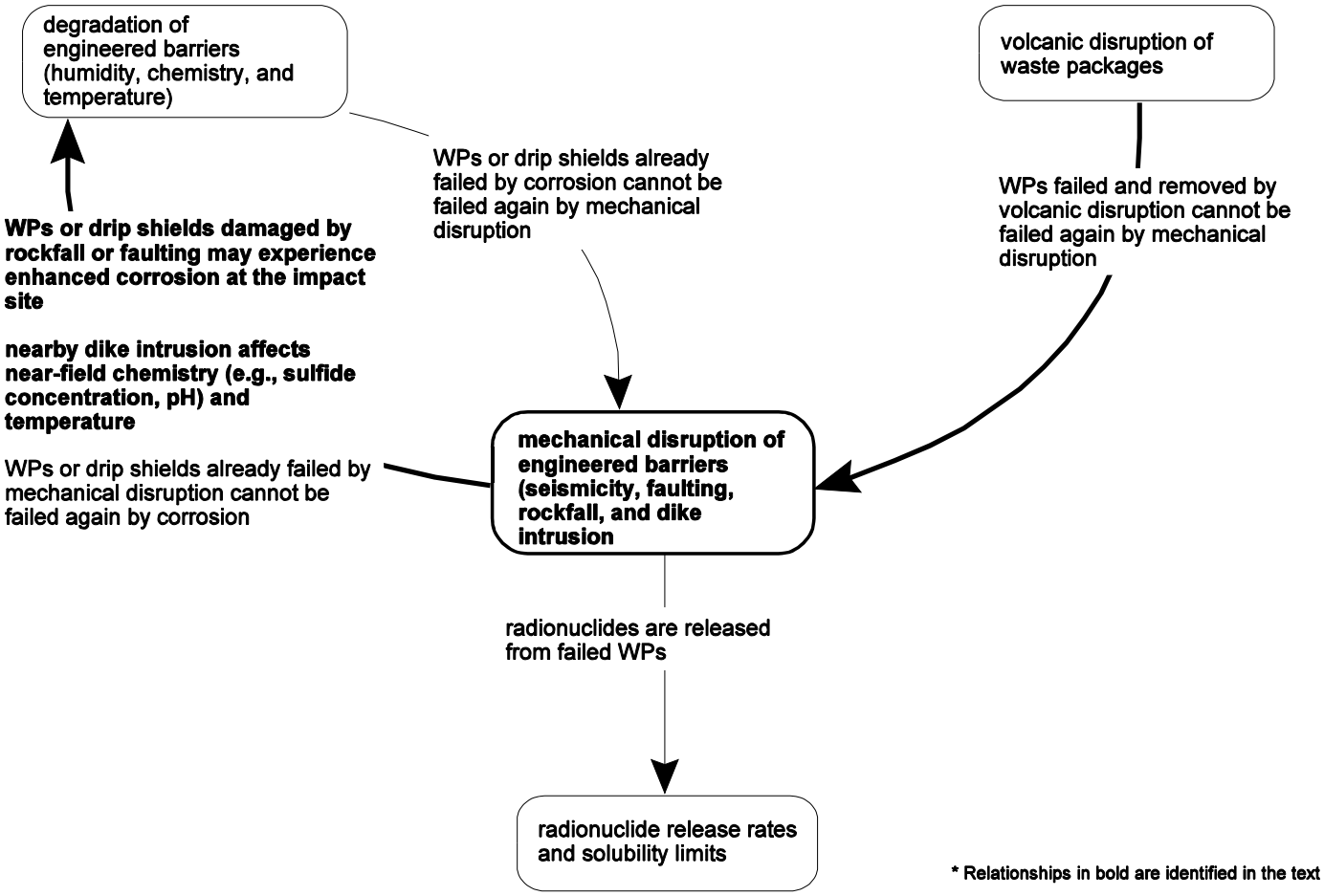


Figure 5. A diagram illustrating the relationships between “mechanical disruption of engineered barriers” and other integrated subissues.

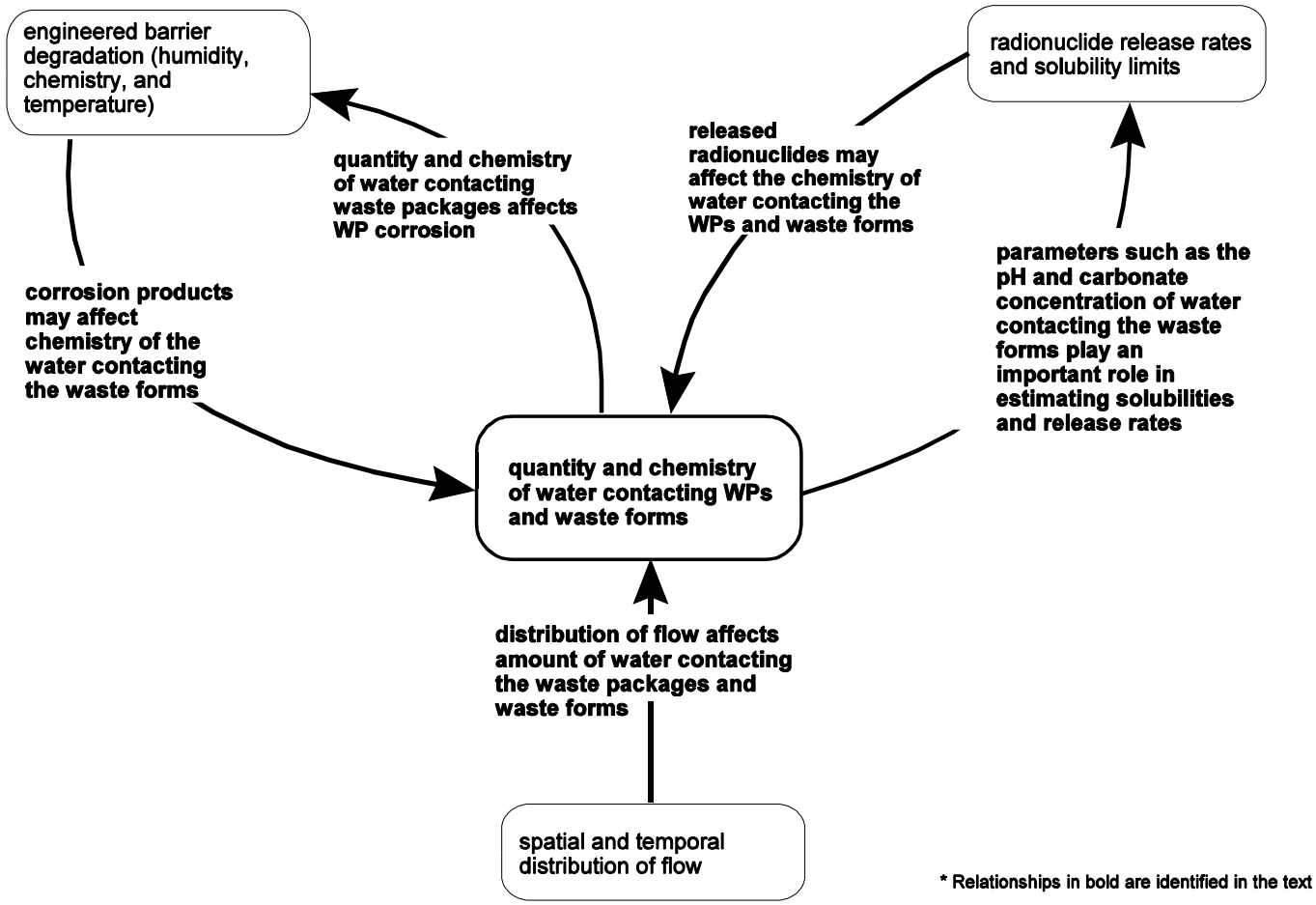


Figure 6. A diagram illustrating the relationships between "quantity and chemistry of water contacting WPs and waste forms" and other integrated subissues.

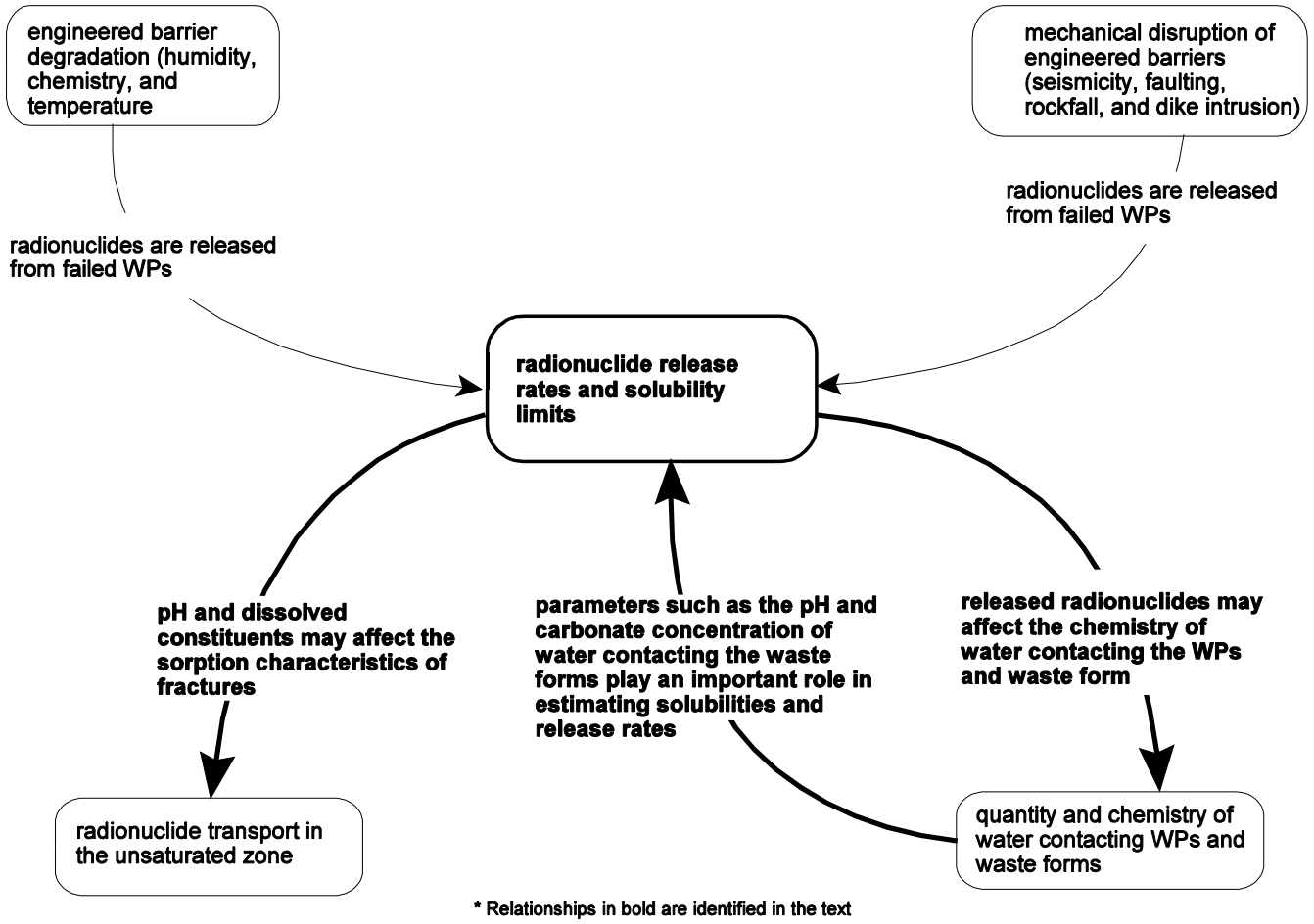
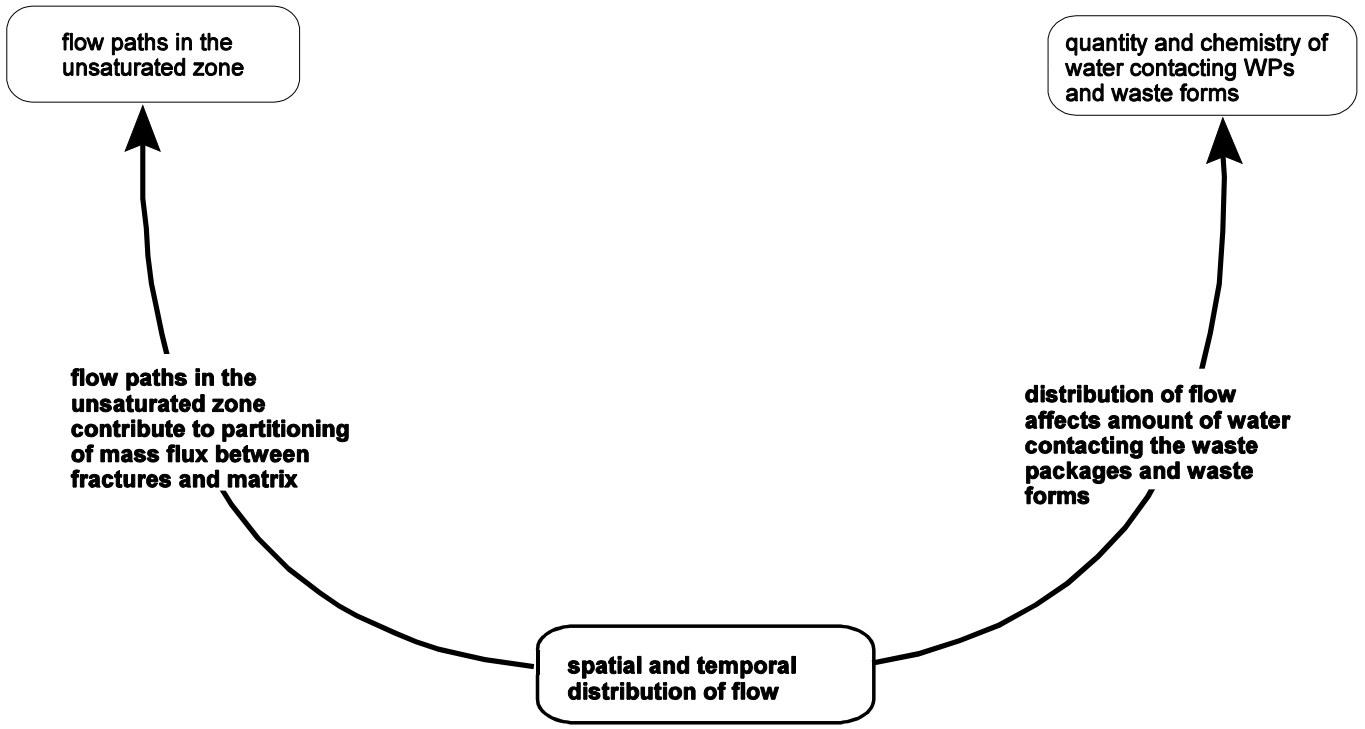


Figure 7. A diagram illustrating the relationships between “radionuclide release rates and solubility limits” and other integrated subissues.



* Relationships in bold are identified in the text

Figure 8. A diagram illustrating the relationships between “spatial and temporal distribution of flow” and other integrated subissues.

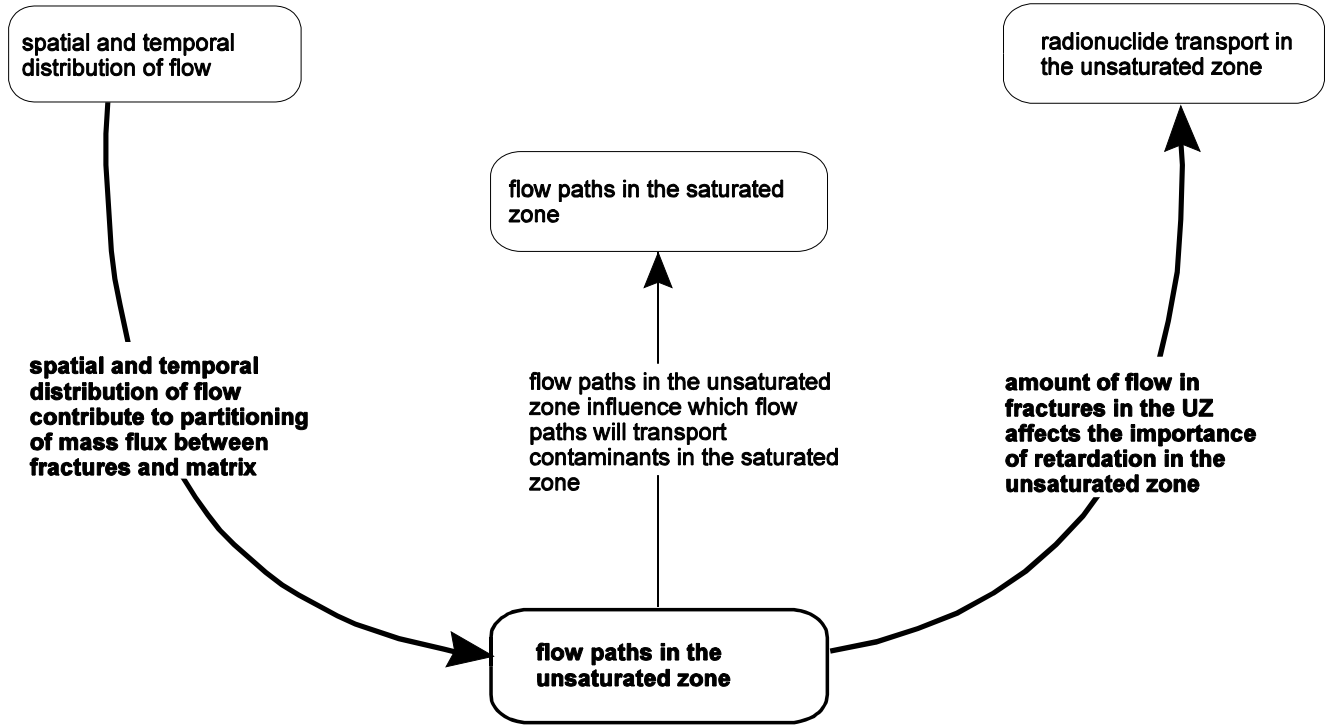


Figure 9. A diagram illustrating the relationships between “flow paths in the unsaturated zone” and other integrated subissues.

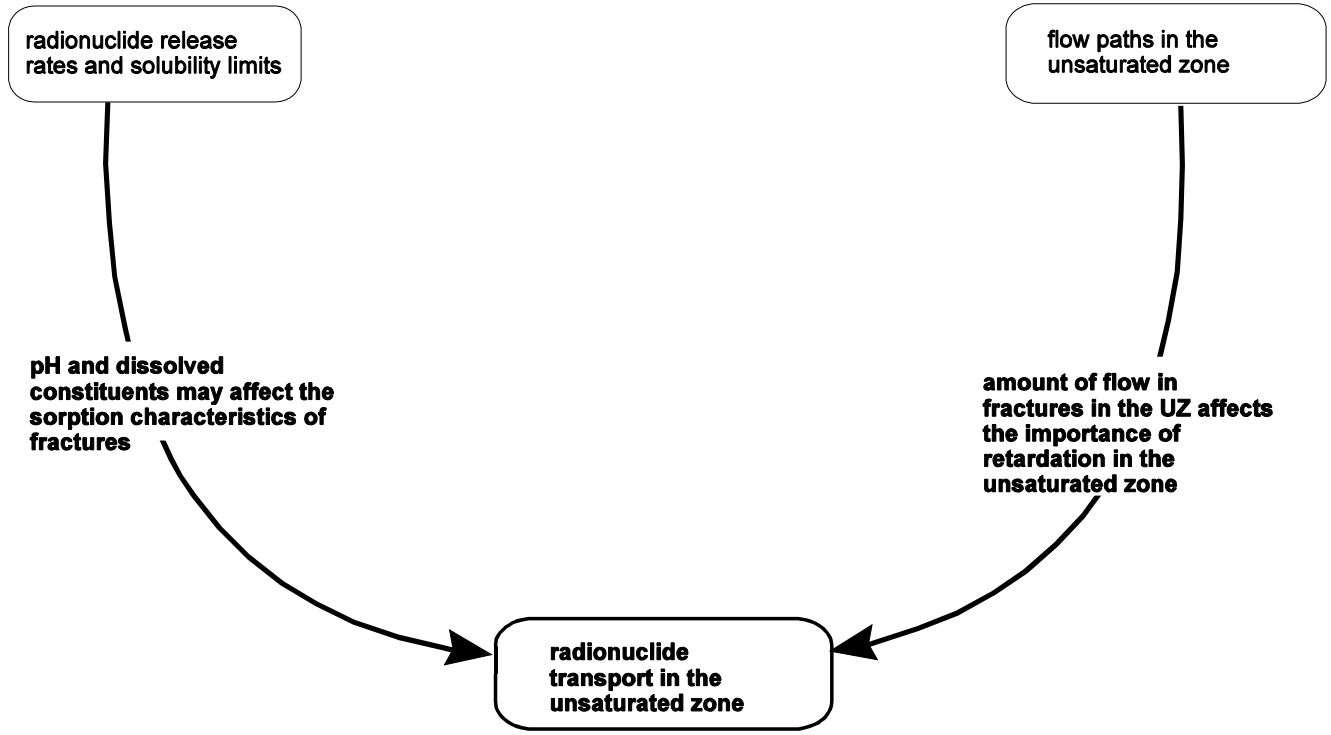


Figure 10. A diagram illustrating the relationships between “radionuclide transport in the unsaturated zone” and other integrated subissues.

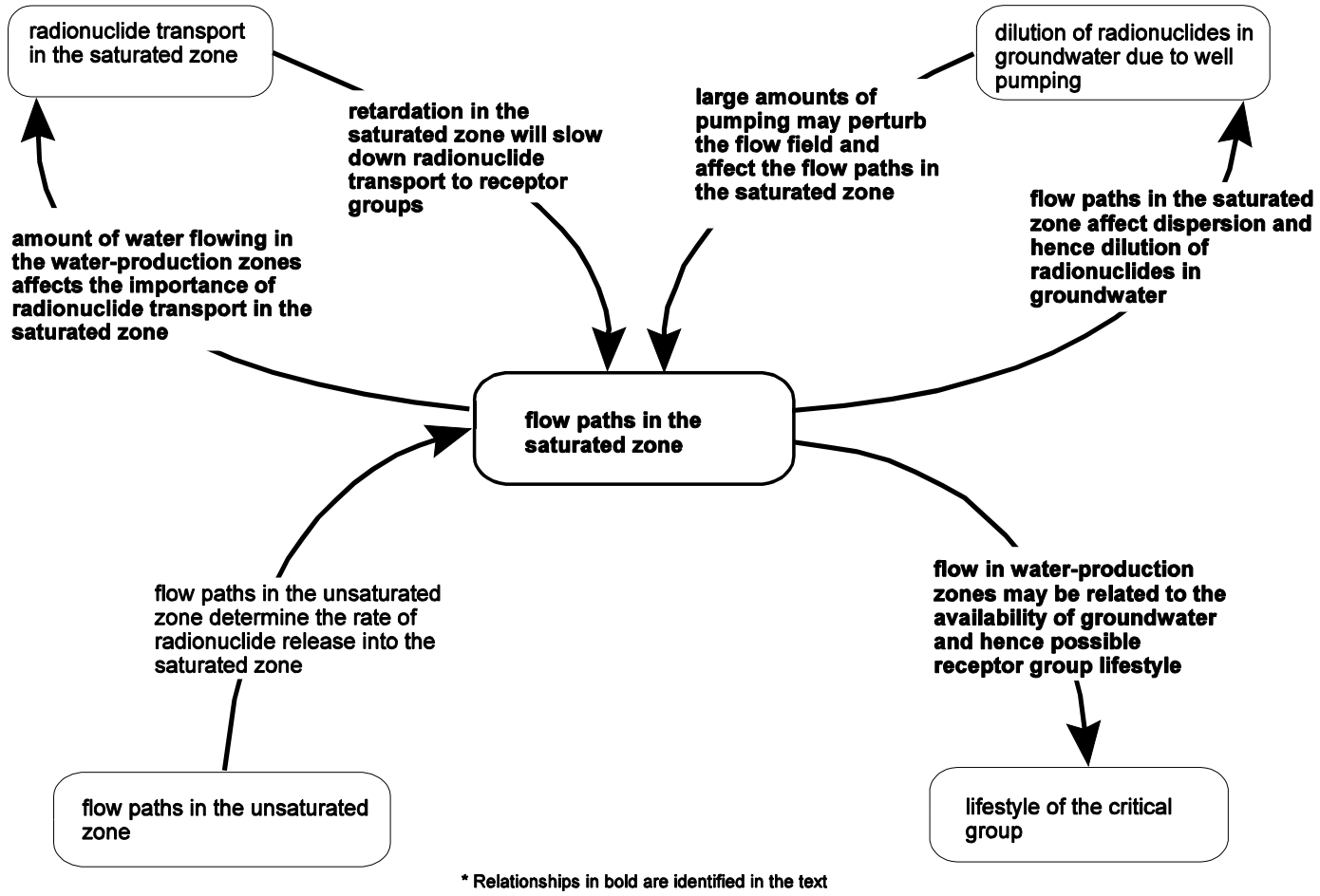
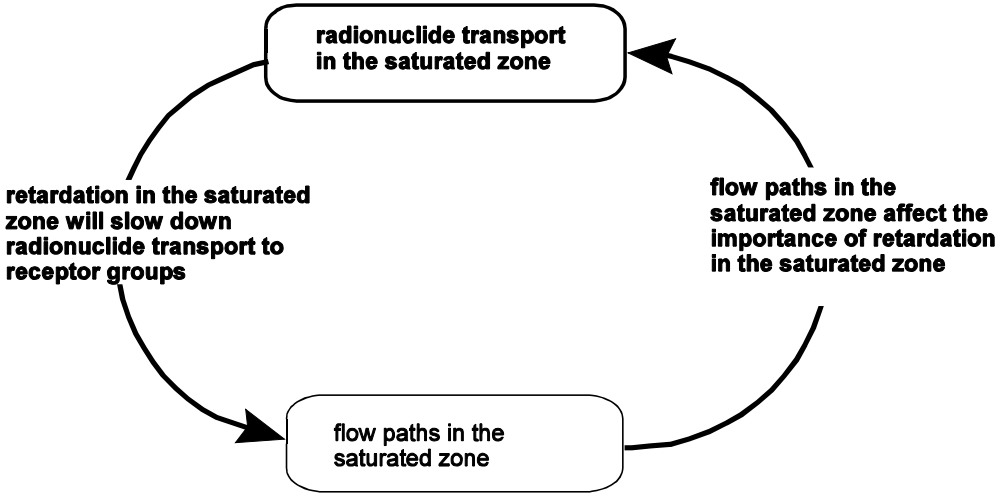


Figure 11. A diagram illustrating the relationships between “flow paths in the saturated zone” and other integrated subissues.



* Relationships in bold are identified in the text

Figure 12. A diagram illustrating the relationships between “radionuclide transport in the saturated zone” and other integrated subissues.

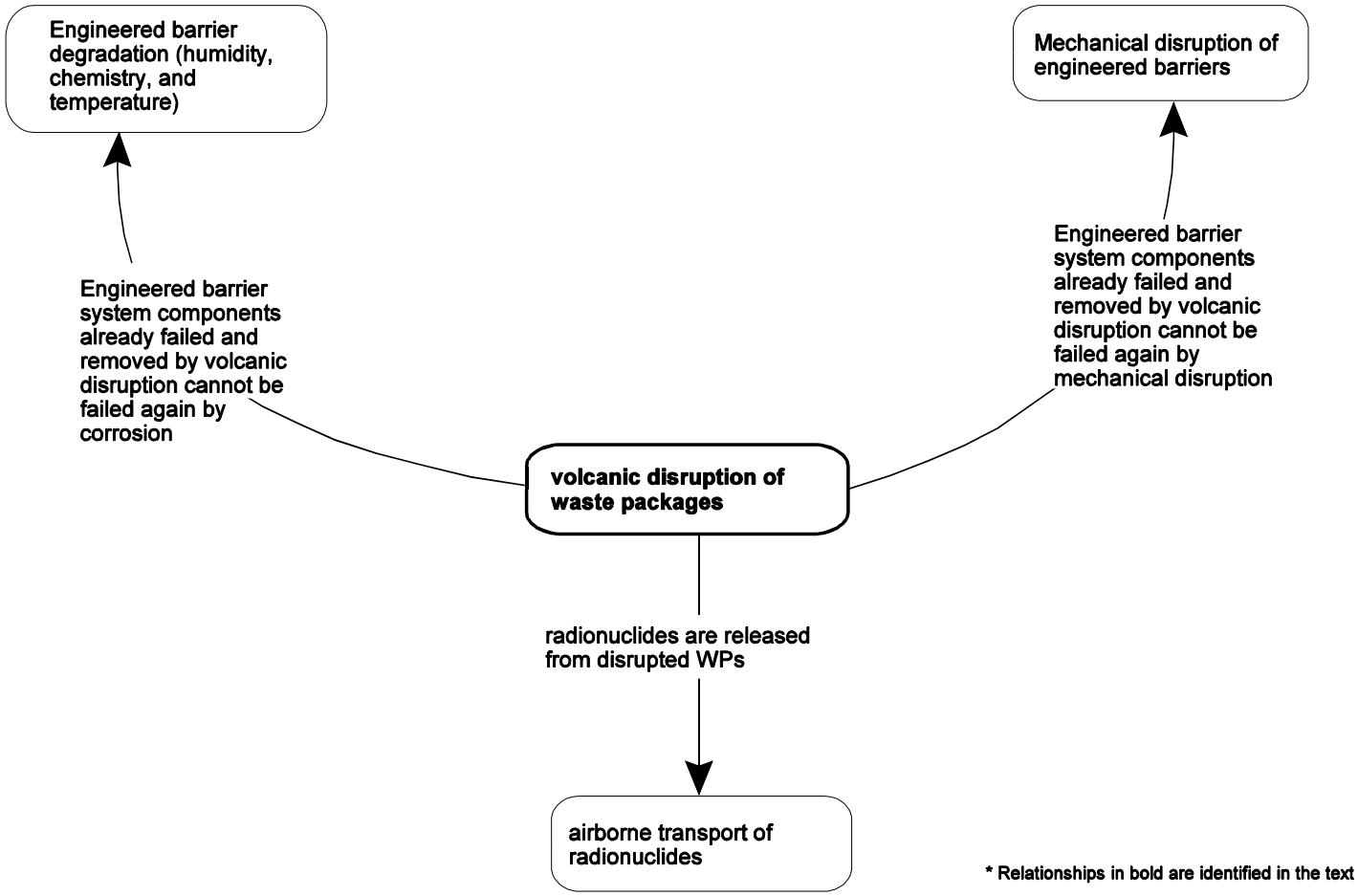


Figure 13. A diagram illustrating the relationships between "volcanic disruption of waste packages" and other integrated subissues.

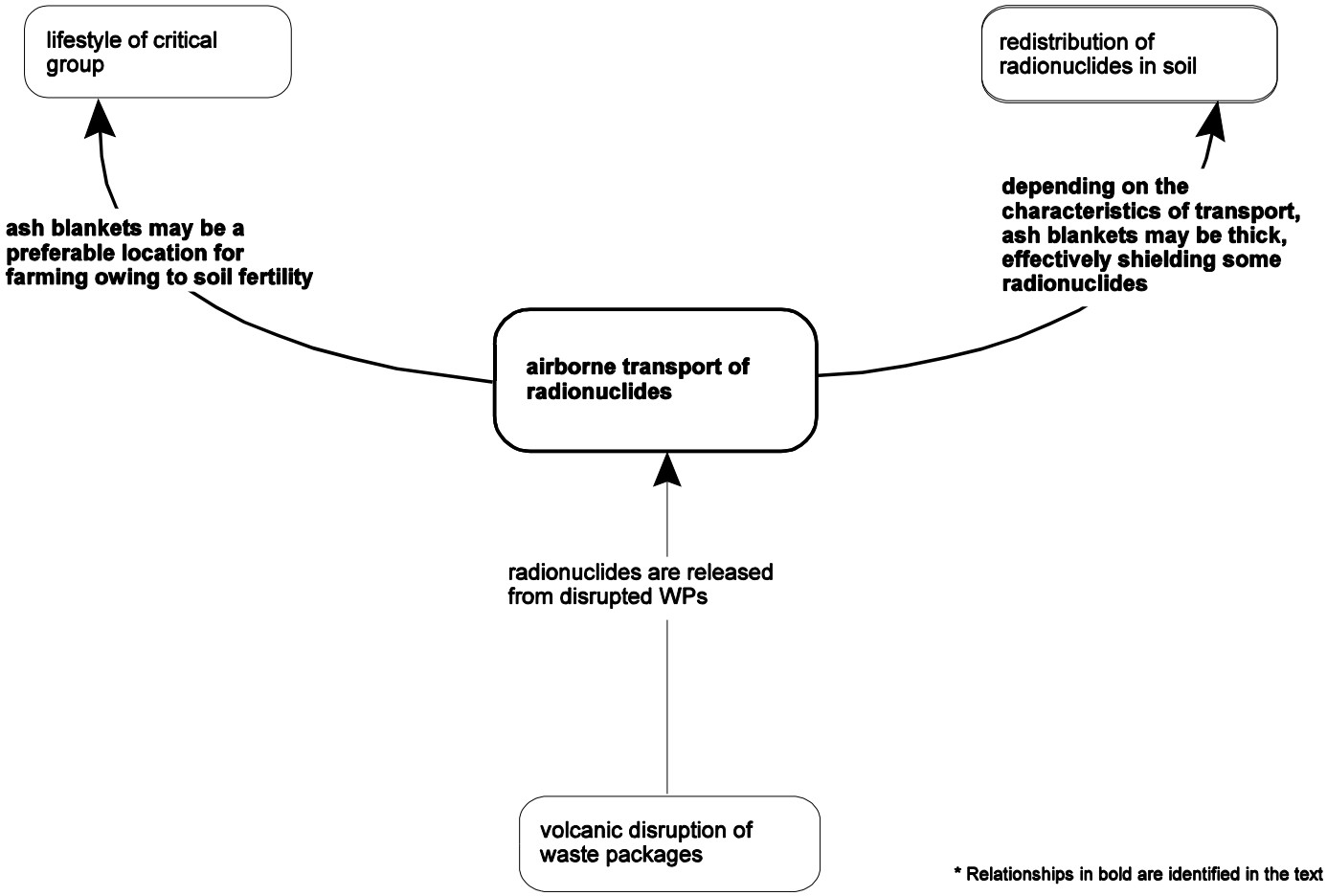


Figure 14. A diagram illustrating the relationships between "airborne transport of radionuclides" and other integrated subissues.

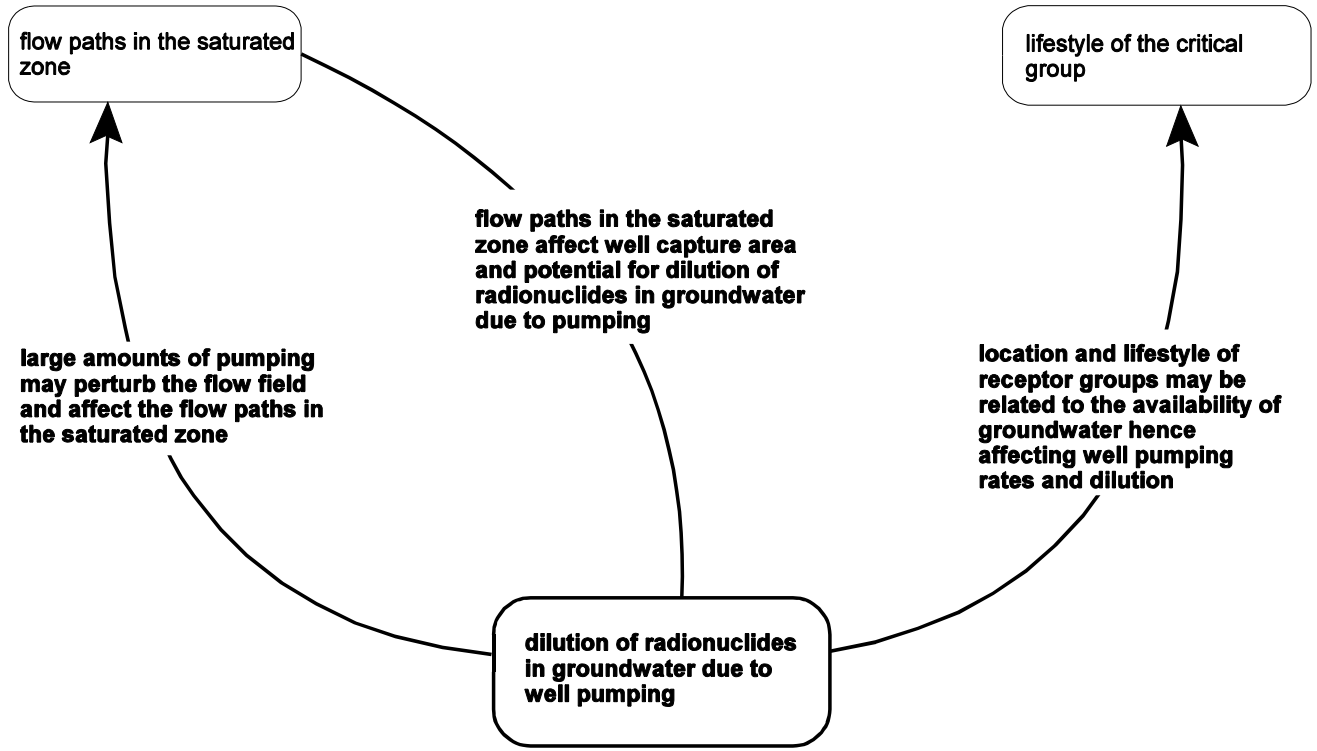


Figure 16. A diagram illustrating the relationships between “dilution of radionuclides in groundwater due to well pumping” and other integrated subissues.

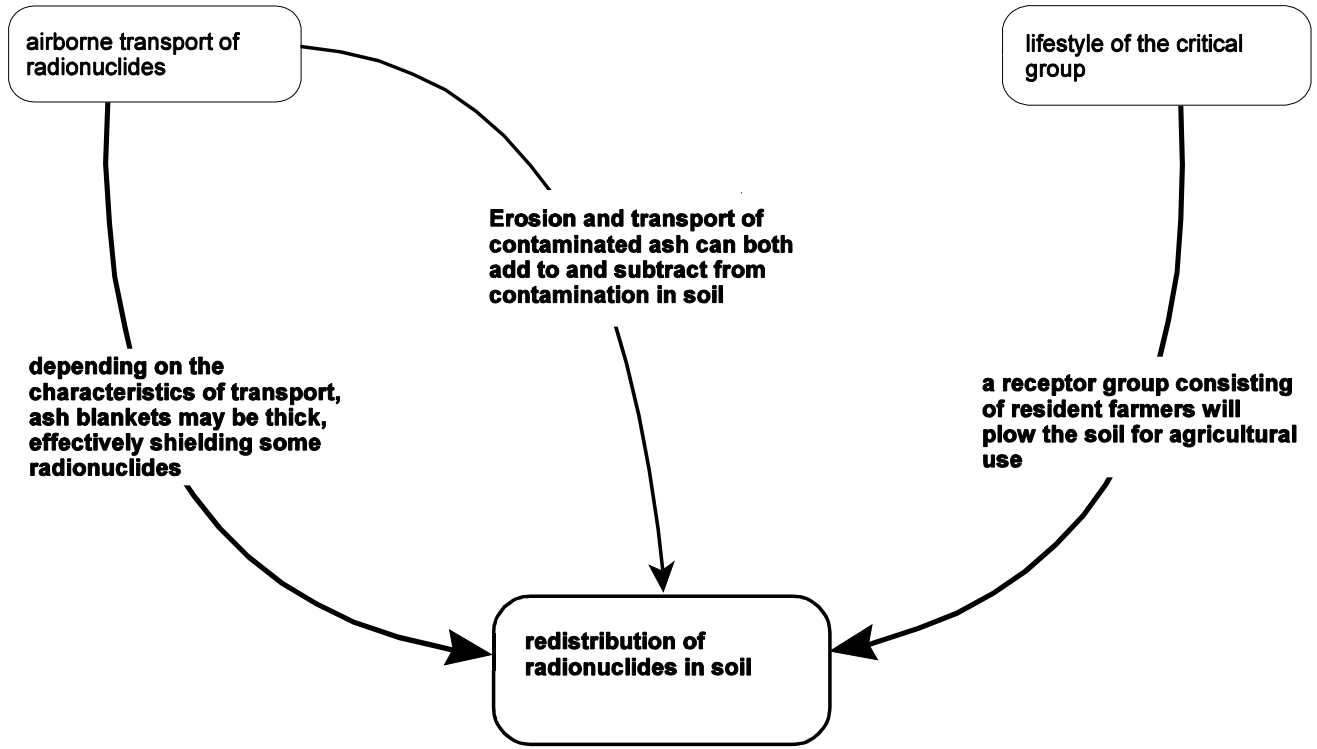


Figure 17. A diagram illustrating the relationships between “redistribution of radionuclides in soil” and other integrated subissues.

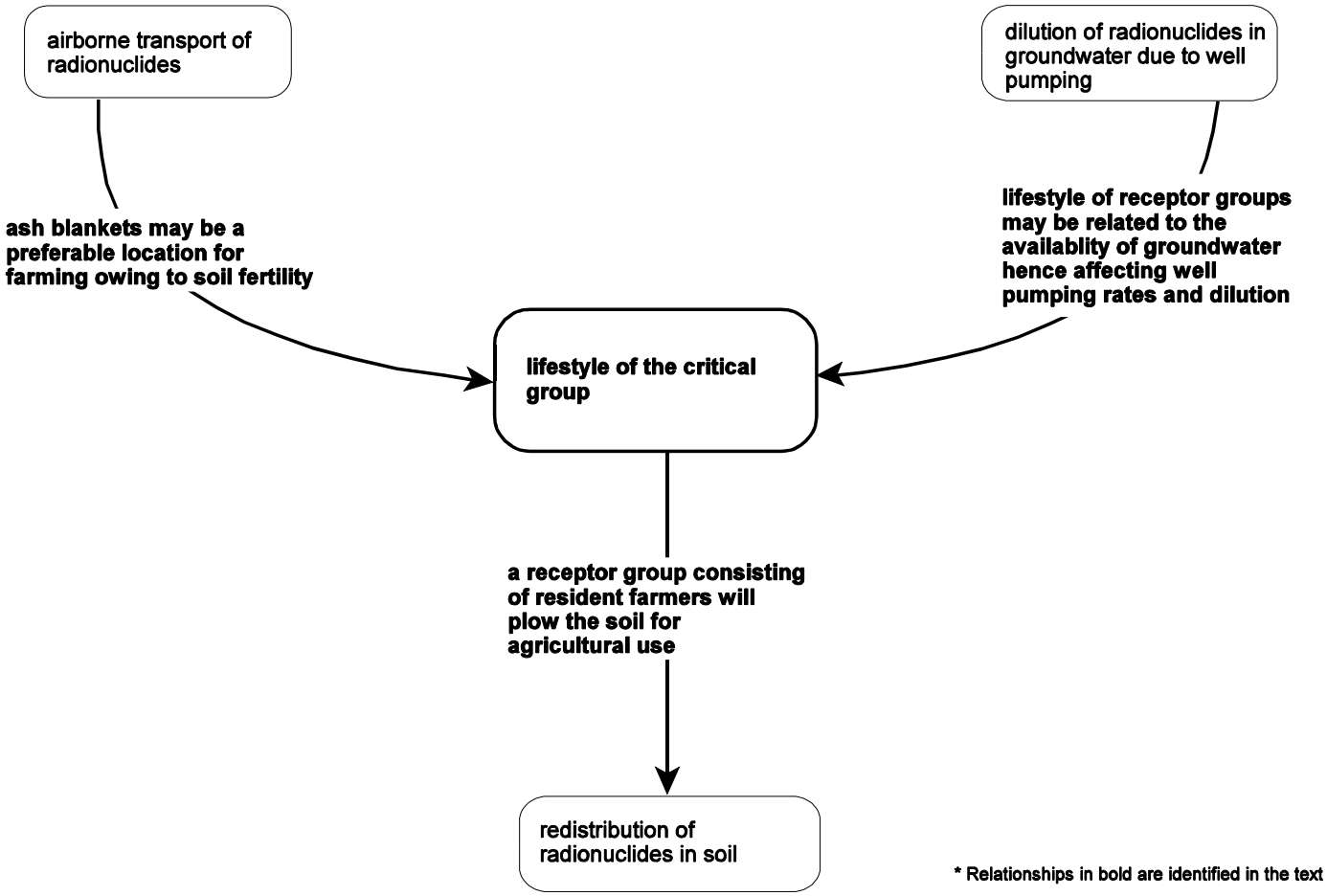


Figure 18. A diagram illustrating the relationships between "lifestyle of the critical group" and other integrated subissues.

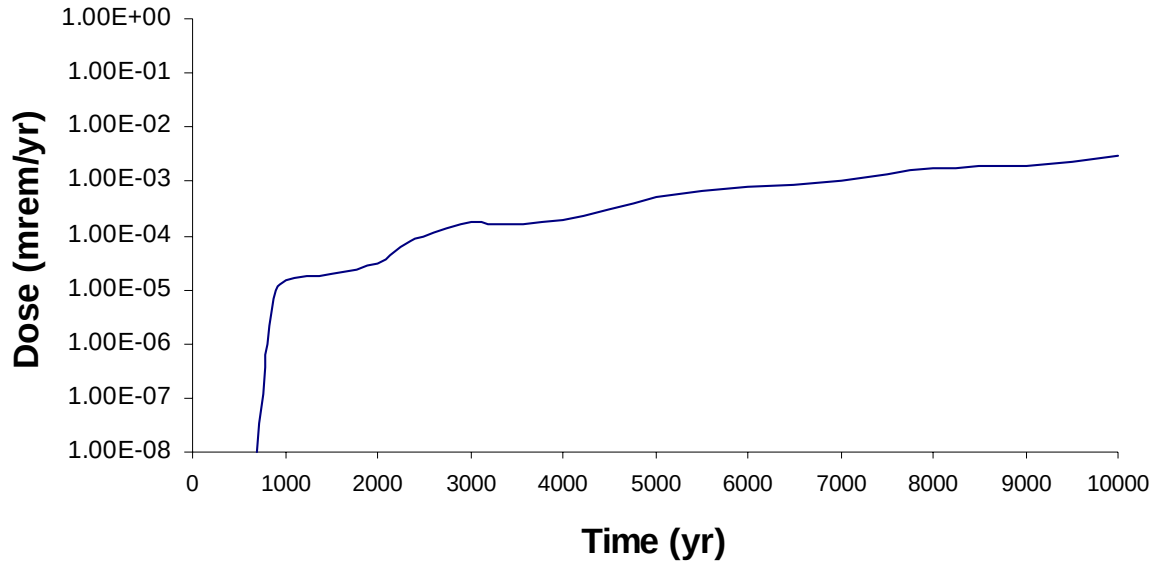


Figure 19. Mean dose history for the basecase performance of the repository

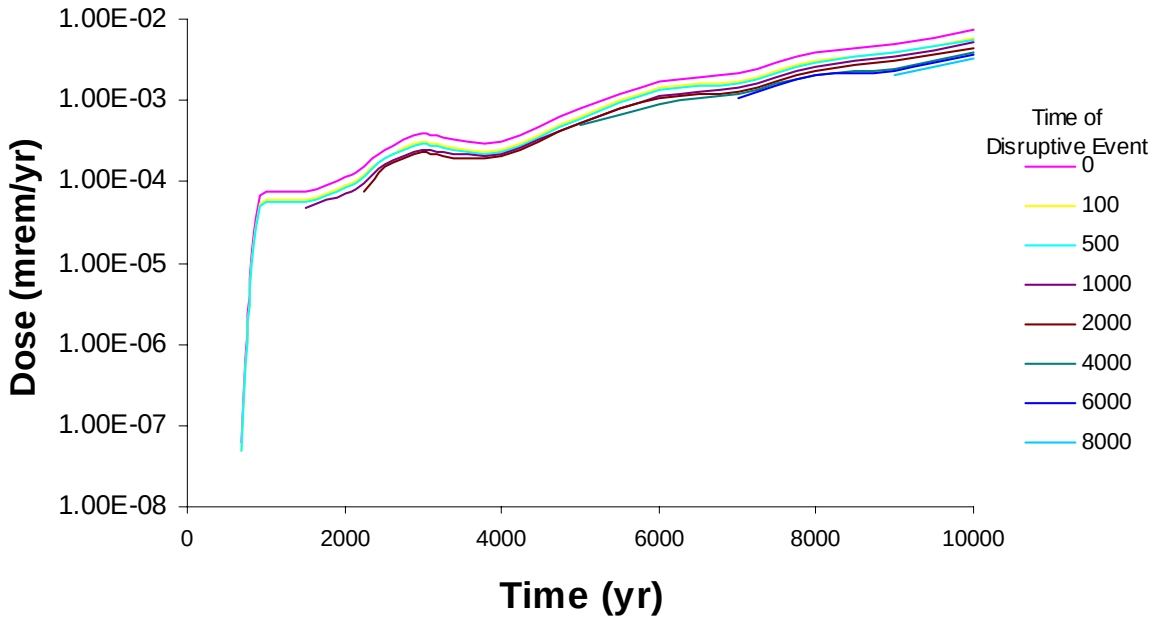


Figure 20. Scenario class dose history for scenario class Θ based on time of occurrence of the disruptive event

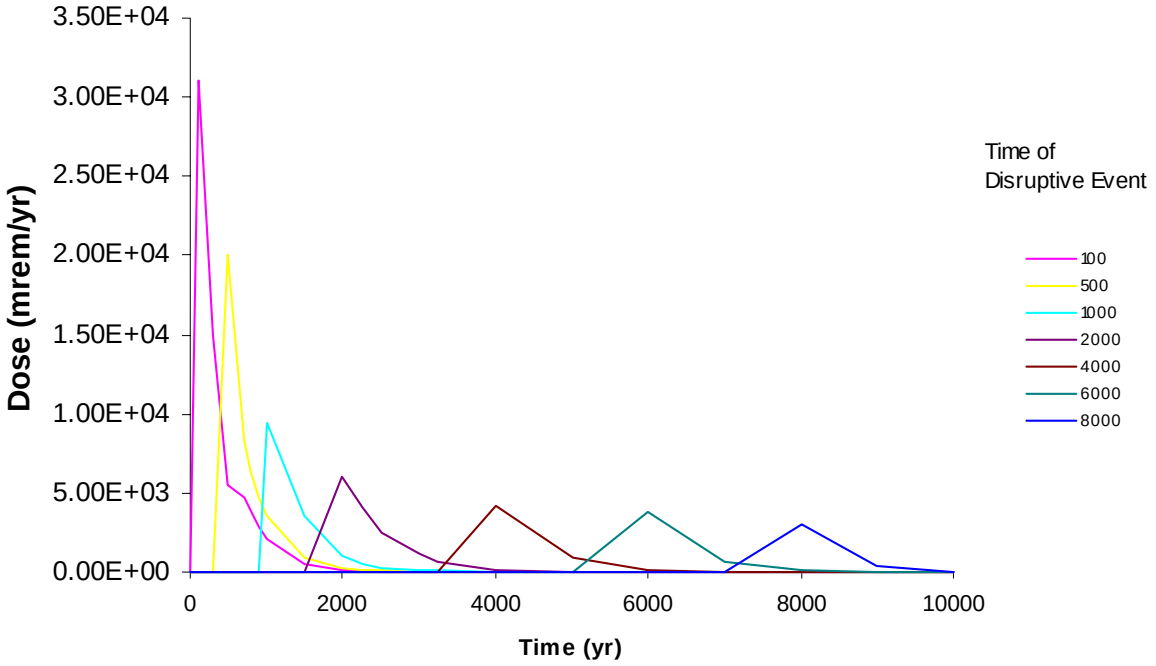


Figure 21. Scenario class dose history for scenario class Ψ based on time of occurrence of the disruptive event

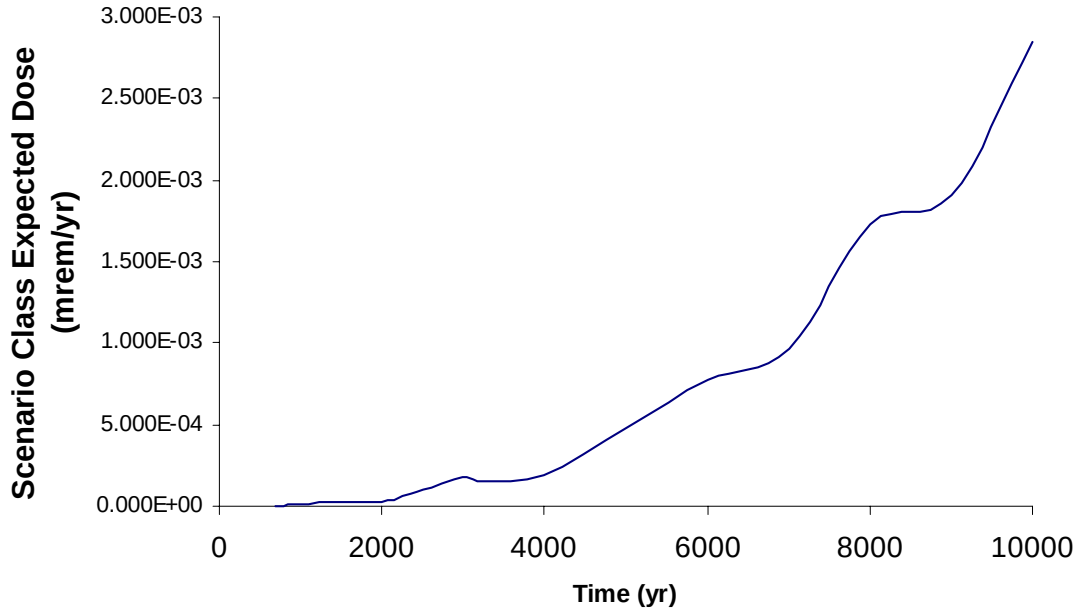


Figure 22. Scenario class expected dose history for basecase

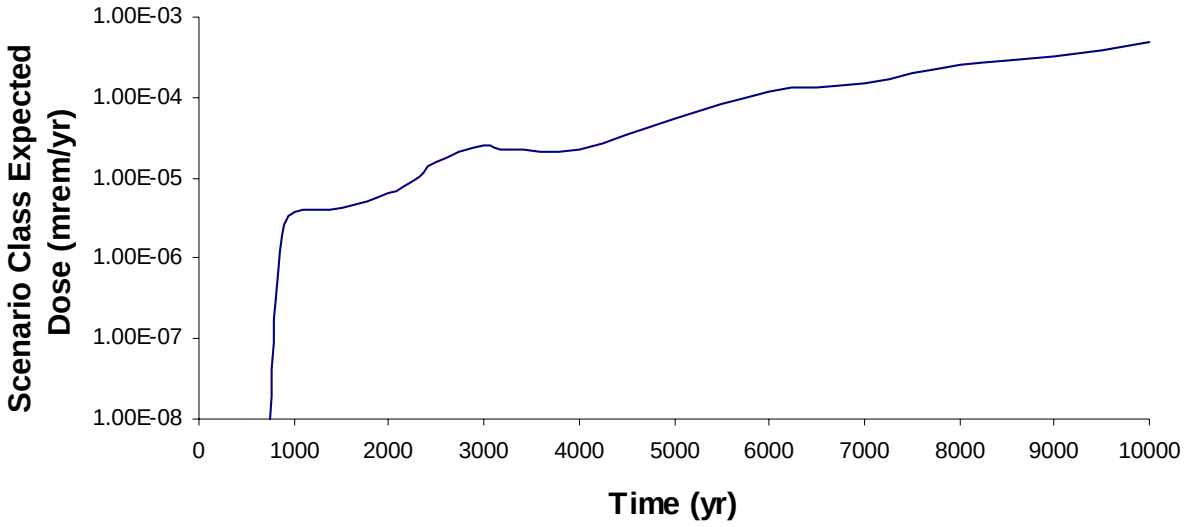


Figure 23. Scenario class expected dose history for scenario class Θ

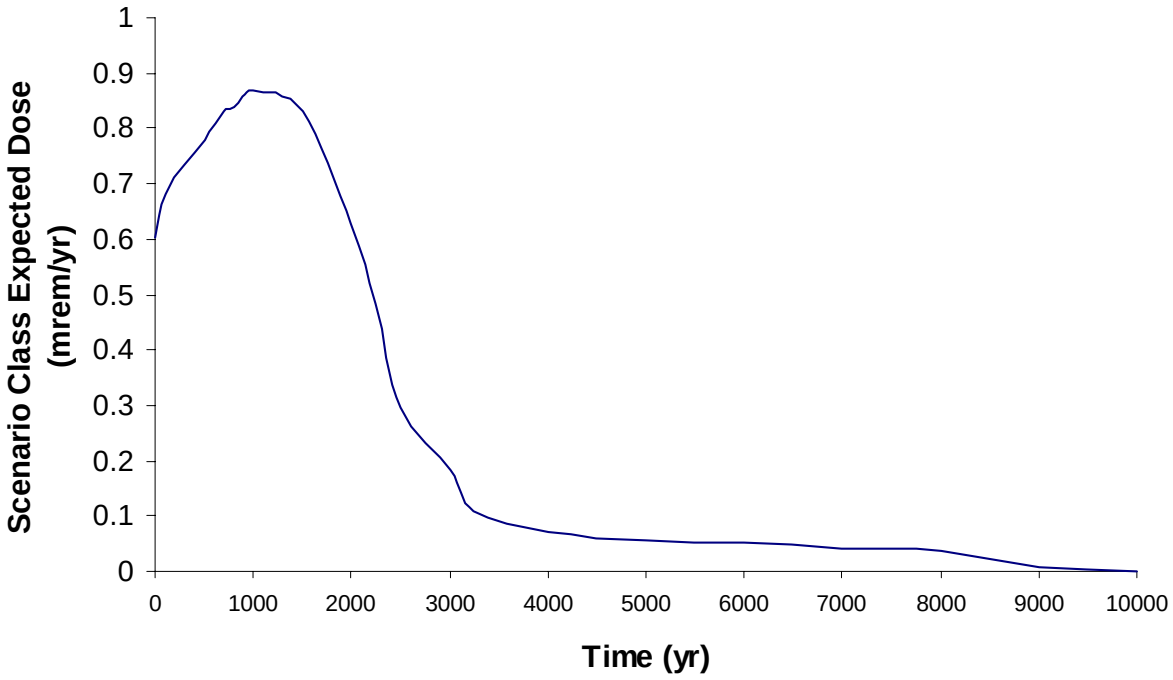


Figure 24. Scenario class expected dose history for scenario class Ψ

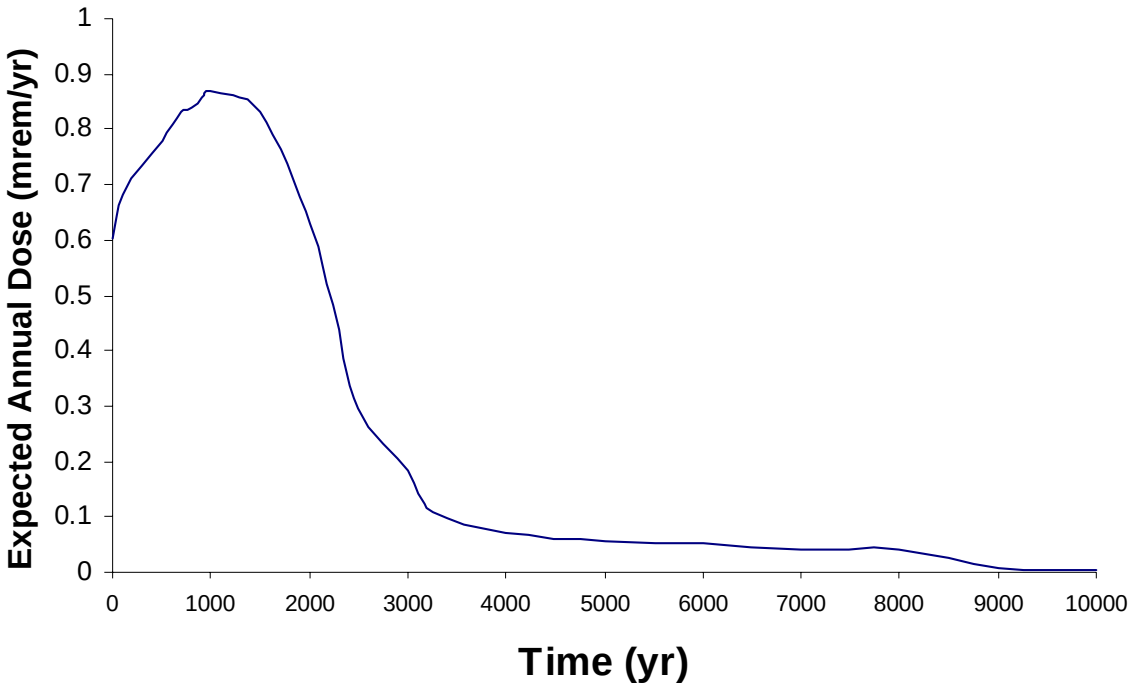


Figure 25. Expected annual dose