
The Science and Politics of the Stream Protection Rule: What We May Have Learned

**Donald K. Lumm, Ph.D., C.P.G.
ECSI, LLC
Lexington, Kentucky**

**125rd Annual Meeting
Illinois Mining Institute**

**Marion, Illinois
30 August 2017**

Presentation Outline

- History of the Regulation – SMCRA to present
- Intent of Stream Protection Rule (SPR)
- Draft of Regulatory Impact Analysis (RIA) of SPR
- OSM Public Hearings (“Open Houses”)
- Critical Review of RIA of SPR Draft Report
- OSM Final Ruling and Overturning of SPR
- What we may have learned

History of Regulation – SMCRA (1977)

- The Surface Mining Control and Reclamation Act (SMCRA) of 1977, Public Law (PL) 95-87
- Formally established the Office of Surface Mining and Reclamation Enforcement (OSM)
- Original intent of SMCRA was to approve each State's regulation program, which gives the State the authority to regulate their own mining operations, issue their own permits, inspect their mines, enforce statutes, etc.

History of Regulation – Stream Buffer Zone

- OSM Stream Buffer Zone (SBZ) Rule of 1983
- Purpose was to protect “headwater streams”
- 100 foot “buffer zone” adjacent to streams
- Allowed for exemptions when water quantity, quality, and biota were not compromised
- OSM and Appalachian operators did not interpret as outright ban on mine spoil placement
- Did not address underground mining

History of Regulation – Stream Buffer Zone

- OSM revised SBZ Rule in Dec. 2008
- Main purpose was to address effects of Mountaintop Removal (MTR) and achieve consistency with Clean Water Act (CWA)
- Maintained 100 foot buffer zone near streams
- Allowed for exemptions for mine spoil placement
- Challenged by environmental groups
- Did not address underground mining

Regulatory Political Football (2008-2014)

- Environmental challenges to 2008 SBZ Rule kept the Rule in abeyance for years
- OSM chose to not defend 2008 SBZ Rule
- OSM and EPA issue MOU of “Appalachian Surface Coal Mining” in 2009, retooling SBZ Rule as SPR
- US District Court vacated 2008 SBZ Rule in 2014, and 1983 SBZ Rule was reinstated

Early Efforts for SPR Draft (2010-2011)

- OSM hand picked a team of three consulting firms (including ECSI) to write EIS draft
- First project meeting in June 2010, but OSM set unrealistic delivery of Draft as Feb. 2, 2011
- OSM initially believed only a Notice of Intent (NOI) was adequate, and public meetings were necessary for publishing SPR, ignoring National Environmental Policy Act (NEPA) process
- Consultants requested more time to allow for public meetings, but were denied by OSM

Early Efforts for SPR Draft (2010-2011)

- Consultants were not informed by OSM that SPR applied to underground mining impacts until Oct. 7, 2010
- Project team felt that inclusion of underground mining impacts changed scope and schedule of EIS, and requested additional time and budget
- OSM denied request and insisted underground mining had been part of original scope of work

Early Efforts for SPR Draft (2010-2011)

- ECSI prepared coal production impact analyses for the various EIS alternatives
- At team meeting in Feb. 2011, OSM “suggested” that project team revisit production impacts using different assumptions that would change final results, yielding less drastic economic impacts
- OSM also asked consultant team to assume 2008 SBZ rule was in effect (although it was not) to change the baseline assumptions
- First Draft was submitted to OSM on Feb. 23, 2011; funding was not renewed, and the consultant project team was disbanded

Results/Repercussions of SPR First Draft

- First Draft submitted Feb. 2011 with several incomplete sections per OSM instructions
- Consultant team predicted over 7,000 job loses in RIA
- All consultant teams, except one, agreed that it would be unprofessional and unethical to change the technical and legal assumptions to derive more palatable economic results

OSM Rationale for SPR

- OSM Testimony to US House of Representatives Nov. 4, 2011 of intent to revise 2008 SBZ Rule
- New SPR “to improve mining practices to prevent environmental damage *before* it occurs”
- To “provide solid benchmarks...based on the latest scientific methods”
- To define and address “material damage to the hydrologic balance outside of the permit area”

https://www.doi.gov/ocl/hearings/112/StreamBufferZoneRule_10411

Congressional Testimony by OSM Director

Nov. 4, 2011

- Job loss numbers from SPR EIS Draft were “placeholders”, “fabricated”, and “no basis in fact”
- Suggested plagiarism in EIS
- Claimed that OSM was at “arms length” in research and review process
- ECSI was in turn prompted to respond to OSM Director’s testimony to provide “fact check”

Consultants Response Testimony, Nov. 18, 2011



“When OSM did not like the result of the analysis, OSM asked that the team change the baseline conditions and use alternative assumptions to alter the coal production and job loss numbers.”

**Steve Gardner Testimony
House Subcommittee on Energy
and Mineral Resources
November 18, 2011**

Retooling of SPR Draft (2011-2015)

- After previous consultant contract was not renewed, OSM engaged new contractors to retool the SPR draft report
- Coal producing states regulatory agencies (mining, permitting) which originally agreed to be “cooperating agencies” to develop and review the SPR draft were not provided copies of the working draft; all but one of these states formally withdrew as a coop. agency

The War on Coal

2016 Presidential Campaign

- Many have termed it phony
- We know it is real
- We have seen the casualties
- It didn't have to happen this way!

Just a Few of the Battles:

- Environmental Groups
- Mercury and Air Toxics Standards (MATS)
- The Clean Power Plan (CPP)
- **The Stream Protection Rule (SPR)**



EPA's Gina McCarthy:

"I can't find one single bit of evidence that we have destroyed an industry or significantly impacted jobs other than in a positive way."

(April 13, 2016) <https://www.eenews.net/climatewire/stories/160035572/>



Initial Release of SPR – July 27, 2015

- EIS and RIA consist of over 3,000 pages
- Initial 60-day public comment period for documents which took 6 years to produce
- Schedule and location of 6 OSM public hearings (“open houses”) released

Initial Responses and Reactions to SPR

- One 30-day extension to public comment period is allowed due to overwhelming number of extension requests
- Extensive opposition to SPR at public hearings nationwide
- Over 94,000 comments submitted
- National Environmental Policy Act (NEPA) process ignored

Initial Responses and Reactions to SPR

- SPR is fundamental rewrite of SBZ Rule
- New and exceedingly broad definition of “material damage to hydrologic balance”
- Wholesale adoption of EPA’s “Waters of the U.S.” regulations
- Unprecedented and difficult permit application requirements
- New and stringent bonding requirements



OSM Public Hearings



Location

Denver, CO

Lexington, KY

St. Louis, MO

Pittsburgh, PA

Big Stone Gap, VA

Charleston, WV

Date

Sept. 1, 2015

Sept. 3, 2015

Sept. 10, 2015

Sept. 10, 2015

Sept. 15, 2015

Sept. 17, 2015



OSM Public Hearing Format



- Ground rules given by independent moderator
- Independent court reporter; OSM officials took notes
- OSM led off with 10 minute general presentation about the SPR
- 15 to 25 comment opportunities to general public (first come/first serve), 2 minute time limit
- Concurrent manned poster session in lobby area

MO S&T and SIUC SME Student Sections
St. Louis, MO



WVU SME Student Section
Pittsburgh, PA



CSM SME Student Section
Denver, CO



VT SME Student Section
Big Stone Gap, VA



Open House Sign-in, Lexington, KY

Sept. 3, 2015



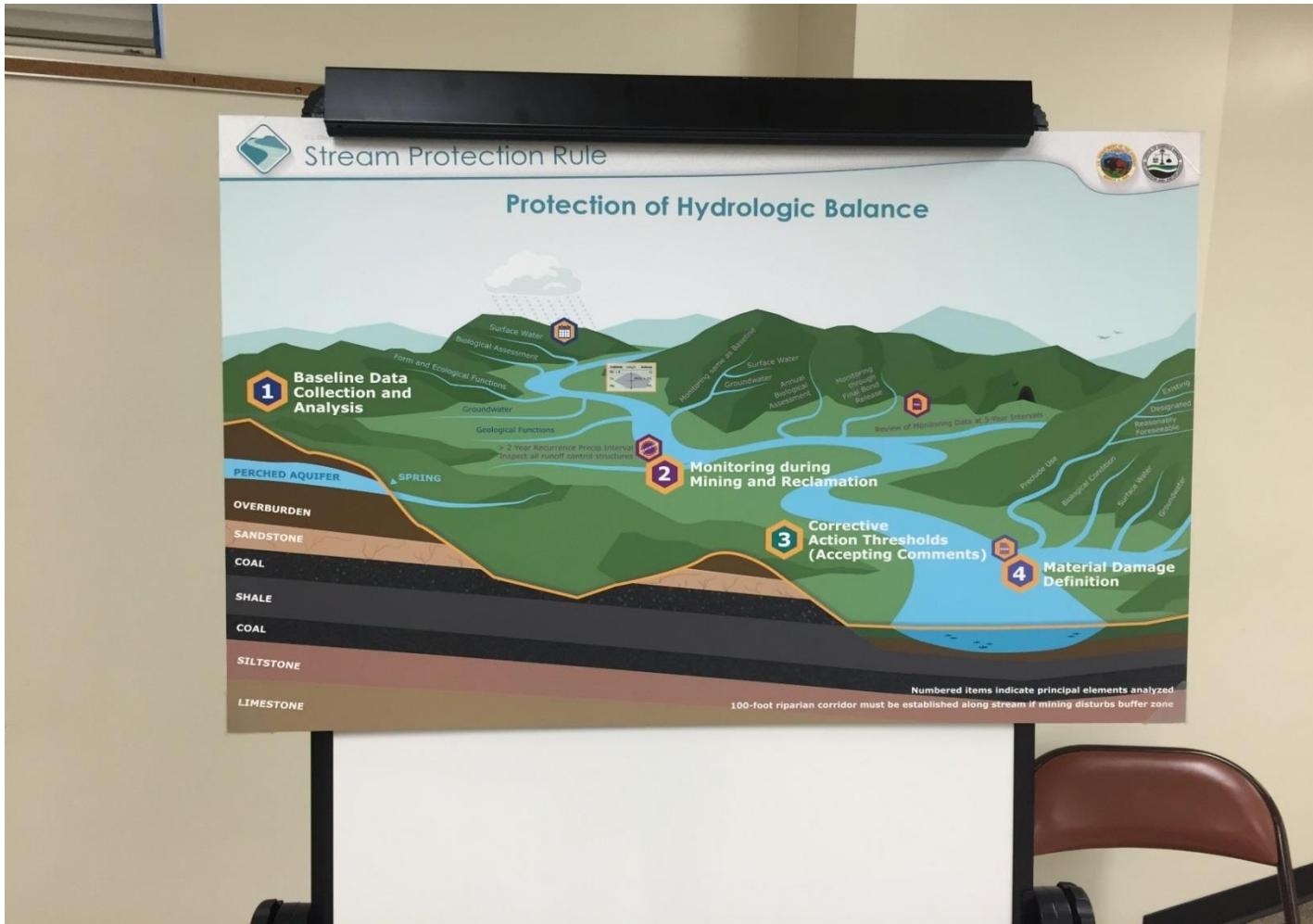
Open House Hearing, Lexington, KY

Sept. 3, 2015



Poster Session at Open House, Denver, CO

Sept. 1, 2015





U.S. Department of the Interior Office of Surface Mining Reclamation and Enforcement

DRAFT

July 2015

Stream Protection Rule Environmental Impact Statement

<https://www.osmre.gov/programs/RCM/docs/SPR/DEIS.pdf>

Draft Environmental Impact Statement for the Stream Protection Rule

Lead Agency: U.S. Department of the Interior,
Office of Surface Mining Reclamation and Enforcement (OSMRE)

Cooperating Agencies:

Federal Agencies:

U.S. Environmental Protection Agency

U.S. Fish and Wildlife Service

State SMCRA Regulatory Authorities:

Utah Division of Oil, Gas and Mining*

New Mexico Mining and Minerals Division*

Kentucky Department for Natural Resources*

Railroad Commission of Texas*

Wyoming Department of Environmental Quality

West Virginia Department of Environmental Protection*

Alabama Surface Mining Commission*

Indiana Department of Natural Resources*

* These state regulatory agencies subsequently terminated their role as cooperators.

IEC

DRAFT

Regulatory Impact Analysis of the Stream Protection Rule

July 2015



prepared for:

Office of Surface Mining Reclamation
U.S. Department of the Interior
1951 Constitution Avenue, NW
Washington, DC 20240

prepared by:

Industrial Economics, Incorporated
2067 Massachusetts Avenue
Cambridge, MA 02140

In association with:

Morgan Worldwide Consultants
122 East Third St.
Lexington, KY 40508
and
Energy Ventures Analysis, Inc.
1901 N Moore St., Ste. 1200
Arlington, VA 22209

INDUSTRIAL ECONOMICS, INCORPORATED

Stream Protection Rule Regulatory Impact Analysis

Draft – July 2015

TABLE OF CONTENTS

- Ch. 1: Introduction and Regulatory Options
- Ch. 2: Overview of the Coal Mining Industry and Market
- Ch. 3: Approach to Regulatory Impact Analysis
- Ch. 4: Compliance Cost Analysis
- Ch. 5: Coal Market Welfare Impacts
- Ch. 6: Regional Economic Impacts Analysis
- Ch. 7: Environment & Human Health
- Ch. 8: Analysis of Alternatives
- Ch. 9: Other Equity Considerations and Regulatory Impacts
- **Appendix D: Analysis of Potential Impacts to Underground Mining Operations**

Appendix D: Analysis of Potential Impacts to Underground Mining Operations

Prepared by:

Morgan Worldwide Consultants, Inc.

In Conjunction with:

Industrial Economics

August 14, 2014

Purpose of Appendix D

To determine whether the addition of a new national definition of “material damage to the hydrologic balance (MDHB) outside of the permit area” would impact the recovery of underground mineable coal in the United States.



Appendix D

Table of Contents

1. Executive Summary
2. Introduction and Approach
3. Minor Longwall Producing Regions
4. Illinois Basin
5. Colorado Plateau
6. Appalachian Basin
7. Conclusions

Definition of “Material Damage”

Any adverse impact from mining operations on the quality or quantity of surface water or groundwater, or on the biological condition of a perennial or intermittent stream that would:

- Preclude attainment of a designated use of surface water under the Clean Air Act;
- Cause groundwater or surface water to be incapable of supporting uses of that water; or
- Adversely impact threatened or endangered species, or have an adverse affect on designated habitat outside of the permit area

“Overburden Threshold Depth”

- Defined as vertical distance from top of coal to ground surface
- Arbitrarily determined from literature review; primary basis is minimum depth of longwall mines operating in early 2000's

Northern Appalachia	400 feet
Illinois Basin	200 feet
Colorado Plateau	500 feet

The Critical Analysis

Prepared at the Request of:
Murray Energy Corp.



Prepared by:

- Civil & Environmental Consultants, Inc. (CEC) 
- Ramboll Environ US Corporation 
- ECSI, LLC 

Appendix D Literature Review

- Consultants fact-checked all supporting references using the original publications for determining accuracy, context, and relevance
- Consultants confirmed accuracy of references but concluded lack of thorough presentation of cited literature and lack of development of complete rationale for selected threshold limits
- Several predictive models of subsidence exist but they are not expandable to a regional level

The “Golden Reference” for Overburden Threshold Depth

“The application of an overburden threshold limit *appears to be* the most logical approach for subsidence assessment.”

(Owsiany, J.A., and Waite, B.A., 2001,

“The Response of a High Order Stream to Shallow Cover Longwall Mining in the Northern Northern Appalachian Coalfield,” Proceedings 20th Intl. Conference on Ground Control in Mining, Morgantown, WV, p. 149-56.)

Summary of Critical Analysis

- Lack of a clear, accurate, and complete discussion of mining practices in the U.S.
- Lack of a complete and transparent presentation of the technical basis of the relevant science and engineering necessary to support the “significant regulatory action”
- Transparency is lacking with regard to how OSM elected or excluded information from consideration

Summary of Critical Analysis

- The SPR fails to distinguish the ecological functions, geology, hydrology and the technical and operational issues that affect mining practices in different states and coal basins
- Data and impacts are limited to specific states within the Appalachian Region with the intent to apply the requirements nationwide

Summary of Critical Analysis

- The “material damage to the hydrologic balance” as measurable adverse impact on water quality and quantity resulting from degraded biological conditions is unattainable and inconsistent with the SMCRA definition
- OSM promotes regulations that would require the use of unproven, highly variable reclamation endpoints and ignores the post-mining land uses and landowner’s rights as are approved by states

Summary of Critical Analysis

- OSM incorrectly asserts that underground mining methods such as longwall mining will not be impacted by the SPR
- OSM failed to adequately consider census and employment data for population trends, and that the SPR will eliminate hundreds of thousands of jobs and millions of dollars of local and state revenues, among other detrimental economic impacts

Federal Register/Vol. 81, No. 244/ Tuesday, December 20, 2016/Rules and Regulations

DEPARTMENT OF THE INTERIOR

Office of Surface Mining Reclamation and Enforcement

**30 CFR Parts 700, 701, 773, 774, 777, 779, 780, 783, 784, 785, 800, 816,
817, 824, and 827**

Stream Protection Rule

AGENCY: Office of Surface Mining Reclamation and Enforcement, Interior

ACTION: Final rule.

SUMMARY: We, the Office of Surface Mining and Reclamation Enforcement (OSMRE or OSM), are revising our regulations, based on, among other things, advances in science, to improve the balance between environmental protection and the Nation's need for coal as a source of energy. This final rule will better protect water supplies, surface water and groundwater quality, streams, fish, wildlife, and related environmental values from the adverse impacts of surface coal mining operations...

<https://www.gpo.gov/fdsys/pkg/FR-2016-12-20/pdf/2016-29958.pdf>

Nullification of SPR Rule

H.J. Res. 38, February 16, 2017



What Have We Learned?

- Administrative political agendas fueled by pressure from environmental groups have and will continue to generate new or revised rules applied to coal mining operations for the long term future
- Operators and technical consultants should strive to maintain or increase standards of data collection, methodology, and analysis, and quantify results whenever possible

Questions?

**Donald K. Lumm, Ph.D., C.P.G.
Senior Project Geologist
ECSI
340 S. Broadway Ave., Ste. 200
Lexington, KY 40508
(859) 233-2103
dlumm@engrservices.com**

