PETROLEUM INDUSTRY ORAL HISTORY PROJECT
TRANSCRIPT

INTERVIEWEE: Jack Minchin

INTERVIEWER: Betty Cooper

DATE: November 1982

BC: This is Betty Cooper and I'm at the home of Mr. Jack Minchin at 1024 Kerfoot Cres. S.W. It's November 17th, 1982. Jack before we get into your career background I'd like to get your own background. First of all, you weren't christened Jack, you have the initials of J. A., so perhaps we should get all that cleared up, when you were born and the names of your parents.

JM: Yes. My name is John Archibald Minchin.

BC: Is that a family name, Archibald?

JM: Well, my grandfather was Archibald Minchin. I was born on February 23rd, 1916, I have two brothers and two sisters.

BC: Were they older or younger?

JM: A brother and sister older and a brother and sister younger.

BC: Just for the records, would you like to put their names down on the tape?

JM: The elder sister is Sally and the older brother is Howard, the younger sister is Margaret and the younger brother is Bill.

BC: Whereabouts were you born?

JM: Grande Prairie, Alberta.

BC: And your mother and father's names?

JM: My mother's name was Mary Christina and my father was Daniel Howard.

BC: What were they doing in Grande Prairie, were they homesteading up there.

JM: Dad had gone into the Peace River country over the Edson Trail. In other words, they were in there before the railroad. So their trip in there, they first went in, in 1912.

BC: Where did they come from?

JM: From Edmonton.

BC: That's where they had been living?

JM: They had been living at Edmonton. My mother and her family had lived at Spruce Grove, that's just west of Edmonton, on the farm and they had come out from Prince Edward Island. My dad had come out to Edmonton, I think he was 19 years old or about that and he was a blacksmith and had settled at Spruce Grove.

BC: where had he come from then, at 19?

JM: From Ontario.

BC: So you go back a way as far as Canadian heritage is concerned.

JM: Oh yes. And prior to Dad's family living in Ontario, they had also been living in Prince Edward Island.

BC: Had they known each other?

JM: No.

#031 BC: Interesting.
JM: No. Dad had been born in Ontario and Mother had been born in Prince Edward Island.
BC: So when they came out to Grande Prairie, did your father come to open up a blacksmith shop there?
JM: No. In those days, when they went into one of the last frontiers you might say, they tried to have all the skills that were needed for each community where they were going to settle. Of course, they always needed a blacksmith, especially when you are so far away from a centre like they would be. They had to have somebody who could shoe horses and somebody who could fix wheels for wagons and he would fill that role.
BC: So was he recruited then, to move up to Grande Prairie or how did this come about?
JM: No, they were friends. The group that were put together that left Grande Prairie were called the Moon Outfit and they were people whose sir names were Moon. Not the Moon that. . .
BC: Not the Moonies.
JM: Not the Moonies, no. And they settled east of Grande Prairie, pretty well the group of them. There were about, oh 10 or 12 families, just west of the Smoky River, in an area called Johnson and also Glen Leslie.
BC: But your father wasn't related to them, he just heard about it.
JM: No. They were friends and one of the families that was in the group were people by the name of Wales, had also come from Ontario and I think Dad had known them in Ontario. So by the time I came along, in 1916, I'm still considered a real old timer because I arrived one year before the railroad did.
BC: That's interesting. Did your family live in Grande Prairie or did they take up a homestead also.
JM: Oh yes, Dad had 3 quarter sections in the Glen Leslie area. That's one that was a little closer to Grande Prairie, that settlement. Johnson was closer to the Smoky River. I've got it written down what the section #, township and range was but I can't bring it off the top of my head.
BC: Incidentally, you mentioned Smoky River and in later years, was there any oil discovered in and around where your family had homesteaded.
JM: No, there were a number of wells drilled in that area but none of them discovered hydrocarbons.
BC: It would have been rather ironic.
JM: Yes, it would have been.

#065 BC: When you started school, you would have started school when, 1920, 1921. Was there a school in Grande Prairie then?
JM: Yes, there was a school.
BC: How did you get there?
JM: We were living in Grande Prairie by the time I was ready to go to school.
BC: So your father had given up the homestead?
JM: Yes. And we were living in Grande Prairie.
BC: What was he doing at that point?

JM: At that time he was in the civil service and he was a timber inspector. I think he covered also, at that time, the job of a homestead inspector. I'd imagine that one came through as a . . .that was a political. . Dad had run for a Member of Parliament for the Conservatives in the early 1920's and I imagine they offered that job to him and he took it. And that was the reason we moved down to Calgary in 1927.

BC: So your elementary school years would have been up in Grande Prairie?

JM: Well, up to Grade 7. When we moved to Calgary I was in Grade 7.

BC: And you were moved to Calgary because your father had a job opportunity?

JM: He was transferred here. And he then became the timber inspector for the eastern foothills, from rocky Mountain House to Waterton Lakes.

BC: My goodness he'd do a lot of travelling.

JM: Yes. In those days too, there weren't that many roads.

BC: No. How would he travel?

JM: He had a car. Up in the Peace River country he had a horse and a buggy and of course, a sleigh for the winter. And the home we had in Grande Prairie was on the western outskirts of the town. We had an area there that, I think there were about 5 lots that Dad had acquired and we had a home there and a barn and a nice location, just outside of the town.

BC: Lovely. Where did you live in Calgary, what part of Calgary did you move into?

JM: Well, we lived in now what is called, Bankview. It was 19th Avenue and 14 A Street S. W.

BC: Did you live there for quite some time?

JM: Yes. Well, 7 years.

BC: So you would have finished your high school here then?

JM: Yes. Well, not quite. When we moved back up north again, we went to the town of Peace River, not to Grande Prairie, to Peace River and I finished . . couldn't get a job and we had to put in time so I took 4 courses that I filled up a morning.

#101 BC: This would be at the high school level?

JM: Yes, at the high school level.

BC: How far had you gone in Calgary then?

JM: Well, through Grade 12.

BC: You had really finished Grade 12, you were just doing extra work?

JM: Yes, I'd already had a senior matriculation.

BC: And why did you move back up to the Peace River.

JM: Dad was transferred back to Peace River. This was just before the province took over the resources, you see, he was still with the federal government.

BC: I see. And this would be 1933 that you moved back north again and finishing your high school. A dreadful time to come out of high school. What do you remember about looking for a job?

JM: Well, the first winter I had ambitions to be a hockey player.

BC: Were you a good player?

JM: Well, I went out to Edmonton and played junior hockey that winter in Edmonton, which

wasn't too bad. Of course, prior to that in Calgary I had gone through the midget and juvenile route and had been well coached and knew quite a bit about the game.

BC: were you paid as a junior player in those days?

JM: No. All they did was. . .

BC: were you kept at all, did they give you room and board?

JM: No. I stayed with an aunt in Edmonton and they only supplied me with street car tickets to get to the arena.

BC: A little different today. So you played for the one, just that one winter.

JM: Yes, that was all I had left for junior eligibility. And I got hurt so that was the end of my hockey, to make it a career anyway.

BC: So you had to start looking for a job again. Having played junior hockey didn't give you too many plus points to get a job I guess.

JM: No. We were in Grande Prairie and Dad had retired from the government.

BC: Had he retired because of the change, was that when they change had come?

JM: Yes.

BC: At that point then, would this be when the Social Credit people came in or was it just prior to that?

JM: Well, we'd moved back to Grande Prairie just before the Social Credit government came in, so that was 1935. Yes, I remember the day of that election. I was running messages for the . . .everybody didn't have radios then, the source of all your information was through the telegraph office and I was a runner for the telegraph office and would take messages to wherever the meetings were being held at different houses.

BC: Do you remember the surprise of everybody when they came in?

JM: Yes.

BC: Including your father I'm sure.

JM: Well, by that time, he was Social Credit and so was my mother, very strong.

#143 BC: So it was a gala day in your household?

JM: Yes. They were quite happy about it.

BC: In the meantime there you are, you've finished high school, you've finished hockey and what were you doing to fill your days?

JM: I got a job in the Frontier Lumber Company, in the sash and door factory there.

BC: This was at Grade Prairie.

JM: Yes. So I was learning a trade as a glazier, as well as handling all the electrical equipment in the shop. I didn't care for that work too well. I worked there for about 6 months. It was very tedious and your. . when I had been hurt playing hockey, it was the back area that had been injured, the lower vertebrae of the back and bending over, you're in the bending position when your glazing and it didn't agree with this injury that I'd had, so I had to quit. But in the meantime too, I was also. . I was earning $7.50 a week at that job and I also had the Edmonton Journal agency for the town and these papers would come in on the train. The trains would arrive twice a week and there were papers on each arrival that were handed out to the paper boys who took them and delivered them to the houses or sold them on the streets and I was looking after that for the Edmonton Journal.

BC: How did you get that job?
JM: I forget exactly how that worked out.
BC: Had you been a paper boy for them at one time?
JM: Well, I had been a paper boy in Calgary. I never had a route of my own, I was always a helper but even then, that was worth something. Especially enjoyable, I remember being on the Shetland pony routes that the Calgary Herald used to have.
BC: Where were they?
JM: Well, the one that I worked on was in the Killarney area. We took the pony cart, I remember the barn was somewhere in the are of the Know United Church on 4th Street and we'd hitch up the pony and get it down to the area where the papers were and we'd pick up the papers, it was a cart with a fairly good sized box on it, so we could stand in the box if we could ride in the cart but quite often we'd just run along beside it. The pony would head out and get it going up, what is now called the Bow Trail, it was quite a run because getting up into the area of municipal golf course, which was there at that time as well, it was just a gravel road and the pony would have quite a struggle sometimes, in the snow or the heavy rains, getting up that hill. However it was a lot of fun. And I got a chance to, I can't remember how it was offered to me in Grande Prairie to take on this job to handle these papers. Well, it's an altogether different kind of thing than being a paper boy in Calgary but it wasn't strange to me, these were papers and I knew what to do with them.

#194 BC: Just before we leave the Shetland ponies, why would they have the Shetland pony carts, what was the purpose, rather than having the papers delivered as they do now, to different points and then the boys just walking around?
JM: They didn't have that kind of distribution system at that time. When they got rid of the pony carts they had the trucks and I remember the big white trucks that would come ut and you went to a certain spot and the papers were there.
BC: Were the Shetland ponies like milk horses, they knew where they were going?
JM: Oh yes, they knew.
BC: They'd just walk along and you'd deliver the papers.
JM: Yes, or you'd get them trotting. Killarney at that time, the houses were quite. . each lot wasn't filled up. The houses were scattered. There might be 2 or 3 houses together and then a blank of about 3 or 4 lots and then 2 or 3 more houses and so on. And of course, we needed 2 people on the route so that you could handle one side and the other boy would handle the other side of the road and the pony would be going right down the middle of the road. The papers then, they were small, they weren't like they are today.
BC: So you could fold them up and toss them quite easily.
JM: Yes. And they were folded in square, we folded them in quare, not in a longer tube like fold that they did later on. Why they did that on these carts I don't know. But we folded them in squares and they could throw them easily from the front of the lot onto the veranda of the home.
BC: How much were you making in Grande Prairie when you were the dispatcher?
JM: I was making about $10 a week out of that, sometimes more. Depends of course, in those

days, you had a certain number of bad debts too, some people didn't pay. But I'd say an average of $10 a week.

BC: So you were making more there, in a twice a week than you were working, how many hours did you work at the sash and door?

JM: That was from 8:00 in the morning until 6.

BC: How long did you stay at both those jobs?

JM: And Saturday mornings as well. I was at Frontier Lumber about 6 months I imagine.

BC: And then where did you go?

JM: Then I went to a men's clothing store and worked there for awhile. Then I had a chance to get into hardware, which I thought would be more interesting and then worked there for several months and then a friend of mine, Jim Ridley from Peace River, who was teaching school and gone out to Normal, talked me into going to Normal.

#242 BC: This would not be too easy, you didn't have much money I would think.

JM: I was one of the fortunate ones that did have some money. But he said that he'd loan my $10 a month and that seemed to be all I needed to go, so I went.

BC: That's quite a friendship to do that. That assistance must have changed the whole direction of your life.

JM: Well, when I look back at it, I'd say it did.

BC: Did you decide, yes, I'll go to Normal because he was the teacher and he seemed to be doing quite well and it seemed a good. . had you thought of being a teacher earlier than that?

JM: Well, one of the things that most of the young men were doing at that time, they couldn't afford to go to university, their families couldn't afford to send them, they would go to Normal and get a degree over a period of years, work towards their degree. It would take them a lot longer to do it but a lot of them did. I had an uncle who married into the family, my mother's younger sister, who had done this. I wasn't afraid about doing that so that was the plan that I had.

BC: Did your family always encourage you that you were going to go and get further education, was this expected of you?

JM: No.

BC: It was something you had decided yourself?

JM: Well it was. . my mother's from a Scotch family and they think education is very. . and they are very keen on having education, their families educated. And I think this is maybe what happened.

BC: When you went to normal school, you had an older brother who went with you I understand.

JM: Yes.

BC: And his name was Norman?

JM: Howard.

BC: Howard. What had he been doing in the meantime?

JM: He'd been working in a store out at DeBolt, which was another, at that time it was a new area just opening up and a lot of homesteaders had come in there from around Sturgeon

Lake, Valleyview, DeBolt. A lot of these people were from. . I say a lot of them, a number of them were from North Dakota, some from southern Saskatchewan, in from the dried out areas. And they'd come up there when the prairies had gone to dust.

#284 BC: Yes, these were the people who were trying to start all over again.
JM: yes.
BC: He'd have some stories to tell of those people.
JM: Oh yes.
BC: So he decided that he would go with you.
JM: Yes, we talked it over. I don't know who made the decision that this is what we would do and we'd go out there and just find batching quarters and go to Normal.
BC: This was going into Edmonton?
JM: Yes.
BC: Your Normal School at that time, was a one year course, was it from September to June?
JM: Yes.
BC: How much was it costing you to batch, do you remember?
JM: I think we were paying $10 a month for that room. Now it was just a single room but it had a gas stove with two burners and an oven. It had a Winnipeg couch, one that you can fold out. . .
BC: Yes, it comes out on each side like a gate leg table.
JM: Yes, but it's a spring deal, it's not like your hide-a-bed type of thing today but it's the original hide-a-bed. It would go up against the wall and could be a sitting couch during the day. And a table and chairs and we did have a shower in the area of our room but the toilet facilities were out in the hall and we had to share them with the other people in the upstairs of this home.
BC: When you were at Normal School, was there any professor there that influenced you at all in your future career, can you think?
JM: Not at Normal, that maybe came later on, when I was at university.
BC; But you did finish Normal in '37?
JM: Yes, 1937.
BC: And did that qualify you to teach any grade, or just up to high school?
JM: Well, it taught, most of the teachers that came out were teaching in rural schools. Most of those rural schools were one room schools and they were from grades 1-8.
BC: That would have been quite a thing to jump into.
JM: A pretty good training area for knowing how to handle your time.
BC: And handle people.
JM: Well, the most important thing was to schedule yourself so that you got to each class during the day, to each group. And some of the children, the younger ones, if they finished their work they could listen to the lessons in the older classes as well and so quite often they did this. Which is quite interesting for them because they were picking up and learning. .
BC: Where was your first school?
JM: At White Mountain, south of Spirit River. It's right on the east end of the Saddle Hills.

White Mountain is a scarp like hill and it's up in that area, there are lots. . the farmers in that area, they were not well to do, they were really in the marginal area for farming. Their meat quite often would necessitate going out to hunt and they were right on the doorstep of marvellous hunting for moose and deer.

End of tape.

Tape 1 Side 2

BC: How long did you stay in that particular school Jack?
JM: Just the one year.
BC: What were you paid? I like to get the money into the record because I think it is rather important.
JM: I was getting $90 a month. That was pretty good pay at that time. We were getting teacher from Saskatchewan coming up into the Peace River country that had left areas where they had been contracted under $70 a month and weren't able to collect, so they left and came up to the Peace River. So at least we were getting our money.
BC: Yes. The School Board or. . .everyone had to sort of give in to make up the money for the teacher. Did you have a teacherage that you lived in?
JM: I boarded out at White Mountain and lived with a very nice family by the name of Welsh. Mrs. Welsh was a girl who had come out form Ireland, she was from Northern Ireland, well educated and finding herself out in that area must have been quite a shock but she was adjusting very well to it.
BC: And you adjusted well to being a teacher, did you enjoy teaching?
JM: I did. I enjoyed children and still do. So that part of it wasn't difficult for me.
BC: Where did you go the next year?
JM: My brother and I were fortunate in getting a 2 room school, just west of Grande Prairie, at Lake Saskatoon. This was in amore affluent area, Lake Saskatoon was the home of the Wheat Kings as we knew them in those days, the Trelley's and the Alsock's and the Rigby's had all won world championships with their wheat. I'd sat with them and watched them polish each grain in their little velvet bags where they'd put a little handful into a velvet bag about 10" long and about 2" in diameter and they would move the bag back and forth so that the plush in the velvet would polish the grain and it seems as though each individual grain had special attention paid to it before it went into the bushel. And the bag that was the. . the bushel that went to the World's Fair in Chicago, originally they'd go to Toronto first, the Toronto ??? and then to Chicago where they had the World's Fair deal, it was bushel and it was a 60 lb. bag of wheat so there were a lot of kernels in there that were polished and they were specially looked after. I don't know whether other farmers paid that much attention to their crop to send it in for this competition or not but that's the way they did it. It was very interesting. And Mrs. Trelley was quite artistic. She could take the grains of the wheat and the different tones of the browns and she had pictures there of a CPR locomotive in a picture, I'd say 3' long by . . .well, say 36 by 24 inches anyway, and flowers that she's have done with these. . .

BC: All done with wheat kernels.
JM: With grains yes.

#043 BC: It would be beautiful.
JM: Well, it was different.
BC: So if that was more influential, you probably got more money there, did you?
JM: Yes. I think we were getting $110 which was pretty good.
BC: How long did you stay in this school where you and your brother were both teaching?
JM: Two years.
BC: And what ended your employment there?
JM: Well, the war was on. We hadn't quite made up our minds what we were going to do about enlisting but we had planned to teach two years and then go to university for a year, and we followed that plan. So we both enrolled in commerce and. . .
BC: What had you decided you were going to take in university, just a commerce degree, is this what you had planned?
JM: Well, commerce, at that time it also got you into economics, it wasn't set up the way it is now. We were thinking of economics and Howard stayed with that and he ended up getting a Masters in Economics. When I came back after the war, well later on we'll talk about that. But I changed anyway, to a science course.
BC: Did you go into university in 1940, the war was already on so it would be. . .
JM: 1940-'41. Now I've got down here, later on, married in '41. I'm always getting confused. We were married and I went to university that first year, in 1940-'41.
BC: When did you meet your wife?
JM: One summer, the year after. . well, I'd taken one year of summer school and then the second year, after we'd taught, that is the first year after Howard and I were at Lake Saskatoon, I went out and got a job with the gas company in Edmonton, working on the gas line between Viking Kinsella and Edmonton. I was working out of Kinsella and I also had an aunt there. So I had a home away from home, I didn't have to stay out with the work crew all the time, I'd come into Kinsella in the evenings and visit with my aunt. It was through these visits that I met Patty and it blossomed into a love affair and marriage, so that's how that happened.
BC: And what was Patty's maiden name?
JM: Astronic???
BC: And this was war time so you were married that summer I presume, were you?
JM: Yes, that September.
BC: She took on quite a bit with you not quite deciding what you were going to do and no income.
JM: Yes. Of course, we didn't worry too much about that in those days. We had quite a bit of confidence in our abilities to do what we wanted to do I think.
BC: And you went into university and you took the first year of commerce.
JM: Yes. Then I think we'd just finished writing the exams or we were in the throws of writing the exams, we'd seen this little blurb in the Edmonton Journal asking for recruits to join the Air Force and to advance their knowledge in electronics.

#092 BC: Were you interested in electronics?

JM: Oh yes. I think most young people were at that time, radio was still pretty new. Especially with certain. . when you were looking for something that was different to work at, something that would be interesting and challenging. Electronics was something a lot of people . . .

BC: Like computers today.

JM: Yes. A lot of young men left Grande Prairie and went either out to SAIT, the Southern Alberta Institute of Technology, I don't think Edmonton had one then, or to Ryerson in Toronto, to take radio. And they were doing quite well. So we felt that might be. . we could join up and do our stint and . .

BC: And learn a trade.

JM: And learn a trade. So that's what we did. But now, in the meantime, we had joined the ROTC at the university, that was the Army. So in order to take this job with the Air Force we had to get transferred from the Army to Air Force.

BC: This would be Army Reserve, or was it actually in the Army, but on deferment while you continued your education?

JM: In those days, I don't think they had what . . it was what they called the Officers Training Corps at the university, when you joined that you were in effect, in the Army.

BC: You were in the Army. And so that actually, when you graduated from university, you would be going into the Army as an officer.

JM: Yes. However we decided that we would do that and get our transfer. First of all we had to be accepted but in order to be accepted we had to be free from the Army.

BC: That must have been a bit of quick footwork.

JM: Yes. We did it through some university professors, Dr. Warren, who later I worked with at the universities geological department was the head man in the ROTC. However we did manage the transfer and got into the Air Force.

BC: Would you have gone in then as officers, in to the Air Force, because you had been. . .?

JM: No. We went in as lowly leading aircraftsmen, even AC 1's. I think. . no, no, we went in as LAC's, which was a little jump beyond. . .

BC: $1.20 instead of $1.05 or something.

JM: Yes. A little better. We had quite a group of men answered this plea in the paper. We didn't know exactly what we were going to be doing, had no idea as a matter of fact, except that it was something to do with electronics. We were shipped down to Toronto, I had to leave Patty at home. We went to the University of Toronto to take a course and it was the university's physics course in electricity and magnetism.

#138 BC: So you'd have to be pretty good in mathematics to be accepted, did you have to take tests?

JM: Oh yes. Most of the people there, they were either high school graduates or they were teachers or had a couple of years university, some of them even had degrees. So they were quite a good group of fellows and we enjoyed the hospitality of Hart House, had all our meals right on the campus of the university, in beautiful surroundings. We had the swimming pool at Hart House at our disposal.

BC: Not a bad way to join the forces.
JM: No. Well that was the best we had. That October we were on the boat going overseas. And I might mention here that on the boat I ran into Jim Ridley, this chap who had helped me go through Normal and we enjoyed his company all the way over.
BC: He wasn't in the same course as you but he was. . .
JM: No, he was a pilot. Unfortunately we heard later that he only lasted, maybe 6 months and he was gone. He was on a torpedo squadron that was attacking the submarine bases on the French coast, which was a pretty hectic part of the war.
BC: What did you do when you got over to England? You had 6 months training, this would be really electronics training, you didn't have any marching or this sort of training.
JM: Oh yes. That was part of the deal. You had to look fit and smart. We did our share of square bashing as they called it. Every day, part of the day was devoted to that.
BC: But where did you go in England and what were you doing?
JM: After getting through the Manning Depot at Bournemouth, which is on the south coast, where we learned about blackouts and where I got a very severe, not a broken nose but a well scraped one where I walked into a brick wall in a blackout and learned how to handle ourselves a little bit in the dark and got acclimatized a little. We were sent up to Cornwall, the Air Force college in Lincolnshire and there we were put behind a 10' high fence and suddenly discovered how secret this stuff was that we were going to be working on. There's where we learned that we were going to be radar technicians.

#179 BC: This was very new wasn't it?
JM: Yes. So the excitement that we had there was quite dramatic. It was there too, I remember, seeing them put a jet plane through its paces. We'd never seen a jet plane before. Here's the thing flying around there with no propellor on it and made queer noises. That was quite an experience. I was still with my brother and we were even sent up to Peter Head. There was a new, what we called, a ground controlled interceptor base in a GCI station. I'd call it an interceptor base . . . the fighter planes, the planes that we were controlling were flying out of Dice Airport at Aberdeen and we were part of coastal command. No longer were we with the RCAF, we were attached to the RAF. The RCAF didn't have radar as a section of the Air Force.
BC: Were they Canadian pilots you were working with though, or they RAF?
JM: Well, the whole works. . .
BC: All of them, the whole Allied. .
JM: Polish, French, even later on, in the Mediterranean, a lot of American pilots.
BC: You moved out of the United Kingdom then?
JM: Yes, we were there for a year, I'd say about 9 months up in Peter Head and I went down to Swannage on the south coast to take a course on a mobile station. That's where the radar, the unit was in trucks. The receiver and operations room was in a truck, the transmitter was in another truck, the diesel units in another truck and so on. So we would go down the road and set up a unit that could be operational and what we said would be one hour flat, from the time we got there, we could be operational. Of course, we couldn't go to just any place, we had to go to a spot that had already been surveyed in because we

had to have a lat-long location, so that we could be reporting from a point on a map so that the grid that we had on the tube, which is just like a television tube, it was a grid with the station was the centre point on the grid and it was like the radium of a circle, the centre point goes out to the end of the tube and as the aerial turned the time base on the tube followed the aerial in a clockwise direction. As it continued on its rounds, if there was no reflection anywhere, there was nothing in the air. . well, sometimes we could pick up boats too, and ships, on the water. Once a little reflection, that is, as the time bases went around, you must remember, this is a flourescent screen, and you got a reflection, you'd get a little blurp, a bright spot would appear and it would leave a little circle of light at a spot.

#238 BC: So that you could pinpoint it on a map?

JM: Pinpoint it on that grid. And you used a letter-number combination, like Queen-E-1-7 and that was a spot on a map that was telephoned in to a home base and the people working on a huge map, you've seen this on. .

BC: On television, with all the little things and everyone. .

JM: Yes, and on the movies where they move these deals around from the points that are found from these different stations that are located along the coast and that's where the information was coming from.

BC: When you moved from the United Kingdom, where were you working then? Was it when the Allies went into Italy or was it North Africa?

JM: North Africa. After leaving Swannage we got the whole unit together and we went to Liverpool. Of course, everybody wondered where we were going, nobody had a clue. Well, we said, we're not going anywhere where it's warm because we're in battle dress, we didn't have tropical gear with us. So we figured we could be going almost anywhere. Except here we landed up in the Mediterranean, but in North Africa, at Algiers is where we went in. We set up the radar unit on the beach about 3 miles from where we disembarked and operated there for a couple of weeks, until the invasion was complete in that area. And then we moved down the coast to Phillipville and near Phillipville. . . now all these names have changed, I don't think Phillipville is called that anymore. It would have an Arabic name now. But it was quite a large centre in Algeria, a French city. We set the station up at Cap Bougeron???. There's a lighthouse there and it's easily marked on a map of the North African coast. And we were 2,000' up above the water with a beautiful cork forest lying below us and a nice slope down to the sea. The cork forest was still being operated by the natives, they'd come in with their little donkeys and load up 10' high load of cork on top of these little guys and walk them down the paths.

#283 BC: Still working with all the war going on around them?

JM: Yes. So that was quite interesting, being there.

BC: So you worked right along the Mediterranean throughout the war did you, or did you go . . . .?

JM: Well, I was there 2 1/2 years. Before we left Cap Bougeron, the Allies were going to

make it into a permanent base and they brought in the American engineers and they built a permanent station and we trained the American boys. There wasn't much to it, they'd already had training but a couple of weeks and they were away, they were on their own. Then we left there and went to Beserta??? and this was preliminary to the Sicily landings and the landings in south Italy.

BC: So did you go into Italy and Sicily?

JM: Yes. We set up our radar unit right up on the naval. . where the big guns were, where the French had their big cannon, their coastal guns overlooking the harbour at Beserta, which is a beautiful harbour. It's all enclosed with a narrow neck, it sort of reminded me of St. John's in Newfoundland, but a little bigger, you could get more shipping in there at Beserta. And some of the raids that came over, I recall, there was one night a raid of about 16 aircraft were coming in to bomb the concentration of ships that were getting ready to jump into Sicily and none of those aircraft got back.

BC: So your radar was working very well, to take them out and the guns too.

JM: And the guns. Some of them that got in, above the harbour, 2 or 3 of them did manage to get in, it was fascinating to watch, and we could sit up, we were up on a higher elevation underneath concrete abutments so that the flack, it was dripping all around us but we were well protected but we could look out and see everything that was going on. The most marvellous sight to see, all of this, almost every ship that was down in that harbour were shooting up at those aircraft and each one of them were pinpointed by 3 search lights. They just couldn't get out of there. The search lights were synchronized with the radar. So it wasn't long after that, that we were also in Italy, southern Italy. We operated off a landing craft, we had the radar set up on the front of the landing craft.

End of tape.

Tape 2 Side 1

BC: As we start talking this morning, we've covered your war years I think, pretty well. Could we look at your coming back, your university career and your summer work that you did while you were going to university. When did you come back from overseas?

JM: Well, I think I should mention about our time in southern Italy, that I'd contracted malaria there. That was in the south of Naples, in the Sorrento area. While I was there I'd had three bouts of this insidious disease. Finally, when our term was over in Italy, I went back to England and got word that I was going to be sent back to Canada. This was in the latter part of 1944. I arrived back in Canada, I remember going to see Patty again with a box of chocolates, the Valentine's Day box, shaped like a heart, you remember those old ones. So we were rejoined on Valentine's Day in 1945.

BC: And where were you, where did you come back to?

JM: Patty was in Kinsella. Now I still had not received any word about a discharge, I had some leave coming to me and our plan was to go up to Grande Prairie and visit with my family for awhile. When I was in Edmonton I came down with pneumonia so I was held up for awhile.

BC: You were probably weakened from malaria attacks were you?

JM: Yes, that's what they said, my blood count was away down and I was a sitting duck for something like that. So after that was over, Patty had been waiting, she was with an aunt of mine in Edmonton and had been able to see me regularly in hospital. I was in the Air Force Hospital, which was in the airport area.

BC: The old municipal airport area?

JM: Yes, the old municipal airport, so we're still relatively downtown in Edmonton. After that was over we went up to Grande Prairie. I hadn't known about this but when I arrived there I found out that my mother was dying of cancer. So we had, it wasn't a very happy homecoming in that sense. While I was there I got word that I would be shipped out to Vancouver, to Jericho Beach, and from there I was supposed to go on a radar unit out in the Queen Charlotte Islands as the Japanese were floating those balloons over, with incendiaries on them. The Queen Charlotte's had a couple of radar stations there. My medical records hadn't arrived, they must have got lost somewhere.

#041 BC: Sometimes they do conveniently, when they need you.

JM: But I said, I told them that I'd had this problem with malaria and had had pneumonia. So they just left me in Jericho Beach and I received my discharge there in September. No, I didn't, I went back to Calgary to get my discharge. But my Air Force career was over in September of that year, 1945.

BC: You could be discharged anywhere in Canada that you wanted I believe, you chose Calgary for what reason?

JM: I don't know. I think it was just a little nostalgia. I'd lived here at one time and just came back to Calgary. I was thinking too possibly, of looking up old friends and so on. I'd already applied for entry to the university and had received the okay for that.

BC: This was the University of Alberta, in Edmonton?

JM: Yes. So I was going to be. . .Patty and our daughter was with us, we stayed for a week or so in Calgary and went back to Edmonton and I made my arrangements then to . . we stayed with an aunt and I tried to get accommodation. We had to wait, it was just after Christmas we moved in to the old war time huts they called them, on 76th Ave. and 109th St.

BC: These were the married quarters, the huts that used to be Army and Air Force barracks.

JM: These were the American Army huts that they had up at Dawson Creek when they were building the Alaska Highway, it was this camp they had up there. So that's where we settled in.

BC: What were they like, some of the war time, or the huts that the married students had during the years following the war were pretty primitive, how did yours stack up?

JM: I guess it was primitive in certain ways, there's no doubt about that. I know we used curtain material for some doorways and that sort of thing. But we weren't too critical of that, they were very reasonable, as far as rent cost was concerned. I think we paid about $25 a month and I believe our utilities were paid. At that time we were getting somewhere around $90 a month.

BC: Did you get any extra for the one child?

JM: Oh yes. There was some extra and I've forgotten what that was.
BC: Probably $12 or something.
JM: Maybe yes, it might have been. It was quite minimal but we got along fine with that.
BC: You had taken one year of university before you joined up. Did you continue on in that course, it was commerce you'd looked at?
JM: No, I decided to go into a science, take a B.Sc.
BC: for any particular reason?
JM: Well, at that time I thought I'd prefer to have a B.Sc. degree if I was going to continue to teach. I'd prefer to have that to use in my teaching, rather than business and commerce and economics. So when I got into that first year, I was taking geology and I certainly enjoyed that course. We had Professor Warren, it was just an introductory course to geology. Professor Warren I believe it was, encouraged me to take geology as my major that I would have in science.
BC: You couldn't get a degree in geology in those days?
JM: It was a B.Sc. Degree with a major in Geology.
BC: What about the year that you had spent in commerce, did that count towards your final degree at all?
JM: No.
BC: With starting in September of '45, you would be among the forerunners of the big influx of servicemen because a lot of them wouldn't have been discharged.
JM: That was the first group, yes.

#095 BC: Do you remember how many were there?
JM: I've no idea. We should mention here that in that year, the 1945-'46 year, we had two groups, one that commenced in September and the other commenced in January. And these were all, well, that January group were all returned men.
BC: They normally didn't allow people in in the January?
JM: In this particular case, as far as I know, they were all returned men. Whereas the September group that I was with, was a mixed group. So we had two groups taking geology, the September group as well as the January group.
BC: How did you feel, going back into school, having spent the time, not only had you been a teacher, but you'd been in the Air Force, in the forces for that long and then you were coming back and you would be going back into school with the high school students?
JM: There was a definite adjustment that had to be made. We were a little worried about it, you know, most of us, we'd talk about how we were going to manage this. But it wasn't that bad. When I look back at it, it was just a piece of cake really. Of course, we were very concerned, I know I was a little worried about it and I think most of the others were.
BC: When you say it was a piece of cake, you found that getting back into studies was not too hard at all?
JM: No. Of course, this is afterwards. We put in a lot of hours and I imagine a lot of those hours were wasted, we weren't really that well organized.
BC: What about the whole feeling of the university life. Certainly prior to the war, you went from high school into university and you were a part of sororities and fraternities and

University of Alberta did have fraternities. As a returning veteran, did you become involved with the campus life or was this just sort of a means to get an education.

JM: No, I had the first year, the year before we joined up, my brother and I had joined a fraternity. So that was a real home away from home for us, as far as. . .it wasn't for me, but for fellows who were single who came back who could go right into a fraternity house, which a lot of them did.

BC: Also it would get you into the university life a bit more.

JM: Oh yes. And the contacts that we made are still quite important to us.

BC: Those who were going to university for the first time, did they join in that same way did you find?

JM: Yes, they did. I know we were, in our activities that they had, I was a part of the group that would entertain these young men that we were wanting to join the fraternity. They were certainly very young but we got along quite well with them. There was no big gap. I think they had a great deal of respect for the older ones, the older fellows.

#141 BC: It would change the whole atmosphere of the university I would think, having so many, quote, mature students, they call them today.

JM: Oh, I think it did. Yes. It was quite an atmosphere. In retrospect it was a pretty serious minded group. I think it took a lot away from the rah, rah of the younger people, what their idea of the university was. We just didn't have that sort of a college joe complex at all. We had too many other interests. I'm not saying there's anything wrong with that, I think it's really part of your growing up to go through that. But it didn't . . the years after the war, they were pretty serious years for most of those kids at university.

BC: So the ones just coming out of high school would not have the joe college atmosphere either.

JM: Well, I remember Sadie Hawkins Day, and I think that was some day early in November, that was about the only big splash they had.

BC: Yes, I know, it was where the girls chased the fellows. Well, with so many of you married there wasn't much use the girls chasing you.

JM: We'd gone down on the Saturday morning and watched this big escapade. It was rather interesting all right. But of course, some of us had already been caught.

BC: Could we look at your university, now you mentioned Professor Warren. That was your first year, he was quite an influence on you. An influence on quite a few young men. Can you tell me anything about Professor Warren?

JM: I'd first become acquainted with Professor Warren in the first year I had been at the university, he headed up our. . .

BC: He was your officer training.

JM: Yes, the officer training. He was the Colonel, Colonel Warren. Of course, at that time I'd only seen him in uniform. He'd be out when we were square bashing, out in the old drill hall, which was the skating rink and hockey rink. Then at university, he was really an excellent lecturer. He was an eminent palaeontologist and well known for his work in the rocks of the Rocky Mountains, as well as the work that had been done in the Northwest Territories. It was under his guidance that we became quite familiar with the sedimentary

section, as it's exposed in the mountains and what we should find under the plains.

BC: Did he take you out on field trips or did you have it all in the labs?

JM: No. This was all done in labs and in the lectures. Now those who were fortunate enough to get jobs to work in field parties and so on, all of us didn't do that you know. There were only so many jobs working with the Geological Society and so many jobs with the mining companies. Now, there weren't any oil companies actually hiring that many people to work out in the mountains. Companies like Imperial Oil and some of those more established firms had people out there and they did work every summer.

#198 BC: You never worked in a field party, no?

JM: No. Now during the summer. That first summer after the first year at university I was lucky enough just to get a job to bring in some money and that was painting the huts we were living in. So I was right at home, they hired a few people there to do the tidying up around, painting those huts that hadn't been finished. So that summer there were three of us that were quite busy.

BC: When you say you were fortunate, indeed, you only were paid for the months that you actually were going to school. You didn't get the $90 or the $102 or whatever, when university closed down, so you were really on your own.

JM: Yes. But we could stay in the huts. So that was. . .

BC: Was it possible to take any summer courses to speed up your degree?

JM: No. The group that started in January, it continued right through.

BC: Right through the summer?

JM: The summer.

BC: So that the following fall, you were altogether then, were you?

JM: No, they were still behind us, they were still that many months behind but I don't know just how that worked out.

BC: Maybe they were not taking full courses when they started.

JM: Not having been in that course, I just don't know, it could have. It could have worked out that they did catch up to us, I can't recall that.

BC: So in the first summer then, you were painting huts. And you'd made a decision then that geology was going to be your major?

JM: Yes. I tried to get on the field party up in the Northwest Territories but I didn't make it. Some of the boys in our class did get on but there were only, I believe about 10 of them that got that kind of a job. And some of them had work in the city, some of them went out painting barns in the country, they did whatever they could.

BC: Right. Now the second year that you were back, you were really then, in 2nd year university once again, because of having to restart everything. What about some of the other professors, during that 2nd year and indeed through the four years, it was a four year course or a three year course?

JM: No, a three year course that I was in. The four year course was an honours course. I did try to get into that but they wouldn't take me, for some reason or another, maybe it was my high school marks weren't good enough.

#242 BC: Well often with people going into honours, they find that they only decided late to get in and they sort of slithered by, anything else didn't matter. So you were in the three year and can you think of any other professors during your tenure at the university that were particularly influential?

JM: The group in geology that we had was Dr. Allen, who headed up the department, Dr. Rutherford who handled all the hard rock or a lot of the hard rock and Dr. Follensby, who had just returned from the Air Force himself. Those were the four, the principal professors.

BC: Can you think of any particular incidents or recall anything with regard to these professors that. . .?

JM: We all admired them. They had their own eccentricities all right. We used to get quite a kick out of Dr. Rutherford, he didn't think anybody that wore a wrist watch was a man.

BC: He was still in the pocket watch era was he?

JM: Yes. And I remember we took courses. . . one mining geological course, this was with engineers who were taking engineering. This group came in one day and they were all wearing alarm clocks around their neck, they'd tied a string around their neck. And they came in, you could imagine, Westlock, those old big loud tickers. They had them all set to go off at 11:00 so the alarms all. . .11:00, oh golly. That was quite a morning. I don't think Rutherford said anything more about people being effeminate wearing a wrist watch.

BC: Interesting today, the pocket watch is the oddity today isn't it.

JM: Yes.

BC: They each had their own specialties though, the professors that you had, you'd take certain courses. . .?

JM: Yes. Dr. Rutherford, he was our crystallography professor and that was one of our more difficult courses. It required the ability to see in three dimensions, see angles and so on. So these angles all related to crystals, the way minerals come out and crystals form. If they have certain angles then they belong to that certain class and that's one way of being able to identify the mineral, by sight. There are other methods of identification too, but that was a sight method.

#302 BC: During the time that you were studying, were you still looking at it as the means to a teaching career as a science teacher?

JM: Not by this time.

BC: What changed you mind and when did you change it?

JM: Well, it was during the first year. I had talked to Dr. Warren several times and I'd been getting quite. . my marks had been very good in each course and in that particular course, Introduction to Geology. That's when I had made up my mind. Of course, at that time we had no thought of oil. Sedimentary rocks were interesting but most of us were still looking at mining in that first year.

BC: Did you have an opportunity, while you were at school, or at university, to work in a mine so that you could see, it's one thing to look at rock formations in a lab, it's another to have to go and pick them out in a mine shaft?

JM: I had no idea what a mine was like and after that 2nd year, that was '47, Leduc had been discovered. That was discovered I think, in February of 1947 and Dr. Rutherford said that if that was . . well, he didn't believe it was going to be a big field, he said he'd drink every barrel of oil that came out of it.

BC: He must have lived to regret those words.

JM: Yes, I think he did. Any of us that he'd made that statement to, really rubbed it into him after a year or two. And he used to go out and sit on wells, Dr. Rutherford did. He was quite interested in the oil geology after he'd been out on wells and had seen that the big switch had happened, that most of us were going to be going into the oil business, not into mining.

End of tape.

Tape 2 Side 2

BC: All right, you can start right in with the summer of '47.

JM: Prior to the end of the year we had a lot, well not a lot but a number of companies come in and interview students about summer work. I had been accepted to work in the Cominco mine at Kimberly. I had hoped that I would get on with one of the oil companies but I didn't make it. However on my way to Kimberly I stopped at Calgary and a thought occurred to me, maybe I'll take a look at what's going on in the Lancaster Building, which had more of the oil companies in it than any other building in the city. It doesn't look very large today, but that was true, you could start at the top and by the time you hit the bottom you'd have most of the oil companies. So I went up the elevator and it was about 9:00 in the morning and I thought, by noon I'll know whether I have a job or not. The top floor was occupied by McCall Frontenac and I didn't know anybody there. But I got up the courage and walked in and asked them if they were looking for geologists for summer work. I was immediately sent in to talk to Dr. Hugh Beech. Inside half an hour I had a job and that put the end to my mining experience and I still haven't seen the inside of the Kimberly Mine, which I would dearly love to see. Anyway, that summer, McCall Frontenac was operating in partnership with Union Oil. They had two programs going, one in southern Alberta, in the Pekouky??? Lake area and the other south of Edmonton, in the Wetaskiwin area. I was sent up to the Wetaskiwin area with Bert Ellison and a geologist from UBC, a chap by the name of Percy Page.

BC: Is this the Percy Page that became the Lieutenant Governor eventually?

JM: No. This is another one. We were sent out to the different, there were three wells that we were drilling in the south Edmonton area, one at Wetaskiwin, one at Pigeon Lake, and one at Wizard Lake. The Pigeon Lake and Wizard Lakes wells were 2-3 miles possibly, off of the main accumulations of the Devonian reefs. The Wetaskiwin well was in the green shale basin, with no Devonian reefs in that area, but they did have Cretaceous gas.

#038 BC: When you went out, you were sitting the well then, is this what you were doing?

JM: This is what they call it, yes. You're sitting on the well. Now I was being trained by a

chap by the name of Gordon Kellick, who is still a very good friend of ours. We were at the Wetaskiwin well. Percy Page was at the Wizard Lake well and Bert Ellison was at Pigeon Lake. Now there was another, Bruce Tiffin was involved in sitting on these wells as well.

BC: But you had never even been out in the oil patch at all.

JM: No, this was a brand new experience. As it was to all of us, none of them had been out on wells.

BC: You didn't have any training before you went out?

JM: No.

BC: You were hired one day and went out the next, sort of thing?

JM: Well, I had a couple of days in the office in Calgary before I went out there. My wife was still in the huts in Edmonton, and Bonnie was there, our daughter. I didn't have any accommodation for her, for my family in Wetaskiwin. We were billeted in a room in a hotel, in the Griard??? Hotel. The Army had had a big training centre in Wetaskiwin and McCall Frontenac had rented what had been the old dental building, where they had the dental labs. This is important for us in washing samples. They had large catchment basins under each sink, dental work is related to that type of thing and it worked out very well for us.

BC: You were very fortunate.

JM: To get that, yes. So we had really nice facilities there, lots of room, lots of space, good lighting and so on and we were quite happy. Very few of us had seen well cuttings before, we didn't even know what they actually looked like. So we had to learn.

BC: And each one had a senior geologist was on the well and you were there as trainees or as helpers?

JM: Yes. Well, we were there as trainees. I can't remember what we were getting paid but I think it was about $150 a month. It must have been that, at least that anyway.

BC: And your board and room?

JM: Yes, expenses were paid.

BC: You must have found this very exciting, being able to apply some of your geological theories to. . .

JM: Well, we didn't have any theories yet. That came later really. They're pretty hard to come by and actually apply them and see them come to fruition, these concepts are really developed by experience. You don't get that by hearing somebody lecture for awhile or reading it out of a book. We found, now there were so many days, it wasn't actually set up as a schedule or anything but we would be out on the wells, usually during the daytime and in the evenings, when we came back, we'd work in the lab there, getting samples looked at. Even though Gordon Kellick was writing the log of the well, describing the samples and so on, I was doing it too, so I could get experience.

#087 BC: And then would you compare?

JM: Yes. And I found out very shortly that you don't describe every rock you see in the sample. You'd almost write a page for each 10' of sample. You'd have a sample for each 10' of drilling. And once you get down a certain depth, there's quite a bit of caving. So

you should recognize what rocks and what part of the sample you're looking at is caving from above. Now this takes some experience and real skill, it develops into a real skill after a period of time.

BC: How long a period of time do you feel that you have to be exposed to this sort of thing before you could give a judgement?

JM: Well, I sat on wells pretty steadily for three years and then off and on for another two years. I'd say you'd have to have two years and then to get to know the stratigraphic section. And then you really get to know it well because you've sen so much of it.

BC: What caused this caving, just simply the drilling or was it something that was there before?

JM: Well, it's a phenomenon on a well, that there's no way you can stop the caving. Supposedly the mud that you're drilling with, it's actually a chemical product, it's not just mud in the sense that. . .

BC: It's not just something that you get out of a mud puddle.

JM: . . .you see on the road or anything, there's dentonite in it and the dentonite is really sticky mud. If you ever got caught in the prairie gumbo somewhere you'd know what I'm talking about because that's got a lot of dentonite in it. That's what they make dentonite from, is what we call the gumbo mud. And that's because it's got volcanic ash in it. I know my time in the Peace River country, when I mentioned about the motorcycle, sometimes you'd get stalled because the mud would pick up and fill up under the fenders and then you couldn't go anymore. So you'd have to stop and dig it out. Well, this happens with cars too. Now the mud, coming back to that, in the well, you have a mud man on the rig and he's generally, at that time he was the derrick man, he was the one who had a little more experience than the fellows n the floor. The derrick man was responsible for the mud. Now the first few years int eh drilling around Edmonton, it was kind of disastrous because none of them had any experience in chemistry, they didn't understand what was happening. They were okay as long as they were staying in the Cretaceous system but once they got into carbonates and anhydrites, the mud could really go to pot on you and then whole well would cave in on you.

#126 BC: Did this happen many times then?

JM: Yes, in those early days, until we got people who were experienced in the handling of mud.

BC: And would they have to be experienced in handling the mud for the formations that were peculiar to Alberta or could you bring them from the States, where they'd had this experience.

JM: The people who were selling the chemicals were the first ones really I guess, to bring in mud men who would come out, the tool push would call for him to come out and set up a mud program. Then they would try to follow that, that program, adding these chemicals when they encountered certain rocks. Later on, the drilling companies had their own mud men.

BC: Would these be chemical engineers, or chemists?

JM: I don't know what their backgrounds would be, not always, no, not necessarily. It would

be somebody who had started out on the rig, working around the rigs and taken an interest in it. I remember Regent Drilling had one mud man that I knew, he was flown around by one of the partners that owned Regent, Lou McCullough would fly this mud man to wherever they were having any trouble. He had his own little plane and he'd land in the farmers field or on the road, the little Piper Moth. It was quite interesting. They didn't want to have any lost time. When they have lost time because of mud the onus is on the driller.

BC: So he loses his bonus or he loses. . .

JM: He's losing money really. He has to be prepared for any eventualities. And of course, this is the way it's written in the contract. Now some contracts might be different, the onus might be with the company but in most cases, I'm pretty sure, once they ran into a few of these problems that the onus was on the drilling company.

BC: Did you have any of these troubles that first summer?

JM: Yes. They had a little problem with the . . once you got into the Devonian, you're dealing then with the carbonate rock. In that area, the upper part of the Devonian which we called the Wabuman has stringers of anhydrite and once you hit those anhydrite stringers, they do have to have chemicals to handle it. But going back now, to describing these samples, the cavings that we were getting in the Cretaceous were cavings caused by the turning of the pipe in the well bore and they were just flapping against the side and knocking the rock off. You could tell pretty well, we used to screen this heavier shale out. We'd have a screen that we could, it wasn't a fine mesh screen but it was one that would take out the 1/2" to 1" long pieces of shale, which didn't belong to your sample, you knew that it came from up above. So we'd screen that stuff out and just examine the part of the sample that we thought was in place. Now you're still going to get some of it, some of the smaller stuff, it's been re-circulated maybe a couple of times and it gets smaller. But then later on, when they had their mud tanks, a lot of that stuff would settle out, solids.

#179 BC: You mean later on, years later?

JM: Years later, yes. So these first samples that we're describing were pretty hairy. We were always keen on describing everything that was in there.

BC: You'd want to be very sure that you didn't make a mistake.

JM: Yes. But then we found out later on that you don't have to do that. The general first appearance of the rock is what you want. Then of course, you're looking at sands and you want to get staining. If you see staining but then we wouldn't know what staining was like unless it was very obvious. And in the Cretaceous you don't see that kind of staining until you're down in the Blairmore section, where it's heavy oil and then it's really obvious. But we'd call drill stem tests on some of these showings in the section and we might recover water but we'd never recover any oil. I don't think that type of staining would flow. Oil was there all right, but it was what you might call the heavy oils that wouldn't flow, not on a drill stem test anyway. But there was hardly a well that you drilled that you didn't see some oil staining in those sands somewhere.

BC: So you could tell right away that this was going to be profitable.

JM: Well, we just took that for granted. We had no idea what a commercial rock looked like,

at that time. It wasn't until later, after we'd seen a few of them that we. . .

BC: Did you see any that summer?

JM: Oh yes. The Viking sand at east Wetaskiwin had gas in it, and also water with it. But we knew the Viking sand and the Bow Island sand in southern Alberta the same, and we were familiar with those and had an idea because they'd been in production for many, many years. The Viking sand is named after the town of Viking and the big Viking Kinsella gas field out there. That's been supplying Edmonton gas for many years. I think some of it's now used as a storage area, the same way as we use Bow Island. Ship Turner Valley gas, or years ago we did, Turner Valley gas down to Bow Island to store it for winter use.

BC: Easier than building storage tanks.

JM: Yes. No that summer, none of the wells that we drilled were productive. We were very disappointed in that but we had experiences there and I know going out onto these fields, we met a different type of person. The rig that was drilling at east Wetaskiwin was a Cantex Drilling Company rig and a chap by the name of Dick Harris was the tool push. He was an American. I recall another fellow there, working on the floor, an older man, Blackie Macdonald, who was from Turner Valley, an old Turner Valley man. He has since died. Gordon Kellick had his wife and child out there at the drill site and they were, the chap on the farm's name was Shorty Nielsen and he had rented them a granary and Gordon had fixed it up with a couple of bunks and a table and a few chairs.

#242 BC: Did it have a window?

JM: I don't remember whether there was a window in there or not but we spent a few very enjoyable hours there.

BC: It wasn't one of the time granaries, it was a frame one?

JM: No. Wooden granary.

BC: They sort of look like little huts don't they?

JM: Yes. Patty and our daughter and I were there visiting one weekend and we were chatting and having some tea and crumpets or something. Gordon wasn't a drinker so we were pretty lucky that way, we didn't get into any of those deals. And just sitting around, having a nice visit and their little fellow was up on top of the bunk and somehow or other, out of the corner of my eye, I saw him move over the edge of that bunk and he was on his way to the floor. Fortunately I was close enough to him so I could reach out and catch him on the way down.

BC: Pretty small quarters.

JM: Now I see Johnny Kellick today, a young fellow, he's about 6'3", weighs about 190 lb. I wouldn't want to try to catch him today.

BC: Tell me about Mr. Kellick, about Gordon Kellick. He obviously was one of your first on site teachers.

JM: Yes he was, and a very good one. Gordon comes from Rocky Mountain House. His father owned the general store in Rocky Mountain House. That's the one that's now owned by Hudson Bay Company, they bought him out a few years ago. Gordon hadn't shown any interest in going into the mercantile trade, his interest was in geology. And he had seen a

fair amount of the Rocky Mountains, he'd been up east of Grande Prairie, into the Nose Mountain country and had worked most of that area from Jasper north. That was all done with horses and with canoes too. So it was very primitive in those days. Of course, that's the way it was done. We had another chap who was instructing too, Norman Sole, he was on the Pigeon Lake well. He was actually looking after Pigeon Lake and Wizard Lake, they weren't too far apart, maybe 10 miles. Where they had Bruce Tippen and Percy Page and Bert Ellison, they're students that were out there. Gordon and Norm Sole had both been on these field parties in the mountains. They knew the geological column or the sedimentary section pretty well until we got into the Devonian, their experience wasn't the same. What we see in the Devonian section in the plains is not quite like it is in the mountains.

#308 BC: So there's a difference. If you could digress, can you explain the difference or is it something you have to picture?

JM: I'd found out the big break occurs in the Jasper area where you have a big shale basin. It's not the green shale, it's the dark coloured shale where out in the plains it's green, green shale. It's a shale section, I'm talking now about the Devonian, below the Wabuman. When you go through the Wabuman in that Jasper area you come out into shales, dark shales, which they call the Mount Hawk. When we go through that same section out in the plains, we go through the Wabuman, and then through the Winterburn, represented in the mountains by what they call the Santenac??? formation. Then we have, at the bottom of the Winterburn, we have the Niscue. The Niscue is the producing, one of the producing formations at Leduc, and a number of other fields. At Jasper you don't get the Niscue, it's all shaled out. Below the Niscue, where you get the ayerton??? or green shales in the plains area, you can . . that's the part of the section that has the Leduc reefs in it. And the Leduc reefs are surrounded by these shales. North of Jasper, on the ancient wall through there, you start picking up that same kinds of sections, where you do get reefs. Near Miette you get reefs. But south of there, it's all shaled out and it's in the Mount Hawk section. Then you have to go quite a ways farther south before you come into the reefs again. I can't just tell you exactly where that occurs but it's in the . . no, I better not mention any names when I haven't got it on the tip of my tongue.

BC: That's gives a very good idea. . .

JM: That's not important anyway.

BC: No, but that gives a good idea of what we're talking about here.

JM: So when you get into the Devonian section out in the plains, we used to think, if you passed through your Niscue, you may or may not have porosity but if you have porosity and if you test it, usually you've got water unless you're on a reef. If you're on a reef you could have hydrocarbons, your chances are much better. If you pass through 100-150 feet of shale. . .

End of tape.

Tape 3 Side 1

JM: We were at about the thickness of the shale. 100-150 feet of shale, you may possibly, your chances of having reef are very slim, having reef under that thickness of shale. However in those days, we didn't know that. Sometimes, some of the wells, both of the wells. . I think the Wizard Lake well didn't go deep enough. They should have drilled it deeper.

BC: Did they go back and drill it deeper at a later time?

JM: Well, yes, years later they did.

BC: And did they find. . ?

JM I think they got a little smidgen of oil in it. But that's sort of the reef detritus??? material off of the edge of it. And I don't think it was commercial. But that's how close they were, they were very close to it.

BC: Had that been, the drilling site, had it been decided by seismic?

JM: Yes. Seismic. . now, I had no idea what seismic, at that time, that summer, we had no idea what seismic, how it was performing to find these anomalies. The interpreters were fairly new at the game. We did, on discussions afterwards, years later, talking to these people, had decided that the anomalies that they drilled on were the. . when the beds say, of the Leduc, the overlying beds of the Leduc, drape over the reefs. There was a change of dip on the beds when they were going back to regional again. There's a regional dip in there of about, say 100' to the mile. This change in dip would be say, 150' to the mile. It went for a very short, maybe 2 or 3 miles and then it was gone again. But that's what they were drilling on, they weren't drilling on the drape of the reef, they were drilling on this change in the rate of dip, going back to regional once you came off the reef. That's the way they felt they were misled on it.

#034 BC: Was this because of misreading of the seismic data?

JM: No. It wouldn't be the misreading of it, it would be interpreting the data and not being aware that they were choosing something where there was no reef rather than where there was.

BC: In hindsight, would it have been possible to have looked at it a little differently so that they indeed, would have been on, instead of just off? With the knowledge and the skills that were available in those days?

JM: The next best effort, which they weren't doing at that time, was to isopac??? the shale, which is a little difficult, if you're not aware of what the squiggles on the seismic sections were telling you. You had to know where these changes in character were occurring. You wouldn't know that until you had drilled a number of wells and been able to tie the seismic in.

BC: Then you found, aha.

JM: Then sure. So you just have to accept the fact that the interpreters had made the wrong choice, which was too bad for McCall Frontenac because they had most of the land under which, later on when the Texas Company came in and got control of them, Wizard Lake and Pigeon Lake were discovered. But if McCall Frontenac had done that, that would have been a Canadian company that would have partially owned by the Texas Company but . .

BC: It would have given them much more capital and clout and made them into a major. . .

JM: Oh yes. They'd have been pretty close then. . well, Imperial had already found Leduc but Bonnie Glen and Wizard Lake were beautiful reefs, so it would have put them right up there with Imperial Oil in the production end of it. But unfortunately they just ended up with a percentage of what was being produced.

BC: With the drilling that you were doing that summer of '47, was this really their wildcatting to see whether they would keep those leases, is that what you were engaged in? Or did they have that land for a longer time than just to the end of '47?

JM: Oh yes, that land was held for quite awhile. A lot of it was freehold. You see, that area south of Edmonton, a lot of it had been settled by homesteaders prior to the province getting the resources, prior to the area becoming a province is what I should say. After Alberta was formed, then the mineral rights were vested in the Crown. Prior to Alberta becoming a province, the homesteader got the mineral rights.

#073 BC: You would have worked. . when did you go out to Wetaskiwin that summer, would you have started in June and worked through to the end of September?

JM: Well, we started in, it would be sometime in May, because the school year would end in the early part of May or the middle of May. And I had gone directly down to Calgary and started to work right away. I'd gone up to Wetaskiwin. . .

BC: You worked so many days in and then got home every once in awhile?

JM: No. I got home certain weekends yes, but we sort of took turns on that. And I would hitchhike to get home, sometimes.

BC: Why was that necessary?

JM: I didn't have a vehicle. I wasn't going to spend money on a bus when I could get a ride. Now to get back, I would take the bus back but leaving the Wetaskiwin area is quite. . you get to know the people around there and if you get out on the road and they recognize you, they pick you up and take you if they're going into Edmonton. It's only 40 miles.

BC: So you worked there, university in those days went in a little later in the year.

JM: Well, it was towards the end of September and I'd work right up, as close to as I could, the time of going back to university.

BC: And when you went back of course, you were going into your last year of university?

JM: Yes.

BC: So that when you finished in 1948 you were out looking for a job?

JM: I wasn't really out looking for a job, I was being due to the fact I'd been out on wells, had experience, I was one of the more fortunate ones. The fellows who'd been up in Yellowknife and the Territories, working on the hard rock geology were behind us. They hadn't had this experience. So I had people coming to me, wanting me to work for them.

BC: Was that when the sort of recruitment on campus was just getting into high gear, when the different companies would come to the campus and set up interviews to see if you would work for them, is that how they did it?

JM: I think . . I can only judge by the interviews I had with Cominco, when they had sent a representative there and that's what they did. They would set up, there would be a notice, come out and if you wanted to have an interview with these people you put your name

down on the list and then they would, through the class, a day or two later, a schedule would come out and your name would be on to meet with this person at say, 3:15 in the afternoon.

#111 BC: Did you have many interviews?
JM: That's the only one I had.
BC: That was at the end of your graduation?
JM: No, that was after the 2nd year. Now at the end of graduation, I had . . . Norman Willson was one of the lab instructors. Norm was taking his Masters and his lab, the one that I took with him was the Palaeontological section, and he was the one who . . . he was working with British American Oil.
BC: While he was taking his Master, he was still employed by them?
JM: No. At the end of that year, he hired a number of . . I imagine he had already made these arrangements with BA. So there were three fellows that were hired, one of them was John Carr, Neil Taylor was the other one and myself. We've run into John's name before. But John I believe, had also taken his Masters. One of the other advantages with British American was that they would supply you with a car. The car, the way it was explained to us, the car would be in your care all the time you were with the company, whether you were sitting on wells or whether you were working in the city.
BC: This was a real bonus.
JM: It was a bonus.
BC: For someone who had been hitchhiking.
JM: Yes. I remember, even after. . well, that first year when we were working in the Calmar area, that I was driving back to Edmonton and would pick up some Imperial Oil geologists who never had a car at that time. But they'd be working out in the field at Leduc and we made many friends that way.
BC: So you really, before you ever had finished school, Norm Willson had contacted you and said, how would you like to come.
JM: So that's how I started in with British American.
BC: You never thought of going to McCall Frontenac?
JM: Well, I did of course, having worked with them. But I believe that the talk that I'd had with them, British American was offering more money and a car, which was great enticement for us. And the fact that I knew Norm but I also knew the principals at McCall Frontenac. It wasn't an easy choice because I did enjoy the work that I had at McCall Frontenac. Later on, I'll be able to justify that remark.

#153 BC: Tell me about Norm Willson, that's Norm Willson with a double L in it?
JM: That's right, yes.
BC: Can you tell me anything about him, what he was like and your relationship with him during the time you were at BA? You were with BA for about 4 years?
JM: Yes. 1948 to 1952. I enjoyed Norm. We had something in common in that his father had been a lawyer, and maybe still was at this time, practising law in Fairview, Alberta. When my Dad was running for a Member of Parliament for the Conservatives, Mr. Willson was

one of his area men, what they call a stump man. So we were connected that way, a long way back. I later on met Mr. Willson here in Calgary, and enjoyed talking to him, but at that time I'd never met him.

BC: Did Norm Willson connect you with your father from those days?

JM: No. He didn't know anything about that but I'd remembered it, Dad had mentioned something about it and I told Norm. This was after I'd been working there with him for awhile.

BC: When you went into that department, Norm Willson was the Chief Geologist and how many other people did he have under him?

JM: Well, we were the first ones that were hired, John Carr, Neil Taylor and myself. Now later on, as we go through the geologists there at . . now Bruce Tiffen was also hired.

BC: At the same time.

JM: Yes, and then. . .

BC: Before we get to these others I'd like to just talk about Mr. Willson and his role as a manager and your relationship.

JM: Norm was very . . it was very difficult to understand him sometimes and he had no comprehension of what sitting on wells for long periods of time meant.

BC: He'd never well sat himself?

JM: He may have, I think he did out in the Lloydminster and Wainwright areas, which were very shallow wells and they didn't last very long. But these wells, some of us would be out for a month, six weeks. And we wouldn't get the time off for weekends that we spent out there, that was supposed to have been part of the deal. And I don't think the other companies. . now some of them may have been doing this but this is something you find out when you actually go to work for people, what their philosophy is in the work force in that company.

#200 BC: What was Norm's philosophy?

JM: He felt that when you worked for a company you were out there for 24 hours a day and that was it. Now of course, I've sat on wells and I enjoy sitting on a well for say, 2 weeks at a time but I don't you're very efficient after that. I think your efficiency decreases after you've been out there 2 weeks. But we didn't know that at that time.

BC: Were other geologists, sitting for other companies, were they getting brought in after two weeks or was it the same throughout the industry at that time.

JM: Pretty well the same. Until we had more geologists available.

BC: And then you could bring a little pressure to bear, perhaps. Did you have a geologists association at that time?

JM: When I was in Edmonton, no, we didn't. It wasn't till I came down to Calgary that I was aware of the ASPG, Alberta Society of Petroleum Geologists, which I believe started here in Calgary, after the Turner Valley days or during the Turner Valley days.

BC: You say, until you came down to Calgary, you came down to Calgary to work for BA in '48, did you, or did you work up in Edmonton for awhile?

JM: No, it wasn't until 1950 or '51 I came to Calgary.

BC: You were in an office in Edmonton were you, or out on the well sites?

JM: No, we had an office in Brewers' Motors, just upstairs in the Brewers' Motors building on Jasper Ave. and 6th Street. We had the upper floor there. The staff, the principal people that were there, the manager was Jim Stattler, he was an American, we had a production man by the name of Orville Wall. He was well known here, he came up here from Oklahoma. Another American was Bob Turner who was the crude oil purchasing man and pipeline man. Another American was Bill Muggler who was the land and working with Bill, we had Brian Gore, Gubby Gore, who by the way last week, I saw, just passed away.

BC: So all of the British American exploration office at that point was up in Edmonton?

JM: Yes.

BC: Were most of the oil companies, you had mentioned you came down to Calgary to get a job with McCall Frontenac, now had you been looking for a job with BA you'd have had to go to Edmonton to find a job with them for the summer, right?

JM: I couldn't say for sure. These people. . I know that British American had had geologists stationed here in Calgary but I don't think they had working office. So Mr. Wall and Mr. Turner, were up in Edmonton.

JM: They were in Edmonton.

#252 BC: When did the BA offices move down to Calgary here?

JM: I believe it was 1950. Now I'm not too sure, I could check this but it was 1950 or '51.

BC: Do you know why they decided to bring them down here?

JM: By that time you could see that the centre of. . the office centre was going to be Calgary. The Conservation Board was still here.

BC: And that was very important for the oil companies to be near them?

JM: Yes. Once the move was . . or once the companies saw that the main offices were going to be in Calgary, the pretty well, like BA, moved here. I don't know of many companies that have maintained their headquarters in Edmonton.

BC: How did you feel about moving down to Calgary?

JM: I didn't mind. Because I was familiar with Calgary. My wife was upset about it, because she, being from central Alberta, because she was leaving her friends and her immediate relatives. She had two sisters and a brother.

BC: Finding accommodation in Calgary at that time would be a little difficult too.

JM: We were fortunate. We'd bought a house in Edmonton and I knew a chap, a fellow by the name of Macdonald who was on a drilling rig, he was a driller and he was a brother-in-law of Bill McGregor, who later became Micmac and Newmac. Donald had a house here in Calgary, it was older than ours but we decided that we'd swap houses for 6 months. And gave each other a time limit and so on and arranged that the real estate companies would start to look for buyers for his house in Calgary and our house in Edmonton. And it worked very well.

BC: He had been transferred up there had he, about the same time?

JM: Yes, he was with a drilling company, it was Dominion Drilling I believe at that time. And I don't know whatever happened to Dominion but it worked out very well for us. So when we were going to buy a house, this home of Macdonald's in Calgary was on 29th St.

and about 25th Ave. S. W., in the Glengarry area and we bought a house on 32nd Street, between 17th and 15th Avenues, near the west end of the Shaganappi Golf Course, or the old Municipal Golf Course, which you drive by every day.

#313 BC: Indeed I do.

JM: But that year, I believe it was '51, that seems to ring a bell, I'd been sitting on a well out in Hanna. It was another one of these long wells but a well that I can well remember because another chap that had an interest in it was Joe Irwin, one of our real old timers here and I got to know Joe quite well sitting on that well, became good friends with him. I'd known. . his daughter had married one of our classmates, ???, so we had something in common. It was a nice experience but another one of these long wells that took more than a month to drill.

BC: What about the land position that BA had when you went to work for them? You say they were deep wells obviously, so was the land position good?

JM: BA's position was quite interesting. They had made an effort to get freehold lands, and they had experienced men, Bill Muggler was experienced. Brian Gore was a graduate in law so he was doing legal work as well as land. And I think he spent most of his time in land and he ended up with Norcen. When he passed away he had been with Norcen. BA, they had a refinery here in Calgary and they were bringing oil in from Cutbank in Montana.

End of tape.

Tape 3 Side 2

JM: They were bringing oil in from Montana, the Cutbank field and it was quite interesting. A number of the wells that I was called on to go and give geological service, BA had made agreements with these companies and two of the that I recall that we performed this work for them was, one was called Lion Oils, Mr. Plotkin here in Calgary and the other one was Major Petroleums, a fellow by the name of Sugar Schultz. I remember that, the Sugar part of it came from one of his dealings during the war when sugar was being rationed.

BC: He obviously had a source, did he?

JM: I don't know but we called him Sugar anyway. What BA was doing was, they would provide the geology and engineering and provide the pipe on a well, complete the well, for the right to buy the oil.

BC: Was that an unusual arrangement?

JM: Well, I'd never heard of it being done by anybody else but that's what BA was doing. So that's one of the reasons that I was called out so many time to go and sit on wells. They weren't being drilled on British American lands but they were being drilled for, if they found oil, BA would have the right to buy it. At this time, we were pretty well into the Crown sales. I don't know how often they had them but they weren't happening that often, they'd be coming up every, maybe every 4 months or every 6 months, I've forgotten. But BA would be right in there buying land and they were one of the first ones

to buy land at Redwater, on the sales, after the reef was discovered there. That brings me into talk about, our scout at that time was Norman Bartley. Norm had been in our class at university. He was scouting and I think after the discovery, in order to find out, there were two more wells drilling and we wanted to know about where they were in the section. And what Norm would do, you see they would be drilling tight because these lands were coming up for sale.

#041 BC: When you say drilling tight, you mean tight security.

JM: Tight security. And this was before . . or it could be just after we had a Scout Check formed, a group, the scouts had got together. I think you'd have to find out more about the scouting situation from somebody else. But Norm was out there and he had another chap with him who was a friend of his. He wasn't a scout but he later took Norm's place with BA, Mac Buffam and I'd asked Norm to see if he could get some of the cuttings from the well. Now to do this he has to get into the shale shaker, he has to grab the muck off the shale shaker with these rocks in it, when they're coming out they're all covered with mud. I had no idea how he was going to do this but Mac told me later on that Norm had an old coat on and he just stuck this stuff right in his pockets.

BC: Were you allowed to kind of wander around the wells like that or are we coming to that?

JM: No, you weren't really allowed to. They were definitely trespassing onto somebody else's lease because they weren't in there with permission but. . .

BC: People wouldn't notice that there were a couple of more people there?

JM: Well, people are busy going around, they're doing their chores and so on and if they were coming out of the hole or doing something like that, they could easily come on and nobody would see them unless it was the tool push or the derrick man. Somebody who was up top there could look down and see them wandering into the lease. But anyway, Norm got a few of these handfuls into his pockets. Now they have a mud pit, where the mud goes out into a big pit and quite often, well, they stir this mud up in the pit, they stir it up so that if they need anymore mud they can get it and they can pump it back into the system. Well, they had the pump into this mud pit and somebody was working with this, stirring the mud up and Norm didn't see them doing this and first thing he knew, he got hit with this stream of mud coming out of the pump. Knocked him right off his feet, however he gets back to Edmonton and has a couple of . . I didn't see. . the samples that he showed me were already washed. And we could see that they were still in the Ayrton, we didn't know, and he had a depth because he could step back after they'd pulled out of the hole and he could count the number of stands of pipe so he would know pretty close to how deep it was. So we knew pretty well where they were in the section and they weren't in the reef yet.

BC: And what would that do for you, what good would that information do?

JM: Well, at that point it was a negative one because I think they should have been in the reef, that was one of the wells that had missed the reef. Now I could be wrong in the timing of that, whether that was the 2nd or 3rd well drilled, I don't think it was, it could have been the 4th or 5th well when this occurred. Because what you try to do when you have your seismic anomaly is to prove where your edges are. Sometimes you can slip off the edge

and miss it, and I think the first 3 or 4 wells Imperial drilled were all on the reef. It was a huge reef. So when they were trying to delineate that edge they could have missed. There again, part of the section, I can't recall whether. . now, the green shale thickness at Leduc was only about 90' when you were on top of the reef. Down at Leduc it was somewhat thicker. Anyway the way we had it figured out the well had missed the. . .so it meant that certain parcels out in that area wouldn't be worth bidding on, where you had a pretty good idea where the edge was. But you still didn't know what the strike of the edge was, you know, whether it was. . . .

#093 BC: Whether it was tipped or whether it was straight up or. . .

JM: Well, you know, the direction of the edge of the reef. You wouldn't know what that was, unless you had seismic. To have had the seismic for all of that reef would have been pretty costly, even in those days. But we did have seismic in certain areas and you could tell if you had some edges, you could draw. . well, the way it turned out at Redwater it was almost like a ruler edge, the edge of that reef.

BC: We had started a little while ago to talk about Norm Wilson and we sort of went off on a little bit of a tangent. I wonder if we could get back to him again, just so that we can paint a bit of a profile from your point of vision? Obviously you felt that he expected 24 hr. a day devotion type of thing.

JM: Yes, well, Norm, he was only trying to do his best, I can see that. He wanted to get the most out of the people that were working for him.

BC: The fact that you got a higher salary and a car, did the company perhaps feel that was compensation for the extra time you put in.

JM: Possibly. They never explained it that way. But it's a little different you see, when you're married and have a family and you're away so much. Especially since I'd spent 3 1/2 years overseas. It was disappointing anyway, to have to be out that much.

BC: Because there was no accommodation for families, out on the site?

JM: No. Well, you could have done what Gordon Kellick had done and got hold of a granary but you can't always find a farmer that will be that obliging either. Although, we did have people around the Leduc fields, say out in that Calmar area that were very nice. We'd take Patty and our daughter out there, say on a weekend that I had to check in on a well and we'd visit with these families and they'd have us in and most of them were Ukranian origin or German. They were quite excited about the wells being drilled because they had the mineral right. It was no uncommon in those days, that after the well had come in that the farmer would put on a party.

BC: How interesting. Can you remember one of the parties, what were they like?

JM: Well, this chap was Ukranian, I've forgotten his name, too bad, very interesting family. They actually built a dance floor and put a canvas cover on it. It would be about the size of a tennis court, a pretty good size.

BC: It was like a wooden floor?

JM: Yes. And he'd invited all the neighbours and the people on the rig and their families. So of course, they were going to get 12 1/2% of the. . that was the royalty that they had, if they hadn't sold any of it, they would get 12 1/2% of the oil that was sold. So they

became quite wealthy people.

#139 BC: Did they have, were these parties, Ukranian dances and this sort of thing or. . .?

JM: No. They were not entirely, no. They'd play the odd polka. But they were country type dances, yes, and you weren't dressed in black tie and tails. You were just out in the sort of the sports outfit and everybody. . .

BC: Obviously those people had a good rapport with the oil people, which isn't always the case.

JM: Oh, well, the time, when you come into the other end of the business where the farmer hasn't got the royalty, where it is not freehold land. Like we did at Redwater, where British American, instead of having to deal with the farmer, they bought the farm. It happened on two occasions that Gubby Gore would go out and make the deal to buy the land and then rent it back to the farmer.

BC: Were they happy about that, the farmers?

JM: Well, they appeared to be. They thought they were getting a better deal than we were just by renting out say, 5 acres.

BC: This would put the price of the well up quite a bit wouldn't it, when they had to buy the farm?

JM: Well, I don't know how they'd handle that, put the price of the land. Of course, you can't deal with it the same way but there must have been a . . . BA wasn't the only one that did that. I know it happened later on at Pembina too, where the farmers were very difficult, some of them were difficult to deal with. But in that case, in Pembina, I know, Texaco Canada had just set up, like a drilling platform and the land was covered with muskeg and they just directionally drilled, under the other lands that were under disagreement with the farmer, the fellow who owned it.

BC: Was this legal?

JM: To do it that way?

BC: Yes.

JM: Oh yes, oh yes. As long as you can prove, you have to be able to show where the hole has bottomed and as long as it's in the LSD that you say it is then that's okay. And that's what they did at Pembina.

BC: Rather like drilling out on the ocean today, the drilling platform. That was the first experience maybe, with drilling platforms.

JM: Well, we called it a platform because it was in the muskeg. And to build roads in there, the cost of developing some of the areas there at Pembina were quite high. Because of the depth of the muskeg.

#178 BC: We will get to Pembina I think, probably a little later, so we can go into that in more detail. Let's look at some of the other people that you were working with, that group that were the beginning people. You have Jim Stattler, who was the Manager, did you have a great deal to do with him?

JM: No, not very much. John Carr would report directly to him, I mean Norm Wilson would report directly to him. And I would be reporting to Norm. The others like John Carr, now

that was an interesting thing that happened to John at BA. He wasn't there very long. And it was unfortunate because John is an exceptionally fine geologist. We were drilling a well up in the Peace River, in partnership with Shell Oil. And we drilled, I think this first well was called Shell, BA, Blue Sky. And they got some oil in the part of the section that we called the Permapen, that's the Permian and/or Pennsylvanian. We didn't know for sure what it was. Because you're so far from the mountains and the rocks that we were running into out here, the facees had changed so much that what they were, say in B.C., when you see them in the mountains that you knew.. . .well, we knew that it was younger than Mississippian and older than Triassic. So it falls into the Permapennsylvanian in age. And the section that had the oil in was so highly domotized, that there's no fossils, there's no way to get the palaeontology on the rock. So the oil was found in that part of the section. I'm trying to think of the chap's name, the fellow's name who came up here for British American. He was the head man and he later on became the President of Gulf Oil, darn it, I've forgotten his name. But anyway, John was taken to task by this fellow for not knowing whether it was Permian or Pennsylvanian where this oil was accumulated. So when John came back to Calgary, he thought, well, he's not going to get very far with this company when the boss man criticized his knowledge. Shell didn't know what it was either and they're far more knowledgeable worldwide than British American was yet their people didn't. . they were calling it Permapennsylvanian until they decided. . later on we knew it was Permian. But it took a few more wells before we decided on that. Anyway John tendered his resignation. That's when he went to, I think, Federated Oil, later Home Oil.

#235 BC: Right. And at that time, he had his doctor or his Masters?

JM: His Masters.

BC: And so did Norm Wilson. No one else tried to find out or verify, or was he just made the . . .?

JM: I think it was John's feeling that he would find it hard, even though somebody would. . . that chap's name was Whitford and he later became, when BA and Gulf were amalgamated then Whitford became President of Gulf. So he wasn't worried about where he was going, but John was. When you run into a situation like that, when John's name ever came up again, he might just disregard it.

BC: yes. So it's a decision you have to make right then?

JM: Yes. And John did, although he was getting along fine, he was doing some good work for British American.

BC: The other people that were there at that time, there was Neil Taylor.

JM: Neil stayed. He was doing a similar type of thing that I was, sitting on wells. And Neil stayed, he was one of the few that did, when Gulf took over BA and he did a lot of work around the Stettler area. That last I heard of Neil he was in Japan, still with Gulf, but working internationally and doing very well, it was quite a responsible position there.

BC: Some of the other names that come up in there, as you got into more exploration, the geological department expanded.

JM: Yes. And one of the first ones that came in was Ellis Walker. Now Ellis later on worked

with John Carr at Home Oil.

BC: Did Ellis leave when the amalgamation came through, was he another that left?

JM: Pretty soon after that, yes, I believe he did.

BC: What do you remember of Mr. Walker?

JM: A very fine person, a real good geologist, a good hard working man and very conservative in a way but very careful, very conscientious I think would be the word, who later on was successful in getting Chieftain Development into the position they are today in his work as the. . .I think Ellis is their Exploration Manager.

#286 BC: And still is today.

JM: Yes. But what happened to Chieftain lately, something.

BC: Just recently, yes.

JM: Was it the Alberta Energy that moved in on them?

BC: I'm trying to remember, it's hard to keep up with. . .

JM: Yes. It seems to me that it was. But that's only happened in the last few months.

BC: What about John Knight?

JM: Now John, yes. I'm laughing because I think John would laugh today too, when he remembers his first day in Calgary. He arrived on the train from Wales, I believe he had this job before he ever got here.

BC: Someone had recruited him in Wales.

JM: Well, he'd written, I imagine this had been done by mail. He hasn't got his trunk and I meet him and take him into the office and get hold of Norm Wilson and tell him that John has arrived. And Norm looks him up and down and says, okay, we'll get you a ticket on a train and send you up to Bashaw and I want you to sit on a well up there. Now John doesn't even know where Bashaw is.

BC: Has he sat on wells before?

JM: Never sat on a well before.

BC: He just graduated?

JM: Yes. But there was somebody out there, there was a geologist out there but Norm was sending him out for training, but right off the bat and he hasn't even got his trunk with his clothes. So that's another aspect of Norm.

BC: I'm sure John wouldn't be very happy with that greeting into Calgary.

JM: No, that's what made me chuckle when I remember his first day in the BA office. John later on went on his own and he's become very successful.

BC: Does he have his own company?

JM: He has his own company. I know he's got a condominium in California and spends some time there when he gets away.

BC: But you don't know the name of the company?

JM: No. Like a lot of geologists just have their. . it may not even be a corporate company, it may be what they call. . .

BC: It would just be under his own name.

JM: . . . a personal company. Yes.

BC: How long did he stay with BA? Did he move out with the great exodus?

JM: Well, I was gone before John left, so I don't know how long. He may have been there for 2 or 3 years and I think he went with another company before he went on his own.
BC: And he stayed on his own the rest of the time?
JM: Yes.
BC: And Jim Manning is another name you have?
JM: Yes, Jim was an older geologist, I mean, about my age. His father had been the Principal of the Normal School at Camrose. I believe Jim had been with. . well, part of his university training had been at the same time as Norm Wilson's. He had been working with Mobil, he was one of the early people that Mobil Oil had. But he was brought in when Bart Gillespie became the Manager of British American, after Jim Stafford had left. Bart Gillespie had wanted British American to get involved in the frontier areas. And at that time, what we called the frontier was the Northwest Territories. We took out large spreads of land up there, I know some of those permits were under my name. We took them out as personal and then they paid us a few bucks for doing this.

End of tape.

Tape 4 Side 1

BC: This is November 26th and it's our third taping session with Mr. Jack Minchin. When we talked last we just got to a very interesting part of your career with Gulf Oil and that is when Mr. Bart Gillespie came in as Manager and you started moving into exploring the frontier in the north. You'd mentioned that everybody was staking out leases in their own name. Could we start perhaps with explaining what this whole business was and why it was done that way?
JM: You mentioned the company Gulf.
BC: I'm sorry it was BA, of course.
JM: British American, yes. This land acquisition in the Northwest Territories was brand new to me, I hadn't run into this before. Because these were all federal lands. But there were a number of permits taken out and rather than set up a series of dummy companies, like some companies have done and putting the land under these dummy company names, individuals within the company were requested to sign as the permit holders. And we were recompensed on that. It wasn't very much money but it was a little bit.
BC: How long would you have them in your name then?
JM: Not very long, it was about 6 or 8 months. How they handled it after that, I don't know. I just know that I signed away my right on the permit and I got my money and that was it.
BC: Why would they have to do it this way? And you say it was federal land, so there must have been some . . .
JM: It may have been time, the time element. The length of time it would take to set up these other companies and so on, they felt it would be another way of doing it and doing it faster, to be able to get in there and get these lands. BA wasn't the only company that was requesting permits up there.
BC: And would it be because one company could only request so many acres, is this the

problem?

JM: I don't know.

BC: Because it would see they could just say, I want to take, as they used to do, great huge blocks and just say I want to take out a permit on all this land. But obviously they couldn't do that.

JM: Well, the regulations I know, in land acquisition, in taking out permits or reservations, in Alberta were different than in the Territories. The federal government didn't have the background in this kind of thing, they did in mining properties and so on but they were quite small as far as the number of acres that were requested. And I can't remember whether these had been open for bid or whether you could just go up and ask for them. I've forgotten whether there was bidding on this land, it just escapes me.

#037 BC: Were you ever part of any bidding session?

JM: Oh yes. Many times the geologist was. . a geological report of an area had to be submitted, most companies required this before a bid is made. Now otherwise, it's a blind bid and you just go out and you try to get it as cheap as you can, without . . and some companies did that, just to build up a land inventory.

BC: But the actual person who would put the bid in, you were never involved in actually putting the bid into the people?

JM: The government? No. I've been there, I've gone with Brian Gore, Gubby. We had to go to the Administration Building in Edmonton and I saw how they lined up and handed the envelopes in and then they had to wait for x number of hours before they announced who had won the particular parcels.

BC: Gubby would be one who was presenting it at that time?

JM: Yes, yes.

BC: Did he have any magic formula? I understand in those days they had wonderful things, always their birth date at the end, or funny numbers so that it wasn't. . .

JM: Well, that's all decided at a meeting, the way they present the . . . the final number, now usually, there was a price per acre and evaluated according to. . the landmen have all these responsibilities. What is the going price in the area. They also watch if you're down more in central Alberta, what the freehold lands have gone for in the area.

BC: But you didn't have, in BA, a magic, sort of, it always ended in a 7 or it ended in a 4?

JM: No. When they were buying land, they were actually buying the price of oil in the ground and it had a barrel number. Whether it was $2.75 a barrel, that's what they're paying and they'd work it out through the geological and engineering expertise in the company and the number of barrels they expected to recover from that property. But that's not on wildcat, that's on these infill pieces within known pools. Like Redwater was a case there. And a number of the leases I recall that I was involved in, in Joachim. And then across, around the perimeters of Leduc, Wizard Lake, Bonnie Glen. This was an effort of a number of people, the numbers were all put together and then submitted. But it wasn't just one individual doing this, it was team work.

#071 BC: Let's look at Mr. Gillespie perhaps, he came to BA while you were there and

replaced Mr. Stattler. This changed the direction of BA's exploration department quite a bit, did it not?

JM: Yes. Well, one of the first things he did was move into that Northwest Territories area. That's when we were fortunate enough to add Jim Manning to our staff. Jim had been quite knowledgeable in the north, he'd come to us from Mobil Oil and had field experience in the Mackenzie and Franklin Mountains. So Jim pretty well headed up the exploration of these permits that we obtained in the Northwest Territories.

BC: Could we talk about Mr. Gillespie first, then we'll go on to Jim Manning. Tell me about Mr. Gillespie, what he was like and any particular incidents you can remember that might give us a fuller picture of him.

JM: My experience with Mr. Gillespie was quite brief you know, I was only there about a year, then I had moved on. He came to British American, I believe it was 1953, yes, it must have been 1953. He had been with the Government of Mexico. The Government of Mexico had, just prior to this period, had taken over the oil and gas industry. Mr. Gillespie's background, through his experience in the north, in Alaska, where the American Navy had done some exploration drilling up the Caldwell??? River, I imagine there was a desire on his part to go back into the north, from the experiences he had there. He was a very straightforward, gruff type in many ways but you certainly knew where you stood with Mr. Gillespie. He liked a straight answer, he always gave you one. Another thing he liked to do was take part in the activities of the staff. He even turned out and learned how to curl. Whether he had curled before I don't know, but at least he was out on the ice and he threw rocks and swept rocks like the rest of us. A few years after I had left BA and Mr. Gillespie also had left BA and had gone to Home, we played against this rink in the Oilman's Bonspiel and Mr. Gillespie was on it. So we had a great reunion there.

#110 BC: He was an older man coming into management of a growing company. Is that why they brought him in, for his long expertise?

JM: British American's headquarters was in Tulsa. What was going on in Canada was decided, at least as far as picking the people who were going to lead the company, was going on down in Tulsa. That's where people like Orville Wall and Bill Muggler and Bob Turner had come through that route. They were sent up as a nucleus. So Orville Wall was selected by that group in Tulsa.

BC: And Bart Gillespie was too.

JM: Bart Gillespie was selected by that group. We were very fortunate, all these people were very skilled in the oil patch, they knew what was going and they didn't take long to adapt to conditions here in Canada. If they were different, they certainly changed without any problem, as far as conditions were concerned. I think their only big problem was the winter, the cold of the winter. And of course, Mr. Gillespie had gone through that up in the Arctic so it didn't phase him. Some of the others had problems in keeping warm. I know Mr. Wall would come out to the trailer if something was going to happen, we were going to run a drill stem test or at some point the well, maybe we were in trouble, well, he was always there. He was the Production Manager and he wasted no time in getting out to

the rig and seeing the company's interests were well looked after. So we had spent many hours in the company trailer that was on the lease and sometimes we'd be in there, and in those early days we didn't have well insulated trailers. Sometimes if we were lucky enough to get the trailer situated in a low spot we could bank up with snow and keep the cold from getting in underneath but most times we couldn't do that, it was pretty flat. We'd be sitting up there, I know, many times I'd have my. . we wore on our feet those big flight boots that we got at the Army and Navy surplus. And I'd be wearing those on my feet and I'd be sweating, the sweat coming off my forehead because they didn't have the proper circulation in those places. It was great though, sitting in there, something was going to happen on the well and we'd have people like Mr. Wall and Ralph Atkinson, the engineer or Pete McNarry who was the helper in the field, would be out there seeing that their part of the procedure was going to be looked after. The geologist sometimes would act as an engineer in say, running surface pipe or something like that and sometimes running drill stem tests but not running production pipe or tubing, there was always a completion engineer there.

#157 BC: You mentioned that Orville Wall found it difficult to keep warm. You mentioned your flight boots, what did he wear?

JM: He was still wearing those rubber galoshes, or what we call overshoes. They come halfway up the calf of your leg and you tucked your pants in those and there might be about 4 snaps on them, you remember those. But they would be rubber.

BC: That would draw the cold.

JM: Yes. They didn't keep you warm. But I imagine he'd been used to. . or had thought that that might be the best way to dress. But I think later on he got something a little warmer for his feet.

BC: You mentioned Jim Manning too and we sort of jumped past him when we were talking about Mr. Gillespie, could you talk about Jim a little?

JM: Well, I mentioned that he'd had experience up in the Mackenzie and Franklin Mountains when he'd been with Mobil Oil. We brought in some geophysicists from Tulsa and I think there were two men came up to set up all the seismic that the company had performed for them, by consulting groups. The interpretations had been done by consultants. We had, up to that point, no geophysicists on the company staff in Edmonton. Now by this time, we're now in Calgary. Jim looked after that integration of the seismic and had the maps all on the same scale. Prior to this the maps were on different scales and . . .

BC: It would be very difficult for geologists to understand what was going on in the seismic side then.

JM: Most companies, even at this time, the geophysics was not discussed with geologists. They were with some companies, they were. . . most of the work . . very seldom would a geophysicist come and discuss even the geology with the geologist.

BC: Would it work the other way too, did you keep away from the geophysicists?

JM: You weren't doing this because you wanted to keep away, but they were just segregated, it was just the nature of the thing. After work, when the day was running down, you'd

hear the trolleys go down in the hall with the seismic maps and the records going into the safe where they kept them locked up.

#200 BC: You didn't have access even if you wanted to?
JM: No.
BC: Why was that?
JM: It was the way that it was worked in those early days. Now later they changed.
BC: This must have hampered your exploration data gathering process then.
JM: I always think of the geology being one tool and seismic being another tool in finding oil. If you confine yourself to one tool when you could be using two, you're not going to be successful and that's the way it was.
BC: Did you find that in those early days then, that perhaps, they've gone back in since, combining the information and they have found producible sites that they didn't find?
JM: Oh, I'm sure that that. . . the old seismic. . of course, the seismic too itself, the technology, the improvements there have been fantastic. The same I imagine, even more so, than the way we look at our geology. We look at out geology just through out own experiences that we have. If you're fortunate enough to be exposed to many different conditions, then you're a better geologist for it. The technology that I'm talking about is something that's been developed somewhere, say some of it's done in the States, some of it was done up here I'm sure. But . .
BC: The utilization of the computer, for example, in recent years.
JM: Oh yes, that made a tremendous difference. Well, even the tape, putting the records on tape, instead of on these long film strips and just getting a single record for each shot or getting a group of records for each shot but they were on separate recorded strips. Putting them on tape, then you had the ability to manipulate that data that's on the tape. Later on they were able to come out with cross sections. Of course, the geologist works with cross sections, when he has a number of wells that are close enough together. Well even he works with cross sections for regional work too, to see how his correlations are standing up.
BC: So once they were able to do this with the seismic, then it made more sense to the geologist I would presume?
JM: By this time the geologist were working closely with the geophysicists.

#244 BC: In those early days, was there much animosity that you found, among the crew?
JM: No. There was no animosity, it was just sort of at arm's length, sort of thing. But you could get some pretty hairy discussions at meetings, at exploration meetings.
BC: And whose opinion ruled, mostly?
JM: The geophysics had a little jump on us. We were confined to what the wells told us, the wells that were being drilled. Whereas they had the information that filled in between the wells. So they'd have a little jump on the geologist as far as the final say was concerned.
BC: Often the Exploration Manager was a geologist though.
JM: Yes, that's true.
BC: So this would perhaps balance the scale would it, or what?

JM: Well, he recognized that the geophysicist may have more information than the geologist. But I know in, say the last 10 years in the business, the number of geophysicists that have moved into managerial positions has increased tremendously.
BC: Much more than in the early days.
JM: Yes.
BC: It was rare for them to move.
JM: Yes. Because they were specialists with that particular exploration tool and it hadn't been their good fortune to have been doing other things within the oil company. But later on, when they had more years under their belt, they got to be a supervisor of a district, which would include geologists. And then they'd become managers of a larger area.
BC: So the picture really has changed, in 30 years, the managerial level, the sort of bodies that are slated to climb the ladder. Could we go back to Jim Manning because we didn't really finish with him I don't think. He obviously, you felt, was a very able man, is very able.
JM: Yes, he certainly was. Now I wasn't there long enough to have followed Jim's career within BA. But I don't know, when Gulf took over, how long Jim stayed there but the next I'd heard about him he was with Husky and was Vice-President of Exploration with Husky.

#292 BC: And so has done very well. Did he stay with Husky through most of his career?
JM: I don't know, that's the last I'd heard of Jim and I'm sorry. . .I've often wondered about him and how he's been doing.
BC: There are a couple of notes that you have here on your working years with British American. Some of the places where the offices were and I think this might be rather interesting to record. When you first moved down from Edmonton, you were in Edmonton and then you moved down in about 1951?
JM: Yes.
BC: And where was your office at that time?
JM: It was the corner of. . well, right on the corner there was a service station on the corner of 6th Ave. and 1st St. W. This would be the northwest corner.
BC: It was the southwest corner was it not?
JM: Pardon me, the southwest corner.
BC: And that was a BA service station, was it?
JM: Yes.
BC: And you had a building, that would be quite close, there's a hotel just along from there.
JM: Oh yes. Is that the Empress?
BC: Yes, I think it is. That must have been where you had your coffee breaks did you?
JM: No. We might have dropped in there for a beer after work once in awhile but not coffee breaks, I don't think we had coffee breaks to speak of.
BC: In those days, right. But the Empress wasn't your gathering, it was for some people I think, the Empress on the Friday nights.
JM: Well, yes, after work. I know some of the fellows did but remember Betty, I was a married man and I would try to get home.
BC: That's right. How many were in your staff when you moved down there?

JM: We weren't very big. It was a small building, it was a two story building and we occupied the top floor.
BC: Oh, you didn't even have the first floor?
JM: No, we didn't have the first floor. So I don't know what was down there. There'd be maybe, 35 people, counting all the geological staff. I know they had a little trouble finding room for the two boys they brought up from Tulsa, doing the geophysical work.
BC: Who were they? Was that Les Lutz?
JM: Les Lutz, that's one name I remember.
BC: Was George Deebler the other one?
JM: No. The one's a blonde chap with a crew cut.
BC: Jim Pace.
JM: Jim Pace that's the one. Those were the two that I recall.

End of tape.

Tape 4 Side 2

BC: Could we talk Jack, a little abut the social side of the oil patch in those early days, in the late 40's and early 50's. Christmas parties, barbecues, there was a lot of sort of camaraderie and keeping the troops happy, was there not?
JM: The major effort that was made by most of the companies came at Christmas. This was brand new to most of us. Companies had never celebrated Christmas with their staff before, that I knew of. The British American parties were quite. . well, everybody brought their families. No, that's not right, not at the Christmas parties. You had a dinner and dance and the wife was along to meet everybody else.
BC: And were they paid for by the company?
JM: Yes. I don't know how they handled the liquor situation at that time because I believe they had to have a permit, you had to have a permit if you were going to have it be serving an alcoholic beverage. So they would have the get together, I think we had our party at the Corona Hotel, which was quite a nice family hotel there, west on Jasper. The other things that were going on, the companies that serviced most of the oil patch, like Haliburton, Schlumberger and the companies. . .
BC: Mud companies, people like that.
JM: Well, I think all of them would have open houses, they would have an open house. But I remember the Haliburton and Schlumberger parties and Flint Rig, they were, I think if you went to all of these parties you could get plastered for two weeks. And some of them did I imagine. But they were all sort of on different days and they'd start in the afternoon.
BC: Oh, sort of coordinated so you could hit them all.
JM: Well, I think some of them were. And the area down on Whyte Ave., no, was it 105th St. that became the Calgary Trail, anyway, down the Calgary Trail where a lot of the service companies had their offices, it was quite a deal down there. No, they didn't have them all on different days because sometimes, I know I've been with a group that would be at one place and then they said, let's move down to somewhere else, just down the street. And

some of them would take off and go down there. These were people that you'd met out on the rigs, all the service staff. Like at Haliburton they were the people who ran cement for setting the pipe, they were the drill stem testers, they were the, later on, the people who came to do the fracking and so on that used on the rig. And you would get to know these people as quite often the jobs would last longer than a day. One of the places of domesticity around the rig would be the geologists trailer and you'd bring them in possibly, for a cup of coffee and you get to know a lot of people that way.

#046 BC: At Christmastime, did you have the patronage kind of gifts, did you find that all these service companies would have so many gaily wrapped bottles of liquor to go to each of the places, or cigars or chocolates or whatever.

JM: The thing that I used to look forward to, now I can't remember who gave these out, one company gave a turkey. Now a lot of this was done by the drilling rigs, not so much by the service companies but by the drilling rigs, they're the ones that I recall anyway. And I've been given a turkey for a Christmas present on more than one occasion and I had nothing to do with getting the contract for that driller, it had nothing to do with being. . they just didn't give the present to the person who was responsible for getting the drilling contract, they gave a turkey for people who were involved in the drilling of the wells.

BC: Was this something that you feel was sort of an American influence, this type of camaraderie at Christmas and showing your appreciation that way.

JM: I hadn't run into it, of course, I hadn't been in business before. I'd only taught school and you didn't run into that.

BC: The school supply people didn't send you a cigar.

JM: No, we didn't run into that sort of thing, so it was new to me. Another thing that we used to enjoy getting was a package of cheese. I won't say package, these were assorted cheeses and they were delightful. They had small bits, maybe 4 ounces per cheese, all wrapped in its colourful foil and so on. So they were nice to get. I might have, on one or two occasions, received a bottle of scotch or rye but I can't remember, it wasn't that prevalent.

BC: When you came down to Calgary, this Christmas party and I presume also, a Christmas party for the children of employees, would this be part of the scene too?

JM: Yes. The companies were, especially like British American, we had been with the group in Edmonton, then we were moved to Calgary, so in summer they had a barbecue, picnic type of thing, at Sylvan Lake where the two offices would come together.

BC: and this would be families, whole families would go.

JM: Yes. Whole families would be there. That's where I first ran into the company barbecue type of thing.

BC: Would you explain what the company barbecue was like?

JM: This is principally an American deal as far as I'm concerned, that they brought in here, where they'd barbecue a whole roast. Not only one roast but maybe half a dozen, depending on how many people were there.

#083 BC: What did they use?

JM: They'd have an open pit with a grate. And the material that they used for the fire would be put in there the night before.
BC: Would it be wood or would it be coal?
JM: Yes. Some of it was wood and then coal too. Now whether they used the, at that time I don't remember briquettes, that is the type that we use on our present barbecue. This was all brand new to me. And of course, the salads, they had beautiful salads there.
BC: Were these covered, were the pits covered?
JM: No, the pits were open. There were usually about two men looking after the meat. And they would never hesitate about giving you all you wanted, you could always come back for seconds.
BC: But there was a gentleman in Calgary, it seemed to me, who invented what they called the barbecue ovens, these were portable and had a cover. This came later though did it?
JM: That came later and I think that was Jack Godwin, is that. . .
BC: The name sounds very familiar.
JM: He was the man that did this barbecue, the one I remember at Sylvan Lake. He was a good friend of Orville Wall's, he was the manager or one of the top salesman, I think the manager, of National Tank in Edmonton. National Tank, they're the people who supply the crude oil tanks at the wells. Wherever they have a battery coming in, then they have the tanks there for the crude. So that was a big business and Jack Godwin was the. . .I've heard recently that he went back to Oklahoma. He was not staying out of business, he went into motorcycles. The story I heard was that they brought in Honda motorcycles and now he's made another fortune out of this and done very well with it.
BC: But the barbecuing was just something he did for fun.
JM: Yes. A lot of people that had this expertise, a lot of it is in knowing what to order. They ordered the food as well as prepared it. This was the type of thing that most of the Canadians hadn't come across, but now some of them are really good too.

#118 BC: There are a couple of other things in your time that you were with British American and that was from '48-'52, those were the years that you were with British American, or was it to '54?
JM: Before we go further, there is something else I wanted to mention. In the early 1950's, there was an organization started up called the Oil Wive's and I believe that was an American group, wives of American men who were in the oil business here who'd had the same type of a group formed in the States. When they were moving from place to place they had an Oil Wive's organization or what would you call it, a social group. It was mostly for social, for something for these strange surroundings that these women would find themselves in, they'd have no contacts, no friends, they wouldn't know anybody here. So they did have a very successful group here and my wife Patty was quite active in Oil Wive's. They still have their Oil Wive's Curling going on, this has been, it must be 30 years now.
BC: Was Patty part of the founding group here?
JM: Well, she was one of the original members. Now, she wouldn't have been one of those that would have organized it.

BC: No, because it would have come from the States where they had another club.

JM: Yes. So this club, Patty, her two activities were curling and they had a choral group and Patty took part in that.

BC: I'll talk to Patty later because I'd like to talk to her about that side, the distaff side of the oil business. Because most of the time that you were with British American for example, you were sitting wells weren't you. So that mean that the wives were by themselves, at home and with a family to look after and it's a role that would be rather difficult. Patty had already gone through this with you in the war and she probably had to do readjusting again. She thought, well now you're home from the war, there you are, and I'm sure she was like many others.

JM: Oh yes. And you know, it was strange too, I shouldn't say strange but it was just a fact of life that we'd go to these parties, the company's parties, the guys would get together, they'd just talk nothing but oil. And that was. . it just sort of consumed us. Of course there were so many things going on then, new discoveries were coming in and everybody was anxious to find out what so and so was doing, how that well had turned out, what happened to it. And we didn't have the instant sort of contacts that we do today, through the Nickle Oil Bulletin, although Carl Nickle had started it. But in the early 1950's, late 40's, we were pretty well on our own, we had to find out what was going on by talking to people. The scouts had just started. About 1949 I guess, we had a scout at British American, I mentioned Norm Bartley. The time of getting together like this, it's not so much . . like you'd see these people every day at the office but you wouldn't be able to talk to them, somebody who was an engineer, or a landman, you didn't talk to these people unless you were at a meeting.

#174 BC: Everybody was busy doing their job.

JM: Yes. So the wives were sort of stuck off in a corner. Maybe they'd have the odd dance but a lot of the times their fellows were talking about the wells too you know, and what exploration was going on in certain areas.

BC: At this time too, the Society for the Petroleum Geologists, was it not getting going too during that time?

JM: The Alberta Society of Petroleum Geologists, I believe it had been formed somewhere in the 1930's.

BC: Right. But they had a very select group of them at that time.

JM: They were pretty well just in Calgary. That's where the nucleus of geologists were because of Turner Valley.

BC: By the time you came down I imagine it had expanded and it would be another source of information wouldn't it?

JM: Well, in one way it was, because you'd get together with these people at a luncheon and maybe talk to them and find out what was going on. But by that time, it was still the ASPG, we had out monthly meetings in the Club Cafe on 8th Ave., between 1st St. and Centre St. on 8th Ave. I still remember that room, it might have held 35 people, I don't think you could have got 40 people in there. And now, when I go down to the meetings I hardly know anyone, there's so many, there must be over 300 to 400 people there.

BC: And that's just the top of the iceberg of the geologists that are around.

JM: Oh yes, because you can't always get tickets to get to those luncheon meetings.

BC: Having this organization, was it helpful to you, you were still a pretty new geologist, did you find that it was helpful having this organization to fill you in on gaps you might not know about or bring in speakers.

JM: That was the purpose of the organization was to keep their membership informed, all the new information about, well, stratigraphy especially. If you had a new formation that had found oil, it was written up in our papers, in our periodicals, or journals as we called them in those days. Most of the geologists also joined the American Association of Petroleum Geologists and quite a few Canadian papers have appeared in that journal, AAPG as we call it. There's a classic paper that most geologists, either , if they haven't got that publication they get a xeroxed copy of it, and that was the one written on the Leduc oil field, that was written by Doug Layer of Imperial Oil. And that sets up the whole Devonian section at Leduc and that particular environment around there. Although there are differences around other reefs, that's the classic one and it's important that every geologist has that. But it didn't appear in our own local ASPG Journal, it appeared in the AAPG.

#234 BC: Interesting that it didn't appear locally.

JM: I don't think the could have printed it at that time, they didn't have the . . there are photographs and certain things that the. . the expertise of printing it, I don't think we had, in the group. But putting it in, well of course, it gets more recognition when it's in the AAPG because that goes all over the world.

BC: This would be an important step forward having that published in that publication for the Canadian oil patch wouldn't it?

JM: Oh yes. It would attract quite a bit of attention and interest. It opens up a new are of these kinds of accumulations. And Leduc, that particular reef isn't the only one that was found, there were quite a number of others. So where were we with the. . .?

BC: Yes. What I want to do, we're still with your BA career. We've got a couple of notes here, one is a well north of Hanna with Joe Irwin that you wanted to just make a comment on.

JM: I was going to refer, like to generalize on the work I'd done with British American was mostly sitting on wells, although I did do a fair amount of subsurface work whenever I could. I learned how to draw structure maps and isopacs and so on, which is a must for any young geologist and to be able to recognize when he has an anomaly or to be able to present an anomalous picture to management so that you could get them interested in an area. So I sat mostly on wells in the Edmonton area, mostly around Leduc and Redwater but I did sit on well north of Hanna and was fortunate to have an old timer with me there, an old timer even at that time, that was Joe Irwin. This well, now Joe had an interest in it. Maynard Davies, I can't remember, I think his company was called Davies Petroleum, was the principal owner and British American had an interest in the well, I don't know how much. But this was a fairly new area. There had been wells drilled in around Sylvan Lake but it was quite an open area and we were interested in, principally, the Basal

Cretaceous and there were some Mississippian rocks in there and we were just going to bottom in the top of the Wabuman, top of the Devonian. And that was the extent of the drilling.

#290 BC: What would determine that, your tests or other wells around?
JM: You mean to determine the total depth of the well?
BC: Yes.
JM: I would tell them when they were in the Devonian. And that would be the end of the well. Of course if there was porosity in there we would test it to see what was in there. But Joe, I had read some of his papers that he had written on the Rocky Mountains. I had previously met him too, at the ASPG meetings that we had but you do get a much better chance to get to know someone if you're out sitting on a well. Although Joe wasn't there all the time, he would be there every day but he had other interests in the area. I think he had a core hole drilling program going about 10 miles north of there. But he was very interesting and a very concerned person about how the well was progressing and I'd tell him how we were doing and how we were getting along and so on. He wasn't looking at all the samples but I had the cuttings out, the ones that looked interesting to me and I would show him where we went from one formation into the other and the depths and so on. Of course, this would be all checked out later on when we got the electric log out of the well. So we were always, the geologists sitting on the well was always trying to get as close as he could to the top of a formation so that he could say, well, I only missed it by 5', the way it shows up on the logs.
BC: Right. Could we just give a little background perhaps, on Mr. Irwin, for the tape. He was on his own at this point was he, he wasn't working with BA?
JM: No, he was on his own. He had his own consulting company. Joe had come up here from Denver in the Turner Valley days, I can't remember when he came up here. But he had great hopes for the oil potential of this basin, the Western Canadian Basin. His experience in the States had been a fair amount of structural geology so he was right at home in our foothills here, in Alberta as well as out in the plains. Our plains geology is pretty well what we call layer cake. It's fairly simple but there are very many subtle changes in it and it's only after you've drilled a number of wells in different areas that you know and can recognize what these differences are.
BC: So he would be a marvellous source of information and training for you then?
JM: Oh yes. His knowledge of the beds, the younger Cretaceous beds which we hadn't had very much exposure to, even at school, at university, he knew the Belly River formation pretty well and the different sands that were potentially productive. He knew the Medicine Hat sands and a number of those sands that are in the upper part of, what we call, the Lee Park, as well as the Cardium sand.
BC: And this would not be information that was readily available in books at that time?
JM: No, it wasn't. Joe had done a fair amount of work in southern Alberta. Of course, a lot of his nomenclature had come up from Montana and most of our names that we were using in these upper beds had been originally brought in from the States.

End of tape.

Tape 5 Side 1

BC: While you were working on this well, north of Hanna, you mentioned Maynard Davies and Stirling Davies was another man who was involved at that time.

JM: Maynard, he was a real promoter. He was the first one of that type that I'd ever met, where he could get out and raise the money to drill wells. He was very extroverted type. He'd come over here as a young man from England and their background was from Liverpool, home of the Beatles. After a few years he brought Stirling out when Stirling was a young man.

BC: This was his brother?

JM: Yes, Maynard's younger brother. And got him a job in the oil patch. At that time Stirling was working for Dow and they'd done the cement job on the well, on the surface casing. Later on Stirling was with one of the mud companies and I'd meet him from time to time. But at the time of this Hanna well, the Dow cement truck was not only doing the Hanna well but there were other areas and Hanna was sort of a centre for them. So I'd meet Stirling and have lunch with him or an evening meal every time we could meet.

BC: What was his background, was he a geologist?

JM: No, he was strictly learning by experience. He had no previous. . just came right out of the city of Liverpool and came right out here and went to work.

BC: That's one of the things you could do in those days, you can't do that the same today, can you?

JM: I don't think you could. . you'd have to have some education, like at SAIT. The wouldn't hire people right off the street, you'd have to have that experience. But a lot of them were real good men, they turned out to. . .

BC: Where did Mr. Davies go from here, or did he stay with his brother in that business?

JM: I think the two of them are now retired, living in Spokane. That's the last I'd heard.

BC: You have another comment here too, Shell, BA, Blue Sky.

JM: Oh yes, that's the first well I sat on up in the Peace River country. The first well that had been drilled up there was the one that John Carr had sat on and this was the follow up well. I've forgotten now, Blue Sky might have been the discovery well and there was another well called Shell, BA, Whitelaw. So I might have those mixed up. But the people that I met up there, I remember a Mr. Cormac who was the drilling superintendent for Shell who impressed me quite a bit. The Shell wildcats were handled altogether differently than other companies. They had a tool push, a drilling superintendent, the had an engineer, a trailer with an engineer and a geologist was in another trailer. So the engineers had control of the well and they called the shots for drill stem tests and whatever. Now most of the wells that I've been on, the geologist called the shots, whether they're going to have a drill stem test.

#050 BC: The geologist was really just there to look after the geological work and wash the samples etc.

JM: Well, he kept the engineers informed as to where they were in the section and would advise them as to whether there was porosity. The engineers would know where there were drilling breaks and so on and they would watch that very carefully and they would also call the shot on whether they wanted to see a core, as well as, the geologist may advise them on this but they were the ones, the ultimate decision rested with them as to whether they took that core or not.

BC: Why did you think they worked their particular system that way?

JM: They worked all over the world and Shell is a very successful company and I find maybe that this is a good way to do it, if you have the personnel.

BC: Others didn't follow suit, Shell stayed the only one that did it that way?

JM: As far as I know they are. The other companies that we had partnered with were operating in a similar fashion to say, British American at that time, or later on, when I was at Texaco, they did the same thing too. Although Texaco would insist on having an engineer present for drill stem tests.

BC: You were with British American until 1952 and then you left. Could you tell me what made you leave British American?

JM: I'd been approached by Dr. Bill Howells, a man I'd worked with before at McCall Frontenac that summer. Dr. Howells had been the head of that group that was stationed at Wetaskiwin and coordinated the work on the three wells that were being drilled there at that time. So he asked me to join with him in setting up an exploration group for Sam Nickle, that's Carl's father. Sam Nickle is well known in Calgary on the work that he'd done in Turner Valley and so on.

BC: This would be a new company was it?

JM: Yes.

BC: Because he would have other oil interests?

JM: He'd already set up a land picture, he had a company called Grid Oil and another one called Canadian Wilson Minerals, which the leases were all in their names, in Grid Oil's name. And the Canadian Wilson Minerals was a royalty holding company, it was comprised of royalties that Mr. Nickle had purchased from the farmers. Like a farmer would have his 12 1/2%, these holding would be, Wilson Minerals would be maybe 2%, 1 1/2%, 3 % of what the farmer held. They were held in perpetuity, which was quite a stroke too. In other words they would last as long as the original mineral royalty.

BC: Were there many people that went around and bought part of the percentage from the farmers?

JM: Oh yes. This was quite the way to do business in those days. I know when Carl Nickle did that as well, he had brought in some royalties at Bonnie Glen. Yes, it was a legitimate and. . . .

BC: Why would the farmers let go of this percentage?

JM: They'd do it for money.

BC: It was ready cash, maybe land that was not being looked at at the moment.

JM: Well, not, they'd be farming it.

#103 BC: No, but I mean, it was not being explored.

JM: Yes. They'd be out in the booniedocks somewhere. Now of course, if you were in an active area where wells were being drilled, the royalty was high. Your one or two points that you were buying might cost you $10,000 but if you were in an inactive area you might pick one or two points up for $1,000 or less. I don't know how these prices were arrived at, I imagine they were the same sort of an escalation as in the. . .

BC: Selling a lot in the city.

JM: Well, relating it to lease, if you were in an inactive area you might pick up a right to explore that area for $5 an acre or less. Then the royalty rights would be low too.

BC: Unless it was an active area.

JM: Then it would be high.

BC: Now, this company that Dr. Howell asked you to join him in setting up, what was it to do?

JM: It was a company called Anglo American Oil Co. Ltd. And it would explore on the lands that Grid Oil held and most of these lands were in Saskatchewan and Manitoba. This was a new area for me. I would like to broaden my knowledge and so on and Saskatchewan, well, we knew about the Williston Basin coming up out of North Dakota and western Montana but we didn't know very much about the rocks, what potential horizons they were.

BC: That's where the name, the Canadian Williston came from, from that basin?

JM: From that basin, yes. So I thought that would be a good time to leave since even then there were strong rumours that British American wasn't going to last very long, that Gulf was going to come in and take them over.

BC: Gulf already owned a certain amount of British American already did they?

JM: Oh yes. I imagine them to be by purchasing stock on the open market.

BC: Why would this make you want to move? Were Gulf up here in any other way, prior to taking over British American, did they have exploration people up here already?

JM: Oh yes, they were a big company here. They'd found the Stettler reef and they'd been very active in the Pincher Creek area, a huge structure down there. They were quite strong acquiring lands around Leduc and Redwater.

#145 BC: One of the problems that seems to be continually facing people in the oil patch is the smaller companies being taken over, or when Gulf went into BA, being engulfed by Gulf. For someone who was in a smaller company that saw this coming, what were your feelings, can you remember how many of you felt about this?

JM: We'd always felt with British American, even though it was being run out of the States, that is the exploration part of it, but BA had always been a prominent name in refineries and marketing of gasolines and oils through western Canada, a well known and well liked company. Of course, that's how Gulf got in here, in refining and marketing was by the purchase of British American. I didn't feel like I wanted to be with a bigger company. I felt I was more comfortable with a smaller company.

BC: Certainly, although BA was very large on the marketing side, the exploration part was a nice little tight knit group.

JM: Yes. And it's not that British American, the exploration part, they weren't being acquired for their land holdings because Gulf had far more land holdings than British American had. But we did have production at Leduc and Redwater and Bashaw, we had some oil there, there were several other small patches and numerous gas wells that had been capped.

BC: So you weren't at the top of the list that . . you would be going along with the fact that they wanted a refinery and production area, and you sort of, they would have to take you too.

JM: Well, if we'd have stayed then we'd have found a little niche there all right but it wouldn't have been the kind of niche that I'd already enjoyed with the smaller company.

BC: How many left before the Gulf takeover out of your department, or were you the only one?

JM: I know that they'd left, for example, now I don't know when these people left but I know Ellis Walker left and John Knight and Bruce Tippen and later on, Jim Manning. And another chap that I hadn't mentioned was Howard Rhodes. He was an American that came up here and he married Tanner's daughter, Tanner who was the Minister of Mines and Minerals here. And Howard was with us for awhile and I think he left. Now this other chap I'd mentioned, Henry Shatty, he was only here for awhile, a Swiss geologist and he was just waiting for a visa to get into the States. So it wasn't because of Gulf that he left. But some of the engineers left too, they didn't want to stay. So I thought, okay, this is a good chance. I had a lot of respect for Dr. Howells, I knew him, having worked with him before.

#197 BC: How big was the staff that he gathered together when he set up Anglo American?

JM: Well, I can name off some names. Mel Harris, who I'd gone to school with, Jim Humphries. . .

BC: Were these geologists?

JM: Yes, these were geologists. Jim Humphries came to us from Gulf, pardon me, no, I don't know where Jim had been, Jim went to Gulf after he left Anglo American. Glen Cunningham, he was a geologist who had been with the Conservation Board in Saskatchewan, he'd never worked with an oil company, this would be his first experience with them and he was a good man too. Hek??? de Brun, who was a Dutch geologist, fairly new here in Canada. Dave Foreman who came up here from Texas, had been working with one of the well site contractors, that people who would go out and sit on wells for you. Mike Rogers who had just come out from England. There was Roy Glover who was our scout and Jack Bartley was our landman. And Jack had come over from McCall Frontenac, Dr. Howells. . . now by this time it wasn't McCall Frontenac anymore, it was now Texaco exploration.

BC: Which is probably one of the reasons that Dr. Howells left perhaps.

JM: This had occurred, McCall Frontenac was no more and Texaco Exploration took over. That was a similar type of thing that happened at Gulf and British American.

BC: What position had Dr. Howells offered you, he would be the manager. . ?

JM: Yes, I was just the senior geologist.

BC: You would be head of these gentlemen that you had mentioned, you were the senior geologist, right.

JM: Now Dr. Howells had hired Mel Harris I believe, and I hired the rest of the staff.

BC: This must have been quite exciting, getting in on the beginning of a whole new company. What were some of the things you had to look at in organizing?

JM: Well, the most important thing you had to do was to decide how you were going to handle your mapping. You had to have the right scale, of course, the regional maps were important so that you could see the regional geology, so you could map the edges of where formations erode out or where they were not deposited. Mostly these edges are erosional edges. The whole North American continent, since the Triassic time, it's had quite a history in its movement, all broken up from the old Tangea???, when North America was attached to Europe and Africa. So the ups and downs, whenever the seas retreated the rocks were eroded and whenever the seas came in, you had more deposition and you had to know what was going on that way. Of course, now at this time I didn't know anything about Continental Drift and the implications, this came after.

#261 BC: Was there any discussion of Continental Drift at that time?

JM: Yes, we discussed it at school. It seemed obvious to a lot of us but we couldn't prove it. You can present it as a hypothesis but you could never present it as, actually, this is the way it happened.

BC: Some people still don't believe that proof has been put forward.

JM: I know I've had some arguments with some pretty well known geologists and I still think they're out in left field. I believe it's quite obvious that this has happened.

BC: It was about the early 60's that finally it was sort of accepted by a great number of geologists was it not?

JM: Yes. As soon as the geophysics, through the work that Dr. Touso Wilson had done, was accepted. And of course, his work was . . the previous workers had done a lot for him, I can't remember their names now. I've read all about the work that had been done by other Englishmen, for example, and they were geophysicists. And their belief that this was what was going on but Touso Wilson was to bring all this together and present it as a real explanation of what was happening. We have a problem with the creationists that is still going on, it's especially strong in the States. They are people who aren't. . I guess their backgrounds just doesn't allow them to have their mind open to this type of thing. I don't think that it's that great a deal to be a scientist working in this kind of work and having this happening, like in my lifetime I think it's great but the way it affects other people it doesn't matter because it's all happened, such a long time to go. But at least if you've got a curious mind and you wonder how those mountains get built out there. Now you can explain it, before they had pretty hairy explanations for how mountains get built.

#317 BC: Now let's talk about the Anglo American Oil Company and you said that your land holdings were principally in Saskatchewan and Manitoba. So this would have given you certain challenges and problems that would be a little different than what you'd been working with.

JM: Yes. The land picture, it was quite a big land picture in Saskatchewan. Mr. Nickle had done this work over the years, he'd put a land picture of Grid Oil's holdings up there and it was pretty impressive for a small company. They also had land in Nova Scotia, which we were going to be challenged to do something with. I didn't know anything about geology in Nova Scotia except I knew they had lots of salt in ??? section and I learned that in school. Part of our economic geology. But that came later on, the first year of course, we had assemble a working group and our feeling was that we had to, it was such a large area we had to do a lot of mapping. There weren't that many wells yet so we were confined to do the work where there was information.

End of tape.

Tape 5 Side 2

JM: So when we got hold of Glen Cunningham to join us, he had a fairly good background of the Saskatchewan are so I put Glen in charge of that mapping.

BC: You were fortunate. Who had he been working with that he would get that information?

JM: He'd been working with the Conservation Board and he knew all the wells. As a matter of fact, he said, he's personally visited every one of them. That is the more recent ones. Now there were a lot of well, I shouldn't say a lot but a number of very key wells had been drilled by Imperial Oil a number of years ago but none of them had discovered hydrocarbons. But they were still part of the picture and one of the things in working the subsurface, you've got to know what wells had gone to basement, which are the deep wells so we'd have what we called a map, it was a pin map that would indicate the depth to which these well had been drilled to. Now I don't think you'd do that anymore, try to keep that up because there are too many of them but in those days you could do it. And it was interesting to see where the shallow wells were and where the deep wells were. So you could always keep in mind, hydrocarbons are found at depth and you know where the deep wells were. Most of the hydrocarbons they were finding at that time, were in the Mississippian on the northern fringes of the Williston Basin. We started our initial exploration on a block of land in southwestern Saskatchewan, near Gull Lake, the town of Gull Lake. This was a block that was a little bit more than a township. It was a land holding that had been purchased by a British company to bring immigrants out and to settle on that land. That was before the province had been formed and that's how come there were mineral rights on it, available. Mr. Nickle had got these mineral rights. We used John Lake, a geophysicist who had been with McCall Frontenac and Texaco and had left them and gone consulting. John handled the seismic.

#043 BC: As a consultant.

JM: As a consultant for us. We were doing this the same way British American had, we didn't have a. . .

BC: You didn't have seismic group, you just hired consultants.

JM: Yes, that's the way we were going to do it. So we got John in there to do the

interpretation and then he hired the crew and handled all that end of it. There was an anomalous area that looked interesting at the Mississippian level so we drilled it and we found hydrocarbons on the very first well in the beds overlying the Mississippian, in the Jurassic. Two producing zones in the Jurassic and gas in the basal beds of the Cretaceous.

BC: That must have been pretty exciting for a new company, first drilling.

JM: Yes, fantastic, first wildcat. That was good and it was bad too. This of course, meant that we had to go into development. The oil was between medium and heavy gravity, it was in the low 20's API gravity and it would only bring 90 cents a barrel at the Moose Jaw refinery and the oil had to be trucked there. At that time there were no pipelines to carry that oil. Eventually there were pipelines built that carried this type of oil down to the States.

BC: Was the Moose Jaw refinery able to refine that particular type of oil?

JM: Oh yes, they were set up for that type of oil. Farther north at Osterton, Mobil Oil had found oil in these basal Cretaceous sands. Some of these, now the sands in the Basal Cretaceous, during the time that I was familiar with the drilling of it, the contained gas. Now it's possible that later on in other accumulations around there that they found oil, like they did up at Osterton, further north. I can't recall that but I'm just saying that it's not just gas prone, these beds had had oil in them. The two zones in the Jurassic, we called them at that time, the J-2-A and the J-2-D. They were later given names and were called the upper and lower Shaunavon. The upper beds were the most prolific as compared to the lower beds. The lower beds were generally tight and difficult to flow the oil out of the zone. The J-2-A was a sandy reservoir, there was carbonate in it but it was sandy and had better porosity and permeabilities. So over the next year and a half to two years a lot of the effort went into the development of that field and didn't leave much money to acquire additional lands. We had planned on moving into Alberta and trying to pick up a land spread in Alberta.

#088 BC: Was this company perhaps, under financed, do you think?

JM: Well, that's what I think it was, that happened there. The reason we had that number of geologists, we had 7 geologists counting myself, and I was mapping too, I was doing a lot of work. We had 3 men working in Saskatchewan, 2 in Manitoba and the rest of them were working in Alberta. We wanted to get into Alberta. There was still a lot of, this was pretty early in the game yet.

BC: Right, 1952-'54.

JM: There was lots of things available there and we felt that this was the better place to be and rightly so. But still Saskatchewan had lots to offer too.

BC: And the land that Sam Nickle had was in Saskatchewan and Manitoba which you would, I presume, want proved up.

JM: Yes. Now we worked fairly closely with the engineers there. Fred Cummer was the senior engineer, my equivalent. They also had Glen Hedges, Ted Fisher, Jack Minnear, these people were pretty well confined to the development work at Gull Lake. Fred Cummer, I knew him at university. He's one of our fraternity. He had just recently married and he was having quite a time because he was not home very much but he was still. . .I wasn't

out so much at this time, I had some younger people I could send out on the well. But Fred, the engineering was pretty important on a lot of these wells and he had to be there or close by, where he could be available. Because the engineers, apart from Jack Minnear who was experienced, the others were still sort of in training.

BC: Back to that first success, as you say, with pro and con results, did you have a series of successful drillings or did you come into dry hole land?

JM: Well, yes, that's what happened, we drilled a number of dry holes. We drilled one well in Manitoba and then the one in Nova Scotia was dry.

BC: You drilled down there?

JM: Yes. But it was enjoyable to get a feeling for the geology. Of course, Manitoba is still not that far from the geology of Saskatchewan and Alberta for that matter. The exposure was important for all of us, none of us had been involved in that except for Glen Cunningham who had quite a good background there.

#133 BC: How was Mr. Nickle, was he an absentee owner or was he involved?

JM: Oh, very much involved. He wanted the turntables turning all the time, he wanted a drilling rig going somewhere. He didn't want any stalled moments, they had to be. . .

BC: Was this difficult to achieve, that continuous production?

JM: Yes it was. Of course, as long as things were going, you could drill at Gull Lake where the development was but he wanted the wildcats to be going down too. You must remember, that land picture he had, apart from this one block at Gull Lake was scattered. You had to, before you went in to drill anywhere, you had to get, first of all, a geological picture and a seismic picture and then a land position.

BC: Do you feel that, because of the pressure that Mr. Nickle put on the company, that sometimes you had to, as many companies seemed to do at times, it's important to put so many holes down whether you've done enough work ahead of time or not.

JM: Yes. That no doubt, happened several times. Wells were drilled that should have had more work done. It was a feeling of. . .getting to be a little feeling of frustration and you knew that you wanted to be more certain of any location you had. Of course, in those days, nobody was very certain. You can never put up a sign and say, oil here or gas here. You still have to get out and drill the hole. .

BC: Why did you not have a geophysical department developed because obviously if you're depending on contractors, there must be times when you want them but they've already got a contract with somebody else. You're at their mercy a little bit.

JM: That's very true when you want to go into a Crown sale. You want to have some seismic and quite often you just couldn't get into a Crown sale because you didn't have that information. And you can't go in and bid unless you do have some additional information.

BC: Why did they not change and bring in geophysicists into the Anglo American, I'm sorry Anglo Canadian?

JM: Well, that was discussed many time. They wanted a better land picture, to get more land. Now this is a decision that Dr. Howells made. You go into an area and you have scattered leases say, in a township, and you're going to do some regional seismic, first of all you

want to get a block of land to do that on, not just scattered leases. So that was the one disadvantage that the land picture gave. It looked good but to do that kind of work you had that hurdle to make.

#180 BC: It was sort of which comes first then, because you didn't have the land so didn't get the seismic and with not having the seismic you couldn't prove up the land in order to bid on it.

JM: Or to drill.

BC: To drill or whatever.

JM: On those leases that you. . .it was the type of the land position where, in a lot of cases, you're. . well, some companies would say, we'll just wait until somebody else drills in this area and hope that it leads to a discovery and we have land there.

BC: Why did you not do that?

JM: Go out and drill?

BC: No, why did they not do that, wait for. . .

JM: It wasn't Mr. Nickle's philosophy, he wanted holes to be drilled. That's good philosophy but you like to drill your holes where you have a good feeling about them and that you've done the work that you feel that there is a real good chance.

BC: You were with Anglo American for about 2 years and then changed. Obviously there must have been some reason for you to change, what prompted your relocating?

JM: They approached me one day and asked me to tell 5 of our geologists that they were no longer required and asked me if I could do my best to find positions for them.

BC: The money position was not very good for Anglo American then?

JM: Yes, they had to pull in their horns.

BC: Was this a downturn in the industry in general at that time, 1954?

JM: Not that severe. No, it wasn't. It was, I think, the expenditure that took place at Gull Lake and the development of that field. That costs a lot of money and as you mentioned earlier, maybe they were under financed. The banks will only go so far with you. One of the problems was with the marketing of the oil and the price they were getting for it.

BC: It was maybe costing more than the 90 cents to find it by quite a lot?

JM: I mean, I don't know what the economics that we were facing there but I know that 90 cents was not enough. I can't say what the bottom line was but maybe it was $1.00. But we were in trouble.

#222 BC: Did it come as a shock to you or were you rather expecting it?

JM: I had a little feeling about it. Because I'd heard that some of the creditors weren't being paid and you can't keep that quiet very long. So it wasn't surprising to me. However, okay, that's part of the game and you have to face it but that was very disconcerting for me to get out there and look for jobs for these. .

BC: This was unusual was it not, for a company to say, now find some other place for them to go, usually they just say, I'm sorry, you're not needed?

JM: Well, you never know. You see, at that time they didn't have, I don't think anybody was suing you for letting you go. Because you weren't being let go because. . .

BC: You were laid off because there wasn't any job.

JM: Yes, it was something else. So Anglo American itself, their vision of the future wasn't what it turned out to be. They found oil and as I say, that was a blessing to go out and find it in your first well but it gets you into trouble too. Because the banks were saying, if you can't get better than 90 cents for that oil that's too bad. And I don't know what they're getting today, I imagine it's pretty good money.

BC: It must have been difficult for you to try and find jobs for these people, or was it?

JM: Well, I think out of the five of them, I got jobs for four of them. So I sort of felt that I didn't want to stay on myself, although they'd asked me to. I'd gotten along quite well with Mr. Nickle, I enjoyed him and had found him a very interesting person.

BC: But it was a very different position than you had come into because you were coming in as head of a large department, which had 6 geologists and you heading it and now you were going to have 2.

JM: Well, it was Dr. Howells was, he was more the head of exploration.

BC: Yes, he was the Manager, yes.

JM: Yes. But I was closer to the people, I was the senior man in the . .

#267 BC: Yes, that's really what I meant, sorry. Did Dr. Howells, did he stay on?

JM: No, he decided to leave too. But I think he'd been approached by the people at McCall Frontenac. The McCall Frontenac name was still used in the marketing and refining and they had a large number of Canadian shareholders. They felt that since Texaco had come in and taken them over that they were not being as well represented as they would like to be. So they decided to set up a department again, which they would call McCall Frontenac Producing Department. They asked Dr. Howells to head it up and they were not only going to look after their own interests in lands that they already held, but they were going to acquire and explore in competition with Texaco and of course, with all the other companies. So Dr. Howells had discussed that, this situation, with both Fred Cummer and myself. Here again, he was setting up a whole new organization. Although Dr. Howells said, he wanted to get a geologist to head the group up who had had field experience and had a little more experience than I had. So that was okay with me and I knew that the chap they were going to get was Fred Hamilton. He was an old Imperial Oil man and had been recently working with Sun Oil. I'd known Fred and felt I could work with him and we felt that this could be a real good start again on a new company and new ideas on how to set it up. So that's what we did.

BC: This would be 1954 that you set up McCall Frontenac Producing Company, again, with Dr. Howells and Fred Cummer and yourself involved.

JM: Yes.

BC: I think that's where we'll stop for today.

Tape 6 Side 1

BC: This is Betty Cooper and it's December 9th and I'm talking to Mr. Jack Minchin. When

we talked last time, we just got to the point where you had gone to McCall Frontenac and there was this new company that had been formed, McCall Frontenac Producing Company, with some of your old oil patch companions from other jobs.

JM: Dr. Howells, who had been with Anglo American and after Anglo American had to pull in their horns he was asked to come back to the McCall Frontenac group to set up McCall Frontenac Producing Company. He brought with him, from Anglo American Fred Cummer as an engineer, myself and Mike Rogers, a young geologist. He had with him as Chief Engineer, Jack Sparks, who later became the President of McCall Frontenac and ack came to McCall from his stint with Haliburton. Many of the old timers will remember Jack with his job at Haliburton.

BC: What did he do at Haliburton?

JM: He was a salesman with essentially, the oil line logging section, where they supplied the industry with well logs in competition with Schlumberger.

BC: And what was his official position in the new company?

JM: Chief Engineer.

BC: He was an engineer by profession.

JM: Yes.

BC: Can you give me a little background on Jack Sparks and any association or incidents you can think of regarding him? You worked closely?

JM: Oh yes, we worked fairly closely with the engineering group at McCall. I always had with Fred Cummer, closely associated with him. Jack, I didn't have that much personal contact with him but he would wander in and out of our working offices. He was still interested in logs and you know, what they looked like and are they improving etc. He had a good understanding of the subsurface geology of the Alberta basin. Later on, he went down to Montreal after. . well, he became the President of the company after Dr. Howells died and then through that elevation he was moved down to Montreal and became the head of all of the Texas group in Canada.

#037 BC: Was that while you were still with them?

JM: No, no, I had left when this happened.

BC: When you say Dr. Howells died, did he die while he was Manager?

JM: Yes. And that was after I had left.

BC: That would be quite a shock to have someone who is the head of a company die suddenly.

JM: Yes. It was very upsetting I imagine to the. . . well, even to myself because I had known him so well over the years. The other people that were there, they had hired Fred Hamilton as the Chief Geologist and Fred was an old field geologist with Imperial and had later worked with Sun and now he was helping set up this company.

BC: What would be involved in setting up the company?

JM: Hiring personnel is the major problem. One of the things in exploration is to get the right step in maps and how you're going to handle your mapping. Fred had ideas about this, which I found very successful. In the mapping area he utilized the National Topographic Survey basis, had them redrawn to scale on a 1":4 mile scale. On the Mylar??? base, all the wells were plotted on them and in this way they were very easy to file because they

filed by a number and letter system. In this particular case all the bases were hung vertically in a cabinet so that they wouldn't get wrinkled or. . .

BC: You didn't have to keep rolling them out and trying to hold them out while you were looking for something.

JM: No, no. The base maps were never used except for making copies. They were only pulled out of the file when they were updating them, putting new wells and the locations and the symbols, whether they were dry holes, gas wells or oil wells. This was handled then through the drafting section of the company. Now with these bases you can do a lot of things with them photographically. You can change scale for example and this was done with a vacuum frame. That is, so that the map that you're going to reproduce is held in an absolutely flat position and then they were photographed.

BC: Then you could blow them up or reduce them or whatever you want.

JM: Once they were photographed you could do whatever you want with them. And later on, when we moved into a new building, we had an offset printer and you could etch the map onto an aluminum plate and then print as many copies as you wanted. So that was a tremendous asset. All the geologists had their own NTS sheets at a scale of 1":8 miles. This forms into a nice little booklet. We had a 3 ring binder, the one that I showed you the other day. Then you can look after all the area that you want to. We also used those maps to illustrate any play that we had, we could use them as bases and put Mylar covering them, with our contour lines and then have them projected onto a wall. And it was just like looking at a screen, so that when you project them onto the wall, they are enlarged, so everybody can see exactly what you're talking about, which helped very much in trying to sell a play. Because you had your own land maps which were set up the same way and you could show the land, where all the Crown land was and who owned the land around it. So that was very helpful.

#095 BC: You'd not run into this type of mapping before?

JM: No, not the way that was set up.

BC: Normally maps are all in little rolls and they're in little cubby holes all over.

JM: Or they're put into stands, there are map stands that they have that they can put in.

BC: But they're always rolled.

JM: And rolled, yes. Then you have the problem of having to indicate on the outside of the map what is on that map and you have to be very careful when you roll it up that the outside sticker is in the right place.

BC: It's one of the things that really gets in your way when you're in a hurry and you're looking for a lot of. . .

JM: Yes, you want to be able to put your hand right on it. Now with this system we could do it with our own books or go to a map cabinet, we had another cabinet with our working maps in that also were filed vertically. And the file folders were held together by metal springs, like clock springs.

BC: Right.

JM: And they held the maps vertically in the file. So that was a great help for all the geologists. I know I've had people remark about that system, you know, when we've had

meetings with them.

BC: Have other companies adopted that system since?

JM: I don't know. You couldn't do it with a company that had already started some other way. To change your mapping system would be a terrible waste of time I think, even though it might look nice to have something else. But it would be a terrible. . .and costly, very costly.

BC: Obviously Mr. Hamilton, when he came over, that was probably one of the things that he'd thought about. If every I'm planning a map system again, there are a few changes I'm going to make.

JM: Yes, no doubt he'd put some thought into it. And then you have to have the cameras, the vacuum frame and so on, and later on, the offset printing, to make it all meld into this one unit and make it quite attractive and a very unique package.

#124 BC: Looking at the maps that you had, what part of the country did McCall Frontenac Producing zero in on when you first went there?

JM: You have to understand, this part of the . . the policy when the company first set up was to ride herd on Texaco exploration activity on lands which McCall Frontenac had held before the Texaco takeover. McCall still retained an interest in these lands on which Texaco was committed to spend x number of dollars per year. Now the Bonnie Glen and the Wizard Lake fields were found by Texaco on a portion of these lands and McCall Frontenac received 10% of the production that was there. They had that free and clear, 10% of the production.

BC: That would give them good financing.

JM: Yes. Those two fields were pretty lucrative all right. But remember, in those days we were on pro rationing. Wells that were capable of producing 1,000 barrels a day were cut right down to maybe 150 barrels a day. But of course, we have that oil in the ground today so that helped. That was the initial policy but you know, when you have explorationists in a group like that, like Bill Howells and Fred Hamilton, that you're not going to be just riding herd on that, you're going to be out drilling holes too. So one of the first big plays that I was involved in was to get lands in an area around the Peace River Arch, where we thought it was quite possible where Leduc reefing would occur. We'd already had . . . Imperial had drilled wells at Claremont and Wembley, this was in the Grande Prairie area and both had found Leduc reefing, but water bearing. So we selected an area which was south and west of Grande Prairie and west again of Wembley, towards the B.C. border, which we called the Hinton Trail block and then another block called Steep Rock Creek block. We had made arrangements to work a farm out from City Service, who were the original land holders. That was the work that I had done and although we didn't find any oil in those wells, we had really good gas shows.

#167 BC: Are they producing gas today, have they made them into producers yet?

JM: Well, this is quite a fascinating story about this because, I'm jumping way ahead here but I can bring it in now. There were two wells drilled, there was McCall Frontenac, City Service, Hinton Trail, it was drilled in township 70, range 11, west of the 6th meridian.

The other one was, I don't know whether City Service was in on this well or not, we'll just call it McCall Frontenac, Steep Rock Creek, township 72, range 13, west of 6. Now if you look at a map today, you'll see these two old wildcats are surrounded by commercial gas wells. Now the first well that we drilled at Hinton Trail had many gas shows on the way down but we never bothered to run pipe on that well.

BC: You were looking for oil, gas there was lots of.

JM: Yes. And the shows that we had, they were drill stem tested but they were nothing more than 2 million cubic feet a day, which today, this is still. . well, it would be a commercial, you'd run pipe on that, depending how deep it was. In later years, other wells were drilled, McCall and then became Texaco Canada, they drilled wells . . . obligatory wells on these lands, they were on permits and had the same sort of success as far as gas was concerned. Then Canadian Hunter approached Texaco Canada. These lands now were getting to the end of their life. I don't know whether it was a 20 year life they had or what.

BC: then they went back, if you. . .

JM: They'd revert back to the Crown. And Texcan was going to have to do something, either drill the wells themselves on these leases, or farm out. They were approached by Canadian Hunter and Canadian Hunter, as well as, I think, Sol Petro was in on some of this land that Canadian Hunter got. And that's the land that the famous Dellenworth??? gas field was found on. We didn't, on that first well, didn't hit the conglomerate, in which the gas is reservoired, that is the major gas reservoir is in these conglomerates in the ??? section of the Cretaceous.

#215 BC: Did you not go deep enough?

JM: Oh yes, we went deep enough but we didn't . . these conglomerates come out in fingers, they're like this, like a beach deposit. And if you drill in the wrong spot. . .

BC: You're between the fingers.

JM: You're between the fingers, yes. So that's where this well had been drilled. At least, that's our picture of it today.

BC: That's very exciting though, because this would be interesting for you to be able to trace. There was the first area that you went into and indeed. . .

JM: Yes. Well, we did it for a different reason of course, but it still was part of Texaco's policy was . . if you could indicate that there were many prospects in the geological column in an area, they would take that land, they would go in and try to get it, try to get in there.

BC: That would be exciting, to work for a company that would do that then.

JM: Well, most of them do that. Most of them are looking at that. Well, later on we called that the Deep Basin area, which did become quite attractive. Many companies have gone in there and are well represented. That area extends say, from Edson right through to Grande Prairie and right into B.C., up through Dawson Creek, that Deep Basin area. Except that when you get to Grande Prairie, you're climbing up on the old Peace River Arch. Then you have another geological province, which you don't have as you go south and west. Now, I was going to say that . . .

BC: You sort of jumped way ahead to Canadian Hunter.

JM: Yes. I was going to indicate some of the people that were with the company at the start and then some who came later and I'll indicate that. I mentioned Sparks Hamilton. Now there was Bob Hahn, who came in as the geophysicist and Bob wasn't there right at the start, he came a couple of years after we got going. Because we weren't an exploration company to start with, as I indicated earlier. But we did get a geophysicist. And then Bob hired Chuck Miles, who was an assistant for him. The geologists were Blake Ryan, Tom Connick, who has since died, Lou Irvin, Mike Rogers who came over from Anglo American with us. Then later on, there was Ray Young who came with us from Regent Refining, that's when Texaco bought out Regent Refining and our group managed to get some of these lands. Now Regent Refining was a producer in the Trinidad area and the Carribean and had refining and marketing outlets in England, or the British Isles I should say. And Texaco had bought them out and we fell heir to the lands that were in the Swan Hills that Regent Refining had.

#275 BC: Did you fall heir to any of the people that had been with Regent?

JM: Yes, just Dr. Young, Ray Young. Dr. Suter was another one who was in there but he didn't come with us.

BC: He went to Home.

JM: He went to Home, yes. And he was a very fine old gentleman. Ray was a chap of about my age.

BC: Do you remember, or am I jumping ahead, looking at the Swan Hills because that is an area.

JM: Yes, I'll come back to that one. I mentioned Ray Young, John Williams, Ron Bunting, Lloyd Cumming and Marshall Hirinaka. Marshall was one of our displaced Japanese Canadians from the coast who landed in southern Alberta and went to U. of A. and took geology.

BC: Interesting combination of names, the Marshall.

JM: Yes, Marshall Hirinaka, a great fellow. And the engineers were. . .

BC: These were all geologists.

JM: Yes, those chaps were geologists. There was Fred Cummer had come over from Anglo American, Dick Rousseau, John Pashniak and Imrie Varga. Imrie was an interesting person, he was a refugee from Hungary. When he came to the old McCall Frontenac he couldn't speak English very well. So he spent a couple of years in our drafting department until he could speak English and here he was a graduate engineer and had been employed in Hungary and he had to struggle for his English before they'd let him on the loose and then he's done very well.

BC: Did he come out with a great group of Hungarians when many of them came?

JM: Yes. He was in that group.

BC: Are there any of these, that perhaps we should, I've got Dick Rousseau is one, the spelling of some of the names.

JM: Dick is Rousseau. And Imrie Varga, I don't think there's any others.

BC: I think the others are pretty straightforward, but those two. Then in the land department we had Bob Elias initially, he's one of the twins, his brother Bill was a geophysicist in the

oil patch here. And then Bob left us and Bob Galbraith came over from the Texaco exploration group and Bob just retired last spring.

End of tape.

Tape 6 Side 2

JM: I should mention that the chap who headed up our drafting section, in which the topography and so on was done was Bob Rhee. Bob was an immigrant from west Germany and was quite interested in doing this kind of work and he was very good at it.

BC: Excuse me, but that's quite a large staff. How long did it take for Dr. Howells to get this working group together?

JM: I would say that by the time we had Lloyd Cumming and Marshall Hirinaka and Ron Bunting, who came later, that would be about 1958. Now they didn't stay either, all of them didn't stay.

BC: No, but it had expanded to that position.

JM: Yes. Then of course, it's like most of these companies, now most of these fellows were there at the same time, for a year or so we all were together. Then they gradually left. Mike Rogers was one of the first to leave. Mike comes up again when I go to Anglo American. Ron Bunting left and Lloyd Cumming and Marshall Hirinaka. Now as these people leave, there are replacements and I don't know who all the people are there now. Out of that group right now, the only one I know. . .of course, it's different now because McCall Frontenac or Texaco Canada is amalgamated with a bigger company, the Texaco Inc. group that was here. But Lou Irvin is still there but I think all the others have gone. Now Ray Young stayed until he retired but yes, all these others have gone and of course, I mentioned, Tom Connick died, of a heart attack. And then with the engineers, Fred Cummer stayed until he retired, Imrie Varga's still there and Bob Galbraith in land stayed until he retired. So there are some pretty steady people through there and they're quite interesting people.

#036 BC: Are there any particular anecdotes of any of these that you'd like to mention?

JM: I think . . we used to get quite a kick our of Dick Rousseau. Dick was drilling engineer and drilling our wells up there, south of Grande Prairie, in the Big Mountain area, there was one well that was being drilled and there are quite a few bears through there. And of course, they come around your camps all the time and they tell the story about Dick taking a pail of syrup and going up a tree and just slapping the syrup on the tree, all the way up as far as he could go see, and then reaching out on a limb so that if he got the bear to go up there, he'd sure fall down. And sure enough a bear went up there, got out on the limb and down he came.

BC: Did it hurt the bear at all?

JM: Well, I guess he never came back so he learned a lesson. But sure, those kind of stories. By the time McCall. . .I was out on wells just a few times. I know I was out at Deer Mountain and I was out at Kaybob.

BC: Would this be winter time?

JM: Yes. But there was tremendous changes from well sitting so I was glad just to go out there to see what. . .

BC: What were the major changes from the early well sitting that you did and then the change, in a comparatively short time?

JM: Well, in the first place you had a camp, there was a camp there and you could eat on the lease. The old camps, well, I know I did my own cooking. The trailer was separate and it was the geologists trailer and he had facilities in there for cooking and you had a cupboard and you had eggs and bacon and bread and butter. I never did have a fridge but in the winter you didn't need one. There always was coffee available because there's people dropping in, they're either there for running a drill stem test of they'd been running pipe or they'd been running. . somebody from the company or some of the service people. And our door was always open for then and they'd come in and we'd chat. This was a good way to get to know people, meeting them that way.

BC: This was in the early days.

JM: Yes, I made many friends that way too. Now in the new set up, now, I'm just talking about the late 50's now and that's not that far along, people like Fortier and Northy, who started out from Peace River, I knew the Fortier family and had gone to school, one year, at Grade 12 up there, there was a Fortier boy who was I think the same family that built these camps. Well, didn't build them but they were the cooks and supplied the food, or they supplied the cooks. And the food was just wonderful, steaks and pie and all you could eat.

#077 BC: Very different from when you cooked yourself, the Kraft Dinner.

JM: Yes, fruit juices and all the milk you could drink. So there was no reason that you couldn't keep healthy on those rigs. And of course, they're feeding the roughnecks as well as the geologist and the engineer.

BC: How many would be in the camps, in these new type camps?

JM; Well, all of the working staff were bunked right there. They even had, there was one trailer that had a couple of washing machines in it so that you could wash your clothes, that was on one end of it and the other end of it, they had showers so you could have showers and keep yourself clean.

BC: What about recreational facilities?

JM: There was one trailer where they had like a sitting room area and playing cards. Now later on I hear they had a TV room and all this but I don't know.

BC: Most of the places, there wouldn't be TV very close by.

JM: No. I imagine this could happen out here but then you get closer in to civilization and you don't have these camps. Then you eat say, in the nearby town or you'd have to bring your own trailer and if you have a family and you want them nearby when you're out rigging, a lot of the roughnecks at one time did bring their families and they hooked into a trailer unit somewhere or into a trailer outlet, you know, where they have a garbage disposal and lights. It might be 2 or 3 miles away but it's what they do. However that's as far as I can go on that. So I did sit on wells with McCall for awhile but then after that, I didn't, that

was the end of my well sitting. I was principally more like ??? to get the subsurface mapping completed. We wanted to get all these NTS maps completed and they had to be able to fit one on the other.

BC: That would be a gigantic job.

JM: Yes. And that's one of the reasons why we had to keep a good staff. And they were all interested in doing this kind of work too. We were doing not only the structure, on top of the formation but we were isopacking??? them and pretty well had to show all of the discoveries and what was found in a well. If there was a gas well we'd have to know where the gas came from. So we'd all have to look at the well logs. And you got to know, after awhile you could look at a log and say, that well was drilled in southern Alberta somewhere, you'd know just by the look of it.

#114 BC: You could figure that.

JM: Oh yes. Or you'd say, that's a Peace River log, you could tell by the. .

BC: By the formation. This is something that only experience can give to you, it would be something that a young geologist coming out of university today, until you've worked the patch you just don't have that.

JM: Well, they do have a certain amount of that, at least they should have. I'm not aware of what they are teaching them but in their stratigraphic courses they would be aware of what the changes were.

BC: But you would have been aware too, but it's remembering.

JM: No, we were aware of it only through going out there and working at it. At university the only sections that we knew were in the mountains and in the Northwest Territories, the Devonian section that outcrops in the hills south of the Mackenzie River.

BC: But all the exploration that's gone on in between times, like the material that you were looking at for the first time, it is now just part of study?

JM: Oh yes. They'd know that pretty well. It's like, we didn't know the Mississippian break down until say, Lou Workman came up here with his strat service and he broke the Mississippian down into its stages. And then we knew, okay, what the Banff stage was and the Kinderhook and these other names that are stage names for the Mississippian.

BC: I'm sorry, I jumped you ahead, where we were was that first work up in the Grande Prairie area and then where did you go from there?

JM: That was going to be a little part of the story of the successes that we had in the McCall, Texaco Canada regime when I was there.

BC: Would you like then to come back to that later?

JM: I'll come back to that now and these other successes. One of them wasn't McCall's success but it happened to be that they fell heir to these lands in the Swan Hills at a time that Home Oil was drilling their first wildcat, their second wildcat, they'd already drilled one.

#148 BC: Had you had any knowledge of Swan Hills at that point?

JM: No. But we were happy to get the land because it was a 4 township block and that's a lot of land. Of course, it's out in what you might call the boony docks because there hadn't

been many well drilled around there.

BC: Now interestingly, when Regent had it, as I remember from talking to Dr. Suter, they were just in the midst of working out a deal with Home when Texaco were taking over the company. And then when it was taken over, Texaco didn't really think that it was that good a piece of land and that's how Home got it. Do you recall any of that or do you recall it in a little different manner?

JM: I know that the Texaco Exploration, as they called it, that's what we called our poor cousins, facetiously of course, because they were the rich cousins, the Texaco Exploration group didn't want it. There was a bunch of other land that Regent had in this Big Mountain area that I mentioned about Dick Rousseau enticing the bear up the tree, that was drilled on some old Regent land that Texaco Exploration, they didn't want it, they didn't want the Swan Hills. But we said, we wanted it.

BC: Why would they not want it?

JM: There might have been reasons that I don't know. No doubt they had good reasons.

BC: Why would you want it, could you see that there were possibilities?

JM: Well, we weren't going to turn down any land like that, especially in unexplored areas. You can always give it up but sometimes it's hard to get. And in this case it became very difficult to get once that discovery was made.

BC: What about the other area where Mr. Rousseau had put the bear up the tree, it was successful too.

JM: Oh yes, it became later on, that's really good gas there, that's the Gold Creek area.

BC: I don't think we'd mentioned that on the tape, that's what I wanted to . . .

JM: No, we didn't mention that area and I don't in this because, although we drilled the wells in there we didn't find the gas. But we had the lands in the area where eventually gas was found. The Swan Hills lands that McCall received so graciously became one of the big exploration successes of the late 1950's. Of course we were involved in it right from the word go and we had many meetings with Home with regard to wells and the selection of leases and the . . .

BC: You worked with Home on much of it did you?

JM: Oh yes. We had to. And this is of course, where I got back to work with John Carr. Because I'd started out with John at BA and got to know Chuck Hemphill???, I didn't know Chuck that well but I got to know him there. And George Fong of course, and I'd been to school with George, he was in the same class at university. So that was a very cordial relationship that we had.

#200 BC: And what was the date of that, if we could just mark it on the tape?

JM: Well, I think it's 1957 that the discovery was made, very close to that anyway. And in the ensuing years, well, not long after that of course. . . what everybody is doing when a discovery is made then you're looking somewhere else for the trend. You know, how far is the trend, how far does it go.

BC: And which was does it go, north south, east, west?

JM: Well, it's pretty well north, south. We found the northern extremity of it at Deer Mountain I worked on the subsurface there and had picked out this area. We got a farm

out from Micmac, it was Micmac then, that was Bill McGregor's company, which later on became part of Hudson Bay Oil and Gas. And then Bill made another company called Newmac which is still going.

BC: When you say you found the northern extremity, does that mean that you drilled and you struck a dry hole there but knew that close by. . ?

JM: No, it was a discovery, it was an extension but it was a very thin extension. It was the limit . . .well the second or third well was a dry hole. Then that became what we call Deer Mountain, House Mountain area, these are hills in the Swan Hills that have these special names. And the area extended for about 12-15 miles, in a crescent from east to west.

BC: What was the terrain like in the Swan Hills area to drill in, like the surface terrain to put your equipment in?

JM: Well, this is a story in itself, you should have somebody who was involved in the road building and so on in there to tell that story. All I know is after the roads were built I could go in there and get around it but it was a very, very rough country. The only people that were in there were the people in lumbering. They had huge trees, some of the best forest trees you see out in the plains. Nothing could compare with these trees anywhere else, except in the foothills, the mountains. The Swan Hills are high enough to create their own weather and have a lot of moisture in there. So these trees have grown, they're a good 3' through, I don't know what that would be in diameter but at the butt they're a good 3' across.

#250 BC: That's most unusual for this part of the country.

JM: Yes. When I'd been with my dad when he was a timber inspector I'd seen a lot of trees in the foothills and I'd never seen them much bigger than what you'd find in the Swan Hills so it's comparable. And the fact that it has it's own. . it's the last of the prairie grizzly country, so it's that remote that even the Indians just went in there to hunt, I don't think they lived and stayed in there very long.

BC: Is it still a grizzly preserve?

JM: I think things have changed. I don't know whether there's grizzlies in there now because there's so much activity. Even the town of Swan Hills I think there were well over 1,000 people there one time.

BC: Was there a town there always?

JM: No, no. It just sprung right out of the wilderness.

BC: A little mini Devon.

JM: Well, at the time that I knew it, it was more shacks and trailers. There didn't seem any well built homes although there were some, because after all, we had Atco here and they could build you a house and cut it in two and take it up there and put it wherever you wanted, as long as you had a base for it. I know the places at Hondu and Mitsu, they brought those homes in and put them out on well built basements and had them all ready to put right on the forms.

BC: Swan Hills would be a very exciting area to be connected with then?

JM: Yes it was. As the Swan Hills, then to the south there's the Virginia Hills. There's several townships with oil wells right through them. It was interesting, just after the discovery to

sit in on meetings where a decision had to be made about a pipeline. How are you going to get this oil out of here. Texaco had people come up here from New York and I was sitting in on some of these meetings and tried to tell them, there's lots of oil in the area and we had to of course, present a geological picture. We had to indicate we knew where these Beaver Hill Lake reefs, this is what we have, the Swan Hills member is a reef in the Beaver Hill Lake. It's upper Devonian in age but just above where the middle Devonian comes to an end. So we sit in here at these meetings and I can't remember now, how many millions. . . they couldn't build a pipeline unless there was 100 million barrels of oil, something in that order. Or they wouldn't be interested. So we were saying that we felt there would be at least 500 million barrels there.

#314 BC: Were you right?

JM: Closer than the 100 anyway. I know at the time it was very interesting, very exciting to be able to present this that way. And the first time I'd ever been involved in that sort of an exercise. Then they formed, Texaco and Home formed a company called Federated Pipelines and it was one of the best moneymakers I think, that either Home or Texaco had.

BC: They ran for many years.

JM: Yes, it was a real dandy, being first in there, they had the first pipeline and even though Imperial comes along later with the oil wells at Virginia Hills, Pan Am comes in south of where our lands were, the whole farm out lands were in the Swan Hills. There's a huge area that became productive.

BC: And they'd all have to use the pipeline, or they all would.

JM: They all used the pipeline, yes.

BC: Is it still an active area?

JM: I have seen. .the last time I was doing any work, about this time last year I noticed they were still drilling in the fringes.

BC: And the old wells are still producing?

JM: Yes. Well, I imagine some of them have run the course of their life, in the northern extremities. They'll only produce so many barrels and the thinner the pay zone the shorter the life of the well. So some of those wells would be abandoned by now.

End of tape.

Tape 7 Side 1

BC: Now perhaps we could move from the Swan Hills that we were talking about.

JM: Well, the next area that proved exciting for the company was the discovery at Rainbow Lake in northern Alberta. This takes us up to about township 110, west of 6th meridian.

BC: What date, could we pinpoint a date here?

JM: This would be 1965. Prior to this discovery there were some lands were made available, an old California Standard reservation. There were about 4 townships and on one of these townships, I can give you that township and range, Cal Standard had drilled a well called

Steen River. It was in township 117, range 5, west of 6. They'd found gas in the sulphur plate but had walked away from the area, I imagine for economic reasons. They couldn't see that the gas would ever get to market, or not in the foreseeable future.

BC: Not enough, or too far away?

JM: It was too far away. But okay, we had Blake Ryan and Ray Young were very interested in this area. The middle Devonian Carbonates were different, they had a certain attractiveness that you just didn't seen in other areas. For one thing we knew that there were Carbonate banks in the area, large Carbonate banks. Some of them were highly porous but full of water. This gas in the sulphur point at Steen River indicated that there was something structurally going on, so it was a good exploration area. Then with Fred Cummer's help on the economics of the thing, he did a real good job on the economics of the area and we sold it to the company and had one of these townships put up for sale at a Crown sale.

#035 BC: How did he set it up so that the company thought oh yes, can you remember?

JM: I sat in these meetings and Fred showed that the demand for gas would be increasing at a certain rate every year and the demand would be greater for export every year. But at this time, in the early 60's there hadn't been that exploration of the foothills where a lot of gas has been found, nor in the deep basin. So Steen River looked feasible as a good area to explore for more gas and if you get enough of it, then you should be able to market it. And this is the way Fred approached it but he was able to give numbers, say, so many years this should be viable provided there is so much gas found in the area that you should be able to get a contract for it and sell it. It was okay enough that the company would go for it. Well, Rainbow was found and at Rainbow in this basin that Blake Ryan and Ray Young had found attractive in this area, around these Carbonate banks, in the area between the Carbonate banks were pinnacle reefs. These pinnacle reefs were surrounded by anhydrites and well, let's call them evaporates because we had anhydrite and salt in this . . call it the Rainbow Basin. Now we never did get into the Rainbow Basin by land acquisition. The prices were becoming quite high.

BC: By quite high, what were they going for?

JM: Well, higher than Texaco Canada would consider paying anyway. I can't remember what the land prices were but they were the highest on record at that time. The reefs were 7-8 hundred feet of solid oil column and this would produce an awful lot of oil.

BC: Were Texaco, were they a conservative kind of company would you say, in looking at land acquisition. Because someone obviously took up the land.

JM: They would go for something if they had a good handle on it. That is, if they had the information that nobody else had. And they were having land put up for sale and as a result of the well that they had drilled they could go in there and go after it. That's another spot that I wanted to talk about, where they actually did that. But okay, at Zama, we had a township, township 117, range 5. Later on quite a few reefs were found on that township, what they call the Zama Lake area. But it was about this time, before they started drilling that I left. Things were getting pretty exciting in the oil patch and I thought, with the information that I have, the knowledge that I have, even about this Rainbow area, I didn't

know that much about it but I think I knew a little more than the average geologist, I went out on my own. But before I go on to that I wanted to mention two other areas.

#082 BC: Right.

JM: One of them was Utikuma??? Lake, which came before Zama which was a Gillwood sand reservoir that Ron Bunting had done when he was working under me, he was the junior but he did some real good work. As a result of his maps and the encouragement that all of us had given him, we got in there and had to buy some land first, drilled a well and were having more land put up at the same time. It's interesting that there were three companies drilling that found oil at Utikuma at the same time. So it wasn't a single company discovery, there were three of them in there.

BC: Were you aware that the others had found. . .?

JM: Well, we knew pretty well what was going on because we had a feeling for the well that we had but they had land put up too, around where they were drilling. And we were drilling about 5-6 miles apart.

BC: This would have been heyday for the scouts.

JM: Yes, I imagine.

BC: Hiding in the trees and. . .

JM: Of course, that's pretty rugged country in there too, they could hide pretty well I think. The other companies were Mobil and the Hamilton Brothers, and Texaco, they were the three companies that were drilling and found Utikuma, Gillwood. . .

BC: Was Hamilton Brothers a small, independent oil. . .?

JM: They were an American company, fairly large in the States, and quite active here in Canada. So that was Utikuma. And then another success, I feel it was a success in the sense that we found a reef but we were too low in the water. We were in the water at Snipe Lake. And that was a farm out that I'd worked on, that we got from Amerata. Unfortunately nothing was done, the information was kept tight by out company, at least as much as we could keep it tight, and also by Amerata. In the meantime we were trying out best to get into where we thought the edge of this reef was. This was all done with seismic. Bob Hahn and I were working fairly close on this and there was an area that Bob had felt there was a fault that ran northwest to southeast. Of course, it turned out in the drilling, that was the edge of the reef. It was very sharp and the edge of the reef may have been fault controlled, there could have been a fault there but it was. . .Bob interpreted that as a fault. And it was along there that Gulf had, they had most of that land and we couldn't get the farm out.

#124 BC: Did they go ahead and drill on the. . .?

JM: Oh yes, Gulf did, later on.

BC: And did quite well.

JM: Oh yes. That became another Beaver Hill Lake discovery. The work that I'd done on it was subsurface and I had isopacked in that area, a zone that would indicate, I felt, where there would be reefs. Or an area favourable for reefs from our knowledge that we'd had at Swan Hills. The reef was there but as I mentioned we were just not successful to get into

the oil. We did find some oil in the very lowermost part, what they call the coral zone and the lower part of the Carbonate build up. And I had noticed that there are 3 or 4 wells that have been drilled in that area that are producing from that zone.

BC: When you were drilling the return was not as great either, whereas perhaps, 10 years later there's more money, those that were questionable now become producible. Have you found much of this in looking back at some of the work that you did, in the 40's, 50's, 60's where you would see that there was something there and they would say, oh well, it's not enough and they've gone back in?

JM: Oh, lots of gas, yes, lots on gas. I wish I'd kept a record of all the gas wells we walked away from, you know, we didn't even run pipe on them. And I imagine a lot of geologists did that because gas, at one time, was 8 cents an mcf. Then when it became 10 cents we were quite excited. But it just wasn't attractive, nobody would run pipe on it. There's hardly a well that you can drill, most wells have got some gas somewhere in the section. You very seldom get a completely dry hole or a well that . . .you get porosity somewhere that could lead you to go somewhere else in the area. There's lots of wells that have water in these different zones that can be productive updip, you just have to . . .

BC: You have to find where the water runs out and the oil starts.

JM: Yes, or the gas. So a lot of accumulations have been found that way, as long as you go updip from where you find the porosity.

BC: Do you find that because of that people are exploring in many other areas than what we call central Alberta today, but do you feel that there is a lot of producible oil to be found or to be exploited in Alberta?

JM: Oh yes. The pools won't be very large but there will be lots of them, I'm sure of it. When you get down to where you can't find something structurally with seismic then you have to look for it with subsurface geology. It's what they call the subtle stratigraphic trap, pinch outs of sands, pinch outs of porosity and Carbonates and so on, that can be found once you get enough information. And you keep mapping, you know what you're looking for. And this is going to happen, I'm sure of it. There are a lot of young bright geologists around here, they know what to go after.

#177 BC: And they look at old records to make new ones?

JM: Well, I'm going to talk about getting data, later on when I go into my computer phase of my career.

BC: Your career took many turns didn't it. And I think this is very interesting in the oil patch, that in a very short space of time, it changed and developed so radically that you had to, as a scientist you had to really be on the ball of your foot to move with the changing ways.

JM: Well yes. When you make your decisions as to what you're going to do you can get into some very interesting situations, there's no doubt about it. So I decided I'd go on my own.

BC: What was the major reason for deciding to become a consultant?

JM: I think Bob Hahn talked me into it a little bit because I'd worked with Bob. That was the first time I'd ever worked with a geophysicist and you get. . what I was interested in geophysics was, after the single record phase, when the seismic line could be shown as a

cross section. It opens a whole new field for geology. And of course then the geophysicist, he needs a geologist to go with him, unless he has that in his own background.

BC: When did this come about, about '66?

JM: No. It started. . .yes, I think, you see, that whole Rainbow area had been under exploration by Imperial Oil at one time. And they had drilled a number of wells there and just hadn't found the oil, they hadn't found these reefs. Now had they had what they now call the digital seismic method, where they could manipulate the data and come up with cross sections they would have seen these reefs. But no, even the old seismic that I saw that Chevron had at Zama Lake, once you knew what to look for then you could see it. But I'm sure that those lines that we had, that crossed some of these small reefs, they'd hardly blink an eye at it because they were so small. Most of those reefs at Zama are not much larger than a quarter section aerially. So you've got to be very . . you have to have aline right over the reef or you wouldn't see it. Now the ones at Rainbow were about 3 times, some of them much larger than that. But the general picture with this Rainbow Basin are pinnacle reefs within an anhydrite basin. And of course, the reefs grew before the anhydrite was laid in to. . and the salt, there was about 400' of salt, that's the most in the section. And then the calcium sulphates were laid in, the anhydrites, completely enclosing the reefs, between these Carbonate banks that were about 40 miles apart. So you can imagine these reefs scattered through this big basin.

#235 BC: Very exciting and challenging.

JM: Yes. So that's the kind of background I'd had about that area and I felt I could contribute something. So Bob Hahn left and he got hold of me so I left and then I went and I talked to Roger Angus and John Harding and Ed . . .just a minute now.. .Ed Fulmer. They had . .

BC: This was after you'd left?

JM: Yes. They had . . .Ted Brownless helping them with their geology but Ted had other irons in the fire and he couldn't devote full time to. .

BC: What company were these people with or was it their own company?

JM: It was a group, they were called Roger Angus and Associates but each one had a professional corporation. And I went in there with mine as Minchin Exploration Consultants Ltd.

BC: Were you the only one, or did you bring other people into your consulting firm eventually?

JM: No. Of course, I would hoping that this would happen, that it would be ongoing but it didn't turn out that way. So I was solely, just myself.

BC: Going out on your own like that, there would be certain decisions to make as to, now where do I look for clients.

JM: Yes well, here's an opportunity to use this Angus group as a client. And in so doing, then I make more contacts with other people. This is what I was hoping would happen. Of course, I did make a lot of contacts. These people had come up with a new concept in seismic, not in the seismic itself but in the selling of information.

BC: What was the concept?

JM: You have to visualize now that most seismic is contracted for by a company. The seismic crew is a contract crew and it's almost the same as a drilling rig, the oil company doesn't own the drilling rig, except I guess Imperial Oil is the only one around now that has their own drilling rigs. But the contract this work out. Well, now Roger Angus and his group, they were contracting lines to be run. These lines would be run, the lines would be selected by one of their group, I think John Harding was the man who was. . he was the field man, he knew, he's get out there and he'd see where lines could be run. See, you're right out in the boondocks here, there's no roads in this area.

#302 BC: You really need your compass.

JM: You've got to make cuts through trees and so on. And there's a lot of muskeg in this area, you can't really free wheel it in the summertime, most of this is done in the winter. They'd run a number of lines and then they would put them on the open market at x number of dollars a mile for the companies if they want to buy it. Then they would have these lines set up in anticipation of a Crown sale. They wouldn't know where the Crown sale lands were going to be but they would anticipate it.

BC: And where they were working was Crown land of course.

JM: Well, mostly Crown lands except where the blocks are. The lines would be covering as much of the Crown lands as they could, they weren't going to be shooting across Aquitaine's 3 x 3 block, they'd run the corridors. So as I say, this was a new concept and oil companies, in order to get into the play at all they had to have seismic, there were only so many seismic crews, there were only so many processing centres in Calgary that could process the lines fast enough. As a matter of fact, a lot of these lines, the tapes were shipped down to Houston to be processed down there so that they could get the lines back and have them worked up before the Crown sale date. So even some of Angus's lines had to be sent down there. Because we just didn't have the capacity to handle all of this, processing these lines that were being shot at Rainbow. That's how active it was, this was a really hot period. It just wasn't a normal period at all.

BC: You were laughing, what were you laughing about, what did it remind you?

JM: I was thinking about my feeling getting in there and hardly having time to eat, you would just be going full tilt all day.

BC: This would be finding clients and. . .

JM: No, what I was trying to do is getting information and doing the mapping in this basin. So we had to know what the reef distribution was like so that I could recommend areas to shoot these lines. And I was not looking just at Rainbow but all around it.

BC: Where was your office?

JM: We were in the Hail Insurance building at 7th Ave. and 5th St. West. For a few months they were in the old building on 8th Ave. and about 6th St. What was in there, that was Riley's Reproductions.

BC: On the south side of the street?

JM: Yes. But the old building. Then Riley's moved into a newer. . .

End of tape.

Tape 7 Side 2

BC: Okay, go on from there.

JM: Now, the people that were there in this group, apart from Angus Harding and Fulmer that I'd mentioned and Bob Hahn, there was Ralph Lundberg, Slim Blair and Nate Rothenberg. These people did seismic interpretation for companies that bought lines, and they didn't say, have their own seismic interpreter, they would get these men to run these lines. No, I don't think Nate did that, he was in the processing end and a very clever man. I think he went back to England but he came to this group from Mobil. He was one of these guys that had a joke every day had he liked dirty limericks, this was one of his favourite little deals, he'd come up and he'd quote, run off a little limerick for you.

BC: He had a new one every day did he?

JM: Not always a limerick but he had his little story every day.

BC: Did people sort of expect that from him then?

JM: Oh yes, they'd always listen for Nate's little story. And of course, once he gets into that groove then he makes sure he has one. So they were a pretty happy bunch. And I mentioned there was Ted Brownless, a geologist that helped from time to time and Bruce Tippen. Bruce was another, I mentioned him before, I'd worked with him at BA.

BC: It's interesting how the oil patch, the personnel is fairly small isn't it, the inner circle?

JM: At this time it was, today it isn't.

BC: Yes, I'm looking at the 60's.

JM: There's so many more people here that I can't begin to. . I go down to one of the meetings, CSPG luncheons and I just don't know half the people there. I don't know 20% of the people or even less than that.

BC: And in the 60's you'd know 80% of them.

JM: Yes. This work went on, we were very, very busy and I recall I took the family down to Expo, so that was 1967, in July we were down there. When I came back a week later there were some long faces and it seemed that during that spring, during April and May, when the spring breakup was on you couldn't get out and do any work. But the company, Roger had made a decision to hold 3 seismic crews through this period and pay them because after the breakup you may not be able to get the crews.

#040 BC: This was an unusual decision was it?

JM: Yes, and it was a bad one because the breakup just went on and on, they just couldn't get in and work.

BC: How long was the contract that they had with these 3 crews, that would be an awful lot of money.

JM: It was a lot. By the time July came along the bank closed in on Roger, at least the geophysical. . well, it was Western Geophysical, there were two of those crews and they put Roger into bankruptcy.

BC: Who was head of Western Geophysical at that time, do you remember?

JM: No, I don't, no.

BC: So this had happened, had you any foreshadowing of this?

JM: No. Well, you can see how close a line they were running. Even if you had a million dollars in the bank in April, you have those crews sitting around very long and you don't have anything left in short order. And you're not making new lines that you can sell. Normally the breakup might have lasted a month but this particular year it must have been over 2 months. Anyway by the time I got back we were in trouble. So we got together. . .

BC: Were you at this point then, really part of that organization or were they just hiring you as a consultant?

JM: No. It wasn't until after this that we formed another company, we called it Cameo Petroleum Ltd. And then I was one of the principals in that.

BC: But in the one with Roger Angus and Associates?

JM: No, I was just a consultant.

BC: So you didn't lose. When he went into receivership you didn't lose anything from there?

JM: No, except that I'd have to look for another client or we'd have to do something else. Anyway we formed this Cameo petroleum Ltd. and there was Roger Angus, John Harding, Bob Hahn, Bruce Tippen and myself. We did one major job for Bob Lawrence who became the head of West Coast Exploration, later on. He was an old Gulf geologist and I knew Bob.

BC: He had his own business by that time, did he?

JM: Well, he was promoting at this time. We'd had some lines there that hadn't been sold and on one of these lines was a beautiful reef, went right across Crown land. So we decided to put it through Cameo petroleum and sell it to whoever, we'd make a deal with them and go in on the discovery.

BC: Were these lines that had been . . that Roger Angus and Associates had?

JM: Yes.

BC: Could I just stop for a second and clear up something. They went into receivership, so their company went bankrupt. Now in going bankrupt they still were able to go and form another company, were they liable, like with the Cameo Petroleum, did you become liable for some of their debts?

JM: No.

#081 BC: And would you have to buy the assets, did Cameo buy the assets, like this seismic information for instance, where would you get that from?

JM: These lines would be . . . yes, they must have bought them.

BC: I just wondered, when a company kind of goes belly up and the same people are involved in another one would the. . .

JM: Well, the inventory of these lines was available to anybody. So they could have picked them up too. Of course, we had the interpreters. Ralph Lundberg did a lot of work on this and so did Bob Hahn. But Ralph, he stayed with himself, he didn't come in with Cameo.

BC: He stayed as a consultant.

JM: As a consultant, yes. So we had this work and had the land put up and Bob Lawrence's group bought the land. Now I can't remember what percentage we had of it but for doing this work, Cameo got, I think it was 20% of the play.

BC: It would have to be always, in these kind of dealings, a great deal of trust on the part of all the principals wouldn't there?

JM: Yes.

BC: Because there you are going to Bob Lawrence and saying, here, here's something and we want a part of it because otherwise they could just trot off and do it on their own.

JM: Well, they could and I imagine that has happened but you don't stay long in the oil patch if you pull that kind of stuff. It gets known and you just couldn't get away with it.

BC: You'd have to make one big strike.

JM: Yes. So we got the land and drilled the well. Unfortunately, as I mentioned earlier these reefs are enclosed in anhydrites and evaporates, this had the porous sulphur point sitting right on top of the reef. So it had no cap, rock and it was full of water.

BC: Must have been dreadfully disappointing.

JM: Oh. Because that could have been a new day for us. However that's part of the game. And . . .

BC: They just financed the one well, there was no thought of doing several.

JM: Once that. . there were two other pieces of land that were purchased too, but they didn't have, it wasn't as good looking anomaly on those other lands. They were quarter sections and there weren't any wells drilled by the Lawrence group. Later on, I know we had a meeting, Cameo was still in force as a company and Norcen drilled on one of these parcels. I know they were going to buy us out, the interest, they were going to buy our interest out, I think for about $15,000. But we decided that we'd keep our interest and hope that they got something.

#125 BC: Did they?

JM: So they drilled the well and it was a dry hole. So that didn't turn out either. So even though, with all the knowledge we had of the geology and the seismic of the Rainbow Basin and so on, you still have to be proven by the bit.

BC: This is what makes the oil business very frustrating at times.

JM: Well, you can be jubilant or you can be the other way. So here we were, by this time, the whole industry was in a recession, this is 1968 and I was looking around trying to get something to do. At this time we had an office out here, 50th Ave. and pretty close to the Blackfoot Trail, with Cameo, that's where the office was. So we all started to break up and went our own way, except Bruce Tippen and I . . I had attended some computer application lectures. These were held up at the University of Alberta.

BC: This is when computers were just starting to find their way.

JM: Yes, it was a time when, well, there were people like, I think his name was Highbaugh and I can't even tell you how to spell that name but they were writing text books on computer applications for exploration. And how you'd go about it, how to build up a data base, what kind of mapping the state of the art was in, well, I should say the state of the art of mapping. There were programs available for mapping but the contours were not smoothed, they were these erratic line type contours, they weren't smoothed out the way a human would do, to try to make his lines fit the points. So there were drawbacks but one of the things that interested me was the data bank. I knew that there was going to be a real

need for, somehow to get the geological information to the geologist so he could work at it. So many firms, they had one set of well cards and these well cards depending on how they were filed, they were maybe filed in drawers and they were always filed by township and range. If you were working a certain area you'd take the whole drawer out and work at it at your desk and there might be 2 or 3 other geologists wanting to get the same data but they can't get it because somebody else is working with it. You might be interested in what wells were cored in the Niscue and you wanted to find out if you could get those corse up at the Conservation Board, somebody was doing drill stem test study and someone else was doing isopacks and someone was doing something else. If you had one set of cards it's very difficult to keep your people working. Of course, you try to do the best you can by allocating the work out so that you don't have this overlap but you're bound to have it. And it's the same thing with the electric logs, or the well logs, they're kept in files and if you want to get your logs out and work with the hard copy logs then you have to get them, put them on your desk and somebody else might want them. But whether you've got computers or not, this same thing happens. You've got to go and get to the log if you want to really look and see what's going on. So I felt there was a real need for getting this information to the working geologist. So Bruce and I went around and we talked. . .

#!93 BC: You were still working as an independent consultant?

JM: Yes, and so was Bruce, he had his own company. But we were going to see if we could get enough interest with companies that we knew were working in southern Alberta where it would be ideal because you have so many wells. There are more wells per township than you have anywhere else. So we felt that this would be a good area to start in. I don't mean all across southern Alberta because you got into the Lethbridge area and you didn't have very many wells, and west of Lethbridge. It wasn't until a few years ago that they started really drilling in that area. There was an interest but nobody was willing to; we were looking for money to back us you see. And we couldn't get any. .

BC: Was that because, at this time, well, rather like it is in 1982 except it's worth now but there was a recession in the oil industry at that time was there not?

JM: Yes. And there was a reluctance. People were interested and having attended a few lectures, I had a few buzz words so that I could talk computer language to some of these people. They knew that I was interested and of course, I had a very good background in the stratigraphy of the whole western Canadian Basin.

BC: In the meantime how did you put bread on the table?

JM: That's what gets to worry you, you know, for a few months you don't have any money coming in.

BC: And did you work out of your home or did you have an office downtown?

JM: We had this office. . .

BC: You still had it?

JM: WE had it . . .by this time when Bruce and I went. . yes, Cameo was formally closed down so there were a couple of months there that Bruce and I were working out of our home.

BC: Where were the Cameo offices?

JM: They were on 50th Ave., near the Blackfoot Trail, S.W.

BC: That's interesting that you're right out of downtown. Everybody thinks that they have to be on 8th Ave. and 1st St. How come you had your business address so far out?

JM: Well, remember some of these people were geophysical types, like Roger and John Harding and Bob Hahn, a lot of geophysical offices were out in the south end of the city. They weren't right downtown. I didn't find it too onerous. We'd go for lunch at the Chinook Centre quite often, quite often I'd come home. If we didn't have anybody to talk to, if I wasn't trying to sell something. But the clients we took to either Chinook or we went to the Stampeder, on Macleod Trail, it's not that far away. I remember working downtown and going out to the Stampeder for lunch.

#240 BC: You're closer to it, exactly. The Stampeder was the gathering place at that time, there weren't that many restaurants really downtown, unless it was a club or the Palliser, something like that.

JM: Yes, a lot of people went to the Stampeder. Every time I went out there I saw quite a few people from the oil patch. Now the . . .

BC: You didn't find any interest in this. . .

JM: Well, they were interested but nobody was going to come up with the money.

BC: How much money were you looking for?

JM: We were looking for several hundred thousand dollars to start with, this was going to take, and then that was going to have to be added to because there was no way that you could build up this data bank. And we'd have to do it, the other thing is the computer time, you'd be using somebody else's computer. What we would do was set up a data bank in an area. Now, I was very optimistic at this time. I found out later that it would have cost us a lot more.

BC: Is that right.

JM: Oh yes, this was not a child's game, this was a very serious game. So I found that without money coming in to buy the groceries I better look around and I happened to see that Canadian Pacific Oil and Gas was looking for somebody who would work on their computer applications in exploration.

BC: That had your background.

JM: Yes, right down my alley. And here the guy who is Exploration Manager is Mike Rogers, the fellow that I gave him his first job at Anglo American. So Mike, when I phoned him he was just elated, he thought that was great that I would even be interested in that. But I said, now remember I might not be there very long, I'm just trying to find out about this computer business and how to build a data bank and so on. As soon as I find that out I might be leaving, he said, that's all right, we need somebody to do it. When I got in there and started to actually get a grasp of this thing it was a fantastic project. It took me a little over a year. I had to build correlation charts and I did it from the Northwest Territories, Alberta, Saskatchewan, Manitoba and these charts, the formation names that are named a certain name in Alberta could be different in the Northwest Territories or different in Manitoba. But they are the same formation only different kind of rock, because it's a

different environment that the rock was laid down in. The Mississippian for example, in the foothills, the mountain sections, I was wanting to be able to correlate them into the Mississippian sections in the plains and find out, what beds are missing that are present in the foothills and they're not present in the plains. Due to erosion or a ??? position. There are blanks in our geologic column in the plains and in the Northwest Territories you may have a different setup altogether. For example, the Wabamun is a Carbonate in the plains, is the Carbonate Palliser in the mountains but in northeastern B.C., it's a shale.

#321 BC: It's just who happened to get there earliest and decided to name it, almost.

JM: Well the Devonian, well, all the Mississippian, not all the Mississippian but the Carbonate portion of the Mississippian in northeast B.C. and the Devonian have all gone into the shale facees. Whereas you get out in the plains, now that Besa River in northeastern B.C. is in the mountains as well as the plains. So you've got to be able to show that in your correlation charts. And you have to, in order to . . . you have to give each formation a code number. And the code number, now we used an 8 digit code, if it's the same formation then it has to have the same number in northeast B.C. as it does in Manitoba.

BC: So this setting it up would be quite an evolved job.

JM: Yes. It took . . well, I don't know whether anybody. . I think if you hadn't had the experience that I'd had I don't know whether a person could have stuck to it and stayed with it.

BC: No, your background and your interest in the computer all came together.

JM: Yes. So it took a tremendous amount of concentration. Of course, I used a lot of the lexicon and I knew most of these names that were as the industry used them, I knew the geological time scale, how to fit this in vertically on this scale and every one of these correlations charts, they had the same scale. And I had to break it down into two parts, I broke it down into a Paleozoic chart and a Mesozoic and recent chart.

End of tape.

Tape 8 Side 1

BC: December 10th today and I am again talking to Mr. Jack Minchin in Calgary. When we stopped yesterday you had just got to where you were going to set up the computer or just in the midst of setting up the computer side of things for what is now known as Pan Canadian. It was Canadian Pacific Oil and Gas at the time you went to it though, that was the fall of '68 I believe.

JM: Yes. Actually I went to CPOG in December 1968. I'd already mentioned about setting up, one of the first things we had to do in this computer applications for geology was to set up correlation charts for the various areas. Now I think I mentioned, possibly I didn't mention that we were using an 8 digit code. And the codes for the geological names, for instance like, the top of the Cretaceous may be, depending on where you are, in the upper Cretaceous or the lower Cretaceous. Most of these names were upper, middle and lower

but Cretaceous, here at least in Alberta, it was just upper and lower.

BC: Setting up all this information in itself would be quite a task because, as you mentioned earlier, there were names that were slightly different in different parts of the province, for the same formation.

JM: Yes. Well, we'd become familiar with that and you had to be fortunate enough to have worked in these different areas to know what you were dealing with. The top of the Peace River sands for example, in the Peace River area, there were two sands, there was the Patty and the Codot but they were generally called the Peace River sands. The top of those sands is the Viking in central Alberta and the Bow Island in southern Alberta. I'm using that as a good name because there are three names for the same deposit.

BC: So you would put all this into the data bank.

JM: Yes. You set it up so that you can retrieve this information by name or by code number. Now you can readily see that by code number is the safest way to do it. Because it depends on how. . well, the data bank that Pan Canadian used was the Conservation Board's data bank and we had to be aware of what they were using for their geological terminology.

#038 BC: The coming of the computers into the petroleum business made quite a difference to exploration techniques and interpretation did it not?

JM: We had great hopes for what we could do with it but they may be arriving at that stage about now but 10 years ago, when I was embroiled in this. Well, I started in 1968, 1968 through most of '69, the knowledge, at least in Calgary was not very high, in how to handle the data once you got it. We were having a problem with our contour program. The contour program was obtained from the University of Kansas and it was, I guess, one of the older ones and it was what we'd call now primitive in that the lines weren't smooth, they were very angular. So you didn't really have a geologist look at that map and he'd just throw up his hands, he was very disappointed.

BC: Was it more difficult to interpret if it wasn't smoothed out or was it just not as aesthetically pleasing?

JM: It's not the way the geologist would envision the formation in the subsurface, it's not sharp changes in thins and thicks or in structure, not out in the plains, it's very gradual. Unless you're on a reef and you're mapping the top of the Niscue, then you will find a change fairly rapidly when you drop off the reef because there is a draping feature around the reef and the beds above drape around this reef. But we had one . . .what I should say here, possibly before we get any farther is to give you some idea what CPOG had to work with at this time. Then you can maybe, or some people can visualize that the state of the art as far as our company was concerned. They had a Honeywell, small, computer and printer and they had some tape drives, I can't remember the number of that Honeywell but it was a pretty old one. And they had the tape drives, everything was done on tapes. We had a plotter and that was about it. The staff, there were about 20 people I imagine on that staff and it was headed up at that time by Gerry Ansell, who had a background in geology. They had some people there, like Glen Skoralski, who had a background in geophysics. Most of the others had no background as far as the oil business was

concerned, they were strictly computer or had been trained in programming at the universities. My job was to get the computer, pardon me, to get the geological tops on to the computer and to be able to retrieve it and draw maps with that information. So as I said, I went about it by first of all doing the correlations charts and we had already had decided to use an 8 digit number system. I hadn't done that, I think that would have been done by Dr. Kerby Eckles and Michael Woodhead who also had something to do with this setup before I arrived there. By about a year and a half we had a pretty good system, the contour program had been smoothed, we now had a pretty acceptable looking production for their maps. We still had problems with the computer honouring certain points, it depended on what the spacing of the data was and how the computer would honour the points, it would sometimes disregard one or appeared to be. But it was weighing the various numbers and sometimes it would move to the right of the data of a well when it should have been to the left of that point. Now that upset the geologists, they didn't like that. So we had to, I guess it was several years later before they got another contour package that did this kind of work.

#107 BC: This would have to have been designed for you by some company?

JM: Well, I believe they did, they bought one. Now whether this program had been developed at the University of Calgary or not, I can't remember. But that was after I had left the computer applications. Now, when that work had all been done I wasn't too happy just being left as a liaison between the exploration department and the computer people. I would have preferred something more interesting to do although this was still interesting because we still had a selling job to do to the geologists.

BC: I think that that's a point that we perhaps should go into, maybe now, before we get out of this area. Because the computer did threaten or a lot of them felt threatened by this monster as some called it.

JM: I don't know. If you had a young geologist he was quite interested in moving into this area. The older geologists, no, didn't want to have very much to do with it. But then again, some of the older geologists, say like myself, I was no youngster then, I was already over 50 when I went into that. And we had a fairly good staff, there were over 30 geologists at. . .well, I don't think at that time, there may have been 25 but I know later on they had larger numbers, 35-40 and one of the big problems was the way we had to access the information. In order to handle this amount of data the company decided to go to a large computer outside of the company and just try this information and see how it would work.

BC: It was in a different building?

JM: Yes, there was a company called Computer Sciences Canada, that was partly owned by the CPR and they had their computer set up just behind the Calgary Inn on 3rd Ave. West, now the Westin. Now in order to get the data ready to plot or to print out this required transportation of tapes from Computer Sciences Canada to the CPOG building, which was the Natural Resources Building at this time, on 1st St. East and 9th Ave. So we had a regular run of taxis going back and forth which is not quite, when you're dealing with computers you want something that will be quicker than getting caught in some

downtown traffic and getting it from the source, which is ourselves, down to Computer Sciences Canada and back again.

#158 BC: This business of having to transport material back and forth, this was before really there were the courier services that they have in the city today.

JM: Yes.

BC: And you didn't have your own courier service with a truck just going back and forth with all these tapes, which would be rather valuable and I would think have to be handled a certain way.

JM: Well, this was a little upsetting and it just didn't seem to be right to be doing it that way, especially in this computer age, when data is supposed to be moving back and forth across telephone lines. Well, some of it was, but we had ideas . . .I started to develop ideas about what to do, the way the company should use the facility of the computer. Because there was a tremendous need for it, the data was getting so large, there were so many well. The geologists were yacking at each other because they couldn't get the cards or they couldn't get at the data, the hard copy type of data and then that means loss of time and sure, you can always do something else, a geologist can, he can busy himself with other things but usually you're meeting deadlines and these working geologists had Crown sales coming up and they were very unhappy that they couldn't get to the data. So I wasn't so concerned about whether the mapping was that good as far as the computer data was concerned as long as. . .I thought well, you can spot the wells, you can map, you can build maps, you can spot the wells and you put the data on the maps. If it's a structure map you have a sub sea value goes on the map, he doesn't have to have the machine contour it, he can contour it himself. Same with isopacking but when you get into the more sophisticated types of mapping, if you wanted a trend surface and then a residual type of map that you can't do manually then the computer can, it can function very well that way.

BC: Could you clarify those terms for the tape, residual mapping?

JM: Well, the residual map showed. . well, first of all you have to have a trend surface, which is an average surface for the area, subsurface, on the subsurface you're looking say, at the top of the Niscue formation and what you want to see is . . if you were mapping normally with a structure map, anytime you had what we called a nosing of the contours something is anomalous. Now a trend surface map will actually show that feature as a circle. The maps that I used to have done I'd have the map show the residuals in red and the normal lines in blue and then they'd just stand out like a sore thumb. And then those are areas to investigate. Now you can't build a residual map by hand because you have to go into a lot of mathematics to do it. Now some people say they can but not with. . when you have a lot of data you can't very well do it, it's too much.

#214 BC: And the computer can do it very quickly and very accurately.

JM: Yes.

BC: If I can just digress just a little, being able to do that quickly and accurately, did this make your exploration data just that much more accurate?

JM: It was a good way to present this area. You can start off with this map, this residual map and say, now this area is interesting because here is an anomaly showing on this map. You can say now here, the data is adequate for this area, you know, a certain number of points that you have, the wells that have been drilled and then you can take your argument there and show the other maps and say, go and look at the wells that have been drilled in the area and you can say now, this is a real good possibility for a reef play. So you've got say, Leduc reef or you've got Niscue, you've got possibilities in the upper beds and you present this and you might have 4, 5, 6 excellent objectives in that well.

BC: Before you had computer accessibility were you able to present it as accurately?

JM: You would, you were able to present it but you would not be able to do it as quickly, that's the thing.

BC: You're looking at months as against hours?

JM: No, I wouldn't say hours, you're still going to take several weeks to do this. Even when you get to your maps you've got to sit down and write it, you've got to go and look at the wells, possibly you want to look at samples. Somebody has to go to the Conservation Board and dig those samples out. You've got to be very. . .

BC: So there's still the digging but it's condensed.

JM: Yes. And with being able to get the data quickly and use it like that, the geologist should be more keen to use the computer. But we had to get over that wall, there was a wall up in front of most of them.

BC: How did you go about getting them over that wall?

JM: I don't think by the time I left, once I got the information to them and worked a few months talking to people and showing them what they could do, I just. . then it's up to them.

#258 BC: Did they have courses that all the geologists were sent on or in house courses?

JM: No, I was more of an eyeball to eyeball type, I would go around and talk to them and cajole and get them to use it. But now here again, when you're using a computer, there's costs involved and reports were sent out each month as to how many maps were drawn by the exploration department and how much this cost, against the overall cost of the computer. Now that was the worst thing they could have done. It's okay to have that but not everybody's. . especially the supervisors because they say, look, we've spent all this money on this computer, we could have 5 geologists for that amount. Why don't we get 5 more geologists then we're better off. Then you defeat the whole purpose of the thing.

BC: 5 geologists wouldn't be able to do the work anyway?

JM: Well, they'd still have a problem in getting to the data. This is the thing that I was interested in was getting . . . later on, it developed into where you can have a hands on approach to getting the data. That is, you sit down in front of what we called a view com, a visual display terminal, as you see everybody talking about these days, these VDT's, and this is what it was, like a small TV screen with a keyboard in front of it, like a typewriter keyboard. And the geologist has a code and he can type in his code and once that's accepted, he can't make a mistake on it because if he's 1,2,3,4,5 and he punches in 1,2,3,4,4 and then he has to have another deal verifying his code then the computer knows

he's not the guy because he punched it in wrong. So 1,2,3,4,5 it will only accept with this other code that he has. So from there, then they just ask for, for example, they want to get the geology tops in a certain area, they give the legal description, township and range of a southeast corner of that area and the northwest corner and ask for geology tops and it will kick out all the tops out of all the wells in that area. Now as well as the geology tops they had a drill stem test file, you got all the drill stem test data printed out and a core file. It wouldn't give you the core descriptions but if you said I want all the wells that had cored the Niscue in this area and give the southeast and northwest corners. . .

BC: Who did that program for you?

JM; Well, it was done internally.

#325 BC: How long would it take?

JM: That was done in that first year. I was there to tell them what we wanted and how we wanted it displayed and then the printed form would come out. We didn't like the drill stem test form, the way it was printed out to start with but we worked out it until it was acceptable. There's so many things that can happen on drill stem tests and it was difficult to get all the. . .

BC: All the variables.

JM: The variables, the conditions and so on. But eventually they got it okay. And then a drill stem test map, it would print out all the; you know, if I wanted the results of the tests of the Viking sand in this certain area, it would plot the wells out on the map and then with little abbreviations beside it, indicate whether how much gas you got or did it get water or what, or if it was tight. So you could build a show map very quickly. So these files were, as we called them, the geology tops file, the drill stem test file and the core file. And then I was working on a lithology file. That was a very frustrating in the sense that we'd envisaged being able to plot out on sheets the descriptions of the samples, say if a man's sitting at a well and he's looking at the sample under the microscope then he can put this data down on these sheets. And then the sheets can be keypunched. It was all set up to do that and I was designing these sheets and even had meetings with other people who were working on computer applications.

End of tape.

Tape 8 Side 2

JM: We had meetings, for example the government sponsored meetings, the federal government, between government and industry on various applications for the computer. I was representing one of the men from industry. I just went to that one meeting they had at Queens University. But I took examples of what I had, of what we'd developed, call it the state of the art at the present time in the oil business. And presented that at the university for the benefit of the people say, who were doing exploration of minerals. And met some very interesting people, like Dr. Lynn Edwards who later went out to UBC and when he was at UBC a lot of work was done on the interior of British Columbia. Well,

from the coast to the interior which gives a very, very interesting picture of the geology of how that coast line was built. And it goes way back into the Shuswap area of central British Columbia. All of that area has been added to the continent as it drifted to the west. So . .

BC: This is his theory, it hasn't been accepted?

JM: Well, these people, a lot of them were, the interest and the dedication to the objective of finding out where did these rocks come from and let's see if we can categorize them and so on, it had to come from somewhere. And he was one of the people that would be interested in that because I know his background. There's a Jim Hutchison, an Aberdeen graduate, Dr. Hutchison, who I met down there as well. But he was out there with the GSC, the Geological Society of Canada and I know that they did an awful lot of work in the analysis of these different ranges. And that was all done with computers, a lot of it was.

BC: So this information would not have been available had it not been . . .

JM: Well, it would have been available but they may not have been able to have arrived at where they are now, it may have taken a few more years. But at least they were doing it. And that was in the early 1970's, so it was in the last 10 years and they've come a long way in what they were doing, starting at least, when I went down to Queens University to that meeting. And it was a week long. It was quite a heavy session. And they had representatives from the provincial governments as well as the industry and there was only this one other chap, an easterner, so I don't know, most of the people were government people. But they were quite interested in the contouring packages that we had and. . .

#042 BC: Were you the first company to do this packaging?

JM: No. Imperial Oil was well on the way with it and Amoco and Chevron, the majors pretty well had staff and were working on it. So as a small Canadian company, the CPOG was relatively small, but fortunately their management had enough vision to see that they were going to be left behind if they didn't move in this direction.

BC: After you got this all set up and continued to act as liaison and you said that you found this role a little frustrating, was there anything that you were able to do about that?

JM: Mike Rogers came down to see me one day and said, I want you to be my Chief Geologist. So I said, good, I was quite happy to move away from that.

BC: What year would that be?

JM: The early part of '70 or the latter part of 1969. You know, I had diaries and in one of my moves I lost some of these diaries. So I would have had all of that stuff down, unfortunately this box, that's when they moved a group of us from the Palliser Square down to 10th Ave. and 6th St. and when we moved back again to Palliser Square I lost that box that my diaries were in.

BC: So you went in as the Chief Geologist?

JM: Yes. And I was in that about a year. And was enjoying it quite a bit then they suddenly decided to go international and they wanted some experienced people on that team and they asked me if I'd like to go on it and I said, sure, I'd like to see what's going on in the

rest of the world geologically. So I went on that.

BC: And where did that take you?

JM: Most of the work that I did with that group was in the Mediterranean.

BC: Were you stationed there or did you work from Calgary?

JM: No. We worked from Calgary and we were dealing with . . now, that firm, gee, I had that name the other day now it's slipped my mind. The firm was an Italian chemical company, it was privately owned, that was the same one that Home Oil . . you see, we were in there with Home Oil and partners with this group, this chemical company. And most of the work that we did, well, the work was done. . .

BC: There was no common shares between them though, like it was two separate companies, the Directors of one didn't own part of the other or anything?

JM: Oh no. We just shared in the exploration. One of the things we found out after a few months was that the Italian owned company AGIP, control most of the land. Now that means offshore as well as onshore. So we were pretty limited to the area in which AGIP would have dropped, that is the acreage that they were no longer interested in.

#091 BC: Who owned that company, was it a government company?

JM: Yes. That was the Italian, like our Petro Canada.

BC: So really the Italians, it was pretty well a country owned industry.

JM: Yes, well, that part of it was. AGIP has operated here in Canada too. I know one of the engineers that I worked with at Anglo American went with AGIP, that was Jack Minnear. However, we did some seismic and . . .

BC: Did you pick up your seismic crew in Italy?

JM: Oh yes. Of course, this was all done through the Italian company, we had meetings with them. We used to meet in Milan and we had several meetings there and John Carr and Chuck Hemphill were also in this international group for Home Oil and Gene Cook I met at that time too. But I didn't meet Gene over there, I met him here in Calgary when we had a meeting with them. But one thing that I was able to do was make our own maps. You couldn't get data there like you could in Alberta, where all wells are released after a year. All wildcat wells are released after one year and your development wells, they're usually available almost as soon as the logs get to Riley's you can get your development wells.

BC: But not so in the Mediterranean?

JM: No, nor the North Sea. You had to do some wheeling and dealing in order to get those logs.

BC: And who would you wheel and deal with?

JM: Well, with the companies that drilled the wells. And you'd have to. . .

BC: Which was the government.

JM: Well, in Italy we weren't able to get a lot of the wells, except the old ones. The wells became available when the concessions were dropped and they could be held for 10 years. So you didn't get the data unless the concessions had been dropped and were available. Now we did some work with our computer getting maps drawn and the wells plotted and this is where I found out about everybody doesn't use the Greenwich Meridian, you

know, for your first meridian on your mapping. In Italy they use the meridian that goes through Rome. Later I found out that in Spain they don't use the Greenwich Meridian either locally, they use a meridian that goes through Madrid. And the wells were located according to Latitude and Longitude based on the meridian going through Rome so we had to find out the mathematical formula to use in the computer to make this adjustment.

#135 BC: That was a good thing then, that you had your computer, you could adjust it fairly quickly.

JM: Yes. And we could draw the maps, we had it set up on the Greenwich Meridian.

BC: How long did you stay in that international?

JM: About a year and half. So that takes me in '73 I guess. I was quite fascinated by it. This is where I started thinking in terms of larger scale geology and Continental Drift and the. . .

BC: Continental Drift, was that just becoming popular again at that time, in the late. . .

JM: In the 60's yes. Touso Wilson came out with his great idea by using these huge faults that we now call, he called Transform Faults, where your mid Atlantic ridge, it runs in a certain direction and then it sidesteps, it goes maybe 30-40 miles to the east or the west and then continues again. So he calls that, where the two ridges, the ridge that's been moved, the fault that joins them is a Transform Fault and once you understand it then you can see, if you put all of the ridge back together you can see that it would be almost a straight line.

BC: There are still some skeptics, re: the Continental Drift though, are there not, in 1982?

JM: Yes, there's a few.

BC: There was sort of a time when, if you believed it you were an eccentric and now, I guess, if you don't believe it you're eccentric.

JM: Either that or you just don't want to accept the evidence. But the evidence is quite overwhelming. At least to my mind it is.

BC: Was this involved, the whole business of the Continental Drift, did that become part of the geological picture as far as your oil discovery was concerned.

JM: There's certain areas that certainly have a great deal to do with. . .

BC: Particularly with offshore.

JM: Take California for example. A lot of their accumulations are in recent rocks and the structures are certainly due to shifting of sediments for some reason. We do know that the uplifts are involved when the continent is moved across the mid Pacific ridge and uplifted that shoreline, all the way in as far as Nevada, it's been all uplifted. So has the Rocky Mountains and this central plains area was uplifted by 2,000+ feet. But that's getting away from where I was.

#182 BC: Yes, a little. But it was important I think, because your dealing with the international community made you more aware of this.

JM: Sure. The Mediterranean is very complicated. Here I'm looking at Italy with volcanics along the west coast of Italy, from north or Rome down to the Naples area. I was in Naples when Vesuvius blew its top in '44. I was in a hospital there recovering from one of my malarial bouts in the American hospital. And I could see it, we had a beautiful view

of it. Before that I had taken some trips over to the Sorrentine peninsula and there was a Canadian, he was the officer in charge of a radar unit just on the Sorrentine peninsula, just before you get to Capri, which is a little island off the end of this peninsula and I spent a weekend there with him. And in the evenings you could see the mountain belching, it would just throw up sparks, give a few rumbles and then gradually it would calm down and as it calmed down I imagine more pressure was being built up. And this was about a month after I'd been over in the Sorrentine peninsula, when I was in this hospital that it actually took off. And that was quite a sight.

BC: You took a step backward there, back into your wartime days with Vesuvius. So perhaps you better get back on top here. Did you stay with the international. . with Pan Canadian, it was Pan Canadian by that time I presume?

JM: Oh yes.

BC: Did you stay with the international until you retired?

JM: No, not till I retired. I was only with international about a year and a half. One day John Taylor, who was President of the company, phoned me and I went up to see him and he said, I'd like you to manage the computer section for the company. I said, I'd like to think about it. So I took a couple of days and. . .

BC: Sorry, but what would that encompass?

JM: That would be to look after. . I'd be on the other end of the stick then, I wouldn't be the one getting after the computer all the time, I'd have to be defending it. Then that's a different situation. But I had a feeling that I might enjoy it, up to a point, as long as it didn't get too stressful. And there is a lot of stress in this type of work, because people are after you all the time.

#233 BC: Everyone wants their job done first.

JM: Yes. And if you can't get it done, then there's explaining to do and this is something that maybe I thought I could handle. So I said, okay. So I went in there and I inherited this tiny little computer and printer and a little plotter and a taxi service taking the tapes back and forth to. . .

BC: What year would this be?

JM: This is 1972, latter part of '72 or early '73.

BC: Was this a new position that was made or were you replacing someone?

JM: No, I was replacing Jerry Ansell. Jerry had left, he had an opportunity to go out to Kamloops and set up a computer system for the city of Kamloops. So he thought he'd like to try that so he went. And I've seen him a couple of times since and he's certainly enjoying it out there. I think we're still Central Del Rio at this time. Murray MacKinnon was Vice-President of Central Del Rio and when they came in with our company, he also was a Vice-President and I was going to report to him. So I started talking and Murray's background was engineering and production. There were a lot of things that we would like to have had done, for example, there's a production history system. The Conservation Board, I think they produce a system where the production history of a well is on a card filing system and you can go to the board or there's some, I can't remember the company that would supply you with books, production history from all the wells, producing wells,

gas wells and oil wells. And we knew that the Conservation Board had built a computer file of production history. And we discussed about what we could do, if we could get hold of that file and utilize it in the company.

BC: It would save so much time.

JM: Yes. So then, in this new role that I'm playing here, I have to make contacts with all the different branches of the company. Working with, of course, the exploration, the geologists and geophysicists, I'm working with the engineers, both the drilling engineers, the production engineers and the reservoir engineers. Working with land, because we were planning to build a land file, which under this CPR's fee lands, and land acquisitions, the farm outs, many, many farm outs that had been made and so on, it creates a monstrous amount of data.

#301 BC: Where was this being held now, all that data?

JM: It's all on hard copy, all on paper.

BC: What was the advantage to having it into a computer?

JM: Sometimes I wondered if there was an advantage. Because there's so many variable in the land system. I know there were three different programmers work on that system. And the third one I think he left too, but it just got too much for them.

BC: This is what I was really asking because when computers first started to be utilized there seemed to be a tendency sometimes to have the tail wag the dog. There it is and we've got it and it's a very expensive thing so we must feed it constantly. Was there any of this?

JM: Sure. Always people were pressuring you to put something on the computer.

BC: That was just as easy to go to a file and pull out. Or was it?

JM: Not really most of them had good reason. But before any file became a project to work on it had to be studied and there was a report on it made by one of the computer systems analysts. A systems man had to. . . and he worked directly with the people in whatever the department was who wanted this information. But one of the things that I found was that the people who wanted the information weren't always that clear about what they wanted. They knew what they wanted but they couldn't explain it, let's put it that way. Because of the number of times that we had to go back and do something over again.

End of tape.

Tape 9 Side 1

BC: So how did you overcome this?

JM: You couldn't overcome that. You might say, well, we could have had a brighter systems analyst who went in there but he doesn't know what the requirements are, he's telling them what he can do for that department and he's telling them no, we can't do that or yes, we can do that.

BC: What was the most important advancement in the oil industry as a result of the utilization of computers, do you feel?

JM: Data handling was most important. It still is. You see, now we have the system where, as

I think I mentioned before, you sit in front of the view com or this little deal and you can even have a printer there right beside you. Now, it's not always the case that the printer is there, but you can ask, through the terminal you can ask. This is what I call hands on because then you're part of the activity of the computer and you're not picking up a phone and asking somebody to execute a request, you make your own request and it goes in.

BC: How did geologists react to some of that, where normally they were used to picking up a phone and someone else did the searching and here's the scientist having to do his own filing or his own file searching?

JM: Well, no, he doesn't have to. He just plunks it out on the keyboard and then requests a print out. And he just has to put it down, there's a form of what they can say and this is a request print out and it will print them out for them and it will be delivered to his desk when it's ready, which might be the next morning. And he can then have his own data right on his desk for whatever the project is he's working on. And that works beautifully, you don't have to go around looking for somebody who's got a book of cards out, or a drawer of cards.

BC: So this certainly sped up the. . .

JM: Yes. Now in the production history which eventually the company did get. Now by the way, we did go and get a new computer system. Talking through Murray MacKinnon, I made the study, I'd gone down to look at computers where you could easily communicate with the computer. That is each one would have what I call terminals, they'd have terminals set up in a certain department, it would have its own little office and you could go into this terminal and do what you wanted to do on that terminal.

#037 BC: This then, eliminated the taxis.

JM: Yes.

BC: And did you then, get your own computer or were you still using the computer down on 3rd Ave?

JM: No. We got our own computer, which is a Honeywell 6000, a big computer, which had the potential for growth, that is, you could expand it. Now we were just . . .well, I think they called it the 3rd generation computer but it started to use the chips, the microchips. Now of course, the chips now, I imagine you could do with half the size of what that computer was because this was 1974 when that came in to Pan Canadian, that was 8 years ago. So there's a fair advance has been made in these last 8 years. But it was still a real good system for what we wanted to use it for. It wasn't as fast as some of the others but we didn't have that much number crunching to do. Sure, the reservoir engineers did a lot of it but we had to think of exploration, we had to think of land and we had to think of the other departments in the company and not just think of a number cruncher. We had to have these other facilities, which was access to data. So it ended up, sure we had tape drives and we had discs which was fairly new then, to have your data on to discs. And we had 6 of them, 6 discs. So we could almost load up all the geology tops on one disc. And it's a tremendous data storage area on these discs.

BC: In this new position that you took over, in charge of the computer, this meant that really,

as you mentioned earlier, you were really in touch with everything from the accounting department to exploration.

JM: Yes.

BC: Did you stay with them doing that until your retirement?

JM: No.

BC: You did change and grown in Pan Canadian in a fairly short, how many years were you with Pan Canadian?

JM: 12. I had a fairly interesting time there, in all the various things that I was involved in. About this time the company had to have a good look at where they were and where they were going.

BC: This would be at what date?

JM: Say, 1974, in the summer of 1974. Actually I had been in hospital, I'd had an aortic aneurysm and maybe that was sort of the hand writing on the wall for me as far as the stress situation was concerned with this computer. I don't know, it might have happened anyway but it did happen in the spring of 1974 and I was out, I guess I was about a month and I was back at the job again. We knew that the company had to have a good look at where they were going to go. Here we had this lovely big computer there and we sure wanted to get the best use out of it. So they really needed somebody who had some real good background in computers. Price Waterhouse came in and did an evaluation and recommended they take me out of there and put in somebody who's had more experience.

#082 BC: But computers had become so sophisticated in such a short time and your science was really geology and computers had become a science unto their own.

JM: Oh, I was happy to get a pat on the back and say, move over. So I did.

BC: Where did you move over to?

JM: Well, I think they sent me to the Senate about that time.

BC: They finally realized that you were the senior, or they allowed you to be the senior did they?

JM: Well, they gave me a nice title called Manager of . . now let me see now. . this occurred after I'd had this meeting with John Taylor. We knew that Price Waterhouse, the recommendation was that they were going to replace me. I went to see Mike Rogers and of course, he already knew. He said, well, we've got a nice spot here for you, we're going to call you Basin Studies Manager. Now of course, I'd already been quite interested in this sort of thing. Now this is not just in Alberta, this is the worldwide area. So as I say, I'm still sort of senior staff geologist type but with the title of manager. It was all right with me because I'm still in that category as far as pay was concerned. But I'm not managing very much because I'm entirely on my own, I don't have any staff. But the other thing that they did, which kind of threw me was honoured me with the job of being the Metric Coordinator for the company.

BC: Well, there's a job and a half.

JM: Yes. And I said to them, now how the hell am I going to do geology and do this metric thing too because you've got to attend so many meetings and you've got to . . . well, I did

it for about a year on my own. I wasn't getting very much geology done except sporadically. Finally I was reporting to Art Groll, who was Vice-President of production about the metric deal and Art understood the position I was in and I said, I'd like to hire a secretary who can do a lot of this paper work because here again, I'm contacting all of the departments in the company. So I knew everybody in the company. At least all of the people that were in supervisory positions because they're the ones that I have on my chart because they're responsible for certain things in this metric changeover. And I had a great huge chart, it was like a time study, everybody was supposed to be at a certain stage at a certain time. And I had to have somebody to help me keep track of all of this. So I got a little gal who used to be in the seismic department who thought she'd like to do this kind of work and it worked out quite well. Then I was able to do some geology again.

#127 BC: What did you do, when you're looking at basins, what were you really doing?

JM: This is where, you know, basins, in order to understand geology in any area you've got to know where the basins are. And it's been in the basins that the hydrocarbons are generated. Some basins are gas prone for example. You should have an understanding of why they're gas prone.

BC: This is, for instance, the foothills, which is considered gas prone, as against the . . .

JM: Well, you've got Turner Valley though, so that disputes that.

BC: Yes. So this would be most interesting study because they're always. . . I'm trying to think who I talked to fairly recently and they said that they didn't exploit their foothills holdings because the management felt, we want oil not gas, and everything in the foothills, well, not Turner Valley but perhaps outside of there. So you would be looking at that sort of thing.

JM: Well, actually you see, you have to consider your foothills and even your mountains here as part of your western Canadian basin. The whole basin goes right from the shield areas in Manitoba and northern Saskatchewan, right through to the Rocky Mountain trench.

BC: So you look at it as one giant basin, rather then split up into smaller.

JM: Yes. Even though you do have anomalies in it, like the Peace River Arch and so on. But one of the things I did that I was very interested in, when I was Chief Geologist we had these field parties and I think Don Campeau had mentioned this in his talk, that all of a sudden they just stopped further research as far as working the mountains. So we had a whole series of sections, like in Alberta, from the Grande Cache area down to the Cardinal River area, which is, I think the last one they did in that line south was Mount Mackenzie. And we hadn't done anything with that data. So I got and about this time they'd found west Pembina and I knew there were Niscue, or this age of reefs that were at west Pembina, there were 2 or 3 exposures in the mountains, 2 in the Cardinal Pass because this has been reported, it's been in the literature. But nobody's actually been up and studied them because they're right on the face of cliffs and nobody can get up there and take samples out of them. Another thing that in the area where these reefs were found at west Pembina, your off reef areas, the Niscue had shaled out. Now we know that like, in the mountain areas and what we call the Jasper area, the Niscue is unrecognizable and

is called the Mount Hawk, the shale section. So when you've seen enough of this you'd like to put the picture together. So I dug through the literature as much as I could and found every section that had been written about the Devonian and I had it all plotted, exactly where the fault occurred on. Because each of these sections has been brought up by a fault. And the faults, I had them all named and I knew where they were by, most of the sections were located by latitude and longitude. So on the computer I had, where they were lat-long I could put them into our grid system as well and put them into townships and ranges. But what I did was turn it the other way around, the township and range locations, I'd turned into lat-longs. So then I had them all plotted on the maps and had the faults all lined up and I replaced, I put the faults all back to where they were, to where these sediments were before the became mountains. And the facees of each of these sections, I treated them just like a well. Then I could draw a facees map. And it turns out beautifully to see where your reefs are in the mountains and where your shale basin areas are and how they. . .like, the Cardinal River is a little neck that's open to the west Pembina area where these black shales came in through that narrow neck and were deposited out into that west Pembina area. And it just shows up beautifully on this map.

#204 BC: That must have been very exciting for you.

JM: Well, I had a preconceived notion of what it would look like. But that's the way it turned out. Now since then, Eric Mountjoy has done a similar thing. So the work is known to most of the geologists.

BC: This is the first time that this had been done though.

JM: As far as I knew. Actually I had talked to Eric several times about the base of the Devonian. What I wanted to see was what the Devonian rests on from west to east, through the mountains. But you see, he's seen a lot of these sections, he's studied a lot of the Devonian and I'm pretty sure he's noted what the Devonian was resting on, wherever it was exposed anyway. The problem is the base of the Devonian isn't always exposed. Where you do have it exposed it could be resting on Ordivishon??? or it could be resting on Cambrian. But what I wanted to find out was where the edge of the Ordivishon was.

BC: Did you ever find this?

JM: No, I didn't have time. But it could be done, and restored, restore the faults and so on and then you'd have your basin the way it was before the mountains were built.

BC: Sounds like a doctoral thesis, or 2 or 3.

JM: Fortunately, as I say, they'd promoted me to the Senate so I didn't have any, except for the metric thing I didn't have anybody bothering me. I could just go ahead and. . .

BC: As a scientist this must have been quite a pleasure for you, to have that time finally to put together all your different areas of knowledge that you. . .

JM: Yes, it was great. Then well, I did that work and several other little jobs. I went down to help some of the fellows in the Gulf Coast, in Texas and some in California. The thing being that I had studied the background of these areas and had a good idea where the Cretaceous reefs were in Texas. The Austin chalk, which became quite prominent, a lot of Canadian companies got into that play. There was oil in this chalk. There's also Cretaceous chalk, the Austin chalk is Cretaceous in age, in the North Sea as well and it

produces in the Norwegian sector. This Austin chalk in Texas, it produces fairly well for the first year or so and then it doesn't produce very well after that.

#256 BC: Why is that?

JM: The oil doesn't move to the well bore fast enough. In other words, it's got low permeability.

BC: Is this a problem that they will have or are having in the North Sea then?

JM: I don't know about the North Sea, how it's worked in there. But that's only one of the reservoirs though, they have other reservoirs. Whereas in Texas this Austin chalk was the great play. And that's the one that Hiram Walker, when they bought out Home, they made a big play in this Austin chalk and it didn't turn out very well for them. And numerous other Canadian companies had gone in there. I can't recall how deep it is but it's relatively deep, around 7,000' and the economics just aren't right.

BC: Although the oil is there. Are they now perhaps working on a way to get it moving more productively or is it possible?

JM: I don't know, chalk is a funny stuff. If you can fracture it, and I think a lot of this, the accumulations are related to fractures, fracture patterns rather than just being right through the whole formation. This is what I've heard anyway. I'm not saying that this is my idea, I haven't done that much work with the chalk. But the chalk is about the same as our speckled shales in Alberta here. And the speckled shales, one of the first markers that was found when they were drilling a well would be the first white specks as we called it. Now we always knew where the first white specks were because we'd take our hydrochloric acid and we'd. .w ell, you'd see the specks in the shale, little buff, whitish coloured specks. Drop it in acid and it effervesces. So you know you're in the specks. This is actually chalk but they're in very small amounts. They're little diatones or something that are in the water when the . . .

#301 BC: But not enough up here to bother at all.

JM: No. They didn't form chalk beds, like they did in the North Sea. But that's the part of the section they're in. So we can say that the help that I did down there was maybe get the company. . .I was more interested in the Jurassic anyway. But I don't think the company got into any of the chalk play. And just doing things like that. Eventually the metric deal was completed, I think in 1978 it was wound up and I had no more responsibilities that way. We had it all worked out in the time frame. And all the companies in the city had. We had meetings that we kept in touch with where we were in the conversion.

BC: Was it quite a. . .I think that we should really talk about that metric conversion of the oil business or the petroleum industry because that would be quite a mammoth undertaking.

JM: It was fairly well organized, there's no. . . Of course, you had quite able people. On the Canadian Petroleum Association group had set up this committee and Peter Moore of Shell Oil, a geologist with Shell, he headed up the committee.

BC: Was there problems because of the fact that there were an awful lot of American companies here and the United States of America is not converting?

JM: No. There were beefs all right but everybody got behind it and went at it. Because you

had deadlines, after a certain date all depths and wells were to be reported in metric.

BC: Did it cause problems or did it make it more efficient?

JM: I used to get pretty frustrated when I would run into a metric log for example and everything I was doing. . .because when you're taking depths off logs, that is the well logs, and you're working in the old system where say, 95% of the logs in the old system, the old depths are there and all of a sudden you get a metric one. Well, like most of the guys, like myself, I had a computer that could, a little hand calculator rather that I could convert from feet to metres.

End of tape.

Tape 9 Side 2

JM: And you could do this conversion quite easily.

BC: Were there advantages to having everything in metres or advantages in having things in the old system, which was the easier for you t work with?

JM: Well, due to the fact that most of your data is in the old system then there is no advantage. Actually it takes more work, you're doing more work.

BC: Even if by now, everything had been switched over to the metric system it still causes more work.

JM: Well, I'm talking as a working geologist now when I say, he's got more work to do, it's more time consuming for him to build a map because he's dealing with two systems.

BC: What about the accuracy of the metric versus the old system. The sizes, they talk often that it's easier to work in the old system because you can get smaller.

JM: I see what you mean. For example, the well samples were picked every 10' in the well. Now, that means to get close to that number or to represent that 10' section you'd say 3 metres would be the number to pick. Well, 3 is not a very good number to work with so the Conservation Board, they say, we just want the samples every 5 metres. So that means you're dealing with something in the order of 16'. So your accuracy then, is not as good as if you were dealing with 10' in a sample because now you're expanded to 16'. However, who's to say that you need 10' for accuracy because your well samples are representing an interval, the interval being 16'. You're not going to be as accurate to pick the tops unless there's a time break on the drilling time per foot. You see, it's all kept track of, the number of minutes it takes to drill a foot.

#040 BC: But you're not drilling a foot.

JM: Now, to drill a metre. But the time break will show.

BC: I was just wondering about American crews coming up for instance, drilling people coming up and they keep talking in feet and yet they come up and they've got to do it in metres. Were there problems there or are there problems?

JM: You'd have American rigs coming up possibly, but you don't have American crews. These are Canadian crews, they hire here, they wouldn't condone American crews coming in here. At least I don't think they would. Now an American drilling company

would send their rig up with a tool pusher but that's about as far as it would go, he'd need to get his drillers and roughnecks here.

BC: We sort of got off to one side but I think it is important to talk about, once the conversion was made, or in converting the problems that it showed. You say that it was finished in 1978.

JM: We had it set up to be that way. I think it was sometime in 1978 that the first wells were being drilled metrically anyway. Now I don't know about cement, we used to have 100 lb. per sack, what it is now. I haven't been on a rig so I don't know, I haven't been on one say, in the last 10 years. So what other conversions are made, out where the work is being done, is questionable. Questionable to my mind, I just don't know. But I know internally, like, reservoir engineering and production engineering are all worked in metric. The Board won't accept imperial measurements for well production for example. Your reservoir engineering work has to be presented in metric. And those are the presentations made to the Board. So I'd have to say that in that respect conversion is working and working well.

BC: When you were through working on that for Pan Canadian, as it had now become. . . . When did it become Pan Canadian, I don't think we recorded that on the tape? When you went in, it was Central Del Rio.

JM: No.

BC: No. It was Canadian Pacific Oil and Gas.

JM: Canadian Pacific Oil and Gas, then Central Del Rio, I think it was about 1973 that it became Pan Canadian. And they held a competition amongst the employees to name the company for he and his wife, or girlfriend.

BC: Who won, do you remember who won?

JM: It was a fellow by the name of Waheed, he was an Eat Indian, a great little guy. He came up with Pan Canadian something or other, Pan Canadian Oil and Gas but I think they went to Pan Canadian Petroleum because of the initials, PCP. It's close to CPR you know.

#081 BC: Oh yes, surely. Easy to work out in a logo. You can do funny things with it.

JM: Yes. But he wasn't married at that time, he recently did marry, he brought a young lady out from India. And now he's gone, he's back, I think he's in Saudi Arabia. I think that's about all I can say about the metric. I worked for awhile there with the boys on the west Pembina, where John Lemmon was the manager of this group and tried to help with the geophysics and what I knew about how these reefs were being formed. Initially we didn't know whether these reefs were Devonian in age or Niscue but my feeling had been they were Niscue and that's the way it turned out. Partly, I shouldn't say all entirely, because there was a period where they were both, the base of it anyway was Ayrton and then Niscue period on top of it. But then that's debatable, somebody would argue otherwise, but it doesn't matter really. The oil is in these reefs and you've just got to go and find it. And there's still you see, this well at Lodgepole that's blowing wild is from one of these reefs. So you can imagine it's kicking out up to 20 million a day of gas, this is wet gas and various sulphurs. So they're quite prolific. If you had oil in there you could easily

make 10,000 barrels a day out of it but of course, you wouldn't be allowed to but you could. The reefs are about 400' vertically and if you're in the oil column it's nearly all oil. I didn't do. . you see, with Pan Canadian's work in here, they didn't find one single reef. And they struggled and worked and sweated and really did the best they could but never could get the right land position. It was the kind of thing, the reefs were very small and covered in aerial extent about a quarter section, something like the Zama reef experiences that we had up there. So your seismic line had to go right over the top of them or you just didn't see it. So this required at least four lines a section. This is very heavily bush country and muskeggy. So you have to go in there and spend a lot of money to find them.

BC: Because there's still some waiting to be found obviously?

JM: It could be, I don't know whether they've criss crossed the country that wide. I'd like to see an aerial photograph of that area to see how many lines had been shot that way. At least 4 lines per mile.

BC: After the metric conversion was done, then you stayed really as a senior management geologist, senior geologist consultant with the others until you retired did you?

JM: Yes.

BC: When did you retire?

JM: The 1st of March, 1981. This coming March it will be 2 years retirement. I did go back and I worked 4 months for awhile with a little company called Allero Resources. I just found it a little too hectic. I was working harder than when I was in the last few years of retirement and working where the pressure is on all the time.

BC: Consultants normally, that is what it is isn't it, because they want you with something in a hurry.

JM: Oh sure. And they expect you to know it all. And I'm a very painstaking worker, I won't say yes to anything until I've looked at it.

BC: Yes, and you can't do that in a hurry.

JM: No. So I figured that I'd rather enjoy my retirement than work my butt off for Trudeau anyway.

BC: What I'd like to do is I'd like to stop the tape now.