PASCOAG: LESSONS LEARNED

Part One: Interviews with Residents

ES 126- *Public Perceptions of the Environment*
Course Project Spring 2002
Executive Summary

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CASE HISTORY

In early September 2001, the Pascoag Utility District (PUD), water supplier to approximately 1200 households in the northern Rhode Island village of Pascoag, announced that the village's public drinking water supply was contaminated with the gasoline additive methyl tertiary-butyl ether (MTBE). What followed was more than four months during which Pascoag residents were advised not to drink or cook with the water, and to sponge-bathe young children and use adequate ventilation when showering.

During the contamination, as state and local officials grappled with the situation, MTBE-laden water continued to flow to Pascoag homes. Residents began reporting a wide range of health symptoms that they attributed to their water. **This study, a portion of a larger case study still in progress, involved interviewing 100 Pascoag residents in April and May of 2002 to gather their perceptions and attitudes concerning this contamination event in their lives and the life of their community.**

The Environmental Protection Agency classifies MTBE as a "potential human carcinogen at high doses," and advises that drinking water not exceed 20 to 40 parts per billion of MTBE[1]. At the peak of the Pascoag contamination in December, MTBE levels in the drinking water climbed to 1700 parts per billion. The source of the contamination was soon identified as the Mobil gas station located on Pascoag Main Street, just 1700 feet from the Pascoag Utility District's two wells. According to Rhode Island Department of Environmental Management (DEM) engineers, preliminary tests ordered by DEM revealed approximately seven and a half inches of gasoline floating on the water table at the Mobil site.

MTBE came into wide use as a gasoline additive in 1992, when amendments to the US Clean Air Acts of 1990 (CAA) mandated the use of cleaner-burning, "reformulated" gasoline in those areas of the country with the highest levels of air pollution. Although the CAA does not specify which additive must be used, many oil refiners identified MTBE as the most cost-effective option[2]. At the time of the CAA amendment, environmental advocates supported the requirement and its potential for air quality improvement. However, MTBE's chemical properties and the poor repair of thousands of underground gasoline storage tanks across the country now pose a threat to drinking water supplies nationwide[3].

In response to the Pascoag contamination, an interdepartmental committee of officials from Governor Almond's office, the Department of Health (HEALTH), the DEM, the Water Resources Board, and other involved parties was formed in September, 2001. Bottled water was donated by the truckload by many private companies and made available at water giveaways at the PUD office. In November, the state purchased and began delivering 60 gallons of bottled water per month to each affected household. Later in the month, a temporary carbon filtration system was installed to lower MTBE levels to reduce residents' exposure, but was not intended to make the water drinkable. Ultimately, an interconnection was established with the water

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[1] http://www.epa.gov/mtbe/water.htm. Accessed July, 2002
[2] http://www.epa.gov/ost/drinking/mtbefact.pdf Accessed July, 2002
[3] http://pubs.acs.org/hotartcl/est/2000/research/0666-00may_pankow.pdf Accessed July, 2002

system in the neighboring village of Harrisville, and on January 19, 2002 residents were told by HEALTH that their tap water was safe to drink.

SITE

The village of Pascoag, population just over 5,000 people, is situated within the town of Burrillville in northern Rhode Island. Located approximately 25 miles from Providence, Burrillville is a predominantly rural town that arose as a mill town during the industrial revolution. Within the town borders are seven small villages, each with their own water supplier[4]. The town of Burrillville is governed by a town manager and the town council. The town includes the villages of Pascoag, Harrisville, Mapleville, Nasonville, Oakland, Mohegan, and Glendale. In the town of Burrillville, the median household income is $52,587 [5].

The Pascoag Utility District (PUD) is the water supplier for the village of Pascoag. It is a quasi-public agency, controlled by a board of directors (elected by the ratepayers) and operationally run by a general manager. The Harrisville Fire District is the water supplier for the village of Harrisville, and is governed by its own board of directors.

METHODOLOGY

Under the supervision of Professor Christina Zarcadoolas, the members of the Brown University class Environmental Studies 126: Public Perceptions of the Environment designed and implemented an in-depth interview study of residents. The goals were to investigate how residents perceived and responded to the water contamination event and to capture the voices and experiences of Pascoag residents, with particular emphasis on residents' information sources, concerns, behavior modifications, satisfaction with government officials, perceptions of their community, and thoughts toward the future.

The interview consisted of a series of **34 questions**. Questions were divided into the following five categories: Background/demographics; History of Events; Personal Response; Officials' Response; The Future. A total of **26** students, both undergraduate and graduate, conducted approximately four interviews each, for a total of **100 interviews**. Of these, **72** were in-person interviews and **18** were telephone interviews. Whenever possible, interviews were audiotaped, and the average interview lasted approximately forty minutes. The in-person interviews were conducted in residential homes, the Pascoag firehouse, and George's Pizza and Pub in downtown Pascoag. These interview were conducted from April 12 through May 1, 2002.

Sample

The study used an opportunistic sample. Initial contacts were provided through communication with a local activist group formed during the contamination event, Concerned Citizens for a Healthy Pascoag. We asked group leaders to provide contact information that would represent a

[4] Burrillville Town Council. Workshop session minutes, January 30, 2002.
[5] 2000 US Census. http://www.riedc.com/aboutri/census_2000/ProfilePDFsRI/0604400711800.pdf. Accessed July, 2002.

wide range of resident opinions. Study participants were also recruited through posted flyers in local gathering places, ads in the Bargain Buyer, a widely-read weekly circular, and a snow ball method using residents to supply names of other residents. The in-person interviews were conducted in residential homes, the Pascoag firehouse, and George's Pizza and Pub.

This study was not designed to include sampling methodology to produce a statistically representative sample. Rather, the findings should be interpreted as representative of the beliefs of the residents interviewed and not the entire village. As previously stated, our initial contact with residents was through the Concerned Citizens activist group, and this group later supplied names of other residents. In addition, other recruitment methods required that the residents themselves take the initiative to respond to our call for participants. These factors in recruitment of participants may mean that those interviewed disproportionately represent the segment of the village population that was most proactive regarding the water contamination.

Confidentiality

Participants were assured that their names and other identifying characteristics would remain confidential. To maintain confidentiality, all completed protocols and audiotapes were immediately collected following interviews. Identifying information was removed, and each interview was from then on referred to by an assigned number. Original interview sheets and code list were kept in a locked location.

Analysis

Each student conducted a preliminary analysis of his or her data, coding for topics and themes. The group then agreed upon a set of five salient topics: Information sources, water behaviors, concerns, officials, community and the future. Each researcher compiled his or her data by themes within the topics. Inter-coder reliability was achieved through small groups working together by topic.

FINDINGS

Information Sources

In order to learn about how residents received information, we asked questions about how they initially heard about the contamination event and where they obtained ongoing information. Of our respondents, **50%** said they first heard about the contamination from a media source such as TV, newspaper, or radio. The remainder was notified through means such as word of mouth and notices at local businesses. **Referring to the lack of official notification, one resident expressed, *"Supposedly they notified people. But let me tell you, they didn't notify a lot of us."***

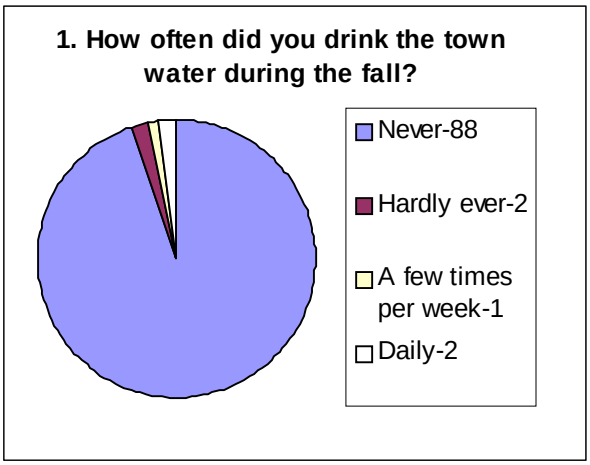
In addition to asking how residents received information, we asked if they found this information useful to them. Regarding public meetings with officials, **78%** of respondents said they attended at least one meeting, though many found these meetings frustrating and said that they left with many unanswered questions. Types of meetings included town council meetings, PUD board meetings, special meetings held by HEALTH, and meetings of the Concerned Citizens for a Healthy Pascoag activist group. Many respondents depended on word-of-mouth communication

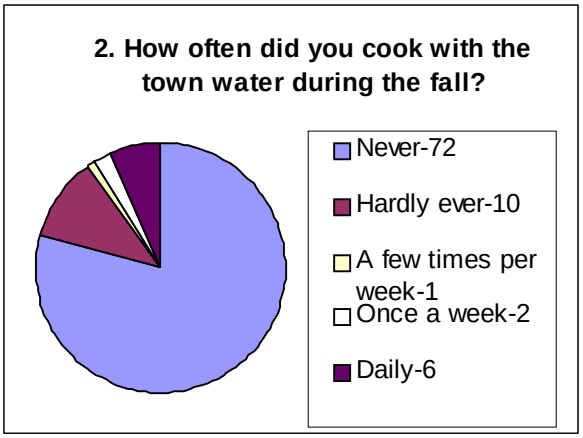
for ongoing information about the water situation, including information circulating at the coffee shop, a popular town gathering place.

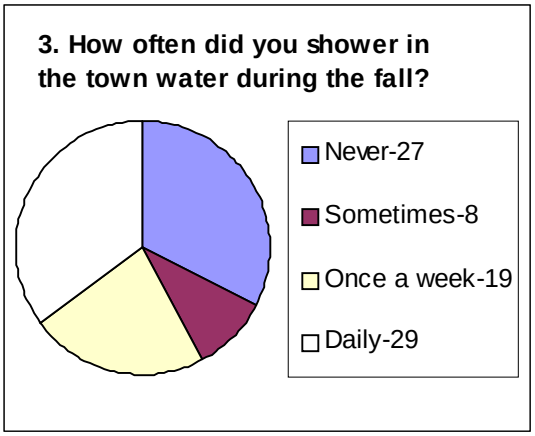
Residents overall wanted more communication from officials at all levels, specifically including the PUD and HEALTH. Their dissatisfaction with communication revolved around issues of timeliness, frequency, trustworthiness, and clarity. Residents expressed the belief that they were not adequately informed about the contamination and its possible impacts or what actions officials were taking to solve the problem. Because of this, residents expressed a *"…feeling of helplessness, mistrust, and lack of control."*

Water Use

Many respondents said that they noticed a problem with their water before the contamination was announced. The majority changed their water usage in some way upon learning of the HEALTH advisory.







Most used the bottled water delivered to them and some purchased additional water. A few installed purification systems, dug wells, or moved elsewhere during the situation. Some residents changed their patterns of water use over the course of the contamination event. One respondent described this*: "In mid December when the [temporary carbon] filters were installed, we tried using the toilet and washing machine again with the town water. Massive headaches, vomiting and wheezing returned. I cried. It was the day after my birthday."*

Of our respondents, **67%** indicated in April that they were still not drinking the town water, **24%** were drinking the water at that time, **7%** said that they were drinking the water sometimes.

Concerns

Although no questions were asked directly about health problems, the majority of respondents brought up problems that they had experienced during the contamination, and most attributed these symptoms directly to the contaminated water. Many respondents focused their concern not on their own health, but on the health of children, the elderly and pets. The most common symptoms reported were headaches, skin irritations and respiratory difficulties. Many additional symptoms were reported.

When residents brought up these health concerns, they never doubted that their symptoms came from the water. Despite the paucity of scientific certainty and the attempt by officials to express that uncertainty, the residents communicated to us that they unquestioningly associated their symptoms with the contaminated water. Concerns also focused on long-term health risks, with many expressing fear and frustration about the lack of scientific certainty; many mentioned cancer. As one resident put it, *"I don't know what it's going to do to me, or my wife, or the other residents of Pascoag. It's kind of in the back of my mind all the time."* Health effects, both long and short term, were the primary concern of almost every respondent.

Also mentioned frequently was the sheer inconvenience associated with the lack of potable water at home. Many described a serious disruption in their daily routines caused by the extra time required to travel to shower elsewhere, fill water jugs elsewhere, and use bottled water to cook and sponge-bathe small children. Some residents said the water prevented them from hosting family gatherings, holiday parties or visits from young relatives. A resident commented, *"We used 22 gallons of water for Thanksgiving dinner. It's hard to do everyday things. They only gave us 12 gallons of water a week. Dinner alone takes at least 1 gallon."*

Financial concerns also weighed heavily on many residents' minds. Concerns included falling property values, the financial burden associated with the situation, and economic stagnation in the town.

Community

In order to learn if and how this contamination shaped residents' views of Pascoag as a community, we asked respondents if they believed the community had changed at all because of this event. While some residents felt that this event brought the community closer together, the majority felt that, overall, the contamination only brought out tensions within the village and with the neighboring village of Harrisville. Residents also communicated their feeling that the reputation of the village has suffered because of this event. *"People look at it like it's a contaminated town,"* said one resident. Some residents expressed that they no longer want to be part of the Pascoag community. One resident, speaking from her meticulously decorated kitchen, said *"I hate my house now. I don't feel it is a home anymore."* However, many said that their desire to leave was thwarted by financial constraints.

We also heard about the role of the community in resolving problems associated with the contamination. Some community members took action during the fall in various ways, including finding creative ways to raise bottled water, donating water to others, contacting their officials, and working with the Concerned Citizens for a Healthy Pascoag activist group. Many indicated that they felt that this grassroots group was highly instrumental in resolving their water crisis.

The Response of Officials

The vast majority of respondents were upset with the response by officials at some level of government. However, their anger was not all directed at the same officials; individuals were upset with different officials based on their personal experiences and interactions with government. One resident, who had previously expressed grave health problems he attributed to the water, said, *"I really just don't know who to blame. I'm blaming someone for making me sick."* The one striking exception to this, however, was Governor Almond. He was mentioned by most residents with very intense emotions, with these residents indicating that he showed a lack of compassion or concern for their needs. One resident said with growing frustration that the governor was "*useless. . .impervious to our needs and concerns. He never came to visit. I was completely unimpressed. Basically, I was disgusted with him."*

When we asked residents about how they felt about the frequency of HEALTH communications, the majority said that communication should have been more frequent. In addition, some residents expressed strong feelings about HEALTH. One said, *"They [HEALTH] made it well known that if you had a health concern, you could call them."* Some indicated, however, that those phone calls often were not returned. Those residents who most actively sought information from HEALTH expressed the most frustration with the department. Residents conveyed that this frustration arose not only from HEALTH's lack of concrete answers about health effects, but also from what they perceived as the department's dismissal of their concerns.

Overall, residents felt that officials did not care about them and weren't listening to their concerns. **Our most significant finding was that the majority of respondents, unprompted, expressed the conviction or suspicion that if a similar contamination occurred in another part of Rhode Island, especially a more affluent or influential part of the state, the government would have acted faster and would have applied more of the state's resources to solving the problem.** The following is a sampling of these comments, with each line representing a different speaker:

- *"We felt like we weren't an important town in the state. We felt like we didn't even live in the state, we weren't part of the state, that's how bad it was. Totally ignored."*
- *"We weren't a big enough town to justify a state of emergency. All [the governor] had to do was ask, and the Feds would have come in. It pisses me off."*
- *"I just feel the north-west corner of the state is always left out. I'm sure if it was Lincoln something would have been done."*
- *"The big shots in Providence don't care about us--we're a hick town."*
- *"They think of us as blue-collar workers. I'm frustrated that the government puts us down."*

This perception on the part of residents could be due to various factors, including communication problems between officials and residents and historic interactions between Burrillville and the rest of the state. This theme will be further explored in our continuing research.

Future Thoughts

We asked residents for their recommendations for action in a similarly contaminated community. They responded with suggestions for both officials and for community members. Their suggestions included having an emergency plan, more frequent, effective, and honest communication from officials, forming citizens groups, and attracting media and political attention. Many also said that MTBE should be banned to prevent this type of contamination from happening again.

CONTINUING RESEARCH

This summer we have expanded the scope of this project. This work will address:

- How did key officials and staff perceive their roles and responsibilities?
- How did these officials communicate during the event?
- How were decisions made at the different levels of government?

This is being accomplished through interviews with the officials involved, background research, and examination of government documents pertaining to these issues. We will produce a case study of the events in Pascoag. In addition, we will be developing draft recommendations for programmatic, regulatory and legislative changes to improve local and state response to such events in the future.

The research through the 2002-2003 academic year will focus on comparing the events in Pascoag to similar water contamination issues across the country. The end product will be a senior environmental studies thesis creating best practice guidelines (focusing on legislative actions, emergency response plans, and communication issues) for Rhode Island. In the words of one state official, the next contamination event is not a question of “if” but of “when”. The goal of this project is to help the state prepare for that eventuality.