

PETROLEUM INDUSTRY ORAL HISTORY PROJECT
TRANSCRIPT

INTERVIEWEE: Jack Pullen

INTERVIEWER: David Finch

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DF: Today is the 28th day of February in the year 2000 and we are with Mr. Jack Pullen at the offices of the Canadian Society of Exploration Geophysicists in Calgary. My name is David Finch. Could you start by telling us where you were born?

JP: I was born in southern Ontario, David, near a town called Woodstock. I grew up on a farm near there.

DF: What year?

JP: That would be in 1927. Just before the big crash of '29 I guess.

DF: What were your parents doing?

JP: My parents were farmers, as I say I grew up on the farm. It was coming up, growing up during the Depression but of course, I don't remember much about that. We always had enough to eat but we didn't consider ourselves wealthy by any means.

DF: Could you describe your childhood, education and how you got interested in science.

JP: Well, my childhood was rather interesting too. I came from a family, single parent family before they even invented that word. My mother was a teacher in a one room public school about 1 mile and a half from where I grew up. And so I attended her school grades one through grade eight, until I went to grade nine in the high school in the city nearby I had never had another teacher. So that was a sort of a unique situation. Of course, having your mother as the teacher has got its pluses and its minuses. I couldn't really get out of line very much. But anyway, mother taught in that school for nearly 40 years and finally retired as a teacher there. That was intriguing too because she knew all the families, absolutely. She was teaching children of children she taught. I couldn't get away with anything at school but neither could they. It was really quite the matriarchal arrangement as far as the education system was concerned. After grade 8, we went to high school in the city, Woodstock, which was 5 miles away and went through high school there. That was Ontario, so there were grades 9 through 13. That we completed and went on to university at the University of Western Ontario, which is in London, which is 30 miles from where I grew up. So it wasn't until I was into geology that I did very much traveling. It was a time when you didn't really do a lot of traveling. It was in the 30's and then into the 40's. Of course, during the war you didn't travel much so when you did that was a big event.

#032 DF: What interested you in geology?

JP: That's an interesting story too because I started out in university taking a general science course because I'd always enjoyed science and math in high school and that seemed like a

good approach to take. About then I got, in university, I got to realizing that many of those rocks that I had dug out of the soil as a farm kid and hauled to the stone pile, were different. And I got to looking around in the stone pile and wondering what they were all about and so the idea of geology just seemed to flow from that. The area of southern Ontario we lived in was one where, not far from the edge of the pre-Cambrian Shield, 4 or 500 miles, close by some standards. And there were a lot of igneous rocks in the stone pile as well as some regular ones. Plus nearby, it's once again, southern Ontario, so the limestones of the Trenton group are being mined as quarry in the general area there's a big quarry near Ingersoll, which was just south of us. So that was interesting as well. And it certainly flowed into geology very nicely.

DF: What did you take in geology, obviously it was hard rock geology, not petroleum geology?

JP: That's right, although we did take some soft rock geology. I started university just at the end of the war, '46. We were very fortunate at Western to have a fellow come from Romania who was world class expert in paleo geology, he was the bug guy. He didn't know much English but he sure knew his fossils. So he lit some fire in some of the people. I never really got into the paleontology much myself but we were very fortunate at that university to have him. That was an interesting time to go to university because most of the fellows in my class were ones that had been in the war. I missed the war by a few months. I was 15 or 16 when the war ended and they had been through the war. So the attitude was not the conventional attitude of kids in university. These were guys that had been there, done that and come back for an education. It really helped us all focus on education. I think we did well there.

Video #01:06.53.23

#060 DF: Did you have field experience in the summers?

JP: Oh yes.

DF: And how did you come about that?

JP: The first year, it was after my second year of university. I was really lucky to get a job with the Newfoundland Geological Survey. This was in 1948, when Newfoundland was still a separate country. So when you went to Newfoundland you had to go to the customs and they had their own currency, coins and bills. That was the year, in fact, in the fall of that year, I think Joey Smallwood finally got Newfoundland convinced that they should join Canada. It was the Newfoundland Geological Survey that hired me but I had to pay my own way from southern Ontario to Port Avask??? Newfoundland. So economically it wasn't a tremendous success but professionally it was a tremendous success. You got the chance to get some real field geology done early on in your career. As a farm boy, growing up in . . . well, our house didn't have electricity or running water. So going out in the field was no problem at all. It was a holiday for the summer.

DF: What did you do that summer?

JP: We surveyed around North Twin Lakes in the centre of Newfoundland, just doing geological profiles. The Newfoundland Geological Survey was studying their rocks and their capability, just doing geological mapping. We had a canoe with a 5 horse motor on it and we went out on the lake in the morning and did a traverse across and then came back and wrote up the notes. It was interesting if you. . . I hope Newfoundlanders don't get

uptight about this, but we did keep track and of the 90 days we were in Newfoundland, it rained 60. So to begin with in the field work, we took the day off when it rained but we rapidly got completely bored with that and so we eventually went on. The thing that the fellows who had been there before had alerted me to was, the footgear. You had to wear, well, we used fisherman's knee high, no above the knee boots rubber boots. Because walking through anything that was bush was all wet. And your pants literally tore apart because they were constantly wet. So you had these boots up over your knees and that worked fine, that was an excellent solution to the challenges.

#089 DF: Were you just writing up notes or were you also taking pictures or drawing what you saw, tell me about that?

JP: It was essentially note taking. I was the junior geologist on the thing and mostly we were just uncovering the outcrops so that the Party Chief could do his note taking on it. We had carried big mattochs, I think you'd call them, a broad bladed thing with a long handle that you scraped the material off the outcrop so that you could examine it more closely.

DF: Now how is it you came to come to western Canada?

JP: I graduated in 1950 and the opportunities, as everybody know, the mineral industry including oil and gas, is a cyclical thing. And the mining industry was in a downturn, plus the fact that I had done that first summer in Newfoundland. The next summer I worked in the iron ore development area in northern Labrador. The big iron deposits in Labrador had just been found and a bunch of us were out there prospecting for more iron ore. The third summer, which was the year after I graduated, I worked for International Nickel in northern Manitoba, in the general Waboden??? country, looking for some more nickel. It became clear that if I wanted to pursue a career in geology it would either be field work all year around or down in a mine half the year. That really didn't appeal to me. We knew about Leduc of course, it was just three years later. So when the job finished in October of 1950, I just continued, I was in Manitoba already, so I just continued west from there and visited oil companies in Regina and Calgary and Edmonton to get a job with an oil company in geology.

DF: The name of the town in Saskatchewan?

JP: Waboden.

Video #01:12.24.14

#113 DF: Okay. And so who did you hook up with in Alberta and how did that come about?

JP: I stopped in Regina, where Esso and I think Chevron had offices but mainly, it was Imperial Oil at the time. I stopped in Regina and talked to the people there. They didn't have anything but they said, go see these people in Calgary, so I came to Calgary and came to see them. Plus several of my classmates were already in Calgary so I contacted them. They said, well, you should check with the people in Edmonton too. There are 2 or 3 companies that have their head offices in Edmonton. Which of course, actually was closer to Leduc than Calgary obviously. So we contacted people in Calgary and Edmonton and the story which I like to tell about going to Edmonton. I was hitchhiking, that was the preferred method of transportation at that stage of my life and in that era. I hitchhiked back and forth from university to my home regularly on weekends. That was my way . . . I'd hitchhike home and take the train back to London. So I was used to

hitchhiking, that was fine. I got a ride with the Chrysler dealer in Olds. He had been looking after seismic crews. This was a nice plum for him because these trucks, a seismic crew would come into town and he'd make the special effort, he worked hard at that. So he gave me a ride and we were chatting away and I told him what I was doing and he said, oh, I know some people that are interested in folk like you. There's a crew out in Edson that needs somebody like you. I said, fine I'm going to Edmonton, he said, no, Edson. He did have to spell it David. And so I hitchhiked out to Edson. The neat story about that, I just keep surprising myself, I went out to Edson and got a job on this field seismic crew. Up until then I had been a geologist and this seismic was something I was aware of but hadn't really worked at. So I came out there and got a job as a geophysicist. It seems that the cycle goes round and round. I was working there for awhile, then through my career I was back at Edson again, with my family, a little while later. Then there was another time I was doing interpretation in that general Windfall country and last year, my client said, you better do work on this Windfall country again. So I've cycled past that four times and there may be more, who knows. It's an oil rich country and a gas rich country, really.

#145 DF: So what did you do on that first seismic crew?

JP: I was a computer, a real live human computer. These were the days before magnetic tape recording at all and the only record of what you did out there was on paper. It was a long stretch of 8" wide paper with traces on it, wiggles on it created by camera and galvil and lights. The paper came in, it was developed in the field with chemicals, your usual camera chemicals. The doghouse was dark and you had a red light on and you developed the paper in there. When you came in from the field with the paper at night, it was wet, they kept it in the fixer a whole day, and when it came in, in the evening, the computer, that was me, got to take the paper out and wash it thoroughly and hang it to dry. This wide paper wrinkled, it was horrible for that, it was photographic paper and it just plain wrinkled when it dried. So you had to catch it before it got quite completely dry and roll it, just like modern photographers do, they roll it out on squeegee plates to keep the paper flat. You had to catch it and roll it up tight and let it dry overnight. So the next morning it was flat at least and you put a stamp on the top of the label and wrote all the details about it and calculated the corrections. The surveyor had told you what the elevations were and you knew all the information and you made calculations on it to allow the Party Chief, he was the big cheese out on the seismic crew, he got to do the actual interpretation. But we did the . . . plotted the first breaks, made weathering corrections, so that by the end of the day and certainly by the end of the week, the interpretation was all done. It was really interesting because you could get interpretation completed in such a short time. You could in fact, have it done the day after it was shot. And many crews, including ourselves would take those interpretations and plan the program for the next . . . not the next day perhaps, but the next two weeks would be planned in advance based on what you shot yesterday. So it's kind of a collapsing, if you like, of the cycle we have now, which is rather longer although we can do it pretty quickly now and perhaps we will again. I'm looking forward to that actually. Well, there's some technology now where the field data is coming directly to Calgary by satellite. It can get processed pretty quickly right now if you really choose to do that and it looks like it's happening more and more.

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#181 DF: What company were you working for?

JP: The company was called Geotechnical Foreign Corporation. It was a small U.S. based seismic contracting company, which had two crews in Canada and which a few years later was taken over by Teledyne. National Geophysical was one of the other companies that they took over too. There's a diagram in that history book, I think Bud Sinclair probably gave that one to you, that shows how that whole conglomeration of companies got together. It was a small company. It was interesting times too, it was right after the war and the equipment was all essentially war time developed things. The survey truck for instance, was a power wagon, which was a Dodge product and it was four wheel drive. The seismic crew was a tiny thing by today's standards, there were two drills and water trucks, all of which were four wheel drive. They had front ends, the rear axle would be traditional truck but the front ends were developed for the war time vehicles, for the army units, made by an outfit called Marmon-Harrington. They worked well but they were not exactly trouble free, they were tough and big and heavy but they still broke down a lot. And the recording truck and the shooting truck and the Party Chief's car, so there were like 4. . well, the drills and water trucks is four and two rig trucks on the recording crew is six and the survey wagon was seven and the Party Chief had a car, that would be eight vehicles on the thing. Compared to. . well, they often have eight vehicles on the geophone crew now.

#207 DF: So tell me about how you worked your way up through the seismic crew or did you back to university or how did you come to be a geophysicist?

JP: Working up through the seismic crew, the office staff consisted of the Party Chief, a Senior Computer and a Junior Computer and I started as a Junior Computer and rapidly became a Senior Computer. About that time, it took about a year I suppose and then I had an opportunity to travel around Alberta, this seismic crew went from Olds, oh goodness sakes, up in the Peace River country for the winter, and back down to Wetaskiwin for a summer, Wetaskiwin-Millet country and then back up north in the winter. That was in the era when you went north in the winter and still do of course. It was interesting, they had just decided that seismic crews could work in the winter in Canada. For a long time the fellows from Louisiana didn't think that you could work in that doggone cold weather. They were just not. . they hightailed themselves back south. By that time, Canada was deciding that all the oil was not south of Leduc, there was oil to be found north of it and they decided that they could work in the winter and the trucks and the vehicles were being modified so that they would work in the wintertime. Anyway I came back with the field crew to Edmonton and spent a summer in Wetaskiwin, at which time I was madly courting my wife Kay, she lived in Edmonton and was working in Banff. So I kept the highways hot during that summer and we got married in the fall and decided that maybe, it would be a good idea not to live the itinerant life of a doodlebug crew, which moved every month and a half. So I was able to find a job in Regina, with Tidewater Associated Oil Company and went there in the next spring. It's another story I really enjoy. We had a vehicle designed to haul our gear around, because after all if you're moving every 6-8

weeks you need something substantial in size to get you. But what I got was an Austin van. A lot of people have never heard of the name of Austin but it was a famous British vehicle of the time and it was an Austin A-40 and it had a tiny little engine but it did the job okay. So we were moving to Regina with our first baby in the back of the van. The Qu'Appelle Valley cuts across, north of Regina up by Lumsden and the motor on the poor little van gave up the ghost climbing the hill out of Lumsden. So we ended up being towed into Regina, our first permanent home.

#248 DF: What kind of geophysics were you doing by that time?

JP: I was doing interpretation at that time. The Tidewater Oil Company was the lead operator of a group of 4 companies, which included Atlantic-Richfield and Tidewater and a couple of others, whose names escape me right now, who were interested in doing oil and gas exploration in Regina. They had joint permits there and I was doing interpretation at that time.

DF: You were learning interpretation from the Party Chief?

JP: Yes. It was essentially, until 2 or 3 years later, except for a minor amount of training about soft rock geology, which I had at university, I had very little experience in geophysics. Although I can't say that quite truly. The final year that I was on field crew for International Nickel, we were doing electro-magnetic things and gravity things on the hard rock.

DF: Okay, I need to answer that question again because the way I asked it was wrong because I gave you the answer? How did you learn to be an interpreter?

JP: I was taught on the job by the people there. Later I received quite a bit of very good training in modern geophysics. We called it modern at the time, today it's always modern, modern geophysics through Continental Oil Company. When I came to Calgary finally with Hudson Bay Oil, their senior partner, owner, 60%, was Continental Oil Company. So we enjoyed the privileges of all the Conoco research and training programs that they had. That's really where I learned almost all the modern geophysics, each time.

Video #01:26.54.09

#272 DF: How did you become Party Chief?

JP: That was later. We spent some time in Regina, came back to Calgary with Hudson Bay Oil and then went out for about a year as a Party Chief on the field crew for Hudson Bay Oil. That was part of my training program at Hudson Bay Oil, they felt I should enjoy the privilege of running a field crew and it was fun.

DF: Tell me about that, what's all involved in running a field crew.

JP: The Party Chief is the boss out there. Because your communications are fine but the folks from Calgary don't show up very often, maybe once a month and the Party chief runs the whole show. So he is the fellow that makes sure that the farmers are kept happy, he makes sure that the municipality is happy for what you are doing on the road, he makes sure the jug hustler isn't too hung over the next morning and he looks after all the payroll and the fuel supply and all of the material things that need to be done to get a crew of 20 people out to the field and back in and the job done each day in an economic manner.

DF: Any stories about that, any adventures?

JP: I hadn't really prepared for that one. Hudson Bay Oil's company crew, it, like quite a few

of the oil companies at the time, had its own company crew. Because of the association with Conoco, this was pretty easy because Conoco ran their own company crews too. So initially we just brought Conoco equipment and in fact, vehicles into Calgary and hired a few people who were experts, trained in the field and got them off and running. But with the company crew you had to find a place for them to work in the spring because you couldn't work in the bush obviously. And the road bans were on and these were heavy vehicles and you couldn't take them on the road, so you had to find a place to use them. Well, southern Alberta was the place. So the crew would tend to be looking for areas to work in the southern Alberta. So it would be Milk River or Manyberries or even southern Saskatchewan sometimes. But the one that we had quite an interesting experience when I was Party Chief, was down in Fort Macleod. Springtime of course, in Fort Macleod includes the occasional little wind and seismic geophones do not like wind. They're adverse to wind. We used to do our best to bury them and make it possible to shoot as long as we could but it was quite often windy. Our office looked out on the main street of Fort Macleod and there was a crosswalk sign hung by two cables across the main street. You could tell, it just hung down from two cables and you could tell pretty well when the crew was going to come back into town by whether the sign was hanging vertically or horizontally. By the time it got horizontal you knew the crew would be in in an hour or two. So we worked that Fort Macleod area and that was quite exciting. Interesting. We worked the area around the Brocket, the Indian Reserve there and that was a fun spring time.

End of tape.

Side 2

JP: The next story is an interesting one about Prince Edward Island. At one time Hudson Bay Oil had negotiated the mineral rights, petroleum and natural gas rights, for the entire province of Prince Edward Island plus a big chunk of the Gulf of St. Lawrence away from it. So we were doing, there had been no seismic done there essentially, before and the surface geology was pretty well done. And they realized that there were some good economic opportunities there, there's an oil field just across the Northumberland Straits in northern New Brunswick. So it was decided that our company Vibroseis crew, which was of course, very surface, environmentally friendly, you didn't drill holes and make big messes, was the thing to take to Prince Edward Island for a summer to record seismic. And we did that. We shipped the equipment by train to Prince Edward Island and off loaded it and spent a summer shooting in Prince Edward Island. I guess I was Chief Geophysicist by then and I made a couple of trips down to see how they were getting along and what kind of data quality they were getting. They would put the big vibrators on the narrow roads in Prince Edward Island and recorded a lot of very good quality data and the company crew found this very interesting too, because they could go and see Green Gables and understand where part of the rest of Canada was.

#016 DF: Explain to me this interest that oil companies always have in the Maritimes because Pete Savage and many others, you know, it's like, yes, you're here in western Canada and there's always been lots of oil and gas here. But almost everybody at some point in their career goes back to New Brunswick or P.E.I. or Newfoundland or somewhere and is looking for oil out there. Why?

JP: There's good sediments there. They tend to be kind of old and something like the Northwest Territories if you like, comparably, they're not highly prolific with oil and gas but there is a lot of hydro-carbon there. You're well aware of the coal in Cape Breton, in Nova Scotia and of course, that's hydro-carbon. And so near that hydro-carbon has got to be some more and that's solid but there's liquid stuff there too. As I say, there's at least small oil field in New Brunswick and there's been excitement about the west coast of Newfoundland. In fact, as a follow up to the exploration effort we did onshore in Prince Edward Island, we did a group of marine seismic in the offshore north and east of Prince Edward Island and drilled a couple of wells. One of them tested 5 million of gas and of course, was not economic in water at the time but there is hydro-carbon around there and people keep knowing that and keep looking for it. The economics haven't happened yet but it still could be there.

Video #02:04.16.06

#032 DF: So we've got you into the early 60's now. What happened in the 60's and 70's that stands out in your mind or in your career.

JP: The 60's, we're going to touch on the CSEG things later so I'll skip that but in the 60's I was back in town doing interpretation mainly. The most exciting thing, well not the most exciting, well maybe the most exciting thing. One of the two most exciting things you do as a geophysicist is find oil and gas and I had the opportunity to do that. We had something to do, a lot to do with some extensions to the Lone Pine Creek, Olds area up here, north of Calgary. That was early, that was in fact, in the 50's. And in the late 60's, we had a great deal to do with the discovery of the Hummingbird Oil and Gas field in southern Saskatchewan and a couple of other small fields in the area. That was most exciting, it's hard to describe how thrilling it is to have your prospect drilled and to have oil and gas coming out. It's always a real thrill and it doesn't happen that often. When I first went to Saskatchewan with the Tidewater Oil Company, they whole group were from Atlantic-Richfield, the managers there, all the senior people were brought in by Atlantic-Richfield, on loan from Atlantic-Richfield. These were really senior, they were probably 45 or 50, and these were old guys and finding oil in Saskatchewan was the first time that those guys had ever found oil. They had been in the business for 20 years and they had never found any oil. So they were absolutely thrilled when they found things like [Wapella, Rapden and Dollard and Insto]??? and the southwestern Saskatchewan oil and eastern Saskatchewan, the Wapella stuff. It was really thrilling for them. It didn't impress me quite so much at the time because ho-hum, that's what you were supposed to be doing. But they had been 20 years looking for it and never found any before. So the thrill of having your wells come in is something I've always, always been really excited about.

#055 DF: Where does this thrill come. Obviously it comes when the well hits the oil but does it also come when you're in the field, looking at the seismic information and

thinking, okay this could be a good one.

JP: Yes. You're not in the field when you do that. You're back in Calgary, looking at maps and looking at sections and spending hours and weeks and months in fact, looking at all the information that bears on this area and coming up with the idea that, there, maybe, that's the right spot. It's such a thrill. Mostly you're wrong, 8 times out of 10 it's a dry hole. But that's what makes the 20% so exciting.

DF: Any other stories from that period, discoveries?

JP: At the same time we were finding Hummingbird was the time when oil business had been in quite a doldrums throughout most of the late 50's and early 60's.

DF: Why?

JP: The easy things had been found is the real answer. The reefs, . . . well, you're aware that Leduc was found in '47 and the reefs around central Alberta were all mapped quite nicely through the seismic of the era. Things like the Rimbey complex and the Sylvan Lake trend and even the reefs out at Windfall, Pine Creek, almost all those big reefs, Golden Spike were all found and the seismic technology hadn't evolved past the ability to find some of the other things that we've since been able to encounter. So in the early 60's, it was quite the doldrums, we weren't finding much, and gas. . . you could find gas, yeah, you could find gas all the time but it was cheap, so cheap that you were really kind of embarrassed to hook it up because you didn't have anyplace to sell it. We had all kinds of gas wells out there. So things were really in the doldrums. And that's when things like Hummingbird in Saskatchewan and Zama and Shekilie and Rainbow came, in the late 60's. That was largely because of improved seismic technology. We were just beginning to collect data on a stack basis. Most of these. . . Hummingbird was found on 100% data but we very shortly afterward were stacking data and Rainbow, that whole Rainbow complex was fraught with multiples, which is a geophysical description for a problem. And by having stacked data most of those multiples were eliminated and we were able to start along, imaging the sub-surface much better.

Video #02:10.21.13

#089 DF: Explain the difference between 100% and stacked, please?

JP: In five minutes or less. Normally you think of an impulse going straight down, hitting something and coming straight back up. When you lay out a seismic spread then you record 24 of those at a time. If you then go and move just a little way away and record again, you can record that same spot through a different path and you move farther away again and you record it once again from a different path. So that doing it once, you've got certain noise that is associated with the depth from the surface, and the weathering at the surface. When you shoot at a different place and record that same place down below, you get the information but the noise that is bothering you at this place is different from the noise that is bothering you at the new place. So it cancels out and the signal reinforces itself and it cuts out a bunch of the noise that you can't handle any other way.

DF: Thank you, that was excellent. I knew that was going to be tough but I thought you would be the one to do it. Great. What were the challenges in the 1970's in the industry?

JP: Well, the 70's were probably the most difficult times that we've had. The oil companies, oil was kind of in the doldrums, still the price. . . well, late in the 70's, of course, the Arabs raised the price of oil but in the early 70's oil was in the doldrums, prices were low

and the governments decided that they wanted to share some of the benefits of the oil business, more of the benefits of the oil business. So they started messing around, if you want to use a southern expression. They started elbowing their way into more of the money of the money from the oil business, and of course, the arrangements with which leases were taken previous to that were all clearly stated and the governments unilaterally changed it, Saskatchewan and Alberta and B.C. I think too. I don't recall clearly all the details of these things but it was a mess and everybody was very upset and it was very, very difficult at the time to make a dollar in the oil business. And in fact, many, many of the oil companies decided to discontinue their operations or take their money out of Canada, move them back to the States or overseas or go to the frontiers, where they were encouraged to go through the government regulations and the attractiveness of the frontiers. So that was the real tough part about the 70's and then of course, when was it, 1980, the NEP came along. And that really put a kibosh on things and the governments were fighting among themselves and the poor geophysicists and geologists were just kind of hung out to dry. It was a bad ten years.

#126 DF: Talk about the cyclical nature of the business and how that affects geophysicist in particular.

JP: Well, it certainly affects the field crews enormously. Some of the published material, like in *Traces Through Time*, give the details of it. In fact, it is quite cyclical. I don't know that there is a period of the cycle but it goes up and down regularly. It goes up and down with the price of oil and gas and it goes up and down with government regulations and it goes up and down largely too, with the demand for oil and gas. The demand for oil has always been relatively solid since we got a pipeline to eastern Canada but the price for gas has not been. It's a continental market and it continues to be a problem. Right now of course, the price of oil is high, the price of gas is pretty low by my standards and next year it may be the other way around. Really our exploration programs are of a five year nature, at least five years, maybe more like ten in remote areas and you get started looking for oil and all of a sudden oil is \$10 a barrel, you just don't look for it anymore. You don't get money for that. And you switch to gas and then you look for gas for awhile and it switches again. Geophysicists, being the people who go out and acquire the data, are the ones that get hit first. The geologists back in town, who are interpreting the results from previous wells can continue to do that, it isn't expensive. But going out and acquiring new seismic data is. When things get tough and cash flow go down the amount spent on geophysics just plain goes down, that's all there is to it. And the guys in the field really notice that right away. Nowadays they're out there with very, very expensive equipment and they just cannot afford not to be working. That's how it is.

DF: What other major changes have you seen? We have about 10 more minutes to talk about this. You're a consultant now and you were with Suncor in the 80's, but rather than go into the details of exactly what you did, just sort of think back on the last 20 years of your career and what the big significant things have been.

JP: As far as I personally am concerned of course, I haven't mentioned the fact that my wife and I have four children and throughout the doldrums, if you like, of the 60's, it was a time when our family was growing and there were four little people running around and we thoroughly enjoyed that and worked very hard at that and we're really proud of how

they have come along. That would have probably been an overriding emphasis in my life at the time. We enjoyed our geophysics and that was good but the family part was very important as well, as it has continued to be, although. . now they've grown up and we don't see them so much.

02:17.29.08

#164 DF: How did the doldrums though, say, affect your family life?

JP: To the point that all through those doldrums, everything was pretty static. You didn't get a very big wage increase and with four little kids the expenses do creep up. So consequently we were. . . certainly well to do by most people's standards but there wasn't a lot of spare cash and our holidays consisted of tenting vacations to Kelowna, because that was a good place to go tenting and that was all we could afford. But that was fine, we got along very nicely and enjoyed our family. The fact that the oil industry was in the doldrums didn't really affect us personally because we didn't get laid off. Modern companies would perhaps not be so kind. They tend to be more aggressive about it but that was the era when you did have a good job with an oil company, you were there and they found work for you. They didn't have a lot of people and they looked after them but they didn't give them big raises either.

DF: In 1980 the CSEG gave you the Meritorious Service Award, tell me about that?

JP: Well, that's an award that the CSEG gives to people who have done something beyond the regular call. Because of my geological orientation of the geophysical things, because my degree was in geology, I have always felt very interested and concerned about training of geophysicists. Coming from geology I had to get trained in geophysics. A lot of the other geophysicists come from engineering, electrical engineering, a lot of them and they need to get trained in geology. Or they even, through some of the universities, not anymore but in the early stages, the universities teaching geophysics tended to come out of the physics faculties. Or in some cases the astronomy faculties. So geophysicists were coming to us without much geological information, knowledge. So in the late 70's, after I had been President of the CSEG, I undertook to put together a course for geology for geophysics. And conscripted a few of the professors from the university to come downtown to give a course in geology for geophysics. That was the primary reason that I received that particular award. It also was related to the fact that I've been pretty busy in the geophysics industry, in the CSEG for they whole of the 1970's.

#198 DF: Well, you're being kind of shy about your accomplishments but I can understand that. Is there anything else that you'd like to talk about, what contributions in your career are you most proud of, what did you really enjoy doing?

JP: Well, I've already mentioned the fact that it's really exciting to find oil and gas, it's just about as thrilling as anything can be. But the other thing that I really enjoyed were my years as Chief Geophysicist with Hudson Bay Oil and Gas Company. There my assignment was to be sure that the technical expertise of the geophysical employees at Hudson Bay were at a high level, that we used the best technology that we could and could afford economically. That fact that we had Continental Oil Company working with us on this was tremendous from my point of view because I didn't need to know all those things, I could talk to their research department, of which they had a huge one. They'd

invented the Vibroseis and they continued to develop that and we had that background behind us. But in that same era, toward the end of the 70's, when I was just about to move out of being Chief Geophysicist. . . throughout all of that time. . . once again, the attitudes of companies were a little different. We used to hire 2-4 new geophysicists out of university every year and I got to choose those pretty well, for quite a long time. I would visit the Universities of Saskatchewan, and Regina and Winnipeg and Calgary, Edmonton and B.C., mostly. Occasionally when we were really looking for more we went down to southern Ontario. For awhile in the very end of the 70's when we were really short of people and the oil business was on an upswing at that time, I went overseas and interviewed in Europe. But to see those young people and to see them come along and join us and be developed and learn and understand and become the fine young people that they are, not so young some of them now. I see them regularly and I'm always proud and pleased and thrilled to see how those young folk have grown. I don't really have a lot. . . I didn't really have a lot of effect on them, except for guidance I think and hopefully setting an attitude that was quite important.

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#229 DF: That's wonderful. We've got just a couple of minutes left but is there anything else you'd like to tell us about your career?

JP: No. I feel I've been singularly fortunate in being able to, in the last 10-12 years, go back to my roots and back to geophysical interpretation. Once again, I just enjoy very much relating the geology and geophysics together and the two backgrounds have just worked very well for me and I continue to enjoy that and enjoy the thrill of finding oil and gas. I feel very fortunate in being allowed to continue to do that.

DF: Any regrets?

JP: No. There's always things you wish we could have done earlier and faster and so forth but no, not in the big picture, none at all.

DF: Great. At this time, on behalf of the CSEG and the Petroleum Industry Oral History Project, I would like to thank you so very much for taking the time to meet with us today and allow us to record your recollections. Thank you very much, we'll end the interview at this time.

JP: It's been a pleasure.