

PETROLEUM INDUSTRY ORAL HISTORY PROJECT
TRANSCRIPT

INTERVIEWEE: Peter Stauff

INTERVIEWER: Nadine Mackenzie

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NM: This is Nadine Mackenzie speaking. I am interviewing Mr. Peter Stauff. Mr. Stauff, thank you for having accepted to participate in our project. When and where were you born?

PS: I was born in Agritas???, Peru, in South America, 1928.

NM: Was your father in oil too?

PS: Yes, my father was a geologist and engineer working for International Petroleum in Agritas.

NM: And now there is the 4th generation in the oil business?

PS: Yes, my great grandafather, actually, on my mother's side, John Macdonald, was a Scottish boiler maker that immigrated to Canada in I guess, the 1850's or 1860's, and set up his own refining business, oil property business. And of course, my grandfather was in the refining business and the oil property business. My father was as I say, a geologist and an engineer and of course, I've been in the business and my son has been in the business and I have a brother in the business and he has a son in the business. So it goes back a little ways.

NM: Where were you educated?

PS: I was born in South America but returned to Canada with my mother and brother and sister in 1934 and went to public school in Petrolia, Ontario, which had been my mother's home town and went to high school there. Then took geological engineering, or mining geology as they called it, at the University of Toronto. Graduated with an engineering degree in 1950 and then worked for a year and went back and took my Master's degree at the University of Toronto, got out of there in '52. Then went on full time with Imperial Oil and worked in various parts since then.

NM: Why did you choose this subject?

PS: I guess it was primarily because my father had been in the oil business and had been an engineer and I felt that that was an interesting career and of course, also, being in the Petrolia area and having worked as a teenager in the oil fields there, it was sort of a natural choice.

NM: Did you have any summer jobs while at university?

PS: Yes, in the 1st or 2nd year, I worked in the mines in Quebec for one summer and decided I really didn't like the mining business that much. Part of one summer I worked an interesting job, I worked on one of the old cable tool rigs for an old fellow by the name of Huzzy, on the famous old Morning Glory rig as a tool dresser, which was kind of interesting. Then I worked 2 summers with Imperial Oil in their operations in the Chatham-Wallaceburg area in southwestern Ontario.

#037 NM: And then when you graduated, what did you do, did you join Imperial straight away?

PS: I had joined them, just stayed on with Imperial, joined Imperial after my bachelors degree and then actually took a leave of absence from Imperial to go back and get my Masters.

NM: Was it easy to find a job in this time?

PS: No. Graduating in 1950 was pretty difficult times. This was in sort of the boom year of the war graduates but I had worked the 2 summers with Imperial and that gave me a sort of leg up on getting a job. A lot of my classmates ended up selling encyclopedias and various other things, until they finally got back into the work force.

NM: Like it is nowadays.

PS: That's right. I don't think it was quite as bad as it is now but it was a difficult time.

NM: So what was your first post with Imperial when you joined?

PS: Well, I guess the first job was in Chatham, Ontario, working as a well site geologist out at Chatham. And stayed in that operation through until about 1955. That was a small operation but a very interesting operation because, again, it was sort of the change over from working on the old what are called the cable tool rigs, in about 1949 or '50, somewhere around in there, '51, that brought sort of the first rotary rig into Ontario to drill in that country and that was kind of interesting. It was pretty primitive equipment, particularly by western Canada standards at that time but it was interesting for us that worked on it.

NM: Do you remember who hired you at Imperial?

PS: Yes. It was a gentleman by the name of Oliver B. Hopkins who was actually, obviously he was a Vice-President of Imperial. Although I guess my first interview was with Oliver Hopkins, the manager of the eastern operation at that time was somebody you've talked too, Bill Roloff, who was running the operation at that time.

NM: How was Imperial at the time?

PS: Imperial was in a very interesting time. There was an eastern operation which was quite small and the main activity was in western Canada, after the Leduc discovery and by 1950 they were really starting to grow. Of course, the majority of the technical activity was in western Canada but the eastern operation was a small money making operation that was far overshadowed by the western operation but nevertheless an interesting kind of deal.

NM: And how long did you keep this first job for?

PS: I guess it was in 1955 that I moved, the family, we moved to Saskatchewan, to Regina and went on well site work there for a few months and then moved into the office in Regina. Worked primarily in the fields in southeastern Saskatchewan. That was an interesting move to go from sort of the flatlands of Lapton County to the flat lands of Saskatchewan. The topography was the same but it was a lot bigger and a lot colder.

NM: Do you remember who was working with you in Regina?

PS: I think the chief geologist at that time or geological department manager was Gordon Darling, who has been very prominent in the oil business since then. Then there were successant managers because I was very fortunate when I moved to Regina that they had had some success there and it was a very active and growing organization. I was there from '55 to 1963 and some years Imperial alone would drill as many as 100 wildcats,

while the activity was so very strong in the southeast part of this province. Pretty exciting times.

#090 NM: They had a very successful time too.

PS: They had a very successful operation down there. But like every other operation, as the oil business, it turns over and by the time I'd left in 1963 it was starting to turn down. I guess we went from a staff of well over 30-35 geologists, back down, when I left, there were about 8 or 9.

NM: And then in '63 you accepted an assignment of more than a year with the Jersey Production Research at Tulsa, Oklahoma.

PS: That was again, an interesting move, just from a physical point of view. I remember my wife and I and the 2 boys left from Regina in I think it was February, 1963, and it was about 30 below Fahrenheit when we left and then we flew down to Tulsa and it was about 75 above. It was a delightful change in climate and a very interesting operation to work for the Jersey, that was Standard New Jersey's research centre.

NM: What did you do then?

PS: I was working in the reservoir description aspect of research and actually worked on some fields in Saskatchewan. Those were in the days when they were just getting started on computer modelling of reservoirs and I was part of the team that were looking at the different parameters that you put into reservoir models. I remember one of the people you might have run into, Gord Wilma and I both worked on the Inglesbee field in Saskatchewan, trying to get the porosity, permeability and the various petro-physical aspects of it into the computer. Again, like I mentioned about the rig, it was pretty primitive by today's standards but it was an interesting start and of course, an interesting career step, to be working in a first class research lab with some very fine people who were doing a lot of very interesting, innovative work.

NM: Did you find a lot of difference between the approach to the oil business in the States and in Canada?

PS: Not really, no. Because I think there was such an interchange of people and technology that there wasn't a major difference. I think various aspects of it, there has been differences but no, it's pretty well the same kind of technology.

NM: And after more than a year in Tulsa you came back to Canada and it was in Calgary, in '64.

PS: Yes, we transferred back to Calgary and Imperial had a research department which was quite active and I went in looking after the geological side of Imperial's research operations there. Working for a very fine man by the name of Dr. Bill Landis, you may have heard of him in your travels. He was a giant as far as technology and global geology was concerned.

#135 NM: How was Imperial in Calgary in '64?

PS: It was very active as one of the major players out there, had a lot of activity going on. And doing a lot of the fundamental research in various aspects, particularly in geophysics at that time. The field activities were scattered all around the country as you probably

know. There was still some activity in Saskatchewan and a major office in Edmonton and a very significant office in Dawson Creek, looking after the new plays that developed up there. It was about that time, in '64, '65, that the Rainbow Lake activity started. That was a very interesting operation.

NM: Were you involved with Rainbow?

PS: Only from a research point of view, not directly involved in that. I found it very interesting because the activities there were finding these small pinnacle reefs, which was very similar to the pinnacle reefs that we had worked on in southwestern Ontario. They were obviously a lot bigger and they were a lot more productive because they were oil rather than gas in Ontario but it was an interesting period of time. Some excellent technology, there again, particularly in the Rainbow Lake area and Zama, they developed some very sophisticated, the whole industry developed some very interesting, sophisticated seismic techniques for finding these very small but lucrative pinnacles.

NM: And your post in Calgary was Supervisor, Geologic Research?

PS: Yes.

NM: What was that?

PS: We had several excellent people on staff, PhD type geologists doing a lot of work in geological statistics and geochemistry was coming along very strong at that time. As somebody with more practical experience I sort of added a little bit of a practical element into the application of the research with the staff.

NM: And how big was the staff?

PS: I guess it would be probably 25, 30 all told, including the palaeontologists. Some very fine work was done in that area. A lot of excellent palaeontological work was done by Dr. Frank Stateland??? in the Pallinology??? area. Of course, one of the elder statesmen of the paleo business, Collin Crickmay was on staff at that time. He was an extremely interesting and independent scientist.

#178 NM: And for how long did you keep this post, was it for 2 years?

PS: Just a little less than 2 years. I remember we had built a house and I think we got to live in it all of a year, something like that and then transferred up to Edmonton, where I was supervisor of the Northwest Territories exploration. Imperial had been active in the Territories for many, many years, starting in 1944 at least in field work up there and had been doing geological field work in the Territories in the middle and early 60's. As a matter of fact, some of the finest work up there was done by a gentleman you'll recognize, Bob Minneally, who is now exploration VP with Petrocan. He did some of the early very fine work in the mountain geology up there. Originally the operation was run out of Dawson Creek and in '64 they separated out the Territories exploration and moved it down to Edmonton. We built up, or started a small staff there. Imperial had acquired a lot of exploration acreage up there. We sort of inherited this from the Dawson Creek office and started in on a pretty active drilling program, particularly in the field plateau area, and then with seismic going on every winter. Then actually drilled the first well in the Beaufort Basin itself jointly with Shell and at that time BA, now Gulf, drilled the old Reindeer well. Which was a very interesting well in that it sort of proved the existence of

a major offshore basin in the Mackenzie Delta area. Kind of interesting there, it was a classic example of 3 companies trying to pick one location, in that there was a structure mapped with seismic and we had gravity. One company wanted to drill on the top of the structure, another company was afraid that with the top of the structure, they're liable to hit basement too quick. So finally we came out with the Solomonic compromise of drilling half way down the structure. It had some small gas shows in it but the main thing was that it proved the existence of the basin there and. . .

NM: So that was very important.

PS: It was an important well and it was an important example of the kind of cooperation that can be handled in that area. I think that was one of the. . . a lot of very fine work was done on the drilling techniques, the environmental aspects of that area up there. When it came to land and drilling and drilling results every company was very, very competitive and kept their data to themselves. But when it came to things like safety and drilling operations and transportation techniques working in that very fragile environment up there, some excellent cooperation was done and some excellent techniques were developed to work in the north country up there. That was an extremely interesting and active time.

#233 NM: You were working out of Edmonton?

PS: Yes, we worked out of Edmonton.

NM: But were you travelling a lot?

PS: Yes, going up to the field once or twice a month to visit the seismic crews in the winter particularly. Because it was primarily a winter operation, with the transportation system up there.

NM: Were there any problems with working in the winter at the time?

PS: Oh, it was and is a difficult area to work in because of the extreme cold and the darkness, both from a human, physical point of view and from a mechanical point of view. We used to laugh, we used to use. . . the seismic crews, it was so cold, they were able to use motor oil as axle grease in their snow vehicles to keep them going. Again, it was. . . that was the major challenge of that area up there, a lot of it was just engineering in terms of trying to cope with the environment from a safe point of view and to understand what was happening. Some of the early seismic work for example up there, when we frankly didn't understand what was happening in terms of the tundra and the permafrost and that sort of thing. But by learning that if you scrape the moss off you would get this thermal[?] topography. And then switching over to snow roads and bulldozers that wouldn't dig into the permafrost, being able to learn to cope with a potentially very difficult situation. However the research was done both by the NRC and another very pioneer gentleman up there, a geographer from UBC, Dr. Ross McKay, who probably never gets mentioned in the oil business but as a pioneer in terms of understanding the environment up there, Ross did and still has done some monumental work in the development of understanding what the situation was up there. He's also a first class ornithologist, just one of those all round scientists. We were able to support his work with our logistics up there, a very happy coincidence.

NM: Can you tell me a bit more about Ross McKay?

PS: I don't know that much about his background but Ross has been a professor at UBC for many, many years. Did pioneering work in the Delta, mapped a lot of the Delta in a canoe. He primarily did work on the pingoes???, he was one of the gentlemen that did the first really discovered what those beautiful pingoes are up there, those ice boils as you might think of them. Ross, I think lately he may have been associated with the investigation of the environment that's been going on in that environmental impact project that has been going on for the last 3 or 4 years up there. He published a lot of geographical material on the Delta.

#290 NM: So he seems to be a pioneer too.

PS: He was in terms of the physical geography of the Mackenzie Delta and the delta area.

NM: When you were working for the north, were there any problems with equipment?

PS: Well, the equipment yes, to the extent that you couldn't use ordinary equipment up there. For example, Imperial had done a lot of work in the early days in Norman Wells in learning to cope with permafrost and had also developed vehicles which would go over the permafrost or over the tundra areas with a low load pressure on them. These wide tracked vehicles. Then in developing transportation systems up there we actually brought in trucks with dessert tires on them. You've seen these trucks with these huge tires which were designed to go across sand and it turned out that they worked beautifully up there in terms of low load pressure to handle and not mess up the terrain.

NM: Where did you get them from?

PS: I'm not sure, I think it was just one of the standard suppliers that had been used in the dessert activities. That was one example. Another example of course, is the kind of work that had to be done in terms of developing the drilling systems to work through permafrost. Such things as having to have a system to chill the drilling fluid mud so that it wouldn't melt the permafrost. Because one of the phenomenon up there is that there is a gas hydrate, which is like a frozen natural gas. If you melt it, it creates I think, 36 times the volume and is potentially a dangerous situation. So to keep that under control you had to chill the mud and put in actually, refrigerated casing, equipment like that. Which was really state-of-the-art technology but it's adapting technology from completely different fields to work in that environment once you start to understand what it is.

NM: This is the end of the tape.

Tape 1 Side 2

PS: Again, as I say, the equipment is really an adaptation of southern equipment. One of the major engineering type of activities that went on up there was learning to build offshore islands. Which was again, not anything high tech or fancy but quite important from a development point of view. The first islands were built in very shallow water with a simple process of about 6' of water, taking the ice out and then just dumping in gravel and building an island. That evolved of course, into some very much deeper water islands with major dredge systems. Again, the dredging systems are used, a lot of it was imported

from Holland for example. Then latterly, the development of the major cason ring islands has been an extremely important element. Imperial did a lot of excellent work in that field. Ice strength research. Very little was known about ice strength 10 or 15 years ago. Dome did some very excellent work in terms of developing offshore drilling systems, again, adapting equipment up there. As well as that, the equipment was important but I think one of the other very important aspects of it was the understanding of the environment from a physical point of view and from a flora and fauna point of view. A lot of the pioneering work on the Beluga whales for example, was instituted by the industry up there. Again, I come back to something I mentioned earlier, I think it was an excellent example of a cooperative approach in industry, to cope with sort of the common problems. They set out. . .

NM: So team work, everybody getting. . .

PS: Team work, very interesting. They set up the Arctic Petroleum Operators Association, which was essentially a multi-company group to do research on the Arctic environment. They have undertaken I think, probably well over 100 projects in the last 10 or 15 years, and some companies would subscribe, some didn't. But again, it raised the level of knowledge in terms of developing in a new and difficult area like that very quickly and made sure that all of the pertinent data was available to the entire industry. Because the industry obviously recognized that the first major problem would that develop would affect everybody, not just the particular operator involved. I think there's been a lot of. . . I think it's a real strong element in the development of the Canadian oil industry and I think the results of it will be with us for a long, long time. Because as we go into the future and develop actual production methods up there, some of this pioneering research work that was done in those years has set up a sound foundation for that type of operation.

#039 NM: Were they very concerned also, about the safety aspect of operations?

PS: Safety of course, is a very, very major aspect of it because of the potential for a blow out. And there had been some major incidents up in the Arctic Islands for example. The main activity there is primarily training because human error is probably the most common problem. You can get the most sophisticated equipment in the world and if people don't know how to run it, it doesn't do any good. Again, a lot of training went into that on a cooperative basis. Oil spill teams were set up, emergency plans were set up.

NM: So a lot of progresses have been made, comparing to what it was in the early days.

PS: Well yes, because in the early days nobody had had to even think about it in that environment. So it worked out very well. The other aspect of operating up there of course, was the human element and the involvement with the local people. Again, I think a lot of mistakes were made but again, a lot of progress was made in terms of being able to understand what the effect would be on the local population. Some of it was good, some of it was bad.

NM: Was it very cooperative or not?

PS: It was basically cooperative, certainly as far as we were concerned. But I think in some instances, particularly in the earlier years we did not. . . well, I guess one of the problems

was that you kind of got caught between a rock and hard place in terms of the native people had natural aspirations in terms of their land settlement. Some of them chose to use the only weapon they had and that was to try and delay development as a lever to the government and the oil industry kind of got caught in between on these plays. But that I think is starting to resolve itself, it's not a simple problem and it's not something that is going to be solved overnight. But I think basically, it was good cooperation. I guess a lot of time we'd have to say that we didn't understand some of the local concerns as much as we should have. But I think as time goes on, and as the various companies set up more of a permanent presence up there, they tend to move. And of course, you're developing a new generation of local people that are working into the industry.

NM: So maybe then, better communication.

PS: I think better communication is coming along. Everybody has been learning as they go, the government's been learning and the industry's been learning.

NM: What about the men who were working in the north, where did you recruit them, were they staying a long time?

PS: No, it's always been a situation, particularly, well, in the early days it was seismic crews and drilling crews and the majority of them of course, were recruited from southern Canada and would go in and work. It's changed over the years but essentially, work in for say 20 days and then out for 10 days. But it's been a commuting type of operation. At the same time all of the companies tried to build up the local people with training and developmental work and they were permanent employees up there. Most of the companies, certainly I know Imperial or Esso set up employment programs with the local people such that if they wanted to pursue their trapping or hunting or fishing etc., they could take time off to do that and then have a job when they came back. It was trying to adapt to the situation. You had to tread a fine line between being paternalistic on the one side and being progressive on the other. And of course, there's always mistakes made.

#092 NM: You cannot spoil them too much and you cannot ???.

PS: That's exactly right. And you run into all sorts of. . .everybody has their own legitimate concerns. On the one hand you're asked to create work for the people up there and hire as many as you can and then on the other hand, somebody will say, because you're doing that the children are dropping out of high school. So it's a no win situation. And it's just something that you have to work on. I think all of the companies and certainly the government in more recent years are taking recognition of it and working in a cooperative basis. We'll come to it later on but there's been some excellent work along these lines done in the Norman Wells project that is under way at the present time.

NM: Mr. Stauff, did you know Cam Sproule?

PS: I had met the gentleman but can't say that I really knew him. Certainly I admired him as one of the pioneers of Canadian geology. I think his activities in trying to develop his vision of the Arctic Islands was certainly one of the significant contributions. He had a drive and an enthusiasm to not give up and he eventually formed Pan Arctic and made some very interesting and significant gas discoveries in the area up there. Again, there were several people of Cam's generation that were what I call, original, pioneer

geologists in Canada. Cam Sproule being one of them, Dr. Ernie Shaw, who you met before, did some of his thesis work in Ontario here.

NM: And then took over Cam Sproule's post.

PS: I think so, that's right, with Imperial. Another one that you won't hear of very often, and I digress here a little bit was Dr. Evans, who was the chief geologist for Union Gas in Ontario for many, many years. Again, one of the first gentlemen to really describe and develop the original concept of reefs in the subsurface. He used some of the original work of Charles Darwin as one of his. . .one of my treasured momentos is a copy of Darwin that Dr. Evans gave me many, many years ago, his Voyage of the Beagle. These were people who were really in the sort of conceptual geologic phase of the Canadian oil business. I put Cam Sproule in that category and then of course, Cam went on to become a very potent force in the actual physical development of the north.

NM: His vision of the north came out right in fact. . .

PS: Yes, that's right. There was a lot of gas up there. Unfortunately it's a long way from home. But it's a national heritage that, if not in this century, in the next century will be of use.

NM: So it's a long term development.

PS: It's a long term operation.

#133 NM: What about the relations with the government?

PS: Government relations, again, if we sort of stay in the context of the original work in the north country have gone through a lot of different stages. In the 60's the government was essentially committed to the development and exploration of the north, much of the same kinds of things you hear these days. They operated in the 60's by giving exploration concessions to companies with a very interesting procedure called a work bonus system, where instead of auctioning the land like they do in the U.S., where you, in essence, pay your taxes ahead of time, they put them up for bid, these large tracts of land and you bid the amount of work you would plan to do in the area. So that this, instead of being a money making operation for the government of Canada, it got work done. A lot of the negotiations and work in the 60's was working with the government on negotiating these work commitments, the work credits that you got for drilling up there. We spent a lot of time with the people in Ottawa and developed basically, a very, I think, cooperative approach to it. As it became more complicated and as the activities increased more and more people got involved and we ended up with an abundance of regulations and an awful lot of people checking them out and looking over your shoulder. But basically in the interests of a safe and viable operation, there were excesses to be sure but I think it was basically necessary. I think I'd characterize the mid '60's to the mid '75 as relatively good relations with the federal government in terms of trying to achieve a common goal of developing and exploring in the north country. We'll come to it later on but as things progressed through the National Energy Program, various other things, that attitude changed and it became much more of an almost confrontation type situation.

NM: In 1968 you became assistant division manager. That was also in Edmonton?

PS: Yes, that was just a move across the hall type transfer, which was a pleasure instead of

moving all over the country. At that point in time Imperial Oil was consolidating its operations in western Canada into the Edmonton area with one major office instead of having them scattered around in Dawson Creek and Regina and Calgary and other places.

NM: So then everything was getting centralized.

PS: Everything was sort of brought in to Edmonton. The head office was still in Calgary but the one major operating division was set up in Edmonton encompassing the entire operations, including the north country. I had transferred then, to become assistant division manager of that entire operational area, primarily responsible for the coordination of the various engineering, drilling, geology, geophysics in the operations across western Canada. Then I guess a year or so later the division manager departed and I fell heir to the division manager's job, which was again, a very interesting job because it was an operational job that encompassed all of the aspects of the business there as opposed to staying strictly in geology or in the engineering side of the thing. The primary, the chief engineer, the chief geologist etc., were all still located in the Calgary office so we were essentially a branch office. But I found it extremely interesting. Also at that point in time it was my first sort of taste of getting into the public affairs and getting into the community involvement, which was interesting. The company always has been a supporter of things like the United Way etc., in Edmonton and I spent some of my time on that type of activity. So it was again, an interesting change.

#203 NM: What were you doing mostly, was it a type of public relations?

PS: No. I'd spend I suppose, maybe 10-20% on public relations type of operation but a lot of it was just plain, the business coordination, that type of thing. A long way from geology etc.

NM: Yes, did you welcome the change?

PS: Oh yes. I've always welcomed the changes, particularly when the pay cheque goes along with it.

NM: That helps then.

PS: It helps yes.

NM: And after that you became manager of regional operations, exploration at Calgary in '71.

PS: Yes, that was again, the company, you may wonder what they were thinking about but there were some reasons for it, they had consolidated everything in Edmonton in the late 60's. Then in early '71 or somewhere around in there they had made the decision that they would transfer the entire, primarily the technical operation back to Calgary and consolidate it in Calgary. I went down to Calgary in '71 I believe it was, as essentially the exploration manager for operations in western Canada. That again, focussed me back on exploration as opposed to the broad, sort of more administrative type of job.

NM: '71 was a bad year for Imperial was it not, a lot of people got laid off?

PS: We had some difficulties at that time. There was a sort of forced retirement system went through which I think some of us still bear the scars of. I think if anything we learned, hopefully the company learned a fair bit about how not to do things because there were some unfortunate moves made at that time. However, it was predicated on the problems that the company was facing. It was one of those down times and we were overstaffed.

We'd been through several cycles at that, the industry has been through several cycles of that and that was one way of coping with it, which I think was not a very good way of coping with it but certainly. . .

NM: It can happen in any company.

PS: It can happen. You just hope that it happens much more humanely than it did at that particular time. The more recent experience has been far more properly handled I think, by using the very simple technique of voluntary enhanced retirement type program, which is I think, something that is. . .when times change, the oil business is cyclical and you just have to learn to cope with these things. Hopefully over the years we'll learn to cope with them better and better.

NM: Where was the decision made, was it made in the east here, or was it made in the west or was it joined?

PS: You mean the decision. . .

NM: Laying off people?

PS: I think it would be, the head office was in Toronto at that time, no question about it. But I don't think you would call it an east, west, that was just a geographic situation. It was predicated primarily on the needs of the time and certainly the senior management in Calgary had a hand in it. They didn't have the final say by any means. No, most companies, even I think, if they have a head office in Toronto, you'll find that the people that are. . . you know, once you get below Board of Director level, that are the decision makers in the head office have a background and have probably transferred in from the west. So I hesitate to call it an east, west type situation, it was something that was a company necessity.

#266 NM: In 1973 you went to New York with Exxon Corporation. What were the reasons for that?

PS: Again, in simplistic terms I had to follow a pay cheque. No, I had an opportunity to go to New York with some potential for eventually ending up in head office.

NM: So Exxon Corporation borrowed you.

PS: Yes, in essence. I stayed on Imperial's payroll but worked for Exxon in New York as an exploration advisor. It was a chance to broaden my experience and certainly the prospect of living in New York for a year and being able to see much more of the Exxon operation and working with some very fine people down there, that was an opportunity that I couldn't really turn down and the alternatives just weren't that great. Again, that was an extremely interesting experience, both from a personal point of view and working. I was fortunate in that I was assigned as the liaison man for the UK and Europe and the Middle East. So it meant a fair bit of travel and working with another fine gentleman by the name of Keith Huff, whom you may have heard of in your travels. Working and travelling with Keith was an experience because again, he is I think, one of the pioneer geologists in an operational sense in western Canada and now is working much more on a global scale. Keith was chief geologist or exploration manager for Exxon Corporation at that time. It was an interesting assignment because it was a small staff, very small staff. It was the first time I'd had really, a staff type job. I'd always been more or less in the operating side of

the business and moving over to a staff operation was quite an eye opener. I used to laugh, you sit around waiting for people to ask you questions that they don't really want answers to.

NM: Can you tell me a bit more about Exxon Corporation?

PS: Exxon Corporation of course, is one of the major oil companies in the world. They've had a long experience with Imperial Oil. I think they, again the dates will confuse me, actually purchased an interest in Imperial Oil in the last century and have been something approximating a 70% shareholder of Imperial Oil since that time. Which is a very interesting relationship. Because it's not Exxon's usual mode of operation. With 1 or 2 other exceptions, Creole being one of them, they invariably own 100% of the company. For example the old Humble Oil Company, which is now Exxon USA, is 100% affiliate. The Esso UK, their operation there, is 100% affiliate and the Exxon Corporation in New York acts as a sort of advisory holding company. They have the ultimate say I guess, certainly in the 100% operations. But primarily have grown I think, because of their decentralized decision making process. Certainly in the case of Imperial Oil they have been a . . . well, we refer to them euphemistically, as the major shareholder. It's interesting because we have to operate within the laws of Canada and certainly within the obligations of the Directors, to all the shareholders. So our relations with Exxon have been, I would say, excellent over the years.

NM: This is the end of the tape.

Tape 2 Side 1

PS: Exxon, in addition to of course, being a major financial asset as far as the corporation is concerned, also provides a lot of advice in terms of, well, we've mentioned the reasearch before and the inter-training affiliates. Most of our senior management and a lot of our technical people have spent 1, 2, 3 year assignments with Exxon, sort of broadening their experience. This is a form of technology transfer which I think is extremely valuable, certainly for the company and ultimately for the industry. Particularly if you realize how many ex-Imperial people are in the industry and contributing to it.

NM: That's something I have noticed, a lot of people went to Imperial as a training ground and then left Imperial.

PS: Yes. And I think this is one of the things a large company has to build into their training program, there's going to be a certain amount of attrition along those lines and I think it's a very healthy situation. Exxon have, as I say, they've provided some financial and from a decision point of view, I guess ultimately they would have the final say if they wanted to but primarily the Imperial chief executive officer operates, essentially independently. They have to go through a budget process every year, just as every company does. But the day to day decisions are certainly not handled out of New York. And it's purposely handled that way. For example, when I spent that year in New York I had no association with Imperial at all, in terms of I was not assigned to Imperial. One of my compatriots from Exxon USA was the contact for explroation at Imperial, which just further indicates the way they try to operate the situation. And I must confess that Imperial, certainly in my

own situation, we tend to maybe even sometimes amuse our 30% outside shareholders because . . .

NM: How come?

PS: Well, we have an obligation to the outside shareholders under law. Something that may be good for Exxon isn't good for the other outside shareholders, we just quietly remind them, oh but, you've forgotten those outside shareholders. The majority of time this is not a factor at all but every once in awhile you have to step in and say, let's just think about this a little bit.

NM: Because so much can happen.

PS: Sure. Because they're used to operating in 100% mode and they tend to forget that we have a different political system, a different set of rules and regulations, taxes and everything else and sometimes we just have to simply refuse to send particular material because it is in conflict with our obligation to our Canadian and outside shareholders.

NM: Did you find a difference in the management of oil company in New York compared to what it was in Canada?

PS: It was different of course in that it was not an operational decision making situation, it was a staff job, which is essentially working for the Exxon Board of Directors, keeping them informed on what the worldwide operations were doing. So completely different from an operating type of company such as would be in Calgary or even the Toronto aspects of Imperial Oil. Different in that sense. The only direct involvement often would be with the research aspects in Houston and that sort of thing.

#045 NM: From New York you did a lot of travelling abroad?

PS: Yes. I travelled a fair bit over to Europe. Again, it's sort of going over the operations, trying to become informed on what the operations are. Providing advice such as you can but in most cases, without the direct hands on operational data, all you can do is provide advice. It was certainly a broadening aspect of understanding what some of the international implications of the oil business are and as the world gets smaller I think that becomes even more important. Again, as I say, I think this is one of the advantages of having a major shareholder like that.

NM: Which country did you go to?

PS: Mostly to the UK and France.

NM: In '73 there was the OPEC crisis, what was the reaction at Exxon?

PS: Well, it wasn't exactly a surprise. Because Exxon for years had been talking, again euphemistically about, they didn't call it the Arab resurgence, they called it the mid-east dependency. It was obvious that sooner or later the nations of the Middle East would want to take more and more of a role in their affairs, through nationalization or whatever. Remember of course, that Exxon had a limited contract in Venezuela, with a 1980 something, definite end to it. So it was not exactly a surprise. Mind you it wasn't a surprise because as the Arab nations had some excellent Harvard trained advice and it was inevitable.

NM: Like Sheik Yumani. . .

PS: Yes, Sheik Yumani and Levi and various other people that said, this is not quite the way

the world is going to unfold forever. I think they probably were. . .well, just learned to live with it and made the best deal they could make out of the forming of Aranco??? and developing. . . Because the main objective of a corporation like Exxon has to be in the supply side of the business, supply for their refineries in Europe and the various parts of the world. When that supply gets disrupted you just have to negotiate your way into a solution of the situation. I think that Exxon and the other majors did just that. And again, it's the transfer of technology to those companies to develop the world's supply.

NM: Can we talk a bit more about the OPEC crisis, what was the repercussion on Canada?

PS: Again, my dates get a little bit hazy. The OPEC crisis, the real impact on Canada I guess was the rising of prices. Which sort of went in 2 or 3 different stages. But the world had got used to struggling along with \$3 oil for a long, long time, which was way below its actual market value. When OPEC asserted itself and started to raise prices then that reflected itself in western Canada. And we can get into that somewhere down the line. But that had an immediate effect, it sort of brought the price and the economics of the oil industry into the political realm. One of the first things to happen of course, as the prices increased in western Canada it became apparent that the companies were going to make, as they call them now, windfall profit type operation. And the Alberta government for example, could see this coming and in essence, changed the rules of the game by changing the royalty system under which companies were operation. To get what they considered their fair share of this much bigger prize that was coming along due to the oil price increases, which had been predicated by the OPEC resurgence, or emergence. That I guess was inevitable. And in Canada parliament is supreme so contracts can be abrogated and that's essentially what happened. That started us on to the situation which has developed over the last 10 years. We could go into detail but I'm a little out of my element in the political side of it because I'm obviously biased on the industry side. But I don't mind wearing my biases.

#112 NM: In 1974 you came back to Imperial in Toronto and were appointed Vice-President and General Manager of the Exploration Department.

PS: Yes. That was one of the fallouts of the year in New York. Imperial at that time had still had its head office for the producing operations in Toronto. I moved into Toronto as general manager but with a very small staff and much similar operation to the Exxon operation in that Imperial had, I guess, probably at that time, maybe 35 people all told in head office here, looking after exploration and production and the various operations. Again, it was, although it was the general manager of the operations, the day to day decisions were primarily made in western Canada, on an operating basis, by the assistant general manager of exploration out there. This office was again, like a major staff department, keeping the management informed and acting as a liaison between the, as I call them the plumbers and the bankers in Toronto and the operational oil people in western Canada. And also working to some extent with the inter-departmental relationships that develop in a major company like this. Because there's obviously some interplay between the refining side of the business and the marketing side of the business and the transportation side of the business. So with this being in the headquarters here,

that was facilitated to a certain extent by having the head exploration man here, responsible primarily to the Board of Directors and to the CEO in terms of the operation across Canada.

NM: And what about being the Vice-President?

PS: Well, the Vice-President, very little vice involved. It was a change in operation at that time. Imperial had operated for many years with an inside Board of Directors where the contact director for producing say, was essentially the general manager of producing. This brought in sort of another layer of management with the vice-presidents not on the Board of Directors. I guess it was about that time there were several vice-presidents, general managers that were also called vice-presidents. But other than the fact that it made you an officer of the company and liable to go to jail, it didn't change things a lot.

NM: In August 1978 you were appointed to Vice-President and Coordinator of natural resources. Can you talk about your post as Vice-President?

PS: Well again, the operative word there is the coordinator of natural resources. What had happened was Imperial, after a lot of soul searching in 1977, '78, essentially decided to set up a separate resource company in Calgary called Esso Resources Canada Ltd. This was done for, the primary reason being that in '77, '78, things were becoming very, very active in western Canada.

#163 NM: It was booming.

PS: It was booming, exactly. It became pretty obvious that you really couldn't operate with a 2,000 mile differential on a decision process. Something that should be decided in an hour would take up to a week to process through the system as it was. There were also some limited tax advantages in terms of setting up an Alberta based company. So Imperial had created Esso Resources Canada Ltd. with its own president and CEO and its own Board of Directors, obviously 100% owned by Imperial, but again, the primary thing was to get the decision process located in Calgary where they were interacting with all of the other companies. And as you say, in a boom time, where fast decisions, those weekly land sales, just didn't wait for some character in Toronto to mull it over. You had to make up your mind on Tuesday morning what you were going to do and you couldn't wait till the next Tuesday. So I think it was extremely timely and a very important process because not only did it improve the situation from a management, decision making point of view but it also I think, created a company in Calgary which was very important as a part of the community out there and able to interface on a much more positive tone and style with the industry and with the government, both there and to some extent, in Ottawa. My own role in Toronto again, was to go back to what I had been doing in New York, essentially as a staff position, as coordinator of natural resources, which was essentially, again, with a very small staff of about 10 people. We transferred most of the people that had been on staff here back out to Calgary, into the operation. Particularly in the planning and economics side of the business. With a small staff here we again, tried to act as a communications link and a bridge between the management in Calgary and the management Board of Directors in Toronto. Again, much the same kind of an operation in that it was an arm's length type of operation. We could provide advice to operations in

Calgary but they were responsible to their own chief executive officer in Calgary. And they might or might not accept the advice. Again, I found it a very interesting and rewarding field, primarily because of the calibre of people I was working with in Calgary and certainly here and found it to be interesting, extremely worthwhile even for a staff job if you want to call it that.

NM: With whom were you working in Calgary?

PS: I guess the first, well, primarily we would be working with the first CEO out there, ??? Hanes and with the executive Vice-President, Dick Bray. And then with the exploration manager who was Dr. Cal Evans, whom I'd been working with for many, many years and the production manager, Gordon Haite, who had transferred actually, from Toronto to Calgary as VP Production, my sort of opposite number in my former job. By working with that group and then in Toronto here, Don Loughheed was my sort of contact Director. We'd had a long association and a very happy association. So again, I think the think that makes it work is the personal relationships that you have with these people. And I guess you've all got the same stamp on your backside and think along the same way. That may be an advantage, it may be a disadvantage but it makes life a lot simpler.

#228 NM: What about being the coordinator of natural resources?

PS: Coordinator is a term that I've never really known what the heck it is but it really means a case of trying to keep everybody informed of what everybody is doing and acting as a liaison between the operating management and Calgary and with New York. Again, there's a reporting responsibility to the major shareholder, Exxon, in New York. Since Imperial is the only sort of recognized affiliate of Exxon, all of the data etc. flowed through this office and was coordinated by this group here in Toronto and sent down to New York. We would visit New York on a fairly regular basis, keeping informed on what was going on down there and then passing it on back through to the operations. And a certain amount of liaison and work with the other departments in the company, for example, in Syncrude, Esso Resources had a 25% interest in Syncrude and a lot of the problems in the earlier years after start up there were much more to do with refining than with anything else in those giant cokers??? they have up there. So we would take a hand in working with the refining experts, both in Toronto here and in Exxon Research and Engineering, and try to facilitate getting the best advice we could out to the operations in Syncrude, on behalf of the owners out there to make sure that that was using the best up to date technology they could get to cope with it. Another aspect of it of course is, as the only upstream visible group in Toronto office, we would spend a fair bit of time on the public relations side of the business and to some extent working in Ottawa in terms of negotiating, discussing the various programs and things that were developed down there. So it was a delightful mixture of many jobs.

NM: Yes. A large spectrum of things to do.

PS: Yes.

NM: You retired last fall Mr. Stauff, what have you been doing since then?

PS: Well, I like to say I'm semi-retired because people seem to take exception to somebody retiring at the tender age of 55. I have caught up on some travelling with my wife. I'm

also now, I say my main objective is skiing in the winter and golfing in the summer but in and around that I've actually started doing a little bit of consulting work.

NM: It seems a lot of oil people do that, when they retire they go into consulting.

PS: Oh sure, they don't know how to quit. I know how to quit but no, you have to keep an interest going. I've been consulting on the Toronto Stock Exchange on some of their listing applications, which is an ideal situation for me. It's very much part time and leaves me free. And as the time goes on I'll probably become more involved in some of those aspects of it. Basically, just practicing so far.

#288 NM: Can we talk about your professional affiliations?

PS: Really the only principal one is the Professional Engineers of Alberta. I have not been too active in that side of the game. I guess the only other significant affiliation that I am no longer in but did enjoy for a few years in Toronto here, again, this is one of those outside things, was with the Canadian Chamber of Commerce. Where I was on the natural resources committee of the Canadian Chamber of Commerce and for the last 2 or 3 years was the chairman of that committee.

NM: Can you tell me about this committee?

PS: The Canadian Chamber of Commerce is really sort of the major association that links together all the various Chambers of Commerce and Board of Trade across Canada and they form national committees, each chapter or section will have their own committee. In Calgary for example, they have a very active natural resource committee, done some excellent work. And then they form a national committee, which is very small and really again, try and advise the Board of Governors of the national Chamber on oil and gas policy or on resource policy. And attend the annual meeting, wherever it happens to be and act as the spokesman for the thing. I found that very enjoyable, you do some work, you usually have every year at least one meeting with the Minister or Deputy Minister in Ottawa and then at various times meet with the caucus, the major parties down there. It's a sort of political business involvement because I think the Canadian Chamber has the potential and is a very strong element of Canadian business. Companies like Imperial and various others support it through having people work on these committees.

NM: This is the end of the tape.

Tape 2 Side 2

NM: Can you compare the training of the oil people in your time to what it is nowadays?

PS: I guess if you go to university training, when I started into university in 1946, certainly in eastern Canada there were no petroleum geology courses and there was probably only 1 or 2 in western, I think maybe U. of A. may have had one at that time. So most of the engineers of my era graduated primarily with a mining background from the geological point of view because most of it was hard rock or mineral mining. In my own case, having graduated from U of T in mining geology, I felt that to get anywhere in the oil business I'd at least have to have a vocabulary in sedimentary geology so I went back and took my Masters degree to acquire that and a few other things.

NM: What was your Masters degree on, the thesis?

PS: The thesis was a study of a small oilfield down in southwestern Ontario here, the Beecher oilfield where I was able to describe it. That was some of my early work on reservoir description. I worked with, again, there were no sort of petroleum people in the U of T at that time, with one exception, Walter Tovall had had some experience. So I did most of my thesis work on Petrography??? thin section work.

NM: So you were quite on your own then.

PS: Pirmarily. But that's good news and bad news. You're on your own but by the same token you don't get that much criticism. I was able to get through a Masters in 1 year which saved an awful lot of time and fooling around. The company, Imperial, was very kind in allowing me to publish the data from the Beecher oilfield which was very worthwhile and saved me a lot of time and effort. It allowed me to take extra courses on things like palaeontology and sedimentary petrography and things like that, which turned out to be useful in the long run. As far as the training is concerned, the majority of the oil people, if you look at the technical people in it, have got backgrounds in engineering physics, electrical engineering, mechanical engineering, chemical engineering, all of the sort of basic sciences. And most of the companies, major companies particularly, really provide their own in-house practical training. So I don't really think that there's been a major change as far as the university training over the years is concerned. Everything has become much more sophisticated of course and the graduates that are coming out now are veyr well versed in a lot of the newer things, such as the computer technology and new types of chemistry and things that some of wouldn't even recognize at this point in time. But I think the basic engineering training, it's really a way of life and a way of tackling problems, it hasn't changed that much.

NM: What about field work?

PS: Field work, that has been a change. It used to be that there was a lot of geologists would spend their summers in the field.

NM: Yes, working for the Geological Survey.

PS: Working for the Survey and mapping. But that, a lot of the sort of basic mapping has been done. As I mentioned in the Northwest Territories for example, the mapping in the mountains was essentially completed from a gross point of view, many, many years ago. There are still people doing some detailed field work but it's not a . . .

#044 NM: So there isn't this need to send people to the field work as there used to be.

PS: Well yes. The job's aren't there, it isn't needed. There still is in the mining business of course, there's still a lot of it goes on. Now it's more of a distinct training program, which I think is a bit of a loss. It's a necessary loss. Because I think one of the advantages of the geologists that worked in the field, particularly in the mountains, develop a sense of 3 dimensional geology, which is extremely important when you're trying to deduce what's going on in the subsurface. Geologists that had spent 3 or 4 field seasons, I always noticed, or maybe it was just something I wanted to see to prove a theory, was that those geologists had what I called much more 3 dimensional thinking. As opposed to . . .

NM: Well, they have been there.

PS: Yes, they've been there and they've seen things in 3 dimensions whereas, if you're working in the subsurface with well logs and geophysical sections, cross sections etc., there can be a tendency to think in 2 dimensions. I don't think that's critical, it may even be a natural talent that some people have and some don't. But I think it provides a sort of background in what the real variations in the earth's crust are. It provides a sort of element of the sense of the heterogeneity??? of the world and therefore the risks that you're involved when you're dealing with a blind 6" core hole trying to deduce a major story from it. It gives you an appreciation of the risks of the oil business, which is really what exploration is all about, it's an assessment of risk.

NM: What about being a self taught geologist, I am thinking of George DeMille for example, do you think that could happen nowadays or do you think that would be absolutely impossible?

PS: I think it could happen. It's not so likely to happen and it's been the exceptions that have proved the rule, people like George DeMille and Bill Rolloff etc., without formal training. Of course what they didn't have in formal training they made up for with a) extremely high IQ's in my opinion and secondly, a truly natural scientific bent, a curiosity that just refused to go unchecked in people like George DeMille.

NM: They loved to study.

PS: They loved to study and they're very observant and are able to assimilate a lot of data and make sense out of it, which is really what I think, a good geologist does, is being able to understand the vagaries of the data and understand how it goes. George, I guess all geologists in a sense are self taught in that you have to only observe. Whether or not you have formal geological training may give you a short term advantage because as I said, I figured I couldn't cope without a vocabulary at least. But it's been interesting to observe because many of these geologists for example, that I mentioned are. . .and engineers, they're self taught, in the sense that their formal training, as a chemical engineer for example, doesn't tell you really too much. . .

NM: So it doesn't prepare you really for the job later.

PS: Not really, it's not a training school, vocational training. It really gives you a sense of science and a background. . .

#087 NM: So some knowledge.

PS: Yes, and some knowledge, to apply to the particular problems that you're faced, be it a reservoir engineer or a hydraulic engineer or a civil engineer building roads in the muskeg, all these various things. The oil industry I think, is almost unique in that it requires a tremendous variety of skills and knowledge and background because they cover so many different. . .it's not like building widgets in a factory and trying to get a more efficient line. It's a much bigger problem.

NM: You have been a witness to the ups and downs of the oil business, what do you think of that?

PS: For a long time it was essentially up. When it started in the 20's or whenever, working through the 30's, interrupted by the war and then in the post war period it was fairly positive. You have to look at it sort of from a Canadian point of view because it really

didn't start in Canada until '47, there was activity before that.

NM: Leduc was the start.

PS: Leduc, '47, was sort of the modern era of western Canada, although there had been drilling and there had been gas found before that out there.

NM: Especially in the east too.

PS: Well, in eastern Alberta, yes, and the old Chauvin??? area there. I had an uncle that was a driller in the old Chauvin area in the 30's, and in Turner Valley of course, which preceded Leduc by many, many years. I guess really, things didn't start to, you had 2 or 3 sort of recessions. The first one I guess would be the OPEC thing really, was probably one of the first ones. The ups and downs, I don't know. So much of it has happened in the last 5 years, with a very big down and now hopefully an up on its way. That's what you tend to focus on.

NM: So it cycles.

PS: It cycles to a certain extent. I guess really to get back to it, the economics have been really what caused have it or have been one of the major factors in there, in that when the price went up, as we mentioned before, it started a whole series of events happening in western Canada. And then as it sort of grew and developed and it became a function of federal versus provincial jurisdiction and confrontation, that created a whole different set of factors in the business, which was a long way from the simple, go out and do some field work, some geophysics, drill a well, hopefully find some oil and produce it and take the province to the bank, and/or reinvest in your next wildcat. I guess that's been the major change that I've seen in the last few years. And the politicization of the oil industry I think, has been a major factor in that.

#133 NM: What do you think of that National Energy Policy?

PS: Or Program. I always like to think of it as a program because a program can change and a policy usually doesn't. I'm not sure what they meant it to be. I don't know how much time I'll take on it but there really has been a national energy policy or program for many, many years if you think about it a little bit. In the 60's for example, the government, there were 2 aspects of a national program. First of all, if you think about the oil industry in the 50's and early 60's, it was, for all intents and purposes, in western Canada and it was primarily in Alberta. Some in Saskatchewan and some in B.C. but primarily Alberta. It was a provincial jurisdiction, it was run from a government point of view by the Alberta government with the Alberta Conservation Board, with some excellent men in it. I think primarily of Dr. George Gauvier but the Alberta Conservation Board, having learned from some of the mistakes etc. that had been made in Texas and various other places, they brought a concept of regulating an industry truly for conservation and for the best economic interests of the province, with a lot of integrity and a lot of technical ability. They really were the national energy policy at that time, at least in my view.

NM: And then what happened?

PS: At the same time you had that policy you had the policy of the federal government who owned the mineral rights in the Canada lands as we now call them, the Territories and the Atlantic offshore and various other jurisdictions that they had. They had a policy of, as I

had mentioned earlier, these work bonus bids etc., which was essentially pro-development, pro-exploration and with, for example, Cam Sproule's Pan Arctic operation wouldn't have gone ahead without strong involvement by the federal government. So they did have a national energy policy at that time. So you had these 2 situations going. Well then, in '73, '74, '75, when the OPEC crisis came and the prices started to rise then you start to get a series of events which eventually culminated in the National Energy Program created by the federals in Ottawa. There's a cause and effect relationship in there and unfortunately the almighty buck was probably one of the primary. . .

NM: Number 1.

PS: Number 1 in most views.

NM: This is the end of the first interview with Mr. Stauff.

Tape 3 Side 1

NM: This is Nadine Mackenzie speaking. This is the second interview with Mr. Stauff. Mr. Stauff, during the first interview we were talking about the National Energy Program. Can you tell me a bit more now, what do you think of that?

PS: I think when we left off we were talking about the development of that National Energy Program and I had mentioned that there really, in the 50's and 60's there was a frontier energy policy by the federal government but the majority of the business was in western Canada and it was really run by the Alberta Conservation Board. It was a very well run industry by the Conservation Board with regulations. It was an artificial situation in many respects in that it wasn't a free market per se, because there was a limited market for the oil in Alberta and with the development of the Inter Provincial Pipeline to provide a market in eastern Canada, which was essentially a form of a national energy program at that time, created by I guess, C. D. Howe as much as anybody. I was just reading an interesting book the other day or article by Jim Gillies, talking about the change in government and in the days of C. D. Howe, he was the Minister in charge and he could sort of ram through a major pipeline. It caused the downfall of a government but it was in essence a form of a national energy policy. And it's one where in essence, the markets were created at essentially, a subsidized price, in eastern Canada, for the continued development of the western Canada oil producing industry. It's easy to forget that particular period of history but nevertheless we wouldn't have the industry that we have today if it hadn't been for those kind of policies that were developed at that time, in cooperation between the provinces and the federal government. It was not a confrontation type of situation at all. That sort of era started to change in '73 as you'd mentioned, when the OPEC Cartel development started to escalate the prices. This did 2 or 3 things, 1) it created a situation in Alberta where the people of Alberta, through their government, felt that they were not getting a fair share of the increased profits of these prices that were raised on old oil, so they raised the royalties up to, I think the first increase in royalties was from the traditional 16% to something like 25%. Of course, this created much more revenue for the Alberta government. It hurt the companies, sure, from what they thought

they should get but they were still making a very strong and valid profit because of the increased prices. They just weren't getting as much of it as they thought they were going to get. But this also alerted the federal government on 2 points, 1) they could see the prices going up for the consuming provinces in the east and with its effect on industry and they could also see the erosion of the potential revenue sources coming in, in that with this Heritage Fund that was building up in Alberta, and Alberta was getting richer and richer and the feds were getting nothing but the simple income tax that they had normally got.

#042 NM: So there was ill feelings.

PS: Yes, this was when it became sort of a national economic situation. The federals felt that they should try and get a piece of this increased action, even though it was a provincial resource. And of course, Alberta steadfastly maintained that it was their resource and they should get all of the primary profits from it. This as I said on the last tape, the almighty buck became a major factor in terms of what economic and energy policy was going to be in Canada. The federal government sort of retaliated with a budget system, which in essence put a tax on the producing profits in western Canada. They started out with an export tax, which took directly away from the companies. This was a time of confrontation when the industry felt very sorry for itself, they felt that they were caught in the middle between the nationalistic policies of the federal government and the provincial policies of the Alberta government and that they were the ones that were putting on the party. I guess the result of that was one of the first, you know, we talked about cycles before, one of the first major downturns in that industry just couldn't afford to keep operating, couldn't afford to keep exploring and the drilling rigs fled south and the industry activity dropped off very markedly at that time, in the mid 70's. Then they had to start to take some remedial action. Again, this was all kind of ad hoc, and it was in a series of confrontations, which is not what you would call a logical planning type of approach to an industry as vital to Canada as the energy industry is. The Alberta government started to put in drilling incentives and royalty relief to try and stimulate activity in the province. The federal government relaxed some of their taxing aspects with a resource allowance, which started to get the industry back into a much more active role in the latter part of the 70's. The federal government in the meantime had come out, were working all the time on the frontier type of energy policy that they'd been working on. Now you're starting to see that the federal government is involved in both the provincial part of the oil industry and the frontier part of the oil industry. And while they were fussing and fighting about prices and royalties and taxes in the provincial, in the meantime something had happened in the early 70's in the frontiers. Which was a major sort of a vacuum developed as far as policy and regulations were concerned in the frontiers. Just to go back a minute, maybe slightly out of context but, in the early 70's, again, with an external source as far as frontier energy policy was concerned, the discoveries had been made at Prudhoe Bay on the Alaska side, with the huge multi-billion dollar land sales that were going on over there. And of course, this caught the attention of the starving revenueurs in Ottawa and said, now, how can we get a piece of taht action.

They then started changing the regulations for land holding and land development in the northern areas, former permits that had been on the suspended land order 1961. Really, the industry, through the early 70's was operating without any clear cut energy policy as an act. In 1976 I think it was, the federal government published an energy strategy for Canada, which was sort of the forerunner of the idea of developing the frontiers. But at the same time changing the ground rules from the original royalty and land tenure regulations that the companies had gone in there with in the first place. So just as Alberta abrogated royalty contracts in '73, '74, at about the same time the feds were, for all intents and purposes changing the rules of the game during the game in the frontiers. It's always been an amazement to me that the industry carried on, primarily on faith, with this situation. The feds tried at various times to start developing a frontier policy which would frankly be much more interventionist than they had ever run into before. I can remember going to Ottawa and talking to one of the civil servants down there in Energy, Mines and Resources, talking about one of the first drafts of what was eventually to become about 4 years later, the National Energy Policy on frontiers. The stated view from a philosophical point of view and certainly the point of view of the bureaucrats that were writing or implementing the policy which presumably had the blessing of the Cabinet was that they were going to control the exploration in the frontiers. They were going to control the amount of exploration, the pace of exploration, who did the exploration and where they did the exploration.

#115 NM: That was a lot of control.

PS: That was a lot of control that was their primary aim. Now there was some justification to this to some extent because some companies, notably in the Arctic Islands, with the exception of Pan Arctic, but some major companies up there were actually doing nothing, were just sitting on the acreage. This properly infuriated a lot of the people in Ottawa who felt that the country deserved some action up there. They should either drill or drop was their objective. Anyway they then started on formulating this policy and I guess those of us who had heard the clearly stated objectives said, that's fine but this is a democratic country, it'll never happen. I guess all the signs were there and we were, I shouldn't speak for the industry, I should speak for myself, maybe a little naive in thinking it couldn't come out that way. But eventually it did and when they did come down with their National Energy Program, in what was it, 1980 or somewhere around in there, they did just exactly what they said they were going to do. And they not only did it in the frontiers but they did it in the provincial areas too. Because again, you can see this conflict that was building up in the late 70's and early 80's, with a boom going on in Alberta with the resurgent gas prices and oil prices to a certain extent and a lot of wealth being created. The federal government could see all of the profits being turned back into Alberta and not much going into the frontiers. So again, a confrontation type thing where they felt that their federal mandate was to look after all of Canada and to try and get the frontiers explored. So they brought down the National Energy Program, which had several aspects to it, which I won't go into the details of because there's been some excellent review and analysis by outfits like the Fraser Institute etc. that have talked about the National Energy

Program in its early phases. But again, they sort of set up a new land tenure system in the frontiers, which was heavily oriented towards activity. They subsidized this activity with one of their other early tenets was, who's going to do the exploration and this was the Canadianization aspect to it, which was to essentially discriminate against the foreign controlled companies and reward the 100% Canadian companies with this petroleum incentive program. Which did 2 things, 1) it curtailed the activities, from a competitive point of view, curtailed the activities of the multi-nationals to some extent and tried to encourage the companies of a Canadian ilk, such as Dome in the federal areas. And it took away from the activities in Alberta, because the money was being funnelled into the frontiers, so that accomplished several of their objectives.

NM: At the same time so many small companies in Alberta just disappeared.

PS: Yes. They just couldn't stand the tax burden and just had to disappear, which was most unfortunate. At the same time the nationalization, Canadianization goals created mania for takeovers and with the subsequent involvement of the banks, they got into the risk business whether they liked it or not. I think again, there's been some excellent material written on that by people much more knowledgeable than myself, but certainly encouraged by the federal government to support the Canadian oil industry at that time, with their takeover situations, which damned near bankrupted many companies and did bankrupt a few. Certainly put the banks in a new light and put the federal government at considerable risk. So the other side of the thing was of course, the introduction of the petroleum gas revenue tax, which again, was a straight off the top revenue grab by the federal government. They justify it with all sorts of national views and far be it from me to say who's right or who's wrong but the net result was that the industry's ability to rebound and reinvest in exploration and development was severely curtailed. We started into a down trend in the early 80's, which was again, exacerbated by the world recession and a Canadian recession. I don't think anybody ever dreamed that the recession would have the effect that it did have. It lowered demand considerably which put a lot of the refining companies into serious difficulty. It created a problem where things that were going to go ahead, such as the mega-projects in Alberta just became untenable from an inflation point of view and from a forecast point of view. So it was a difficult period where I don't think anybody comes out of a thing with a high degree of happiness because the main sufferer was the province of Alberta in terms of the loss of industry. But by the same token the federal government also had set up systems which were extremely expensive and an increase added to that \$30 billion deficit that we're all passing on to our grandchildren.

#199 NM: Do you think it's going to change, are we going to...?

PS: I think it will have to change. Again, the National Energy Program was developed by a particular interventionist type philosophy. It was extremely well done in terms of, you know, as a document, as something that you'd read as a policy, it's very cleverly done. But I think events have overtaken it. Price was, it was predicated on, you know, price would defy the laws of gravity and would keep increasing forever.

NM: A lot of thought was put into it.

PS: Very much so. And a lot of people have been accused of being the chief architect. I'm sure there are principal people involved but it was not a new idea as far as the bureaucracy. I think to a large extent, even the Cabinet.

NM: It was a new approach.

PS: It was a very concrete approach and one that was eventually put into law and then eventually had to be negotiated, subsequently, with the Alberta government in a memorandum of agreement. But unfortunately on a confrontation type basis. What the role of politics was for politics sake is pretty hard to say, I'll leave that for the political scientists to discuss but certainly a major element. And all of a sudden, I shouldn't say all of a sudden but energy, the energy industry, the oil and gas industry particularly suddenly became sort of a national issue. You couldn't go to a cocktail party without getting accosted. . .

NM: Everybody was talking about it.

PS: Everybody was talking about it, everywhere from Halifax to Vancouver. Those of us that had enjoyed the quiet days when we just went about our business looked back with some nostalgia on that side of it. But nevertheless it's changed. When you say, will it change, I think yes, it will change. I have no idea how but I think it's been demonstrated that the tenets that were the basis for the National Energy Program and some of the assumptions that went into it have, for various reasons, proven to be incorrect and therefore it will have to be updated in the light of the world petroleum scene as we see it now. Because Canada is part of the world petroleum scene and will not be able to operate in isolation forever. I think there will be probably a move towards much more decontrol of prices, this has been going on in the US and going on in Canada. Some of this will be good news, some of it will be bad news for the producer. For example, my own guess is that the decontrolled price of natural gas is probably less than it is today, at 65% of parity. That will cut down on the income of the natural gas producers. But they will be producing gas instead of leaving it shut in and keeping the bankers happy. You know, Adam Smith said it all many, many years ago and sometimes it takes a little while for that hidden hand to operate but I think eventually it will. I don't think it really matters what the political stripe is of the thing, I think Canada has always been an interventionist type of society and there will always be some of that simply by the nature of the geography and the constitution of our country. But hopefully in the kind of government system that we have it will correct itself. I view this a fair amount from the viewpoint of a geologist of a few years ago that's used to working in time scales of millions. When you look at a 5 year period from 1980 to '85, you say, my goodness, what was that little blip on the path of progress.

#261 NM: How do you foresee the future of the oil business in Canada, in a positive way?

PS: Oh, I see it very much so in a positive way. When I talk about the oil industry I naturally think of the so-called upstream part of the business, exploration and production. I'm encouraged that we will have a strong exploration and production oil industry for many years to come. It won't be the same as it is now and it will change just as it's changed in the last 10 or 15 years. That's the nature of the business because it's a finite resource and

you have to keep looking for different things. But I think 3 things really, 1) is the basic heritage, I don't know whether it's heritage or resource or whatever you want to call it, that the country is blessed with. In terms of frontier resources, oil and gas and in terms of the heavy oil resources in Alberta, which are world scale. And to some extent in the present production that we have, which can be reworked with technology to get a little bit of tertiary recovery or a little bit more oil out of the old fields. So I think that we have the resource there. Secondly we have a strong base of technical ability on the part of the entire industry, to not only cope with the physical aspects of producing oil and gas but with the research and development that will be required to produce those heavy oil reserves or resources that are in Alberta, and to some extent in Saskatchewan. I think there also is a major, not only the technical know-how but the managerial and business sense that's developed in Canada over the last 30 years, to actually make this come about. I think that's our second major resource. Thirdly I think there's another side of the thing, we have a major natural gas resource in Canada. Right now it's very difficult from a marketing point of view, but again, I suspect that the so-called gas bubble in the United States will disappear in the next 3-5 years and then they will become a major potential market for our natural gas, be it from Alberta or from the frontiers. That's a long term market that we can compete in because keep in mind that the world is long on gas. They've got tremendous reserves of gas in the Middle East, and various places, so we'll have to be competitive on a world basis but we are the closest to one of the major markets in the world.

NM: Which is a very good place.

PS: Which is a very good place. And we have tried and true technology to get it there, via pipelines as opposed to the expensive LNG, liquefied natural gas system for offshore bringing in of liquids. So I'm saying, I think we can be competitive with all these things. I don't think I'm being overly optimistic but I certainly see it as an ongoing industry that will look a lot different 10 years from now just as it looks a lot different than it did 10 years ago. But certainly a very positive element because there will always be a strong market for energy and particularly the liquid forms of energy that we can produce.

NM: This is the end of the tape.

Tape 3 Side 2

NM: What do you think of the contribution of the province of Alberta to the development of the Canadian industry?

PS: I think that first of all, I should get in a little dig, not a dig but a comment that the industry started in Ontario, in my hometown in 1858 or 1859 and the Alberta's has kind of come along a little bit later. But they've done a darn good job of it so far. No, seriously, with even the development of the Turner Valley oilfield in the 30's in Alberta and sort of the early development of the Conservation Board. And then with the subsequent discovery of Leduc in 1947 and the major fields in the next 3, 4 years and the development of the expertise and the conceptual approach that the Alberta Energy Conservation Board took

under some fine leadership, I think they made a major contribution towards developing an industry which was based on principles of conservation and business fairness. Which is something that I suspect has not been the case in a lot of other jurisdictions. So the Canadian oil industry has been developed on standards of I think, high technical competence and rules of the game which were, you might not like them but they were at least written rules that were fair and equitable for all. So I think that the Alberta government has been largely responsible for the development of a sound well managed industry. Because a lot of the developments and things that have been proceeded with have been reviewed at public hearings. It hasn't been a behind the table or under the table type of operation, there's never been a hint of any paternalism or scandal or anything involved with the governments or the oil industry in Alberta and in Canada as far as I can see and as far as I'm aware of. I think that's a tremendous record which is a credit to the political leadership in Alberta and certainly to the bureaucratic level that has been developed there. They're world class.

NM: Mr. Stauff, can we go back to your family again and talk about your father? Your name is German.

PS: Oh yes. It's been around North America for a long time. My father's ancestors originally came over to this continent in approximately 1812 as Hessian mercenaries. So the German sounding name is really all we've got left of that particular heritage. It's always been an embarrassment to me if somebody said to me, you should be able to read the menu in German. ??? is about as close as I ever got to German. Anyway, my father was raised in Pennsylvania, where most of those people settled as the Pennsylvania Deutch, went to the University of Pittsburgh there, taking geology and engineering, spent some time before graduate school on field work in Mexico. And then in graduate school, I think I'm clear on this, met a fellow student by the name of McQueen whose father was with Imperial in Toronto and Imperial at that time had an affiliate, International Petroleum, 100% affiliate, which was operating, had purchased the British properties in Toleranagredas??? in Peru and were starting to develop them and produce oil from them. My father accepted a job through McQueen as a geologist in Peru and went down there in the early 20's as a field geologist. Did some of the original mapping in the Situra??? Dessert out there and then when sort of the field geology days were over he went into the production side of the business with his engineering background and was, at the time of his death in 1934, was the production superintendent, or production manager in he Labraya-Perenius??? field at that time. As a matter of interest, my mother had gone down to Peru as a school teacher and met my father in Peru and they were married down there and there were 3 of us in the family. Upon my father's death we returned to my mother's hometown in Petrolia and all of us were educated there and started out from there. Petrolia being sort of the cradle of the original oil industry, it was a great, an interesting town in itself in that a lot of the early exploraiton and drilling around the world was actually done by drillers from the Petrolia area. In the Middle East and South America, certainly the Turner Valley area, most of the drillers were originally from the Petrolia area. Unfortunately I think most of them are long gone but it was interesting that one small town could produce so many world travellers in a time when travel was not a

common thing.

#068 NM: You followed your father's footsteps into the oil business.

PS: Yes, I had worked of course, my grandfather in the Petrolia area had a small oil property and farm just outside the town and I spent my summers out there working on, he had a couple of old wells that we produced a few barrels a month. In those days, enough to pay the hydro bill as we called it. I was actually, we used to change the sucker rods and the valve cups with horse drawn motivation and one of my early jobs was to drive a horse drawn tank wagon down to the receiving station to deliver the oil to get the \$15 cheque that we'd get every 6 weeks or so.

NM: Who was influential in your career?

PS: As far as who has influenced me in the career I'd have to say, maybe I'm a pragmatist but it's always been the people that I've been working with. Either in my own company or in the industry. I think I'd find it very difficult to pin down any one name. There are people that I'd consider great friends of many, many years but from an influence point of view and the way your career develops, I think it would be just the same as the way most of the things that happen in the oil industry, they happen by a group of people working together towards something. I think from an influence point of view, I would say that the groups of people that I've worked with on a year by year basis have been the influence on it. That's strictly from a career point of view.

NM: What were the most exciting experiences in your career?

PS: I think I'd have to break that down into 2 or 3 different categories. Probably one of the most exciting was being stranded in the middle of a river in northern Manitoba when the engine went dead on the canoe that we were operating in and watching the guide trying to start it in the middle of the rapids, steering the boat with his feet, I found that quite exciting. No, I guess from a career point of view, or from an interest point of view, obviously all of the drilling successes and failures etc., technical successes or monuments to science, whatever you want to call them, dry holes we drilled, they're all interesting. But I think one of the more dramatic ones that I felt was significant in terms of Canada and being a part of it or interested in it was the first significant oil discovery in the Beaufort and the Tuk Peninsula, the Atkinson #1 well. It turned out to be a very significant field by southern standards but with no market it's not very significant at the present time. Eventually I'm sure it will be producing. But at that time we were just nicely starting to get success in a few wildcats in the Northwest Territories and that first well was about 100' of excellent looking reservoir that I'd never seen as good before was certainly exciting. Subsequent events were a little disappointing in that we were not able to prove a major field up there but at the time it was certainly very exciting. Because you could see it as hopefully the dawn of a new oil region in Canada. It's just taken a heck of a lot longer than any of us had hoped for at the time but that's the nature of the business.

#113 NM: Any other experiences?

PS: No, I don't think there's any others. There's been a lot, the experiences in research, the experiences overseas and the experiences of getting to see a lot of Canada, some of the

interesting work in the days of negotiating oil and gas regulations with the government of Newfoundland for example and meeting the wonderful people of Newfoundland. I found those to be very interesting and rewarding parts of a career. There's a lot of negative sides of being like a gypsy and moving all over Canada but there's a lot of positive sides too.

NM: Mr. Stauff, what do you consider your achievements?

PS: I don't want to sound too maudlin or anything else on it, I think if I have an achievement it was to work the first half of a career with some success from an ego point of view in terms of the corporate structure but I think from an achievement point of view I think, being a part of finding some oil and gas and furthering exploration sides of the industry is an achievement. Not a singular achievement but certainly part of it. I think also in being able to work with a lot of people and watching the development of the younger geologists, geophysicists and engineers coming along, having even just been a part of that I find is an achievement that I'd be proud of.

NM: Looking back at your career, what do you think of it, is there anything you will do differently?

PS: I'm sure if I went back on a step by step basis I can find lots of things that I could have done a lot smarter. I've always been an old Presbyterian fatalist to some extent or pedestrian or whatever you want to call it and felt that events would transpire and that if you worked at it, it would proceed and there were some things you could control and some things you couldn't control. I just feel I've probably been very fortunate in a lot of these elements. So I can't think of anything specific that I would change in the process. I'd just look forward to the future.

NM: That's a good positive attitude. And this is the last question, on the whole what do you think of the oil business?

PS: I think it's an exciting business to be in. It's certainly been a rewarding career as far as I'm concerned. I've always been impressed with the integrity of the people, the number of handshake deals that have been a hallmark of the industry. I think that it has a proud history and a strong future and I think it will and can be a significant contributor to the Canadian scene over the decades to come.

NM: Mr. Stauff, I have really enjoyed interviewing you, thank you very much.

PS: Thank you.