



**MOUNTAIN CITIZENS SPEAK: PUBLIC TRUST IN WATER AND GOVERNMENT
TEN YEARS AFTER THE MARTIN COUNTY COAL WASTE DISASTER**

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Overview: Sometime after midnight on October 11, 2000, the Big Branch coal waste impoundment owned by Martin County Coal Company ruptured in Martin County, Kentucky. Over 300 million gallons of coal waste, including water, diesel fuel, heavy metals and other contaminants, leaked through a series of abandoned underground mine tunnels and exited through Coldwater and Wolf Creeks. The spill killed all aquatic life in both watersheds and disrupted public water supplies in Martin County and other communities along the Tug River. The black, lava-like substance flooded people's residences and properties, temporarily displacing many Coldwater and Wolf Creek residents from their homes. The Martin County coal waste spill was the largest environmental disaster in the southeastern U.S., dwarfing the well-known *Exxon Valdez* disaster spill of 11 million gallons of oil. Fortunately, this disaster did not kill or injure any people, though it did destroy wildlife and vegetation.

With the exception of the *Exxon Valdez* disaster, which has been the subject of sustained follow-up study (see, for example Picou et al., 2004), research on disaster impacts typically focuses on their immediate aftermath, including emergency response, clean-up, litigation and other community or psychosocial effects (Nigg and Tierney, 1993). This paper investigates the long-term impacts of the disaster from the perspective of Martin County residents. Specifically, it asks how the disaster affected residents' perceptions of environmental quality and risk, especially concerning the safety of drinking water. In addition, it examines the disaster's impact on local politics and on trust among Martin County residents in their local government. This study is based upon interviews with nine key community members conducted in 2009 and a review of *The Mountain Citizen*, a local weekly newspaper, from October 1998 through December 2008.

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Martin County, Kentucky: Context

Martin County is located in the central Appalachian coalfields, in eastern Kentucky near the border with West Virginia. It is a rural county with a small, declining population. In 2000, when the disaster occurred, the county's population was 12,578; the U.S. Census agency estimates that the population in 2008 is 11,602. It is a poor county, with an annual per capita income that is about half that of the general U.S. per capita income (\$10,650 compared to \$21,587 in 2000) and a poverty rate that is about three times the national average (37 percent compared to 12.4 percent for the US). Its adult population of persons aged 25 and over lags behind the U.S. in educational attainment, with 54 percent having earned a high school diploma (80.4 percent, US) and nine percent having earned at least a bachelor's degree (24.4 percent, US). The population is primarily White (99.3 percent in 2000) (U. S. Census Bureau, 2000). One of the county's most important economic sectors is coal mining. It employs 37.2 percent of Martin County's paid workforce in 2007 compared to the U.S. average of five percent. Following coal mining in Martin County were retail trade (20.5 percent) and food services (6.2 percent), as the second and third most important economic sectors (U.S. Census Bureau, 2007).

LITERATURE REVIEW: The impact of disasters on communities

As the field of disaster studies emerged in the post World War II era, social scientists posited that disasters would produce significant changes in the structure, social life, and even the culture of the communities and societies they impact (Sorokin, 1942). But it has proven difficult to gauge the economic, community and human costs of disasters (Chang, 2001; Eshgi and Larson, 2008, pp. 71-73). Studies done mostly in the U.S. have generally

found that natural disasters have no long-term effects on communities. U.S. communities usually "rebound" after a few years and return to functioning normally and meeting community needs. Consequently, many researchers agree that disasters merely accelerate and build upon pre-disaster trends and dynamics, rather than completely transforming them (Quarantelli, 1993, p. 75; see also Nigg and Tierney, 1993; Pais and Elliott, 2008). As Nigg and Tierney put it, "disasters do not cause growing, prosperous communities to decline; nor can they save declining communities" (1993, p. 1). It is important to note that these generalizations apply only to communities in the developed world—not to communities in the developing world, where the impacts of disasters, policies and resources pertaining to them, may be quite different (Nigg and Tierney, 1993; Pandey and Okazaki, 2005).

It is possible that a community's characteristics determine how it responds to disaster. For example, communities with higher proportions of low income populations, racial-ethnic minorities, women and those at the extreme ends of the age spectrum (very old or very young) may suffer more psychologically, socially and financially from disasters than other communities (Adeola, 2009; Cutter et al., 2003; Edwards, 1998; Fothergill et al., 1999). Another factor that seems central to the understanding of how a community will be affected by a disaster is social capital. Social capital refers to the cultural norms and social networks that facilitate collective action. Communities with dense, overlapping social networks comprised of people who communicate openly and have a high level of trust in their neighbors and leaders, prepare for and cope with disasters more effectively. Communities with a low stock of such social capital are more vulnerable to the negative consequences of disasters. Interestingly, the experience of

disasters or serious social problems can, when coped with appropriately, increase a community's capacity to respond effectively to such dire events in the future (Bin and Edwards 2009). Disasters, according to Dynes (2002, pp. 10-15), cause a re-ordering of social priorities and, an "expansion of citizenship" whereby community members are called on to take new roles, share information, enact norms of altruism and reciprocity, evacuate, shelter one another, and so forth. Disasters can build social capital and can, in the long run, benefit a community. Finally, how the community understands the disaster has important impacts on how such events effect it: whether conflict and litigation result, how resources are deployed and policies are developed, and whether people cooperate with authorities during the evacuation and emergency response periods immediately following a disaster (Barnes et al., 2008; Lindy and Lindy, 1985; Tierney et al., 2006; Voorhees et al., 2007). Obviously, the media play an important role in setting the agenda for discussion and understanding of disasters and disaster recovery (Barnes et al., 2008; Tierney et al., 2006; Lindy and Lindy, 1985). This paper focuses upon community understanding of the Martin County coal waste disaster and its consequences as represented by a local newspaper, *The Mountain Citizen*.

Based on the literature, it is difficult to predict the long-term social consequences of the Martin County coal waste disaster. The negative consequences of the disaster, for example, should be mitigated by the fact that the county is part of a relatively prosperous nation, with federal, state and local cost-sharing of disaster recovery, emergency management services organized at the local level and the potential to get recovery costs covered by the responsible corporation through litigation and other mechanisms. The county's relatively homogenous

racial/ethnic composition could be a source of cooperation and solidarity promoting community resilience (Cutter et al., 2003, p. 256; Manyena, 2006). Also, it is possible that strong family ties, dense, overlapping social networks, and strong attachment to place could serve the community well in the post-disaster era (Beaver, 1992; Bryant, 1981; Halperin, 1990; Schwarzweller and Brown, 1971).

On the other hand, an examination of social capital in U.S. counties found that social capital was lower along the Eastern Kentucky / West Virginia border and in the South and Southwest than in the Upper Midwest and Northwest regions of the U.S. (Rupsaingha et al. 2006). Likewise, Putnam (2000) ranked Kentucky the 10th lowest U.S. state for social capital while neighboring West Virginia, which borders Martin County, was ranked the 8th lowest in social capital. Third, in a comparison of three counties in Appalachia, the Mississippi Delta, and New England, Duncan (1999) finds the low social capital in Appalachia and the Delta accounts for persistent poverty in those regions. Another comparative study of social capital in poultry-producing and coal-mining towns in West Virginia found that the coal mining town, "Coalville," had lower stocks of social capital than the poultry-producing towns, even though both had economies dominated by a single industry (Bell, 2009). Finally, low levels of social trust were discovered in the immediate aftermath of the spill in Martin County (Scott et al., 2005; McSpirit et al., 2007). Low social trust and capital could inhibit disaster recovery.

Also, because the spill was not a natural disaster but rather was caused by human technology, it could initiate or exacerbate political and legal contestation (Kroll-Smith and Couch, 1990; see also Aranoff and Gunter, 1992; Clarke and Short, 1993; Besser et al., 2008, p. 601; Clarke and

Chess, 2008, p. 995; Couch and Kroll-Smith, 1985, 1991, 1994; Gill, 2007; Quarantelli, 1985, 1992, 1998). In addition, its economy is dominated by a single industry and the county has high poverty rates and low per capita income, all of which are obstacles to disaster recovery (Flint and Luloff, 2005).

DATA AND METHODS

This study examines community perceptions of the long-term impact of the disaster on local government and politics as well as local perceptions of water quality and safety. During 2009, nine key community members reflected upon the environmental recovery following the disaster and how the disaster had affected them and their community in digitally recorded interviews. Interviewees included: a retired employee of the Kentucky Division of Water, whose remit included Martin County; a former newspaper publisher of *The Martin County Sun* (which was sold to a Paintsville publisher in 2001); a reporter / editor from the remaining local newspaper *The Mountain Citizen*; the Martin County judge executive; the chair of the Martin County Water District Board; two teachers at the local high school; two current residents of Coldwater Creek; and one former resident of Coldwater Creek, who moved from the neighborhood after the disaster. Also, 570 issues of *The Mountain Citizen*, the local weekly newspaper, were examined. Analysis of the newspaper extended to two years prior to the disaster (October 1998) and continued through December 2008. Included in this investigation are editorials and articles that report or investigate matters of public concern. This study also examines letters to the editor, and public opinion polls conducted by the newspaper in either their “person on the street” interview format (Citizens Speak) or their anonymous phone-

in format (Sound Off) . Not included in this analysis are press releases, announcements of public meetings or advertisements.

Newspapers do not merely or passively reflect public opinion and concerns; they are important community players who “set the agenda” and frame the terms of the debate on important public issues (Barnes et al., 2008; Tierney et al., 2006; Lindy and Lindy, 1985). The 2009 Martin County judge executive offered an extreme perspective on the local newspaper’s effect on public opinion: “Public worries are generated by what’s written in the paper. You know, they see something in the paper and they think, ‘Oh, this is the gospel!’” He went on to warn, “When you read the paper, you figure about 25 percent of it may be factual and the other 75 percent is usually made up on what they want it to sound like.” In Martin County, the newspaper played a crucial role in facilitating and setting the terms for public debate concerning the local water system and local government more generally.

The impact of the disaster on trust in public drinking water

Everyone interviewed agreed that the residents of Martin County did not trust the safety of the local public water supply. However, they did not agree upon whether the current lack of trust was well-founded and, if so, what the primary cause of bad water quality was. “[Local grocery store owners] would tell you that bottled water, like the big, old gallon jug we just poured you a glass from, is one of the top sellers. It’s in everybody’s basket, you know?” reported an interviewee who self-identified as an environmentalist. “We buy—I don’t know— maybe six gallons a week at 89 cents [each]; that’s the cheapest. We buy it by the gallon. And, you know, in the summertime, when I can vegetables, I still

can with bottled water. I wish I could shower with it, but I can't afford that."

Although most interviewees said that the public lacked trust in the water even before the spill, this was not reflected in newspaper content in the two years prior to the disaster (see Table 1). In the two years prior to the disaster, there were no editorials or public opinion polls concerning water quality or the management of the public water district.

There was only one letter to the editor written by a former Martin County resident who complained about the water district's excessive billing of his/her sister because of leakages in the water lines (Dials 1999, pp. 6, 7A). The coverage of the water district generally was published on back pages and covered routine matters, such as water board meetings and major construction or repair projects.

Table 1: Newspaper reports, editorials and public opinion polls concerning the Martin County Water District

	Prior to Disaster (1998-2000)	Disaster Period (2000-2002)	Post-Disaster (2002-2004)	Long-term (2004-2006)	Long-term (2006-2008)
Front page stories	2	61	10	11	11
Other stories	1	11	4	0	1
Editorials	0	24	6	8	2
Solicited Public Opinion Features	0	17	1	1	1
Total	3	113	21	20	15

Nevertheless, a Coldwater resident said she did not drink the local water, because she did not trust the local water plant to deliver clean, safe water to drink. Two local high school teachers and a retired newspaper publisher believe that the water has been compromised both by the 2000 disaster event and also by smaller coal waste leakages and straight-piping of sewage into the creeks as well as the general inadequacy in the local water infrastructure. One of the Coldwater residents who participated in a class action lawsuit against the company seeking compensation for damages related to the spill expresses lingering doubts about the water, even though her family currently drinks the public water:

I used to buy water. But it's very expensive to buy water and then pay a water bill. Now that we filter it, we drink it. A lot of people tell me they don't drink or cook with it or anything, but we do....

I think this spill would have had an effect on it. I guess I did, too, because I bought water for years after the spill. You just carry it in and you have all those plastic bottles that you have to dispose with. I did it for years, so I thought the water wasn't safe. *Then all the newspaper articles about the water and everything* [emphasis added]. For years, after the spill we bought water for cooking and drinking.

Yes, I think U.S. and everybody else felt like the spill had something to do with the quality of our water. When the spill occurred, the creek was flowing on top of the slurry. Then, they were pumping water from one of the other creeks to the water plant because—I don't know why they did it, actually. I don't know about that. To answer your question: yes, I think everybody felt that this spill had a lot to do with the water quality.

A retired environmental scientist from the Kentucky Division of Water stresses that the public water is safe now, but it may not have been in the immediate aftermath of the slurry spill. This was due to inadequate water treatment at the local plant in combination with possible contamination from the coal waste as it flowed down local waterways. He explains:

There was basis for fear [of water contamination], especially with the coagulation chemicals that were used for sludge... The water supplies have been monitored over the years like any public water supply is. But there came another problem in the midst of this.... [T]he water plant was in need of desperate repairs—pumps and things were deteriorating badly... They did have problems with water there coming out of the tap brown and it was due to the plant not operating correctly. It wasn't so much the coal slurry spill.

So, do they have concerns about the water? You bet they do! And it's lingering probably to this day. It'll probably be lingering for 50 years in somebody's head, even if it's fixed. And I think it is fixed.

In contrast, the chair of the local water board, the county judge executive, and the newspaper reporter are confident that the 2000 coal slurry spill did not harm the public drinking water. The judge executive

states, “I don't think the spill affected our water any.... A lot of people liked to have said that.... But, you know, you'd have to convince me that it affected our water whatsoever.” *The Mountain Citizen* editor reached a similar conclusion: “The slurry spill did not impact our water at all.” In sum, there is disagreement about whether the spill contaminated the water in 2000 and if the water is currently safe to drink, though everyone agrees that the Martin County Water District has a history of mismanagement and incompetence. Disagreement such as this is common in the aftermath of potential contamination (Edelstein, 1988; Kroll-Smith, 1995).

As interviewees point out, the local newspaper plays an important role in providing information to the public, setting the terms of public discourse and drawing attention to public issues. As Table 1 shows, the *Citizen* devoted much more attention to the issue of public water in the two years following the spill than it did in the two years preceding the spill (1998-2000) or in subsequent years (2002-2008). Local media scrutiny of the water accelerated in the first six months after the spill, with 22 front-page stories on the water, four staff editorials and seven public opinion polls on water concerns and quality (see Table 2). That is, seven of the 24 weekly editions published in this period (approximately 33%) asked citizens for their opinions on water safety and quality. Though there was a significant decline in newspaper attention to the quality of water after the two-year disaster period (2000-2002), coverage of the water district management nevertheless had not yet returned to its relatively low pre-disaster levels by 2008 (eight years after the disaster).

The newspaper's and general public attention to the local water district resulted in a Kentucky Division of Water inspection of the local water plant in early February of

2001, about fourteen weeks after the coal waste disaster (Ball 2001, February 7, pp. 1, 4). As the newspaper editor describes it, “Of course, due to the complaints, the Division of Water came in and did an inspection of the treatment plant. . . We got the report back and found that the water plant was messed up bad. They went line by line with what was wrong with it, but summed it up like this: ‘The water plant is nasty. It needs a good house-cleaning.’” The inspector’s visit came on the heels of an article the preceding week, which outlined the provisions and requirements of the 1974 Safe Drinking Water Act (Ball 2001, January 31, pp. 1, 7) and an editorial two weeks earlier entitled “Who will come to our rescue? Unsanitary

drinking water demands quick action, not promises” (2001, January 24, p. 6). The article provided general information about citizens’ rights and government responsibility and then the editorial demanded action to address public concern about the water. These concerns were also expressed, in November 2000 and January 2001, when the newspaper asked readers to comment on local drinking water quality. Each of the 16 citizens who responded to these two queries complained about the water quality and were critical of the water treatment plant and supervision (2000, November 22, p. 9; No Author 2001, January 3, p. 6).

Table 2: Newspaper coverage of public concern about drinking water and criticisms of public water system management in the two years following disaster, in quarterly increments

	Six Months after Spill		Twelve Months after Spill		Eighteen Months after Spill		Twenty-Four Months after Spill		Total
	Oct – Dec 2000	Jan-Mar 2001	Apr-June 2001	July-Sept 2001	Oct-Dec 2002	Jan-Mar 2002	Apr-June 2002	Jul-Sept 2002	
Front page	6	16	4	1	1	8	13	12	61
Other	0	3	1	0	0	3	1	3	11
Editorials	0	4	0	2	0	4	7	7	24
Solicited Public Opinion	1	6	2	1	0	4	3	0	17
Total	7	29	7	4	1	19	24	22	113

In the immediate aftermath of the disaster, government agencies, lawyers, and public officials issued conflicting reports concerning the presence of toxic metals in the water supply . Public confidence in

government regulatory agencies and the local public water board was severely eroded by spring 2001. The *Citizen* continued both to facilitate and contribute to the debate: publishing conflicting reports,

editorializing, printing letters to the editor, and soliciting public opinion about the

safety of the water, often under eye-catching, provocative headlines—"Who do we believe?," (Editorial, 2001, February 14) "Fiscal court's water sample 'bandaid' for life-threatening problem" (2001, February 14), "Have I lied about the water?" (Editorial, 2001, February 21), and "Don't trust the Division of Water, says Alpha Branch couple" (Ball, 2001, March 28). In that context, it is no surprise that "tempers flared" at a March 13, 2001, public meeting when residents expressed outrage at the lack of fines against the coal corporation, questioned the safety of the water supply and challenged federal Environmental Protection Agency (EPA) and state water officials to drink water from the water fountain where the meeting was held (Hickman 2001, March 21, pp. 1, 5).

The debate over water heated up again in the winter of 2002, when a flurry of articles and editorials appeared criticizing the county judge executive and his appointed head of the Martin County Water District (Table 2). In response to the January 30 "Sound Off" question, "Would you favor a contractor taking over treatment of our drinking water?," an anonymous responder replied that "nobody in their right mind" drinks the local water, that the local water board is incompetent and that they are appointed in order to "repay political favors." On the other hand, almost half of the twelve respondents expressed confidence in the new water board (2002, January 30, p. 9). By this time, the focus had shifted away from the impact of the slurry spill and was directed entirely at the competence of local water officials and the adequacy of the water treatment plant and delivery system (Editorial, 2002, March 27, p. 6; Ball, 2002, April 3, pp. 1, 10); but, again, opinion was divided. The spring 2002 water "crisis"

resulted in citations by the Public Service Commission, a temporary take-over of water management by Kentucky/American Water Corporation, the ouster of the water board chair, and the county judge executive's failed re-election bid. Later, a new administration secured funding to upgrade or replace the water plant (Hickman, 2002, August 21, pp. 1, 10) and confidence in the water board was somewhat restored.

It is possible that a 2005-2006 study played a role in increasing public confidence in the safety of the drinking water. Conducted by a research team from Eastern Kentucky University working in conjunction with University of Kentucky researchers, a Martin County citizens' advisory committee, the Kentucky Division of Water and the Martin County Water District, this study concluded that the spill had no long-term effects on the water source or the treated public drinking water (LaSage and Caddell, 2006). It further found that the water plant had improved in its facilities, management and ability to produce and deliver good drinking water. The findings of this study were delivered to every household in Martin County. By 2009, the newspaper editor reflected on the coal waste spill as "a blessing in disguise" because "it focused a lot of attention on our water plant. We knew our water was bad. But it focused a lot of attention on it" (Citation needed?).

POLITICAL IMPACTS OF THE CRISIS OF CONFIDENCE IN THE WATER

In the months following the disaster, "town meetings" held by the EPA and others, resulted in high turn-out, questioning and, at times, vocal citizen complaints and challenges. During the first year following the spill, various citizens groups emerged, including a group called Health, Environment, Life and Preservation (HELP), a local chapter of the Ohio Valley

Environmental Coalition (OVEC) called the Big Sandy Environmental Coalition (BSEC) and a Citizens Advisory Committee (CAC), to work with the EPA and the coal company in environmental recovery from the disaster. Local citizens groups sponsored informational presentations by nationally-known environmental lawyer, Jan Schlichtmann, other lawyers and representatives from Kentuckians for the Commonwealth (KFTC), a statewide community organizing group, and OVEC (January 2001). They worked with teams of Eastern Kentucky University researchers to circulate the findings of interviews and surveys conducted in the county to assess the impact of the spill on the community; and they tried to persuade the EPA to include citizens in environmental recovery and monitoring efforts, to open an outreach office in the town of Inez and to require the corporation to set aside funding for independent, citizen-monitored water testing, all with disappointing results (McSpirit et al., 2005). However, citizen activism did at least play a role in securing \$150,000 for independent water testing from Kentucky's settlement with Martin County Coal Corporation. In 2006, after the water testing found no long-term contamination of the water, citizen engagement and social activism in environmental and disaster recovery apparently waned.

One of the local citizens involved in these environmental recovery efforts expressed disappointment in the decline of citizen activism after 2006. He explained:

There have been very few times that anybody has stood up to the so-called authorities. And, damn, I felt great to hear people talking. And these were every day, good, common "Joe's," you know? And many of them there didn't have a dog in the race, except for fear of the health of them and their children. A few of them, of course, had taken part or were in the process of taking part in lawsuits against Massey. But I

was excited. And I see that now; I see a settling of that. You don't hear people screaming about the sludge. . . . You have to demand that the agencies work for you because, if you don't demand it, they're working for the corporations.

The comments of those who were interviewed in 2009 testified to this "settling" of citizen activism. When asked about who was involved in environmental recovery, almost everyone cited the coal corporation. The corporation was responsible for the mess and so it cleaned the mess up, they said. Second, they listed government agencies, such as the EPA, Mine Safety and Health Administration (MSHA) and the Kentucky Division of Water (DOW). The existence of the CAC, HELP and the BSEC had faded from the memories of those residents who were not directly involved in those efforts by the time of the interviews in 2009. By then, only the current supervisor of the Martin County Water District, the DOW retiree and the two interviewees who participated in the CAC mentioned the 2005 citizen-supervised water tests that confirmed drinking water safety. Interestingly, the newspaper reporter also failed to name any of the citizens groups that emerged immediately following the disaster, though he did specifically name two local environmental activists who remain openly critical of environmental quality and government stewardship. Those two are "probably more active than anyone," he said.

In sum, the disaster in October 2000 drew attention to a pre-existing problem in the Martin County Water District which resulted in an electoral change of local government and water district administrations, an increase in state regulatory attention to the local plant and, by 2009, some improvements in water service delivery and the cleanliness and reliability of the water plant. However, many of the

recommended technological improvements in the water delivery system have not yet been accomplished; and some areas of Martin County still pollute the waterways with untreated sewage. Funds from the coal corporation's post-disaster settlement with the state of Kentucky have not been used to improve water quality in Martin County, as originally negotiated and intended. The issue of whether to "trust" the water ultimately rests on whether the community trusts the government to protect public health and safety, to restore and maintain environmental quality and to work on behalf of the public good in Martin County.

TRUST: Long-Term Trends (1998-2009)

Disaster recovery research indicates that social capital, including the levels of trust and the density of social networks, affects if and how a community recovers from the trauma of a disaster. Previous research found a statistically significant difference in trust levels in Martin County compared to Perry County, a county that did not experience a coal slurry disaster but was otherwise similar to Martin. Specifically, Martin had lower levels of trust, lower ratings of the local quality of life and higher perceptions of risk than Perry County (McSpirit et al., 2007). This, in addition to other research (see, for example, Erikson, 1976; Freudenburg and Jones, 1991; Kroll-Smith, 1995; Gill and Picou, 1998) and prior analysis of the behavior of government agencies in the aftermath of the spill (McSpirit et al., 2005), led to the conclusion that disaster-related events had eroded trust in Martin County, at least in the short-term.

But what about the long term impacts of the disaster on trust? The 2009 interviews lacked consensus on whether the disaster had any impact on trust in the government. In her interview, one Coldwater resident explicitly states that the disaster caused her to lose trust in government and corporations,

though. In response to the question of what had changed since the spill, she replied:

I believe that everyone up here, they don't trust anything anymore, you know, the coal company or the government, for that reason: because that shouldn't have occurred. It should have never happened. It could've been prevented had everything been done by the rules and if the regulations and been enforced. That's my opinion. It makes you leery. . . .You're always in fear of stuff now. It's not that same. You're not the same. Or I'm not the same. I'm always expecting something to happen. Oh my goodness, is this going to happen again? We were told it could.

Another interviewee agreed: "I think the community has given up on the government. They've given up on 'Can we get somebody to help us do anything?' We've had all these different agencies coming in here and telling us that everything is all right. People don't drink the water, even though the water's clear now. The water's running clear. Why wouldn't they drink the water? They don't trust anybody. They don't trust clear water anymore, you know?"

In contrast, the manager of the water district reports that levels of trust had actually increased in Martin County in the years since the disaster, though he does not explicitly relate this change to the spill itself. "I think things have changed greatly here in the last few years," he states:

Q: How so?

A: Trust. Not near the back-biting that we once saw. You know, you're the county judge; you're supposed to do this. And, once you don't play with me, then we're mad at each other. That's not the case anymore.

Q: So, there's more trust between local government officials? How

about the people generally? Do they trust the government or the corporations?

A: Yeah, right. I think it's coming along better, because they can see results. They can see results.

In sum, four interviewees reported in 2009 that local residents had lost trust in the government as a result of the disaster; four said there had been no change in the community dynamics or trust since the spill; and one reported that public trust had actually increased recently, though he did not explicitly link that development to the disaster.

Newspaper content supports the water district manager's contention, at least where local government is concerned. Prior to the disaster, most of the news articles and editorials about government (64%) was critical¹ and focused exclusively on local government (Table 3). The paper's public opinion questions demonstrate that *The Mountain Citizen* framed politics prior to the

disaster as inevitably corrupt and flawed. Just before the November 1999 election, the paper posed an anonymous "Sound Off" question: "How can vote fraud be eliminated?" (1998, October 21, p. 9A), as if assuming that vote fraud would occur. After a new county judge executive took office in January 1999, the paper asked citizens: "Can the new administration solve the problems left by the former administration? How?" (No author, 1999, 1/13/99, p. 9A). In addition to questions that reflected and reinforced a lack of trust in local government and politicians, there were others which demonstrated a lack of civic pride and satisfaction with public services and life in Martin County, more generally. For example: "What is the most embarrassing thing about Martin County?" (4/7/99, p. 9A); and "Should the [public] water company be responsible for clothes damaged due to poor water quality?" (9/8/99, p. 9A).

Table 3: Critical newspaper coverage of local and non-local government in the Martin County *The Mountain Citizen*, 1998-2008 (in percentage)

	Pre-disaster (1998-2000)		Disaster Period (2000-2002)		Post-disaster (2002-2004)		Long-term (2004-2006)		Long-term (2006-2008)	
	Local	Non	Local	Non	Local	Non	Local	Non	Local	Non
Front page Stories	53%	0%	73%	44%	50%	0%	62%	0%	35%	0%
Other stories	52%	0%	10%	0%	75%	0%	0%	83%	30%	0%
Editorial	76%	0%	90%	75%	93%	100%	71%	88%	22%	100%
Public Opinion	100%	0%	100%	100%	100%	0%	100%	100%	57%	0%
Total N	64	0	82	56	64	100	67	81	38	17

The anonymous responses to these weekly public opinion questions were also often

negative, regardless of the question's phrasing or intent. When asked what made

them most proud about Martin County, 17 of the 21 who addressed the question criticized Martin County and did not mention a single thing of which it should be proud. "Proud? Are you serious? What is [there] to be proud of?" one asked. Another said, "It sure ain't the politicians!" A third quipped that the best thing about the county was it had roads so that you could leave it (No author, 1998, 9A), a refrain that was repeated in later "Sound Off" columns. "There are five good things about Martin County: the signs welcoming you to Floyd, Johnson, Lawrence and Pike Counties, plus the sign at Kermit welcoming you to West Virginia" (No author 2000, 9A). "I hate to say it but Martin County is beyond repair or any shred of hope" (No author, 1999, p. 9A), said one reader commenting a change of local political administration. Commenting on the litter problem, another suggested that citizens should not "bother" to clean up Martin County but, rather, "sell it off as a junk yard" (No author, 1999, p. 9A). These comments were made *before* the coal slurry spill of October 2000.

At first, it seemed as if the new Republican county judge executive would restore public confidence in local government after his election in November 1998. After the January inauguration, the paper's editor noted a "spirit of cooperation" (Editorial, 1999, January 6, p. 6A) and "atmosphere of hope" (Editorial, 1999, January 20, p. 6A) at county fiscal court meetings. Things went awry after the coal slurry disaster in 2000, when attention increasingly focused on how the public water district was being managed by his political appointee. The controversy over the management of the local water board resulted in a 2001 skirmish between the local newspaper and water board chair, who attempted to stop the paper's publication because the publisher missed a filing deadline to retain legal rights to the

corporate name "The Mountain Citizen, Inc." This strategy did not succeed and the editor, Gary Ball, was awarded a 2002 Kentucky Press Association award for excellence in journalism (Smith 2003, January 29, pp. 1, 5). The water board chairman was replaced, but the county judge executive lost the subsequent political election in spite of this. The public conflict between the water board chair and local newspaper editor, along with the misallocated \$3 million earmarked for water plant improvements, did little to increase public faith in local government during the disaster and immediate post-disaster periods (2000-2004).

The newspaper's increase in critical reporting and commentary is a *positive* development inasmuch as it contributes to government accountability and public oversight and information. Of course, it also may erode public trust in the government, but perhaps rightly so. Critical articles and editorials focusing on local government rose to a high of 82 percent during the two-year disaster period (2000-2002) and remained high thereafter in response to a series of public revelations about water district mismanagement, accusations of malfeasance and incompetence and concerns about the safety of the public drinking water supply (Table 3). By 2006-2008, however, the proportion of critical news and opinion items about local government had fallen to 38 percent (below pre-disaster levels), perhaps indicating that local government had begun to perform better and started to regain public trust. When, on January 7, 2009, the paper posed the question: "What has changed most in Martin County in 2008?," one anonymous respondent replied, "How nobody ever says anything—good or bad—about our drinking water" (No author, 2009, p. 9A). It should come as no surprise that the newspaper editorials repeatedly reinforced the editor's interpretation of the

disaster's impact on Martin County: the disaster had focused attention on pre-existing problems with the water plant which, eventually, forced the governmental authorities and the public to address that problem. In the editor's eyes at least, the problem has been adequately addressed, though the some of the 2009 interviews did not endorse his view.

The impact of the disaster on the newspaper coverage of state and federal government, however, differed from the coverage of the local government. In the two-year pre-disaster period, *The Mountain Citizen* focused most its attention on local government. The October 2000 disaster, however, turned local attention to the role of the federal and state government in regulating and enforcing environmental, occupational and public health and safety legislation. The number of articles and editorials commenting upon the state and federal levels of government increased in the disaster period from five to 25. At first, the state and federal levels fared better than local government did: 54 percent of the reporters' articles and editorials concerning state and federal government in the disaster period was critical compared to 82 percent of the coverage and commentary on local government.

A number of events contributed to a heightened criticism of federal government. The EPA set up their headquarters on company property and allowed the company to provide the water samples for testing and, also, let the corporation edit EPA press releases. There were conflicting reports from different government agencies about whether the water was contaminated. It emerged that the impoundment had leaked before and, although MSHA knew that, the public did not. Controversy emerged over the MSHA disaster reporting process and content. Jack Spadaro, an MSHA inspector, refused to sign the report and was later

charged with wrongdoing and forced to retire, a move that was generally interpreted as retribution for his "whistle-blowing" activities. Then, following advice from the company's attorneys, the EPA ceded its right to pursue the case against Martin County Coal Corporation under Comprehensive Environmental Response and Liability Act (CERCLA, also known as "Superfund"), thus, relinquishing the government's right to collect future damages and changing an earlier precedent which treated coal waste as a toxic substance (McSpirit et al., 2005). By the winter of 2004, when news broke that MSHA's fine against the corporation had been reduced from \$110,000 to \$5,600, the newspaper editor stepped up his criticism (Editorial, 2004, February 4, p. 6), accusing MSHA of failing to do its job and being little more than a "paper tiger" (2005, February 23, p. 6).

So, while the news generated by the federal and state government declined dramatically after the disaster, a relatively large portion of it took a critical and untrusting perspective (Table 3). Several high profile mine accidents in 2006 and 2007 kept MSHA in the public eye in Martin County. Again, the tone of the news remained highly critical: the federal government was accused of being lax in inspecting mines, enforcing regulations and protecting workers. These events account for the continued media criticism of the national government, which only began to decline eight years after the disaster in 2008.

Conclusion

This study, based on interviews with nine key community members and reviews of newspapers from 1998 through 2008, examined the impacts of the 2000 Martin County, Kentucky coal waste disaster on public trust in drinking water quality and trust in government. Not surprisingly, the impact of the disaster is not straightforward

or uniform. Some interviewees say that the disaster destroyed their trust in government at all levels, while others claim that the impact of the disaster had been minimal, even non-existent. Based upon the critical nature of newspaper coverage of local government prior to the disaster, it seems that the disaster merely exacerbated existing patterns of distrust and low opinion of local government. On the other hand, both newspaper content and interviews suggest that the disaster has increased public doubt about the competence and legitimacy of non-local government, at the federal level especially. The actions of the EPA and MSHA, specifically, came under greater scrutiny during the disaster than in the year two years preceding it. Later, mine disasters kept MSHA in the news, again highlighting the agency's betrayal of public trust.

It is important to note that, by the 2006-2008 time period, the newspaper was less critical of local government than it had been immediately prior to the disaster. The current water board manager is particularly cognizant of the restored faith in the public water service. However, this partial recovery of public opinion about water district management only indirectly relates to the coal waste disaster itself. In other words, based on these data, the Martin County coal waste disaster follows the pattern of communities in developed countries. The disaster did not seem to have a lasting impact on community policies or politics at least in part because the level of trust in local government and politicians was already so low. This conclusion is supported by studies of similar coal mining counties indicating that the region lacks social trust and other aspects of social capital, regardless of the presence of a major coal waste disaster (Bell, 2009; Duncan, 1999). Regardless of whether the disaster permanently lowered social trust or whether social trust was low prior to the event, the

disaster nevertheless did have a short-term impact on public trust in the quality and safety of local drinking water.

In 2011, however, a 10-year follow-up survey was conducted in Martin County. The results were then compared to 2001 survey data from Martin County and Perry County, a comparable Eastern Kentucky coal county. These data suggest that the coal waste disaster contributed to a decline in the normative dimension of social capital in Martin County, particularly social trust and community attachment. In addition, this study found that public concerns over drinking water and coal waste are associated with distrust generally both in Martin and Perry Counties (Scott et al., under review). In short, this survey study "muddies the waters" on whether the disaster did or did not have long-term impacts on social trust in Martin County.

Clearly, additional research is needed to further investigate the long-term impacts of the disaster on Martin County. Such research should include a wider variety and larger number of interviewees in order to provide richer, more representative interview data. In addition, examination of local newspapers prior to 1998 would provide needed information about the pre-disaster local attitudes toward state and federal government, in particular. Because the newspaper did not cover federal or state government in the two years prior to the disaster, the conclusion that the disaster itself diminished local trust in non-local government is based upon interview data alone. This is not sufficient.

Future research should also examine organizational social capital indicators, including civically active religious denominations, clubs, organizations, associations and so-called "third space" interactional settings (see, for example, Mencken et al., 2006). There is much still to explore regarding the mechanisms by which

disaster may either erode or shore up social trust. Exploring the relationship between social trust, social networks and a community's capacity to rebound from a disaster has taken on increasing importance in this era of global climate change, extreme weather events and changing patterns and norms of political violence. Such investigations may provide the key, not only to understanding why some communities can "bounce back" from adversity, but also how they can resist the forces that cause such calamities in the first place. While this insight is clearly needed in the coalfields of central Appalachia, it is increasingly in demand throughout the world.

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¹In this analysis, the term "critical" refers to newspaper content which criticizes government agencies, including editorials, investigative and documentary reporting, and the wording of public opinion poll questions. Specifically, it refers to the adoption of a skeptical and critical perspective on government officials' actions and motives, particularly that which either assumes or builds a case for governmental incompetence, nepotism, conflict and / or inconsistency in government policies, actions or enforcement.