

CHEMICAL HERITAGE FOUNDATION

**THE TOXIC SUBSTANCES CONTROL ACT:
FROM THE PERSPECTIVE OF
GLENN E. SCHWEITZER**

Transcript of Interviews
Conducted by

Jody A. Roberts

at

National Academy of Sciences
Washington, D.C.

on

29 December 2010

(With Subsequent Corrections and Additions)

CHEMICAL HERITAGE FOUNDATION

Oral History Program
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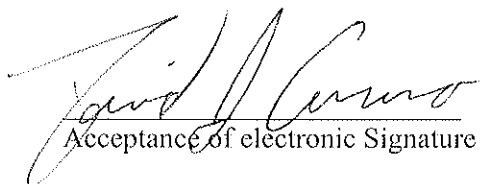
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GLENN E. SCHWEITZER

Professional Experience

- 1963-1966 U.S. Department of State, Moscow, Russia
Science Officer
- 1966-1970 Office of the Vice President of the United States, Washington, D.C.
Marine Science and Technology Council
- 1970-1972 U.S. Agency for International Development, Washington, D.C.
Director, Office of Science and Technology
- 1973-1977 U.S. Environmental Protection Agency, Washington, D.C.
Director, Office of Toxic Substances
- 1977-1980 Cornell University, Ithaca, New York
Senior Research Fellow for Environmental and
International Affairs
- 1980-1985 U.S. Environmental Protection Agency, Las Vegas, Nevada
Director, Environmental Monitoring Systems Laboratory
- 1985-Present National Research Council, Washington, D.C.
Director, Program on Central Europe and Eurasia
- 1992-1994 International Science and Technology Center, Moscow, Russia
Executive Director

Honors

Numerous awards from U.S. governmental departments and agencies, international organizations, universities, and professional societies

ABSTRACT

Glenn E. Schweitzer received his master's degree in nuclear engineering. He began his career as a Foreign Service Officer, moved to the staff of the Vice President's Marine Science and Technology Council, and finally accepted a position at the U.S. Agency for International Development. He was then asked to manage the new Office of Toxic Substances (OTS) in the U.S. Environmental Protection Agency (EPA) in 1974. He had four tasks: to ensure that the Toxic Substances Control Act (TSCA) passed quickly; to deal with the "chemical of the month"; to help the Office of Air and Water deal with toxic chemicals under their legislative authorities—the Clean Air Act and the Clean Water Act; and to upgrade data, especially testing data, being used throughout EPA.

Believing that the purpose of the OTS and TSCA was to prevent or reduce exposure to harmful chemicals, Schweitzer spent four years visiting producers to learn about their chemicals and relevant procedures. He insisted on the necessity of cost/benefit analysis because TSCA, which had been finalized but not yet passed by Congress, could have a potentially enormous impact on the U.S. economy and on these companies. Schweitzer thought that TSCA was designed to fill regulatory gaps while providing data for use under many laws, using unreasonable risk as the principal criterion for action on chemicals. He thought that Section 8(e) was among the most important sections, as it put on manufacturers the burden of warning the EPA of health risks. This approach relies on conscientiousness but provides clear penalties for noncompliance.

Schweitzer's staff supported the establishment and conduct of the Interagency Testing Committee (ITC), which included the Department of Health and Human Services (HHS), the U.S. Food and Drug Administration (FDA), the Centers for Disease Control (CDC), and the EPA. The EPA's role was to choose the many chemicals to be tested; ITC would arrange for steps to prioritize, test, and evaluate them. Schweitzer thought that EPA had an important but not decisive role in human health, but had a critical role in environmental matters. He regards as two successes the simultaneous regulation of chlorofluorocarbon (CFC) aerosols by the EPA, the Consumer Product Safety Commission (CPSC), and the FDA beginning in 1977 which he led; and the persuasion of the producers of vinyl chloride to agree to reduce emissions by eighty percent in three months, and their achievements in doing so, a process that he arranged.

Shortly after TSCA became law, Schweitzer was sent to Cornell University to make way for political appointees at EPA. He spent two years revisiting chemical producers and found that EPA/TSCA had made a large difference; i.e. chemical companies had many more qualified people doing important testing and providing more effective oversight. He believes that this was an important aspect as to how TSCA should work. After Cornell, Schweitzer was appointed Director of EPA's Environmental Monitoring Systems Laboratory in Las Vegas, Nevada. There he dealt with many complicated chemical exposure and risk issues, including acid rain; Love Canal; Three Mile Island; smelter problems in Dallas, Texas; dioxin contamination in Times Beach, Missouri; and potential nuclear threats at the Los Angeles Olympic Games in 1984. The laboratory also was responsible for quality assurance of measurements, which Schweitzer believes is crucial when monitoring contamination.

In general, Schweitzer thinks that Section 6 is sound in that it covers handling, transporting, and labeling of toxics, when necessary. He regrets that some officials wanted too many results too fast and thereby caused delays in passage and implementation of TSCA. Due

to delays, many states and companies lost enthusiasm for cooperating with the EPA and introduced their own plans. His concern now is that great efforts will be devoted to amending TSCA, primarily for the sake of amending the law, with little likelihood of success, whereas other measures are available to use more effectively the law as written.

INTERVIEWER

Jody A. Roberts is the Associate Director for the Center for Contemporary History and Policy and the Manager of the Environmental History and Policy Program at the Chemical Heritage Foundation. Roberts received his Ph.D. and M.S. in Science and Technology Studies from Virginia Tech and holds a B.S. in Chemistry from Saint Vincent College. His research focuses on the intersections of regulation, innovation, environmental issues, and emerging technologies within the chemical sciences.

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TSCA had made huge difference: more qualified people, more testing initiatives, more oversight by Boards of Directors. After two years appointed Director of Environmental Systems Laboratory in Las Vegas. Many important problems: acid rain; Love Canal; Three Mile Island; Dallas smelters; dioxin in Times Beach, Missouri; nuclear attack threats at Los Angeles Olympic Games. After leaving TSCA dealt mostly with Clean Water Act, Clean Air Act, Superfund, and pesticides. Las Vegas office responsible for quality assurance of measurements throughout the agency, crucial in monitoring chemicals.

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TSCA's credibility diminished by delay in passage of bill. States and companies eager to cooperate. Section 6 proponents divided. Section 6 is important since it addresses transportation, handling, labeling, and restrictions on production. TSCA should not be amended for the sake of amendment. Two weak arguments for amending are (a) hasn't been amended in thirty-five years, and (b) market needs stability which might be achieved to a limited degree by amendments. TSCA requires comprehensive examination of chemicals

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INTERVIEWER: Jody A. Roberts

LOCATION: National Academy of Sciences
Washington, D.C.

DATE: 29 December 2010

ROBERTS: [...] All right, this is Jody Roberts. I'm here with Glenn [E.] Schweitzer at the National Academy [of Sciences] in Washington, D.C. Today is Wednesday, 29 December 2010. This interview is part of our TSCA [Toxic Substances Control Act] Oral History Project. So, thank you, Glenn, again for being with us. We just would like you to start with just some general background...your background in becoming a civil servant and, you know, working up to your time into...getting towards the EPA [United States Environmental Protection Agency] in the early 1970s. But I know you had a lot of other experiences before that.

SCHWEITZER: [...] I had worked in the Office of the Vice President in late 1960s, where I was on an organization called the Marine Science and Technology Council, and I reported [...] through an intermediary, to Vice President [Hubert H.] Humphrey. In that position, I received a [...] good overview of [...] the marine area, including the environmental aspects of ocean problems. [...] I was a career civil servant then. I'd been in the [United States] Foreign Service [...].

I then was offered a position in USAID [United States Agency for International Development] to set up their Office of Science and Technology. [...] In the early 1970s, a colleague of mine, who knew me from my experiences at the Vice President's Office and the USAID, contacted me and said that EPA was setting up a new office for toxic substances. They needed a manager who had experience. He thought I was a good manager.

[...Just to back up a little bit], I received my master's degree in engineering at CalTech. I specialized in nuclear engineering. The State Department then sent me to Argonne National Laboratory for two summers to write a book there on an experimental boiling water reactor, which I did. Then I went back to the State Department and was assigned to their Arms Control and Disarmament Agency. I was one of the first people in their science bureau of the Arms Control and Disarmament Agency in the early 1960s.

[...] I entered EPA in 1973 as the first Director of the Office of Toxic Substances, which didn't quite exist. I was given four tasks by the leadership at EPA. One, job one, I was to be the point man on moving TSCA through the Congressional process. The early drafts of TSCA had already been sent to the [Capitol] Hill a couple of years earlier, and there was a pretty well-[tuned] version up there in the Hill, in 1973 when I arrived at EPA. Secondly, I was to be the

point person on the “chemical of the month” problems. When these “chemicals of the month” came up, they were referred to me, and I was supposed to do something about them.

Thirdly, I was asked to work...to assist the [Office of Air and Water Programs] in addressing toxics that they were trying to address under their various legislative authorities. So, I had a responsibility there to see that toxics were developed to the extent possible, or were addressed in a responsible way under the Clean Air Act [of 1970] and the Clean Water Act [Federal Water Pollution Control Act]. They had different names, those laws had different names at those times.

Finally, I was asked to upgrade the data that was being used on toxic substances throughout the Agency. There were lots of databanks around that were being drawn on that were going to be new databanks generated by TSCA, and I was given the responsibility to address the data issue big time, particularly testing data.

So, those were the four substantive thrusts of what I was told I was supposed to do. These weren't exactly written out in a job description, but these were given to me when I arrived. Then finally, I was to build the office. The office had about three or four people in it when I arrived. They wanted to scale up. I was reluctant to hire people until we really knew what they were going to do, because I didn't like people around without enough to do. So, we scaled up gradually, but that was one of my jobs. That was when I arrived. That was in 1973.

I stayed there till...through 1976. The law passed in fall of 1976. It failed in 1974, and there was an interesting story why it failed in 1974. But then, it was reintroduced in 1975, and in the fall of 1976 it finally was signed by President [Gerald R.] Ford.

ROBERTS: All right. So, there's a lot of stuff to fill in there.

SCHWEITZER: Yeah. And in 1977, when the [James E.] Carter team came in, I remained there until June, when I was then removed from my position as head of OTS. So, that's a very broad framework within which you may want to ask questions.

I have never been associated with the Democratic or Republican party. I was strictly a civil servant [...]. I was really surprised and, obviously, pleased to be on a team that really wanted to do something about the environment. There was never any attempt to throw roadblocks on what we were doing [...].

I think the expectation when I arrived was that TSCA was pretty far along, and that a lot of the debates had already been held. The bridge had been crossed about whether there would be premanufacturing approval or premanufacturing notification. That was a done deal. The language had been worked out about whether it's unreasonable risk or acceptable risk. That was already set. The notion that small-scale companies had special consideration was in place. I agreed with all of those [...].

But there were extensive discussions with the Hill, particularly with OMB [United States Office of Management and Budget]. To a lesser extent, Department of Commerce had fallen out of the objecting mode. Even the OMB was supportive. By that time, CEQ [President's Council on Environmental Quality] wasn't playing a role. CEQ had done their thing. [J. Clarence] Terry Davies and company had crafted...in the first instance. But they had turned it over to EPA, and EPA was where the action was. The action came down from the administrator to the assistant administrator to me, and was on my desk. There were four or five assistant administrators while I was there, to whom I reported. So, the assistant administrators, they came and they went.

[...] The administrator was always a water person or an air person or something. I was just one of the deputies. I don't know if I had the title deputy assistant administrator, but I was just one of the four offices that reported to an administrator. But in fact, all the dealings with the Hill, I dealt either with Russ [Russell E.] Train or John [R.] Quarles [Jr.]. John Quarles, particularly, was much involved on the Hill.

ROBERTS: And what position was he in?

SCHWEITZER: He was the deputy administrator. [...] On the "toxic of the month," everybody agreed that needed attention. There the idea was to use existing regulatory authority—the Water Act, the Clean Air Act, authority of other agencies, Consumer [Product] Safety Commission, FDA [United States Food and Drug Administration (FDA)], OSHA, [Occupational Safety and Health Administration (OSHA)] whatever—to solve the problem. We had a number of them. In the vinyl chloride case, we used arm-twisting [...].

But whatever the "chemical of the month" was...and I'm not sure they came up every month. [There] may have been [...] a dozen cases over the couple years. We were able to address it somehow and solve the problem. Again, everybody at EPA wanted to solve the problem. Sure Dow Chemical [Company] might have been involved, but there weren't any fans of Dow Chemical saying, "Back off on Dow Chemical." [...] So, they all wanted to solve the problem. I was very energized by the whole activity.

Now, the next one was a tough one...to provide input on the toxics dimension of regulations under other authorities—the Clean Water Act, the Clean Air Act, the [Safe] Drinking Water [Act], whatever—authorities within EPA. There my office really had a tough time. We were just outgunned. It didn't bother us at all. But the water people could put a dozen people plus a lab on a problem; we had two people. So, we took a very light touch there. Unless we really had something important to say, we didn't try to second-guess these offices which had dozens of people on the problem.

So, I would say on that, we didn't make too much of an impact. Occasionally, we raised some issues on mercury or whatever if we didn't think [they] were getting enough attention.

There was an organization called the Steering Committee in EPA, and I was a member of the Steering Committee...which all regulations had to go through the Steering Committee before they went to the administrator for sign off. I had a seat on that Steering Committee. Whenever there was a toxics problem being discussed in the Steering Committee, I was expected to weigh in and say something. But with a thin staff [...] we did make a little contribution [...].

Then the other responsibility we had was the databases. Well, where were the databases that were relevant? There were two kinds of database. There were the monitoring databases and then there were the toxicology/[epidemiology] databases we focused on. The monitoring databases were basically in the ten regions [of EPA] and they were in terrible condition. People did not understand what was meant by standard deviation. They didn't understand the words "standard deviation."

Every piece of data in those databases should have had a standard deviation associated with it, but none of them did. They were all put in there as numbers...three [parts] per million. It should be three parts per million *plus or minus* something or other. But they never had the plus or minuses, so all the data all over the agency was, sort of, absolute data [...]. One thing we did know something about was data. I think we tried our best to get that across.

[...] Fortunately, six, seven years later, when I was in Las Vegas, [Nevada], I was responsible for quality assurance of these [databases. So, to a limited degree I had] my day in court.

On the epidemiological and the toxicology data, that was a tough nut, also. [...] The first thing I did was hire three or four toxicologists [...]. Everyone was trying to steal them from me all the time, but they stuck with me. We did make a contribution to the debates on human risk assessment. We just had a couple of good people [...], young people. I had one very senior person. We did, I think, help the agency better understand what toxicology was all about, what risk assessment was all about, and so forth. As a matter of fact, the ORD [Office of Research and Development] was constantly saying that my group of toxicologists should be transferred to them. Bureaucratically, I decided that wasn't a very good idea [...]."

On the epidemiological data, I must say, we only had a staff of [...] twenty people. We're talking a small operation here. But it was better than a hundred people, hundreds of people they now have. We at least did something. We didn't write memos to each other all the time. On the epidemiological data, we didn't have anybody on our staff that really understood that [...]. We started talking with the people in HHS [United States Department of Health and Human Services]. [...] We had constant meetings with [...researchers at Research Triangle Park, North Carolina].

But the whole epidemiology area [...], I don't think we covered ourselves with glory. We did get involved in trends in cancer [...] versus presences of chemicals in various areas of the country. There was a [...] problem in New Orleans, [Louisiana], when the rivers down there were polluted and whatever. We were trying to correlate cancer rates in different parishes there

versus the chemical monitoring [levels] and so forth. [...] We] became aware of the difficulties of dealing with epidemiological data. So, those are the four areas [...].

The first thing I asked when I went there was, what is our objective? It took about five minutes to figure out what our objective was. Our objective was to prevent and reduce exposure to dangerous chemicals. It was very clear to me [...].

ROBERTS: Was that answer given to you or was that something you developed?

SCHWEITZER: We figured it out ourselves [...]. We said, “What are we trying to do?” Everybody said, “Oh, putting out regulations.” I said, “Why are we putting out these regulations? [...] I want a nice clear concept of what are we trying to do.” They said, “Okay, we’re going to try to prevent and reduce exposure to dangerous chemicals. That’s our job.” “How are we going to do that?” “[...] We’re going to lead the way.”

[...] We have all these regulatory authorities all over the government. We’ve [...] all these states [...] which want to get in the act. We’ve [...] the industry itself, some of which [has an] environmental conscience. We have the public out there. And we want to use whatever the best tool it is to do that. Now, if it’s part of TSCA, that’s great. But remember, TSCA is the law of last resort.

ROBERTS: Was it always that way or was it that way eventually?

SCHWEITZER: That’s the way it was when I arrived. TSCA said, “If you can solve the problem cheaper some other way, do the other way.” So, that was the message from TSCA. It was the law of last resort. If you can solve the problem with the Clean Water Act, the Clean Water Act takes precedence.

ROBERTS: Was that something that was immediately obvious when you got there or was that something that became obvious through your interactions with other people at EPA?

SCHWEITZER: You just had to read the law.

ROBERTS: But the law wasn’t done yet, right?

SCHWEITZER: No, but it was the proposed law. [...] And without the law, it had to be the last resort. [...] And since there was no law, we had to use the other authorities, because we

didn't have anything else. Also, we thought the law was going to pass in [1974], very frankly. Everybody, all my colleagues in EPA and around the government thought it was going to go through until the Sierra Club got involved [...].

So I said, "Okay, if we're going to reduce the exposure [...] to toxic chemicals, we have to know what the exposure is." So [many simply] said, "Oh, it's what the industry [...] does." [...] I spent four years visiting industry. I went all over this country visiting all kinds of chemical companies, big and small, seeing what [...] they were] doing, [...] at least before TSCA was passed [...].

So, I visited [...] twenty-five or thirty companies. [...] It turns out that [it was] a good thing I did it, because once the law was in place, the lawyers got very nervous about my going out there [...].

ROBERTS: So, what was it like to run an office that didn't have a law behind it yet?

SCHWEITZER: EPA had a tremendous amount of clout. I mean, and people were nervous about the law coming down the pike. *C&E News* [*Chemical & Engineering News*], for example, would carry features on the [issue] every month, even though the law wasn't in place. People knew it was dead serious. [...] We were talking hundreds of millions of dollars [in impacts...].

There was a very famous tiff we had with Dow, on estimating the cost of implementing TSCA. They had come up with five hundred million [dollars of initial expenses], and we had come up with two hundred million [...].

They were very serious about this. Granted, they took my colleague who administered the Clean Water Act more serious than they took me. But they didn't say, "Get lost. You have no clout."

ROBERTS: What about internally, in the rest of the Agency? You're being asked to work with these other offices, figure out ways to collaborate, but you don't have any statutory authority yet.

SCHWEITZER: [...] We had to come in with scientific information they could use. [...] Most program managers would say [...] if you have something to offer, come drop it off on my desk. [...] They [...] had] enough bureaucratic things to go through. I was aware of that. So, I tried to be a nice guy. I only bothered them when I had something specific I thought they'd be interested in.

ROBERTS: [...] How was that hindered or made more difficult through these interactions, because you didn't actually have a law that you were representing yet?

SCHWEITZER: Until the law passed, I never pretended we were operating under a law. I'd say, "Look, you know, we know something about toxics and, here, I'll help you." [...] I didn't want to get into other people's pockets. When I left [...], we had [...] forty or fifty people. Now they're complaining they only have three or four hundred. Well, what do they need with three or four hundred people writing memos to each other? But no, I didn't see a problem [...].

I think the other [...] agencies] liked me. They knew I didn't have these deadlines to get these regs out, so they figured I had more time, so I could go around and talk to OSHA. [...] I could go down and talk to the state of North Carolina [...]. We [needed] to find out what they're doing. So, I was doing things that they thought were important, interesting.

ROBERTS: So talk to me a little bit about the relationship between the Office, as you're setting it up, and what you see TSCA eventually doing. If you take your objective, which is very concise—prevent and reduce exposure to dangerous chemicals—you don't necessarily need TSCA to do that.

SCHWEITZER: Yes, you do.

ROBERTS: But you were doing it without it.

SCHWEITZER: Well, we were doing half a job. [...] TSCA would have given us the [ability] to do a lot better.

ROBERTS: Right. [...] So, what did TSCA enable you to do that you weren't able to do while you were simply waiting for it?

SCHWEITZER: [...] What it enabled the Agency to do, okay?. I was gone.

ROBERTS: Sure.

SCHWEITZER: Certainly Section 6. Now, people all complain [that] asbestos killed Section 6. But I don't think they understand Section 6. Section 6 isn't limited to banning things. Section 6 says you can put labels on things. [...] Section 6 says you can control hazardous

wastes. [...] RCRA [Resource Conservation and Recovery Act] hadn't kicked in fully, and Superfund [Comprehensive Emergency Response, Compensation, and Liability Act] hadn't kicked in. But Section 6 says you could regulate hazardous wastes. Section 6 gave you blanket authority to do almost anything you want to do with chemicals. So, that was the driver.

[...] Premanufacturing...you could chop off any of those on premanufacturing. [Have] to make a case and do it, but that's a clout. The testing...you could require people to test, and the requirement for testing was a lot weaker than the requirement for banning under [Section] 6. [...] So, you could do a lot of things with TSCA in place.

[...] You could go to the industry and say, "Look, here's a chemical that you're putting out in five thousand tons a week. Now, you can either test that starting tomorrow, or we're going to put out a regulation and test it. You'll test it our way starting in two years, but you'll [test it] our way instead of your way." That has a lot of clout, you know. So, I don't think there was any question that TSCA gave you the muscle, if you wanted to do things.

I really liked the language in the law that says it has to be an "unreasonable risk." I like the idea of balancing economics and science and environment. People complain, "Oh, it's too tough a test to see if you could regulate something." Well, if you can't [...] make a cost-benefit case, you probably shouldn't be doing it. [...]But] I wasn't around when they developed some of [the] regs, when they got in trouble with the courts.

But [...] my attitude was, well, that language seems reasonable. We tried very hard to figure out [the best formulation for the law], in discussion with the Congress, who went through all those words...we tried to figure out better [...] formulations of the regulatory provisions. Unreasonable risk was one area. There were variations on the theme. Very frankly, we couldn't come up with better formulations which really balanced the national interests. I mean, we were the Environmental Protection Agency, not the economic protection agency.

But still as the Environmental Protection Agency, you had to worry about the economics or it made no sense. Asbestos: should you ban asbestos? Well, we wanted to at least [begin]. Without TSCA, we were trying to limit it under the Clean Water Act, because we detected asbestos in the Schuylkill River in Philadelphia, [Pennsylvania]. We sent people up there, and we started [monitoring] for asbestos in that river. Then we had tests on the asbestos. It seemed to me [...] that we should have been doing something with asbestos under the Clean Water Act, but we never did. But [...] it takes time to work [...] out [some approaches].

ROBERTS: So, you said you were a fan of the language of "unreasonable risk," when it was going through in the Congress back in the 1970s. [...] How do you feel like that played out?

SCHWEITZER: I don't really know. Very frankly, all I know...on the asbestos case, all I know is what Chuck [Charles L.] Elkins says. He says, "We goofed it by not [...] appealing." I have great confidence in Chuck. He must have had good reason for that, because he was in the

driver's seat part of that time. But I don't know the details. I didn't get involved in that one at all. I [was] in a couple [of times on other issues when I was] subpoenaed after I left the Agency...on issues that came up, but not that one.

ROBERTS: [...] So, can you talk a little bit about how you thought...you've pointed out already how some of the...there's a serious lack of good data, if any data at all, in some of the things that you mentioned. How were you working through trying to fill in some of those data gaps? What sort of data did you want? What kind of data did you think you needed in order to support something like being able to meet the challenge of unreasonable risk?

SCHWEITZER: Well, I thought [Section] 8(e) was a very key provision. I heard [someone] say 8(e) didn't work. I don't know what he meant. 8(e) says that if anybody knows that there's a health effect of the chemical that's bad, [you have] to tell the EPA. [...But] they don't want to tell [...], because it's industrial proprietary [...]. But I always thought that the people who were most likely to have adverse effects data were the people who manufactured the [chemical...]. They would be the 8(e) people. So, I always thought that was a terribly important provision.

The notion that EPA is going to go around and test seventy thousand chemicals or something like that—or seven thousand, or seven hundred, or seventy chemicals—I said, “[that is fantasy].” It just seemed to me that this wasn't a central command-and-control economy we're living in.

[...] When the [Manufacturing Chemists'] Association set up [their] testing laboratory in North Carolina [...], that was terrific. I was a big supporter of that because here the industry was going to take a lot of nasty chemicals and test them [...]. I knew the government had to [be] kind of [...] a watchdog [...] to make sure they [were] doing it properly. But that was so much more sensible than EPA [...] going out with a regulation saying, “We're going to test this [chemical].” Then going through all the hearings, and people [saying], “You can't test....” Then farming out [the testing] to either an EPA lab or a contractor [...], go through all that paperwork, and come back six years later with the test results...this shortcut that the chemical industry [undertook]...I don't know if it's still going or not. That was a terrific way to go.

I didn't consider us to be the [engineer] of every train. I considered us to be more of the [controllers] in the switch yard who had our own trains to send [out] and who also [...] had influence on lots of other trains going out [...]. That's why I thought this law was such a terrific law.

ROBERTS: Well, so there's two pieces to the [...] data question. One is getting access to data that might already exist. So, being able to get those who are already manufacturing these chemicals to offer up the information that they already have in-house. And, I think, from other people that we've talked to for this project, that was definitely one of the major considerations

and the ways in which the law was structured. That you know these people are doing at least some testing. They ought to share it. So, that leads us in some ways...

SCHWEITZER: But they only have to share it if there's adverse health effects. They don't have to share it if it's [not harmful].

ROBERTS: Right. So, that does get us into the question of how do you know there are adverse health effects if you don't know that they're...if you don't have access to the data? So, if...

SCHWEITZER: If you find out, then they can go to jail. There were some cases, way back in my time, where companies had not brought their data to the front. Somehow it was discovered later on [...], and they [...had] trouble with the legal system.

ROBERTS: But it assumes a certain honesty on the part of all parties rather than...

SCHWEITZER: Honesty, or [...] if they get caught, then they can go to jail.

ROBERTS: But getting caught usually involves...you only get caught after there's been some sort of calamity.

SCHWEITZER: That's right. [Sometimes] whistleblowers [can intervene...].

ROBERTS: [...] It seems like, at least around current discussions now, in trying to think about what holes need to be plugged, figuring out how to get access to that data sooner, before there's a problem, or hold people responsible for being honest and sharing that information...there seems to be a catch in there.

SCHWEITZER: [...] Put in heavy penalties if they don't share the data. But I don't want to bankrupt our economy. [...] Chemists do [...] good things.

ROBERTS: Sure.

SCHWEITZER: I'm very sympathetic to their position on protecting IPR [intellectual property rights] and so forth. That's their lifeblood. If Du Pont [E.I. du Pont de Nemours and Company] or Union Carbide [Corporation] or somebody says, "[...] If this [information] gets out we're going to lose that market," I don't want [other countries] taking over the market. So, I'm sympathetic to that [position].

ROBERTS: So there are questions...I was going to say...so this does lead down into the questions around confidential business information [CBI]. What ought to count as confidential business information, and what's actually a secret. What's necessary for protecting a trade secret versus what ought to be transparent and publically available in terms of health data. And the large murkiness in between that EPA is trying to navigate, because they can see inside of that CBI, but they also need to be able to share some of that information. But the other [issue] I think that you hint at, and that you discussed sort of a little bit more in your book, is not simply of missing data, but really not even having a scientific and technical infrastructure that could give you the data that you want.¹

I wonder if you might talk a little bit about that from your time there. That you might not even have...there isn't just simply a lack of testing that's been done, but an uncertainty about what sort of testing ought to be done, the type of instrumentation that's necessary to do these sorts of things. And if you could talk a little bit about—if this is at all relevant—how you tried to fill those gaps during those years that you were at OTS, recognizing that we don't really have the analytical capabilities to do the sorts of testing that we might like to have in order to make these sorts of assessments.

SCHWEITZER: Well, you're talking primarily about toxicological data, aren't you? Human health effects data.

ROBERTS: [...] But not exclusively.

SCHWEITZER: What was done in my day was they set up this Interagency [Testing] Committee. [...] HHS weighed in, and CDC [Centers for Disease Control and Prevention] weighed in and FDA weighed in. EPA was [destined to] lose [control...]. I testified enough with doctors to know that you don't get in an argument in front of the Congress with a doctor sitting next to you because the doctor's going to win every time.

So, I was quite comfortable with the idea that if [...] EPA could identify the chemicals that seemed to be suspect, that this Interagency Testing Committee [...] would be able to figure

¹ Glenn E. Schweitzer, *Borrowed Earth, Borrowed Time: Healing America's Chemical Wounds* (New York: Plenum Press, 1991).

out as well as anybody what kind of tests could be carried out to resolve the issues of whether a chemical was dangerous, and how dangerous it was. At the time, I had thought it was kind of a waste of time to try to prioritize [...] seventy-five thousand chemicals—in any kind of a very tightly structured [manner]. I thought the way to go was to try to [...] pick ten, twenty, [or] fifty chemicals which were among the most important ones [...].

I thought EPA would be pretty good with [the] people we had, and be able to consult with the associations and [others...]. I thought we [could say], “Yes, printer’s ink deserves attention.” But the kind of attention it deserves, I thought, [would depend on the...] health [agencies...]. Dyes, [it] seemed to us, were really important [...]. We [have] to worry about [them...]. There were a [lot of them] coming out of Buffalo, [New York]—[...] German [émigrés had] set up a big dye industry [...]. And there was enough evidence around that shows they were bad actors, but now how do you determine how bad they were [and] which ones were [the worst]?

[In short, I thought that] we could play a role. [...] Since I’ve left [EPA, other] people have really walked over these issues many times and [...] thought through [the issues] more deeply [...], but I think the general approach is [much the same...].

ROBERTS: So, you bring up another issue during that answer, which is this tension between EPA as a health-based agency and an environmental protection agency. Can you talk a little bit about those tensions in setting up the office of toxics?

SCHWEITZER: Every time we hired a toxicologist, people [became] nervous. Within the agency, ORD said it was their [territory]. And HHS said, “You know, we’re going to do the toxicology.” But my view was we needed toxicologists [...] to a) make sure [when] we farmed something out to somebody else, we know what we’re farming out, and b) to know [what] to do [...] with the results. Toxicology [...] was probably the most contentious issue [...].

[As to] environmental effects, [United States] Fish and Wildlife [Service] had some capability. NSF [National Science Foundation] said they had some capability, but when it got right down to it, EPA was as good as anybody [...]. Our lab in Athens, [Georgia], (Ecosystems Research Division, National Exposure Research Laboratory); our lab in Oregon [Western Ecology Division, National Health and Environmental Effects Research Laboratory]; our fish lab in Nantucket, [Massachusetts], (Nantucket Environmental Laboratory)); and our fish lab in [...] Gulf Breeze, [Florida], (Gulf Ecology Division, National Health and Environmental Effects Research Laboratory))...I thought that on the ecological side we were okay. We could [...] take the lead, [...] and NSF [and others] could come along and pitch in [...].

But, on the human health one, I was among the skeptics. In fact, I really had to put the reins on some of our toxicologists who wanted to change the world on their own. I said, “[...] You may be right, but I’d feel much more comfortable if those people at NIH [National

Institutes of Health] would tell me we're on the right track." So my personal sense was that we had to be careful when we [were] in the health area.

It turned out, [my apprehensions] came back. When I went [...] to EPA lab in Nevada [Environmental Sciences Division, National Exposure Research Laboratory] in 1980, my team was called to Love Canal. And I deployed people at Love Canal [Niagara Falls, New York] for two years. I had testified in front of the city council of [Niagara about] the dangers. So, I went up there [with a doctor from the Agency for Toxic Substances and Disease Registry]. So, he and I went side-by-side. [...] We each had a sheriff escort because it was kind of dangerous up there. When he spoke, he [said], "I [am a medical doctor]. I've had thirty years experience in internal medicine," whatever. There was an absolute hush all over. [...] He said, "In my professional judgment, these people aren't in danger, but in the long run we have to be [vigilant." When] I spoke, "You're asking me [...] if there's synergism between those two pollutants in the water? Well, our data shows that [there is]," and I was sort of the [lightweight]...I couldn't compete with [the doctor]. So, don't try to compete with generals or doctors. You're going to lose every time. That was my lesson.

ROBERTS: [...] I want to talk a little bit more about your time shepherding TSCA through Congress. [...] Can you talk a little bit about the differences between dealing with the House [of Representatives] and dealing with the Senate?

SCHWEITZER: I thought that was pretty well worked out by the time I got there, very frankly. I think those battles were in the earlier 1970s. [Before] we testified in front of the [committees], we interacted a lot with the staffs. The staffs were pretty good on both sides. The House, particularly, had a good staff.

The usual routine was [...] John Quarles and I would go up [to the Hill. On] both sides, you were lucky if [...] one or two members [were] listening. This wasn't a priority topic. [...] We had more controversy over the "chemicals of the month" than we did over [...] TSCA]. Kepone in Virginia or hexachlorobenzene in Louisiana or PBBs [polybrominatedbiphenyls] in Michigan, then the Congressmen got more interested. But in TSCA general, it wasn't a very intensive interaction there over those last [...] two and a half years that we dealt with the Congress [...].

ROBERTS: Did you get the sense there was more intensity before your era?

SCHWEITZER: Well, when I was at your meeting [...] at AAAS [(American Association for the Advancement of Science),² one participant] said he was on the Senate staff [Michael B. Brownlee]. He talked about what he was doing in 1971. Well, that was two years earlier. Apparently, [in] 1971, 1972, there were some real hassles up on the Hill. But by the time I [arrived], those hassles had more or less disappeared, and I can't recall any incident of major restructuring of that law when I was there.

Now, [...]I don't know why the environmentalists were so [...] negative about the law. It was never clear what they wanted in addition to what was in there. They always kept coming back. [...] Some of them wanted to have the pesticides model where you had to approve every new chemical, but in the last analysis that never went anywhere. They always wanted [...] more transparency for the world. There was another item they wanted, which [...] we added [...]. When EPA has hearings on an issue, [...] EPA is required to pay the expenses for NGOs to come and testify. [...] Language was inserted [...] so that if there was a hearing and some NGO in Colorado didn't have money to come, [EPA would] buy them the airplane [...] ticket. [...] That's fine. [...]I can't recall a big split between the House and the Senate by the time I [arrived].

ROBERTS: So if it's your sense that most of the major issues had been resolved by the time you get there, what is it that's happening over the next two years, before it actually passes?

SCHWEITZER: First of all, there were some minor disagreements on the words specifically. One of the big jobs was to get time on the calendar up on the Hill for the committee to get its act together and focus on it. Just getting time. The same way with the OMB was getting them to focus on any unresolved issues. Even though there weren't unresolved issues, sometimes you had to go through OMB, get them to sign off on next steps. Every time [we sent] something to the Hill, even for a minor change, [we had] to get their concurrence. So, very frankly, during that time I was there, most of the action was on these ad hoc problems that came up.

For example, we published one set of regulations while I was still there. We published the chlorofluorocarbon [CFC] regulations. We published three regulations at exactly the same time—[they were] draft regulations in [...] March [...] 1977. [...] Consumer [Product] Safety Commission was there. FDA was there, and OPP [Office of Pesticide Programs], our pesticides office, was there. We were the brokers. I was the chair of the committee.

We [...] all three [...wrote] parallel regulations on controlling CFCs, and we put them all out at the same time, in the same *Federal Register* notice. That was a real triumph. Now, we didn't have to invoke TSCA because these [regs] were only on aerosols. TSCA would have covered refrigerators, but these were on aerosols. The aerosol regulations went out and TSCA

² Jody A. Roberts, "From Inception to Reform: Unpacking the History of the Toxic Substances Control Act through Archives and Oral Histories," at the American Association for the Advancement of Science on 19 November 19 2010.

[would later address...] the refrigerator problem. But I thought that was really a triumph for the agencies working together. That was just before I left. We were able to get those [...] in the *Federal Register*.

Then we had [...] vinyl chloride. [This was a] six-month problem. [...] About] fifteen vinyl chloride [and polyvinyl chloride] plants around the country spewing [VC pollutant] onto the porches of the neighbors living [near] the plants. [Some of the affected areas were] low income [neighborhoods...]. To use the Clean Air Act, [...] we could shut [...] down [particularly worrisome plants at once pursuant to an...] emergency provision. There was another provision that [provided for] an expedited procedure [to correct the situation or] shut them down in about two years. Well, we [...] thought polyvinyl chloride was pretty important. [...] So, we rejected the idea of shutting the plants tomorrow. [...] But we couldn't wait two years. So, we got the CEOs [chief executive officers] from fifteen companies to come in and agree to cut the emissions by [up to] 80 percent [...]. In three months they did [this, and] that was a big deal.

The whole PCB [(polychlorinatedbiphenyl) issue] was a constant problem. Every day you woke up there was some other PCB problem. [Probably another] transformer had sprung a leak [...]. Then the [...] flammable pajamas. They're putting some [...] chemical in the pajamas [that could burn the] babies' bottoms [...]. To get CPSC [Consumer Product Safety Commission] to [take action] was a big deal. [...] Also], we were [preparing] regulations. [...] We had to put out a list of existing chemicals. It was a big deal. [What is the definition of an] existing chemical? [...] That [hassle] took a few months.

ROBERTS: So, talk about that a little bit. What was your approach to building an inventory?

SCHWEITZER: Well, first we went to the ACS [American Chemical Society], which has the inventory of three million chemicals [...] that have been reported. [...] Then we had to [determine the production level that would be the] cut point. I've forgotten whether a thousand pounds a year [or some other quantity was the agreed level]. Of course, [there were] enormous discussions with the industry.

[...] Fortunately, the ACS has a catalog of all these chemicals [Chemical Abstracts Service], which very clearly tells you what they are, but there was some variations on the theme. That was simply running that list through lots of people. Then, there was great concern we'd missed some. So, we were asking people if we missed some. But by the time the law was enacted, we had [...] scoped out the inventory pretty well. [...] But it still took EPA] two and a half years to [publish the inventory].

ROBERTS: [...] But you didn't actually have an inventory. You just had a...

SCHWEITZER: No, that's right.

ROBERTS: ...you had an idea of how you were going to build the inventory.

SCHWEITZER: That's right. We hadn't hired the software engineers to figure out exactly how they were going to keep the catalogs [...]. That seemed to us to be [...] easily doable [...].

[...] TSCA passed in September. A month after the Carter people came to town [that fall]. People wanted to know what we were going to do about TSCA, so we organized over at the Department of Commerce auditorium [...] a meeting. We invited the world. I [gave] a briefing on how EPA [...] planned to proceed in each of the areas, Section 4, Section 5, Section 6 [...]. We invited questions from the audience. Turns out there weren't very many. We [received] a lot of kudos. Then when the new administration came in, they said, "We're starting over again."

ROBERTS: So, talk about that. Talk about that transition, if you would.

SCHWEITZER: It was a disaster.

ROBERTS: In what way?

SCHWEITZER: Well, the Democrats said the Republicans couldn't do anything right, so, therefore, we're going to do it from scratch. We're just going to do it our own way. I, of course, was right in the middle of it [...].

ROBERTS: You were in a staff position at this time, right. You weren't a political appointee.

SCHWEITZER: Oh, I was never a political appointee.

ROBERTS: Right.

SCHWEITZER: I was told there would be a new assistant administrator [that would] come in who would take this over, so I should just not make too much noise. [I had] one briefing [...for] Doug [Douglas M.] Costle, [the new] Administrator. [...] He was going through all the regulatory authorities, and he came to TSCA. [...] He asked a very sensible question: "How

[...] are we going to regulate [toxic chemicals] under various authorities?" We had a hit list of ten or twelve chemicals, or classes of chemicals, that we thought were near the top of the list. [...] met with him for about an hour and said, "Here are the various chemicals we have, and here are some...we can address this one under Clean Water, this one under RCRA or whatever." I walked through them one by one. He said, "Yes, thank you," and that's the [...] last substantive interaction I had with the new administration.

ROBERTS: I'm sure there's got to be more details in there somewhere. But, if you could talk about...there had to be some overlap if you didn't leave until spring of 1977 or so.

SCHWEITZER: [...] I was there until June of 1977. And the [new appointees] came in July and August. There was a fellow named Ken [Kenneth L.] Johnson, who was the [deputy] regional administrator from Boston [Massachusetts] who was there, holding down the fort until they got there.

ROBERTS: So where did you go after you left OTS?

SCHWEITZER: I went to Cornell [University] for two years. They told me to get lost.

ROBERTS: What were you doing up at Cornell?

SCHWEITZER: One thing I did do that was relevant, I said, "Okay, when I was doing TSCA, I always thought that the job was to reduce exposures, so I'm going to go back and visit those companies I visited when I was in EPA and see what difference it makes." So, I went back and visited some of those companies that I visited when I was at OTS. The difference was enormous, absolutely enormous. You wouldn't have believed it. I went into these various companies, Allied Chemical [Corporation] or Rohm and Haas [Company], or [...] American Cyanamid, or back to Dow or DuPont and all those. I addressed the same issues that I had addressed five years earlier. It was absolutely amazing.

For example, I always asked, "How often does your board of directors [...] address this issue?" [...] Originally, [the answer was] maybe once a year, and this time was every month. "How big a staff do you have to watch this kind of chemical problems?" When I went the first time it was, "We have one or two people." [Now it was...] "Ten or twenty." "What kind of testing do you do?" [Originally a frequent answer was], "We don't have any labs, so we don't do any testing." [Now the answer of those companies without labs was], "We have contracts with this university to do our testing." It was an absolutely enormous difference. So, all I'm saying is that from 1973 to 1977, the time I was in [at...] OTS, [...] there was a big time transition, from lack of a concern to mega concern.

ROBERTS: Did anyone in the new OTS ever get in touch while you were up at Cornell to... questions about what they were going to do about TSCA or...was there any interaction at all?

SCHWEITZER: No.

ROBERTS: So, you're up at Cornell, but then you do come back to EPA...

SCHWEITZER: Right.

ROBERTS: ...after that, and head out to Nevada.

SCHWEITZER: Right.

ROBERTS: You want to talk just a little bit about that?

SCHWEITZER: Well, I came back. I had this career appointment. They couldn't dump me, and I had a family to feed. I mean, I'm not a wealthy person. I spent two years in Cornell. That was the deal. I came back, and here I am. You know, I called the personnel people. "Where do I go?" They said, "Okay, we're sending you to ORD." So, they assigned me to ORD. I was given a slot in ORD...I guess it was a legitimate slot. But the people in ORD knew me, and I had a pretty good reputation. They thought a lot of me. So, I wasn't coming back to a hostile environment at all.

Then just after I arrived back, maybe a month or two, they had a big-time rift out at Las Vegas, [Nevada]. And they said, "We really need somebody to go out there and [...] put that place back together again." Torn apart. They had [to] fire [...] fifteen people [and] cut their budget way back. They said, "Will you do that?" So I took a trip to Las Vegas, and looked around and said, "I'll do it." So they sent me out there, and I spent five years [rebuilding]. We put the place back together. We quadrupled the budget and got them back in business.

I wasn't really involved in TSCA, but I was much involved in monitoring. We had all the hard problems. We had...acid rain, they called us. We had to send trailers all over the northeastern United States to [...] monitor] lakes in the northeastern United States. Love Canal, [we sent] our team up there. Three Mile Island [Nuclear Generating Station], we [sent] teams there for two years. Dallas, [Texas], lead smelter problem. We sent teams down there. Dioxin [in Times Beach], Missouri, we sent teams there. I had teams all over the country. Every time

there was a problem, somebody would call us. Had to worry about nuclear [attacks during] the Los Angeles, [California], Olympics [...].

ROBERTS: So...go ahead.

SCHWEITZER: That's all. But that didn't have much to do with TSCA. I deliberately stayed away from TSCA, because I just felt that [...] the last thing they needed [was] some has-been nitpicking at what they're doing. So, I dealt with the Clean Water Act people primarily. [I also became involved in the implementation of the] Clean Air Act and the Superfund [...].

At Las Vegas, we had the responsibility for quality assurance for chemical measurements, because EPA [chemists] would testify in court all the time, [and] would [be harshly interrogated]. The lawyers know how to get at you when you're presenting measurements. So, we had a big-time program on that, on how to make measurements and how to be able to defend them in court.

The acid rain [problem] was a disaster. [The] data collected by [the] environmental luminaries fell apart when you looked at it carefully. So, we had to [...] sample ourselves, and we [sent boats and] flew helicopters [...] over [large areas]. That was kind of fun, though. So, that's my story.

ROBERTS: [...] So, what do you think would have happened if TSCA had actually passed in 1974? Do you think that would have made much of a difference?

SCHWEITZER: Yes.

ROBERTS: What would have been different?

SCHWEITZER: There wouldn't have been this effort to divorce...there wouldn't have been this Democratic/Republican split. Maybe I exaggerate that, because I was the guy they split in half. I think it would have rolled in right nicely, and maybe I would still be there, I don't know. I think we would have...because Quarles and Russ Train were fully committed to this. I mean, it wasn't just [my responsibility]. They were [fully] committed. I wasn't going up [to] the Hill on my own [...]. They were always with me. It was going to be their legacy.

So, I think if it had gone through...and what really went through wasn't much different. It was [...] 99.5 percent the same. Maybe there was a word or two changed, but not much.

When it didn't pass in 1974, I think, some of the stakeholders out there didn't know if it would ever pass. They may not have taken it very seriously, particularly the small chemical [companies]. The states [...] were ready to move in 1974. When it didn't pass, some of the states started to lose interest. I just think there would have been a bigger celebratory event, in terms of [...] conquering the environmental problem. By the time 1976 rolled around, the states had felt let down. Some of them had their own toxic substance legislation, particularly Illinois and California. [...] Fifteen [or so] states had legislation. They were ready to go, and then it didn't happen. They felt a little let down.

The industry...I think the industry, also, was really primed to go. I don't know if it would have made any difference on the safety of the environment...to the people or not. Also, internationally, we had picked up a lot of momentum in OECD [Organisation for Economic Co-operation and Development]. Then, when we backed off, that whole OECD effort, sort of stumbled along. I think we would have gotten [agreement on] Freon/[CFCs] much earlier [...].

I don't know if we would have had any better luck with Section 6. I think, the people [interested] in Section 6 were looking for a kill. They weren't looking at the small things you could do. I always thought that was wrong. I knew that banning something [would be difficult]...now, we weren't talking about banning asbestos in my time. We were talking about controlling it [though]. I also had the sense, when you banned an important chemical, it was going to be a [firestorm...]. But I thought small steps could be taken. I thought the labeling, I thought some of the handling provisions, and in fact, I heard [...] they're trying to do small steps under Section 6 now, for the first time.

But I remember up at American Cyanamid, they were telling me, "We can do a lot of things better with these chemicals. We don't have to ban them. We can just handle them better." [...] If you get a chemical, you've got to check on where your source is [coming] from. [...] Is your sub-supplier providing you chemicals that are developed in a safe way. All sorts of interesting things [were] going on that, I thought, were Section 6 candidates.

I think, when the new crowd came in, all they could think about [was] how we're going to get these regulations out. I think that the general counsel's office took charge. There were some deadlines in TSCA, as I recall. You had to have the inventory out in two years or something. [And they were overpowered by deadlines, whether mandated or self-imposed].

ROBERTS: There were very few deadlines, but there were one or two, and I think the inventory was one of them.

SCHWEITZER: [...] Well, once they started...everybody's an expert in writing regulations. Everybody wants to be a hero and write their regulations. I experienced that with the CFC regulations. My attitude was always let somebody else write it. Then, we can just edit it. They can put their name as the author. That's fine.

But now, the big worry I have is whether we're going to try to amend TSCA for the sake of amending TSCA, rather than because it needs it. I heard two rationales given at the meeting the other day. One was, TSCA hasn't been amended in thirty-five years. It's the only major piece of legislation we have that hasn't been amended. It sounds to me, amending for [the sake of] amending [... Second], the industry wants stability. I don't know what that means. You've heard those arguments too?

ROBERTS: I think the first is pretty prominent. The second, I think, is a common one in most regulatory circles. Just, if you think there's reform in the air, you want to get that reform out of the way, right?

SCHWEITZER: Oh, it's like the uncertainty when the thing was proposed in the first place.

ROBERTS: Right. So, they would like reform to happen sooner rather than later.

SCHWEITZER: If it's going to happen.

ROBERTS: Right. So, it adds stability back to the market.

SCHWEITZER: But they aren't saying that it ought to be reformed this way.

ROBERTS: They certainly have their principles for reform. I think they have the things they want to be reformed. Where you're getting at with some of your questions, though, gets at the larger problems that we've been interested in highlighting, which are is it the statute that needs to be fixed or is it the ways in which the statute has been implemented that need to be fixed? Those require very different solutions.

Some of that's wording. There are certainly wording issues that folks might want to shore up. There are certainly larger situations in thinking about chemical hazard and chemical control that have emerged over the last thirty-five years that, perhaps, couldn't have been thought of. But there's also a lot that folks have pointed to in these discussions that say, "The tools are there, what needs to be fixed is the ways in which you use them."

I think, the comment you just had about the current Assistant Administrator, Steve Owens talking about, "We're trying to go back and use some of these tools that we haven't thought about using for the last twenty years. They're still there, we just haven't thought about using them." Figure out a way that, if you're going to do reform, you reform the correct things, is crucially important.

SCHWEITZER: But the big message from this whole legislation was that the EPA has to [...] look at chemicals in the full context. In fact, if a chemical has fifteen different uses, you've got to look at them all. This was to [...] get people out of the smokestacks. [...] I'm interested to find out whether that worked. Is it just too bureaucratically complicated? So, that's it.

ROBERTS: All right. Well, thank you very much [...].

[END OF AUDIO, FILE 1.1]

[END OF INTERVIEW]

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