

## Risk Perception and Institutional Complexity in the 2014 West Virginia Chemical Spill (2014-8)

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On January 9th, 2014, the chemical MCHM (4-Methylcyclohexanemethanol) spilled into West Virginia's Elk River and contaminated the drinking water of over 300,000 people. In the weeks that followed, the public uncovered a series of institutional failures--among the private sector, local utilities, and government agencies, and both preceding and following the spill. This case study will introduce students to the institutional complexities and ecological vulnerabilities that slowed effective response to the disaster due to an unclear chain of responsibility across sectors. The case also assesses how West Virginia residents and agencies perceived environmental risk severity and the responsibility of different institutional actors, and how these perceptions added to the complexity and uncertainty surrounding response to the spill. This case aims to teach students about different theories of risk perception and environmental governance. It also provides a basic introduction to water quality data, monitoring, drinking water systems, and source water protection. The course's main modules will take approximately 3 class periods of 1.5 hours each. We also provide optional modules on environmental risk perception, which will grant several more class periods' worth of material.

### Associated Project:

[Teaching Socio-Environmental Synthesis with Case Studies 2014](#) [1]

### Resource File:

 [WV Chem Spill Teaching Notes\\_01 01 2015.pdf](#) [2]

 [Class 3\\_powerpoint\\_Jan2015.pdf](#) [3]

### Estimated time frame:

A few class periods or multiple-weeks

### SES learning goals:

- Understand the structure and behavior of socio-environmental systems
- Consider the importance of scale and context in addressing socio-environmental problems
- Co-develop research questions and conceptual models in inter- or trans-disciplinary teams
- Find, analyze, and synthesize existing data, concepts, or methods

### Has this been tested in the class room:

Yes

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### Source URL:

<https://www.sesync.org/risk-perception-and-institutional-complexity-in-the-2014-west-virginia-chemical-spill-2014-8>

### Links

[1] <https://www.sesync.org/project/teaching-ses-case-studies-2014>

[2] [https://www.sesync.org/system/tdf/resources/WV%20Chem%20Spill%20Teaching%20Notes\\_01%2001%202015.pdf?file=1&type=node&id=949&force=](https://www.sesync.org/system/tdf/resources/WV%20Chem%20Spill%20Teaching%20Notes_01%2001%202015.pdf?file=1&type=node&id=949&force=)

[3]

[https://www.sesync.org/system/tdf/resources/Class%203\\_powerpoint\\_Jan2015.pdf?file=1&type=node&id=949&force=](https://www.sesync.org/system/tdf/resources/Class%203_powerpoint_Jan2015.pdf?file=1&type=node&id=949&force=)