

An Interview with  
**Dr. James H. Williams**

at his home in  
La Belle, Missouri

**20 May 2013**

interviewed by Jeff D. Corrigan



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## PREFACE

Dr. James Hadley Williams was born in Canton, Missouri on November 8, 1929. He grew up near La Belle, Missouri and attended area schools, including a one-room schoolhouse called Air Point. After graduating from La Belle High School in 1947, Williams enrolled at the University of Missouri-Columbia. He completed a bachelor's degree and master's degree in geology during his time at the university. He also conducted field research and geological surveys with Hal Levin in northeastern Missouri. Williams married his wife Marilyn in 1953. Following the completion of his master's degree, Williams worked for the Missouri Geological Survey for two years. In the mid-1950s, he enlisted in the United States Air Force and was assigned to bases in the United States, Germany, France, and Libya. After completing his military service, Williams returned to the Missouri Geological Survey and eventually earned a Ph.D. in Surficial Materials from the University of Missouri-Rolla (now Missouri University of Science & Technology). In 1986, Williams was appointed as the State Geologist and Director of the Missouri Department of Natural Resources' Division of Geology and Land Survey. Since his retirement in 2000, Williams continued to stay active in legislative affairs concerning geology, natural resources, and the environment. In 2018, Williams was honored with a Distinguished Arts & Science Alumnus Award from the University of Missouri-Columbia.

The interview was taped on a CompactFlash card, using a Marantz PMD-660 digital recorder and an audio-technica AT825 microphone placed on a tripod. There are periodic background sounds but the recording is of generally high quality.

The following transcript represents a rendering of the oral history interview. Stylistic alterations have been made as part of a general transcription policy. The interviewee offered clarifications and suggestions, which the following transcript reflects. Any use of brackets [ ] indicates editorial insertions not found on the original audio recordings. Physical gestures, certain vocal inflections such as imitation, and/or pauses are designated by a combination of italics and brackets [  ]. Any use of parentheses ( ) indicates a spoken aside evident from the speaker's intonation, or laughter. Quotation marks [“”] identify speech depicting dialogue, speech patterns, or the initial use of nicknames. Em dashes [—] are used as a stylistic method to show a meaningful pause or an attempt to capture nuances of dialogue or speech patterns. Words are *italicized* when emphasized in speech or when indicating a court case title. Particularly animated speech is identified with **bold** lettering. Underlining [   ] indicates a proper title of a publication. The use of underlining and double question marks in parentheses [   (??) ] denotes unintelligible phrases. Although substantial care has been taken to render this transcript as accurately as possible, any remaining errors are the responsibility of the editor, Sean Rost.



Narrator: Dr. James H. Williams  
Interviewers: Jeff Corrigan  
Date: May 20, 2013  
Transcribed by: Teresa Bergen

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**[Begin Interview.]**

**[Begin Track 1.]**

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Corrigan: This is Jeff Corrigan, oral historian for the State Historical Society of Missouri. And I'm outside of La Belle, Missouri, at the home of Dr. James H. Williams. Today's date is Monday, May 20, 2013. Dr. Williams is being interviewed today for the first time for our Missouri Environmental Oral History Project. Can you start out by telling me when and where you were born?

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Williams: Canton, Missouri, the eighth of November, 1929.

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Corrigan: Did you have any siblings?

Williams: No. And neither did my father.

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Corrigan: What was your father's name?

Williams: Ramoth. R-a-m-o-t-h. My grandfather, James T., was born in 1833. That's my grandfather. Not great-grandfather. My great-grandfather is 1805, so our generation spans are quite long.

30

Corrigan: Okay. And what was your mother's name?

Williams: Gaile. G-a-i-l-e. And her last name, Hadley. That's my middle name.

35

Corrigan: Oh, okay. That's where that came from.

Williams: H-a-d-l-e-y.

Corrigan: Okay. Because I read somewhere that a lot of people know you as Hadley.

40

Williams: That's correct.

Corrigan: Okay. But that's your middle name. Correct?

45

Williams: Yes.

Corrigan: So James Hadley Williams. So that's your mother's maiden name. When did you start going by Hadley? Or how did that come about that some people know you—

Williams: About the second grade.

5

Corrigan: Oh, okay.

Williams: There were some Jameses in the school. And Hadley seems to be acceptable. So it's been since that time, for this area. And south of the river it's been Jim.

10

Corrigan: Oh, okay. Okay.

Williams: South of the river they won't recognize me as Hadley. Missouri River. That's kind of a make-believe demarcation line there, but nonetheless.

15

Corrigan: So in your professional career down at Rolla, people would know you as—

Williams: Jim.

20

Corrigan: Jim. Okay. And then up here—

Williams: Hadley.

25

Corrigan: Hadley. Okay. I was wondering how far that went back, and it's a lot earlier than I expected. Okay. What did your father do for an occupation?

30

Williams: He was a farmer here. But he had other purposes in mind, but they were not able to happen. He had attended two years University at Richmond. I think he was interested in going into State Department, things like that. That would be back in 1915, something like that. His father died. He returned and finished his schooling at William Jewell in a long line with the same interest, but the farm, he was the only kid, so to speak for the farm. So that's why he had, came back here. I'm not sure he was ever totally satisfied with that change. But in those days, particularly, you didn't have the elasticity you have now to make changes in your family.

35

Corrigan: And so this is actually the farm that we're on right now?

40

Williams: Right. And this was farm my grandfather bought, 1883. And he bought here because he lost his leg in the Civil War. He used to live over north of Monticello, which is twenty miles northeast. But hilly ground, he couldn't walk on that. So he bought this land out here.

Corrigan: And what was your grandfather's name?

45

Williams: James. James T. He was Uncle Jim to people around here.

Corrigan: Now where did you attend elementary school and high school?

Williams: One year out here in a little rural school, and the rest at La Belle High School.

5 Corrigan: Okay. Was the rural school, was it a one-room school?

Williams: Yes.

Corrigan: It was. Okay. Did it have a name?

10

Williams: Air Point.

Corrigan: Air Point.

15 Williams: Mm hmm. And my wife, Marilyn, taught at a one-room rural school as she started schooling at Truman.<sup>1</sup> And it was one room also, one-room school. Grades one to eight. It was north of La Belle.

Corrigan: So you did, how long were you there at Air Point School?

20

Williams: One year.

Corrigan: One year.

25 Williams: I might have gotten kicked out, I'm not sure. (laughs) And then the next year I started at La Belle.

Corrigan: Okay. And then La Belle, was that one school the whole way through—

30 Williams: Right. Everything. Mm hmm.

Corrigan: Do you remember about how big it was? Like how many kids were in your class?

Williams: Oh, twenty-five in graduation class, as a senior. Mm hmm.

35

Corrigan: What year did you graduate high school?

Williams: Nineteen forty-seven. At age sixteen. We were all young in those days. Of course, no kindergarten. One girl graduated at fifteen. Went to university.

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Corrigan: Now since you lived out here in the country, do you remember at all, did you have to walk to the one-room school?

Williams: No, we had—oh, the one-room school, yes.

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<sup>1</sup> Northeast Missouri State University changed its name to Truman State University in 1996.

Corrigan: You had to walk. Okay. But then were you bused into—

Williams: Yes. Mm hmm.

5 Corrigan: Okay. Where was the one-room school in comparison to where we're at now?

Williams: Just a half, well, it was more than a half mile back east on—

**[End Track 1. Begin Track 2.]**

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Williams: —this route here. Blacktop. Gravel road then, mud road, east one half mile and a quarter of a mile to the north. Real close.

Corrigan: Okay. So you didn't have terribly far to go.

15

Williams: No, no, no.

Corrigan: Do you remember that school much at all?

20

Williams: No.

Corrigan: I wondered if it, do you have any idea how far when you went, after it closed down, did it kind of disappear?

25

Williams: It gradually disappeared. Yes, pretty quickly. Because there was some early consolidation here in the school system. So I don't remember it lasting hardly any length of time afterwards.

Corrigan: Okay. So it wasn't like you saw it for years to come.

30

Williams: No, no, no. Just a building. No school.

Corrigan: What was your favorite subject in school? In high school? In grade school?

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Williams: Well, my favorite subject was the subject I thought I was going to major in at the university. And it wasn't so much cool, but my folks being educated and what have you, we had a very old large Philips upright radio. And I would listen to the foreign correspondents, the beginnings of World War Two. This would be in the 1930s. And I remember writing a paper, a little paper for something like sixth grade that we were going to have a big war in Europe coming. And nobody had even heard about that at school. (laughs) But that was my interest. Because William L. Shirer and those people, all those people I would listen to. And got some of the books. So that was my interest right then.

40

Corrigan: So journalism was your interest? Or?

45

Williams: Right. And then I learned quite quickly after my first class at university, that wasn't what I thought it would be.

5 Corrigan: Okay. I'm wondering, okay, so you didn't end up going into at the time what you had thought or what was your favorite subject. Now La Belle, you said there were twenty-five kids in your school.

Williams: Mm hmm.

10 Corrigan: Or in the class. Roughly how big was—

Williams: Oh, in the class, yes. Twenty-five in the class. And oh, it would be, at most, 100 in the entire school. Grades one through [twelve].

15 Corrigan: Okay. So not super-small.

Williams: No.

Corrigan: Decent-sized back then.

20

Williams: Mm hmm.

Corrigan: Okay. Were you interested in the sciences back then at all?

25 Williams: Don't even think we knew much about science then or didn't study that. We had language. Had Spanish and this was during World War Two much of this time. So some of our teachers were in the service. So we had kind of limited education just because of that. We had trigonometry and a good—[phone interruption]

30 Corrigan: Okay, we had a brief pause there for a second. So we were talking about—you just conferred with your wife, it was about 100 kids in your school and about twenty-five to twenty-seven in your class.

Williams: Mm hmm.

35

Corrigan: But you were talking about, so some, you didn't really have much of a science education at that time because of World War II. So you did have teachers serving then.

40 Williams: Mm hmm. Yes. We didn't have classes like chemistry or physics or any of that situation, type.

Corrigan: Okay. I was going to say, in a small rural area like this, was there a lot of discussion about, say, World War Two? Was it part of the curriculum? Were you talking about it?

45

Williams: Not very much. But we had people from school, young people who were ahead of us two or three years already in service. I remember one time one of them had called his folks in La Belle. And they told us at school at such and such time, there's going to be a B-17 flying over you. Well, sure enough, that morning, here comes this loud noise. And here is this big B-17 flying low over our high school. So it was that environment we lived in. A number of them were in service. Several of them were wounded. And at least one or two lost their lives there and so on. And for a small town of six or eight hundred people.

Corrigan: Because, yeah, everybody would have known then—

Williams: Right. Right. Knew about the war. It was very much so. Mm hmm.

Corrigan: Do you remember doing anything at that time? Now you lived on a farm, but did you probably have your own garden?

Williams: Yes.

Corrigan: Did your mother can or put food up?

Williams: Yes. Yes. Mm hmm.

Corrigan: Do you remember much, did you have your ration book?

Williams: Yes. I don't think we still have one, but I remember that. Gasoline rationing and all, sugar and things like that, mm hmm.

Corrigan: So you remember that then?

Williams: Mm hmm. Mm hmm.

Corrigan: Okay. I'm trying to move a little bit forward there. So you graduated in 1947. Now you made a comment just a little bit ago about your parents were educated.

Williams: Yes. Mm hmm.

Corrigan: Did you know early on that, or I'm kind of wondering, when did college start becoming on your radar, that that was something you—

**[End Track 2. Begin Track 3.]**

Corrigan: —would either do or, could you talk about that a little bit? Was it expected? Was it encouraged? Can you just talk about your parents? How they looked at education in regards to you?

Williams: That was neither encouraged or anything else. It was just, in my own view, as I recall, it was just what I was going to do. And then I was going to go to university and I was

going to study journalism. And folks took me down there earlier, or my mother did. She liked to drive. And we visited a person from the school a couple of years ahead of me in high school. She was in university, and she took me around the school, down to see things and what have you. But it was neither encouragement, discouragement, whatever. I think it was  
5 just the accepted thing, just what you normally do because my parents had normally done that. And it was just seamless, I guess you would say, from high school to the university. But quite a different change, however, because this was the time World War II veterans were there in great numbers. And so you had this shift for yourself. It wasn't some counselor coming along and holding your hand. You swam or you sank.

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Corrigan: Now, I'm wondering did a lot of people, though, that you went to school with, now this is a rural farming community. Did a lot of people go into that? Or did very many go off to college?

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Williams: Amazingly, for the class of twenty-five, twenty-seven, probably six or eight went to college. Many went into teaching. It was a class that had kids of a different kind of interest than you might expect from this particular rural community with many not having that much education, necessarily. But everybody just seemingly wanted to go ahead and do that. And it didn't make, say anything about it. It was not the episodes you make of it today going onto  
20 college and all of those kinds of things. It just, we did it.

20

Corrigan: Now do you think, I mean was this, did you have good teachers then? You said you weren't getting some subjects because of the war. But overall, though, do you think that you got a quality education there and maybe that's what spurred people to go into that field?

25

Williams: I think that's exactly right. And I wasn't exactly a model student, either, so I'm not a good one to judge that. (laughs) But I shaped up a little bit better when I got to university. But there were a lot of good model students there. And there were some that drank and smoked excessively. And of course it killed them later on in their lives for doing  
30 that. Smoking was accepted then. But it was a different class in that aspect, and rather unique. The class that followed me didn't quite have that many. But one of them, the only person, the boy that lived out here, great, huge farm to our west here, so there were very few kids out here. He went to University of Missouri—Columbia, also. Degree in engineering. Became a principal eventually at Black and Veatch, which is a large firm in Kansas City. So  
35 there was some of that coming out of here. The people, part of that, particularly my mother's class and my dad's class, many of those people were well educated. Very interesting. Very differently.

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Corrigan: Now your father definitely was from here. Was your mother from the area, too?

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Williams: She was from the area, but her parents were from Iowa. The Hadley family had large areas of farming up in Marshalltown area of Iowa. So she was from Iowa. I mean, her parents were Iowa-born. But they lived to the northwest of us, where we presently are here about five miles, on a large farm. But her mother died in childbirth. And that just pretty well  
45 tore the whole family apart. There were five children. All did very well in school under very difficult circumstances. So there was that education environment here, I guess you'd say.

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Corrigan: Now I'm wondering, was there anything in your childhood or in your teenage years that you can look back now and see, that may have led you into geology or the sciences?

5

Williams: The only thing led me into geology, I happened to accidentally be taking it as a science. Never heard of it. And the thing that propelled me into it, good teachers. Interesting. Plus the fact my professor in journalism said, "Well, the first thing you've written here is about the worst thing I've ever read." So that also encouraged me to move over into geology. That professor was fairly frank. Which was really a good fortune, because I needed to hear the truth of the matter. So that's how I got into geology.

10

Corrigan: Okay. So before you get to the University of Missouri there, now, you said your mother drove you down and you looked at it. I would think Truman was closer to here. Is that correct? Or no?

15

Williams: Oh, yes. Much more.

Corrigan: Did you consider going anywhere else?

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Williams: No.

Corrigan: Now—

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**[End Track 3. Begin Track 4.]**

Corrigan: —the University of Missouri is known as the journalism school. Is that what led you there, though?

30

Williams: Mm hmm. Right.

Corrigan: Now did you go straight from high school to college?

Williams: Yes. Well, except for the summer break.

35

Corrigan: Yeah. Now could you talk a little bit just about your experience at the University of Missouri as an undergraduate? Can you talk a little bit more, you talked about all the returning vets. I assume there would have been a boom in the population at the school. So could you just tell a little bit about maybe any classes you particularly enjoyed or professors? Was it really just that one geology class? Or can you kind of talk about how that unfolded and what your major was? So you were journalism and you switched to geology right away?

40

Williams: Mm hmm. And to get there, of course you have to enroll and with this huge group of people coming in, the vets and what have you, you're on your own, kind of. And then you needed to find a place to sleep. They did not have places to sleep. I spent the first, as did a number of kids and veterans, in the basement of one of the hotels in Columbia. On an army

45

cot. Before they could find a place to put us as students. Then we get to what's called a barracks, fired by coal stoves. So we kept our own coal stoves to keep us warm. And when we would go to our first classes, particularly, they eventually got things improved a little bit, people could tell where we came from because we smelled like coal smoke. And with that, all of that contributed to this, oh, let's say pressure, I guess you might say, of those early classes. Geology, as I mentioned, I did enjoy. And the professors were excellent there. A unique thing about geology at that time, too, there was an oil boom developing. And of course geologists are attracted to that because there's employment there and it sounds adventurous, all those sorts of things. I never was interested in that. And this particular department of geology believed in a broad education. They're not going to educate toward a specialty. So the breadth of that was very interesting. We had very good coverage of all geology subjects. And it's gotten better.

Corrigan: I have a question. You mentioned about the barracks. I've seen some photographs. Soon after World War Two, around the university. And it seemed like sometimes things would pop up in large yards around the university. It seemed like anything from a little shack to anything that somebody could build. I mean, is that kind of how you remember it? There were just people trying to find wherever they could sleep, eat?

Williams: Pretty much so. Yes. Now the barracks were organized structurally like a barrack. Army barracks is what they were, of course.

Corrigan: And where were they at?

Williams: They were to the south part of the campus. Kind of in the area where the stadium is now, that part of the area. And there was a cafeteria out there which food was just short of terrible. (laughs) But, yes, they were in the southern part of the university environment. After one year there was a family that came from this area here by the name of Wehrman. And he had, the father had fallen and had a serious injury, could not work anymore. The Wehrman's are German and thus, interested in education as well. They moved to Columbia, five girls. And the mother wanted to get those girls educated. So she had a large rooming house. But only two of us, she didn't take in roomers too much, but I was able to stay there along with one other person here. So I was in the barracks only that freshman year, and moved into this environment. So that, you kind of shifted to where you lived as time and place permitted. You weren't required to be in someplace like you are now, dormitories, for instance, that I can recall. My goodness, these veterans from World War II anyway, they were already in their mid-twenties, and they could do what they wanted to.

Corrigan: A lot of the campus at the time, say like East Campus and that, there was a lot of housing there. Big houses converted into many different apartments and things.

Williams: Yes.

Corrigan: Did you eventually move out of that boarding house? Or did you stay there the whole time?

Williams: Stayed there. No, stayed there through the, almost to the senior year. Then I left and was with a professor in forestry, their home. And I stayed there one year. And then in graduate school, I was working quite a lot. In fact, we did our thesis work together, our field thesis, a person named Hal Levin and—

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**[End Track 4. Begin Track 5.]**

Williams: —his brother was an art professor at Christian College. So we moved in there but kind of, let's say undercover. (laughs) Because there were no boys allowed on campus and certainly not to stay there. But we stayed in facilities he had. And we, because we were working on our masters we had long hours. And so we would come in after dark. And we would leave before anybody would be aware that we were there. So we spent a year and a half right there in that kind of “dormitory” in quotes.

10

15 Corrigan: Okay. So you quickly changed your major to geology. What is it that you think drew you to that?

Williams: Probably the thing, by being an entity, science, because it is a history, so to speak, a history of the world. And has an opportunity to study, review and learn about. That is challenging, at least to me. It was quite interesting from that perspective. And the opportunity to be outside quite a little bit. I like to travel. I went to Long Beach, California with my mother and her brother in 1936 on brand new US 66, so to speak. So always liked to travel. Geology has that. And I think those kinds of things, outside, not in an indoor environment science, so to speak. Science that moves you around over a whole variety of areas and small towns and what have you. Even those days, in field trips, all of that had a role, I think played into my interest, anyway.

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25

Corrigan: Now where would you take field trips to? With the professors?

30

Williams: Yes. Right. We would go to the Ozark places and down to Arkansas. The Joplin area, in the old iron, lead mines there. Things like that.

Corrigan: Okay. Now did you, so not too far from campus you have Rock Bridge State Park and the Devil's Icebox, did you—

35

Williams: Yes, we went to those. Mm hmm.

Corrigan: Okay. Kind of right in your backyard. So was it a hands-on learning environment?

40

Williams: It's a hands-on learning environment. Very good descriptive—

Corrigan: Okay. Because you know, a lot of the subjects you're just in classrooms, you're just being lectured to. But it sounds like it was a lot of hands-on stuff. Was it a fairly big department or—

45

Williams: No, it was not. It was in Swallow Hall, which is that building right next to Jesse Hall. Let's see, in our individual classes, they would be relatively small. Thirty, twenty, ten, fifteen, something like that. The only hugely populated classes would be like chemistry and the other courses you had to take. Chemistry class was 100. I can remember, they were large.  
5 But for the geology classes, no. Now, much later, after I left, then it became much larger classrooms. But at the time, that probably went, may have made it also one in which you had a lot of nice people to work with as students. Many of them were World War Two veterans. All had the same interest. And it was a closer interpersonal relationships that made the thing, made it enjoyable. We all suffered together.

10

Corrigan: That's good. (laughs) Was there a, I'm trying to think, what are some of the activities you would have done? Were you in any clubs? Or did you have to work at all while you were attending school?

15 Williams: I did. But didn't really have to, but I did begin by the sophomore, junior year, something like that, worked in, helped in the geology library. But the classes I was taking didn't allow so much fun time. And I was not interested in fraternities, to the disappointment of my father. But fraternities had changed since his day. They were quite proper in those times. And they didn't interest me. And I didn't join anything like that. The things I got  
20 would be in honorary type things or so on like that. But no, I just plugged away as a farm boy would, I guess.

Corrigan: But you did work in the library, though?

25 Williams: A little bit.

Corrigan: Little bit? Okay. Now did you decide right away that you needed to get a graduate degree to do anything?

30 Williams: Pretty much so. Because I'm not really sure, I just accepted that along with several of the other people with me. Some left at the senior year to go right into petroleum geology. But no, I don't know. You had the understanding that if we had the master's, that degree, we were going to be much better fitted for a variety—

35 **[End Track 5. Begin Track 6.]**

Williams: —of types of geologic studies. So I just moved right on and graduated in three and a half years and I was able to get through the undergraduate work. So I started on—

40 Corrigan: So what year was that that you graduated?

Williams: In 1950

Corrigan: 1950, okay.

45

Williams: That winter semester then. And then master's degree in 1952.

Corrigan: So it was a two-year program. Okay. Now when you—

5 Williams: I'm sorry. It was 1951 I graduated. Winter semester of '51. And a year and a half for my masters.

Corrigan: So '52, then, you graduated with your masters.

10 Williams: Mm hmm. Right.

Corrigan: Now talk about your graduate work there. What was your project? What was your thesis on? And kind of how did that unfold?

15 Williams: By our own choosing, really. By "our" I mean my friend that I mentioned we stayed together at Christian College. It's called Columbia College now. And he and I wanted to do field theses. And we kind of, some reason, graduated to the interest of our area up here in along the Mississippi River, in the Hannibal area of Ralls County and so on. Geo mapping, doing geologic mapping in these areas. And we selected that for our thesis, which meant that we did not get any subsidy support or school support. The Geological Survey, where I ended  
20 up working, was supporting masters' theses in the Lake of the Ozarks there, not Lake of the Ozarks, in the Ozarks area, southeastern Ozarks, because of mining interests. And they were financially supporting those, and some around Columbia. None of that seemed to interest us. And we liked it up here. That's where we worked. We bought a 1938 Chrysler from a junkyard. My friend is a Jewish person of modest home or what have you like that. In those  
25 days, they worked closely within the black neighborhood. And so in that setting, we bought this car for thirty-five dollars or something like that. We used it all summer. Took it back. Got our thirty-five dollars back by returning that car. So we worked together and we seemed to fit together, a couple of guys that wanted to do a master's thesis on our own with nobody else bothering us.

30 Corrigan: Now who was the guy you did it with?

35 Williams: Hal Levin, H-a-l, L-e-v-i-n. He eventually became chairman of the department of geology at Washington University, and then dean of the Arts & Sciences, Washington University. Wrote several books.

Corrigan: Okay. So the two of you just kind of set out from this area and Hannibal and you just were mapping.

40 Williams: Mm hmm.

Corrigan: So a lot of your thesis would have been all just field research and collecting data.

45 Williams: Yes. Right. Mm hmm.

Corrigan: But you were kind of familiar with the area though, correct?

Williams: Kind of. But not all that much. Other than the fact that I knew where Hannibal was and so on. But beyond that, I cannot give you a good reason why we said this is it rather than someplace else. We did know that there was a lot of opportunity here because of the geologic structure here that exists in that area. And that was attractive there. There certainly are a lot of bedrock exposures, obviously. There's caves. We were not cave-oriented. But a good place to work, we thought, and turned out to be so.

Corrigan: Now where was Hal from?

Williams: Western part of Saint Louis.

Corrigan: Okay. So relatively not that far away.

Williams: No.

Corrigan: You guys both kind of stuck to the northeast area. Now I imagine, so this is back in the '50s, you would have, with mapping and surveying, there would have been far fewer paved roads and far fewer gravel roads.

Williams: Not so much there. And by the way, the other thing that brought us into, Hal had been up here visiting a farm. He'd never been on a farm before and so on. He liked the area. So I think that had something else to do with that. The discussion about roads and so on that we might get into later on, early work with Geological Survey in the Ozarks. Here we did not have much difficulty getting around by road access, things like that. It was all pretty accessible.

Corrigan: Now did, I'm just curious, did people welcome you onto their land? How was that, where were you doing your work, actually, and how was that accepted?

Williams: It was receptive. This was long before the time of "Get off my land or I'll shoot you" attitude. And no, we never had any kinds of those problems. The only problem that we ever had—

**[End Track 6. Begin Track 7.]**

Williams: —we would park our cars, we'd each go, one of us would drop the other off in his area of work, and then the other one would take the car. I think this time, Hal had it. We had to park the car up near the top of a hill, because it wouldn't start unless we'd get it rolling downhill. (laughs) Somebody had to move the car, and so they rolled it down the hill. But they didn't do it maliciously. No, we were welcomed every time. We stayed at a little town at Rensselaer and so on. Before people became jealous, concerned, or what have you. We were just a couple of kids out doing geology. People were interested in it.

Corrigan: Oh, people were interested?

Williams: Oh, yes. Always.

Corrigan: Did you get stopped a lot and asked questions?

5 Williams: Mm hmm.

Corrigan: Had this area not been really surveyed, then?

Williams: No. Very little geologic mapping in much detail. Amazingly, after I got to  
10 surveying and began to do more work and some research papers much later on, geologists  
then, I was just amazed how much area the Missouri Geological Survey geologists covered  
during the 1800s. 1850 up through 1890. And they had to do it by horse and train and what  
have you. So yes, they had been up in here and what have you, but mapping was not in much  
15 detail to be really usable in the days and needs, to meet the day's needs and what have you.  
But they did have the maps available, the base maps to work with, things like that.

Corrigan: But other parts of the state were, though, like the Ozarks, you mentioned, they  
were much heavier done, and that's where funding was for?

20 Williams: Yes. That's right. Right. Mm hmm.

Corrigan: Did your advisor at least, was he helpful in the sense that you wanted to do  
something different and you guys could come northeast?

25 Williams: Yes, he was fine. His name was Unklesbay. We called him Unk.

Corrigan: Unklesbay?

Williams: Yes. Athel, A-t-h-e-l, first name. U-n-k-l-e-s-b-a-y, I believe it is. He's passed  
30 away only twenty years ago, fifteen years ago. And one of the other professors there, a  
famous Dr. Keller who lived to be 100, and lived out in the healthcare facility south of  
Columbia. He worked all the time. These were the days professors were dedicated to their  
work. They weren't publishing for merit or their position, whatever like that. And our  
35 advisor, which was Unklesbay, Unk, he would visit us here and what have you, and  
encourage us in this work and so on. He didn't make any partial treatment to those working  
in the Ozarks or anywhere else.

Corrigan: So you finished your, you graduated in '52. You finished your thesis, and that was  
40 field mapping in northeast Missouri.

Williams: Mm hmm.

Corrigan: And then, so you're in the '50s here. So Korea's, World War Two is over—

45 Williams: Right.

Corrigan: Korea—

Williams: Is in progress.

5 Corrigan: Is in progress. And because you had a gap, then, right? So what did you do after you graduated?

Williams: For some reason, I never had a draft notice. Yet. I'd eventually get one. The first few years, then, I went to the Missouri Geological Survey to work. I always seemed to want  
10 to do that. And I don't know why. I didn't want to do the oil thing. And while I liked to travel, I didn't have to travel to the far ends of the boundaries of the United States or anything like that. So I wanted to go to the Geological Survey. And my Unklesbay, my advisor, took a copy of my thesis down to the director of the Geological Survey there, Ed Clark. Clark read the thesis. Hired me on the spot right there. He never saw me till I showed up for work.  
15 (laughs) Which I did, a couple of weeks or what have you, after graduation. And with that, we started mapping, more mapping, detail mapping, in the areas where they had hired students to do that earlier that I described.

Corrigan: Okay. So then you, after graduating from Columbia, you move down to Rolla,  
20 because that's where the survey is, and you started working there.

Williams: Mm hmm.

Corrigan: You were there, I think—  
25

Williams: Two years. About two years.

Corrigan: Two years. Okay. And then you got your draft notice.

30 Williams: Mm hmm.

Corrigan: Okay. Now, well, before we get into that, so what did you do for those two years?

Williams: We did geologic mapping. Just like we had done here on our thesis. And that's  
35 what the survey was looking for, and what Clark was looking for. Because they were expanding their geologic mapping areas, given the fact that what is called the old lead belt, which is the area of Bonne Terre and Saint Francis County and so on—

**[End Track 7. Begin Track 8.]**

40 Williams: Lead mining resources there were being depleted. They were essentially needing to see new geologic areas for that. And then the activities of looking for strategic minerals, magnetite, iron and things like that, in the 1930s or even, previously geologists, or a person by the name of Buehler had done some geologic exploration using the subsurface means to  
45 detect mineral deposits, things like that. And one of them was found south of Sullivan. So we were mapping that area. This turned out to be eventually Pea Ridge Mine, which is a mine of

magnetite, rare earth now has a potential there and so on. So that's the area where we began mapping. South of Sullivan about forty miles, thirty-five, thirty miles, something like that. And that's the area when we were mentioning roads, there were no roads to speak of. You drove down creeks that had, they didn't have school in the wintertime because kids couldn't get there. They would have school in the summertime. And the country store with gunny sacks for the window, chickens walking in and out of the country store, things like that. We stayed with a farm, Ozark farm family while we did our work for the summer there into the fall of the year.

5  
10 Corrigan: So all of this work, though, is above ground.

Williams: Yes.

Corrigan: And you're looking at—

15  
Williams: Bedrock and see where rock is displayed, bedrock formations. And from that, make an interpretation of the subsurface. There was drilling exploration going on then by the mining companies, Saint Joe Lead. But we did not participate in that or make any suggestions or what have you. All of our work was above ground. Geologic mapping. And from that you make projections as to what is in the subsurface as well.

20  
Corrigan: So you're making an educated guess on what's below there.

Williams: Right. Right.

25  
Corrigan: How much of it's there.

Williams: Right. Yes. Mm hmm.

30  
Corrigan: The size of the formation.

Williams: Right. That's really a good description of geology. No matter how much work you do, it's still an educated guess. And that part of the, what makes it attractive, I guess in a sense. It is not engineering, which is precise.

35  
Corrigan: Well and this is early on, so eventually you would have things that come along that might be useful. Computer models and computers and things. But this is, we're back to the '50s here, '60s.

40  
Williams: Right. Right.

Corrigan: This is a little different. This is hands-on. You are out there—

Williams: Yes. Mm hmm. That's correct.

45  
Corrigan: Walking, hiking.

Williams: But even with all, well, the computer models did come later. But even with all the detail that that mining company was doing and a whole lot of them flocked in in this particular area, and then the portion where the new lead belt is, which is south of Salem.  
5 Probably fifteen mining companies in there. The statements I've heard the Saint Joe Lead people make is that we decided to drill a hole. It's a very narrow, relatively narrow, lead belt. And the comment was, "We thought, well, where are we going to put the next hole down?" Nothing had been productive. "Well, let's drill this under the shade of this tree where it's cool. On a hot day, it's cool. To keep us cool." That was the hole that hit the lead. Hit the  
10 mineral resource galena and what have you. So it's still an educated guess with a bit of fortune—good fortune or bad fortune associated.

Corrigan: Now with lead or mine companies in general wanting to find those resources, was that an attractive job? I mean, were they trying to eat up geologists to—

15 Williams: Yes.

Corrigan: Was that a lucrative job? I'm wondering, you said people were attracted to oil. I'm sure there was money in oil.

20 Williams: Mm hmm.

Corrigan: I'm wondering, were people attracted to the mine companies?

25 Williams: Yes. Yes. But not me. Because, I think my circumstances, the way I am personally hyperactive, I'm not too inclined to stay in one area to work for one company in one spot for the rest of my life. Just did not appeal. And I liked this type of geological survey we were doing because you're here and there and somewhere else. Short attention span, I guess you'd say.

30 Corrigan: Although you did end up working for the same company, or the same job forever.

Williams: Right.

35 Corrigan: But it allowed you to move around a little bit.

Williams: Yes. Absolutely.

40 Corrigan: Okay. So you worked those two years at the Missouri Geological Survey. And then you got your draft notice.

Williams: Mm hmm. Yes. And the word that I received from the draft board is, we had lost your papers, I think because W, Williams, way in the back of the drawer. And it got slipped down. And somewhere—

45 **[End Track 8. Begin Track 9.]**

Williams: —in a drawer. So I didn't get, they didn't even know I was draft-eligible until toward the end of the draft.

5 Corrigan: So somebody must have found your paperwork?

Williams: Somebody found my paperwork. Which actually turned out to be good fortune. Because by then, I had kind of gotten a little bit tired of just geologic mapping for doing that. It was too much focus for me, perhaps, I'm not just sure what. So when I received a draft  
10 notice, we were in Rolla. Marilyn was teaching. And decided well I don't want to just spend two years in the army. Why don't I enlist? For some reason, I decided that. Then an Air Force major intercepted me in the enlistment area where I went to in Saint Louis. He said, "Why don't you go into the Air Force for four years?" And that's what I did.

15 Corrigan: So somebody just randomly saw you there and recruited you?

Williams: Yeah. That's right. Uh huh. I think it's because I had the master's degree in geology was the reason.

20 Corrigan: So you enlisted for four years—

Williams: Yes.

Corrigan: Correct. So this is—

25

Williams: 1954. April.

Corrigan: Okay. And then, well, where did you go to basic training?

30 Williams: Basic training for three months. And then toward the end of that basic training, somewhere I saw in the camp newspaper a little known article about a place in Montgomery, Alabama called Arctic Desert Tropic Research. And that sounded interesting. So I wrote a letter. And the next thing I knew on my basic training completion, I got that assignment. To  
35 this Arctic Desert Tropic Research facility in Montgomery, Alabama. By the way, I went to basic training with my first class Pullman from Saint Louis to Lackland. San Antonio. And then I was flown, or I had an airline ticket, Super Conny aircraft. That was a great big, equivalent to our 747s today. First class air. Everything like that. Went from Lackland up through San Antonio, up to Montgomery. Which was nice. And surprising. I found when I got to this research outfit, it wasn't quite what I thought it would be. It turned out to be, and I  
40 ended up with a top-secret type classification and so on. It turned out to be all civilians except one lieutenant colonel. And our work was determining the best evacuation routes out of southern Russia into places like Afghanistan, Turkey, Pakistan, those areas. And doing research on, and I don't think that anybody had ever gotten out of this. This was for the potential of B-52s and so on going over, like they were doing in World War Two, if they ever  
45 expanded that. They would not have had a chance to have gotten back out like they did in Europe, from my experience of where I worked. And it was a good assignment, too, because

of the people associated with it. A person with the name of Louis Dupree and his wife was later recognized as the queen of Afghanistan. He had a doctorate from his work in Afghanistan. And I have his book here. It takes one through all of the history of Afghanistan. And into the area when it began to develop their government. And we were working there at the time when they, Afghans had a functional government based on British governmental structure. A parliament, prime minister and a judicial branch. They had positive export balance. They exported to India, they exported west. Grain, grapes, things like that. They had a university. They had students going abroad. It was a functional government. They had graft, but we had graft here. So it wasn't, we even more, probably, than Afghanistan did. And of course after I left there, I was there a year—

Corrigan: This is in Alabama?

Williams: In Alabama.

Corrigan: Okay. So you never were in Afghanistan.

Williams: No. No.

Corrigan: Now you said it was the Arctic Desert Tropic Research—

Williams: Right.

Corrigan: So I'm guessing by the name of that you were thinking it was something along the lines of—

Williams: Arctic, desert, tropic—(laughs)

Corrigan: That it would be about the land.

Williams: Right. Right.

Corrigan: Okay. So that's what drew you to it. So you said most of it was civilian work except for this lieutenant colonel and you?

Williams: Right. Doing the same—

Corrigan: Yes. Okay.

**[End Track 9. Begin Track 10.]**

Corrigan: And then—

Williams: It was more intriguing, what we were doing, than if it had been, actually, its namesake.

Corrigan: And so you said it was classified work and you were there in Alabama. And you stayed for one year. Is that correct?

Williams: One year.

5

Corrigan: Okay. So, okay, so your job was to basically—now, before getting to there, you said you were flown first class and that. Was that your first time on a plane?

Williams: Yes. Mm hmm.

10

Corrigan: Okay. Well, that's a good way to do it, then. So you got down there, you were doing this work, trying to find ways out of Southern Russia, Afghanistan. Okay. What did you do then?

15

Williams: Well I had that application in for OCS, Officer Candidate School. I had gotten tired, even though I was doing this kind of work, I was still getting stuck with pulling kitchen police, KP and stuff like that. And we didn't, as an airman third class, it was kind of tough for us. So I had, I tried going to, or give a try to Officer Candidate School. Which I made, was accepted. And then April, again, went back into April, April 15 of 19-5—

20

Corrigan: Five.

Williams: Five. Entered Officer Candidate School. And that's a six-month, arduous type of, attempt to wash you out, really. They're really making a determination if you're going to be acceptable as an officer or not.

25

Corrigan: And where was that training at?

Williams: Back in Lackland. San Antonio. So kind of a full circle.

30

Corrigan: And did you make it then?

Williams: Yes. They wash out probably half the class. Most of the people there were sergeants to start with. I was an airman third. And there was a couple three people there, really smart, really intelligent, at least. They were more like myself by being younger and not having been, a little bit longer in the enlisted ranks. So it was really hard for those people to take. But a lot of them did stay, in spite of the fact that they had the comfort of being a sergeant for four or five years, what have you. And they gave up a lot more than I did as an airman third class. (laughs) I couldn't do anything but go up. So it was tough in that score. It was total demanding of honor and respect. We had no place to put your billfold and your valuables or whatever like that. And those who lost something, there was an immediate search and an immediate expulsing of them. They'd find whoever did it, immediate expulsion. So that cleaned out a few people right there. It was that type of environment. Up at four o'clock. Do your thing. Bed at ten o'clock. By the way, I woke them up, because I was a bugler. And I put them to bed with taps.

40

45

Corrigan: So you played the bugle?

Williams: Right.

5 Corrigan: Okay.

Williams: So that, it could wear you out physically, but we were of the age that you could take it, I guess you'd say. So that was a good fortune to get through that. And very fortunate to be accepted, get there in the first place.

10

Corrigan: And then, so you did that for six months of training?

Williams: Mm hmm.

15 Corrigan: And then what did you do after that?

Williams: I did not request for any particular assignment. In fact, I don't think it was offered. But I ended up being sent to Orlando. And it was a US Air Force missile, the first missile organization. And I was to be, and that's what I did from there on, the geodetic survey officer.

20

Corrigan: Say it again?

Williams: Geodetic. G-e-o-d-e-t-i-c. An excellent group of fellows there in that section that was doing the geodetic survey. What it turned out, what it became, well actually, I did the computations, too. We're at the very beginning of the missile, Cape Canaveral missile development, things like that, and for getting a missile to go from here to there, you need very accurate surveys to do that. And that's what we were doing. Helping that guidance. We would locate the survey stations that would be instrumented. And then those instrumented survey stations, then, would contribute to the guidance of the Air Force missile. We hope. Those are the days it was more, much more hope than even geology, with no drilling exploration or anything else. There were a lot of errors. A lot of misfires, a lot of whatever.

30

Corrigan: So where, approximately, in Orlando were you? How far out were you?

35

Williams: There was an Air—

**[End Track 10. Begin Track 11.]**

40 Williams: —Force base right in town. And then most of our work was over in the Cape Canaveral area and along the ocean there.

Corrigan: And you were trying to figure out, you were trying to correctly direct missiles to where?

45

Williams: Right. And for there, it was just training. We were just getting the knowledge of how we were going to build our towers that you have to climb up on to to put your survey instruments on. And doing some of that surveying, doing the calculations and doing those kinds of things. Just pure, 100 percent training. And we were there until, let's see, again it would be April. And we went overseas to Germany. So we were there less than a year. We were there about ten months, something like that. And then the advanced part, of which I was part of, because we had the responsibility for getting those missile sites, guidance sites, established early. We went over as a group, as an advance party, and stationed at Ramstein and Sembach, S-e-m-b-a-c-h. That was our primary station in western Germany. And there's where the real fun began, because again, we were, and fitted my "I got to move someplace else, I got to keep moving." We were all through western Germany and some in France in determining missile site guidance locations, doing the surveying, which was required to be done at night because of the procedure to keep it precise. We had lights on towers, on old German towers or towers we built, things like that. And we spent there quite a bit of time. Most of our time was there except for the times we would spend in Libya. Because we were actively firing in Libya when we'd go down there. We would stay at German hotels or guesthouses. Things you would not stay in anymore. But we had fun. We enjoyed it. Suffered through the cold. The Germans were suffering through the cold because they didn't have any heat. This was not too long after World War Two concluded.

20 Corrigan: I was just wondering that. Was much of Germany still in shambles?

Williams: No, they had repaired quite a lot. Amazingly so. In the descriptions of jobs, I was thinking about areas we worked. Now in France, they had not done quite as well. They were still, they weren't in shambles. I mean, Paris was in excellent shape. Of course, Paris was an open city and so there was no destruction there. But some of the smaller communities in Paris were not as well rebuilt as much as Germany. There was quite a bit of damage left in Germany, yes. But not as near as much as you would expect seeing the pictures of that total destruction at the close of World War Two. They got their bricks together somehow and began to put it back. But there was still a lot of shortages, obviously. And heat being one, we would, the fact that we did our surveying at night and what have you, particularly in winter, you'd have no heat at all in some of these places we'd stay. Except on a Saturday night you'd get some hot water and something like that. So it was hardships, particularly for them. Not so much for us, but certainly the people that lived there all the time.

35 Corrigan: Now somewhere I think you had mentioned to me earlier, did you go to Libya several times?

Williams: Went to Libya several times. And again, it was for the purposes of setting up the guidance sites where we'd mount the instrumentation on towers to guide the missiles that we had. There's a picture of that missile over here on this wall and it's a winged missile called a matador. And on, to do that, we would have these towers situated along the northern coast of Libya, or near the ocean, so to speak. And they would extend from Misurata, which you have seen or heard of, Misurata during the recent Libyan events that were on TV. We'd be somewhere from south of Misurata, which is, oh, 100 miles from Tripoli, back toward Tripoli. And then to the, on west of Tripoli some distance. And then we would enter the

interior to a town called Gharyan. We would stay there in the hotel right across from the old livestock yards where they still had camels and things like that. And work out in the, our work there would be in the desert. Again doing the same business of setting up the guidance points. It was, we'd be there for a couple of months or a month, and then come back to  
5 Germany. And then go back, back and forth a number of times. The impression one had then, and again, Libya, by the way, was like Afghanistan, in its governmental structure. It had been facilitated by the United Nations at the close of World—

**[End Track 11. Begin Track 12.]**

10

Williams: —War Two. And it was a countryside that we could be comfortable in. The Bedouins knew nothing about all of that, but they were friendly people. Terribly poor living conditions. I would walk the city and streets of Tripoli by myself. Because I liked to do that on weekends when working. If I get a couple of three guys kind of look like they're crowding  
15 me, well then I just walk over. I kept track of where the British police were. They were unarmed police. There were just a couple of police here and there around the city, and in downtown particularly. In the old city, there was no police, no nothing. Just go in there, we bought so many things. Oh, that little thing hanging up on the wall over there, the camel saddle right behind us, things like that I bought from the old city. And it was an environment  
20 interesting to work it. But it was an environment you also were glad to get out of because of the extreme discrimination against women and children. You could see that all the time. And that bothers one after a while. But our work experiences there were good. And we would be two of us sometimes by ourselves, way off anywhere, or what have you. Get back to the Ozarks, and go back to survey. And I saw more guns, more violence, than I ever did in  
25 Libya.

Corrigan: Hmm. Now you mentioned discrimination against women and children in Libya. Now when you were going, going back a little bit, when you were attending MU, this is before desegregation of schools and that, not too far off of campus, what would have been  
30 known as like black Columbia at the time, is that correct?

Williams: Yes.

Corrigan: Around like the, just, I guess, northwest of campus a little bit, was Columbia at the  
35 time, was that a pretty segregated town?

Williams: Yes it was. And I don't remember the violence portion of it. It certainly was. But now speaking about women, particularly the geological sciences, the science of geology, has had women in it since the beginning of the science. 1900, something like that. Compared  
40 with being lawyers, being engineers, what have you, women were common in that science. Nothing new there. No discrimination. There were no blacks. And there are not very many even today in geology for some reason of which I don't understand.

Corrigan: But there was always women present in it?

45

Williams: Mm hmm.

Corrigan: Even at your studies at MU?

Williams: Yes. Mm hmm.

5

Corrigan: And then in the survey, too, was there—

Williams: Oh, my, yes. Uh huh. Some of the famous surveyors, geological survey geologists there were women. And jumping way ahead into the survey, when we were thinking about the drilling activities of the mining companies and the borings they made and what have you like that, those borings are in little what they call cores, rock samples. And they were keeping them. But as the exploration closed down and as the mining began to kind of cease through the years, they were going to be discarded. We didn't want that to happen. So I said well, getting a contribution concept developed to build a core repository, core library, library to keep these cores in, recorded and what have you like that. Had some great assistance. We held meetings and brought in mining company people and so on. And a nice way of outlining what we wanted to do. Had some great help to prepare that. And so I got the thing started in a meeting. And I kind of had salted it already. Had one company say, "Well, we'll contribute thirty thousand, forty thousand," what have you, like that. So we got all this money, about \$300,000, 250, and out of that, then, I said, "Well, let's call this Mary McCracken Repository." Mary McCracken was a 1930s, 1940s geologist. And was part of the initial work of how the geological survey used in the late 1930s to distinguish aquifers that were suitable for public water supplies in the Ozarks. She was a large part of that. She did consulting work in geology when she did not work for the survey. Her maiden name was Mary Hundhausen but she married a gentleman named McCracken, Earl McCracken. And they worked together. But he died from smoking, as so many people did, at a young age. And Mary—

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**[End Track 12. Begin Track 13.]**

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Williams: —was there until her eighties. And we were able to have that dedication before she passed away. Yes, that's an example of a woman. Then we had a woman chemist there. She was a graduate of the University of Missouri when it was called the School of Mines then. One of the few women in those days. But women at the survey were common.

35

Corrigan: Okay. So going back a little bit, did you finish your time, then, in Libya, and then you were done with your four years?

Williams: Yes.

40

Corrigan: Between Libya and Germany?

Williams: Right. We'd almost, we were toying with the idea of staying. But I guess our parents, the farm drew us back here.

45

Corrigan: Okay. So you would have finished in—

Williams: '59, 1959.

Corrigan: Okay. And then, because you didn't get your PhD till the '75—

5

Williams: Right.

Corrigan: So you went, so after the Air Force, you went back to the survey?

10

Williams: Yes.

Corrigan: Okay. And what were you doing back then? So you would have been there, this would be in the '60s, 1960, right about then?

15

Williams: Right about then. Yes.

Corrigan: Okay. So what were you working on then?

20

Williams: Okay. This is something I want to kind of develop a little bit early, here. I was working on something that Tom Beveridge, the state geologist then, had been wanting to do and was able to develop that by getting an appropriation from the Missouri legislature for it, for an employee, for a geologist, to begin engineering geology section in the state geological survey.

25

Corrigan: So there was funding, so the state geological survey existed.

Williams: Right. Right. Exactly.

Corrigan: They had employees, but they didn't have a geologist?

30

Williams: They didn't have a geologist to do this work. And this is applied geology. And it is not research geology. It is not geology as science in a sense. There were geologists there that Beveridge had had these folks, these geologists doing. But it wasn't, they thought it was technician work. It was a discrimination against this kind of geologic thinking. And it doesn't exist today, of course, but then it was. It just wasn't the science of, like I was describing earlier. Whatever.

35

Corrigan: So it wasn't like chemistry or biology or—

40

Williams: Right. No. Right.

Corrigan: So are you saying that it was less respected?

45

Williams: Less respected. But Beveridge didn't have that much, that was just some of the internal circumstances. Not Tom Beveridge. And it was not the survey. Now this is important to develop. Because what I was able to achieve there was only done because of that time.

And prior to that time, the geological survey had been doing environmental geology work. And I would have called and I used the name in writing histories of geology and what have you, “applied geology.” Because the environmental geology work as a name did not exist then. Engineering geology did not exist in the 1920s. But our state geologist then, Chief  
5 Buehler, was a chemist by training. And his initiatives, though, did speak directly to the public. And that’s why this survey achieved so much. We were doing the waste disposal sites in 1920s. He was doing dam sites in the 1930s with the Depression. He did the state water plan in 1930s to help the public in northern Missouri, particularly, to have instruments of financing, so to speak. They’d never had that before. To better prepare themselves for  
10 another major drought. He did the, when I was describing what Mary McCracken did, he was regulating water well drillers to assure the safety of water supplies being drilled. All before World War Two. World War Two, geologists left, and that changed things with the strategic minerals and what have you. Tom Beveridge joined the survey in 1955, ’54, something like that. He wasn’t there when I left the service. And gotten his PhD there. Beveridge also had  
15 enough engineering to be a professional engineer. And the person that was his assistant, also the same. So those people had the same concept of engineering geology. Still called applied. Oh, he did call engineering geology section. And that’s how it all got started. So I built on it. I had nothing. Had a whole generation plus of, whole forty years, fifty years, to build on that. And Beveridge had been working on all that himself. One of the very first things I remember  
20 when I got there, he was showing me a letter that he had written to the Water Pollution Board. He was already working with—

**[End Track 13. Begin Track 14.]**

25 Williams: —Water Pollution Board, making sure as best as one could then, of safe waste disposal sites. He was very much objecting to the placement of waste and atomic waste, contaminated materials, in a quarry near Weldon Spring. And had written a letter to that effect. Well, it was ignored by the Atomic Energy Committee. It was called AEC at that time. It later cost the taxpayers some 500 million, 400 million dollars, to clean that quarry up. That  
30 one letter, had it been listened to, would have saved an awful lot of money.

Corrigan: So this is Beveridge that wrote the letter?

35 Williams: Beveridge wrote—

Corrigan: And this is Weldon Spring, so outside of Saint Louis—

Williams: Right.

40 Corrigan: So where they deposited a bunch of nuclear waste.

Williams: Yeah. Exactly. And that’s what I’m building on. All those things were happening at that time. This time, with this political environment, nothing that was achieved from the mid 1950s and 1960s, nothing that has been achieved all during this period, which is quite a  
45 lot, could even be started now. With the legislature made up like it is. Term limited people. No knowledge of legislative history, the only people you see there now that you recognize

are lobbyists. The legislature was elected with vendettas. “I’m going to get this done, I’m going to get that done. Then I go home.”

5 Corrigan: And you’re talking about today.

Williams: Today.

Corrigan: As opposed to back in the ‘60s.

10 Williams: So everything we talk about is built in an environment that does not exist today.

Corrigan: Yes. So the legislature appropriated this money for a geologist—

15 Williams: Right. Right.

Corrigan: —which actually was your position. And what were your, what kind of, you were saying at first it was applied geology, you called that. But then environmental.

Williams: Right.

20 Corrigan: Are these, what kind of projects? You said waste disposal, dams. What other things are we looking at? Like landslides?

25 Williams: [Williams Landslides, southwestern Saint Louis, northeast Jefferson counties for example. Also sinkhole collapses primarily southern Missouri and property damage; losing streams with surface water entering groundwater and contamination risks]. Well, right here, where we’re living. This clay pan subsoil is a mechanism that causes more destruction than about anything else. Because it swells when it gets wetted. Breaks up basement floors, breaks up foundations, breaks up highway foundations and so on. So that was part of it. Beveridge  
30 sent me to the state, the district geologist at Hannibal to have time to work with that person for several months. And then sent me to the Jefferson City Highway Department in their soils lab to work with them. To just see what happens within road building. Which is a big factor in geology. In fact, the earliest geologist who did applied geology were those who went west in the expansion of railroads and what have you in the 1800s. In Missouri, also because we  
35 have a lot of limestone mining, that, too, became a part of what we were doing. The safety of mines in western Missouri. So it’s a broad application of how geology affects the public health, safety and welfare.

40 Corrigan: Now the state geologist for a long time was the same person. Buehler?

Williams: Right. Forty-four years.

Corrigan: Was it Henry Buehler? Or Chief Buehler?

45 Williams: Yes.

Corrigan: That was before your time, though—

Williams: Oh, yes. Absolutely.

5 Corrigan: So he was kind of the one who wasn't, he's the one you're saying has laid this kind of foundation of early geology in Missouri.

Williams: Right.

10 Corrigan: And then, but you worked under Tom Beveridge.

Williams: Right. Right.

15 Corrigan: Okay. And he was, so he sent you off to all these different places. Now were you just a one-man shop?

Williams: For a little while. Now to come back and think on the sense of Buehler and what have you, you see, we're starting with the DNA of a survey that does regulatory activities. That gets into the fuss and feathers of town meetings that don't like you, what you're doing here, because this is a waste disposal site we don't want. Or this is a waste disposal site that's in a terrible mess, why aren't you doing something about it? Eventually getting in litigation. All of these kinds of things that go with regulatory activity that's going to do what the hands-on applied geology as opposed to the research aspect. We're the only state geological survey that did that. I've given presentations at meetings describing what we do, and they just sit back in horror. Geologists shouldn't be out there doing that, muddying up science with regulatory stuff. The two don't mix. I say, yes they mix. Because it's an absolute essential use of geology to mix that in with the regulatory process. Otherwise, a regulator is—

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**[End Track 14. Begin Track 15.]**

30 Williams: —and the different regulatory agencies have, some states have, and our DNR tried to have. We fought with them a lot, too. If you have the geologist sitting in the same desk next to the regulator, then you're going to get cross-pressures. Inbreeding, I call it. Or just a pressure of your associates. So you need to be separate yet active in that regulatory process. But separate sufficiently that you can maintain your own integrity and not be adversely affected by the pressures that go with promotions, that go with greed, that go with self-serving. And some really innocent pressures, concepts that you or I or somebody else would have, which really are good concepts because we haven't learned about this or learned about that, but we'll change our mind when we do.

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Corrigan: So the geological survey, would they insert themselves where they thought they had to be? Or was it, I'm thinking along the lines of what maybe was the biggest problem at that time, early on. And you keep mentioning like waste disposal. Are these landfills that we're talking about? Or is this like—

45

Williams: Lagoon-sized, liquid lagoon-sized landfills. The nuclear waste sites. And also the dam sites. Everything that we have spoken about, yes. And there's an opportunity to be aggressive in that form. And this is where geologists tend to fall back, too. Because aggressiveness and geologists don't always go together. I mean, the thinking process, I don't think, does. You see them not willingly to inject themselves into that environment. Yet the time that we're speaking about now, it was an environment that welcomed us. So we had an opportunity to do that and not being obstructed by legislative pressures. They'd be unhappy, but not pressures. We were respected within the legislature and within the civilian community.

5

Corrigan: Now who, I guess who did the geological survey report to, per se? I mean, you had to work along with the legislature. They would be appropriating money.

10

Williams: Yes. Mm hmm.

15

Corrigan: But you had to somewhat be independent. Then you're having to work with all these different entities, whether it be a community or a company. Now particularly I'm thinking, this is early on. World War Two is over. People saw the destruction of a nuclear bomb.

20

Williams: Mm hmm.

Corrigan: Was nuclear waste on people's mind? Were people worried about it? I mean, to me, that seems when you start to talk about the waste and you can see the destruction of it maybe early on, I'm wondering were people worried about, some communities don't want landfills. Some want them. It's a source of revenue. But I'm wondering early on was there much thought to just how polluting these can be or were people connecting it to like the water supply or the health of—

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30

Williams: Yes. I certainly was in my description of Buehler and the drilling protection that he made sure the wells were drilled properly and what have you in the late 1930s. Missouri was the only state in the limestone environment that did not have polluted public water supplies after World War Two. And that was found out in the sense that as urban areas expanded in Illinois, southern Illinois, Kentucky, Tennessee, Arkansas and what have you, their public water supplies had a much greater level of pollutant and difficulty to assure the public that they were safe than Missouri because of that protection that the survey had started then. And in that sense, that created an environment in which we were welcomed in the legislature. Now we reported to, up until the DNR was created in 1975, the geological survey was a part of the government that reported to the governor's office, so to speak. And most of the agencies did indirectly have that. But I do not ever recall any pressures from the governor's office whatsoever. And really no, legislature would challenge you and they'd be unhappy here and there. But by and large they were legitimate challenges. And once in a while we'd have somebody that would obstruct us. But no, it was an environment that—

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**[End Track 15. Begin Track 16.]**

Williams: —there was not a lot of public fear. There would be public unhappiness of a particular site was not, as I mentioned, not where they wished it would be. Of course, things like, you don't want a landfill next door or something, and things of that nature. But overall, we knock on the door and say, "I'm with the state geological survey." "Fine. What can I do to help you?" That was the environment. And that's not the environment today, of course.

Corrigan: But this is the, it was in the '60s and '70s?

Williams: And the '80s.

Corrigan: Eighties, okay. I wasn't sure how far that went up to.

Williams: They started being more difficult for us after the DNR was formed.

Corrigan: And that was in the '70s.

Williams: That was in the '70s, right.

Corrigan: Now in the '70s, you went back to school and got your PhD.

Williams: Right.

Corrigan: Okay. Could you tell me how you decided to come to that? And obviously Missouri S&T, which is known today as the mining school, University of Missouri—Rolla, was obviously right in your back corner there.

Williams: Right. Mm hmm.

Corrigan: That probably played into some of it. So why did you make the leap to your Ph.D.? And what was your project and what did you study? And research on?

Williams: Well, I think I'd always thought about it, that I kind of needed to do that, or should do that. But what really, I think, tipped the balance toward doing it was a trip we made, Marilyn, our daughter then, and I, to Czechoslovakia to the International Geological Congress meeting in Prague, Czechoslovakia. We went on our own money, as opposed to the professors and all like that. That wasn't too long after we had been in Europe in 1968 when we were there. So we kind of knew how to go about and pick the hotels we could afford to stay in and what have you like that. So we were there at the same time the Russians invaded Czechoslovakia. So we got to see the Russians again. And what triggered the Ph.D. thinking then, everybody was Dr. So-and-so. And we worked with some fine Czechoslovakian engineering geologists, all Ph.Ds. what have you. So I was about the only non-Ph.D. in that whole environment, that meeting, what have you. That kind of sped up the thinking, so to speak. That was an interesting time, when the Russians showed up, obviously. Our hotel was kind of the average hotel. We weren't staying where the professors were, which was more expensive. But we were where the Norwegians, people of European affiliations were there. Anyway, this hotel room we had was one of the streets, busy street. But something seemed

awfully more busy early one morning. We'd been on a week's field trip to eastern Czechoslovakia, over on the Russian border, really. And Poland. Polish borders. Got back there. Noisy morning. So I get up and look out the window and here comes a bunch of army vehicles. And one guy with a machine gun. He swings around, how he saw me, I don't know. Swings around, points his gun at me like I'm going to drop a bomb on him, whatever. So we found out that Prague had been invaded, Czechoslovakia had been invaded. The Russians didn't like what the Czechs were calling "Spring," and were going to put their thumb back on them, which they did, obviously. And caused a fair amount of destruction in the city where they're running around. The Czechs immediately took down all the street signs so the Russians got lost. They were a mess. And the Norwegians we were with they, well, the typical invasion is no food today. Tomorrow, you get some food. And the third day the trams will begin running. Which that turned out to be. A couple of old ladies about our age right now, or may have not been quite as old, were there. Americans, had been in Russia in the mid-'30s on a field trip. And they said, "Well, we learned then, never trust the Russians." (laughs) Anyway, the Americans tried to get out by car convoy and they get all messed up going to West Germany. We'd been told, maybe by people there, don't mess with the American embassy. Go to the Canadian. Which is what we did. Canadians put together a train, took us all out by train to Vienna. So we made the best of a bad situation, which worked out fine. Anyway, that started the Ph.D. thinking.

20 Corrigan: So bad timing when you happened to be there. But you anyways got to Vienna through the help of the Canadians, and then you got back to America?

Williams: Mm hmm.

25 Corrigan: Okay. And so you got back, now did you continue working while getting your PhD?

Williams: This is about, probably one of the reasons I have high blood pressure. I'm surprised I even survived. And obviously your family contributes a great—

**[End Track 16. Begin Track 17.]**

Williams: —deal with this. Stayed working fulltime. At that time, I'd already had pilot's license, a fair amount of hours. But I was using, used the GI Bill to get my other ratings, like flight instructor, instrument, multi-engine and so on. So I was doing that. Then we were keeping the farm going up here. By that time, my father passed away and so on. And my mother was here. So we had all those things going at one time. Got it done in six years. It was related to surficial materials, the overburden over bedrock, classifications of that and what have you, the dissertation part. But in the mix, I took courses in engineering, well, geological engineering, they call it. Civil engineering and geology. It worked out okay but it was not easy, let's put it that way. (laughs) But later, much later, I met a fellow there at the same time I was and he was describing his time doing what I was doing. I think he was getting his master's, I believe, in civil engineering. And he was flying mail runs for the local fixed-base operator at night, going to school in the daytime. So there were some people, obviously, that go the extra length to get that degree.

Corrigan: So what was your dissertation on, exactly?

5 Williams: Surficial materials. S-u-r-f-i-c-i-a-l. Which are unconsolidated materials. The materials we're sitting on out here right now. Glacially deposited materials. Materials developed in the Ozarks from the residual weathering of bedrock. Materials that are in large stream channels, deposited by stream flow. Everything that is unconsolidated.

Corrigan: Now had you considered teaching at all, or no?

10

Williams: No. It somehow doesn't appeal. That, again, is confining. (laughs)

Corrigan: That's okay. So you continued to work at the survey.

15 Williams: Yes.

Corrigan: Now at some point was it in, let's see, you were appointed the director at some point?

20 Williams: In 1986. And there's a person that came in as director of the Department of Natural Resources in 1984 by the name of Fred Brunner. And Wally Howe who was the state geologist, he and Fred didn't get along. They got along personally, I never could figure out why the two just didn't quite click. Wally would talk to me about it, said I just can't make it with Fred. And then Fred would try to hint to me he wished I would apply for the position.  
25 Well, I didn't want to get into that situation. So I didn't. I just ignored it all. And kind of console Wally and say, well, I just never could understand why those two didn't click. But still even today. On Christmas break, coming up here to the farm, I get a call from Fred. He was Dr. Brunner to everybody else. For some reason, I always called him Fred. Got a call from Fred. He said, "Stop by the office when you're going up to the farm." I did that. And  
30 just four questions, he said, "Well, I'm appointing you as state geologist." And he didn't ask me if I wanted it, he just said, "I'm doing that." But he did say then that he liked Wally and he really didn't like what he thought he had to do. "By the fact that I'm also appointing you is I think that you can help that transition and help things for Wally better than somebody else can." So that combination of events that took place. And from there on, I got into this  
35 much expanded position in geology.

Corrigan: So this was, was it called the director of geology—

Williams: And state geologist.

40

Corrigan: Okay. So the director of geology and land survey—

Williams: Is the state geologist.

45 Corrigan: Is the, okay. It's a long title.

Williams: Right. (laughs) Yes.

Corrigan: But state geologist is shorter. And that was in, I think I have January 3rd, 1986.

5 Williams: We got it all settled by a court decision later on. I got in a big fuss with one of the directors.

Corrigan: The directors of the DNR?

10 Williams: Right.

Corrigan: Because I read somewhere—oh, I think you had told me this in an email or something, and I wanted you to kind of expand on this a little. It said at one point you said you officially served at the pleasure of the governor.

15 Williams: Yes.

Corrigan: But you said you also served at the displeasure of the DNR directors.

20 Williams: Right.

Corrigan: So can you kind of—

Williams: You can make that in plural.

25 Corrigan: Directors, plural. Okay. So can you talk about your experience at DNR, and why there was—

**[End Track 17. Begin Track 18.]**

30 Corrigan: —contentions and what those were?

Williams: Actually, they began long before I became director. And we skipped by our discussion of Wilson Creek. Maybe I ought to pick up there a second, because that relates to these differences.

35 Corrigan: Yeah. With the water pollution.

Williams: Right.

40 Corrigan: Okay. So what I should put on the tape here is that before we started the interview, we had talked about something. So let's go ahead and start with that. So what we were talking about then was the, well, Wilson's Creek is basically it.

45 Williams: Right. Yes.

Corrigan: And in the 1800s, it was found to be dirty.

Williams: Right.

5 Corrigan: So I'll let you start from there.

Williams: Right. Well you see, this really leads up to the contentious issues that we developed with our DNR now in charge of the geological survey, including the DNR director. So actually this begins that trail of discourse.

10

Corrigan: So start back with, is it the 1880s?

Williams: 1880s. 1890s. The dean of, before becoming dean of Drury, Drury University, Springfield. And one of his reports on Greene County, which is a published report, noted that  
15 Wilson Creek, which drains south from the city of Springfield into James River was terribly polluted. And commented to that effect and hinting or indicating it's a part of that drains, the cars, the sinkhole drain terrain, and so on related to that in the city's accident and whatever. So it remained terribly polluted for decades. And we had, and the type of work I was doing, and then my associate, Jerry Vineyard, who is at Springfield now, retired there, was a  
20 geological survey geologist who specialized in caves and springs and what have you. But through my work at looking at individual waste disposal sites, of course I'd encountered Wilson Creek. And it was terribly polluted. (laughs) The professor described it quite correctly. In fact it was so polluted up near the headwaters where it was flowing, it flows for a ways and goes underground and finally resurfaces down the stream at the sewage treatment  
25 plant. Anyway, where it was flowing up near the railroad yards, where there used to be the Frisco repair shop, railroad yards and southwestern portion of Springfield, a lot of oil on the creek. So I didn't smoke, somehow or another I had a match, or maybe I thought I would bring some matches along. Whatever. I struck a match there along this polluted creek and it caught fire.

30

Corrigan: The creek did.

Williams: The creek did. So here I had this fire. And I got busy. I thought good grief, this thing's getting out of hand. So I got busy trying to, and I finally got it put out by splashing a  
35 lot of other oil-polluted water on my polluted water, burning polluted water. Anyway, that's an illustration of how badly polluted Wilson Creek was. And it had bloodworms and terrible things.

Corrigan: So the main pollution, though, was oil.

40

Williams: The main pollution, it was waste from the city.

Corrigan: Oh, city waste. So not just the railroad.

45

Williams: Not just the railroad. That was just one of many contributors.

Corrigan: Okay.

Williams: And Jerry Vineyard worked down there, too, and a U.S. Geological Survey geologist by the name of Ned Harvey. We all had kind of similar joint interest to our individual work and jointly, we had determined that Springfield is a really bad situation. And we began our joint investigation of that. Three of us working together. I would fly over. We would take colored infrared pictures of Wilson Creek. We were doing water tracing, water drawing. We used the water going from a sinkhole and coming out someplace else downstream. Putting together the network of the subsurface, geological subsurface drainages that go south/southwest from Springfield and to Wilson Creek, including that waste treatment plant. Somewhere along the line, I guess we had learned about the Federal Water Quality Agency, FWQA. Their office was at Ada, Oklahoma then. Went down to see them. Told them what we were doing. So out of that we got some funding to help support us. Plus we had USGS funding and we had some state survey funding, but we also had FWQA funding. And FWQA then becomes Environmental Protection Agency, EPA, and district 7. So we had a tie of interpersonal relationships between FWQA and EPA and ourselves. And we get, finally we get this whole study completed to the point where we take it to the city, talk to the city council, made a presentation at city meetings. The combined began to take effect toward the city, actually taking action, including—

**[End Track 18. Begin Track 19.]**

Williams: —cleaning up Wilson Creek, improving the waste treatment plant, including their collection systems and watching their push and going to sinkholes. A whole lot of things. So things got better. Much better. Now we have this relationship with EPA. And we were getting money from them to do a variety of things. They had geologists, but that's again where you have your geologist right with you, right into the inner closeness of the regulatory environment, you do get kind of inbred there, a little bit. And you don't really have the people who are on the ground that you're doing your regulatory activities with. We were the only, they had four states—Iowa, Nebraska, Kansas, ourselves—we were the only ones who had a geological survey this active. So we had a lot of cooperation. We had funding from them. And in 1975, DNR's formed. And I have no idea who selected the director, what have you. They immediately shut us down at the geological survey. We couldn't mail stuff out. We couldn't get in. Had to go through Jeff City. They took away the name geological survey. And Howe, our director-state geologist, was there. All kinds of adverse situations. It goes on maybe a month or so, I don't remember how long. I get a call from people I knew at EPA and said, "No, we're not getting anything from you on your work that we're funding." And I said, "Well, we haven't received any funding." They found out it had been shortstopped at Jeff City. Told Jeff City DNR you either turn that money loose to the geological survey, or we're going to cut off all our funding to you. Well, we got the money. And the war began. And except for two or three DNR directors, excellent directors, three, probably, during my time, which I retired in 2000, except for those directors, it's been a more difficulty accomplishing our work because of DNR than it was because of the legislature or anything else.

Corrigan: So I guess it's up to you if, so which directors do you think, did you work with well? And what is the issue or the problem from DNR's point of view why they didn't either

want to work with, fund you or your purpose? What was, from your perspective, what was the problem?

5 Williams: I don't know if I could ever really figure that one out. It didn't make sense. The directors that I basically remember, Fred Lasfer, L-a-s-f-e-r, he served through the Kit Bond and I think it was Teasdale, he served Kit Bond twice and Teasdale, strictly non-political. The early Kit Bond was a great governor. The late Kit Bond seemed to get over to the dark side. The DEQ director, Bill Ford, was especially good. I got along with John Young, who was also DEQ, fine. But Bill Ford, I remember.

10

Corrigan: What was the third one there? You said Fred Lafser, Bill Ford and—

Williams: And John Young.

15

Corrigan: Oh, John Young.

Williams: They were both environmental quality. And Bill Ford was a super guy there. And he was just as irritated with the DNR environment as I was. He told me one day a good news/bad news story. And the director tells him, "Well, I'll tell you the bad news. You're fired." And Bill said, "You know, if he told me that, that would be my good news." He left shortly after and went to Washington, D.C., to work for the sand and gravel as an engineer and kind of a lobbyist. Happier in Washington, D.C. He was a country boy out of the Ozarks. Happier in Washington, D.C., than he was with the DNR.

20

Corrigan: And this is John Young?

Williams: Bill Ford.

25

Corrigan: Bill Ford. Okay.

30

Williams: Of course, Fred Brunner appointed me and I got along with Fred all right. In fact, interestingly, this led into some legislation that really has turned us off this year. In the, before I was appointed by Fred Brunner, Fred was, apparently stopping, he didn't know at the time, nobody knew, the permits were not getting out of the department. So he appointed three people. I was one of them. I guess he decided, well, I can't give him the state geologist and we'll give him this job. And two people, one from his administration and one from environmental quality, where John worked on as I mentioned. Go through the whole department, find out who's holding up the permits. So we spent two or three months. We specifically started pulling all the permits, everything like that. Came to [the conclusion that it was Dr. Brunner holding up the permits. We had kept Fred regularly briefed until time for the conclusion. For those meetings, the environmental person, a former Air Force briefing officer provided excellent briefing chart status reports. We had one program blocking us, Fred fixed that one immediately. We freely discussed issues at each meeting. But not so for the final conclusion meeting].

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**[End Track 19. Begin Track 20.]**

Williams: "We can't do that because he's going to fire us." And said, "What did you tell him?" So we have a meeting and Fred says, "Okay, you've been through all this. Where is the problem?" And I said, "Well, Fred, it's you. You're holding up your permits." And he  
5 kind of laughed and said, "I was afraid you'd tell me that." What he was doing was reviewing them. He was non-political, but he was an engineer. He just couldn't let stuff get out without him reviewing them.

Corrigan: So he appointed you as the director.

10

Williams: Right.

Corrigan: Okay. So you had a good working relationship with him.

15 Williams: I had a good working, so that tells you kind of what the situation is between those that we had trouble with and those that we did not have trouble with. Steve Mafood is another one. The last director that I worked under.

Corrigan: What was his name?

20

Williams: M-a-f-o-o-d.

Corrigan: Steve, okay. So he was the last director you worked with?

25 Williams: And his first utterance as he took charge, he was with the department already in one branch of the department. As he took charge, he said, "Every division in here is equal. I don't want it otherwise." [Strained relationships existed with the two DNR directors that followed Fred Brunner. The first, 1988. Tracey Mehan responding to the anti division of geology and land survey attitude that existed by some in the DNR Jefferson City  
30 management attempted to eliminate the survey entirely as did the first director in 1975. Not sure Tracey himself was that way personally. Regardless, he learned quickly in his administration neither the Governor who appointed him nor the legislature would tolerate that. The director that followed Tracey, 1992, David Shorr, first follow that same anti Survey attitude that would return unless stopped by the DNR director. However, he could see  
35 something not quite right when I kept warning him he was being set up for trouble.] So as time goes along, some other issues came about and we keep trying to point out that David, you're going to get in trouble if you don't fix this. One dealt with the damn state parks. This is really going to get you. And he begins to see that he's not been given the full bits of information that he should be getting.

40

Corrigan: And this is the director?

45 Williams: This is the director, David Shorr. He finally figured out I've been trying to keep him out of trouble on some of the stuff he's getting into. Even after we've had all, because he's a lawyer. And a good lawyer forgets past history. You know, they lose the case, he lost that, so what, you know. It's that kind of attitude that Shorr had. So I keep trying to get him

out of trouble. And he finally figures out that I am trying to protect him from getting into trouble. After that, we get along just fine.

Corrigan: And what kind of trouble?

5

Williams: Oh. Well, litigation trouble. Liability. You see, he's going to get sued, for instance, this dam that state parks owns, for instance. We're taking you, taking that to the attorney general's office because it is a hazardous structure. They'd been given it by a mining company. That kind of thing.

10

Corrigan: So for example, like so the mining company gives it to the state parks. But the state parks, if they don't keep it up or repair it, gets a liability.

Williams: Right. Exactly.

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Corrigan: And so if somebody gets hurt on it or it falls apart.

Williams: Right.

20

Corrigan: A structure, somebody can sue, and that's going to go back to the director.

Williams: Director. As a lawyer, he saw that one. All of a sudden, that really began to really build on his pile of things I need to worry about. Then we had an issue with the water well drillers that we were regulating. And the Saint Louis labor union that deals with pump installers and so on. And we were on the water well driller side of this issue. We went through all of that. His attorneys couldn't figure it out and so on. I finally sat with his attorneys, and I would keep pointing and when the statute says, "This is what you need to do" and so on like that, he gets fed up with the fact that his attorneys can't figure it out. So again I go over to his office and work through the process. So it's a combination of things that they don't know within that office and a combination of greed and jealousy and what have you that goes with an interpersonal office relationship. All those things. Some directors are susceptible—

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**[End Track 20. Begin Track 21.]**

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Williams: —to it. [David was not and became one of our best DNR directors] Others are good managers and can figure it out.

Corrigan: Mm hmm. Now, and this still continues today, this struggle.

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Williams: That's right. Well, and it's gotten worse in a sense that with term limits, then, there's nobody knows about geology. I had no problem going back in the legislature when I needed friends. Two or three times they tried to eliminate the entire survey. I walked the halls of the state legislature. We contacted our friends in the public and they lettered them with support, all of those kinds of things. Everybody knew about the geological survey. We'd been there since, I'd been there since I started working on the first thing that developed

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within the legislature, the dam safety law. And the council that went along with that, which was an act in 1979, well, Wally had been there early developing the oil and gas council to protect water pollution from oil wells in western Missouri. Then I came back again with the well installation board, creating that, to help in the regulation of water well drilling. And then we'd gotten the geologist registration bill passed. That was part of the three we did then. So it was all of these kinds of things that I had participated in, been supportive of these councils, these boards, these things that the legislature were doing. The geologic hazards legislation we created. All those kinds of things. So you have a legacy in there that the whole environment is receptive to. And that's why they couldn't harm the state geological survey. They being a few that would get within the office of the Department of Natural Resources. And a few that they would support them within the legislature. Just really didn't have a chance, because they had such a strong legacy. Well, actually built upon the Chief Buehler type stuff way on back. That led us to be a well-recognized state geological survey. We had 130 people, six million dollar budget, what have you. That doesn't exist today. And I've spent all of, half of the last several months with the person who succeeded me as director, Mimi Garstang and our friends with the water well drillers, our friends with the consulting and engineers council. Not the Missouri Society of Professional Engineers, but different geologic agencies trying to protect these boards, commissions and what have you that are set up that then go ahead with their public participation, all these boards and so on have public members. The ones that Wally created, the ones that I created, and so on, have public members as well as members of the regulated community. And some of them do have a government or the geologic or an engineer from the DNR on them, but they are all public. Now many of them are on conference videos. Many of them are out on the web and so on. So everybody knows what's going on. Nobody knows what's going on within the inners of DNR in Jeff City. It's a closed shop, so to speak. And those are about to be eliminated. The governor got mad because it permitted a limestone quarry in the Lake of the Ozarks area.

Corrigan: And which governor is that? The current one?

30 Williams: The current one.

Corrigan: Nixon. Okay.

35 Williams: The Missouri legislature, not knowing any of this history that I'm describing, they want to get rid of government. They say, hey, that sounds like a good idea. Let's get rid of these people. And that got this big hornets' nest stirred up big time. And it's been an unhappy time. They've succeeded a little bit, but—

40 Corrigan: Okay. So you're talking about today. Let's go back just a little bit. So you retired in 2000?

Williams: Yes.

45 Corrigan: So you had been there, except for your Air Force duties, from '59 to 2000? Is that correct?

Williams: Oh, at the survey?

Corrigan: Yeah.

5 Williams: Except for Air Force duties, yes, '59, 2000, including the two years prior to that. 1952 to '54, then the Air Force break. Then back in 1960. '59, 1960 forward, to 2000. Retired at age 70.

Corrigan: Okay. I was trying to figure that out in my head. So you stayed on quite a bit.

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Williams: Yes.

Corrigan: Or past an age you probably could have retired.

15 Williams: Yes. Right. Even before that, because of the retirement system the state has.

Corrigan: So why did you—

**[End Track 21. Begin Track 22.]**

20

Corrigan: —decide to stay on. Did you enjoy it?

Williams: Yes, because there are many perks, if you want to call it that, by being a state geologist. You feel like you're doing something inside and outside the state. I would be on the liaison committee of the Association of Missouri State, National Association of State Geologists. We go into Washington, D.C. Visit various offices to obtain this, learn that and so on like that. So you feel like you're doing something worthwhile there. I go there myself. For instance I presented testimony at a House subcommittee to try to save the Bureau of Mines office in Rolla. And then this is an interesting display of the difference between now and then. This was under Governor Carnahan's time as the governor for the state of Missouri. And the U.S. Geological Survey in a sense was trying to close down the U.S. Bureau of Mines. The one in Rolla, which Chief Buehler, by the way, helped bring to Rolla in the first place. And they were doing quite a lot of recycling research work. Of plastics and things like that. They used to do things for miners only, and mining safety and so on. But this particular agency, they were doing a lot of good stuff. So we wanted to save it. Rolla wanted to save it. We, the geological survey. The city of Rolla wanted to save it. Carnahan, the state did. I wrote up my testimony and what have you. Sent it to the governor. He said, "Fine. Make sure you talk to Bill Emerson when you're out there." That's Joanne Emerson's father. He was there. And the reason he's probably not there now is he smoked too much, and had lung cancer, of course. I'd always stopped to see him anyway. He's a friendly guy. And Carnahan said, "Well, be sure to visit him." So I said sure, it's no problem. I talked to him, saw Bill Emerson. He said, "Oh, yes. We're always together on things like this. The only place we differ on something is strictly a political, the old-time political stuff. But by all means." Well, I was disappointed with some of the Rolla, I'm always disappointed when I go to a committee hearing and somebody reads something. You don't read something. You better know your stuff so you can talk it, speak it extemporaneously, or you're dead meat. So I

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presented a copy of the letter, but I just, you know. I've been doing this thing for so long. Anyway, we lost. They still lost the U.S. Bureau of Mines. But it was those kinds of things that made the job very interesting. And of course we'd have meetings in different parts of the state, the next to last one I attended was up in Alaska. And then the last one I attended was our own, and we were the host state. So all of those things made it an attractive position. And in spite of all the fuss and feathers that went on with DNR, we were still getting quite a lot of useful things done. After I left, term limits had set in—

10 Corrigan: So you left in 2000. So term limits were voted in before that, but they didn't take effect until then.

15 Williams: Until then. When you're dealing with a third of the legislature brand new, many coming in for a particular vendetta. We suffered one big loss because of it. And one guy's mad at something, dealt with the land survey. And you lose that. He just got mad. So there was a lot of that type of politics now. There's a lot of bad legislation in the sense they don't know even the formality of creating proper legislation. The only people who know where the bathroom is are the lobbyists that have been there. I still recognize people I knew back before then. Lobbyists are not all that bad, by any means. They're representing whoever hired them to represent something. They could be representing the poor mine people which they do.

20 Corrigan: Now I have a question for you about term limits. Prior to them going in, were you against them or for them? Or did you have an opinion?

25 Williams: No, I had an opinion all along because I had seen, yes you do have some people who shouldn't be there. We had one gentleman that was in there, I couldn't tell you how that guy got elected. This is Barton County. Somewhere along during when I was there, I was in Barton County looking at landfill sites with the county commissioner. This is before I was appointed state geologist. I think I was. No, I might have been there. This was a high profile case. I might have been there when I was a state geologist. It was fairly recent, mid 1980s. 30 And anyway, I asked them, how did you guys, why did this guy elected out of Barton County, was a representative. Comment was, "the only way we could get him out of the county." So you had some of those kinds, yes. But then—

35 **[End Track 22. Begin Track 23.]**

Williams: —they were outnumbered by others who really knew the government, really were sincere there, and did stay on beyond what was called the term limits. And the partisanship, there was partisanship, but there also was, particularly in the senate, the old saying is you don't know if they're a Democrat or a Republican unless they're wearing a nametag on their shirt. Because Democrats are conservative. Republicans were moderate. Not liberal, but you know, back and forth like they're supposed to be. I worked frequently with an old-time Republican by the name of Emory Melton, from Cassville.

45 Corrigan: A lawyer and publisher and newspaper, he had a publishing company, too.

Williams: Oh, let's see. No, Emory Melton was not that. He was a lawyer.

Corrigan: He actually owns, his family had a publishing company. And he owns it still today.

5 Williams: Oh, they do? Oh, I see. You're talking about, oh, I didn't know that.

Corrigan: Yeah. He's one of the trustees of the historical society.

Williams: Yeah.

10

Corrigan: And he, yes. He's in the, his oral history is in our political collection.

Williams: I was going to suggest Emory to you, but not knowing that, even.

15

Corrigan: Yeah. He's been interviewed before. Years, probably in the '90s, as a legislator. Because I've heard that name in the way southwest part of the state. Yeah.

20

Williams: Oh, okay. Yeah. Well, I was having trouble. We were given the job of my statute, we'd been trying to regulate the water well drillers. There was more loss of life and illness due to improperly drilled wells than all the hazardous waste sites put together in the state. Or in landfills. It goes back to 1930. We right here experienced it, in this area. I know children died from that polluted water. Water's polluted because of poor casing and all like that.

25

Corrigan: So is it the drillers? Or are you talking about the people who are drinking the water?

Williams: The drillers. I mean, the drillers are not doing the job right.

30

Corrigan: So the people being harmed, though, are the people whose wells these are.

35

Williams: Right. Exactly. Now the state had regulated water well drillers before World War Two, no problem. And I guess that ceased during the war, I'm not sure. But we start back doing it again. But this is on private wells now. And it was, we created a war. And the drillers were mad. Some of them were really mean guys. They carried guns. I was, myself and a newspaper reporter from Springfield, we were under watch by our place to protect us from a couple of these guys who were making threats to us. And one of them came in the building one time. And contrary to what it was I wasn't there. But they knew, the receptionist knew this guy. Name's Tommy Shelton. Called up Rolla police. They come in, grab him, send him off to Saint Louis to Bull Pen there. Which is quite a shock to him, I'm sure. We never saw him again. Anyway, it was that kind of environment.

40

Corrigan: Was it contentious because did they not understand, or they just didn't want to abide by it?

45

Williams: Didn't want to abide by it.

Corrigan: Did they just want to continue doing it the way they'd always done?

Williams: Right. Exactly. Most of them. Now there's some decent drillers along with all this. And in one of these contentious meetings, shouting, stomping, what have you, after, one  
5 of them came over to say, "Now don't let that bother you. As soon as they get out of here, they're going to knife each other in the back anyway." So it was that kind of environment. And we had tried when getting that regulatory statute established, to get a board there, like we'd been talking about, a mix of people on the board. Then the legislature would not buy it. So we came back in 1990 and I and two drillers. One was a supplier. One was a former  
10 World War Two submariner. And a driller and myself. We went back to the legislature. And we were doing pretty good until we—I ran into Emory. Emory didn't buy it. He did not like this. I couldn't figure out why. So I go out to see Norman Merrill, whose president pro tem. Norman, big time, very influential. I only got to give Norman Merrill just a little bit. I said, "I need help getting this board by Emory." Norman Merrill, I remember I looked at him, he  
15 said, "You go find out why Emory doesn't like it and fix it." So that was the end of it. Which tells me "no, I'm not going to help you, a Democrat, against this Republican. Because that Republican, if he's objecting to something, there's a reason he's objecting to it, and you better find out what it is." So I didn't get it done that session. But toward the session I called Emory in the summer. He and I were good friends, really, even though we might differ—  
20

**[End Track 23. Begin Track 24.]**

Williams: —on stuff. Emory had a record of reading everything he got involved with, all that sort of stuff. So I called him. Flew down to Cassville, visit with him in the summertime  
25 to see if we could figure out our differences here. He had more elephants in his office than I'd ever seen anywhere. Anyway, he kind of tells me why. And his opinion is this. We established that statute and we don't want somebody else regulating it. This is our responsibility as a legislature. But then I kind of turned it on him because he asked me to help intervene in an issue that dealt with the drillers and a church which I did with the  
30 department. They were kind of leaning on the driller too much, really. So it goes both ways. And I said "well now, if we had this board where we could have drillers on it, this wouldn't happen." So I had him in a corner; he had to agree. (laughs) Next session, the board went through, no problem.

35 Corrigan: Now oftentimes I hear, especially legislators, that pass term limits. And that several of them will say, "I was for term limits, but I never knew it was only going to be eight years." And I don't know, and I wasn't around at that time, but a lot of them say, you know, they really, even when they voted for it, thought it was going to be twelve, fourteen,  
40 sixteen.

Williams: Yeah.

Corrigan: And so, that's not what happened. But I get the sense that a lot of people somehow  
45 felt that they were going to be long enough that you would still have an institutional memory.

Williams: Right.

Corrigan: But that's not what happened. And so I do hear a lot of talk about the repeal of them. Or at least the, not the entire repeal, but the extension of them. Because of what you say, several reasons about who's running the legislature.

5

Williams: Right. Right.

Corrigan: So obviously I'm guessing you would support—

10 Williams: Yes. And I actually take the side of the voting populace who would say, "Well it's up to us who vote as how long they should serve." Not some arbitrary limit, be it twelve or twenty. So you could make that argument, too, that this is a voter's choice. Like in the Congress. Albeit the fact that there is heavy lobbying, there is money, and all these other kinds of influences that are created to get somebody can stay in place once they get there. So  
15 there's upsides and downsides. But it definitely should be longer than it is, if they're going to have term limits. Or my option is, let's go back to let the public do that. And make it easier for the people to campaign. Now the public has an obligation here, which they're obsessives themselves, and they're part of the problem. Now it used to be solved. I had another situation described here to illustrate this with a gentleman called Senator, I can't think of his first  
20 name right now. Casky is his last name. C-a-s-k-y. He and his brother were both, not blind, but very poor sight. They're both lawyers. They had their readers help them through law school and stuff like that. So the person I've been working with at western Missouri. And he's involved in oil drilling, what have you, related to that. He did not have any money, no investment there. But his constituents are. And they were unhappy about some regulatory procedures we'd established with the oil and gas council. And even before Casky started leaning on me, I had looked at those myself because we have meetings and I was thinking that this, we don't really need that. I'm just kind of thinking that myself. Well, he's kind of saying the same thing. So I said, "Okay, let's come over and meet with these people you have, they were objecting to this and see what we can work out." So I go over there, flew  
30 over to Harrisonville. He picks me up or his wife does, driving. We get to the meeting, sit down. There's probably twenty people there or twenty-five. One was a driller. And he introduces me. And I stand up and start describing. And all hell breaks loose. Man, they were like the healthcare meetings. Casky gets up and says, "You sit down and you shut up, or this man's going back home. He's my guest." Not a word said. They sat down. We had a fine  
35 meeting. We got the issues discussed, resolved. I got the regulatory process changed. My staff didn't like it. But I thought it was right. And that's an example of pre-term limits. He had the historical memory, I had the historical memory.

40 Corrigan: Now did you, so 2000 was when they were implemented, I think, right around there?

Williams: Yeah.

45 Corrigan: Is that why you left? Or just you were ready to retire?

Williams: No, I was just finally worn out.

**[End Track 24. Begin Track 25.]**

Williams: I was just finally worn out. (laughs) And also had to, I'd been working with Mimi  
5 Garstang. And she didn't want to take on all this. Really smart lady. And capable. She didn't  
want for anyone to take on all of this stuff. What had deceived her, it wasn't quite as bad as  
I'm describing in some cases, this was when Steve Mafood was there. And it was a pleasant  
environment. Normally when it's in the past except for, and I wasn't present, I wasn't state  
10 geologist then, in my experience, it's always with a new director and staff, it's always one of  
these in your face. Not only no but hell no, we're not going to do that, I don't give a  
goddamn what you say. And I by the way, I had, as a director, deputy director, Sarah  
Steelman. And Sarah was a bachelor's and a master's in economics. Or master's in history,  
maybe, or bachelor's, I'm not sure which. But anyway, smart lady, also. And she was in that  
15 position in Jeff City got a position for her in Rolla doing, oh, level two work, something like  
that. But she was sharp. And by this time, we're getting larger numbers of people. And the  
person who was doing our budget work and personnel said, "I can't do this. Why don't you  
go ask Sarah if she will help us?" So contrary to what has always been said, political  
pressures got her the position, what have you, that wasn't, didn't happen that way. That's  
20 how it happened was that Carolyn Ellis, this lady I'm describing, said, "We need help. Go  
talk to Sarah." And she said, "Okay, I'll try it for a while." She didn't really want it, either,  
just like Mimi. So she did try it, got a taste of it. Now Sarah's not somebody you're going to  
walk over with. Now Sarah became state treasurer, you know, and then she ran for lieutenant  
[governor]. She changed somewhere after the state treasurer. And I don't recognize her. She  
25 sure changed. But anyway, David Shorr, this is in the early days when we were having  
trouble, this is another reason I think he backed off of us. He started pulling, at a joint  
meeting, I went up there with her kind of, first time to meet him so they would meet each  
other. And he started in on her like he started in on me, normally, about how terrible we were  
and all that, can't get stuff done. And she laid that guy back in a language I never would use.  
I know how to swear pretty good. Man, she blew him out of that seat! We never had one  
30 problem with David Shorr after that, not until she left. And when she went to state as senator,  
and I would say sometimes Sarah, don't drink too much political alcohol it'll get to you. She  
was also thinking about going back for a Ph.D. in economics. And I kind of think now she  
should have. But that's the kind of environment that existed. Now when Mimi came in and  
such a nice guy, the director, I really didn't prepare her for the more typical transition, which  
35 there is absolutely no reason for that to exist. No reason whatsoever.

Corrigan: Now is your position, it's appointed, though? Or no?

Williams: It's definitely appointed.

40

Corrigan: Okay. So she was the next in line behind you. Is that correct?

Williams: Not as an assistant state geologist, since she wouldn't qualify as a geologist. She  
was only there as deputy director. The assistant state geologist isn't even in the statute. It's a  
45 working title. And they have a principal geologist as a working title, too. It's just a state  
geologist and his assistants. It's the way the statute reads. So Sarah was a deputy director.

5 And those are appointed positions, too. I had to talk to the director, Tracy Mehan, at that time, who was going us a hard time, too. I had to talk to him into appointing her there. And the program directors, also some of them are non-merit. And that's the next step below division director and deputy director. But all division directors and deputy directors are definitely appointed.

Corrigan: Okay. So your replacement, though, is Mimi, correct?

10 Williams: Yes. Right.

Corrigan: And so she's currently the state geologist?

Williams: No, she stayed about seven years. The state geologist now is Joe Gillman.

15 Corrigan: But she was the state geologist after you?

Williams: Right.

20 Corrigan: Okay. So about seven years. And now you said, who was it?

Williams: Joe Gillman.

Corrigan: Joe Gillman? Okay. So it's been twice since you were in that position.

25 Williams: Right.

Corrigan: Okay. So moving forward just a little bit, so we can start to wrap up a little bit, your wife's name is Marilyn, right?

30 Williams: Yes.

Corrigan: And she was a teacher? Or originally went to school to be a teacher, correct?

**[End Track 25. Begin Track 26]**

35 Williams: Yes, she went to school and got her degree there. Taught.

Corrigan: At Kirksville?

40 Williams: And three years after we came back. Two years, right after we came back to [unintelligible], then Marilyn went back to Truman. It was called Kirksville. I don't think it was called Truman then, but it was the same school for her counseling degree. Master's degree in counseling.

45 Corrigan: Okay. And then now you two have known each other since—

Williams: High school.

Corrigan: High school. Okay. And when did you get married?

5 Williams: 1953.

Corrigan: 1953.

Williams: It will be sixty years this year.

10

Corrigan: Okay. And you mentioned a daughter, correct?

Williams: Lynn, yes.

15 Corrigan: Okay. Is that the only child you have?

Williams: Yes.

Corrigan: Okay. And she lives in Rolla, you say?

20

Williams: No she's in Chandler. A daughter in Arizona, in a suburb of Phoenix.

Corrigan: Okay.

25 Williams: And she got her nursing degree at Quincy. And kind of like my parents, I guess. Kind of like one aunt I had who was a nurse. The floor nursing was going to be too tame for her, boring. So she went immediately into UIC, intensive care. Um, was there until she remarried. Her husband was an air freight pilot. Now he's with the US Air. They went to the east coast. She worked there and then Pittsburgh in nursing. Then back to Springfield where  
30 he did still air freight pilot for a while. Then went into emergency room there and then back into Arizona and then the recovery room.

Corrigan: Okay.

35 Williams: So she has been a long time nurse. Now that we're thinking about in Rolla, that's our granddaughter.

Corrigan: Your granddaughter. Okay.

40 Williams: And she's now, she's been a technician in a dentist office and that's barely survival rates. Salary, one. And she's, I guess you'd say a second year of nursing school now.

Corrigan: So do you have one grandchild?

45 Williams: Two. And the other's Gretchen.

Corrigan: So what are their names? Gretchen and—

Williams: Yes. Gretchen Cunningham and the other is Heather Maring. She took on the name of her. She has kept her maiden name. She's not married.

5

Corrigan: What was the last name? Maring?

Williams: M-A-R-I-N-G, um-hum.

10 Corrigan: Okay and you said you had mentioned too that your wife, she also, I should maybe a little bit later on attending a one room or teaching at a one room school house. But, I was going to ask you what you're doing in your retirement. How you spend your days, but it sounds like you're still pretty active in the—

15 Williams: Yeah, more than I actually want to be in a sense, particularly with this whole— Oh, by the way. This is new. Relatively new. I'm getting along, kind of getting along this guy who has Thunderbird Email. I don't know if you ever heard of that.

Corrigan: No.

20

Williams: I had a home Intel, but I didn't need a portable any more so that's a change there. But it's full of stuff I've been doing this spring. Actually I did some consulting off and on. And, some professional work, I've stayed active in the professional societies and associations. Stuff like that. And I was pretty active again returning back to the legislature  
25 when we tried to develop a legislation that would relate specifically to high hazard dams. Missouri has some four thousand dams that are officially called twenty-five feet and higher. We have thirty-five feet and higher, long story on that. And we regulate only about six to seven hundred of them. The cutoff being Farm Bureau caused. We never would have gotten in the dam situation. I worked real hard on that. Mining Investment Council helped me with  
30 that, too. But the Farm Bureau had it cutoff, making it thirty-five foot or higher. So we, oh, with that cutoff the twenty-five to thirty-five and so on, some of those that are upstream of people are high hazard dam because failure would cause loss of life. The department, after I left, there was a person, Mike Wells, came on and I worked well with him. But on this one, well, first I was a member of Association of State Dam Safety Officials. And so they asked  
35 me if I would help get the Missouri legislation statute changed to regulate more high hazard dams. I said, "Well I'd do that but only if DNR is okay with it." You know, all this fussing I've had with them, I still don't want to go in there and actively oppose or get in the midst of something they've got going. That's just not a good practice. And I said, "Only if DNR will say okay. They're comfortable with it. They don't object. Whatever." Well, I go there and  
40 not only that, but Mike Wells says "Yes, fine go ahead and do it. We need it." But then I say—

**[End Track 26. Begin Track 27]**

45 Williams: —"I've been out of this too long to know the exact situation of current issues with dams. I'd have to have the chief engineer of the program help me." Jim Alexander is his

name. Mike said, "Well okay, but only if he's with you." So I don't know. Jim's a great guy. But anyway, that's the way it was. We spent two years trying to get that done. And of all things, this time a couple of term-limited Democrats zapped us, not Republicans. And we didn't make it. So then I was in and out of there a little bit until this time, and all these efforts  
5 to eliminate these boards and things we've been speaking about came about. Came forward. Including the geologist registration act, and this also was going to eliminate the boards that govern barbers, morticians, a whole batch of stuff. Absolutely libertarian to the extreme. Both Nixon was trying to play Republicans, and Republicans are trying to play Libertarians. They don't know what they're doing, in a sense. Except we did convince a few. And the  
10 water well drillers now are not the same drillers I used to know. There's a lady by the name of Beth Marsala who's retired from the board, retired from the geological survey who was responsible for the activities enforcing that. She's their manager, assistant. She knows Jefferson City legislature in and out. Better than I do. So she had, we had heard about the well installation board, they absolutely were not going to let that well installation board go  
15 because they've got members on it. They don't want, the director's office, everything is going to be dumped onto the director's office. No way could they ever get any permits out. Everybody knew that. So we jointly testified at the first hearing in the House. And even as that first hearing opened up, which included getting rid of all the boards, everything else. Even before the guy could get the hearing open, one of the members of his committee just  
20 stood up and said to the girl that was sitting next to me, "Don't worry. They're not going to touch you." And then he walks out. So that's telling the committee, the person who's sponsoring it, who's also the committee chair, that he's got a problem. Well, he did have a problem. And he tried to mix some other things together and what have you. So he knew the same things was going on over in the Senate. We'd jog up there to the Senate side. And I've  
25 been trying to get into this senator before. He's always going somewhere, busy and what have you, as many of them are. And I'm there before, it wasn't before this hearing, maybe the afternoon before. And the secretary says, "He's pretty busy. You're probably not going to get a chance to see him." I called and what have you. And they are really hard to see. But this  
30 guy made a mistake of coming into his office. And just coming out, and there were three drillers, one my size, the other two, big guys. Look like what a driller should. They're standing in the door, the guy couldn't get out. He had to talk to them. And we ended up in a very pleasant discussion. He changed his legislation in the Senate and what have you. So we've been going on this for the last two months, what have you. And I've been in that darn legislature about as much as I have before I retired. (laughs)

35  
Corrigan: So you, yeah, it sounds like it. So the legislature ended on Friday last week. So that's done. So they didn't touch your boards—

40  
Williams: They didn't touch the boards. Right. Exactly.

Corrigan: Okay. Well, it sounds like you're still busy doing that. Is there anything, I mean, we covered a lot of territory today. Is there anything in particular before I came that you were thinking about we'd cover? Or if we didn't yet?

45  
Williams: No. I think, again, I think we did say this. So much of this would not have happened had it not been for the prehistory of the geological survey or the environment of the

time in which it was created. Some tremendous guys in my section, we were going to be collapsing dams that were highly dangerous, mines, in Kansas City area. We very much helped the highway department there save a whole lot of money in the building of roads where the owners of these hazardous mines were trying to overcharge them. All those kinds of things. All that. And now the highway department doesn't have hardly any geologists, seeing what happened to them. Seeing what's happened to a whole state. So all of this took place during that time. And would not have done that. We created a lot of great things for public safety. That's the most satisfying part of the job. Also seeing dams that you worked on out there and so on like that is satisfying, too. But all of this in environmental geology or environmental—

**[End Track 27. Begin Track 28.]**

Williams: —protection, none of that would happen today. If you started today like I started in 1960 forward, you'd basically achieve very little. You don't have the people there. You don't have the environment there. You don't have the public with you on that. The partisanship that has been created along with all that. Term limits we've discussed. Things of that nature. So you're very fortunate to be in an environment which you can work with and will accept your particular attitude and that of your people you're working with, and you're very fortunate to have people who are supportive and who know more than you do. I once was sitting in the doctor's office getting my bee allergy shot. And a really fine banker in Rolla, well known, watching me work on my papers because I had so much to do. And he kind of grinned and he said, "You know I hire people smarter than I do so I don't have to do that." And so there's a lot of good advice there. Better have people, and that's what I have.

Corrigan: Good. Well, I want to thank you very much. This will be a great addition to the environmental collection side of it, there's no geologist in that collection so far. So this will be a good addition to that. So thank you very much.

Williams: You're welcome.

**[End Interview.]**