

PETROLEUM INDUSTRY ORAL HISTORY PROJECT  
TRANSCRIPT

INTERVIEWEE: Jack Wegh

INTERVIEWER: Betty Cooper

DATE: May 1982

BC: The date is May 7<sup>th</sup>, 1982. I am talking to Mr. Jack Wegh, at his home at 8536 Fairmont Dr. S. E. Mr. Wegh, I wonder if first of all, we could just get a little of your background, where you were born, when and where your family came from?

JW: Betty, I was born in Vulcan, Alberta. No, pardon me, I'm a liar already. I was raised in Vulcan, Alberta. I was born in Estevan, Saskatchewan in 1923 and my parents moved to Vulcan when I was 2 years old, in 1925. So I always consider Vulcan to be my home, that's where I started.

BC: Were you an only child?

JW: I had a sister, Louella. My father ran a flour mill. He built the flour mill in Vulcan, Alberta in 1925. I suppose I'm kind of related to the oil patch from the relationship of Vulcan to Turner Valley because we were about 40 miles east of Turner Valley. You could see the glow of those flares way back then. Each little town at that time almost had its own oil company. Vulcan Oils was one of the companies. Mr. Stack was a lawyer there, he eventually became a judge and Mr. Peterson, who was a farmer, sort of headed that company up.

BC: Was your father involved with it at all?

JW: It's kind of interesting because Mr. Stack said to my dad one day, why don't you buy a piece of the oil patch. Dad bought a 40 acre lease in the Pokisko Hills. I remember going out with him one day to Turner Valley and walking up the side of this hill to an old wood derrick where they were drilling and talking to the driller. In those days they said there was a tremendous pool of oil under the EP Ranch. The Prince of Wales at that time, later the Duke of Windsor, King Edward VIII, wouldn't allow them to drill on it. But here was this tremendous pool of oil and my dad was right on the edge of it. Well, it didn't work out that way. The Turner Valley field just ran out of oil before they got to his lease. But all the people in southern Alberta at that time were kind of in the oil patch.

BC: What year would that be, do you remember Jack.

JW: I would say it was in the early 30's. It was a time when the little guy was very excited about energy in Alberta, even at that time. I went to grade school, I went to high school in Vulcan. We moved to Calgary.

BC: What year did you move into Calgary?

JW: We moved to Calgary in about 1942. I went to the Provincial Institute of Technology in the early days when the originator, the first principal of that school was Dr. Carpenter.

BC: This is what is now called SAIT?

JW: It's now called SAIT. It was called the Provincial Institute of Technology and Art at that time. Dr. Fowler was the principal. I had an interview with Dr. Fowler. My radio teacher

was Don Fleming, who later became a principal of SAIT.

BC: What were you studying then?

JW: I studied radio. Believe it or not this was the only technical school in Alberta and our radio class consisted of all the students that were interested in going to Tech to take radio at that time and it comprised about a dozen students.

#041 BC: What were you studying, was this the radio technology of radio?

JW: Yes, just the technology of radio. It's rather interesting because at that time, I studied it with the flow of electricity from plus to minus. We didn't have the electron flow. So all our radio circuitry was in reverse. So we had what we called the super-hetrodine system at that time, which was just a tube system. And all our circuitry was plus to minus. After going to Tech I enlisted in the Air Force in wireless and the electron flow had come in so now I had to reverse all my thinking and everything went from minus to plus. After Tech and the Air Force I came back and I didn't know really what I wanted to do.

BC: Did you go overseas or were you just in Canada?

JW: No, I was in Canada. I went to pre-matriculation school where one of my classmates was Dave Mitchell. And several others who became quite well known in the oil patch today.

BC: This was a very good thing that they had after the war was the opportunity to catch up on your matriculation.

JW: That's right. So after pre-matric I thought I'd take medicine and I went to Mount Royal for one year. I could have continued on to the University of Alberta in Edmonton but I thought, my dad was interested in going into business for himself and he made me an offer. I thought, gee whiz, I was going to get married in that year, 1948, Norma and I got married June 1948.

BC: What was Norma's name before. . .

JW: Norma Cochrane.

BC: Calgary girl?

JW: Calgary girl. Yes. She's a native Albertan. She was born in Bindloss. So got married in June of '48. The business didn't do very well.

BC: What kind of a business was it?

JW: It was the furniture business and that's where I met Mr. Weir. So I went to work for the Calgary Power Co.

BC: What were you doing for the Calgary Power?

JW: I was digging holes. For posts. I didn't like that very well. I saw an ad for Dominion Tar and Chemical and they were offering a job which I thought I'd take. The starting salary, \$135 a month, but since I was married they said they would give me \$137.50 and told me to report to work on Monday and bring my gloves. Well, over the weekend I saw an ad in the Herald and I replied to this by phone and it was George Blunden.

BC: What kind of a job was it?

JW: As a seismic computer.

BC: Did you know what a seismic computer was at the time?

JW: I didn't have a clue. So I went over to see George Blunden at his home on the weekend and he looked me over and I presented my credentials and he said, I think you'll do. He

said, we work 5 days a week and we work hard, the starting salary is \$175 a month. I said, my gosh, that's the most money I've ever heard of so I took it.

BC: What company was Mr. Blunden with?

JW: He was with Northwest Seismic Surveys. This company had been formed up by Jack Macmillan, Jack Timmins and Ollie Anderson, L. A. Anderson. They hired George Blunden from Gulf Oil and George was their chief geophysicist. I knew nothing about the work but George Blunden. . .

#083 BC: What did he like about you do you think?

JW: Pardon.

BC: What did he like about your references. You obviously didn't know oil business.

JW: I knew nothing about the business.

BC: Was your radio background good?

JW: I had some technical training. I'd had some university training. I had basics, I had the basic calculus and my high school record was quite good. So he said, I guess you can do some of these things that are required. George Blunden was just a great teacher. He was a task master, which is a requirement of a good teacher. He wouldn't really accept a poor job from you. And George taught me continually, it was an ongoing process for 3 years.

BC: This is very interesting because you were probably one of the last of the breed then, and really, to have that done in '48, of the breed that really learned to be a geophysicist really, as an apprentice almost.

JW: That's right. There aren't too many that had that opportunity.

BC: What was a computer in those days Jack, a computer now is a machine?

JW: That's right. In those days a computer was a person. Initially there were no women computers, they were men because of the field operations and that. You corrected the raw data. You did the basic computations, you did the basic work that was required for the interpreter to take over now and interpret the data. It demanded that you be accurate, that you work pretty hard and get the work done every day.

BC: Who did you work with, who was the geophysicist?

JW: I worked directly with George. And I was extremely slow when I started. You see, George had come from Gulf Oil where they used a fiducial system of correcting. . .

BC: Could you explain that.

JW: Fiducial is an arbitrary time plane that you correct the records to. In other words you have to have a correct time on the record in reference to some datum plane. The fiducial is a method of getting timed off records, on to cross sections for accurate interpretation. George used to read me these values and I would plot them. Or I would read them to George and he would plot them. I started out by saying, approximately this, below the fiducial. After saying it just a few time he said, hold it. I looked across the table at him and he said, it either is or it isn't. He said, you're going to have to read those values a lot faster. He'd given me a month to shape up or ship out. Not cruelly but he needed someone that could do the work. I needed the job and I just worked so hard at it. After a few weeks one day I was reading values to him and I was so steamed up I was just reading them as fast as I could. I was oblivious to him across the table. After reading

quite a few values off the records I looked up, noticed that he hadn't been plotting them. He looked across at me, this pugnacious little guy and he said, you can slow down now. So I felt good. And at the end of the month he said the job was mine. It was an ongoing thing with George and he taught me an awful lot. He was the ground work for me staying in the business. Jack Macmillan was an interesting guy. He had put the title on the company, on the decal, it showed a little boy with a cigarette hanging out of his mouth with a hat askew on his head. It was from a painting that Paul Roll???, the football player apparently had in his house and Jack liked it and he said, I'll use that on my decal. Below the decal was this slogan or whatever, a poor boy enterprise.

#133 BC: And the name of the company was?

JW: Northwest Seismic Surveys. But Jack Macmillan was not a poor boy. His father was quite wealthy, he was a member at that time of the country club. But he liked to give this impression. Jack, the first day I saw him had a green suit, it was a greenish-blue suit with a kind of yellow plaid through it, pretty large, almost 3x3 squares of yellow. And he wore that suit everywhere, he wore it to the country club, he wore it to any function. It was threadbare but he wanted to perpetuate this image of a poor boy and he did it. He was an awfully nice chap.

BC: Did he have many poor boy enterprises besides this one?

JW: No. At that time he was dedicated to the growth of this company. And Jack Timmins . . .

BC: Where had he come from?

JW: Jack Macmillan. He was a native of Calgary.

BC: No, but I mean, what company had he been working for?

JW: I'm not sure but he did have some inside connections with Imperial Oil. They liked him and I think Jack had been a mining engineer or something of that background and that's how he got into it.

BC: So did you do work for Imperial Oil during that time?

JW: Jack had I think, a couple of crews that did field work for Imperial. The data was sent into their offices and they were interpreted there. That's why he hired Blunden. He wanted 1 or 2 free lance crews that he could work for other people. Our first contract was with the Saskatchewan Federated Co-op Co. But this didn't appeal to George too much because it was so short term.

BC: What were the terms and where were you working?

JW: We were working here in town and the records that we got were sort of, they were Alberta records but the Saskatchewan Federated Co-op Co. were the contractor for that job. It was actually an oil company, or an energy company. Well, I don't know whether they had any but they were an exploration company. In the meantime George was looking for a better contract and we got one with Socony Vacuum. Jim Kidder was the chief geophysicist and his right hand man was Jack Oden. They both had come up from the U.S. Betty. And we worked for them for quite a long time. George was intent on his fiducial method. Socony Vacuum had a residual and an uphole method. We ended up using their techniques with some of George's improvisations from the fiducial method and I worked for them for quite a while.

- #170 BC: What was it like working for Socony, did they know much about Alberta when they came up?
- JW: They didn't. They were green to the area, as many people were in those days. You know, contouring maps Betty, later on, because we didn't have digital computers or fancy profiles, a contour map was a very powerful exploration tool. One of the things they noticed after Leduc, Redwater, particularly Leduc and the Rimbey, Home Glen trend was that the normal strike of Alberta along the front of the mountain ranges is northwest and southeast. A lot of people were inclined to perpetuate or . . .when you're contouring these maps you must have some idea of the regional strike of these things. They didn't really even know the regional strike too well and their contour maps were all screwed up. When the trend changed from northeast to southwest this could be a very significant tool in the search for a reef in Alberta. Well, the maps that Socony were first turning out, they had to learn all these things. I mentioned to you in an earlier little discussion we had that George actually mathematically concocted a migration fan. We were migrating dips out here at Langdon which is a perfectly flat geological type surface and they were feeling their way along.
- BC: So you were working on an area that there was no chance at all.
- JW: Well, there was a chance for hydrocarbons or gas out there. But the concept of trying to migrate dips on flat surfaces, there are no dips to migrate. But Jack Oden and Jim Kidder were really good geophysicists. They were good Calgarians. They participated in the community, they participated in square dancing, they were a credit to this town. They were really good people.
- BC: Did they go back to the States eventually?
- JW: Jack Oden went back after a few years here but Jim Kidder stayed on. He saw Mobil Oil, Socony Vacuum became Mobil Oil, he went right through the Pembina era etc. and he stayed here for many years.
- BC: What did they find during the time that you were working for them?
- JW: Initially, when we went to work for them they had no production at all in Alberta. They drilled a well at Craigmyle which was a dry hole but they felt that they had drilled in the wrong place. So they stepped out a little piece and drilled another dry hole. It was a long ongoing thing. I think Pembina was the making of Mobil Oil. That hadn't occurred till a long while after we had worked for them. And it wasn't a geophysical play anyway, it was a geological play, principally. But we worked for them and then Aubrey Kerr of Home Oil, we did a small job for Aubrey Kerr, who was I believe, their exploration manager or chief geologist at Home.

#217 BC: What area was this in?

- JW; It was I believe, out in eastern Alberta somewhere. We weren't in the foothills at that time. Then I decided that perhaps I should move on. Fred McConnell was forming up a company called Velocity Surveys. By the way I should tell you a little interesting story maybe, about Northwest Seismic Surveys. We had a young geologist who came out from New Brunswick. He just hated geophysics but it was the only thing he could do. So he took it on. We used to print our records in the print box at the back, we used to have to

duplicate every records. His name was Bob Stephenson, he's still in the oil patch here, heck of a good guy. Very outspoken. He told me, I hate geophysics, I like geology, I've got to get out of here, the only thing I like doing is printing records. Well, we used to have a Christmas party once a year and George used to bring in the very best and we would start drinking about noon. Jack Armstrong who later became the head of Imperial Oil, he came over, he was a geophysicist in those days. And we'd go through the Imperial Oil group. It was about 4:00 when Jim Kidder and his secretary came over. By that time we were all feeling really high. So we all lined up just like in the military. There were only about half a dozen of us or so. George Blunden came down the line with, it was like a receiving line. And Bob had never met Jim Kidder but he'd heard the name often because when something bad happened we'd always curse Jim Kidder. So along came Jim and George Blunden said, I'd like you to meet Bob Stephenson, this is Jim Kidder. Bob, who was feeling no pain said, oh, you're the s.o.b. that's causing all the trouble around here. But old Jim just laughed. It was one of those Christmas parties in that era. Anyway, George took it in good stead, it didn't bother him. But I went on Betty, to Velocity Surveys.

- #252 BC: Before we go to Velocity Surveys, I want to just go back to Mr. Blunden just for a moment. Because in talking to me a little earlier and I'd like to have it recorded, is the way he shared his information and his whole teaching philosophy.
- JW: Okay. George had been, he'd gone to the University of Saskatchewan. He started out as a school teacher in Saskatchewan. The salaries were terrible in those years, he was getting 4-7 hundred dollars a year. Having been a teacher, he remained one all his life. So when George became a geophysicist. . .by the way George got started with Gulf Oil quite late in life. He had been a wing commander in the RCAF navigation. After the war he decided that he had to do something with his life so he went to work with Gulf. This is where he got his background. When he came to Northwest, George was the chief geophysicist as I say there, but he would go out to companies like Socony Vacuum where they would have a new technique. George would get all the parameters of it, all the ideas and then he would come back to the office and he would teach all of us what he had learned. In 2 of the offices that we worked in he had a blackboard and he would teach, literally teach. Anything that he would learn that was new he would not keep to himself, he would pass it on to us. He actually turned out one of the first geophysical sort of, it was a text on all the principals that he knew and he printed it up, had it typed out and each one of us got a copy of that. I still have his notes in the basement. So George was not only a good geophysicist but he was an excellent teacher.
- BC: He was very far ahead of himself wasn't he, because now there is continual upgrading of skills but in those days, there was very little time given to that.
- JW: That's right. In fact, in my experience Betty, I've run into some excellent geophysicists who were very poor teachers. They would have made good research people. But George, fortunately because of his background was a teacher. All the years I knew him he taught.
- End of tape.

## Tape 1 Side 2

JW: . . . third turn for the acquisition of instruments. He was using a set of instruments, I think they were called Geotronics 401. It was a little company down in Texas that was turning some stuff out. For about the first 6 months or a year we actually used that kind of gear. But in about 1949 or thereabouts, one day into our office came 3 men. One was called Emmet House, another Parker and the other person's name was Beaman. Nobody knew who they were. They had a new set of instruments, a new set of analogue gear. They said to George Blunden, would you be interested in coming down to the Palliser to see what we have. It's quite portable, we think it's excellent gear. Blunden went down and came back and said, it looks interesting. From that start, as far as the contract business went, for a number of years SIE was the standard. They really didn't believe they could sell so many instruments. And Emmet House later on said, he was the sales manager, if he'd known that they were going to sell so many sets he would have gone on a commission rather than salary. But when he came up here he didn't realize that the potential was so great and he had to have bread and butter on the table. They became almost the ultimate.

BC: What was so much better about their instruments?

JW: They were very simple to operate. Some companies had instrumentation that was more versatile but it was very dependant on the observer. He had to know his instrument. Whereas with the SIE instruments, they did an excellent job and they were easy to operate. Furthermore, as they increased the number of sets, because in the seismic business it's important, in those days because we didn't have playback, whatever frequencies you used on the paper record were the ones that you were stuck with forever. Now when you came to tie different instrumentation together it was much easier to tie gear that was the same than if it was different. And there was a standard filter that was pretty well used everywhere and it was called 30-42-1. This was the low cut and the high side of the filter band. This was used extensively over the plains in those years. SIE just, well, if you didn't have SIE you couldn't get a contract. I just thought I'd interject that because it is quite interesting I think.

BC: So let's move on then now to Velocity Survey, just to get a general picture. We'll go and pick up a few of these people again later on perhaps. When you went to Velocity Survey, tell me about it?

JW: Okay, I went to Velocity Surveys in 1951. Fred McConnell had worked for Northwest Seismic Surveys and when he decided to go in with Bob Grier, in the company, he asked if I would like to go with him. I said, yes, I would. Fred was a very good interpreter and he was a very nice person. Bob Grier had started the company Velocity Surveys and they were principally involved in shooting wells for velocity information. But Bob had worked for Imperial Oil and he was the supervisor for operations in the north land and he decided to start this company up anyway. But he lacked interpretive skills and he knew Fred had them. He liked Fred, he knew he'd make a good partner so the 2 of them started the company going as a fully integrated company.

#042 BC: When you say fully integrated, what do you mean?

JW: This meant that they could go out now and shoot regular seismic records and do complete

interpretations. Bob would look after the electronic and field operations and Fred would look after the interpretation. So I went to work for McConnell here in Calgary. the company did quite well. We ended up getting a contract with Canada City Service and we worked for them for about 3 years in the Rimbey-Home Glen Area. Mr. Ernie Disler was the manager of City Service at that time, he was an American who'd come up from Bartlesville. It was a very good contract. The crew actually took the wheels off their trailers and settled right down into Bretton for a 3 years stay. But at the end of 3 years there was a bit of a slump in the industry. City Service began to cut back on its budget and we were without a contract.

BC: You only worked for that company for the full 3 years?

JW: Well, pardon me, this was the crew that I was associated with. They actually had a couple of other crews which worked for Imperial Oil. To begin with interpretation was not required on the crews but eventually that changed a bit and they did a field interpretation. Don Walker, who eventually became the chief geophysicist at Triad, worked for Fred at that time. He was a Gulf man who had formed his own company at one time, Universal Seismic. Then eventually went in to work for Fred. Don left Velocity and went to Triad where he became the chief geophysicist.

BC: Did you work with Don Walker?

JW: No, Don was out in the field and did his interpretations there. But he used to come in and we would talk about things.

BC: That was one of the things which they did at that time which they don't do today, the field interpretation. Then your job would be to look at the interpretation when it came in and justify yours against theirs?

JW: That's right.

BC: Could you tell just a little bit about how that works?

JW: Okay, they had what they called a dual interpretation. You see, there was a time lag. The records were often sent in to the central offices and there's a time lag there. Whereas if you had an interpretation which consisted say, of a party chief and a computer in the field they would do an instant interpretation. As the records came in they would interpret them right there. Then they would bring their interpretation in where you would do a more in depth study here and then you would compare your anomalies and see if they were in the same place. It was an excellent system of confirming your interpretation.

BC: Did you find that your interpretations always confirmed though?

JW: No. It's still an art and quite often there would be differences. Then you would sit down and look at things together and see why the differences were there. This was a very powerful tool. I think the old interpretations that were turned out, even to this day are regarded quite highly.

#079 BC: Because you had 2 heads instead of . . .

JW: That's right. And they were working independently. And I think it was a very powerful tool. But you couldn't do that today very easily. Now it's all central interpretation.

BC: Why is it so different?

JW: I think you get into costs etc. You see, today you don't see any. . .you see, we had paper



records then Betty. You did the shooting today, you didn't have to run them through a machine. The analogue system was such that the recording was made there that you used. You didn't bring a tape in and run it through a system. And there was no time lag at all, so you could do it. But today, you just have a tape in the field. You can't do anything with it until you get it into a playback system.

BC: Is this because of the computerization of the industry?

JW: Yes, that's right.

BC: Have you found that it is more accurate?

JW: What I see today is that you can do a lot of fudging with the data. In those days the problem was that perhaps you got a poor record and you didn't get a chance to get a second record. Or you only had one filter setting and you couldn't play around with the data enough. I think playing around with data has its advantages but it can have its disadvantages.

BC: Sometimes to make it look pretty you might. . .

JW: Do the wrong thing. So I think that's one of the dangers of the new playbacks. But you know, cost figures, I mentioned that and this era that I was in, a seismic crew, can you imagine, the total cost of a crew in the field. . . now, these are just fudged figures, I may be way out but. . .

BC: But in the general area, sure.

JW: You know, they might run from say a 20 day operational month might run from 10-16 thousand dollars a month. And you might get say, 10 records a day. That's 10 useable shot points a day. If you figure, say it was \$16,000, a 20 day month, that's roughly \$800 a day and you shot 10 records, that record cost \$80.

BC: What would it be today?

JW: You're looking at ranges of \$1,000-\$5,000 a mile depending on the difficulty of the area.

BC: Is it just because the science has progressed and so it sort of makes slaves of us all? Or is the data that's being gathered, in the long run, making it more economical to use the new ways?

JW: I think it's. . .that's a very difficult question. Because you know, we keep returning to basics. And until you've made the trip you really can't answer these questions. But I have a really deep down feeling that we're wasting a lot. In other words you see, today you shoot multiple records instead of just one. And you really could be shooting a lot of data that you don't need, at great cost. Or you might not be shooting enough data, I don't know. But these are difficult questions to answer. And of course, seismic is still an art. The dry hole ratio will always be there because we have no direct detection techniques that really work effectively.

#120 BC: It's interesting that you would call it an art rather than a science.

JW: We like to think of it as a science Betty, to a point. I think when you get into recording etc. that is sort of science. But when you get into the interpretation of the data, then you get into sort of the realm, in unknown areas of the art. And I do believe that some people have a better feel for the instinctive things about the thing than others. Now that's a generalization that you could never prove but I think some people. . .well, I don't know,

maybe they are a little more observant or a little more experienced in a certain area.

BC: so that they know where to correct the contours?

JW: Yes. Maybe that will be gone soon too. More and more machines are contouring, more and more machines are putting data out and management are looking at data. And the interpretation may go the way of other things, although I don't think so because it's still that art form.

BC: Do you think the early days were more personal and exciting for you or the satisfaction better with the help of a machine in the latter years of your work?

JW: I think that's a good hard question again. It seems to me that we often eliminate one drudge and replace it with another. We look at it in terms of the old drudgery and say, oh boy look, we don't have to do that anymore. But if you look very closely at what's being done you may have replaced it with another type of drudgery that's just as bad. This is the way I feel, I don't think we ever eliminate the drudge no matter how exotic we make these machines. We just replace it with another format.

BC: What you have to hope is that the 25% that is not just drudge work is so exciting that it makes up for the routine.

JW: That's right. But you know, these cost figures are so interesting, and of course, they can't be related because of inflation and times and all the rest. But they are interesting to look back at and see.

#148 BC: One of the things we haven't talked about is Mr. Bob Grier, and he was a pretty innovative gentleman, was he not?

JW: Bob had an inventive type of mind. Again, backgrounds of these people who get into this business. Now we have more specific courses in universities. Bob, I believe had graduated from the University of Alberta. He had gone to school up there at the same time as Stan Pearson. Bob graduated as a chemical engineer I believe, who drifted into this business when the crews used to come up with Carter Oil, with the high boots and about 1 or 2 records a day. Bob had signed up with Imperial Oil in those days. He learned his electronics the hard way and he was very good at this. One of his ideas was to generate energy by the dropping from a helicopter of a huge block of concrete. He picked an open area somewhere up in central Alberta and he himself sat in the doghouse which was a darkened little cab on the truck. The helicopter was hovering close by and it would drop this big block of concrete. There was some energy generated which he picked up on the records but it really didn't work because the reference time was difficult to record. You could see some energy on the records. And you had to have an open area or you might drop it through a farm house. But Bob had a sense of humour, Bob was quite a caustic character, he could rile you up a bit but he said he didn't dare rile that helicopter pilot up because there was a chance that he might drop it through the doghouse. He said, when you were sitting there in the dark and you would hear this thing come whistling down because it had a hole in the middle of it, you always wondered how close it was to where you were sitting. Another idea he had was to, in seismic shooting on the plains, we used to have a rule of thumb and that was, we always drilled about 60' holes and we'd fire about 5 lb. of powder off. But the shothole is such that it is best if you can get it at an

interface, like the difference between a clay and boulder shale or a sand and a shale. We used to have a little shale marker we called the blue shale marker. At that interface you got very good records. So Bob felt that if he could have a gauge on the back of the truck that would record some kind of a frequency change, if you could relate this specific frequency that gave you the best shot, then you would be able to just look at this gauge, see the depth, put the charge down to it and fire it off and get a good record. It was a good idea but it didn't work either. But it was this kind of thinking I think, that has made the seismic business quite great. Because people have problems and they are trying to overcome them and they have overcome a lot of problems.

#188 BC: It's a very new science.

JW: I think the basics are extremely old but the techniques of acquiring data are new. I think this is maybe where we get into trouble is that it's just like the 10 commandments, you know, you can violate the basics and you pay the same price. No matter how innovative you become. And I think this will always be the problem, you're dealing with an earth science and as I said earlier there are things you can't overcome. You're basically doing the same things only with a different method.

BC: One of the very important steps forward in the geophysical work was the introduction of continuous velocity logs. Could we talk about that because you were around when that was happening?

JW: Again, in the early 50's, and well before that of course, we had really no knowledge of how these events were. . .well, we knew how they were being conceived and we understood how the reflection system worked. But it was awfully difficult to ID your reflections. One of the things that we often did was we'd pick a marker. We'd see a reflection on a record and we'd say, that's the Mississippian event. Now if your production is from the Mississippian it's very important that you observe this event and see changes on it. However, as it worked out, sometimes the geological marker didn't produce an event, yet we were still attributing one to it. Now 1959 they came out, Seismic Service Corporation developed the continuous velocity log to the CVL. This allowed you to make up a synthetic seismogram, using the velocities recorded by the CVL. One of the things we found out in central Alberta was that in some areas that the Mississippian did not have a velocity contrast. So the event we were mapping as the Mississippian was not the Mississippian.

BC: How would this misinterpretation come about?

JW: It wasn't as serious as one would think of but for instance, if you had the Home Sandstone, which had a velocity contrast, which was directly above the Mississippian and it gave you a reflection which you had been IDing rather improperly, you could still see the topography of the Mississippian surface. So a high on the Home Sandstone would be maybe a high on the Mississippian. But it could be a pitfall because. . .well, the pitfall was that it wasn't the Mississippian but you were saying that it was. Now the CVL allowed you to kind of overcome that. Because now you go into an area, you say, okay, I'm interested in marking such a marker, does it give a reflection. Now we have a well in there, do we have a CVL in it. Okay, let's run a synthetic. You look at it, you say, yes, it's

a good event, well, we'll use it. But we didn't have that tool until that came along. I think that maybe 1 or 2 well known fields were maybe ID'd wrongly but some other marker close by came to our rescue and allowed us to find a field.

#241 BC: Can you think of any specific ones where you feel that this misinterpretation could have been . . . ?

JW: I wouldn't want to put a name on the fields because I have an idea but I wouldn't want to ID that. I can think of one field in particular where I think the Mississippian reflection doesn't give the contrast that would be required and yet I think, perhaps way back Mississippian maps were used to find the field. And that would be up in central Alberta and it would be a Mississippian play Betty.

BC: You mentioned, when we were talking before we started to record, of a particular place where indeed this had happened where they thought they had something and there it was. But it was not the Mississippian after all.

JW: Well, that's the field in central Alberta and I wouldn't want to be specific because I think that I could be wrong on it but I have a hunch that this happened. Because I know, I remember myself working on a specific play where we thought, and I'll name this particular play because it's not an outstanding thing, it was in the Rimbey-Home Glen area. We thought perhaps we should be looking at the Mississippian and in that area we found that the velocity contrast was not that great and because of the CVL information, it allowed us to be specific about this. So it's happened.

BC: Can you think of any other events that happened within the '51-'55 time, that you were with Velocity Survey? Or some of the people that you worked with or the areas you were concerned with?

JW: At that time I was principally concerned with the Rimbey-Home Glen field because we had the 3 year contract with City Service. I got to know Mr. Disler quite well. He eventually returned to Bartlesville. He hated to leave Calgary but he went back to Bartlesville and became a vice-president down there. I believe he has passed away quite a long time ago now. He was a very, very interesting man. An excellent geophysicist, and a geologist. At that time they had an interesting guy who was their chief geologist. I think you might know him, his name is Nick Taylor. Nick was the chief geologist there and the Calgary office of City Service thought the sun rose and set on him. They couldn't make a decision without Nick.

#286 BC: Did you have much to do with him in those days?

JW: Yes, Fred McConnell and myself, we curled with Nick.

BC: Tell me about it?

JW: I don't know whether Nick would even remember me now, I don't think he'd even like me talking about him because he'd say, who is that guy anyway. Fred and myself and Nick, and they would alternate, there was a chap called Cal Neal who was our chief geophysicist, another fellow called Nick Nixon who was a geologist and they would alternate on the little curling team. We curled at the old Victoria Arena in those days. But even then Nick was interested in politics. I can remember we would have a coffee. He

was a heck of a geologist, but I can remember him saying, you know, I'm principally interested in politics. I'm not surprised that he's gone the route he has.

BC: Did he leave there to form his own company?

JW: He left City Service, I forget how long he worked there but he left City Service somewhere in the early 50's and he went to work with Honolulu. He was their exploration manager there. Then they were taken over, I think they got caught up with Honolulu Seaboard which got caught up with Texaco. Texaco felt, either Seaboard or Texaco, one of those mergers, they felt that they had enough chiefs, they needed Indians. So I think Nick got some arrangement and then he went out and he went in on his own. That's how he got started. But he was an interesting guy even back then. Lots of energy, very highly thought of, they hated to lose him. But Ernie Disler was a very good man for those guys to work under. He was a good leader, a hard worker, a very good person. I can remember once, Mr. Disler calculating possible reserves in the Pembina field. Long before Pembina had come in, I think, they had a choice between retaining Notakeewin??? and the Pembina acreage. Somehow through the channels of management, not directly his fault but I think they had decided to keep Notakeewin and relinquished the Pembina acreage. One day he had a slide rule and a map and he was calculating how many reserves they would have had if they'd kept the acreage. But he was a dynamic exploration man.

BC: That would have been quite a bitter blow to him.

JW: It was really I think because he had kind of made the recommendation. But he wasn't bitter, I mean, that's management. And who knows, maybe the Pembina patch could have been bad and the Notakeewin could have been good. Hindsight is always better than foresight Betty.

BC: But did they just have dry holes in. . .?

JW: Well, I can't think of Notakeewin. Maybe it has in recent times, I don't know the history but at that time it wasn't as good as Pembina.

End of tape.

Tape 2 Side 1

BC: Just as we begin again Jack, I have a note here about Macmillan and a reef. Could you tell me about it please?

JW: This is backing up Betty but when I started with Northwest in 1948 I knew nothing about the business at all. But this was shortly after, there was a sequence there, I believe that Leduc came in in about February of '47 and Redwater had come in in about '48. Golden Spike was in about that same time and then Stettler came in about '49. After Leduc and Woodbend were so successful, with their D-2, D-3 potentials, it just looked as if you could drill anything like that and it would be a sure thing. But just to show you how the oil business is and the odds are so great against you finding anything, just a little ways away from Woodbend was the Willingdon complex. When they first saw this thing on the seismic paper records in those days they said, we've got another big one. Jack Macmillan was so excited about this, he said, George we've got another big one out there I think. But they drilled it and the Eyerton was not there, the ceiling cap was not there. So it was a

disappointment. It really goes to show that the science was good, the art was probably good but Mother Nature had put a little wrinkle into it that you couldn't analyze. I think that's sort of the story of the oil business.

BC: Could you have analyzed that today with the more sophisticated instrumentation?

JW: They do have what they call direct detection techniques but they are filled with pitfalls. You can detect gas with these techniques because the gas has a velocity contrast and it makes a sort of bright spot. It has been used quite successfully in offshore operations. For instance in Nigeria I think we could see indications. It's a flat spot and it's a bright spot and it can be related to gas and hydrocarbons sometimes. Onshore you have coal beds, well, you have them anywhere. Coal is low velocity, a high pressured shale is low velocity so now you have a pitfall. You also have other pitfalls of onshore that are difficult to handle so the bright spot technique is fraught with error. And to bring that out, for instance, they used this bright spot technique in the Gulf of Mexico quite well, quite extensively and were very successful with it. Well, in the U.S. when they ran short of oil when the embargo was on they had certain plums down there that they thought they were holding the Crown jewels back for such times and now they would drill some of them. Well the Dustin anticline which is offshore in the U.S. was one of the big plums. Exxon thought this DDT technique should be very effective down there. They drilled and by golly if they were, I think they were high pressure shale markers. The Dustin anticline was a big disappointment. So ever with the modern techniques, Mother Nature always throws something in to the thing that gives you the same effect but it's not for oil or hydrocarbons.

#045 BC: Don't you find this a very frustrating business then?

JW: I think it is Betty, in that, if you're a carpenter you build a house and you can see the fruits of your work. A geophysicist can work away and work away and nothing comes of his work. That is rather frustrating. But now and then, as long as you keep plodding along and then when you do get something it's so rewarding, you feel that you've really accomplished something. So it has its frustrations but it has its rewards.

BC: Because geophysicists, their findings are fraught with all these problems, there seems to be from time to time, a chasm between geophysicists and their interpretation and geologists and their interpretation. Can you comment on that, did you find that there was great variance?

JW: I think there always will be barriers. I think the barrier is a real one. It's like integrating say, blacks and whites. Just because you've integrated them doesn't mean that the differences aren't there.

BC: What's the biggest problem in the two sciences?

JW: Okay, geology perhaps, is broader, it encompasses broader things. You have a few wells in an area and they're actual wells and you can take them and you can project. But it's a projection really of your mind. You take a certain well, you say, I think it's close to a reef so there's reefs in there. Now a geophysicist can't do that. They say to him, now I want you to tell me where there is a structure there to drill. So he has to plod now. He can't just take 1 well or 2 wells or 10 wells and project, he has to get actual information. It's a

plodding process. And it takes a long time to get the data and put it into a package. And geologists are always kind of wanting this process to be pushed a little harder. I think the geologist deals with the macrocosmic sort of or the macro sized things and the geophysicist looks at the micro sized things. Now I think as a geophysicist you're trained to think in terms of milliseconds. You're inclined to pick away, pick away and a geologist will look at this and say, why, that isn't like nature. You draw a map with all kinds of little wiggles in and out, that isn't like nature, just draw straight lines in there. Well, this bugs the geophysicist. Now, the integration has taken place in many ways for the better. I think there's pros and cons. Like geophysics without geology is meaningless and geology without the fine tuning of geophysics is not accurate enough. But I think it's a matter of training. I think if you get to the point where you begin to broad brush and it is much easier to broad brush than it is to pick away, then you lose something. That's the only thing I see wrong with the process of integration of the two.

BC: When you see integration are they working in the same office now?

JW: Today we like to use the term explorationist. We think by saying that we've solved the problem but we really haven't. Because if you have a geologist like Bob Stevenson who hates geophysics and you have a geophysicist who really doesn't like the broad brushing of geology, you could get the wrong person working on the wrong thing. And it isn't so bad to get the wrong person on the wrong thing but if you get a very dominating person, heading this thing up, if the dominating person is a geologist then you could be in trouble because he will not understand what you're trying to do. And if the geophysicist is the head man he may become too picky and he may not do enough broad brushing, not enough imaginative work. So it's a difficult thing. I think that the 2 have to be together but I think you have sort of different objectives Betty.

#096 BC: And yet, today, more than say 20-30 years ago, there is much more specialization. Indeed you are a geophysicist and you are a petroleum geophysicist and a petroleum geologist, so their education isn't always as broad as it was at one time.

JW: No, that's true. I think though, that whatever the scenario is, it depends on the company. It's not a broad thing, it doesn't encompass the whole business. I believe you could work for one company and you would find that they might have the geophysicists a little more separate from the geologists. But intertwined so that they can make sense out of the work. Another place might say, we'll lump them all in as explorationists. I think it's a philosophy and I believe that both philosophies are productive. If the company is successful then you have to say, heck, it works.

BC: That's the bottom line isn't it, absolutely.

JW: Yes, you can get someone like Canadian Hunter who go out and they use a more geological set-up perhaps than Gulf who has been very geophysically oriented. But if either system works, then don't knock it.

BC: The proof is in the pudding, right.

JW: That's right. But I don't think there's an easy definition of the melting of the 2 together or the separation of the 2. I think as long as it's a team effort, as long as you can get proper input and meld it into one picture and get people who understand this. You can sit in a

management setup and you'll see the man, if he's the top dog and he's an geophysicist he'll always say, where's the geophysics. If you're in there with a man who's strongly geologically oriented, well, get the geophysics but we know how accurate geophysics is. See that map up on the wall, see all those dry holes up on the wall, they must have been drilled on geophysics. I think you end up with a strong person at the top establishing the philosophy. And getting back to the science and the art, if the system works then don't knock it. Maybe they've got something going.

#124 BC: In your years in the oil patch, did you find that there were times when it was difficult for the 2 sides to work together?

JW: I think yes, I think that is still is that way somewhat. I think that a lot of geologists sort of poo-poo the efforts. Although I don't think too many of them do. I think the smart guys understand and they realize the shortcomings and the power of these things and they utilize them to the best of their ability Betty. It depends on the team, on the person again.

BC: Right. Certainly in the oil patch the person who is the head, it is more important even sometimes than their background of. . .

JW: It is, it's the philosophy that this person. . .and you know, you don't get to the top by being a wishy-washy person. You've got to have a certain dogma I think and that is what will apply to the philosophy of the company that's working that.

BC: The philosophy of the Velocity Survey, did it have a particular way that they worked.

JW: I think again, you see, it starts out with the tool, you say to yourself, oh boy, that works pretty good. And then it had its pitfalls just like everything else. You could take this velocity CVL and create a synthetic and then you'd try to match it to the real world and it wouldn't fit. You'd say gosh, there's got to be something else in there. Well, the earth was doing a filtering which you couldn't put into your little simple synthetics. So everything man tries to do is an oversimplification of reality. So as you learn, you usually learn by suffering and he never really gets the final answer. Hindsight is always better than foresight. But that was the CVL that I thought was quite an important tool.

BC: Right. From Velocity Survey, you then left for Gulf Oil. Why did you go to Gulf?

JW: In about 1955 there was a slowing down in the industry. Our contract with City Service had terminated and Mr. McConnell wasn't sure where our crew would be going. He was looking even overseas, he looked at Montana, the States. He did end up with a contract in southern Saskatchewan. This would have meant that I would probably have to go down to Saskatchewan or wherever the crew would be. I had been in the business about 7 years then and my children were growing up and starting school and I thought, gosh I better look around maybe and see if there's something in town, which I did. I applied at various places. Having a rather poor formal education in the sciences I found that it was rather difficult because they were looking for people with advanced degrees. Being a slump they could look for the very best of university in the industry. So I was turned down by Socony Vacuum, I went to Texaco, I got in touch with Dr. Richards at Triad. He said they were looking for a PhD preferably because of the frightfully difficult computations that they had.



#171 BC: So were you out of work then at this time?

JW: I wasn't really. Because I went to Fred McConnell and I said, Fred I think that I'm going to have to look at the major oil companies because I wonder where this contract business is leading me to, there's not much security. There's good money for the owners but where does this lead me. And Fred is a very honest person, a good person and he said, I know how you feel. I've got some contacts, maybe I can help you. I said no, I would go out and look on my own and they'd have to take me at face value. He said, that being the case, you go down and look any day you want because there was a lull in the business things were slow. He said, you just go whenever you like and find your job and you're on payroll until you get one.

BC: That's a very splendid man.

JW: That's right. So I did this and looked around and finally, one day I went to British American Oil and I talked to Ken Atroll. Ken said, they were looking for a geophysicist and he would put a good word in for me to a fellow by the name of George Deebler. I appreciated that and he said, I'll arrange an interview with you, with George. I remember going into what I thought was a rather impressive office by my standards and this great big gruff guy sitting behind a desk with a long drawl, Texas accent, gruff looking guy. I thought well, this is the end of the road. Before the interview started I looked at George and I said, I don't want to waste your time, I've been turned down by most companies because of my lack of formal education, I don't want to waste your time. He said, I'll decide whether it's a waste of time or not, I've got a job to do here and if you can do the job it's yours, if you can't it isn't. I'll think about it. So I said, that's fair enough. I went away and I didn't think I'd get it but one day Ken phoned me and he said, you've got the job. So that's how I got started with Gulf. It was rather interesting because before that, I had gone over to Gulf Oil looking for a job and I went in to see Mr. McGrew and Mr. McGrew looked at my credentials and looked at me and he said, well, I would like to hire you really, I think we could use you but at this stage of the game we're only hiring the cream of the university crop and we just can't pick you up. So a year later, after I'd worked for BA for a year, who comes along but Gulf and they buy us out. Old George Deebler said well, we're getting lined up over there and certain people will be doing certain jobs and there's an element of uncertainty. But I put you down as a geophysicist and they'll start you as that and don't let me down. I said, I'll do the best I can. He said, by the way, do you want to meet your new boss and I said, who's that, he said, Mr. McGrew. Oh I said, I met him before. Well he said, come on, let's go over, we were going to the old Petroleum Club. We went up there and I remember we went upstairs and there was a little alcove there and Mr. McGrew was sitting in this alcove. As we walked towards him, you know, Harry doesn't miss a thing, he looked at me with those sparkling eyes and, I've seen you some place before. I said, well, I was in your office about a year ago for a job interview. How did that interview go and I said, well, I didn't get the job. And now I was working for them so that's how I started with Gulf.

#228 BC: Did you find this difficult, the transition? BA was a fairly small company and Gulf was, particularly the exploration, it was big in exploration, it was the

marketing they were looking for.

JW: I found it rather difficult because I'd been used to quite a bit of informality you know, working for a little company. But I found that it had real advantages too, Betty, and that is that they were very sound in the geophysical business. Their techniques were quite different than what I'd used, although I'd worked for Blunden who had worked for Gulf and we'd used the fiducial method. So I had been sort of oriented to the Gulf system through Blunden.

BC: So you had to come back into it, they were still using it?

JW: They were still using the fiducial. So this gave me a bit of some ease anyway, in entering the system. So George Blunden's teaching paid off again. It helped me. I had no problems with their concepts. And I found that men like Harry McGrew, he was a very firm but fair minded guy. And he was interested in geophysics. They pushed it, it was a good school, it was a university again. But I did have some system adjusting to the number of people there.

BC: What building were you in at the time?

JW: We were on top of the Hudson's Bay, they had the penthouse on the Hudson's Bay store. So I was up there and Alex McKey was my section head that I worked under for nearly all the time I was there. Jack Bowden, I worked under him for about a year. Harry Carlyle at that time was a field supervisor. I can't think of other people. Mr. Copeland was in charge of field operations.

BC: Did you work very closely with those gentlemen?

JW; We had the dual system in those days and I worked in central interpretation Betty. In those days I worked principally in the plains because I'd worked Rimbey-Home Glen for a long time. I worked Rimbey-Home Glen, worked around Stettler, Viking Kinsella.

BC: When you say worked around, you were in the office interpreting field data?

JW: Interpreting those fields, that's right. And then I worked up in the Arctic. The first well that was drilled up there was Reindeer #1 and I was lucky enough to be in the interpretation set-up that did the interpretation for that first well that was drilled up there.

#273 BC: Can you remember anything about it, the things that were different or. . . ?

JW: Well, the records, we worked the Mackenzie Delta, up around Tuktoyaktuk, and we were using the analogue system. The records were absolutely terrible.

BC: Why?

JW: Because there's a permafrost problem up there. The permafrost can be up to 1,000' thick. The velocity is very high, it causes problems in the reflection technique. We had problems with reflection quality.

BC: Did you try other kinds of techniques?

JW: They had gravity and they had magnetics to support the tectonics and the thickness of sedimentary sections. We found this fairly large domelike structure with, it looked like normal faulting on the flanks of it. We only had one reflection marker at one time, over the Reindeer well. It was a pretty weak event. However it sort of analyzed a dome type feature which they drilled on the flank of and that was the first, Reindeer was Gulf's first well anyway up there and one of the first ever drilled in the Arctic.

BC: And it came in?

JW: It had some shows in it, which were rather interesting. It gave some hope for that area.

BC: Did you continue working in that area?

JW: Well, I worked up until, Nick Chenachan had started working on it and then I worked on it under Mr. McKey. Earl Mahaffey eventually became involved in it. And I worked on it until we sort of came to a standstill on the operations up there. But I'd worked through the Mackenzie and through the MacPherson area. Then I got a chance to go out in to the field as a party chief.

BC: What year was that, do you remember?

JW: That would be in about 1968. I had this little crew and . . .

BC: Excuse me for interrupting but this was the first time that you had gone out into the field for any length of time.

JW: Yes. Well, even then it wasn't for a long duration because I party chiefed the crew but I was located in town, so I really didn't live on the crew.

#316 BC: That was a change from the earlier days.

JW: Yes. Well, Earl Mahaffey took over as the chief geophysicist and he decided that since we didn't have dual interpretation anymore that we would have a party chief set-up here where one man would be in charge of field acquisition and processing. The little crew I had was basically Hiland Exploration but we had our own observer and our own junior observer and myself on it. In town we had another geophysicist and a computer to help. We had an offline, we were still analogue in '68 and Gulf were just going FM on their tapes. One of the breakthroughs by the way, I should go back in the Gulf history. Right up until I started to work for Gulf Corp. in '55, we were still using paper records. But what had happened in the early 50's, they had gone to recording on tape which now allowed you to record with rather a broad band of frequency, bring the tape in here where you could process it to any filter that you wanted. Getting back to the old SIE, everything [30, 40 to 1]???. Well, this system allowed you to play any filters you wanted. We were still analogue but we went to a tape system. Then the next, okay as far as Gulf, when I went over there the first change for me was the magnetic tape system. But we were still analogue. But the next big change was the manner in which we played those tapes out. We were now able to use what they called a variable density type film with a type of plotter which would allow us to now play all these records out corrected side by side to present a profile, which we did. This was a change from picking each individual shot point and then putting it on to a piece of paper on a profile form to get your values off for your maps. Now we had a profile played out on film for us.

BC: So this would make your decisions more accurate?

JW: That's right. This is where the geologists said, I sure want to go into this act. Because now he didn't have to pick those ugly wiggle records. I think this is when geologists began to look at profiles and put their marks on them because now they didn't have to worry about getting it compiled. That kept the geologists hand out of it for a long time. But that turned it around Betty.

End of tape.

## Tape 2 Side 2

BC: All right, so you were with Gulf until you retired in February here, of '82, but you weren't down in Calgary downtown all of that time.

JW: As I say, I party chiefed these crews and then in about 1969 they changed the party chief system and Earl Mahaffey said to me one day, how would you like to go to Nigeria. I said, Nigeria. What had happened too was, in the summer of '68 Gulf got rid of all their seismic crews. They decided the contract was would be the way to go so we had no more of our own seismic crews as such.

BC: You were about the last company to keep their own crews.

JW: Right. So we went into companies, Teledyne, companies like that did our work.

BC: Why did they decide to stop?

JW: I think one thing was we were becoming. . . our own gear, which was an AM system was not suitable for digital processing. We were starting to put FM transports into our crews in about '68. We were gearing up for digital. Digital had come in in the mid 60's. What had happened was, Zama Rainbow had come in. This is an interesting tale because I think it had a lot to do with the multi-channel, stacking type of shooting. We had gone to 4 fold with the analogue system and 6 fold, and we were doing it manually and it was a terrible task. This was a job built for computers. So it hastened the advent of digital.

BC: Could you tell me, just for the lay person, what 4 fold means?

JW: This meant that in the subsurface, instead of 1 reflection event from a surface like the Mississippian or the Devonian or the Wabumen, you now had 4 traces, 4 common depth points and you had to stack those into 1 trace for presentation. This becomes a nightmare manually. When you're going to 1,200, 12 points to put together, 24 to put together, 24 to put together, 48 to put together. So when these Rainbow reefs came in they found these with stacking and they shot it like Limburger cheese. This just hastened digital.

BC: They wouldn't have been able to make the discovery without?

JW: Now this is the interesting thing. I think that they could have because I can recall seeing, now not in the detail that was required. I must qualify this, I think that the digital work allows you to look at these reefs splendidly, it's a marvellous tool for this kind of hunt. But the old analogue system, I'd seen in my time, an isochrone map which portrayed ??? of the Rainbow reef. And on the bottom of this old hand drawn map was a note that said, isochrone 6 represents build-up of a prescal reef. These 6, later on some chap plotted, well, they didn't all fit naturally, but you could have discovered I'm sure, if you'd been diligent enough you might have used that map to find it. But one can't take any credit away from the stacking method. It was a powerful tool for that area and it's a powerful tool all over Alberta now for reef hunts and things like that. But I think that play brought it about Betty.

#041 BC: So what made you decide, yes, I will go to Nigeria?

JW: Well, our crews were closing down here and I really . . . I didn't know what I would be doing in the office. I might go back into straight interpretation and I'd had a flare of going out in the field there you know, where I could look at the field data, design the field

parameters, do the experimental work in the office, work on interpretation of data that we had acquired. And I found this real exciting. It probably was one of the most exciting parts of my life in the business and now that was ending. When Earl said, how would you like to go to Nigeria, actually they approached me in the morning. . . Earl had quizzed me at a party for Stan Pearson, he said, how long have you been in Calgary Jack, where have you been. I said, oh. . .he said, that's a long time. That's when it started. Then Mr. Copeland invited me in in the morning and said, how would you like to go there. I said, gosh I've got to go home and talk to my wife. He sent me down to see a guy called Gene Corgury, Gene had been in Nigeria for 5 years and he told me all about Nigeria. I got home rather late, about 6:30 or 7 after having talked to him. Norma said, where have you been, she thought I'd been to the pub maybe eh. Then I said, how would you like to go to Nigeria. She said, where's Nigeria. I said, well, I've got an offer to go there. She thought a moment, she said, why not. I said, we have to talk to the girls, which we did. I went back next day and Cope said, are you ready to go, I said, well, I still have one more daughter to talk to. He said, oh, you'll go and I said, put me down.

BC: How many daughters, we never did establish the size of your family Jack?

JW: I have 3 daughters. At that time Laurie the eldest, had finished a nursing aide course and she wanted to stay here. Vicky was in grade 10 and Anne was in grade, I think 6 or 5. So we left here in January of '69. Laurie stayed in Calgary, Vicky finished off her grade 10 Alberta schooling by correspondence and Anne went to school under the U.S. system in Lagos. Then the following year Vicky went to Switzerland to school for 2 years where she went into the general certificate of education and got her high school there and Anne completed her grade 9 in Lagos. Then we moved to California from there and they went back into the U.S. system. But they managed. And Laurie came over later.

BC: Did she come over to live with you later?

JW: Yes, Laurie came over and she met her present husband there. He was in the Marines. She's living in town, they're both in Calgary now. So it was a good experience. But that's why I went there, it was an adventure. Neither Norma or I considered the financial aspect of the job that much, it was an adventure for us. The pay seemed reasonable.

BC: At that time there were some advantages to overseas as far as tax was concerned too, was there not?

JW: Yes there was Betty. They did not tax your income if it was paid by an American company. The American companies had a hypothetical tax, which was very low. So tax wise you came out quite well but I think that has changed now.

#079 BC: This was only for so many years, you were allowed that freedom was it?

JW: Well, as long as you wanted it, at that time, until they changed the tax laws.

BC: Did this still apply when you went to California?

JW: No, there I paid federal tax and state tax and non-residents tax.

BC: Did you pay the federal tax to the United States government or to the Canadian government?

JW: To the United States government and I paid state tax to the state of California and being a Canadian living in California, I paid non-residents tax to the federal government of

Ottawa. So it was as bad tax wise as Nigeria was good. But we enjoyed our stay in Nigeria. I had gone there because, one of the reasons was I was interested in the Niger Delta. I knew nothing about deltas or tertiary exploration and while I was there, the first 6 months I was in Nigeria I was lost. I had come from hard rock geology where there were reflection coefficients which you could detect with the CVL, into an area of tertiary sedimentation, which is a sand shale sequence. The structures were growth faults and I knew nothing about these things. Fortunately, while I was there, Gulf had sort of been extending themselves offshore further and further and we'd run into some shale ridge problems. They brought in 2 experts from the U.S., one was Paul Howell, who presently is the exploration manager in London and the other was Lynn Hazel who is the exploration manager in Bakersfield. These were 2 tertiary experts from Houston. That had to be, they were there approximately 8 weeks, that had to be the most interesting experience that I've ever had in this business.

BC: Why was that?

JW: This man Paul Howell is an absolute genius. He didn't believe in report writing, nothing fancy but he was a tertiary expert. They assigned me to him to do the leg work, to get anything the man wanted, profiles, any data he needed. But he reciprocated by letting me join him in anything he found. If he saw anything of interest he would come down and show me and show me why this had happened, why there was a dry hole here, why they could expect production here. I'll always remember the first assignment he gave me, I thought I'll just be getting profiles for him. One day he said to me, I want you to find the earliest syncline that you think exists in the this basin. I said, what do I do. He gave me a rough idea and said, start looking. He had other things to do, he was organizing, he only had 8 weeks. I remember one day I found this little syncline and I brought it in and he said, you can do better than that, that's not it Jack, keep looking. This is a man who really knows what he's doing. One day I found what I thought was a really big one and I brought it in, he said, now you're talking, now we can go to work. And we did. I just think that he has to be one of the best oil finders that I've ever worked with. He analyzed as much as he could of Nigeria in that short time with Lynn Hazel, who was just as great. Lynn was the geologist, Paul was a geologist who was in seismic. They analyzed nearly all of, Paul did, all of our offshore acreage. Block B, C and D, quickly looked over our 1L-49, those are the names of the things they had in those days, gave all kinds of constructive information and ideas, left us profiles behind to document the area, picked some locations, taught every Friday morning. And they did this for 8 weeks and when those chaps left there wasn't any one of us that felt afraid of the Niger Delta. I consider that, as I said earlier, just one of the greatest experiences I've ever had.

#130 BC: How many of you were working there for Gulf International?

JW: In Lagos, there were approximately, all told, including the production, exploration and services people, there were probably about 45 expatriates.

BC: Were there any more Canadians?

JW: When I was there, Barry Whalen and myself were the only 2 Canadians. Ed Cheetah had come from this office but Ed is an American. So there were the 3 of us that came out of

the Calgary office. The chief geophysicist when I was there was Nick Syngis, who was a very knowledgeable tertiary man. But I must say that I found the Nigerian experience to be the most fascinating and interesting one of my whole career.

BC: Why did you leave?

JW: We found that in Nigeria, although we enjoyed ourselves, by enjoying ourselves I mean we really found it interesting. Norma, she was just great, she never complained once all the time we were there. I really mean that, if she did I can't remember. My daughters concerned me for one thing. Laurie was now contemplating marriage. Vicky had to go to university, she'd finished grade 12 and Anne was going to have to go to Switzerland. Even though they helped us on education costs they were quite high. It's rather, you know, sooner or later, there are things that sort of play on you a bit there. I think you get to the point where you say, maybe it's time for me to go. Because when we were there we all enjoyed the life literally, but I think things were happening now that were kind of changing that. So I thought to myself, there's a time and place for everything, maybe it's the time now for me to again.

BC: But you didn't come back to Alberta?

JW: No. One day Nick Syngis, we were having our ??? and Nick said to me, how do you like it here. I said, well, I've enjoyed my stay Nick but I think I might like to go somewhere where there are schools etc. for my children. I want to keep my family together. He said, I didn't know you felt that way but if you do we'll see what we can do for you. So he said, would you like to go back to Calgary, I said, no, I'm still adventuresome enough to not want to go back. Oh well, we'll see. So one day I was asked in to see the exploration manager and he said, how would you like to go to Houston. I said, that sounds all right. Then one day he asked me, how would you like to go to Bakersfield. I said, that sound good too, so that's where I ended up. I stayed there for 3 years Betty, until 1974. I had again, a very interesting time. It was a different kind of geology. I worked on the Vibroseis crews and worked up in Alaska because this was a very big district. I worked under a very good district geophysicist, Jim Peacock. And it was a learning experience. I really enjoyed the stay there, we enjoyed Bakersfield.

#181 BC: Why did you leave California then?

JW: Again, it became a matter of economics. My children had to go to university and I was a non-resident which would have cost me quite a bit of money. Had I decided to stay on I might have stayed with Gulf U.S. and this entailed some adjustment in our lives.

BC: And you have to, at that time, make a commitment I think as to whether you're going to be an American or a Canadian.

JW: Well, I felt that if I stayed there I would do this. but as it worked out my L-1 Visa was up at the end of 3 years. I could have stayed on but then I began to think of my pension and my retirement and I thought it would be advisable to come home. So we returned in '74. It was interesting to come back here to Alberta after all those years because now, we were digital, now we were looking at the same areas with new techniques. I found that it's funny, it's a learning process and if you work under good people in the industry, it is of great advantage to you when you come back and look at things again. Having worked,

there's no relationship between tertiary and Alberta but having worked with Paul Howell I began to look at things differently than I had from an interpretation point of view. I found that I could look at things differently now in Alberta.

BC: So you were really like a whole fresh person coming in.

JW: And I was assigned back into the reef country, which I had been working on since '48, literally. I was looking at all these reef areas again, I was going into old areas that I'd looked at. . .

BC: Did you find any new data in looking at it different ways?

JW: Yes, I did. I didn't mind going back into these old areas Betty, because now I could look at them with the new profiles, the advantage of the digital system, and I kind of looked at in a sort of fresh way.

BC: Can you think of any particular area that you had been passed over with old data and now . . .?

JW: I can, I don't think I can mention names really. But I know that I looked at one area in a different way and the new profiling did help us to find something in it, a reef area. So it did pay off. I could look. . . I can't explain it but it gave me a different interpretive way of looking at things. I enjoyed being back here. Then I worked in the plains mainly, then about 3 years ago or more, I was asked to go into the foothills. Then I went into the foothills and I went in there principally because I had not worked the foothills and I thought, this sort of closes the loop. I've looked at all these different types of structural aspects and stratigraphic plays and this kind of completes my learning process. I worked in there under Case Boss, who was a good foothills man. I worked along with Gordon Houston, who was one of the best geophysicists I've ever known. We had a very brilliant young geologist by the name of Doug Gardner, a young PhD, who I consider to be, for his years and experience, a real giant in the business. He's got a tremendous future. He's imaginative, not narrow minded, innovative, creative, he's a brilliant young man. So I worked with these people in the foothills. I ended up working in northeast B.C., on some terribly poor data and then one day I decided, maybe enough's enough and decided to put in for my early retirement. And the company consented to this. I thought it was a nice time to go because B.C. was quiet and I could get the packages all in order. I left messes behind but at least they were in neat packages.

#247 BC: During your career in geophysics Jack, did you find the fact that you did not have a degree a detriment in your career progress?

JW: I don't think so. I'm only talking about the intellectual side now, I think if I had to advise some young person I would say, when you get into these big companies you will have to make a choice somewhere along the line about which path you're going to go on. If you don't have formal schooling that fits this profession, if you go the technical route you may rise up to a fairly high level but I think sooner or later it catches up to you and it presents a road block.

BC: Did you find that the road blocks for you, not intellectually, I mean in your career because you did not have it?

JW: I wouldn't like to say this but most people who are evaluating you will say otherwise. But



I think if you have a computer that sorts things out just by, okay, we need a PhD for this job, he's got to have this and this and this and it's documented, you're not going to drop out of that box are you. I think sooner or later it will catch up to you. I went the technical ladder, I rose up to be a technical specialist, which for me, I was very happy. I'd done better than I had ever expected Betty. But I believe that was probably for various reasons, who knows, I'll say that's where it ended for me. But had I gone the managerial role, I think most companies, big and small, demand a certain amount of prestige related to these top jobs. It is an extremely rare individual now, I think you could have done this years back when I was. . .

BC: If you were 20 years older then you are now, starting in the business in '28 instead of '48.

JW: I think that's over with now but I would say that technically, I found it an advantage in many ways. Because I had to be more humble about my approach to these things and I always found people who were willing to teach me. I found that in the long run, as far as the work and doing the work was concerned Betty, it wasn't really a detriment.

#295 BC: No, it wasn't as far as the work was concerned.

JW: But as far as the progress, I would say, you pay a price because it will only go so far. And management changes. I mean, gosh you know, if you don't have these requirements of schooling and that sometimes you can get along with certain managerial levels who understand who you are and what you can do and they won't deter you. But if you get a managerial role being changed and they don't know who you are then you could pay a price because they just automatically say, he doesn't have the background. But I found most people generally, once I got working with them, I would look back and say that I never ran into a person who held me back because of lack of schooling or anything like that.

BC: Who would you say you were most impressed with in your years in the oil, can you pinpoint anyone whom you feel has contributed, not just to yourself but to progress in the oil patch of Alberta?

JW: I would have to rate George Blunden right at the top in Alberta.

BC: Did you work closely with Stan Pearson?

JW: No, I didn't but I knew Stan because of his relationship to George Blunden. He worked as a computer for George, started out that way I think. I may be fibbing on this but I think, you know, he knew George, George had had a little more experience or something and Stan had, he knew George. So when George had opened his little office with Northwest, Stan would come up now and then, they would go out for coffee. So I ran into Mr. Pearson through George Blunden. I didn't work with Stan at all, he was too high up and I was always down at the bottom. But George Blunden I have to rate as the one who helped me the most and I think who made major contributions to the oil industry here, as a geophysicist and as a manager. I always thought very highly of Earl Mahaffey. Earl Mahaffey was, I always considered to be a very sound technical person who was an excellent manager. Paul Howell, internationally, well, I rate Paul as the #1 oil finder that I've known. He really made contributions to Gulf in that respect. And Jim Peacock, again, I would rate him along with Earl Mahaffey as a technical person and as a managerial

person. So I worked for really good people. And I can't forget Fred McConnell, because Fred was a really personable, fine person. So all these people helped. And I can't forget old George Deebler who gave me my chance in BA. I figure that George was a very gruff man but a very honest man and I think, was, in the days of paper records, could have been one of the best old time geophysical interpreters that I have ever run into. So my education was working with good people Betty, I guess I'll conclude on that note.

BC: Thank you very much.