

LARRY HAWKINSON
Oral History Interview

Statewide Oral History Project, Abandoned Mine Reclamation Program
Utah Division of Oil, Gas and Mining

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This is Lee Bennett and I'm here today in Green River, Utah at the home of Larry Hawkinson to interview him about his experiences in mining. Also present is Jim Mattingly, who is recording the interview.

LB: To get things started, would you give me your name and your birthday?

LH: My name is Larry Hawkinson. Birthdate is May 24, 1943.

LB: We're here in Green River, Utah. Were you born in this town?

LH: No, I was born and raised up in Washington State. I moved down to Utah in 1964.

LB: Did you move down because of mining?

LH: No. I moved down here and went to work at the missile base.¹ I worked for them for 10 years before I got into the mining.

LB: Why did you get into mining?

LH: There wasn't a lot going on right here, at the time. I liked the area and just wanted to stay. To start with I went down to Ticaboo [Utah] and I worked in the uranium mill down there. I never was actually mining at that time, but I did work in the mill. We processed a lot of uranium ore. You know, crushed it and processed it, and made it into the yellow cake. After that was over--I wasn't down there that long, only from March 1974 to 1976--I came up here [Green River] and they were just starting a new shaft, the Probe Shaft out here at the Four Corners area. There were a lot of people that I knew who were working out there at the time. I'd never had any mining experience. They started at the top of the shaft and followed it all the way down with one company--Centennial Development.² I worked with them to start with. After we bottomed out

¹ The Green River Launch Complex, a US Air Force installation, became operational in 1964.

² Centennial Development Company of Salt Lake City held a contract with Atlas Minerals to sink the Probe Shaft, with a projected start-date of April 20, 1977 and a 9-month construction schedule (DOGGM Permit S0150011).

and did all of the development work underground, I hired on with Atlas Minerals and stayed out there and finished my career with them.

LB: How many years was that?

LH: I started in 1977 and I think the mine closed down in 1982, so five years at the most.³

LB: What was the name of the shaft?

LH: The Probe Shaft.⁴ It was out here in the Four Corners area, what they call the Four Corners area.⁵ There were several mines out there in that area. A lot of them had been mined years before. There is a cross roads out there and that's the reason it got the name Four Corners. It was a brand new shaft and head frame. They sank 850 feet and I started at the top and drove down through the shaft with them. I stayed on and worked with Atlas Minerals doing the actual mining of the ore.

LB: Let's go back a minute and start with your time at the mill at Ticaboo. What did you do there?

LH: I ended up being a crew chief over a crew. We took the raw ore that was mined in that area and we crushed it into a powder, and added chemicals to make a slurry. Then we ran it through a process where we heated it and put it in big ponds and then percolated it to get what they called the pregnant liquor, which was the uranium solution. We pumped it up to an ion exchange unit that had resin beads in it. The resin beads would extract all of the mineralization that was in the water. We'd treat it with some other stuff [chemicals] and pump it into storage tanks. We ended up with yellow cake but it was not really radioactive at that point. That was something that always boggled my mind--how you could get radioactive ore out of the ground, and it was highly radioactive, but when it went into the yellow cake stage, it was not. It was not dangerous, they said, at that point. We just stored it in storage tanks.

LB: So it was a liquid?

LH: It was a liquid but it settled out into a pasty form. It looked like yellow mud, is what it looked like. That [mill] didn't last too long. I worked for Hydro-Jet,⁶ which was out of Amarillo, Texas. The process worked, and that's all they wanted to find out. After they closed that mill down [the one in which Larry worked], they built a big mill. They were going to mine

³ The period of Mr. Hawkinson's employment at the Probe Shaft coincides with the period of highest uranium prices in the San Rafael River area (R.W. Gloyn, D.E. Tabet, B.T. Trip, et.al., Energy, Mineral and Ground-water Resources of Carbon and Emery County, Utah, Bulletin 132, Utah Geological Society, 2003). DOGM inspection on May 15, 1984 reported that the mine had been closed since January 1982 (DOGM Permit S0150011).

⁴ Like Mr. Hawkinson, several sources name it the Probe Shaft, while others call it the Probe Mine.

⁵ The area has been variously included in the San Rafael Mining District, Green River Mining District, or Four Corners Mining District. DOGM places it in the Green River Mining District.

⁶ Hydro-Jet Services, Inc. They were registered as a Utah business in 1974 with an office at Richfield; by 1982 their registration had expired and was not renewed.

but they couldn't get the [electrical] power. Garkane Power,⁷ they asked them to run commercial power in there but [Garkane] wanted too much money to do that, so [Hydro-Jet] ran everything with diesel generators. You can't run a uranium mill on diesel generators and make it profitable. The mill was built--it's still sitting down there I think--and they ran it a couple of days to make sure it would work, then they shut it down because they couldn't get the power. A lot of money went into that process down there. They transferred everybody out to different places. I left right after the original mill shut down and I went out with the survey crew. We were surveying a lot of other claims in the area to document where they all were. They ran out of work for me to do, so I took a little vacation and went up to Alaska, then came back to Green River.

I knew a couple of the guys that were working at the Probe Shaft, and they had just barely started, so I went out and talked to the superintendent out there.⁸ They were looking for people so he put me on. I worked with people who taught me a lot of stuff, you know. I did a lot of things that I'd never done before. It was very fascinating to me. It was a wet mine, or wet shaft, so we had a lot of water to contend with. Until we got down to the bottom and got our big pumps installed, we were just pumping from one landing to the next [into barrels at each landing] with little light pumps. A lot of times the barrels would run over and you'd get rained on pretty heavy. There was a lot of clay in that ground out there. When the water flooded over it washed some of the clay loose on the sides. We had one accident out there--I was involved in two of them.⁹ We were down about 750 feet and it was wet all the time. We were pumping water. The graveyard crew came on and all of a sudden there was a big rumble of rocks and muck and boards and timbers and everything else came down on top of us. There were three of us in the bottom. The first wave that came down knocked the light off of my hat, so I was depending on the other guys' lights they had. We heard somebody from up above yell, "Are you guys all right?" We said, "Yeah, we're ok." We were hiding under the timber sets, you know, to keep from getting caved on. He says, "Well, come up and get me. I'm buried in the skip." We climbed up the hanging rods and through the timbers and all to get up to where he was. All we saw of him was just his head and one arm sticking out. He was pretty severely injured; he never did go back to work after that. His arm just kind of withered up, dried up and went away. I quit out there after that night.

I went out there about two weeks later just to see what they were doing. They had started right back up at the top again. They took chain link fencing and were bolting it to the ribs all the way down, so this wouldn't happen again. I said, "That looks all right," so I went back to work and finished the shaft out with them. We went down to the bottom. The shaft wasn't that big. The manway was, maybe, 6 feet by 8 feet, or 8 feet by 10 feet, or something like that. We had to take all of the equipment, hoist it down with the hoist, down to the bottom. Loaders and buggies, everything that went down there we had to lower on the bottom of the skip bucket. That was quite an interesting process.

⁷ Now Garkane Energy Cooperative, the company serves the south-central Utah and north-central Arizona areas.

⁸ DOGM records show the proposed mine was inspected on February 15, 1977, and described as a "completely new operation" with about 8 acres of surface disturbance to accommodate the working pad, ore and waste rock stockpiles, substation, office, and access roads. Atlas Minerals was the owner. The mine is situated in section 14, T21S R14E, in the Green River Mining District (DOGM Permit S0150011).

⁹ Mr. Hawkinson was involved in two different mine accidents at the Probe Shaft. This cave-in was the first. Later in the interview he talks about the second one.

LB: Did you have to dismantle that equipment?

LH: Yes. It was all dismantled. We had one big scoopie¹⁰ that was just in pieces when it got there. We had air-tugger motors¹¹ that, when [the equipment] got down there, we could hook on to them and pull them out to where we could assemble them. Right there at the station, what they called the station, we built a big shop down there where the mechanics worked and had their tools. They pulled everything into the shop area and reassembled it all. Then we used it [equipment] to mine with. I would have never believed that you could have gotten all of that down in there, but we did!

The interview is temporarily stopped so Jim can adjust the microphone on Larry.

LB: Tell me how you go up and down the shaft. You mentioned the skip; tell me about that.

LH: It was the bucket that we hauled the ore out on, but on top of the ore bucket was a cage where all the workers went down. It was just a cage with a gate on it, you know. We'd ride up and down in that. We had a bell system; a bell went to the surface and into the hoist house. If we wanted to go up we'd ring a certain series of bells. Two longs and three shorts did one thing. I can't remember what they all were; that was quite a few years ago. When we had that cave-in there it tore the bell cord loose, so we didn't have any communications with the surface. There was a guy up on top and he was listening for what we wanted to do. He would give the commands to the hoistman, whether we wanted to go up or down, and so forth. It was kind of scary when we got up to the part where the cave-in was because it had ripped out all of the skip guides and everything else. The skip didn't have anything to guide it; it was just hanging on the end of the cable, spinning loose. We had to kind of jockey it around to where we could get it lined up with the guides that were up above us. Once we got it back in the track again we could go up with it. Those guides were made, I think the first ones were made out of cottonwood and they kept on wearing out. You get a piece of metal going over them so many times and they just don't last that long. We replaced them quite a few times until they finally started getting some wood out of Australia, cherry wood out of Australia. We replaced all of the guides with that. It was harder than heck; you couldn't even hardly saw it with a chainsaw. After we replaced [the cottonwood] with that, it worked a lot better. The whole process was interesting to me.

LB: So when you got down to the bottom did you go outward with drifts?

LH: Yes. We shot a station out, which is a landing, where we could unload everything. Then we started drifting. From there we mined uphill so all the water could run down the haulage ways and into a big sump. We had to build a big sump down there with positive-displacement pumps that were strong enough to push the water up the 850 feet to the surface. We had a little spiral ramp that we took down below where the shaft was and we had pumps down there so we could get rid of that water. We could also go down there and clean out the ore that spilled over

¹⁰ This was a large loader owned by Centennial Development. It was bigger than the loaders used by Atlas when mining began, and hence the "scoopie" had to be disassembled into more pieces than the loaders supplied by Atlas.

¹¹ Air tuggers were winches manufactured by Ingersoll Rand.

the skip bucket when they were loading it. You can't get 100% with just the slusher,¹² you know; you lose a lot of it. It goes down to the bottom and about every 2-3 weeks we'd have to go back in there and dig all of that out and haul that up, too. It depends on whether it was good ore or waste rock. They go to a different place up on the surface. The skiptender was up there and would probe every load. They'd dump it into a buggy. The bucket would come up and go through a series of scrolls, and it would tip over and [the contents] go down a chute. The toplander was the person that probed every load to find out what grade ore it was. They didn't want us to ship anything that was lower than ten-hundredths. If it was low grade they'd put it in one pile; if it was high grade they'd put it in another pile. Before it was trucked down to Moab¹³ they would blend it. They would get rid of the low grade and blend it with the high grade so they could make it passable that way.

LB: What was your job? Did you drill, muck, or what?

LH: When I started we were just sinking the shaft and I was on the drill. There were three of us to a crew when we were sinking the shaft. We had two drillers and one guy on what they called the Cryderman, which is a mucker that would come down and get the ore and dump it into the bucket. It was like a clamshell thing. We would stair-step that down; one side of the shaft was always higher than the other. We'd always shoot the high side over to the low side and we'd have a sump on the other side. The Cryderman operator would pick up the ore after we shot it, and dump it into the bucket and send it to the surface. Then we got down far enough to hang a timber set. We had 10x10 [inch] timbers that we'd hang on hanging rods, [which were] J-bolts with a big hook on it. The set up above had one on it. We'd hang the timber sets then we'd block them over to the rib based on a string line we had coming down from the surface to keep it straight. I did that when I was working for Centennial. We stayed there and did the early development work. We put in the big sumps that the water came into, we got all the equipment down there, and we went up one drift far enough to where we could put a transformer down there.

When I went to work for Atlas Minerals I was drilling, just shooting drift. I'd go in there and shoot a round. We would drill everything out; we drilled two rounds a day. We'd drill it out in the morning, or the first part of the shift depending on what part of the day it was, and then we'd shoot just before lunch so we could have the air come down and blow all the powder smoke out. It would take about an hour to clear out. Then we'd go down there and muck it out and set up for the next crew to come down. They would come down and drill and shoot before their noon meal. We had big airbags that were three foot in diameter that came down from the surface, down through one side of the shaft, and it would blow air down in there. We kept having to hang utilities, you know. The airline would run out, waterlines would run out, so we'd have to keep them up to where we were working.¹⁴ There was a lot of regular maintenance work to do.

They did a lot of surface drilling. The geologists would figure out where the ore bodies were and they'd drill from the surface until they'd find an ore body, then we'd drift over to it. I

¹² A drag shovel loader hauled along the floor of the mine by a cable attached to a winch or hoist.

¹³ Ore was delivered to the Atlas Mill at Moab, owned by the same company that owned the Probe Shaft.

¹⁴ As the drift advanced they needed to extend these utilities in order to keep working.

ended up with Atlas; I was the long-holer. The surveyors would come down and say, "You've got a surface hole coming down over here, just 50 feet or so, and there should be a pretty good ore body out there." I did most of the long-holing. We'd go out there with drill steels and we'd drill 50-foot holes in a [vertical] fan-shape. You start down then fan them up. The drill rods were only 6-1/2 feet long, so when you ran out of rod you'd screw another one on. You'd keep going until you got out to 50 feet [about 8 drill rods]. When you got your whole fan drilled out the geologist would come down there with his probe. He'd probe all of the holes to see if you'd hit any ore anyplace. Sometimes you had to [mine] down for it [ore]; sometimes you had to go straight up for it. It just depends on where it was. That was quite interesting. As a matter of fact, I enjoyed mining. Any type of a job well done, if you do it like you're supposed to, is an enjoyable job. I like mining. Centennial Development called me up two or three times after they left and wanted me to go on other jobs with them. I didn't want to leave, so I stayed here [Green River] and did other things.

LB: When you were working at Ticaboo were you commuting from Green River?

LH: No. They had a man-camp down there that everybody lived in, but I didn't like that too well. You get 8 or 9 guys sleeping in the same room [and] everybody had different habits, you know. One guy liked to listen to the radio all night, one guy liked to read all night long with the lights on. I had a camp trailer [at Green River] that I moved down there after about 3-4 weeks. I couldn't take it anymore. It was always noisy, somebody was always setting up a table, playing cards while you're trying to get sleep, practical jokes going on. I remember the first time, I was in taking a shower. One of the tricks they would do [was to take] a grocery bag and fill it up with shaving cream. They'd narrow the slit down [top of bag], and stick it under the door. They'd wait until the water shut off and give you a few minutes to get out of the shower, and then they'd jump on the bag. There you'd go with shaving cream all over you. There were just all kinds of practical jokers out there doing things like that. After I got my own trailer down there it was a lot handier. They had a cook shack that you could go eat at so you didn't have to do any cooking. They let you fill your vehicle up with gas at the company gas pumps before you came to town. They [Hydro-Jet] treated you quite well.

LB: When you worked at the Probe, were you commuting to Green River?

LH: Yes, it was only about 10 miles out of town. We'd usually have our whole crew in the same vehicle; we'd just car-pool out there.

Every manway had a ladder going up to another station, another landing; back and forth, back and forth [gesturing in a zig-zag manner]. You had to have a way to get out if something happened, you know. There were two or three times where we had to climb out these ladders-- 850 feet is a long climb! There were a lot of guys, especially the ones a little on the heavy side, who could hardly make it. They'd get up so far and everybody would be sitting on the manways, resting. They drilled a borehole; it was off probably 150 feet from where the main skip shaft was. It was a 50, 60-inch borehole. If we did loose power or something happened down here

[underground], there was a cage they dropped down through the borehole.¹⁵ It would only hold two people at a time, but they could take us to the surface with a diesel-driven hoist. We had to use that two or three times. That was also the air intake for the whole mine. There were big fans [on the surface] that would blow air down through the borehole, then we'd have to go down underneath and build bulkheads, depending on where we wanted to channel the air to. We always kept big canvas bags up close to us because that's the only way you could get the air, to get the powder smoke out when you shoot it.

There were quite a few guys towards the end that were working out there. You'd have to walk a long ways. They were thinking about drilling another shaft over there on the other side of the intersection so we didn't have to walk so far. The shifter had what they called a "boss buggy" but he could only haul two people at a time. If he'd catch somebody walking he'd stop and pick them up and take them up to where they were working. So if you waited long enough, you could always catch a ride with somebody! It was up there quite a ways.

LB: So you were 850 feet down, and then you were some distance away from that shaft.

LH: Yes, we were probably a mile and a half. If you have anything you have to carry, like if your drill went out and no one came by to give you a ride, you'd have to pack your drill back down to the station so you could send it up to the shop and get it repaired. The drills themselves, they called them Gardner-Denver 83s¹⁶, and the reason that they called them that was because they weighed 83 pounds apiece. When you put one of them on a jackleg over your shoulder, walking a mile and a half with it, it's not too fun! It all got done.

That one accident I was in,¹⁷ there was another time. It was just before the last shift before the New Year's vacation. Jack Irwin told us, "You guys get your round all drilled out and shot, and get it cleaned up, and I'll let you go home early." This was New Year's Eve. The round that I shot opened up a river. It was right on top of me. I went in there and mucked it out. You have scaling bars that you use to tap the back with to make sure everything is solid. If you have any loose rocks hanging you take the scaling bar and pry them down. I pried down everything I could. I don't know how much water there was but it was a bunch, so I mucked to the side of the waterfall to get most of my round out. Finally, I had about two buckets left to get right under the water. I went in there and got the first bucket out ok, and went in after the second one when the lights went out. I remember waking up and everything was just gray. I had a 150-pound slab hit me right square on top of the head. MSHA¹⁸ came and made that determination; I still have the report in the bedroom. The guy that was waiting for me to load his buggy kept on looking for me, and looking me, and I didn't show up. He came up to see what I was doing. I had that big slab sitting on my shoulder and across the steering wheel of the buggy; it was just sitting there. He got another guy and they came down and pried it off of me. I walked out of the mine; they held me up and I walked out. The ambulance came and got me and took me up to

¹⁵ DOGM inspection report (Permit S0150011) dated December 14, 1979 indicates a new escape shaft. Perhaps it was the borehole mentioned by Mr. Hawkinson.

¹⁶ Created through mergers in 1927, the Gardner Denver Company of Denver, CO moved to Dallas, TX in 1973 but continued to manufacture pumps and pneumatic tools for the mining industry. Their line of rock drills was acquired by Mid-Western, LLC during the 1980s, who made the series under their own name (Gardnerdenver.com; mwdrill.com).

¹⁷ Referring to an accident he described earlier in the interview.

¹⁸ Mine Safety and Health Administration was established in 1977 as an agency of the US Dept. of Labor.

Provo; it was 3 o'clock in the morning when I got up there. The nurse said, "We x-rayed everything and everything looks good, so we need to get you up and moving." They'd try to get me up and walk around, and they couldn't. I couldn't get up. One of the doctors came in and said, "We'd better wait until the neurologist comes in and looks at you in the morning." My second vertebra was broken horizontally--something that didn't pick up on the original x-rays. They took me down for a CAT scan and found it was broken going the opposite direction where it didn't pick up. They had me in surgery that next morning. They cut a piece of bone out of my back and fused my second vertebra together. That's the reason why I don't have any more rotation to my neck [demonstrates turning his head]. Norma Dean was up there at the time, we weren't married at the time but she rode up in the ambulance I think. She said I was 5-1/2 hours in surgery and she was getting worried. I came out of it. It was 4-1/2 months before I could go back to work. I went out there [Probe Shaft] and visited all the time. Finally they released me to go back to work and Jack [Irwin] said, "I don't care what you do. Just go down and familiarize yourself with what we've done since you were gone, maybe help load a round or something." Finally I got to where everything got better and I could get back into working again. Most people would have quit right then, walked off of the job! But like I say, I did like it.

LB: Did it pay pretty well?

LH: It was contract pay. The base pay was like only \$8 an hour, but we got paid by the amount of ore that we brought up. If you had a really good week where you got a lot of good ore out, when [the ore] got down to Moab they gave you a percentage of what the ore quality was. That's why they stressed split shooting. Some of these [ore] veins weren't very big, they were only 2-3 feet wide, and they weren't big enough to shoot a whole round in. You'd go in and shoot the high grade out of the middle of it, then you'd go back and shoot the waste separately.

There were some interesting things that happened in there, you know. When I was long-holing I drilled into this one area that I just wear out bits, wear out bits. I couldn't penetrate it. The geologist came down and probed it and said, "Whatever that is you've got to get back to it." He said, "That is about as hot as you'll ever find." So we drilled back into it and shot everything out. It happened to be a big old tree. Our drill steels were 6-1/2 feet long and we got into where I could take a cross-section of it with my drill steel; we figured that tree was about 8 feet in diameter. How it got down there no body knows. I guess when the San Rafael Reef out here heaved, buckled you know, there had to have been some pretty good trees here at that time. It stayed down there, petrified, and turned into some pretty good ore. You could follow every one of those branches that were on that tree. The branches weren't as big as the stump, but you could get some good ore by following all those branches out to where they just disappeared.

One time Jack Hatfield shot a round out here, and he walked back in and his eyes just lit up like that. The whole face of the ground that he shot was iron pyrite, fool's gold. He thought he was a millionaire! There were big chunks of iron pyrite, like that big [gesturing], in there. I went up there and grabbed enough to put in a little bottle just as a sample to bring home. It was about a mile and a half [from the shaft to the face]. I was always going to get one of the big chunks but they closed the mine down before we ever got it out. There were some interesting things that happened. You're always supposed to wait for 30 minutes after you shoot before you went back into a heading. Jack Hatfield didn't do that at one time and he had a misfire. He

walked right back in there, up to a couple of holes that went off as he back there looking at it. He got hurt pretty seriously on that, it hit him right in the face. Whenever he tried to breathe he had bubbles coming out of his eye. I don't think he ever went back to work. He said, "That's enough for me."

LB: The other Jack, the fellow that was your boss, what was his name?

LH: Jack Irwin. He's an old time miner. He's 20-some years older than I am. He'd go out here and mine on his own back in the early days, when they didn't have the requirements that they have now as far as the safety concerns. They'd go in there and mine and they didn't have anybody to tell them whether the area was full of radon gas or anything. We had little clips that we wore all the time that would measure the amount of radon gas that you were getting. Every month you'd have to turn them in and they'd get them analyzed in some lab, someplace. Also, about every couple of months, you'd have to do what they called a sputum test. They'd take you in and the doctors would have you cough and spit into a jar and they would check for contamination in your lungs. You had a lot of black stuff come out of them every once in a while, but I've never had any indication that I've had too much radon gas. But it does happen.

LB: If they were contract mining, then the union wasn't involved was it?

LH: No. No, I don't remember having a union out there at all. When I got my neck hurt it was [paid] through Workman's Compensation.¹⁹ I'm sure they all paid into that. I think any business, especially out in something like that [had to pay].

LB: How old were you when you had your neck hurt?

LH: I'm 74 now and that probably happened in 1978.²⁰

LB: When you were working in the mine was that your only source of income?

LH: Yes, it was for me. When we got married, I got married to Norma Dean, she was the Postmaster here in Green River. I got so much from Workman's Comp for loss of time; I can't remember what the percentage was. I wasn't going anyplace to spend it anyway!

LB: How has Green River as a town changed?

LH: Green River at that time was quite busy. There was a lot of mining going on, a lot of construction going on, and there was a lot more people here at that time. I think the Army was still out at the missile base. I worked under an Air Force contract out there, but after they closed

¹⁹ Workers Compensation Fund of Utah was established in 1917 to assure all employers carried insurance for their workers (wcf.com).

²⁰ After the interview Mr. Hawkinson checked his records and corrected the date of the accident in which his neck was broken. It happened on December 31, 1978, not in 1980 as he originally said; he would have been 35 years old at the time.

up the Army came in here and took the base over. They launched Pershing missiles down into White Sands. They would bring crews in for training. I worked out there for 10 years. They [Army] had some big payloads they had to shoot that they couldn't shoot over land because Canyonlands was getting pretty well populated back then with tourists and so forth. So we went over to Wake Island and we'd launch missiles from there down to Kwajalein [in the Marshall Islands]. We were over there for about two years. We came back and the Pershing was still launching. Whenever they would launch a missile over Canyonlands [National Park], the park rangers would have to go in and clear everybody out of the area, all of the campers. It was a pain. Finally they got to the point where they wouldn't let anybody shoot missiles over there anymore.

LB: The mine was running three shifts, is that true?

LH: When we were sinking the shaft we were running three shifts. But when we were down there mining, getting the ore out, were just had two shifts. We had a day shift and a swing shift.

LB: Did you work 8-hour days or longer?

LH: Yes, we'd work 8-hour days.

LB: Five, six days a week?

LH: Five days mostly. When I was with Centennial there might have been a time when we worked six days, but not too often. Eight hours was enough.

LB: What did you do for recreation?

LH: In the Green River area?

LB: Yes.

LH: After they built the golf course I did a lot of golfing. I used to like to fly fish and we did that quite a bit until the Division of Wildlife cut the limit down on fish. It's no fun to drive 150 miles to go fishing for four fish; that's all you could get. Then the price of gas got so high it wasn't worthwhile. We'd go on little trips and so forth.

LB: Did the company that you worked for encourage you to be active in the community or where they active?

LH: Not really. When I came back from Ticaboo I bought a boat. We made quite a few trips down to Lake Powell with the boat and saw most of that. Took the kids down there--I have three kids and she has two. The kids enjoyed that. We'd take them down there waterskiing, boating. I think we looked up everything down there at Lake Powell. We didn't go too far down in the southern part of the lake. Rainbow Bridge is about as far as we went down. There are so many

canyons down there to explore; it was interesting. Some of those canyons were so narrow you'd travel up and you couldn't even see the sky. The rocks would come over the top of you. Yes, we did a lot of fishing.

LB: You talked about the head frame and they'd take the water out of the mine, and what did they do with the water?

LH: At that time we didn't have to clean [the water]. We just pumped it to the surface and let it run into the sand flat. It wouldn't go out there 20-30 feet before it would just percolate back into the ground again. The head frame was, I can't remember how tall it was. It was like 140 feet tall. That's so the cable that came out of the hoist house could get up over the top into a pulley and come straight down into the shaft without any interference. By the time you got the man cage up and the skip cage up, you'd have to get it up high enough to trip the ore out down the chute. It was up there quite a ways. It was about a 1-1/2 inch cable. Jack Irwin would inspect that thing a lot, or the hoistman would inspect it a lot. They'd mic²¹ the cable. We changed them twice when I was out there. I worked out there with both companies about five years [total]. We had to change it twice so it wouldn't get frayed and guarantee it would hold the weight it was supposed to hold.

LB: Before we wrap it up, tell me what your favorite experience was as a miner.

LH: Favorite experience, huh? Payday! [laughing]. I liked working with all of the guys out there. We had a pretty good crew. We'd get together on weekends and go up the river here on some of these beaches and sit there and drink beer on the weekends. Had good times together. Every once in a while I still have one of the guys that I used to work with, [he] still comes by the house and stops to visit. You made some good friends out there. By that time I was married and I didn't want to leave Green River, and she had a good job and I had a decent job. The kids were all around here, so we just stayed right here. A lot of these guys, they just traveled all the time. They called them tramp miners. They would just go from here to there no matter where. A lot of them left from here and went up to Rifle, Colorado. Some of them went down to Globe, Arizona; that's where a lot of them came from. This same company, Centennial Development, the one job they wanted me to go on was up here at Billy's Mountain when they had that big landslide up there that covered the train tracks and the train couldn't travel.²² They got the contract to build a tunnel through the mountain for the train to go on. Then they wanted me to go up to the Willow Creek mine, the coal mine, and do some work up in there. But that mine was dangerous. I don't know if you keep up with the coal mines at all, but they've had so many gas explosions in there, even back into the 1800s. After Centennial went in there and did some drifting, they had a beltway they ran through the mountain that came out on the Willow Creek side where the shop was. Ron Scow was my boss out here, and he wanted me to go up on that job but I said, "No, I don't want to leave."

²¹ Micrometer, used to take minute measurements.

²² The massive landslide happened in April 1983 and ultimately blocked both the train and the highway, and dammed the Spanish Fork River. It continues to move ("Geosights: Thistle Landslide Revisited, Utah County, Utah" viewed at <https://geology.utah.gov/map-pub/survey-notes/geosights/thistle-landslide/>).

LB: Anything else you'd like to tell us?

LH: No. I did enjoy my mining experiences and I wouldn't pass them up for nothing. Except my broken neck; that's been kind of a handicap all my life. I have a hard time backing up a vehicle and turning to see who's coming at an intersection, and so forth. The new vehicles with a backup camera and so forth have made that all a lot better [laughing].