

PETROLEUM INDUSTRY ORAL HISTORY PROJECT  
TRANSCRIPT

INTERVIEWEE: Norman Jones

INTERVIEWER: Tina Crossfield

DATE: July 2001

TC: It is July 23<sup>rd</sup>, and we're at the home of Mr. Norman Jones and my name is Tina Crossfield. Mr. Jones maybe you'd like to say something and I'll check the tape.

NJ: Fine Tina. Well, I was born in Lethbridge, Alberta, July 2<sup>nd</sup>, 1927.

TC: Okay. So could you tell me, you've already told me where you were born, the names of your parents?

NJ: My father was Stanley Jones and my mother, Rosalie.

TC: And were they also born in Alberta?

NJ: No, they both came from England. Dad from the small county of Oakham, Rutland and mother was born in London and very proud of it. As usual.

TC: I think most Londoners are that way. When did they come to Canada?

NJ: After the Second World War, 1922.

TC: After the Second World War?

NJ: Pardon me, after the First World War, 1922.

TC: Okay, that's good. And do you have brothers and sisters?

NJ: Yes, I'm the youngest of three in our family, two brothers, one, Stanley Gordon and the middle brother was Geoffrey Charles.

TC: All boys.

NJ: Yes, three boys in the family.

TC: You said you were born in Lethbridge, were you born on a farm?

NJ: No, I was born in the Galt Hospital in Lethbridge.

TC: What did your dad do?

NJ: My dad was a city fireman and mother was just a domestic engineer.

TC: What do your brothers do?

NJ: My one brother, Geoffrey is deceased. He worked at the . . . well, he was a career Navy man for 21 years and then he went to work in the Aero Astro Space at Stanford University. And he was involved with the linear accelerator and later on, when they designed the new circular accelerator. My older brother Stanley graduated from the University of Alberta with Honours Physics and attended Stanford University for his Masters degree. He came back to Canada and worked for the National Research Council in Ottawa til his retirement and he presently lives in Calgary.

TC: Could you outline your schooling?

NJ: I of course, took all my common??? education in Lethbridge but I graduated from Lethbridge Collegiate Institute, LCI, as it's commonly known, with a high school diploma. Subsequently I did not go to university, I took correspondence courses from International Correspondence Schools in surveying and mapping.

#042 TC: Who offered those courses at that time?

NJ: It was ICS as it was known then, International Correspondence Schools. I don't think they offer technical courses anymore, I'm not sure. I've seen some of their advertising and it's mostly commercial and computers and stuff now I believe. But at that time they offered quite a number of technical type courses. So that was where I got my start into surveying and so forth.

TC: Was that difficult to learn that material?

NJ: No, not really. I enjoyed doing the home studies. When you say was it difficult, it carried on into when I started into my seismic career, so I was working sometimes in very poor conditions, gas lamps and that kind of thing. Because we were in small communities, like Mameo Beach where there was no electricity in 1946. So it did become quite difficult to complete but nevertheless it was done.

TC: So were you doing those courses when you were working?

NJ: Yes, I should go back a little bit, I got ahead of myself. When I left high school I went to work for Byrd Construction Company in Lethbridge and that's where I, I was apprentice carpenter at that time and I, as part of my apprenticeship I worked with a surveyor by the name of Lou Krueger, who had been involved with seismic work in Saskatchewan when he was going to university there. It was Lou who got me interested in surveying and told me that he didn't think this construction industry was for me and asked if I would be interested in joining a seismic company. At that time Heiland Exploration was working out of Lethbridge and Lou had worked with the Party Manager on the crew at that time so he had a bit of an in there and was able to get me a job as a helper on the seismic crew.

TC: Is Lou Krueger still alive?

NJ: I don't know, I've lost contact with him. He went back to Saskatchewan and I really lost contact.

TC: So when you started with seismic you went right in at the ground level?

NJ: Ground level, recording helper, jug hustler as they call them. That's the real basics.

TC: And what year would that have been?

NJ: That's 1946.

TC: Can you describe what that work was like?

NJ: Well, compared to today's seismic it was very primitive. We operated a 24 trace recording system, which was I guess, at that time advanced because most of the other systems in use at that time were only 12 trace. We hand laid our own cables in those days. They were made out of, as we know it today, simplex wire and they were started at 12 traces, of course, from the recording truck, going down to 1 trace at the end. And we laid those up in the field when required and they were hand taped with just ordinary electrical tape every 2 or 3 feet, just to keep them together. So it was, as I say, a pretty primitive cables to what they produce today, out of commercially manufactured. Our geophones were about the size of a quart oil tin. They were what we call oil damp and we had to change oil in those geophones in the winter and summer. When the weather cooled off we had to dilute the oil about 50% kerosene, 50% oil. Of course, in the summertime we just used straight oil. But that was the damping mechanism there, versus today's electro-magnetic systems.

#099 TC: Were the cables similar to the telephone cables at that time, like what they would have used?

NJ: No, simplex wires like you have coming out of your lamps and so forth. It's called technically, PSOJ-18 wire. It's simplex wire actually.

TC: Just for curiosity because my dad worked for the Bell for many years and he started off sort of at ground zero, stringing cables and things like that.

NJ: Oh yes, well, Dad, when he first came to Canada, worked for AGT for awhile before he became city fireman. So he was out riding the posts and doing cable repairs and stringing cable. But that got a little rough in those days, sleeping in cow barns and whatnot. When they were out in the country in those days, they slept anywhere they could, in barns and ate at farms and that kind of thing. So that's one reason he left and moved into the city as a fireman.

TC: Which territory were you working in?

NJ: I started in Lethbridge, the crew was working in Lethbridge at the time and we stayed there for approximately 6 weeks after I started. One kind of look on the lighter side, when I first went to work for Heiland and of course, as you know, Lethbridge is the windy city, and wind really bothers seismic recording. So the first day mother packed up my lunch box and off I went to report for work at the garage where the trucks were stored, at 7:00 and well, the first day was too windy, the second day it was something like the drills were having difficulty so there were not enough holes available for us to really go out and do a day's work and I've forgot whether we went to work the 3<sup>rd</sup> or 4<sup>th</sup> day but every time I would arrive back home with my lunch pail my dad wondered if I had a job. He'd never heard of anyone getting paid not to go to work. So that was kind of a little on the lighter side of things the way they were going. But in those days we dug the geophones in as they say. They used what they call a sharp shooter shovel which is a very narrow spade, short handled narrow spade, sharply pointed. And we dug the geophones in to stop the wind noise and so forth. And those phones probably weighed, I don't know, well, they were heavier than a quart oil can so when you were out carrying them you probably carried three in each hand. And at that time, most of the time we were shooting what the call mile correlation. In other words a shotpoint every mile, you'd lay out your spread 12 traces either side of the shotpoint and shoot every mile.

TC: Was this fairly close to roads?

NJ: Oh yes, we were on roads. We were on roads all the time. We were down towards Stirling as a matter of fact, working for Imperial Oil.

#146 TC: So Heiland was hired out by. . .?

NJ: Contracted by Imperial Oil, that's right, yes.

TC: How long did you stay in that position?

NJ: Through to the summer of '46, about four months. We had moved from Lethbridge up to Okotoks for a short job, shooting a line out in Turner Valley between New Valley and Calling Valley if I have my names correctly, for Imperial. And this was done on continuous shooting, rather than mile correlation shooting. And after completion of that job we moved up to Mameo Beach, which is on Pigeon Lake, west of Wetaskiwin. And

we were, then again, shooting just mile correlation until we were assigned the detail work at Leduc. So we were following up a lead I guess, from Imperial's reconnaissance shooting. They saw something happening on their mile correlation shooting and because they only had 12 trace instruments it was at that time, with Carter Oil, it was easier to send a Heiland crew, which had 24 trace instruments and we could do the detail work faster and less expensive.

TC: So it's double.

NJ: Well, yes, if you can feature it, with a 12 trace recording system they would drill a shotpoint, they would have to shoot it to the east and then pick up their spread and move it and shoot it to the west, then go to that next shotpoint and shoot it back to the east. So they had to double shoot every hole and if they lost that hole they'd have to drill another hole of course so that they could record the spread. So with shooting with 24 trace at that time, we could leave one set of geophones in, pick up both cables because they went from 12 traces to 1 trace, lay one new set of geophones and reverse the cables.

#185 TC: How large was your crew with Heiland?

NJ: We had a recording crew, 4, shooting crew, 2, and three drill crews of 3, 9, so that's what, 15 in the field. No, survey crews, 2 in the survey crews, so there would be about 17 field personnel. And there was a Party Chief, Party Manager and a computer in the office.

TC: Who was your Party Chief?

NJ: Jim Ziegler. I think Jim is, the last I spoke with him, was about 18 months or more ago when Aubrey Kerr was doing his book, The Road to Leduc, I consulted with Aubrey somewhat on some of the history of the shooting as we're doing now of Leduc. And I talked to Jim several times on the phone, just to verify our thoughts and make sure we were. . . because there's a lot of people take a lot of credit for discovering Leduc. But I can assure you that Heiland did the detail work and it was Jim Ziegler that took the maps that we made. I was in the office computing at that time. I had moved from the recording crew into the office as Jim's computer. So I know first hand that he took the maps to Calgary, to Imperial's head office and consulted with the Chief Geophysicist and his staff at that time, on picking a location for the Leduc #1 well.

TC: Is Jim Ziegler, does he live in Calgary?

NJ: No, he lives in Lethbridge, that's where I last spoke to him.

TC: And he's well?

NJ: Well, he was then, yes. I haven't heard anything of Jim since then. So I don't know how his health has held up or whatever, but at that time he was in pretty good shape, yes.

TC: So there was already something interesting to see in seismic around the Leduc well.

NJ: Yes, what we could see on the records was a halo effect over, of course, we didn't know it was reef at that time. D-3 reef had not been discovered or I don't believe, it outcropped in the mountains but I don't believe anyone knew they were drilling for D-3 reef when Leduc was discovered. Of course, I wasn't up on all the technicalities at that time, I was just a junior. But with the recording instruments we had at the time we saw a large burst of energy, I can kind of describe it, this is what a record looked like back in those days, this is a 100% record. It has more traces, we just had 12 traces each side, this has 24. But

we had a big burst of energy come in at what we call the lower Cretaceous level. And because we didn't have suppression on the instruments that they do have now, they never did recover to accurately record any data deeper than that. In other words if you saw a big burst of energy like this you wouldn't see this down here, you would record that and the instruments would just keep vibrating, they wouldn't shut back down. Now we have pre-suppression to quiet the front end and suppression on the instruments and the electromagnetic damp geophones are of course, an improvement over the oil damp. I mean, it was just the viscosity of the oil that stopped the geophone from resonating all. . So you can have that if you wish. I don't know whether it's of value to you.

#247 TC: Wow, is this your only one?

NJ: Oh yes, but I have no need for it. In fact I'm happy to be able to pass it on somewhere. I've forgotten where I got it from but it's what a record looked like back in the old days, a 48 trace.

TC: This is amazing. So it was the surface of the plastic was scratched.

NJ: Here? This is just made up from somewhere, this isn't an actual record, that's just what it looked like. They were paper, they were recorded on Kodak film but that's just something to show, if it's of any value, I doubt whether it is because you've probably got lots of paper records, which are more authentic.

TC: But I've never seen something like this before. Okay, so now Heiland is h-i-g-h.

NJ: No, Heiland. They had three crews in Canada at that time.

TC: Were you near the Leduc well in '47?

NJ: No. We were back in Mameo Beach actually. We stayed there until, well, Leduc was discovered what, February of '47, I think we stayed at Mameo Beach until May or something like that, of that year.

TC: But the news of that must have been pretty exciting.

NJ: Oh yes, it certainly was. We were told we had, well people that came out to Mameo Beach in the summertime, we made friends with some of the people there and this one fellow became a stock broker overnight, when all the little Leduc companies started up, East Leduc, West Leduc, Central Leduc. And he said, you guys should buy stock, it's 25 cents and I'll even forgo my commission and you'll get it for 22 1/2 cents or something. Did we buy any, no. We're skeptics.

TC: So after Mameo Beach, where did you go then?

NJ: Oh lordy, we could go on. We moved into Edmonton for some time. I've forgotten how long we stayed there now, probably around 6 months and then we moved out to Seba Beach at Lake Wamoo and Party 3 broke up at that time and I was transferred to a crew at Fort Saskatchewan, which was shooting in the Redwater area. That was about October I think, I went over there and it was shortly after that that we heard of Century Geophysical coming to Canada. The assistant observer and myself went in for an interview into Edmonton with the Vice-President of Century at that time, Jack Hanley and he offered us positions with substantially better pay and of course, with a new geophysical company moving in, more chance for promotion. So both of us hired on with Century and ended up in Grande Prairie.

#316 TC: That would have been about '48, '49.

NJ: No, that was in November of '47. Yes, still '47, oh these moves were quick. We didn't stay in one place very long. November '47 I joined Century and I was made. . .well, I guess I should go back for a minute. I was in the office for awhile then I went back out in the field with Heiland as a rodman and that's the position I was working in when I went to Fort Saskatchewan. Century offered me the surveyor's position in Grande Prairie, so that's one reason why I took the job. I only stayed in Grande Prairie until April of 1948 and as I mentioned previously, Century was very rapidly expanding into Canada. They had a second crew already working out of Olds and I was sent down from Grande Prairie to manage the third crew, which was Century Party #9.

TC: And that was in Olds?

NJ: Yes, in Olds.

TC: Where was the head office of Century?

NJ: The head office for Canada was in Calgary but Tulsa, Oklahoma was the home office.

TC: As a surveyor would you then have been in charge of the. . .?

NJ: Just responsible for the lay out of the field work, and doing permitting from the land owners if we had to go on their land and running the elevations.

TC: Was that difficult, dealing with the land owners?

NJ: In those days, no. And when we were in Grande Prairie we were doing mostly road work, there was the odd time you had to ask a farmer if you could go into his field but it wasn't like we were doing cross country work at that time, like they're doing today. So it was, no, it was quite easy. In fact in those days the farmers were glad to see you, and often fed you lunch. Especially in the wintertime when the bulldozers opened up the roads and they hadn't been able to get out of their farms for weeks on end and they saw our bulldozer and they were happy to see us. So I didn't stay in Grande Prairie very long, from November to April of '48 and then I, as I say, with Century expanding rapidly I was moved to Olds as a Party Manager in 1948. That was their third crew in Canada at that time. They brought a second crew up . . .

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Tape 1 Side 2

NJ: So as the new crews arrived I seemed to take them over and break them in or something, I'm not sure what.

TC: Would those have been Canadian men?

NJ: Oh yes. Well, there were some American personnel but mostly they tried to hire Canadian people.

TC: But the majority would have been. . .

NJ: Canadians, oh yes. Most of the field personnel were Canadian, some of the interpretive staff, the Party Chiefs at that time and some of the Chief Computers were American. But by 1948 we had started to train quite a few Canadian personnel. There were crews around, like Gulf I think had started up their own crews by then, there was Canadian

Exploration, which is Cec Cheshire, I've forgotten when the crews all started coming to Canada but there were a number of places to select personnel from. They were all looking for a better deal of course.

TC: Would some of those men have been returning from the war, looking for work?

NJ: Oh yes, some were. We had several veterans on the very first Heiland crews, not so much later on but on the very first Heiland crews we had, our assistant observer had been in the RCAF and some of our recording helpers and various drill helpers had been in the Army and so forth. So they were all, as you say, looking for work, or something better than they were doing. Because seismic didn't pay all that bad at the time, we started at, in those days, about \$135 a month at the lowest position, as a recording helper. And when we worked these various jobs, like moving for a short time to Okotoks we got what the call, hot shot allowances and things like that. So when you got an extra \$5 a day, in 1946, that bought you a lot of good meals and so forth.

TC: Where did you live in these places?

NJ: Well, in Olds we lived at the Willingdon Hotel for example. When we moved to Mameo Beach we moved into a little motel just wood sided little cabins, and there were three or four of us to one of these little cabins. Then when winter arrived of course, we had to move out of those and we tried to find something a little more substantial but nothing was insulated for winter. I mean, people didn't spend the winter at the lake in those days. But we had a place that had at least, building paper on the inside of it but it used to frost up all night. We had sleeping bags of course, but in the morning you'd get up and throw a few sticks of wood and a half gallon of kerosene on the airtight heater and have it blow away until it warmed up enough to get up. So we managed. And then later on we were able to find a log house, which was substantially better for that winter. But we lived on a lot of elk meat and stuff because Jim Ziegler and his wife at that time, Bess, were great, real good hunters, loved the sport. They were divorced after that. So they were a big provider of our meat because everything was closed up at Mameo Beach in those days. There was one little store open called the Bright Light and that was about it. So to buy any kind of groceries we used to send somebody in once a week, into Wetaskiwin with the pick-up and bring back a load of supplies, including the beer.

#-47 TC: Was there a cook?

NJ: Oh no, we all cooked our own meals. No, no, we weren't living in a camp. No, we were just struggling on our own.

TC: Really nothing organized, you were all for yourself.

NJ: No, just all on our own. The summer that there were two or three married couples on the crew at that time, the wives were good enough, they would go over and start a fire in the stove for us, knowing we would be in from the field around 6:00 or so. And so things would generally be warmed up at least, when we got home and you cooked up your dinner and so forth. It was primitive but we survived.

TC: What about the instruments themselves, how did they function in the cold?

NJ: They were in a doghouse and we kept the doghouse heated at night. They were in an insulated. . .

TC: I'm always curious how equipment behaves through temperature change.

NJ: Well, in the summer, the Arctic conditions, it doesn't do very well. I've seen things in the Arctic, I'm getting quite a ways ahead of myself here but I've seen ??? in a drill just twist off like a piece of spaghetti, the cold weather. You know, when it's 65 below metal crystallizes and as much as you try to warm it up and whatnot beforehand, you don't always accomplish what you want to do. But as I say, I'm getting way ahead of myself there.

TC: Okay, I think we're still in 1948.

NJ: Yes, we are and we're just with this party I led and we moved from, oh various places, to Medicine Hat, to Empress and Cessford, when I say Cessford, we stayed out at the Forester Ranch, which is on Berry Creek. And of some interest, our office out there for the crew was the RCMP barracks, on Berry Creek, which is now in Heritage Park, it's the RCMP barracks that is in Heritage Park. That came from Berry Creek, out on the Forester Ranch, west of Cessford.

TC: That's interesting. So you can go and visit it sometimes.

NJ: Oh yes, I've been over to the park. It's still the same as it was, the leg irons are still in the wall and so forth and they were there when we had it as an office, so it hasn't changed much. And I guess what I omitted was, when we were in Medicine Hat I became, instead of working as a Party Manager, I went into the office again as a Chief Computer. I worked at that until I took out my first crew on my own as a Party Chief. From Cessford we moved up to Kilm, in 1949. That was in the fall, I think it was right at Thanksgiving, 1949 we went there. And in the spring of 1950 I took out my own crew as a Party Chief. We ended up on the 27<sup>th</sup> base line, on the Mackenzie Highway, which is just south of the present site of High Level. We were working for a company called Bear Oil, which I don't know if many people remember. It was an exploration arm of I believe, Pacific Petroleums. And that year I did various things, that was quite a short job in the summer and I bounced around down to the Swan Hills and various other places, as a Party Chief on crews.

#099 TC: You must know Alberta like the back of your hand.

NJ: I've been most every corner on it. Yes, from up to Lake Athabasca, to the four corners, to what they call the Three Corners area of B.C., Alberta and the Northwest Territories and everywhere in between. So I guess the next major stop was in 1951 and I took a crew to Fort Vermillion in May of that year. We were working for Hudson Bay Oil and Gas Company, Lindy Richards, L. J. Richards was the Chief Geophysicist for Hudson Bay at that time. We kept an office in Fort Vermillion for the reason that, we were out there in a tent camp, without lights, without electricity, without refrigeration, in the middle of summer. So we kept this office in Fort Vermillion so as the cook could come in when the supplies came in from Peace River all the way to Fort Vermillion, he could come in to fort Vermillion, cook up all the meat and everything, stuff it in garbage cans and seal it all with wax paper so as the blow flies couldn't get at it. And then we'd take it out to camp on the back of a Fordson tractor and bury it in the muskeg to keep it cold. We've often, a lot of the fellows have referred to that job as not a seismic project but it was an

experiment in how much the human body or spirit could take. I sent people out with mosquito bites so bad that they just were allergic to them, they swoll up and whatnot. So I was there from May till September that year. My eldest daughter was born while I was up there in July, so I didn't see her till I came back in September.

TC: Did anyone get sick from the food?

NJ: Oh no, we looked after it well.

TC: So it was perfectly good eh?

NJ: Oh yes. We had a good bush cook and he knew how to look after things.

TC: I've never heard of that, burying it in the muskeg.

NJ: Yes, we buried the garbage cans, you know, so that they were just above it like that, and the muskeg was cold. So it kept it, just like a refrigerator almost.

TC: When did you get married?

NJ: 1948.

TC: That must have been, well, I would think that would be hard, to be married and out on the field crews and gone quite a bit.

NJ: Well, once you have a family of course, it's a little harder. But we moved around quite a bit with a couple of the kids through places like Ponoka, Lacombe, Fort Macleod, Claresholm and Lethbridge. And that's where I left Century and at that time, I was their oldest Canadian employee with Century Geophysical. And I left there early in August of 1956 and I joined Sinclair Canada Oil Company as a senior geophysicist. And at that time, Sinclair, the name escapes me but they bought out a company here in Canada and I can't for the life of me think of the name. Every once in awhile it comes to me but right today, I just can't think of the name of it, but it greatly expanded Sinclair's operations in Canada at that time. And we had a lot of farm out properties in Alberta and northeast British Columbia from Pacific Petroleums. So I pretty well, as I say, as the senior geophysicist I supervised our contracted field crews in Alberta, British Columbia, southern Saskatchewan, and at that time, of course, I was responsible for making all the interpretations, like the well recommendations.

#162 TC: Was that an easy transition for you, to be Party Chief?

NJ: Oh yes. Because I had, well, as the Chief Computer on the crew, if the Party Chief was away you kind of manned, and having been a Party Manager, those responsibilities were part of the Party Chief's responsibilities. They did away with the Party Manager's at that time, is why I went back into the office as a Chief Computer. And so having had all the field experience and previous computer experience way back with Heiland, it wasn't a difficult transition, no. And of course, in 1956 I was very happy to move to Calgary and get settled down and stop this nomadic life. So we've resided in Calgary since and if Maureen??? comes out, she's not my first wife, my first wife passed away in '67.

TC: Was she ill?

NJ: Yes.

TC: Okay, so was Sinclair, what were your duties as senior geophysicist?

NJ: Well, as I said, I supervised all the seismic crews, I made interpretations from all the field data, recommended wells.

TC: That's right, I already asked you that.

NJ: And I also acted as the Chief Geophysicist at that time, in his absence. So we were quite successful in increasing the company's reserves in northeast British Columbia, and Gold Creek particularly in Alberta at that time.

TC: Were there some geophysicists that had gone through U. of A. and U. of C.?

NJ: Oh yes. Well, I don't think they offered actually a degree in geophysics at that time, but they came out at electrical engineers and various other degrees, that fitted in with the geophysical industry, and geological degrees. I don't think a lot of the . . . I think a lot of Canadians went down to Oklahoma and took geology and geophysics back in those early days. And the Colorado School of Mines was another famous school for geophysics. They offered great geophysical courses.

#204 TC: My understanding though is, that the industry was moving so quickly that it had really the best technology and that if you studied at university, they were a little bit behind. But if you wanted to be where the action was, it was in the industry.

NJ: Oh yes, I would say so. Well, in '54 they started with, about then, I think it would be '54 we started with magnetic tape, '53, '54, somewhere back there. And there was a company called SIE that had . . . we recorded just our analogue data on magnetic tape and at Century we used a large drum type system, it was called, oh, Magnadisc System, and I know we worked with that when I was down in Fort Macleod as a Party Chief and that would be in '53 or '54, we installed that magnetic disc. So everything started going on tape that early but in an analogue form and they're since converting a lot of that data to digital. There's ways they have of converting it in the processing centres, there's companies set up to do nothing but that, to convert data from analogue to digital in today's market.

TC: So there must be reams and reams of data, from all of the work that took place.

NJ: Well, that's true and some of it can never be duplicated because of areas building up, new regulations, you know, you can only shoot so close to creeks now and in the forested areas, you're a certain distance from farm houses and wells. You know, the restrictions were put in place to prevent damages so you just don't go helter skelter around the country like we used to do, blowing, spraying people's clothes and stuff with the shot. I remember once down in Lethbridge with the wind blowing or down at Stirling we had a lady with her washing hanging out on the line and we shot the shothole and the spray came out, which it does, from the drilling mud and so forth when the charge goes off, just carried all over her washing. We laughed like the devil, we thought it was a great sport. I'm sure today you'd be paying dearly for a trick like that but back in '47 or '46 I guess it was. So anyhow, maybe they have restrictions in place, for our acts back then.

#249 TC: It's interesting because I was sitting at a small display in Okotoks on what Okotoks was like during the 20's, 30's and 40's, you know, sort of the heyday of the Turner Valley field. And I thought it might be nice to have a piece of seismic to put up on the wall and one of the fellows that has been helping me out said, you'd be really lucky to get a piece of that because it's still very valuable.

NJ: Oh is that right?

TC: Yes, the old pieces of seismic data are very valuable.

NJ: Gosh we had some when I was at Sinclair that was shot in 1922 I believe it was, down, just north of the border, around Twin Butte, some place like that. It was shot by GSI. Old, old data from the 20's, I don't know, it probably got thrown in the garbage, I don't know what happened to it.

TC: But it's as you say, it depends the area, if the area is interesting.

NJ: Yes, but to duplicate a record or something, that's not a big deal. No, you should have been able to find something from one of the companies back in those days. Of course, a lot of it's been all converted by now. They even took the old 100% records and transferred those on to tape by using a laser beam and actually tracing the trace with a laser beam, every trace they would trace it off and it would be converted and put on to magnetic tape. So the paper records, they caused so much storage problems and now, of course, they're putting it all, taking all the magnetic tapes and compacting it on to discs, digital formatting it and everything, just for storage considerations mostly, if nothing else. So things have come a long ways since 1946.

TC: They sure have. So we're still with Sinclair.

NJ: Yes, in '67 we kind of had a change in the organization of the company here in Calgary and I was made what they call a specialist geophysicist, whatever title that meant, I'm not sure. And I was directly responsible to the exploration manager for all the company's northern Alberta and Northwest Territories geophysical operations at that time. And coordinated the geological data supplied by the geologists and so forth and set up the seismic programs evaluate the geological recommendations. And recommended acreage acquisitions and a lot of that was up in the Rainbow, Zama days and of course, we acquired quite a bit of acreage up there at that time. We had a group which we called the SSS group, it was Sinclair, Scully and Sunray and we kind of split all that northwest portion of Alberta into 3 parts. So together, we acquired quite a bit of land and we drilled quite a number of successful oil and gas wells in Zama and Rainbow area at that time.

#312 TC: Whereabouts is that, I'm not familiar with that?

NJ: Rainbow, you know where High Level is on the Mackenzie Highway, Rainbow's west of High Level and Zama is north of that, towards. . .

TC: Oaky, that's the region.

NJ: That's the area, right in the northwest corner of Alberta. And in June of '69 Atlantic Richfield Company bought out Sinclair in Canada. I guess they bought them out North America wide actually. So I was offered a job there at substantially less pay and a less responsible position so of course, I bid fond adieu.

TC: I need to backtrack for a second, Sinclair was a Canadian company?

NJ: No, the head office was, Sinclair Oil Corporation was based in New York, Sinclair Oil and Gas Company, which was the production, exploration company was based in Tulsa, Oklahoma.

TC: Okay. And it had a Canadian office?

NJ: Yes, then it Sinclair Canada Oil in Calgary.

TC: Okay, so it was bought out by Atlantic Richfield.

- NJ: Atlantic Richfield, in 1969. As a matter of fact, I had already been contacted and offered a new position with the French Geophysical Company here, CGG, which is, if you want the name, Compañie General de Geophysic. I can give you a copy of all this if you. . I have it written out here. And I was hired as the sales manager for their crews, they were a geophysical contracting company and I was hired as the sales manager here in Calgary.
- TC: Were they from France?
- NJ: Yes, the head office was in Massie, France. The manager of the company at that time was Lucien Frion. And a fellow by the name of Maurice Eidness was the operations manager.
- TC: And Lucien?
- NJ: He was the manager, he was the Canadian branch manager for CGG.
- TC: That's the first time I've heard that name pop up.
- NJ: They pulled out of Canada, they operated North America wide from Houston, Denver, various places. They're a large international geophysical company, CGG. They also have a manufacturing arm called Serscel, and they also have a large processing centres called Geo-Digit, somebody may have mentioned those in there.

End of tape.

Tape 2 Side 1

- NJ: Another subsidiary they had was a company by the name of Geoterrex, which operated out of Ottawa.
- TC: Were they the only company from France that were over here?
- NJ: Well no, there were oil companies, they were the only contracting company but there were a number of oil companies, like Elf, Aquitaine, Total, they were the three major ones that were here from France at that time. So as the sales manager for CGG of course, I was responsible to contact all the companies in Calgary to try and obtain the opportunity to bid on their field operations and calculate the crew costs and supply the quotations to the clients and well, just general duty of keeping an update on who was who, at what company, you know, updating the client lists and their representatives. Of course, tried to assemble information regarding other companies and market conditions and competitive rates and all those sort of good things. And then of course, we tried to promote the services of our subsidiary companies, the processing company and Geoterrex in Canada and the U.S.A.
- TC: So you must have known a great deal of people in the business by this time?
- NJ: Yes. It was interesting, we used to have large Christmas parties for all the clients in Calgary, invited everybody and the President used to come over from France and I'm sure I stood in that receiving line with him for an hour and a half an introduced everybody by first name to him as they came through the receiving line. So I had a very good knowledge of all the clients in Calgary at that time. He was somewhat impressed by my. .
- TC: Was it a good company to work for?
- NJ: Yes. They were very good at times but there's only one way of doing things and that's the

French way unfortunately. When we'd come to the end of this, that's where our disagreement came to, when I left CGG, it was in the policy of how to operate the company. In 1970 I became the assistant branch manager and also the sales manager, in August of 1970 and I did all the former duties but I also assumed the duties of the branch manager when he was away, which was quite often, back to France and whatnot. And I did things like budgets, five year budgets and got more involved in the operations, coordinated the work of the operations manager and so it was a little more responsibility than I had to begin with. And in 1972 I became the branch manager. Which at that time I reported direct to the Vice-President of land operations in Massey, France. We were responsible, from the Canadian office, for all the companies crew operations in North America employing dynamite energy sources. And I'll qualify that by saying our company out of Houston and subsequently Denver, used vibroseis, so all the dynamite operations were performed from Calgary and we were quite successful down in obtaining clients in the U.S. and in working in the U.S. out of Calgary and Canada.

#054 TC: Could you elaborate on that a little bit, about the dynamite?

NJ: Well, the two methods are of course, surface energy sources, which are vibroseis and various other, but mainly vibroseis operations, where they vibrate right on the surface. When you use dynamite you're drilling holes basically, and using dynamite as your energy source for your seismic recording operations. So for those operations with CGG, from the Calgary office, we ran all those operations, no matter how far they went south in the United States, we looked after them from the office here in Calgary. And as I said, we were quite successful in fielding several crews in the U.S. which is where we agreed to disagree in the end. They wanted to remove those operations from the Calgary office because we were very successful and profitable and the U.S. operation wasn't, so they thought if they took those Canadian operations using dynamite in the States under the office out of Denver at that time, they would even things up a little bit, profitability wise within the company. I told them if they did that they would lose their clients before the ink was dry on the agreement and they wouldn't listen to me, and we did. They lost all the U.S. contracts right away. So that was kind of the handwriting on the wall for Norman and CGG at that time. However it worked out for the best. I left there in August of 1976. But I have some good memories, we made some great trips over to France and I took Maureen on some holidays with me over there. So it had its benefits as well as its tribulations. So at the end of CGG, in September of 1976, I joined Sigma Explorations Ltd. That was a company formed by Wes Rabey. Wes was the President and founder of Sigma Explorations and Sigma was basically a data brokerage company. In other words trading data between the oil companies for a commission. A company would phone up and say, we'd like some data in a certain area, they would research the files and find out that company x over here had that data, was it for sale, if so how much and then they would offer it to that company. And they would take a commission for arranging that sale of data, that was basically how Sigma started. And in about '75 or so, they got into planning and marketing what we call non-exclusive seismic surveys. In other words, what we did was select an area that we thought was interesting, or was seeing some activity by

the oil companies and put in a line, sorry, a regional survey of lines, connecting key wells and offer that for sale to the oil companies at a fairly good cost. In other words, to go out and shoot that kind of data on their own would maybe cost them 3,000 some odd dollars a mile, we would try to get 4 or 5 participants, 6 participants and offer it to them at 4-5 hundred dollars a mile. So we were quite successful in our efforts of doing that. When I joined the company in 1976 they were doing quite. . .the surveys were small in size, being about 50, maybe 60 miles, it wasn't long after . . . I was just a sales representative, I took over the department and we started to put together some large surveys, 300 miles. And they were very successful, there were surveys in the Burns??? River in northeastern British Columbia and northern Alberta, I mean we put them together all over the province. So I was the manager of this non-exclusive survey department and responsible for the research, design and marketing of the surveys to the major oil companies.

#116 TC: That's interesting that the oil companies would allow that data to go out.

NJ: What we did, what we tried to provide was data that was regional in nature. By that I mean, they were long lines of say, 40-50 miles. So it wasn't that we were detailing over someone's acreage and giving away secrets to the anomalies that they may have on their acreage, what we were doing is setting their acreage up in a regional setting for them. In other words, for example, Rainbow is in the Black Creek salt basin. So we started over in Wood Buffalo Park and ended up at the B.C. border and so that put the whole thing in perspective, you might say, geologically, for the oil companies to buy that data, interpret it and see just where the whole thing fit together in the greater scheme of things.

TC: But if they wanted more detail they'd have to go and do it themselves, right?

NJ: They'd do it themselves, oh yes. No, we didn't get into that type of operation. And we also basically tried to shoot across what we call Crown land, which was freehold, owned by the Crown and was available for the companies to go in and do, as you say, their own work on it and detail it and see if they saw something anomalous and then go to the Crown land sales and buy on the results of their surveys. So it worked well for everyone I think. So Sigma were, I think, the originators of those surveys and later on of course, we had lots of competition. People saw that it was, I think, a good business. So then later I became the General Manager of the company. I guess Wes was giving me a trial to see how I could manage the company, I retained all the above duties of the non-exclusive surveys, researching them and putting them together and marketing them and so forth. With some help from other people in my department. But he gave me, I assumed the duties and responsibilities of the day to day running of the office. So I think that lasted for probably about 6 months and I think Wes saw that things were going pretty good so he wanted to get out of Sigma and start up his own oil and gas company and of course, he had a conflict of interest by having all this non-exclusive data so he sold out the company to a group of employees, myself being the senior shareholder and I became President of Sigma Explorations in December of 1978, which we changed the name from Sigma Explorations Ltd., to Sigma Explorations (1978) Ltd. And I remained as President until June of 1987, June 30<sup>th</sup> of 1987. At that time I was about to turn 60 and I thought, while I had my health and everything Maureen and I would take up some travelling, so I sold out

my shares and semi-retired. Because I remained President for another 6 months during the transition period, until January 30<sup>th</sup> of '88, at which time, when I say semi-retired, I consulted back to the company until June 30<sup>th</sup> of 1992. So just on a kind of management consulting basis, just to help the boys out with their surveys and things like that. So after 46 years, 3 months, I retired, end of story.

- #173 TC: Well gosh, through the mid 80's and then when you were consulting at the beginning of the 1990's there were some big political things happening with the oil business.
- NJ: Yes. Right on, yes. First we had the NEP, what that was '81 and we survived that of course, with great difficulty but we did survive. Sigma, we did quite well during that time, because of the low cost of the data that we had to offer. In other words, as I mentioned, when people signed up for our surveys, to begin with, we offered it at 4 or 5 hundred dollars a mile. In the after sale market it would become 6, 7 hundred dollars a mile, maybe \$800 a mile. So it was still a good way to acquire data at a reasonable cost when the companies were really struggling during that period of time. Yes, there's been lots of booms and busts since 1946 in the oil patch.
- TC: That's right. What do you feel is your highlight, if you could go back and pick one?
- NJ: One particular thing? Well, I guess mostly when I was with Sinclair, doing geophysical interpretations and making well recommendations. To see a successful well drilled gave you a great thrill. Mind you we drilled some dry holes but to drill a successful well and as I say, contribute to the company's reserves and prosperity, I think, was probably, to me one of the highlights. I enjoyed interpretation and mostly I enjoyed the contouring of the maps, of the data. I think for some reason I was given a special art at that because I guess I have a good imagination on what kind of, the subsurface should look like. So I did some fairly good interpretations.
- TC: You were a natural.
- NJ: For some reason or another, I remember when I was with Century and working for Sinclair down in Fort Macleod we were shooting all the way from the St. Mary's Reservoir up across the Blood Indian Reserve. We ended up in Stavely, over as far west as the Peigan Reserve and beyond Lethbridge up to Picture Butte, a big area like that. But in one area which is called the Spring Coulee anticline, Amoco took a farm out on our acreage from Sinclair and did a lot more shooting and so forth. And I was told by the manager of Century Geophysical who actually did the work and was a good friend of mine, Pete Bediz, that when Amoco did all that infill shooting they hardly had to move a contour on the map that I had prepared for a lot less data. So that was very gratifying to hear. So as I say, I enjoyed the interpretation and drilling a successful well, that was probably as gratifying as things can get for you.
- #223 TC: And I guess, your greatest contribution?
- NJ: Golly, I don't know.
- TC: You don't know. It might have been exactly what you just told me.
- NJ: Yes, I guess so. I would think yes, contributing to the reserves of the company and so

forth, I think that's probably the highlight of the way things went in 46 years. If somebody asked me if I would do it over again, yes, I would but not in today's conditions. The old ways were far less stressful.

TC: You would probably leave out Fort Vermillion maybe.

NJ: Yes, a few things like that. But no, we all had a lot of fun, we worked very hard and there were days when we played very hard as well. So I have some very fond memories of the geophysical industry. It's of course, provided us with a very good retirement so what else can you ask for, as long as you have good health.

TC: Tell me about your children.

NJ: Maureen and I have 7 children. I have 5 children, the eldest son is Stephen, then came Diane, Mark, Greg and Catherine. Maureen's children were Virginia and Cody. Virginia unfortunately is deceased, she had cancer and passed away about 4 years ago now I guess it is. Left a big vacancy in our life.

TC: I bet it did, that's pretty sad. Did any of your children go into the oil field?

NJ: They all worked, when I was at CGG and they were going to school and high school, of course, they all worked for me in the field. Our eldest son Stephen probably did most work. He spent a lot of time in the Arctic with CGG, we did a lot of Arctic exploration work. We used helicopters and portable crews on the ice in the Arctic and Steve, one summer, went up there in May when university was out and ended up staying there until he went back to school in late August, September. These aren't very good pictures but they show, this is a little portable seismic camp that CGG used in the Arctic and of course, we were supplied by Hercules aircraft. Here he is riding a barrel in the Arctic Ocean. He worked all the way, as far north I think, as a seismic crew's ever been, up in Ellesmere Island.

#271 TC: What did he do?

NJ: He was a shooter at that time on the crew.

TC: Did he stay with the oil business?

NJ: No, Steve graduated with a Bachelor of Education degree, Bachelor of what else, I've forgotten he's got three degrees, one's religion, one's education, I guess a BA as well. And he's a Vice-Principal in the separate school system. This is what the camp looked like then. This is an old portable recording cabin, you can see where it slings underneath the helicopter. This is something I comment on, when I was at Sinclair, we did an experimental, what we call dynoseis operation. This was a portable system, the Sinclair tried to push this as an alternate energy source in remote areas where you couldn't get in with track vehicles or whatever. It was unfortunately, the experimental work was being done just before the takeover by Atlantic Richfield of Sinclair. So I think the thing kind of died a natural death. So whether it would have been successful or not, who knows. But it was certainly an alternative to seismic sources at the time. I don't know whether any of these pictures are of interest or they should be kept or anything.

TC: Oh, keep them. Absolutely.

NJ: Or if you'd like to have them. Here's a picture of yours truly that appeared on the cover of World Oil, that was taken in 1948 up in Grande Prairie, north of Grande Prairie, up

towards Claremont. And they published that on the cover of World Oil magazine sometime in early 1948, in the spring of 1948. We were surveying up there. But it was posed a little bit.

TC: Gosh, you were a pretty handsome guy you know.

NJ: But that's the old plane table and allodade method of surveying there, instead of using transits and whatnot we used plane tables and allodades.

#322 TC: I don't think there's very many pictures around of work up in the Arctic you know.

NJ: Isn't there. Oh gosh, I'm surprised because people at work for United Geophysical and some of those companies, I have a very poor selection of pictures actually, if you'd like any of those well, you're certainly more than free to take them.

TC: Let's keep them altogether in the meantime and we'll be maybe contacting you later. But don't throw anything away, keep them all.

NJ: This was, Georgian ??? Supply Company used to sponsor breakfast, those were back in the days of the 50's I guess, and whatnot, that's at the Palliser Hotel. That's our table here, I think I'm sitting here somewhere.

TC: Is that you here?

NJ: Yes, and then the fellow next to me on my right is Charles Wayderman???, who used to have Big Indian Drilling Company. He was a seismic driller, amongst other things. The fellow sitting over here is Jack Desmond, who was the Manager of Wester Geophysical at that time here in Calgary. And I don't know whether you've ever had any of these come into your hand, but these were the ??? magazine was published by Geospace and the editor is Betty, used to come around and take pictures of. . oh, she'd come up to the Doodlebug golf Tournament and places like that. So there are a lot of pictures of people that were old timers in the business. This is a dress up night at the Doodlebug, we used to have a costume night. A fellow by the name of Hal Godman right there. They're all photos of people in the industry and some of them, old timers like, Harold Farney was one of the original Party Chiefs in Heiland and then started up Farney Exploration Company, Harold recently passed away. And then there's Ted Rozsa who's an ex Shell employee who started up his own company. I don't know whether you've been able to talk to any of these, Ted is still around of course, you've probably heard of the Rozsa's they're great philanthropers in the city. He and Lola, they've been around forever.

End of tape.

## Tape 2 Side 2

NJ: So there's all sorts of things like this that give a little history of the industry. As I say, if they would like to be kept in the archives I would be more than happy to donate them because they would be of interest to somebody else other than . . .

TC: I'll make a note of it, but hang on to them too.

NJ: As I say, these are more pictures of various, this is Lucien Frion as I mentioned and

Maurice Eidness with CGG.

TC: Nice photographs, very clear.

NJ: Yes, she did a good job. And as I say, these were the United people and she visited their crew in the Arctic, I think there's some pictures in one of these of their crew in the Arctic Islands. So I would think, I don't know where Hugh Rackets??? is at, he was from the U.S. and whether he's still alive or not I don't know. And some of it's from the States.

TC: Was this a short run for this magazine?

NJ: It was out for quite a while. I kept ones I guess, that were of interest to me, that had pictures of CGG in it at that time and so forth. But there should be. . a fellow that could tell you more about this is probably Art Baptie. Art lives out in Bragg Creek. You know Art?

TC: I'm familiar with him. I didn't go out to see him but we spoke on the phone.

NJ: Art was the manager of Geo Space so Art would be able to tell you quite a bit about this publication. These were some pictures of the dynoseis operation at Great Bear Lake. And I had a big coloured photo of that with myself in it up there and I don't know where it's gone to.

TC: That was the alternate energy you were talking about.

NJ: Well, it was an experimental energy source, it never materialized to anything. As I say, these experiments were conducted shortly before the take over by Atlantic Richfield Company and I don't think they followed up with any of it, so it kind of died on the table. But we had lots of alternatives, at Sigma we used what we called the hydro pulse as an energy source, which was a tractor mounted energy source and we used that with pretty good success up in the Peace River Arch country of northern Alberta. The only problem was, it gave good data results but it was just a slow energy source, slower than. . we used it in Canada and in the U.S.A. The other energy source we used was we had what we called mini-sosie crews. Now you've seen them every day in construction, they're the little whackers, compactors. And we used those in areas of very shallow, where our objectives were very shallow. And we used them primarily in areas where you couldn't detonate dynoseis or go in with big energy sources like vibroseis and so forth. They were very environmentally friendly and whatnot and we used them in a lot of portable operations. We mostly used them in the States the mini-sosie, we did southern Alberta but very limited. But we did some big jobs, portable jobs, in Michigan, in the National Forest there, where you can just hand cut lines so these worked out well down there. So we had quite long term contracts in Michigan and various parts of the U.S. for the mini-sosie. But we eventually closed the crews down and closed our U.S. operation down. They ran into one of their recessions down there so we decided to close down but with Sigma we had offices in Denver, Dallas and Houston at one time. So we're jumping all over the place.

#058 TC: We are, yes. But that's okay. Well, you think of things, things pop up. How was it working in the Arctic?

NJ: I didn't actually do any work, physical work myself because I was the manager of the company. But we tried not to keep the people in there too long, we tried to rotate them

out on a fairly regular basis, like a 4-6 weeks max in and kind of 2 weeks out, something like that. As I mentioned earlier, my son Stephen probably stayed in the longest of anyone I'd known when he stayed that entire summer in the Arctic.

TC: Would you go up to visit occasionally?

NJ: I only got as far as Inuvik. I never went to the Islands. The opportunity never presented itself, should have gone but didn't. No, I've never been to the Arctic Islands.

TC: You spent time though in the Northwest Territories, Great Bear Lake?

NJ: Oh yes, Great Bear, yes. We did work for Mobil Oil north of Great Bear Lake and that's when I mentioned having that kelly??? of a drill twist off like a piece of spaghetti, that's where it happened. It was I think about 65 below zero and it's just flat as a pancake out there north of Great bear Lake, there's nothing out there. I don't think there's a good straw stack between you and the north pole. Anyhow, it was a very, very cold winter out there but the work went pretty well. We had a few problems but nothing that we didn't overcome eventually. Living conditions, we were in trailers and we had, I don't know whether there's a picture of what they call a fold out trailer, they were Nodwells on tracks and wings folded out and make the bedrooms. You had a central unit and then two wings folded out and you had 6 bunks on each wing. Well, with those, when it got down to that 65 below we had to bring in insulation and insulate the walls another 8" and the floors and whatnot or the guys would have froze to death in them. There was just not sufficient heat in them to keep them warm. But everything turned out quite comfortably before it was all over. But I did fly into there a couple of times on Mobil's plane and whatnot to see how things were going up there. There's a picture of a fold out camp I think. You can see there's a track underneath there and this folds out and this folds out like that.

#092 TC: How did they get that equipment up there?

NJ Hercules aircraft. Yes, it was all flown in by Hercs.

TC: And was there, there must, well, I can imagine there was a real season, like before, well, freeze up and the fall you know?

NJ: Well, like in the Inuvik area we'd generally start in February. January was just too dark and whatnot to do any work pretty well around that far north. In the Arctic Islands we did most of our work in the springtime. There was no early break-up in the Arctic as we know it in the plains here so we did helicopter work especially, we took advantage of the long daylight hours starting in April, May, June.

TC: And then there's a break-up, a small break-up that happens in the high Arctic?

NJ: There is but they take the. . . I guess around on the north slope as we refer to it, or the Mackenzie Delta, they take the equipment off the tundra, it's in late April I believe. You know, they don't want any track ruts or anything because they never repair themselves or it takes ages and ages to repair themselves. So all the work is shut down. The reason we were able to still operate up in the Arctic Islands is we were heli-portable with all those operations. So we didn't have any track units on the ground or anything like that. It was slung heli-portable and just people walking with the lines and so forth so we were able to work right through the summer, as I say, we were up there till September the one year.

TC: What about snow depth up there?

NJ: Oh very little, it's almost, the Arctic is like a desert really, dry snow, very powdery.

TC: So instrumentation I guess, wasn't a bit problem reading. . . ?

NJ: No. Of course the drilling in the Arctic, when they were using dynamite was done with air because you couldn't circulate water of course, so you used air on all the shothole drills.

TC: You had to pretty adaptable I guess eh?

NJ: Yes. Of course, there were always accidents, we had one fellow on our own crew that was killed with a dynamite accident up there, which was very unfortunate but just one of those things that happened. I guess if anything it served as a good lesson not what to do. When you're loading holes that are drilled by air of course, there's no water in them, when you're loading dynamite into the hole with water you have to actually force it down with loading poles, with nothing in the hole you just kind of let it free fall. And I think what the fellow was doing, he was dragging the cap line over a nylon parka, loading it down into the hole and then it caused static electricity and set the charge off while he was standing there. So it was, I guess if nothing, it taught everyone a lesson, a safety lesson.

TC: My goodness, it's such an innocent mistake.

NJ: Yes, it was. So we've all had our ups and downs.

TC: I guess yes. Well, I want to thank you very much for taking the time out to talk to me.

NJ: You're very welcome, I'm happy to do it and I hope it adds something to the work that you're doing. It sounds like a great project with the oil industry, very good. Good success.