Oral History Project
Interview of Bud Franz 1
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Interviewer: Richie Ashcraft

[Music]

Bud Franz: It was hard, but it was — we did it with the idea that we were helping people, which we were. And we were taking a problem that wasn't really something they asked for, but they had it, and it was a way in which, at least, overlooking the inconvenience, would solve the problem for them.

Interviewer 1: All right, Bud. This is the hardest part.

Bud: Okay. [laughing]

Interviewer 1: Say and spell your name for me, first and last.

Bud: Gustav. G-U-S-T-A-V, as in Victor. Alfred. A-L-F-R-E-D. Franz. F-R-A-N-Z. And I'm the third. Interviewer 2: And, and Bud, do you — do you have a special way — is it B-U-D? Or it is — Bud: It — just — nickname is B-U-D.

Interviewer 2: Do you — do you want us to put that into — you know how you see the lower third? Bud: That doesn't make any difference.

Interviewer 2: Okay. We just want to make sure that you're okay with that. Cool. Thank you.

Bud: Mhm.

Interviewer 1: So, let's start by — can you reintroduce yourself to me and tell me where you worked just prior to the cleanup here in Grand Junction. Okay. I grew up in Ouray. I went to school at the University of Colorado. I was in the Marine Corps. I taught school in Ouray, Wisconsin, and Michigan before I moved back here to Colorado. I moved to Colorado in 1969 to take a job with the Colorado Department of Health. The job was to make radon measurements and underground workings under a contract from the U.S. Public Health Service, but that contract was not ready, but there was one that would provide someone to take radon measurements in buildings and structures here in — in Grand Junction, because there was concern that uranium mill tailings had been used in the construction of those structures. So, I got here in August of 1969, immediately started taking samples in various places where there was a record that tailings had been used, and very quickly found out that that list of 100 locations should have been a list of thousands of locations. Does that help?

Interviewer 1: That's perfect. Tell me how you discovered that. What — what was the — the work? You were telling me — you'd come into a neighborhood — tell me about that. Well, I was equipped with a scintillator that measured gamma radiation and an air sampling pump that would pull air through a filter that then could be read out on a — on a alpha counting device and through a calculation, you can define just how many working levels — which was a unit of measure at that time — you would find in — in various structures. And my job was to go in, introduce myself to the property owner, say, "There's been record that there was tailings being hauled to this property." And "Is it all right if I take a measurement of the air inside your home?" Most of the people said, "Sure, come right ahead."

So, I'd take a five-minute grab sample. And through that and the calculations based on the counts that I got, I was able to determine how much radon, radon-daughter concentration there was in that particular structure. I could also, with a scintillator, look at the — the gamma field that would be coming off of any tailings deposits that were there. After about the first half a dozen locations that I looked at, I noticed that, in just walking past — I'd park my vehicle, walk to that, that location that I had a record of that I was getting gamma radiation readings on the house next door or the sidewalk out front, or sometimes even in the street. So, I would report this back to my boss in Denver, and pretty soon, instead of this list of 100 locations,

I could show that there were at least twice that amount. Also, part of that job was to replace air sampling equipment that was located around the uranium mill itself here in town. We were trying to find out how much radon was coming off the tailings pile, and how it was affecting the community right around the mill site. And those measurements were — were then — gave us a better idea of — of what the — the mill site itself was affecting the community.

Interviewer 1: What did the — as your data was coming back to the people in Denver, what did they say about it?

Bud: Well, first of all, they were surprised because the — the record that they had of where the tailings was hauled came from truckers and from the mill itself. And they were surprised that there was such a large number of different places than it was on that original list. And they — they looked at the — the list and they pretty much decided right away that it was a lot bigger problem than they had imagined. And when my boss was providing a report to the Colorado Department — the State Board of Health that — a newspaper person with the Denver Post was at the meeting and heard this, and all of a sudden there was this "radiation all over Grand Junction" type thing, which then started the news media scramble to come in and find out what this was all about.

Interviewer 1: Is that when they started calling it "Hot Town"?

Bud: Yeah. And, you know, it was — yes, we have it. We had a problem, but it wasn't anything like, terrible like they were saying it was.

Interviewer 2: Have him say “That's when it started as a hot town.” So, he can say that.

Interviewer 1: Okay. Did you hear that? We want you to say, “That's when it started being called 'Hot Town.'”

Bud: Well, that's when it started to be called — be called a hot town.

Interviewer 1: And then — but you don't think that — that was kind of a media —

Bud: Yeah, that it was, it was a hype by the media. They liked scandal, they liked something that was grand and terrible all at the same time. What we were trying to do is just find out what kind of a problem, if any, we had and whether it was a problem. And it took us quite a while to be able to do that.

Interviewer 1: Tell me, why, when you were walking through the neighborhoods, you were finding it in other places besides just in the houses or the sidewalks?

Bud: Well, the — the — the gamma radiation detector, the scintillator, I just turned it on. And after I started seeing properties adjacent to the ones that I was told to look at, I could see that it was much more widespread. And so, sometimes I’d park my car at the end of the block, and I just walked down the block, and I could then see that there were more, many more locations than I thought. Or anyone had thought.

Interviewer 1: How they — how people had put it in their landscaping. The rose bushes.

Bud: Tailings is a finely ground up, sandy material. There’s — there's actually two fractions: the slimes fraction, which is a very fine stuff, and the more coarse, sandy material. Anything that you could use sand for, some people decided, well, they could use the tailings for that. They used it for bedding around and underneath slabs. They used it for bedding around utility lines. There was a group in town that thought it was the best thing that you could possibly do to mix in the soil around rose bushes. And so, we found a lot of radioactive rose gardens in the community. It was — it was — anything you could use sand for, they used it. That — some of it was mixed in concrete. Some of it was mixed in plaster. It was any — sandboxes, kids that would play in their sandboxes. They just used it for everything.

Interviewer 1: Did — did you have to — after your data came back in and you realized that there was a problem, were you one that had to go out and tell people that there was a problem with their house or their land, or their rosebushes, or their —

Bud: Eventually, yes. That — at first, it was just trying to find out how big a problem we had. And then, there was a period of time, well, okay, we've got all of this stuff out there. How much is too much? So, there was a meeting held down in Las Vegas where people from the Colorado Department of Health, U.S. Public Health Service, the Atomic Energy Commission, sat down and discussed what kind of a standard should be used in dealing with this. And that's when they came up with the standards that eventually were used here in Grand Junction and pretty much everywhere else in the world.

Interviewer 1: What year was that?

Bud: I'd say it was either — it was either 1970 or '71, probably 1970.

Interviewer 1: So, it wasn't very many years between when you started —

Bud: No.

Interviewer 1: — to study it and — and action was taken?

Bud: Once — once we dec— we were able to see that it was pretty much widespread, then an effort was set forth to really define just how big a problem it was. And because it had become very widespread here in Grand Junction, and we got to thinking, well, what about the other uranium mill towns, and did they have that problem? And so, that screening effort of the communities spread from Grand Junction to other mill tailings piles around the country, actually, but especially here in Colorado at first, then into Utah, New Mexico, Arizona, other places in the United States, too.

Interviewer 1: Tell me what you remember about this cabin. What was it used for when you worked here in town?

Bud: The — what I heard was the original use was the — the man who set up the AEC office here in Grand Junction used it as his office building. And when I got here in '69, my boss directed me to work with the AEC people here in town. And so, that's first time I came into this building.

Interviewer 1: And it was still an office building?

Bud: Right. Well, it had — they had stopped using it so much as an office building as they were using it for a civil defense structure. And that's the way it was when I actually occupied it for a few days.

Interviewer 1: Yeah. Tell me about the vault behind you.

Bud: Well, we needed a place to calibrate our new air sampling equipment that Colorado State University had produced for us. They were called radon progeny integrating sampling units, or we called them "RPISU." They — they were a — a device that continuously pulled air through a filter, and then, based on the radiation coming off that filter onto a thermoluminescent dosimeter, we could determine just how much radiation was in the air. And that was radiation from the radon and daughter concentrations, primarily. We needed a place to calibrate those instruments. So, the — the management here at this facility said, well, we can use the vault down in the log cabin as a radon chamber because there wasn't anything here or anywhere else at that time.

So, the AEC people, Frank McGinley specifically, arranged to have a whole bunch of high-grade ore samples put in baking trays and stacked inside the vault as our radon source. And then we put our air samplers in there. We had three or four of them all running at the same time. And I would be here taking air — taking air samples out of the vault to see what kind of concentration the radon daughter concentrations there were in the vault. And I had to take a sample every hour, on the hour. And I did that for [laughing] parts of three days and just stayed down here, and about every 40 minutes, or about every hour, we'd start a new sample. And it got kind of tiresome after a while, but — [laughing] Interviewer 1: And what did it look like down here?

Bud: It was more rustic than what you see here. It was, you know, the vault was there. That wall was pretty much the — the end of that room. There was a bunk over where the camera is, and there were radios and things for civil defense kind of along the walls. It was just kind of rustic, but it was a very safe place to — to do what I had to do.

Interviewer 1: How much ore, do you think, was in that vault, if you had to take a guess?

Bud: There was probably a couple hundred pounds of high-grade ore.

Interviewer 1: Did you have any safety equipment?

Bud: No. The — I didn't think I needed any.

Interviewer 2: You know, maybe have him say, "No safety equipment."

Interviewer 1: Okay. Did you have any safety equipment?

Bud: No, we didn't have any safety equipment at that time.

Interviewer 1: And what — what was the data? What — what did you determine after those three days from that?

Bud: Well, it turned out that the — the high-grade ore was not producing a very high level of — of radon — radon daughters. But it was enough so that we could at least get a calibration on our instrumentation. We found much higher levels in some of the places that we sampled in town.

Interviewer 1: Why is that? Bud: Well, the high-grade ore was still not pulverized into a fine, sandy material. It was still chunks of rock. And the uranium tailings was pulverized into very fine sand, and there was some of the slimes fraction, which is probably — I can't remember the exact amount — five times more radioactive than the sand fraction. When you brought in a load of tailings and spread it out, then the — the radon that — produced by that was able to migrate with air currents in the soil into the living spaces.

Interviewer 1: Why did you volunteer to be the person that stayed down here?

Bud: Well, I was the only one that was here at the time, so it was kind of "It's you, Bud." [laughing]

Interviewer 1: Did you —

Bud: But, but there was — it turned out that it was a great assignment because there was a lady with a national magazine that wanted to talk to me, and I knew from experience from some of the other news media people that they'd ask you a question, and then they'd take your answer, and they could turn it into anything they wanted it to. Also, I found out that they would want me to tell where this stuff was found so they could go to the property owners. But again, from past experience, you — you could tell that they were going to stick a microphone in that person's face and say, "How do you feel about this deadly radiation that your children — children are breathing?" which was not an accurate representation of what we were actually experiencing here in town. Does that help? [laughing]

Interviewer 1: It does, it helps immensely. So —

Bud: I was essentially hiding out down here in the basement [laughing] to stay away from that one lady. Because she was very persistent. Interviewer 1: So, I think you also said — and you weren't sure, but was this the only radon chamber in —

Bud: This —

Interviewer 1: — Colorado, or —

Bud: This was the only thing here in Grand Junction that we had. The Colorado State University undoubtedly had some way of — of producing a radon chamber, but there wasn't any here in — in town or probably anywhere else, because at that time, this was a whole brand-new

experience. When my dad was a mine inspector here in southwestern Colorado, first time I heard about radon was when a couple men from the Salt Lake Health and Safety Lab came in to talk to him, he was the mine inspector for this district, and so they wanted to know if he could take them to a uranium mine so they could measure how much radioactivity was in — in the mines itself. And that's the first time I heard “radon.” He did take them to a mine. And, just to give you an idea of how primitive the equipment was in those days, he introduced them to the mine operator, they went underground, before they went underground, one of the men from the health and safety lab put on a respirator with a double filter, and then they walked underground, and my dad and the mine operator talked to the other man, and the man with the respirator just stood around and wouldn't talk, even though you could talk with those kind of resp— respirators.

When he came out, they came out from underground, the guy pulled off the respirator and he said, “For Christ's sake, Franz, I couldn't talk because I'm counting the number of breaths that I was taking.” He was using his body as a pump to pull air through the filters, and then they'd count the amount of radiation on those filters. So, they didn't even have a mechanical vice — device that was portable, that they could do that kind of thing. That's how primitive that this — this whole look at that radon — radon daughter concentrations was in those days, that — and that was about 1948.

Interviewer 1: That’s exactly what I was getting ready to ask you, what year that was. So, after your work here in Grand Junction was done, where else did you go? You mentioned there — you did a similar kind of radon chamber in Uravan, I think. Well, we — you know, we're — we haven't — we aren't through here in Grand Junction, really. Right to this day we're still digging out tailings that was called out in the community. A lot of the utility lines had tailings in them, and as long as they weren't affecting the structures around, the decision was made to leave that tailings in place. But when you dig it up, you don't want to haul it to some other place where people could build on it, so, they — they're still hauling some of that stuff out to the repository. Now I forgot the question. [laughing]

Interviewer 1: I know you did some similar type of work in other areas, other western Colorado or Utah.

Bud: When — when it became obvious that it was a widespread, a problem here in Grand Junction, then we decided we better start looking at other communities. So, I would go out with the — the survey equipment that I had and do kind of a spot check in Durango, Gunnison, now I can't think — Rifle. And, yeah, there was stuff that had gotten away from the mill site and out in the communities. We — we developed a technique here in Grand Junction, a procedure to do a screening survey to walk on the property using gamma survey information. We could determine

if there was a deposit there and then decide whether or not it was a significant deposit. So, we used that technique in other communities and would develop a list of all of the places that had been contaminated in one form or another.

The — the effort here in Grand Junction had ex— from me to hiring two guys to help me to, in a very short period of time, bringing in people from health and safety labs scattered around the country, where they would send in one or two of their staff to be a screening team here in Grand Junction on that — that January 13th, 1970 — ’70 or ’71. We — I sent the — the crew out on the fourt— on January 14th, and they came back to the office, in maybe half hour and say, “Everything's hot.” So, it turns out that the Chinese had exploded an atomic bomb in the air, and it had taken a few days to migrate across the Pacific. And it had a heck of a snowstorm that — that night, the 13th, and that — all the snow was hot. And that shut us down for about two days until they decayed away so that we could then go back out and find where the tailings had been used.

Interviewer 1: Okay. That's interesting.

Bud: Yeah, yeah. And a lot of people never realize, what that — that that had even happened.

Interviewer 1: So, when you — when — when did you re— did you retire from this type of work?

Bud: Yes.

Interviewer 1: Or did you move on and do something else?

Bud: No, I retired from this type of work. The only thing I've done after I retired was, I got an opportunity to help write a paper for the International Atomic Energy Agency in Vienna. A couple of guys from Australia and I were asked to write a paper about how emerging nations could deal with uranium mining and milling. But that's about all — the only thing I've done since then.

Interviewer 1: When did you retire?

Bud: In 1969.

Interviewer 1: In —

Bud: Or — excuse me, 1996.

Interviewer 1: ’96. And so, you — you stayed on the project all the way through the cleanup in the ’80s. So, when you look back at that work, what do you — what do you think about — about the work you did here?

Bud: Well, we accomplished a lot. We found out that there was a problem that needed to be addressed. We had to struggle to find instrumentation that would help us to do that kind of work on a very widespread area. We had to develop instrumentation that could make the kind of measurements that we needed. So, we tested lots of different kinds of instrumentation for gamma radiation, measurements, and for radon daughter and daughter concentration measurements. We had to — once we found out we've got a problem, then we had to figure out how to address that problem. And so, we had to develop remediation techniques that actually worked. And we had to figure out when they would work and why they wouldn't work and all of that, the — that information then, that's been used worldwide by other countries, by all kinds of people here in the United States. Naturally occurring radon, every once in a while, creates problems in — in communities. And by developing the kind of instrumentation that we — we developed — and "we" meaning a whole spectrum of people in various health and safety labs, Colorado State University, people in Las Vegas — you know, we just, were able to find that threat to our existence and to try to figure out where it was, how it — how it was a threat, and then solve the problem to deal with it.

Interviewer 1: So, overall, how would you say you feel about your career?

Bud: Very interesting career, because I got to see that all kind of from the beginning. And it was — and I — I'm proud of what we did because it — it was right in front of everything. And we, you know, the number of really neat people that you — you — you encounter along the way, the guys that were in this AEC office turned out to be lifelong friends. People from Las Vegas. I got to know some of the guys from the AEC lab out in New York City. So, it — and then, the people. The people here in town. You go in and say, "Hi, Ms. So-and-so. Based on what we've seen here, you have a problem. And we think we've got a way to help you solve that problem." Just — just imagine, pick your own house.

I walk in the front door, and I say, "We've made this measurement, and we have found that you've got contamination on the property that's causing a health effect to you. And we have a way to address that. But we're going to have to move you out of your home for at least a month and a half to two months, and your dog's going to have to be put in a kennel because we're going to move you into a motel. We — we — they won't allow dogs. And that your kids — we're going to — you're going to have to figure out a way to get them to their school. Because we — we will have to move you out." And then you come by after we started work and walk into the front door, and the floor's completely gone from the living room and the bedrooms. And we're in there digging it out, you know, just imagine that kind of thing happening to you. And that's what happened to hundreds of people here in this valley and in other communities. "We — we're sorry, Mr. So-and-so, but you're — we're going to have to shut down your business, and it might take us as much as

three months. We'll try to set you up in a vacant store down the street, but we can't guarantee anything that will not affect your business.” But that's what the people here and in other communities have had to deal with.

Interviewer 1: Right. Sounds hard.

Bud: It was hard, but it was — we did it with the idea that we were helping people, which we were. And we were taking a problem that wasn't really something they asked for, but they had it, and it was a way in which, at least overlooking the inconvenience, would solve the problem for them. And it was — you know, there were — there were two remedial action programs. The first was called Grand Junction Remedial Action Program, GJRAP, and it was the first effort by anybody's part to deal with the remediation. And I can't remember the exact number of locations anymore. I should, but my mind's not there anymore. [laughing] But we dealt with the worst locations we could find at that time, and there was one structure where the tailings deposit was 14 feet deep underneath the floor, because there had been overexcavation of that site before they built the structure.

So, when you went in and got down to the bottom of that excavation, you know, as long ways to the ceiling that the structure above it. We made mistakes. Nobody knew how to do any of this. No one had ever done it before. We received information from a renowned physicist that radon would go from where it's created, would migrate maybe one meter. And so, any deposit that was here, if it was — the structure was three feet away, you didn't have to worry about that deposit, if — unless it was within that one-meter distance. Well, that turned out to be totally false because this radioactive gas, radon, is a noble gas. That means it doesn't react chemically with anything. And so, once it's formed, it's free to go wherever it goes, and if there's a flow of — of air, it'll just ride that flow of air, and because structures act kind of like chimneys, they pull in soil gases from all around. And so a deposit that's out quite a ways could still be produ— producing enough radon riding that current of air to come into the structure. So, there was at least one place that we had to redo the remediation four times before we got it right. But we were willing to admit that we didn't know what we were doing, but we were doing the best we could. And through trial and error, which was basically what it was, we finally learned enough to — to successfully produce remediation to solve the problems.

Interviewer 1: Bud, that's all the questions that I have for you.

Bud: Okay.

Interviewer 1: Are you — is there anything that — that I overlooked, or I didn't know to ask you about that you really want to — to include or to say?

Bud: The scientific community — if you want to call it that, AEC, U.S. Public Health Service, EPA, all of those groups, Colorado Department of Health, Radiation Control — all those groups worked together to identify a problem and to find a way to solve it. None of that could have been done without the support of the political community. The state legislatures, Colorado and others, the federal government, the various agencies within the federal government, EPA, at first, the Atomic Energy Commission. So, with that — that allowed us, with all those people working together, to finally solve our problem with radon. And it — and it's something that's used all over the world. It's — and it's amazing that you could kind of get that cooperation. Then it took a lot of cooperation and a lot of people trying to figure out how to — to convince other people that this is needed and necessary.

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