

PETROLEUM INDUSTRY ORAL HISTORY PROJECT
TRANSCRIPT

INTERVIEWEE: Maurice Paulson

INTERVIEWER: Nadine Mackenzie

DATE: April 1984

NM: This is Nadine Mackenzie speaking. Today is Tuesday, April 24th, 1984. I am at the office of Mr. Maurice Paulson, 800, 444 - 5th Ave. S.W. in Calgary. Mr. Paulson, thank you for having accepted to participate in our project. Can you tell me, when and where were you born?

MP: I was born in Bawlf, Alberta, in October of 1919. I grew up in Camrose, which is 18 miles west of Bawlf. I attended public school and high school there and then left and went to the University of Oklahoma.

NM: What did your parents do?

MP: My father was in the garage business in Camrose, from 1921 until 1938. He homesteaded in the Bawlf area in 1902 so he's a long . . .

NM: Yes. Where did your parents come from?

MP: My father had come from Wisconsin, had been born in Wisconsin, and my mother had come from South Dakota and been born there. Each of my grandparents came from Norway.

NM: And why did they come to Alberta?

MP: My dad came from Alberta in order to homestead in that area and similarly, my mother's parents had come to . . . I presume it was because homesteading land was practically free.

NM: That's right, they were giving the land away.

MP: Yes, and they wanted to encourage people to come in and settle in Alberta.

NM: It was a good idea in fact.

MP: It was very good. When we look back, people in our parents age contributed a great deal to this province in many ways.

NM: So you went to the University of Oklahoma, what did you study there?

MP: I studied petroleum engineering and got a degree in petroleum engineering.

NM: Why did you choose this university?

MP: It was quite a little coincidence. While in Camrose my uncle and my father were in the garage business. They sold out in 1936, the one business they were in to the other. As a result of that my uncle went down to Oklahoma to look after some natural gas leases that his father owned. He came back in the summer of 1937 to pick up his family and take them down. 1937 I graduated from high school and during a conversation with my uncle he asked me what I was going to do. I said I was uncertain and he suggested, why don't you come down to the University of Oklahoma and take petroleum engineering and I said, okay, that's fine I'll do that.

#038 NM: Did you know what petroleum engineering was about at the time?

MP: Well, I had an idea because being in the garage business of course, you sold gasoline and oil and you enquired as to where they came from and stuff like that.

NM: How long were you at the University of Oklahoma?

MP: I was there for 2 years and then I had to stay out for about a year and I went back for a year and stayed out for another half a year and then I stayed until I graduated.

NM: Did you take any summer jobs?

MP: During the first and second summers there basically weren't any jobs available. However, when I found out that I had to earn some money to go back to school I was fortunate enough to have Mr. Ralph Will of Anglo Canadian Oils hire me as a roughneck in Turner Valley in September of 1939.

NM: That would be good training.

MP: That was excellent. Not only from the standpoint of getting sufficient money to go back to school but also from the standpoint of learning some fundamentals about the drilling business and being associated with the producing business with friends who were in that end of the business.

NM: Did you meet a lot of people there that you were going to work with later on?

MP: Yes, I did. There are a lot of people that are still around that I associated with in Turner Valley. Some of them of course, have died, the older ones. But there are still several around.

NM: Can you give me some names?

MP: As I mentioned before there was Ralph Will, there's Don Binney and Herb Bagnall, Jim Harvey. . . I can't think of the rest.

NM: And after you graduated from the university, what did you do?

MP: At that particular time, which was at the end of July, because I had to go to summer school, I came home and at that time, which was in 1942, my father had moved out to the farm and he had cataracts and was quite elderly at the time and he had to have those removed. So that combined with the fact that there were not really jobs readily available, I stayed on the farm and did the farming that summer and fall, until the next spring. He went and had the cataracts removed and at that time of course, it was a very difficult operation, he would be in bed a month at the time. So that's what I did. Then somehow, Alec Bailey with the Energy Resources Conservation Board, I guess, had got wind of the fact that I had been to university and he phoned me in June of 1943 to see if I would come to work for the Board in Turner Valley, so I did.

NM: And what was your work there, what did you have to do?

MP: At that time we took bottom hole pressure surveys of certain wells, we looked after the production reporting that went on and we'd get other chores that the Oil and Gas Conservation Board were involved in.

#081 NM: How was Turner Valley at the time?

MP: Turner Valley was a great place. They had a golf course there and many of the people were active in hockey and other sporting activities. There was considerable work going on, maybe 15 or 20 drilling rigs operating and basically, the area was divided into 4 towns, which was the Turner Valley town, the town of Black Diamond, the town of Little Chicago and the town of Little New York, which were at the south end of the town.

NM: ??? Little Philadelphia or something like that?

MP: No. There was a smaller town in between the south end and the north end called Hartel, which there was a small refinery located at.

NM: What about the pollution at the time?

MP: At that time I don't think they really knew what pollution was.

NM: People were not talking about it.

MP: Actually, when you look back on it, there was very little pollution that bothered anybody. Sure, there was some H₂S in the air as a result of burning a certain amount of gas but conservation was coming into effect and it really never hurt anybody that we were aware of. The primary thing was, when you came to Calgary and went back, you could smell the SO₂ in the air.

NM: And then you got accustomed to it again.

MP: And you got accustomed to it and you couldn't smell it. The only comment would be, we smell the SO₂ and that's it, it never bothered anybody.

NM: And nobody was complaining of being sick?

MP: I never heard any complaints no. I don't think it ever hurt anybody because some of those guys lived to be 90.

NM: So maybe it was a good thing. How long did you keep this job for?

MP: I worked until the fall of '43 in Turner Valley and then the Board had me come in to Calgary to do some reservoir engineering work on Turner Valley and I stayed there until the spring of '44. At which time I left the Board because I received an offer from Ken Doze with Oil Ventures Ltd., which was partially consulting firm on field operations at that time. So I did that and went down to the Taber area where they were looking after 2 or 3 drilling rig operations for operating people.

NM: Was Oil Ventures a big company?

MP: No, Oil Ventures was very small. There would probably be 8 or 10 people involved.

NM: Is it there that you met Neil McQueen and Ken Doze?

MP: Yes.

NM: Can you talk about Neil McQueen because his name has come up several times?

MP: Yes. Have you had any discussion on Neil before?

NM: Not really. ???

MP: Neil's background was that his father, at one time, was I think, he was either president or vice-president of Imperial Oil in the east. Neil came out here and he got involved in the oil business in the late 1930's, basically as a promoter. He got tied up with Oil Ventures, which was tied up with Pacific Petroleums at that time. So he was with them for 5 or 6 or 7 years and then Oil Ventures kind of went out of business with the slack period of time between '44, '45, until 1947, in February, when the Leduc discovery occurred. He got involved in some leases and formed a company called Central Leduc Oils, which was very successful and he went on from there. Central Leduc was bought out by, gee, I can't recall the name at the moment.

#138 NM: And who was Ken Doze?

MP: Ken Doze, he was from the States originally, and he came up here in about 1935 or 1936,

with Haliburton, I'm just trying to recall whether it was Haliburton or Dowel. Anyhow, it doesn't matter. Came to Turner Valley, he stayed with them until Neil McQueen hired him away in approximately 1940, from Dowel. Then he went with Oil Ventures and then with Neil through Central Leduc. He left Central Leduc, I'd say in the early 60's or maybe the late 50's, and went down into the U.S. again.

NM: So he did not stay in Alberta.

MP: He didn't stay in Alberta, no.

NM: Because a lot of Americans in this time, came to Alberta and then stayed.

MP: Yes, a lot. Actually very few went back, well there were several that went back.

NM: It was a good place to be.

MP: Oh yes, they enjoyed it and contributed very great. . .

NM: Absolutely. So how long were you with Oil Ventures?

MP: I stayed with Oil Ventures until the spring of '46. During that time I was in the Taber area and in the Brooks area. While in the Taber area I met my wife and we got married in Taber.

NM: So she's from Alberta?

MP: She's from Alberta too, yes.

NM: You are both true Albertans.

MP: Yes, although she was born in Saskatchewan, but she was 2 or 3 years old when she came to Alberta. Then in the spring of '46 Oil Ventures were just about bankrupt or didn't have business anyhow, so they were going to break up. So a fellow by the name of Vern Taylor, with Imperial Oil hired me. He heard that they were going to lay me off or go down, so he. . . at that time Imperial were fairly active so I went to work for them as an engineer.

NM: And where was it?

MP: It was in Calgary here, came to Calgary in '46 and was sent out on various wildcat wells in the Brazeau area and up in the Viking-Kinsella area and the Carstairs-Crossfield area. Then of course, in February of '47, the Leduc #1 well came in.

NM: That's right. We have the letter you sent to Doug Layer here. Can we talk about your work at Leduc, you were on Leduc #1 and then Leduc #2?

MP: Yes. The prime purpose of an engineer on the job was to ensure that what was wanted done by say, the Calgary office, who had in mind the clear objectives, as well of course, as the field personnel but there was a little coordination required there. And then the field personnel was to carry it out. Most of the field personnel were well experienced, they'd been around in Turner Valley, they knew what to do, so it was a question of ensuring that everything checked out and get the job done, get the well on production. During perforating, or completion operations, which involved running casing and perforating and acidizing in many cases, the engineer would be on hand to help to ensure, with the tool pusher, that everything was going good and going according to plans. Then if any trouble developed, to try and interpret the causes and proceed.

#194 NM: Were there many engineers at the time at Leduc?

MP: No, there was one, that was me. No, there were very few engineers. At that time within

Imperial Oil, there may have been 3 or 4 and that's about all.

NM: And it's written down that Charlie Visser came to your apartment to request that you went to Leduc.

MP: Yes, I believe it was either on February 11th or February 12th, Charlie came, I guess it was the Friday, February 12th, Charlie came to my apartment here because he was the drilling superintendent for Imperial Oil in charge of the drilling rig up at Leduc. He advised me that they'd had a successful drill stem test and that they were going to run pipe the next day. Well, I guess this would be maybe a couple of days before that. That he wanted me to go up there and help Vern Hunter, who was the tool push on the rig, and the drilling crew and the service companies, complete the well. So I was up there a couple of days before that while they ran pipe, then when they were ready to make the completion, Vern Hunter came up, who had an engineering background but was the assistant manager at that time with Imperial Oil here. During the night of February 12th, the crews were rigging up so they could prepare to swab the well into production the next day and they ran into trouble with their swabbing line and it had to be spliced. So I stayed basically, all night, then I went into the town of Leduc to get some sleep and Vern Hunter was out there. I was intending to go out in the afternoon, about 3:00 and Aubrey Kerr came in and told me that they weren't ready yet, to go back to sleep. But they decided to go ahead and swab the line with the short line, which was fortunate. After several swabs, half an hour or so, they got the well swabbed into production. So when I got out there the well was turned into the flare and so it just was a matter of turning it from the flare into the separator and then into the storage tank and watch the production overnight and see how it did.

#235 NM: And that was quite historical.

MP: Yes, it turns out to be a very historical event for the province of Alberta. There had naturally, been a number of wells and a few oilfields discovered in Alberta before but this formation had different characteristics than other formations that had been discovered. It was easy to bring in, there was sufficient pressure, good gas-oil ratio in the well and the well flowed nicely. So it was kind of the dawn of a new era of dolomite type reef production.

NM: Everything was going very, very well then. And that was Imperial, Leduc #1?

MP: Yes.

NM: And you were also at #2?

MP: Yes.

NM: You were the engineer on this well completion?

MP: Yes. After the successful completion was made of the Leduc D-2, Imperial geologists picked 2 additional locations. Imperial Leduc 2, which was to the south and a little bit west, approximately 3 miles. It's a long time, I may not have that exact. And Imperial Leduc #3, which was approximately 2-3 miles to the northeast, to see if they could define the limits of the field in that direction. The Imperial Leduc #2 well drilled through the D-2 zone and didn't obtain any porosity in that zone. They continued drilling and got through the shale and into the D-3 zone, which I don't think anybody was too

knowledgeable at that time, that this zone existed or had possibilities. Aubrey Kerr was the geologist on the well at the time and when they broke from the shale zone to the D-3 zone, the drilling speed in penetration feet per hour picked up considerably. So Aubrey had them stop and examined the cutting and determined that they were into a porous dolomite again. So a drill stem test was run and oil flowed to the surface on the drill stem test. So then it was a matter of myself becoming involved in the running of production casing and perforating and the acidization and bringing the well into production. Vern Taylor came up at the same time because he was very interested in it. He did the acidizing, or was present at the well when the acidizing job was done. That was done at night and I came out in the early morning, about 6:30, 7:00, and the swabbing crew was ready. We swabbed about 5 or 10 swabs and the well came into production and we put it the flare for about 15 minutes. It appeared that all the water was out of the oil and the acid was out of the oil and we put it into the storage tank and I went back into town about 8:00 that morning and that's all there was to it. So it was very simple.

#297 NM: That's right, and it was such a big discovery too.

MP: Yes. It was a big discovery in that what has followed within Alberta since that time has been excellent.

NM: There was then, a very big party to celebrate the discovery at Leduc, were you there? When Tanner came and opened the ???

MP: At Leduc #1, Imperial had invited the press and certain people, which I guess, from the government were there. Because Vern Taylor had in his mind, he knew from the drill stem tests that had gone on that this well would come in flowing. So he had these people out there when they swabbed the well in and after it had gone to the flare and cleaned up a little bit, then I think he had, maybe it was Tanner, turn the well into the separator and into production.

NM: I think there was a delay too, I think at the time he was going to turn the valve or something, it was not working.

MP: Well, I don't recall that.

NM: I heard that somewhere so I don't know if it's true. So after Leduc, what did you do?

MP: After it became known that we had the D-2 zone and the D-3 zone then it was a question of, we have to develop it and determine the limits of it, how big a field it is and put it on production. I was moved up to Leduc as the district engineer and I stayed there for I think it was, the fall of '49. So basically I moved up to Leduc in March of '47 and was the engineer in the field, and worked with a number of other people of course, until the fall of '49, and then I was moved to Redwater.

NM: This is the end of the tape.

Tape 1 Side 2

NM: What type of work does the district engineer do?

MP: It involves a few areas. You and your other engineers that are working with you get involved in the drilling and the completion work of the wells that are being drilled. You

also get involved with the design and the construction of the producing facilities. It's not, in a field like Leduc, it was not that complicated most of the time. We were busy because we had 7 or 8 drilling rigs going so we had a lot of completions all the time. We had of course, the help from the production department on the producing operations but we had to be involved in giving them ideas relative to, how much oil are we going to have to produce, how much facilities do we need, where do we want to locate them, do we want them all together or can we have them spread around a bit. So it's the overall designing involved in it, and then you get into the details of it also.

NM: To whom were you reporting to, at Imperial, who was your boss at the time?

MP: Vern Hunter was the district superintendent so I reported to him. He was the man that was the drilling supervisor or tool pusher on the Leduc #1 discovery.

NM: So you knew him?

MP: Yes, I'd known Vern for quite a long time.

NM: And then you moved to Redwater?

MP: Yes.

NM: And what were you doing there?

MP: I guess it was in the spring or summer, probably late summer of '49, the Redwater discovery was made. Some of us in Leduc at that time were involved a little bit in it. But after the discovery was made in Redwater and a couple of step out wells drilled then it was realized that this also was another large field operation that had to be developed and put into the producing stage. So another district was established up there and I was moved up there then, as the district engineer. Because at that time it was very logical, there were some other engineers at Leduc that had been working there. Actually we probably were short handed to a certain extent but you had to spread around and as a result I went up to Redwater and one or two of the others I guess, came along fairly soon after that.

NM: Where were you living then?

MP: Imperial Oil built some houses in Devon. I think we occupied them in the spring of 1948 and I think there were approximately 25 or 30 houses built originally. So the people working in the field moved out there. So we had one of the first houses in Devon and so we lived in Devon until after I was moved to Redwater. There were no housing accommodation for families at Redwater and since our daughter was born in the fall of '48 while we were living at Devon we needed to have a home and so we moved into Edmonton and stayed there for about 6 months, until housing was built in Redwater. Then we moved out to Redwater.

#048 NM: Who else was working with you at Redwater?

MP: Rod McDaniel was an engineer there with me. Jack Harvey was another engineer, George Bannantine was the district superintendent, Kelly Gibson was the drilling superintendent, Jim Henderson was an engineer there. There were some production people if I can recall the names, Van Dusen was one of them, well, I guess I just can't recall the names at the present time.

NM: And how was your work there?

MP: The work was basically the same as what it was in Leduc and naturally, what goes with

that type of work which is the overall planning, you would have to make your best cost estimates as to what each drilling well would cost and what the production facilities would cost and make out your budget. Then make out your estimates as to what the production would be and the overall income and stuff like that. So there was a small amount of paper work involved, not as much as there is now.

NM: Were you coming very often to Calgary or going to Edmonton?

MP: Not very often, no. There would be times where the people from Calgary would come up to the field and discuss things with us and we'd make our overall plans for the next 3 months or 6 months or year or whatever it was.

NM: So were you staying mostly in the Redwater district or were you travelling a bit?

MP: When I was in Redwater I was mostly in the Redwater district.

NM: And how long did you stay there?

MP: We stayed there until the fall of '49, so we really weren't there very long. Then I was moved to the Imperial Oil office here in Calgary.

NM: And that was in '50?

MP: That was in the fall of '49.

NM: So what was your new post with Imperial here?

MP: I joined the division engineering department here at that time.

NM: Where was your office?

MP: Our office was where the old Albertan building was, which was on 9th Ave. and 2nd St. W.

NM: And did you stay there a long time or . . . ?

MP: I only stayed there until the summer of 1950 and then I left Imperial Oil and went with Home Oil Co. There was one influential reason for that and that was, at that time, I had been with Imperial Oil 5 years and I had moved with my wife 10 times.

NM: In a very short time too.

MP: And we had a young daughter and I didn't want to be moving around that much. When I went with Home Oil they were a very small company, their headquarters was here in Calgary and I thought, if I move with them I'll be able to stay in Calgary for the rest of my life and so far I've had 34 yrs. of it.

#093 NM: So what did you do at Home Oil?

MP: I was an engineer at Home Oil.

NM: Where were the offices of Home Oil at the time?

MP: Home Oil's offices were in the Lougheed building, which was on 6th Ave. and 1st St. S.W.

NM: Can you talk about this company, it was a very small company then?

MP: Home was quite small. The president at that time was Major Lowry and he had a considerable ownership in the company, not 100%. It was founded in the early 30's, in Turner Valley, maybe late 1929. It was active for awhile and then it went fairly dormant and then it became active again, in 1937, after the discovery well was drilled in Turner Valley in the oil zone. The oil discovery well which was drilled by Bob Brown's father. So Home had some leases and acquired some leases in the north end of Turner Valley and

they were successful in expanding the field in the north end. As a result, continued on with their development there and after Leduc was discovered they acquired some leases in that area and got some wells up there, production. Then I think it was in about 1953, Major Lowry sold out to Bob Brown Jr. After Bob Brown Jr. got in, who had been an old friend of Major Lowry's, the company got more active in different areas, got more land holdings, did more wildcat drilling and were very successful. Bob Brown was a good promoter and he wasn't afraid to go out and drill exploration wells.

NM: Was he a good friend of yours?

MP: He became a good friend after he acquired the company and I worked for him, yes. I had known him slightly before that but not really on a friendly basis because I didn't know him that well.

NM: How was it working with him?

MP: It was extremely enjoyable throughout the 27 years I was with Home Oil. Bob was a promoter and a financial man. His background wasn't in practical work or engineering work and as a result he left that to the employees that were best suited to do that work. So he looked for the results that were obtained and that was it. Most of the production people and the engineers were left on their own to carry out the job. They could seek direction from consulting firms if they needed it, as far as that phase of it went. And then of course, he coordinated how that phase would fit into the rest of the organization.

#141 NM: How big was the staff at Home Oil when you joined?

MP: In the Calgary office we had approximately 12 people and then we had approximately 30 people out in the field when I joined it, which were out at Turner Valley. Then as time went on of course, the Calgary staff got larger and we got involved in different fields, in Westward Ho and Swan Hills and Virginia Hills and Carstairs and various other small fields. As a result the field staff grew considerably. I think when I left, including the people we had in the U.S. we only had about 500 people. I understand they have 3,000 people now.

NM: So you saw the company growing and growing?

MP: Yes, I did.

NM: Can you talk about those discoveries?

MP: Sure. The first major discovery, which was a new field discovery that was significant would be in Swan Hills. I think that would be in 1959, the fall.

NM: How did it happen?

MP: Our exploration department was quite aggressive. George Blunden I think, was involved considerably at that time. I forget whether he was exploration manager at that particular time. If not, he was involved anyhow, considerably, and the geologist, George Fong for one and there were probably several others. So Home, Mr. Brown and the land department and the geologists were able to obtain a farm out from Texaco of Canada, 4 townships of land in the Swan Hills area and the Virginia Hills area. We were under an obligation to drill, to earn an interest, to drill 3 or 4 wells. The first well we drilled struck oil in the Beaver Hill Lake formation in Swan Hills. Of course, the drilling of the other wells then became quite automatic. One of them was the Virginia Hills well which

became the discovery of the Virginia Hills field.

NM: And that was in '59?

MP: That was '59 or the spring of '60, maybe the winter of '60. As I recall it's close in that period anyhow.

NM: What was the next one?

MP: The next large discovery for Home was at Carstairs, which is Carstairs gas field. That was about '61. Those were all very major discoveries. I don't recall since that time of being involved in discoveries of that extent in any fields. We did participate or have holdings in fields such as Harmattan-Elkton, Pembina, Mitsu and maybe a couple of small gas areas like Erskine and we were involved a little bit in Stettler, but not necessarily in the discovery wells. But we had holdings and got into those fields.

#199 NM: And after Carstairs gas field, what happened?

MP: That then became a major gas field. But relative to what happened within the company, we still had considerable development to do because it took several years to develop the Swan Hills area. It took several years to develop the Carstairs and the Virginia Hills area. In the Carstairs field of course, you had to determine the size of the field by the drilling, you had to determine the capacity to produce that and you had to build a gas plant in order to separate the liquids and the hydrogen sulphide from the gas so that you could market the gas if you could find a gas market. So those things occupied a lot of the time relative to say, the production department and the engineering department. Of course, the exploration department continued to be busy trying to find other locations or areas or fields and were successful in some small areas. But these contributed a lot.

NM: Were you there at Carstairs all the time, or were you working mostly from Calgary?

MP: No, I would be working in Calgary, I was located in Calgary. Then we would have production and engineering people working for me.

NM: Did you go and have to check on them to see how the work was coming?

MP: They would report to me their activities and you would see the results. I would go out to the field quite often to see what was going on because to me, it's quite important to be on site and it makes it much easier for discussions with them when you are discussing because then you can visualize and you know what's going on.

NM: And the staff was growing and growing at the same time, did you have to hire more people?

MP: Oh yes, we had expanded with engineers. Mechanical engineers and reservoir engineers and production people and drilling people, yes.

NM: Where were you recruiting the people, where were they coming from?

MP: The majority of them came from people who were within the oil industry. They were with other companies to an extent, some came directly out of university. Imperial Oil supplied a lot of people.

NM: They say it was a very good training ground for people.

MP: Yes, they supplied a lot of people. Or people went to them to hire a few because they . . . new companies could offer a little bit more money or a better opportunity. Within any organization you. . .

NM: It happens all the time.

MP: It happens all the time, sure. As a result, sure, Imperial lost a lot of people but I think they also gained a lot of friends too.

#250 NM: Who was the president of Home Oil at the time? I'm thinking of the time of Swan Hills discovery and Carstairs.

MP: Bob Brown was president.

NM: And after Carstairs is there anything which happened.

MP: Of course, they were some exciting times. As far as exploration lies, I can't recall participating in any large discoveries. There was an exciting time relative to when Prudhoe Bay came into existence and Home Oil participated with others in bidding on some land up there and were successful in getting some land but it turned out to be dry holes.

NM: Mr. Paulson, can we talk about the Prudhoe Bay sale and how you got involved being on the blue train between Calgary and Edmonton?

MP: The situation was that lands were put up for sale near Prudhoe Bay, near the discovery, the south end of what was thought to where the field was to be. We got involved with other companies. It was a bidding situation and each one of the companies that we were involved with were really not large enough to gamble the total number of dollars that would be required to buy this land.

NM: So you were then getting together?

MP: So then we got several companies together, Hamilton Brothers I believe, were the instigator of it and they got different companies as partners, to go in and bid. One thing that they wanted, since there were a number of companies involved, consequently a number of people would be involved. Since it was going to be quite a lot of money, I think in the \$8-10 million range, the Hamilton Brothers people wanted to ensure that the final bid that the companies agreed to would not leak out to any other opposition company. So they dreamed up that if they hired this train, then they could have various people, 3 or 4 people from each company, get on that train and stay there for a couple of days. They could get together and have discussions, make decisions and come to a final bid price. Then when that was done they would keep the people on the train until after the bid was submitted and the closing date for the bids was passed. So that's what they did.

#308 NM: And you were on the train with Bob Brown?

MP: No, I was on the train from Home Oil Co., there was Bob Campbell, who was executive vice-president, George Blunden, who was vice-president of exploration and myself, who was then vice-president of production. So we had a mix of management and exploration and engineering for economic analysis.

NM: Who else was with you on the train?

MP: What other companies? Actually, I only recall Hamilton Brothers but I know there were 8 or 9 others. I've still got the folder at home which I think, probably lists the companies but I believe you're going to get that from Mr. Marshall anyhow.

NM: So how long were you on the train?

MP: Basically 3 days.

NM: And was the train running non-stop between Calgary and Edmonton and back or was it stopping in between.

MP: No. It was running at a very slow pace between Calgary and a point about 50 or 60 miles northeast of Calgary and then it would turn around and come back. It would stop at certain times but I don't recall that it ever got to Edmonton.

NM: And the press went wild because of speculation because nobody knew at the time what was happening.

MP: That's right, I guess they didn't. Of course, it was a very secretive thing because there was no communication once we were on the train, other than through the one Hamilton Co. person.

NM: This is the end of the tape.

Tape 2 Side 1

NM: So after 3 days on the train you came back to Calgary?

MP: Yes. We were back in Calgary, of course, we were never very far away from Calgary. But at that time all the bids had been closed for the sale so we went home first. Then I guess the next day to the office and got the results. As I recall, we were successful on one piece of land and not successful on two pieces of land I think.

NM: On the whole, do you think it was a good deal?

MP: Hindsight it wonderful. I think it was a good deal relative to ensuring that nobody else knew what the bid was going to be. Hindsight is great, it was a very poor deal because it never proved to have any production. However, that's the history of the oil business. Some wells are dry and some are good.

NM: It's a gamble.

MP: It's a gamble, even with the finest scientific knowledge at the present time, it's still a gamble. In some exceptional cases, probably, not very much of a gamble but it's extremely hard to find.

NM: Home Oil got involved with pipelines, can we talk about that?

MP: Yes. I think our first venture was with respect to the Cremona pipeline, which was a pipeline from the Harmattan-Elkton area and the Joffre area, to bring crude oil to the refineries, which was the Imperial Oil refinery and the British American oil refinery in Calgary. They are not now in operation. This was a short line, about 50 miles and we were successful in winning out on the competition or getting the bid to build a line, from the Energy Resources Board and from the Alberta government. So the line was built and for many years we moved approximately 20-25 thousand barrels a day through those lines from the fields in Harmattan-Elkton area, to Calgary. I think they are still moving a certain amount of products or heavy oil into Calgary, although, I think that heavy oil refinery which used to be British American, has probably now shut down the last 6 months or a year. But in the meantime, there has been oil production, as everyone knows, that extends right into the airport in Calgary. So that oil is now moved north so what the line does is gather the oil from the various producing batteries and moves it north to the

Sundre area, where it's picked up by what was then, Rangeland Pipeline, which I think now is owned basically, by Dome Petroleums. Then it's moved to Edmonton to the refineries there or the excess goes to Vancouver, through the Trans Mountain Pipeline or to the east, Toronto area through the Inter-Provincial Pipeline.

#040 NM: What about the Montreal Pipeline, what happened to this one?

MP: The Montreal Pipeline was thought up, very logically, by Bob Brown and some of his other associates. The idea was to move domestic oil from Alberta, from Toronto, because the Inter-Provincial line was built to Toronto, to move it from Toronto to Montreal. At the time I think oil was selling here for around \$2 a barrel, and with the transportation costs it probably brought it up to around \$2.40 a barrel to Toronto, and it would have added maybe another 20 cents a barrel to move it to Montreal, to build a line from Toronto to Montreal. The rest of Canada could buy oil for about 5 cents a barrel cheaper than that so they chose to depend on foreign sources of crude rather than using domestic produced crude, which is kind of a little turn around from what it happening at the present time. Actually, the government's involved and industry involved were, with hindsight you could say, very stupid. But the situation remained then, as it does now, it meant that money would have remained in Canada rather than being sent out of Canada.

NM: So nothing has changed really?

MP: The line has been extended since then, to Montreal.

NM: It took a very long time.

MP: Oh yes, it took many years because this was proposed in the early 50's and I think it was in the middle 70's before the Montreal extension was put in.

NM: And now is this pipeline used a lot?

MP: Yes, it is, it's used quite a bit. I don't recall how much oil is going through it but I would suspect there would be close to 200,000 barrels a day.

NM: What about Home Oil marketing liquid petroleum gases?

MP: Home got involved with a small outfit out of Tulsa, Oklahoma, who were in the process of buying liquid petroleum gases, basically propane and butane, from operators who had gasoline plants throughout that part of the United States. They would buy these and then they would resell it. So they had a marketing distribution business. Mr. Brown was able to acquire that company so we continued on that and expanded. And in connection with that, since propane and butane has high seasonal peaks of usage, that is in the summertime the demand is low, in the wintertime the demand is high. Whereas the production remained fairly stable or much more stable than that. So you had to have a place to store this propane and butane in the summertime when it was being produced. Steel tanks storage is very expensive, so we got involved with underground storage in Kansas. Because there were some salt domes there and in order to create the storage caverns, you drill a well into the salt dome, you pump the fresh water down inside the tubing, it dissolves the salt and it comes up on the outside of the tubing. Depending on the size of the cavern but to create 60 or 70 thousand barrels of storage, you probably had to pump water for a couple of months, maybe 3 months. So the facilities we bought already had some caverns and we expanded those caverns and so we were able to use that to store

our propane and butane, which would be some of ours and then we would provide storage space on a contract basis to other companies.

#092 NM: So were you selling this liquid petroleum gases to other companies?

MP: Yes, what it was. . .

NM: All over Canada or to the States?

MP: No, mostly in the United States. We sold some up here, yes, because we were then producing propane and butane from the Carstairs gas plant, of which we had taken ownership of a certain percentage. We also had ownership of propane and butane that was produced in the Harmattan-Elkton gas plant.

NM: But the market was mostly with the States?

MP: The majority of the market was in the States. We sold quite a bit in Canada also. Most of our products that we produced in Canada were sold in Canada, some of it went to the States. Then our operation outside of Tulsa bought propane and butane in the States and in Canada and then they marketed that throughout the states surrounding Oklahoma there.

NM: Was there a competition for the prices?

MP: Yes, there's always a competition for the price. They settle down within a certain range but there's always competition for buying and selling.

NM: And then Home Oil got involved with the North Sea?

MP: Yes, Home was, I don't know how they made their first connection but I think it was basically that our geologists and geophysicists were fairly well on top of what was going on in certain parts of the world and they got interested in the North Sea discoveries that had been made. In looking at the area there was a lot of land available yet from the British government and from the Norwegian government. So we developed an interest in it, figuring that there were a lot of fields to be found in the area. We were successful in making a bid and obtaining certain lands in the British segment of the North Sea. We never did obtain any in the Norwegian section of the North Sea.

NM: Why?

MP: I guess basically, because we acquired the British lands first. This involved a certain amount of commitment as for dollars. Probably we didn't have enough dollars to make another step. So we committed to 3 or 4 exploratory wells on lands that we acquired, which were in slightly different areas. One of the commitments that we made was to build a semi-submersible rig. This was deemed necessary because at that time the activity in the North Sea was expanding rapidly and there was a shortage of offshore drilling rigs.

#135 NM: So where was it built?

MP: The drilling rig was built in Oslo, Norway. Home Oil went in as a 50-50 partnership with Bow Valley Industries, who we were friends of for many years and still are.

NM: So the rig was built in Oslo?

MP: We built the rig with Bow Valley Industries, in Oslo, and I was very fortunate then, in that I got an opportunity to go to Norway where my grandparents came from.

NM: Back to your roots then?

MP: Back to my roots, although I didn't know anybody over there. Also my wife christened

the rig, so that was extremely good and the rig was called the Odin Drill, which I guess means the great god of the seas.

NM: How do you christen a rig, like you do for a boat, do you throw a bottle of champagne?

MP: You throw a bottle of champagne on it and they have a big party, well, a nice gathering. So we met a lot of Norwegians and did business with them. The ones that we came across were very good.

NM: Was Home Oil successful in the North Sea?

MP: No, we weren't. The parcels of land we bought proved out to be non-productive. So that was too bad but I guess that's the way the oil business is.

NM: What did you do with the rig then?

MP: It went to work as a contract rig for other operators. And Bow Valley had some land in there, which they then, would use the rig on their land. They were successful and eventually, they decided, when they got a surplus of rigs, we and them decided to sell. But Bow Valley are back in the rig business now.

NM: Also Home Oil was doing exploration in England?

MP: Yes. Up north of London, about 160 miles, we drilled some wells up there and discovered a gas field, which initially looked extremely good. The formation was quite tight in porosity and permeability. In other words, the gas volume it contained per unit area, or unit volume, wasn't that large. The well looked good because there were fractures in the formation. So we produced the well and got some data on it which indicated that we had a possible field. So we drilled a couple of other wells and they came in about the same. So on that basis we decided to build a gasoline plant because it was necessary to separate out the impurities before the gas could be sold to UK Gas Council.

#179 NM: So you were selling the gas to ???

MP: Yes, into the local market there, the United Kingdom Gas Council. So we put the field on stream and in about a year and a half we had to shut it down because the fractures were connected to a water zone below and the formation watered out. Naturally we lost quite a bit of money there, which happens at various parts around the world. It's just one of those things.

NM: Seems to be happening all the time.

MP: No, not entirely. You have to take the good and the bad. The good was our participation in Swan Hills and Carstairs and Virginia Hills. . .

NM: That's right. And look at the positive results. What about Malta?

MP: We got a concession in Malta and as a result we drilled a couple of wells over there. They were unfortunately, dry too, so we didn't get anything. One of the reasons we got into Malta was that we were operating in the UK with a company formed there, which was 100% owned by Home Oil Co. here and one of our directors was Lord Beatty. He had been, I believe, born in Malta and grew up in Malta, relative to his father's situation and so he had some influence there. It's not that far away from the African countries, which have a lot of oil and so we figured it was a good place to look in the sea to see if we could find some structures there with some oil in them. Unfortunately we were unsuccessful.

NM: And also you developed underground storage in Alberta, what was that?

MP: Yes. This wasn't the first venture into underground storage within Alberta or within the continent by industry. But as a result of having the LPG marketing division in the States and having LPG production ourselves and a little marketing arrangement here. And the fact that, again, that the demand in the summer is low and the demand in the winter is high. You have a surplus in the summertime and because there are salt domes up in the Hardisty area, we, along with Canadian Superior, who were an equal partner, 50-50 with us, decided to drill some wells, develop the cavern so that we could have underground storage. Which was successful and is still in operation, being operated by Home for Home and Can. Sup.

#224 NM: Where is it located?

MP: It's located at Hardisty, Alberta, which is approximately 190 miles southeast of Edmonton and maybe, 50 miles from Bawlf where I was born. Nobody ever heard of Bawlf. In connection with Bawlf, it might be interesting to say that my second daughter went to university here in Calgary and she got out and got a job. One of her first bosses was also a farm boy from Bawlf.

NM: So it's running in the family.

MP: I say one of her first bosses.

NM: What else did Home Oil do?

MP: After the discovery of the Swan Hills field and the development of it, and Virginia Hills, that oil had to be moved to market, so ourselves and Texaco Canada, who were then 50% partners with us, built the Federated Pipeline, which brought the oil from that area into the refineries in Edmonton and for further transportation by Interprovincial Pipeline, or Transcont. Pipeline. I believe the first line was about 10" in diameter, and then as the field grew and as other fields came onto production in the area, we had to lay another line to handle the production. I think the total production at one time got up to about 150 or 160 thousand barrels a day. Production now is down to, maybe 70 or 80 thousand barrels a day. So it was a very profitable operation also and helped pay for some of those dry holes.

NM: Mr. Paulson, when you started with Home Oil you were an engineer and when you left you were vice-president. You did not jump from being engineer to vice-president, how did it happen?

MP: As time went on the company expanded naturally, and we hired more engineers and our operations became larger and I became production manager, then eventually, vice-president of production, which included the drilling and the reservoir engineering and the gas plant and the pipeline departments. Then eventually, I became executive vice-president.

#268 NM: As an executive vice-president, what did your job entail?

MP: In my case, it entails basically, all of the operations of the company, except maybe the financial arrangements for raising money. Although you do get involved in a certain extent in that. But basically it was over viewing or supervising your exploration department, your gas plant department, your production, your drilling, your reservoir

engineering and not so much involved in the financial or the accounting department. Our president at that time was Ross Phillips and that was his background. So in order to give him something to do I had to let him look after that. He got to chair the board meetings which was nice because I don't really care about that.

NM: This is the end of the first interview with Maurice Paulson.

Tape 2 Side 2 Blank

Tape 3 Side 1

NM: This is Nadine Mackenzie speaking. This is the second interview with Maurice Paulson. Mr. Paulson, can we talk today about unitization?

MP: Yes. I think that the first that I became acquainted with unitization was relative to the Turner Valley field. It was unitized because of the gas conservation problems, to a certain extent and also, because the engineers felt that with water injection tertiary recovery could add considerable amount of oil to be recovered from the field. The problem in Turner Valley was that there were a great number of different working interest owners, plus gross royalty interest owners, plus net profit interest owners. The first attempt was to get these together and then it was found to be impossible because some of the interest owners were in the States and they couldn't really trace everything. So they went to the government and asked that there be a forced unitization. The government, which basically was the Conservation Board and then the royalty holders in the government, decided that it was the proper thing to do because conservation and additional recovery would take place. So after many meetings they decided to unitize Turner Valley field in 4 different units.

NM: Why 4?

MP: Basically, there was the north end of the field that was operated by Home Oil Co. at that time, or had considerable operations there. So they broke it down into that area, as then Home would then operate it. So it wouldn't cut Home Oil out. The central area was mostly operated by, at that time, Royalite Oil Co. and they say had the most experience in that area and had the most holdings in that area. So Royalite operated that. Western Decalta had the most holdings or interest in the southern end of the field and in the south end there was a little gas cap too, so they broke that southern section down into 2 little units and they operated that. It turned out very well because there was cooperation between the companies and the field is not very wide so the influence of water injection would not spread from one are to the other in any significant amount and it could be quite well controlled.

NM: So one company would not bother the other one while they were working.

MP: That's right. They cooperated very closely in the whole thing. So the result has been, I haven't looked at the production figures in Turner Valley lately but I think there's been very little change in production from about 1953 or '54, until the present time. At that time I think they had maybe 2,200 barrels a day and the production rate went up some with water injection and probably the production rate now is in the 1,500 barrels a day.

Which means a very slow decline. They have recovered a considerable amount more oil and conservation has really been good.

#047 NM: Who initiated unitization?

MP: I don't remember how it can be tied down to one person. I think that the Conservation Board were fairly instrumental in having it come about in that they were interested in secondary recovery, just like each of the operators. So basically, the operators got together and the engineers and the geologists, and probably members of management, got together in a meeting and decided, we will proceed and try and get unitization.

NM: So it was a team work?

MP: It was a team effort very definitely. I couldn't tie it down to one person who said, this is it.

NM: What were the reasons for unitization?

MP: Basically, the major reason for unitization is in order to install secondary recovery operations by water flooding. In doing that, if the field was not unitized then when you injected water into one lease owned by one person, it would drive the oil into another lease and the person owning the one lease with the water injection well would not get any benefit where the other person would get the benefit. So the main objective then, was to determine how much oil was under each parcel of land owned by each company or each person, then come out with the formula involving other things, to determine what percentage of the field each person owned. Then you could unitize and then you could produce that field to obtain the maximum recovery of oil and natural gas. That is the biggest factor. Secondary factors would be, you could then have joint facilities for operating and this would mean less operating costs. So the value to all the owners would be better. The third reason is in the initial development of certain fields, if it was unitized and enough information was available to unitize it, then it would not be necessary to drill wells on each section spacing unit or whatever the size of the spacing unit was. This is important in oil wells and in gas deals. So the development costs were less which was of benefit to everybody.

NM: So really, the costs were cut.

MP: The cost was cut, yes.

NM: Potentially, wasn't it also, a lot of problems if a company saw the oil disappearing into the land of another company?

MP: That's called drainage and in certain fields, that would happen and it does happen all the time. It wasn't too significant except in a few exceptional cases. But if you got into secondary operations where it was necessary to water flood on the downdip side of a field and you were pushing the oil up, then it would become a very major problem.

#089 NM: That's right. How did they solve this problem?

MP: They solved this problem by making engineering and geological studies as to how much oil was in place under each lease owned by each person or each company. That would then determine what their interest in the overall unit would be. So then, when they started to water flood or producing operations the total oil would come out and it would be

divided amongst each of the owners according to what this formula was.

NM: So that would be fair then?

MP: That would be fair. There was another factor that was quite important that came into it and that is, the allowable, or the amount of oil that each person was able to produce from a well in each field, was set by the Oil and Gas Conservation Board. That was set on an area basis. In other words, if you had 1 quarter section, you got the same allowable as another person with 1 quarter section in that field. Even though the oil bearing pay thickness in your well may only be 10' and his was 100'. So this also entered into how to determine the division of the overall unit amongst the people. This was also very important in gas fields because gas migrates much easier than oil. So there, for example, in the Carstairs field, there were several different owners, some people owned gas that had a pay thickness and other people owned gas that had a pay thickness of 25'. So it was fairly complicated and there was a lot of give and take in determining who. . .

NM: That's right. What about the time spent discussing these problems?

MP: There was considerable time spent, I think most units were put together within a years period of time. As I say, it took a lot of cooperation. I got involved in a lot of the formation of units.

NM: Yes, I was going to ask you, how did you get involved?

MP: The way you get involved is that your company is an owner of leases in a producing field. So that company then has to put together a team to negotiate with other companies in that field. Being an engineer and having some production experience, I was one of those members of the team and it usually consisted of 1 or 2 geologists, a couple of engineers, maybe some landmen and some members of management. So that's how people would get involved in it. As a result, the major benefit coming out of it is increased recovery of oil and conservation. Not only for the individual companies but for the province and for the consumers as well.

NM: So then everybody is interested?

MP: Everybody is interested and everybody benefited from it. Also, the individuals benefited from the side point of view that you got to meet and be with other people in the industry rather than be confined to your own little group within the company. And this then, turned out to be beneficial for all companies because they would obtain contacts, they would know how different people thought and they'd learn to trust them, that, you know, it would be an equal benefit between each company.

#136 NM: Were the lawyers involved too?

MP: Yes, the lawyers would be involved, definitely, in drawing up the agreement.

NM: So at the beginning, even at the beginning?

MP: Not to start off with. I think the basic principles of how you are going to divide it up and how you are going to operate it, then the lawyers would come in and draw up the agreement. They would be involved in a lot of the discussions though because they have to obtain an understanding and then they have points of law that they have to bring into it too.

NM: Would there be only one lawyer or several of them representing each company?

MP: Well there would be, usually, at least one representing each company. Depending on the company size, if a company had a very small interest they would depend on the fact that there were 3 or 4 different lawyers there and they would get together and come out with a solution.

NM: What about Leduc?

MP: Relative to unitization in Leduc, there are 2 different fields there. The Leduc D-3, the characteristic of that field was such that it was underlain by a strong water zone. As a result, primary recovery consisted of a strong water drive, which displaced the oil on a vertical position rather than on a horizontal. Therefore the need to unitize really wasn't there to start off and it took a long time before it got unitized and I don't remember whether it really is unitized now. The D-2 zone didn't have any water associated with it, or very little, maybe around the edges. It was a gas solution drive reservoir and here again, you didn't have the migration significantly from one lease to the other. So the demand for unitization didn't come until the people were satisfied that they had to inject water to maintain their production and increase their recovery. Unitization, as I said, is very beneficial from a point of view of being able to increase the recovery. It's also beneficial from the point of view of maintaining production, depending on the demand. Certain fields, like Leduc D-2, the demand for the oil from that field in the early years was such that it was producing at far less than its capacity. Therefore there was not a need for unitization to maintain production and it didn't make any difference if recovery was delayed because you weren't taking it out then. So the time element is very important in any field. So Leduc wasn't the next field unitized after Turner Valley. I don't recall which one was, I just don't remember.

#179 NM: What about Home Oil and unitization?

MP: Home was quite active in unitization of fields that it had discovered or participated in.

NM: More than other companies?

MP: Not necessarily. More than certain companies but as much as probably, any others. It was in the period of time where Swan Hills required unitization for secondary recovery. And of course, to reduce development costs and reduce operating costs. Virginia Hills came in the same category. Carstairs, which was a gas field, came in the same category. As a result, very few wells needed to be drilled. Harmattan-Elkton was another field that was unitized. Later on Mitsu became unitized. Those were the fields mostly that I was involved in, and I'm sure there are many other fields that have been unitized by other companies. It just escapes me which ones they are at the present time.

NM: Was there a time when you were involved in unitization where there were a lot of problems?

MP: I think Swan Hills, there were quite a few problems there because there were quite a few operators or different working interest owners. And throughout the field there was a considerable variance in pay thickness under each lease. And because of the fact that there was an allowable on a per day basis, of oil that you could produce, that was equal across the field, regardless of what pay thickness you had there was considerable discussion and problems relative to determining what percent of the unit each working

interest would have.

NM: So that can be quite difficult.

MP: That can be very difficult. Fortunately, a high percentage of the people, when they put their mix together they had some thick pay sections and also some thin pay sections.

NM: So a bit of everything then.

MP: A little bit of everything. Although there were some that only had the low pay thickness. As a result, the companies finally agreed that it would be unitized on the basis of how much oil you had under your particular lease as 50% of the equation and the other 50% would be based on allowable. That seems to have worked out very well.

NM: Were the negotiations very long?

MP: It was fairly long, I think it ran 3/4 of a year in length. But it seemed to have turned out very well.

NM: Did any company play dirty with another one?

MP: I can't answer in all cases. In the experience that I had, there was very little if any of it. I can't say that there wasn't any, there's got to be some but the majority of them were very good. They were considerate and you have to also remember that the shoe changes foot from period to period. None of the companies wanted to, and rightly so, to get a bad reputation. As a result, they fought for their rights at all times, but I don't think they were really unfair.

NM: So they were reasonable?

MP: Very reasonable, yes.

#238 NM: What was the involvement of the Energy Conservation Board?

MP: The Board has always been very conscious of conserving oil and gas, not wasting it, having it wasted. Not having flared gas and trying to ensure that maximum recovery would be obtained in each reservoir. Whenever a unit was formed, or an operator wanted to do something in the field, of course, approval had to be obtained from the Board to do it. On the whole they were very good in that they had their objective in mind, they would have helpful hints or solutions and would help to get the project done in an operating. As a result, I think they have been instrumental in conservation being obtained in Alberta oil fields and secondary recovery installations made throughout the province. They and industry together, I think, are to be complemented on the number of fields that required to have secondary recovery operations in the early days that were put on secondary recovery operations. Percentage wise, compared to other areas in the world, and especially to the United States, Canada was far ahead and did more good, I think, in conservation and trying to increase recovery than anybody.

NM: Why is that, was it because of the people working there?

MP: It's hard to say why it was but I think their basic principle of not seeing waste and trying to recover the maximum amount of oil was good.

NM: That was very important. Who was working for the Conservation Board mostly, was it geologists, engineers or a bit of . . .?

MP: It would be a combination of geologists and engineers involved in this. Of course, there would be accounting people involved also, with their normal functions but mostly

geologists and engineers and a few lawyers and administrative people.

NM: So you feel they did a very good job?

MP: Yes I do, I felt that they'd done a good job.

NM: That's great. Come back to your career now and can I ask you, when did you retire from Home Oil?

MP: I retired from Home Oil in the summer of 1978. At the time I had been with Home Oil for 27 years and Home had grown from a very small company to a fairly substantial, independent, large company. I guess my nature was, I was getting a little tired and I wasn't that fond of getting into the large organization. I could see it was going to expand further so I decided that I would at least take some time off so I retired from Home.

#292 NM: So what did you do then, took a long holiday?

MP: No, basically, I didn't go back to work until the fall of '79 when I came with Cantex Producing Co. I did do a little work for 2 or 3 months for another friend of mine that had needed somebody to look after a very small company so I did that for awhile.

NM: Can we talk about Cantex Co.?

MP: Yes.

NM: When was it formed?

MP: Cantex Co. has got a good history in that Harry Bass Sr. was from Dallas, Texas and he came up here to Alberta in approximately 1943 with some drilling rigs. Which at that time were mechanical drilling rigs, as opposed to most of the drilling rigs in Alberta which were steam driven, because they were used in Turner Valley. He was very definitely a pioneer in the oil and gas drilling business and contributed a lot to obtaining of additional efficiency in drilling. Speeding up the drilling of the wells and bringing in new equipment. Equipment was needed at that time because most of the equipment was designed for 9 and 10 and 12 thousand foot holes which were drilling in Turner Valley and they were steam rigs. In order to explore at different parts of Alberta which were in the Taber area and the Brooks area at that particular time, the requirement for drilling rigs was for 3,000 and 4,000' wells. So Mr. Bass Sr. saw this and brought these type of rigs up and was able to put them to work.

NM: So that was very clever.

MP: He stayed in the business a considerable amount of time. He's now dead. Before he died he sold out his drilling company to what is now Cantex Exploration Co.

NM: This is the end of the tape.

Tape 3 Side 2

MP: So Mr. Bass Sr. sold out Cantex Drilling Co., which is now Cantex Exploration Co. a number of years ago, I guess 15-20 yrs. ago, something like that. Jerry Dearcy??? had bought him out but in the meantime he had acquired some leases in Alberta and had obtained a little bit of production, especially in the Brooks area. So he then continued on in the exploration and production end of the business to a small extent. After his death of course, his 2 sons, Harry Bass and Dick Bass carried on and are still the principals

involved with Cantex Producing Co. They also made a very good contribution in the Pembina area, in that gas conservation was required by the Oil and Gas Conservation Board because most of the gas was being flared. At that time the companies who had the majority interest in there did not want to put up any money to build gas conservation facilities. The reason being, that it was a losing proposition with the price of gas. The cost of putting in the gathering system and the gas plant and the compression facility could not be recovered from the value of the gas that you could obtain. Because volumes were small on an individual lease basis. Mr. Bass Sr. and I guess the boys were involved, decided that they would forgo the immediate returns on the hope that gas prices would increase and it would become a profitable operation. So they were instrumental in putting together a deal so that they could gather all the gas, which is the gas produced with the oil in the Pembina field, put it through a gas conservation plant which would separate the impurities and then sell the remaining methane gas to Northwest Utilities. So I think Harry Bass Sr. made a good contribution to the conservation of gas. Not that it wouldn't have come about sooner or later but at least, got it started and it came about a little sooner. I've been talking about Cantex, the company that was formed to do the work in the Pembina field was called Golead??? Ltd. Golead Ltd. became Golead Oil and Gas Co. and is now Golead Resources Ltd. Basically, has always been the same ownership but the company has changed names. In 1978, Golead sold, essentially all the facilities to Amoco and Dome so that they are now in charge, or looking after gas conservation. I believe that in the original group, all of the producers had the right to buy back in and I believe that right has been exercised at the present time so each of the producers have a certain percentage of the facilities.

#041 NM: Where is the name Cantex coming from?

MP: Cantex is short for Canadian Texas.

NM: Mr. Paulson, how did you come to work for Cantex?

MP: Since I had known Harry Bass Sr. and Harry Bass Jr. and Dick Bass, there came a time when the person, Bill Dockery, who was looking after Cantex, and Harry Bass Jr. had a falling out. Harry needed somebody to look after his operations, I had known him up in Leduc and played poker with him. He remembered me and he knew I had retired so he phoned me up and asked me if I would look after the operation here and that's how it came about.

NM: And you are the president of Cantex now?

MP: No, I'm a vice-president.

NM: What is your work as a vice-president of Cantex?

MP: Since it's a small company and since we have quite small oil and gas producing operations and we do operate a small gasoline plant and a couple of gas wells, and we do have interest in several units like Carstairs and Harmattan and Mitsu and Brazeau and 2 or 3 others, the whole thing needs a little looking after.

NM: Coordinating?

MP: Coordinating. And being the fact that I'm an engineer, I have the background in that. So I have with me a geologist, we look for new exploration plays. Basically that's what he

does. Then we have a couple of girls that help out and do the accounting work and reception and secretarial work.

NM: So that keeps you busy.

MP: It keeps me busy keeping them busy.

NM: You were also very active with IPAC.

MP: Yes, I was. Originally mainly on the technical committee meetings, engineering committee meetings. It was an organization formed, so that the smaller, independent companies, who had a little different philosophy of the oil business than the larger companies who controlled the Canadian Petroleum Association. IPAC was formed so that they could present a united front relative to the problems affecting them. One of the major problems affecting them was the marketing of crude oil, in that the capacity to produce within the province was much greater than the market that was available for crude oil. Because what we were serving was the western provinces, mainly Alberta and Saskatchewan and Manitoba, partially serving Ontario and partially serving British Columbia. Well, as the oil industry progressed the amount of oil that was shut in increased. The independents were very conscious of the fact that we had the capability and we should expand our markets into Canada and into the United States so that there could be greater benefits obtained. One thing they had on their mind was self sufficiency for Canada in oil. They knew that it was very basic, if they didn't have the markets there would not be much activity. Therefore there would be much less oil and gas found. If they had the markets then there would be more activity, there would be more oil and gas found and there would be oil and gas prove enough to show that Canada could become self sufficient. It wasn't talked of in that light that much. The primary thing then was that if you drilled a well you wanted to be able to sell the product that it was capable of producing.

#089 NM: That's logical.

MP: Very logical.

NM: So what did you do with IPAC?

MP: For a couple of years I was chairman of the technical committee. Then I was forced into becoming president in 1973 or 1974, so served on several committees there and helped guide the organization through difficult times when price increases came up.

NM: As the president did you have to go and give a lot of talks?

MP: As the president I think you were expected to give a lot of talks. I kind of deferred on doing that as much as possible as I'm not a very good speaker and I liked other people to talk.

NM: Did you have to travel to represent . . . ?

MP: Yes, I had to travel quite a bit to Ottawa, there was . . .

NM: Negotiating in Ottawa.

MP: Negotiating with the government, yes.

NM: How did you enjoy your time with IPAC?

MP: I enjoyed it. It was very interesting and you gained additional knowledge. I think it helps anyone that gets involved in those types of organizations. They establish contacts with a

lot of good people and they become more familiar with outside thinking rather than the inner room thinking of your own company. So it's a benefit to anybody to participate in it.

NM: What are your professional affiliations?

MP: The Alberta Society of Professional Engineers and Geologists is one. The one I was the most active in was the Petroleum Society of the Canadian Institute of Mining and Metallurgy. In the early 50's I participated a lot in their meetings and served on some of their committees and went to quite a few of their conventions and served as chairman of the Petroleum Society for one year.

NM: So you have been active there too.

MP: Yes, I have been active. And here again, it's a great benefit to anyone because you get out and meet people of other companies.

NM: So you make a lot of contacts and people become more aware.

MP: Yes, you make a lot of contacts and you get ideas from other people, naturally.

NM: Do you have any publications?

MP: Just one that I can remember and that is with the CIM publication, involving Turner Valley, which dealt with basically, the project for secondary recovery operations in Turner Valley.

NM: When did you write it?

MP: I wrote it when I was with Home Oil Co. and that would be in 1951 or '52 area.

NM: And you don't know where it is now?

MP: It's in a CIM publication someplace.

NM: Mr. Paulson, can you compare the training of oil people in your time to what it is nowadays?

MP: At the present time I'm not too sure what the companies do. I have an idea but relative to when I came in to the industry and had been in there for 2 or 3 years and when I went with Imperial Oil, there were 2 things that they did. One is that they sent me to Texas in order to observe the operations of Carter Oil Co. down in the field. The second thing is that they sent me out to the field, Leduc and Redwater and many other small operations in order to get the actual experience in the field, to get the background. Then they brought me in to Calgary and I guess that's as a consequence of a need to have people come in to the head office as they were expanding. Because when I went to work for Imperial Oil we had, in the Calgary office, something like 20-25 people. After the discovery of Leduc and Redwater of course, the Calgary personnel number people grew to about 500. Which consisted of engineers, geologists, lawyers, accounting etc. etc. At the present time, I think there are a number of companies that do make sure that people get out into the field. I have the impression that they don't send them out there other than for short periods of time. I believe it's fairly essential that an engineer be located in a producing field for a year or 2 years or 3 years. It gives them a great background so that he knows what he's talking about. Or helps him in the future considerably. Aside from that, I really am not familiar with what training. I'm sure that they have improved on their training situation.

#156 NM: Can we talk about the ups and downs of the oil patch, you have been a witness to

that?

MP: I guess what I've witnessed is that when I first went with the oil industry, which would be in '39, the activity was quite high in the Turner Valley field. There was some activity in the Lloydminster area but not very much. In the early 40's, '43, or '44, Turner Valley development drilling was on the down swing because most of the field had been drilled out. Chevron Standard and Imperial Oil, at that time, '43, '44, were drilling quite a few wildcat wells. There weren't very many rigs operating outside of Turner Valley, maybe 15 or 20 through Alberta and Saskatchewan, if that many. So when the slump in drilling occurred in Turner Valley it was picked up a little bit by this outside drilling, until 1947 came along and Imperial discovered the Leduc field. Which then brought up a whole new trend of thinking relative to where oil occurred within Alberta. Prior to that time, I am under the impression that even though they had limestone production in Turner Valley, when they were exploring in the central part of Alberta and the southeast part of Alberta, they were looking more for production in sands because they encountered some. Most of the limestone areas that they had encountered were water wet. Although they would continue to look in that they would take some of these wells down to the limestone. When Leduc was discovered they determined that the productive zone which would be the Devonian reefs, the Devonian reefs had production in them. And they didn't know the aerial extent of that throughout the province, so each company then would obtain land and start doing some more exploration work. Then of course, after Leduc, there came in fairly quick succession the Golden Spike discovery, the Atchison, which was north of Leduc, Redwater, and Stettler area and the Drumheller area. Then there was a fairly small decline until Pembina came in in the early 50's. Then the activity picked up again. With Pembina and with Swam Hills and Carstairs and Harmattan, in the late 50's, the activity was fairly strong until the middle 60's. Then it went down again.

#203 NM: Just like a yo-yo.

MP: There's always ups and downs in the oil business and there always will be. Demand has a great deal to do with it, just like at the present time, the demand for gas is low relative to the volume available to sell. Therefore the activity in the gas is down. Oil exploration activity is fairly good but the areas that we presently know of for conventional oil production is getting smaller and smaller. So there's not that many areas that we can have a high level activity in oil but they're doing quite well at the present time in the oil areas.

NM: What do you think of the National Energy Program?

MP: As far as the NEP is concerned I think it's proved to be a disaster. The implication of it. It may be that one aspect, which was Canadianization, is desirable but the method of accomplishing it left a lot to be desired. I think the government spent a lot of money and sent a lot of money out of Canada that could have been used in Canada and still accomplished the same thing. The NEP program, whereby the government has subsidized directly, the drilling of frontier lands in the Arctic and off the east coast is very bad. This is a direct subsidy and I don't think it was necessary at all. Also, tied into the NEP program is a taxation that has taken place. This has been very harmful to the industry. It seems to me that eastern Canada has followed in the footsteps that they

always have, and that is to take from the west and give to the east. This is very obvious in that all the products that the west buys from the east is above world prices and essentially, all the products that the west sells to the east is below world prices. It appears that the government wanted to influence the people in Ontario and Quebec, they wanted to help their industries which is natural, but they took it all from one place. Rather than have the people in Ontario and Quebec increase their efficiency, they subsidize them by lower fuel prices. Which is, on the overall situation, isn't good because that is only a small part of the overall cost. It seems to me they just forgot about the other costs involved and didn't do anything about it but we will take the money away. To me, it's always been that. . .and it's very natural, all the votes are in the east so they're satisfying the easterners to get the votes. I don't know, I get fairly bitter about this sometimes, I don't think they're fair at all.

#258 NM: What do you think of Petro Canada?

MP: Petro Canada I think, is progressing along not too bad now. I think they started out, I don't think it should ever have been formed in the first place. It wasn't the answer to our needs.

NM: It's so huge now.

MP: It's very huge. I think we could have got along and we could have accomplished the same thing about Canadianization if the government had gone about things in a different way. It's always hard to say how to do it but I think that there's investors in Canada and if those investors, and there can be many of them, are encouraged to participate and if they are allowed to make some money rather than have it taxed away from them, then they will participate. But it's very hard to encourage anybody to invest their money and then have it taxed away from them, which has happened in the oil industry. And this is another thing about the NEP, they have said that 25% of any discoveries go to Petro Canada.

NM: That's quite a lot.

MP: It is a lot. The big money is involved in finding the oil. Once you've found it, then sure, you need money but it's almost a sure thing from then on out.

NM: But until the oil is found then people ??? trouble.

MP: That's right. Until you've found the oil, that's where your front money is or that's where your. . .I just can't think of the word but your gamble is, in finding that.

NM: So you can be lucky or you can be very unlucky.

MP: That's right. As I say, I think Petro Canada is coming along better now but I didn't like the principle then. I don't like the principle of a publicly owned or a company owned by the government. Any government, whether it's Alberta or whether it's Canada. Because of the fact that they are not as efficient as private companies and the reason is that they don't have to be competitive.

NM: It's easy for people who work less in such a company, comparing to private companies.

MP: That's always the tendency and that's because there's no real competition. They have money given to them and they don't have to work that hard. Although I think they've got some better management in there now. I think they started out on the wrong foot. They started out too big and it was all given to them by the consumers. The consumers are

paying for it in the end. And they're paying badly. I'm just not in favour of it.

#308 NM: How do you foresee the future of the oil patch?

MP: I think the future for the oil industry in Canada is going to be good. Our requirements are going to increase with time. I see a very slow recovery but that is far better, as long as it continues to increase. Which I think it will, the demand will increase in the future. That's far better than what we had in '81, where it was out of all proportion and everything was gone in too much of a hurry and there wasn't enough precaution taken, which is hindsight but I think a lot of people could see it at that particular time. And that always happens, you go into something in a rush and it doesn't turn out as good as it should. If you go into steady and slow it works out a lot better.

NM: So do you think people here went really zooming?

MP: They were really zooming yes.

NM: And then there was a crash?

MP: The crash. World economic crash and then the NEP added to that considerably, so it made it extremely tough. But the oil industry is going to survive. There will be different fall-outs, which there have been but it will improve as time goes on. It's going to be tougher and tougher but Alberta is extremely fortunate in that they have the oil sands and the heavy oil, which gives them enough oil to last 2 or 3 hundred years. All it takes is money and effort to get it on stream. But that money and effort is going to be spent within Alberta and within Canada to a very large extent. The benefits to all of Canada will be nearly as great as the benefits to Alberta.

NM: This is the end of the tape.

Tape 4 Side 1

NM: So are the tar sands acting as a form of security for Alberta, for the oil patch here?

MP: Yes, it's certainly a security. I think it's something that should be developed to a certain extent, as soon as possible. We need more development, it doesn't have to be entirely developed at this time but within the next 10 years it should be a continuous process of development as our needs are there. To become self-sufficient in Canada and to export oil to the United States, or to other areas that may be required. The money that can be spent in developing the oil sands is high, but here again, that money remains in circulation within Canada. It does a great deal for employment within Canada, a great deal. Not only in the development of the plants and in the operating of plants but of the supplies that come from basically, eastern Canada for it. It does a great deal for employment down there and it has a multiplying effect. And if governments would be a little bit more willing not to take any money until the people had had a decent return then they themselves would be far better off. Because they will get money in the end. If it's not developed they won't get any at all, period.

NM: What about the cost?

MP: The cost is competitive. They say it's not competitive but it is competitive if we can avoid the government taxes, both at the Alberta level and at the federal level.

NM: So in fact, you leave Alberta just dealing itself with this problem of extracting the oil?

MP: Alberta require a royalty. They are granting certain royalty free holidays, which is a big benefit. But the federal government are also in there to a big share of money and this has to be brought down to a manageable portion for industry. This is the big thing that is stopping industry from getting into the oil sands projects. One factor now is, the demand for oil in the world is down and there's a surplus of oil. But this is a trough in an ongoing upward situation of demand for oil. And the oil sands take a long time to develop. A new plant would take 3 or 4 years to get on stream. By that time it could be entirely different. I don't think it will be but it will be improving, the requirement will be there.

NM: Do you think that will be the future of Alberta?

MP: That will be one thing, yes. If the governments allow it to happen.

NM: And do you think the government is going to do that?

MP: I think the Alberta government is very strong in favour of getting it done. I personally think that the federal government has not been strong on it because they, and I know this is a small thing to say, but they are afraid Alberta gets too powerful.

NM: We're into the same problems.

MP: We're into the same problems between the east and the west. I think the federal government are getting better all the time in recognizing this. In fact, John Turner this morning gave it on his speech.

NM: Do you think it could be also, a lack of communication?

MP: No, I don't think it's a lack of communication, I think it's a lack of the eastern politicians not paying attention. And the fact that they want to get into office the next term that they're voting. I don't think they're that sincere in a lot of cases. They can appear sincere a lot of times but . . .

#042 NM: As a game in your campaign. Can we talk about the contribution of Alberta to the development of the Canadian industry?

MP: I think Alberta, through the present Conservative government and the Social Credit government that was in power before, have made a good contribution. Industry has made a great contribution up here. I believe that we will find that Canadian entrepreneurs or engineers or geologists will be a great asset in the future, not only in Canada but also for other nations. They will make good contributions and are now, there are a lot of service people, there are a lot of engineers, there are a lot of geologists who have been trained in Alberta that are now working in the Middle East. They're working in Indonesia and other places and there are a number of Canadian companies involved in these areas. So they make contributions worldwide. But you always have to remember, they're going to have to be paid for it. Just like a secretary won't come in and won't work for nothing.

NM: Mr. Paulson, who were the most influential persons in your career?

MP: I think there were several people that helped me through my lifetime, not only in my career. Naturally, my parents. Unfortunately my mother died when I was 4 yrs. old but my father was very good. He and my other relations set an excellent example that it was necessary to work for a living. Which I've been very thankful for all of my life, because I believe it contributes a lot. Teachers in public school and in high school and in university

contributed a lot, I learned a lot from them. Sometimes they were mean but that's beside the point. Also, I had 2 people in Camrose when I was going to high school that I thought I got quite a bit of guidance from. One was the principal of the Camrose Normal School, Mr. Haverstock, and the other was Dr. Rogers. Both of these people spent considerable time at my father's garage where I would work evenings and Saturdays. They'd come over and visit and it was very good listening to them and having little discussions and getting their little guidelines and that helped considerably. Relative to my work and my career, I think I'd have to give a lot of credit to Ralph Will, since he gave me my first job in the oil business and has been a very kind person throughout the time I've been involved in the oil industry. Naturally, you have to give consideration to people that you have worked with and actually, who have hired you. When I went to work for Oil Ventures, there was Ken Doze and Neil McQueen, who were very considerate and passed on information. When I went to work for Home Oil there were people in there, Bart Gillespie and Bob Brown and many others. With Imperial Oil it was Vern Taylor and Don Mackenzie and Doug Layer and Aubrey Kerr and a bunch of others. I think there also has to be a great deal of credit to the people that you meet within industry. At the unitization meetings they all are helpful, they bring up points that you may not have thought of and discuss things. So I think there have been a lot of fine people in this industry.

#090 NM: What were your most exciting experiences?

MP: I think I'd like to put it this way, I think experiences that brought excitement. Very naturally, any time a discovery was made, particularly in the case of the Leduc discovery and the Redwater discovery, which you participated in with others and contributed towards it. Then in Swan Hills and Virginia Hills and Carstairs, they were all exciting. I think Swan Hills and Carstairs and Virginia Hills were probably more exciting to me in that here was a fairly small company that had made major discoveries. Therefore it was extremely important to them. Leduc and Redwater were exciting from the point of view that, here was a new era relative to the potential of the province, bringing out the potential of the province. I guess many people have different ideas of how these things could benefit and the excitement that can be brought in with them. Aside from discoveries then, I think it was exciting to be involved in the formation of unitization and helping conservation projects and improving recoveries in the oil field. It meant a lot to me. I think that's about it. Excuse me, from an external point of view, blow-outs were quite exciting. Living in Leduc at the time that the Atlantic blow-out occurred, which was a famous blow-out, and then when I was with Home we had a couple of small blow-outs which only ran for 2 or 3 days.

NM: That was very exciting.

MP: They were exciting at that time because you could visualize as to how long and what damage could be done. So on an outward appearance, I think that was exciting times.

NM: What do you consider your achievements?

MP: I can't point to anything that I did personally and by myself only. I think that I achieved the satisfaction of being able to aid with the help of many others in the development of

certain of the oil fields and gas fields within this province. Contributing to, maybe not real significant outstanding things but at least getting the work done, getting it done in a routine manner and there were times when you had to do a lot of special thinking. One of the things that we had in the early development of the Leduc field was a problem called lost circulation, which was the cause of the Atlantic blow-out. At that particular time steel pipe was extremely scarce. The normal procedure to prevent blow-outs due to lost circulation while entering the D-3 zone with the drill bit would be to have a full intermittent string of casing run to the top of the D-3 zone. We did not have, or there was not enough pipe available to do that on each hole. So naturally, we ran as much as we could but basically, it meant running about half as much which would give us the protection and then we would run a liner for the rest of the way. A smaller diameter piece of pipe but it was less steel involved and we got the job done in the completions and this was the procedure that they carried out after we'd done it a few times and the people who came after me, when I went from Leduc to Redwater, followed that procedure for a considerable number of years.

#142 NM: That was quite something then.

MP: Well, as I say, I didn't specifically develop it all myself but it was in cooperation with the superintendent and the drillers and the other people involved. But I felt I had quite a lot of input into it. Also, I think, with the aid of many others, getting a bunch of units formed in different fields and contributing to the fact that the operating and development expenses could be reduced. Therefore more wells and exploration could be done with the money and contributing to the fact that secondary recovery operations could be installed in fields was a big asset really, to the industry. There were a lot of people that contributed that and can feel, have quite a bit of pride in my estimation, that they were involved in it and did contribute towards it. Aside from that I don't know.

NM: Looking back at your career, is there anything that you would do differently?

MP: I don't believe I actually would do anything different. I think that I have thoughts at times that I would have liked to have become an independent entrepreneur and get involved directly in ownership in the oil industry. But then, taking a closer look, I'm just not that kind of a person. My brother would be that kind of a person. You have to be a promoter of stuff. With respect to a career, I've enjoyed it tremendously. There's many times, especially on sunny afternoons that I wished I would have been a dentist and worked in the mornings and played golf in the afternoons instead of working. But aside from that, no, I've enjoyed it throughout my life.

NM: That's a very positive attitude.

MP: Yes, very lucky, very fortunate.

NM: Do you have any plans for retirement?

MP: I think about retirement once in awhile. I don't have any plans for full time retirement. I'll probably start taking it easier in the next 6 months or a year or something like that. But yes, I suppose in 2 or 3 years I'll probably retire fully.

NM: And what will you do then?

MP: I'll play golf and . . .that's the problem about retiring.

NM: It seems to be the problem with a lot of oil people, they just go on working or go on being busy.

MP: There's many of them that have enjoyed their work, have obtained a lot of pleasure out of it, not only from the work but from the direct contracts. I think it's very natural they would miss those contacts and miss the work. And it's hard to put your time in I think. Fortunately I play a considerable amount of golf and I ski in the wintertime, therefore I can do it. I have to help my wife do some of those things. She doesn't ski.

NM: Does she golf?

MP: She golfs now and is starting to enjoy it. A couple of years ago, before she started she said said, I hate the goddarned game. But it's like everything else, you get into it and you find fascinating points about it.

NM: And this is the last question, on the whole Mr. Paulson, what do you think of the oil patch?

MP: I think the oil patch is very good. I think it's been excellent for many, many people, it's been excellent for me. I think that it has changed considerably and here again, I've got to get back to government interference and interference by environmental people. It wasn't too many years ago that we would pick a location for a well and we could have a drilling rig on there in 2 or 3 days because we could get a drilling license and go ahead and do it. Now it seems like it takes 2 or 3 months to get the drilling license, to get permission to go on the land, to look after environmental things. I think the environmental people are very good, except that they do a lot of things that has no bearing on it at all.

#205 NM: It is time consuming too.

MP: It's time consuming, it's very wasteful of money. Very wasteful of time. And it doesn't do anything. They had some good points, there's no doubt about it but I think the industry has had those good points ever since Turner Valley days. After the first 2 or 3 years of Turner Valley. The Conservation Board got in there, they helped them clean up their act. I can guarantee you that we've had thousands of visitors in Alberta go between Calgary and Edmonton and around Alberta and never even noticed an oil well where there's been thousands of them. If people go up and look at the land where the Atlantic blow-out is I'll defy them to find out where it was and there was oil all over that land. And they won't be able to tell. So I think the environmental people are going to far but maybe this is the way they have to keep pushing. But no, it's slowing down, it's slowing down with the ability to get certain things done because of paperwork. I think it's improved considerably in mechanical ability to do things. Drilling times have speeded up considerably, it takes less time to drill wells. Construction times have speeded up considerably, but this paperwork is what kills a lot of them. Also, as I say, I think the oil industry is good. It's like any other industry, it needs improvements. I guess to point out that I do think it's good, I've had 3 daughters that attended university and they're all involved in the oil business.

NM: There are more and more women now involved in the oil business.

MP: Yes there is. My oldest daughter is involved in looking after a computer operation for a consulting company. My second daughter is a reservoir engineer for an oil and gas producing company. And my third daughter is in systems and analysis work for a

company.

NM: So you started a dynasty.

MP: Well, I don't know, maybe that's what I talked about more at home and they get more familiar with it. Naturally, the oil industry is large in Calgary, therefore the opportunities came up in that area. Also, I've had 1 or 2 nephews that I've encouraged to get into the oil industry and other children of other people. So I think the oil industry is good and it's going to be good for a long time.

NM: Mr. Paulson, I have really enjoyed interviewing you. Thank you very much.

MP: You're very welcome, I've enjoyed it too.