

# A Summary of the U.S. Environmental Protection Agency Multi-Year Study of the Contamination Risks to Drinking Water from Hydraulic Fracturing

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## AGENDA

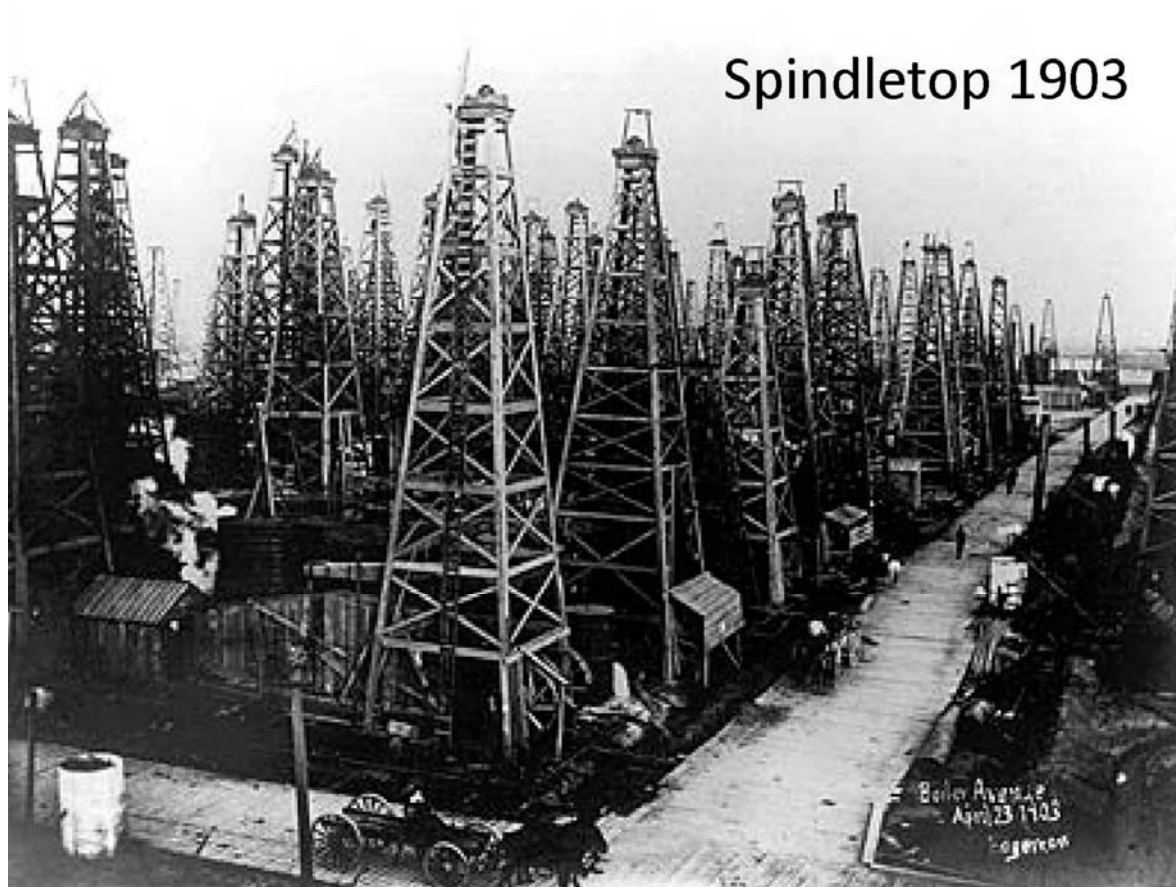
1. How Did This Get Started?
2. Timeline & Scope of Work
3. Study Conclusions
4. The Dissenting View
5. Ramifications
6. What is Next?



# Legacy



Spindletop 1903



4/12/2018

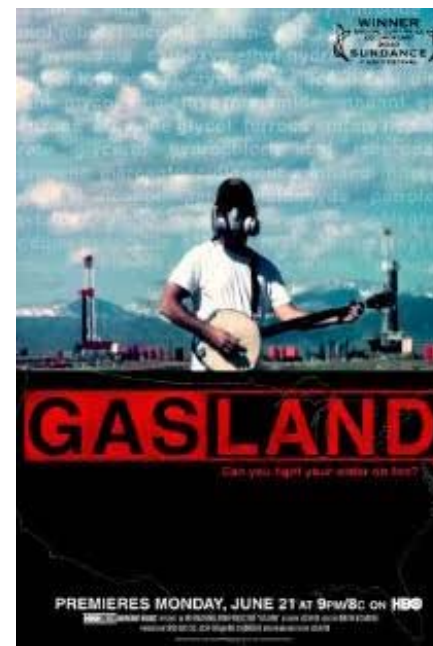
(Credit: Edgerton, 1903)



# The Last 12 Years

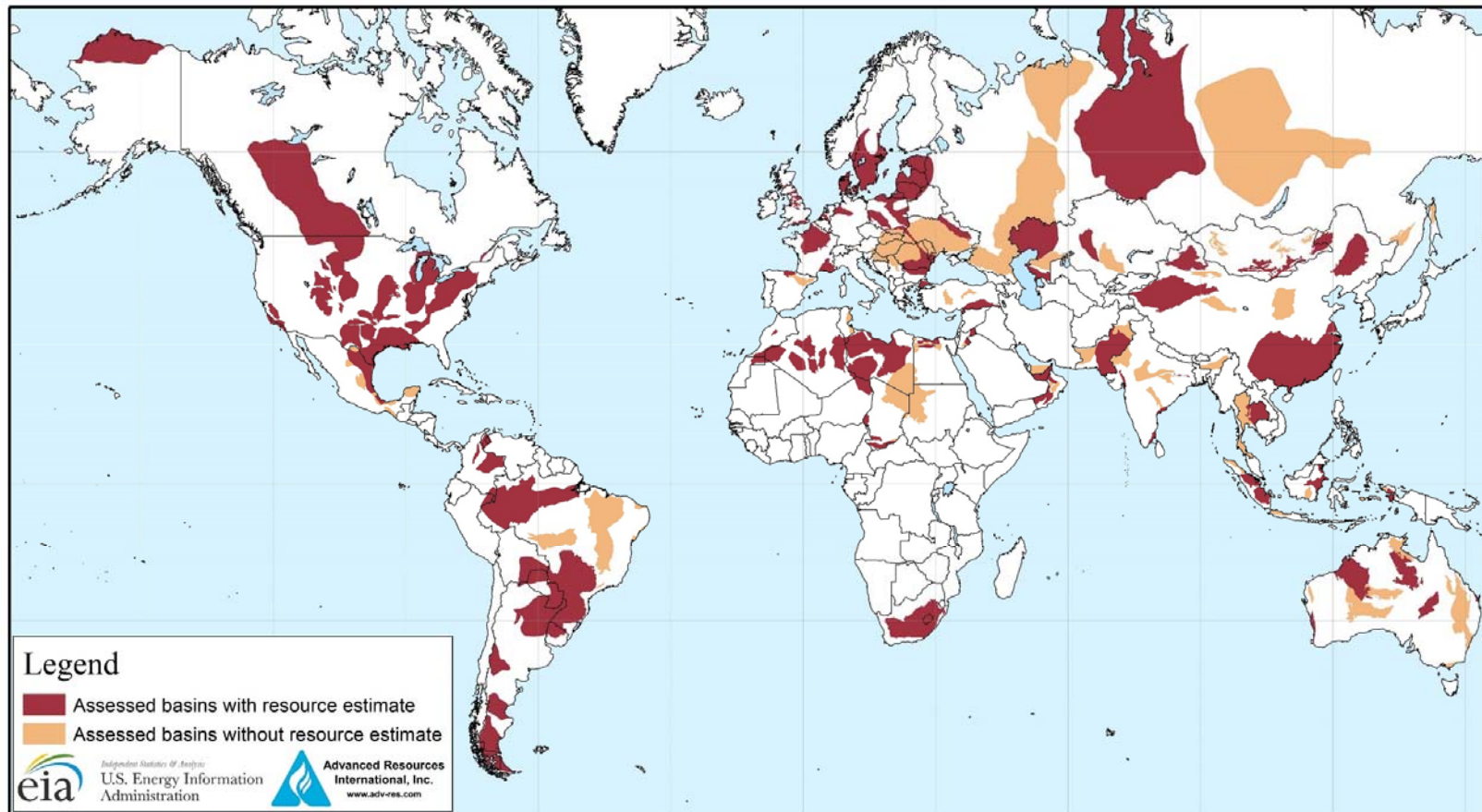


(Credit: Time Inc.)



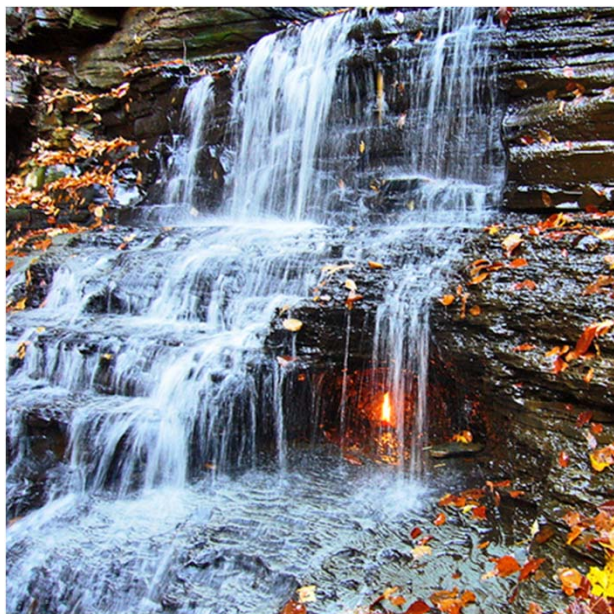
(Credit: Gasland)

# Global Shale Oil Opportunities



(Credit: U.S. Energy Information Administration based on Advanced Resources International, Inc. data)

# Methane in the Environment

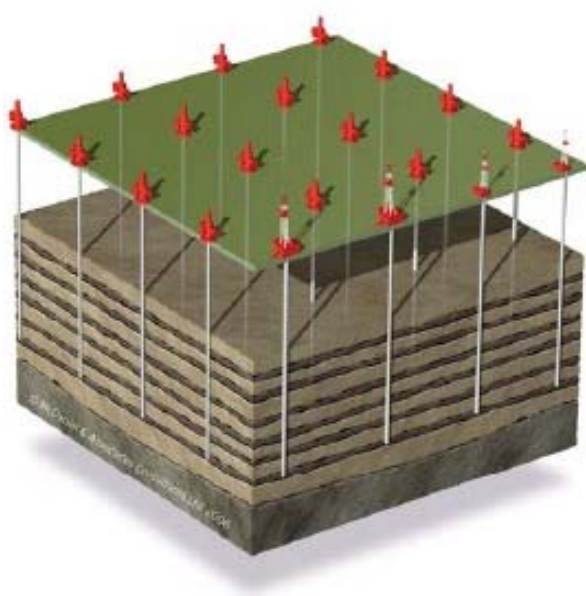


Chestnut Ridge Park, New York, is a small waterfall called the Eternal Flame Falls. (Credit: [Linden Tea/Flickr](#))

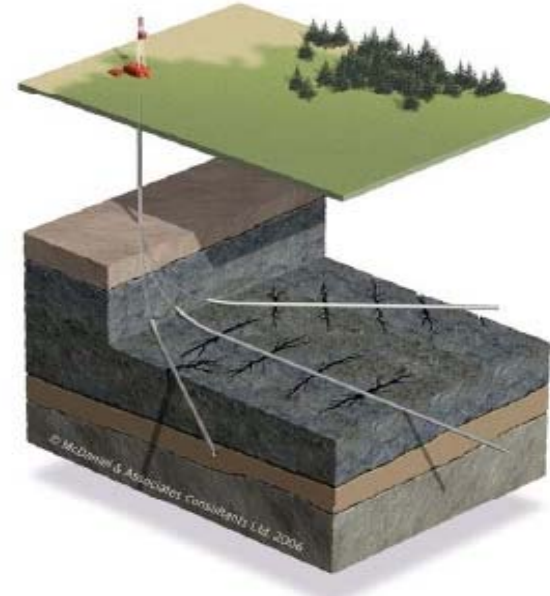


(Credit: [Club937.com](#))

# Evolving Technology



Former Technology



Current & Developing Technology

*(Credit: McDaniel & Associates Consultants Ltd, 2006)*



# Congress Responds



The U.S. House of Representative's FY 2010 Appropriation Conference Committee Directive to USEPA requested the Agency to conduct a study of HF and its relationship to drinking water, specifically:

*"The conferees urge the Agency to carry out a study on the relationship between hydraulic fracturing and drinking water, using a credible approach that relies on the best available science, as well as independent sources of information. The conferees expect the study to be conducted through a transparent, peer-reviewed process that will ensure the validity and accuracy of the data. The Agency shall consult with other Federal agencies as well as appropriate State and interstate regulatory agencies in carrying out the study, which should be prepared in accordance with the Agency's quality assurance principles."*

# Timeline & Scope of Work



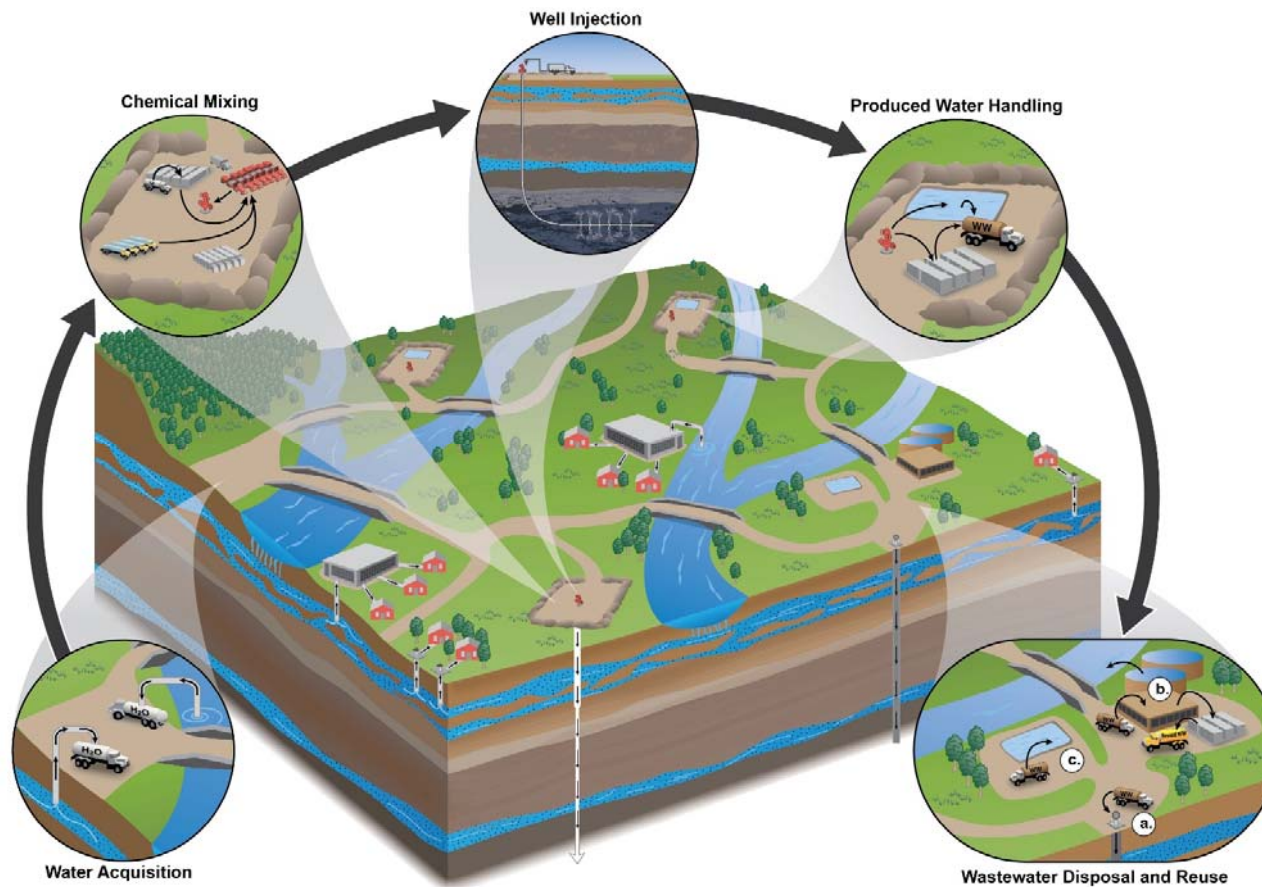
- 2010 – USEPA’s Office of Research and Development (ORD) coordinates work
  - Pavillion, WY work already underway under CERCLA investigation
  - Most of the work completed by outside consultants, national labs
  - Chartered SAB provides recommendations
- February 2011 – USEPA releases draft study plan – 1<sup>st</sup> SAB panel review
  - No industry representative on this panel
  - Expands research into full life-cycle of water – “Fracking” is now used broadly
- July 2011 – Chartered SAB reviews study plan and 1<sup>st</sup> SAB panel review
- November 2011 – USEPA releases final study plan

# The Study Plan



- Literature review and workshops
- Information requests to several oil and gas operators
- Independent research – laboratory, modeling
- 5 “Retrospective” sites selected for review
- 2 “Prospective” sites would be monitored
- Classified as a **Highly Influential Scientific Assessment** after work by **ORD commences**
- Extensive public input
  - Meetings
  - Testimony

# Drinking Water Resources & the Hydraulic Fracturing Water Cycle



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(Credit: USEPA, 2016)



## Timeline (continued)

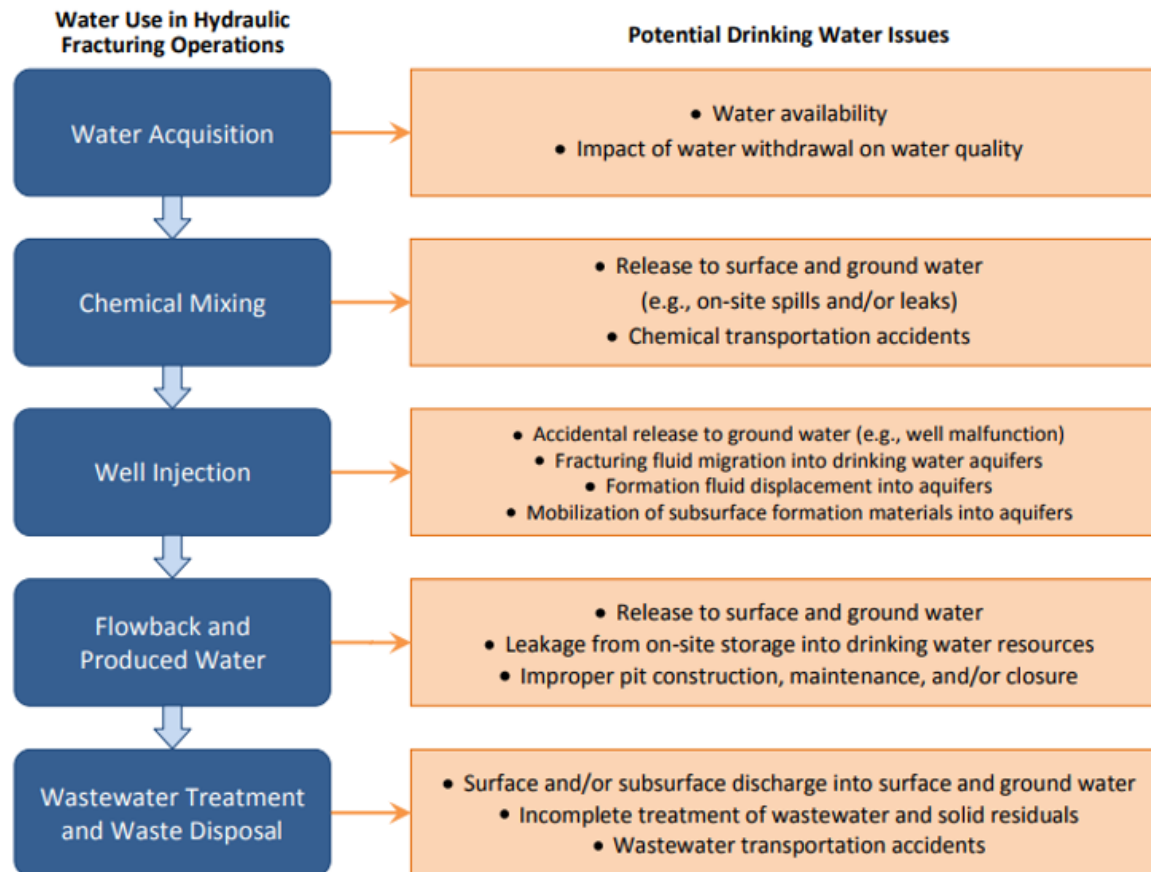


- November 2012 – proposed candidates for the 2<sup>nd</sup> SAB panel
- March 2013 – Chartered 2<sup>nd</sup> SAB empaneled
  - Comments (over 105,000) submitted
- June 2015 – Final Draft Assessment Report released

*“We did not find evidence that these mechanisms have led to widespread, systematic impacts on drinking water in the United States.”*
- April 2016 – The SAB panel submits report to Chartered SAB
- August 2016 – Chartered SAB provides final report to USEPA
- December 2016 – USEPA releases final report

*“activities under the hydraulic fracturing water cycle can impact drinking water resources under some circumstances. The Report identifies certain conditions under which impacts from hydraulic fracturing activities can be more frequent or severe”*

# Study Conclusions



(Credit: USEPA, 2016)

# The Dissenting View



- June 2015: Final Draft Assessment Report released  
*“We did not find evidence that these mechanisms have led to widespread, systematic impacts on drinking water in the United States.”*
- After 2015 draft document release, many members of the SAB suggested this conclusion was ambiguous, not supported by data, and unclear
- I drafted and defended a “Dissenting Opinion” stating the USEPA’s conclusion was both clear, concise and accurate
- Three other members of the SAB publicly agreed with the Dissenting Opinion and went on record in the final SAB report sent to the USEPA
- The Dissenting Opinion was reviewed by the Chartered SAB and considered significant to include in their final report to USEPA

# USEPA Discusses Final Report with the Wall Street Journal



*“While the number of identified cases of drinking water contamination is small, the scientific evidence is insufficient to support estimates of the frequency of contamination,” Burke told the Wall Street Journal. “Scientists involved with finalizing the assessment specifically identified this uncertainty in the report.”*

Thomas Burke – Dept. Administrator - USEPA



# Missed Opportunities



- The final USEPA report failed to discuss State regulatory programs that have successfully managed the oil and gas industry for decades
- The report did not address that a majority of releases are both spatially and temporally limited
- The final report failed to address the trends in industry standards and improving technology
- The report did not identify the need for educating property owners on private well maintenance

# Private Water Supply Well



4/12/2018

# Private Water Supply Well

(continued)





# Private Water Supply Well

(continued)





# What is Next?



- Debates continue about safe and responsible development
  - Health studies
  - Eminent domain
  - State vs. Federal/National policy
- Continued oil & gas development opportunities require:
  - Fact-based science
  - Investing in R&D
  - Effective external stakeholder engagement strategies
  - Government stability & fit-for-purpose regulations
- Succession planning is a growing issue
  - Exodus of retirees from the industry
  - Hesitation of young people to work in the industry

Thank you

