

PETROLEUM INDUSTRY ORAL HISTORY PROJECT  
TRANSCRIPT

INTERVIEWEE: Robert A. Brown

INTERVIEWER: Aubrey Kerr

DATE: May 1982

AK: [begun in mid sentence, no introduction of Interviewer]. . . .A. Brown, Langham Court, Victoria, B.C. and today is Monday, May 24<sup>th</sup>, 1982. Bob, it's a pleasure to be here and talk to you. The purpose of this interview is to get some of your background, your reminiscences and some of the anecdotes that form part of your career. Perhaps we could start off by your telling me when you were born and where and a little background on your parents.

RB: Well, I was born in 1914, in January, in Montreal. My parents were both Montrealers. Dad's family on his mother's side had been amongst the early settlers in Peterborough but his immediate family moved to Montreal when he was just a boy following the death of his father who died quite young. Mother's people were in Montreal and Langeil???, south of the river. Both my grandfathers were Scotchmen, both came to Canada as immigrants from Scotland. So both sides of the family, I have a fairly strong Scottish background. I went to West Hill High School which is now no longer in existence as a senior high and then on to McGill and went through to acquiring a Ph.D. in 1939.

#012 AK: Now this West Hill High School, what part of the Montreal area was it in, Bob?

RB: It was in the northwest corner of Notre Dame de Gras, one of the English speaking wards of Montreal. It was an old High School built, I think, originally in '13 or '14 and then various bits were added on over the years. They added on the last nice bit, which I just missed, a new gym, swimming pool and so forth, the year after I graduated. I always seem to have missed out on these nice facilities.

AK: Then you chose McGill, could you tell me why you chose McGill to . . . ?

RB: Well, that's a strange story. I had spent a lot of time as a youngster at my grandmother's summer place and become something of a lover of the outdoors, so I wanted to get into something that would let me work outdoors, my first thought was to be a forestry engineer but the financial considerations for that career ruled it out, during the days of the Depression, I was in high school in 1929. So my next choice was geology and McGill had a good reputation of course, as a geology school and also it was financially feasible to go to McGill whereas to go to another university at that time, where I would have had to live away from home was just financially impossible. So it was partly choice and partly the hard economics of the thing that caused me to go to McGill. I'm glad I did though.

#027 AK: And you started right in then with a firm intent to pursue geology as a major then?

RB: That's right and that idea was reinforced by the first course I took, Geology 1, it was known as then and Thomas H. Clark was the professor and he inspired me as he did many people to really take up geology seriously as a career. He was a marvelous teacher.

AK: Is he still alive?

RB: The last I heard he is still alive and still active around McGill and active in geology.

AK: Very good. They your first summer out from your first year, what work did you get or what were you able to get in the way of work and what year was that by the way?

RB: The first year I worked on a Geological Survey party was 1934 and I worked with Dr. Hal Norman in the Shebugamu??? area finishing up the map area that John Mawdsley had started a couple of years before.

AK: [spelled Mawdsley]

RB: He was head of the geology department in Saskatchewan.

AK: Right. But prior to 1934 had you any summer work?

RB: Yes, I had the previous summer was the first job I managed to get and I worked as a counselor at a boys camp along with a number of my friends and there was no money in the job. We were supposed to work for our room and board for six weeks and at the end of three weeks I and two other got fired because we ate too much. This is true.

#045 AK: Right. And this was in the summer of 1933. Well then we didn't quite get clear what year it was that you entered McGill?

RB: The session of '32, '33.

AK: Right. Okay. And then '34 you were fortunate to go out on this Shebugamu???. . .

RB: With Dr. Hal Norman.

AK: But '34 was a very tough year in the survey. How did you manage to do that, could you give me a little background on how you managed to get a job?

RB: Well, I had applied of course, having had two years of geology by then, which made me eligible for a job in theory and I applied for a job and heard nothing, so I took a job working in a service station for \$1 a day. Then Norman, at the last minute was assigned some money from somewhere or other that the government scraped up and started to recruit a party. And unlike the usual practice we didn't start out until well on into June, I think it was pretty nearly the end of June and he told us when he met us in Oskalaneo??? River, the other student assistant and I, he told us that he had hired us because we were the only ones left. We weren't the kind of student assistants that he had hoped to get but he had to take what he could get at that late date. This was an encouraging start to the field season.

#060 AK: What river . . . .?

RB: Oskalaneo River was a town on the Quebec, Cochrane branch of the CNR, TransContinental.

AK: Oh the old TransContinental line.

RB: That was a jumping off place for. . . it's west of Lake St. John.

AK: How did you find your way up there?

RB: We took the train from Montreal.

AK: Who paid the fare?

RB: The Geological Survey.

AK: You got a travel warrant did you?

RB: I think they sent me a ticket, I don't remember just how that was, I think they sent me a ticket.

AK: but at least you didn't have to pay your way?

RB: No, we didn't have to pay our way. We had to bring our own sleeping bags though. The Quebec government used to provide you with good sleeping bags or blankets but the federal survey didn't. I had to bring my own and I had my cousins, World War I, officers sleeping roll with blankets and what not in it. I was cold.

AK: And you tented?

RB: We tented. We started out by canoe from Oskalaneo River, going through the Baskaton??? Reservoir and working our way towards Shebugamu. We got to the Baskaton Reservoir and stopped at a Hudson Bay post and Dr. Norman took ill and had to go back to Oskalaneo River and I stayed for a couple of days with the Hudson Bay men, two very interesting fellows and the cook, the canoe man, and the other student assistant went on with the canoes and then a few days later, we had a deal with the Air Force, who were doing a photographic survey in the Shebugamu area, and they picked Norman and me up and flew us into Shebugamu Lake. And so I didn't go all the way in by canoe and eventually we were all flown out by the Air Force.

#080 AK: And what about Dr. Norman?

RB: He was okay, it was some minor thing and he got some treatment and he was okay and was fine the rest of the summer. Incidentally the canoe man who took us in was a rather famous fellow by the name of Bill Ojig???. He was an Indian, a full blooded Algonquin from Manawanke, north of Ottawa there and Bill was one of the finest men I ever met and I owe him a great debt for learning a few woods skills. Bill was 60 some years of age that summer and he had never missed a summer working as a canoe man for the Geological Survey since he started in 1913 and he worked several seasons after that. Bill was just the greatest guy and there are several lakes and rivers and what not named for him, cross Canada.

AK: Right. And you were of course, on the pre-Cambrian Shield and was this your first exposure to crystallines??? and pre-Cambrian?

RB: Well, in that sense yes. Of course, at McGill we had field trips into the Laurentians and the Appalachians and the igneous geology around Mount Royal itself. So we weren't completely green. The other student assistant was Hughie Maclean from Campbellton???, New Brunswick, who later was Chief Geologist at Buckins in Newfoundland and unfortunately he was killed young in a plane crash there when he was doing work for Buckins. And it was his first season too, we became firm friends as a result of that summers work.

#099 AK: You find out the innermost secrets of a man on a field party and you either become fast friends or you become mortal enemies. I don't think there's any in between.

RB: There's nothing in between I think and Hughie and I got along beautifully. I got to know some of his family later on and it was a loss to Canadian geology when he was killed as a

very young man.

AK: Okay, so then you returned to McGill for the academic season and then the summer of '35 was the summer which Dr. Wickanen??? told me was. . . and I knew also from other people, that that was the big Bennett blast, where Bennett was going to blast his way into prosperity by spending a million dollars. Were you one of the beneficiaries of this?

RB: No that year I worked for the Quebec Department of Mines, the Quebec Bureau of Mines it was then. And John A. Dresser was their Chief Geologist at that time. Who had an office in Montreal and I was interviewed by him and hired and assigned to a party working in Gaspé under Hal McGarrigle, Mac McGarrigle???, who spent most of his career with the Quebec Mines Department.

AK: Would he be any relation to John McGarrigle who is now editor of. . .?

RB: He's John's father.

AK: Oh, is that right?

RB: He's John's father. Mac's first wife and my first wife, they grew up in the same country. Up in the St. Andrews east area, along the North River and the Ottawa River. And Mac and I became very good friends and I knew John McGarrigle when he was a little kid. As a matter of fact, I saw him two summers ago and reminded him of an experience or remark he made one time when I was having dinner with Mac and his wife and family. John made this remark about the size of my nose, embarrassing his mother no end but his father and I thought it was hilarious. I don't know whether he really appreciated the story when I told it to him a couple of summers ago or not but he was nice about it.

#124 AK: Oh yes. Well he's a very hard worker. This gentleman that hired you with the Quebec Bureau of Mines, what kind of an arrangement did you have there. Did they supply you with transportation and . . .?

RB: Yes. Let me see. I had a car by that time, a very ancient Chevy and McGarrigle had some work to do around Drummondville and so on early in the season, cleaning up a few odds and ends of a party he'd had there the year before. So he hired me and my car early on and we spent a couple of weeks in the Eastern Townships region and then drove down to Gaspé, which was quite a drive in those days on the old Perron??? Boulevard, gravel roads and this ancient car which sprung leaks in the radiator every so often. But it got us there and back.

#135 AK: Was this during the regime of Duplessis or was that just before Duplessis???

RB: No, that was in the early days of Duplessis and ??? Gagnon was Minister of Mines at that time, he later became Lieutenant Governor.

AK: And this old car was the property of the government of . . .?

RB: No it was mine.

AK: Oh, it was your own personal car?

RB: My own personal car.

AK: Did you get mileage?

RB: Yes, ten cents a mile. I made money on it.

AK: And incidentally, I didn't ask you, how much your salary was?

RB: I don't remember. The first year with the Geological Survey of Canada, they paid \$75 a month. I remember I came back with my summers pay intact, paid my tuition fees at McGill and had \$5 left over. And I said, what am I going to do with that \$5, I've always wanted a bowler hat so I went down to St. Lawrence Main Street, where you could buy men's clothing cheaply and got a good bowler hat for 5 bucks, which I wore all the rest of the time I was at McGill off and on.

#148 AK: So you had this experience in the Gaspé. Were you in the Devonian beds or...?

RB: Yes, we worked along the Rivière St. Jean???, in Salurain??? and Devonian rocks mainly. And that was another influence that got me into the soft rock side. McGarrigle of course, was a paleontologist and stratigrapher and a very good one and he was the kind of man who taught his student assistants as we worked. So it was a tremendous learning experience. I fell in love with Gaspé and the people there. Because we had a lot of local people working on the parties. I also got to know Dr. Islwyn Jones, who had a party on the York River immediately north of ours.

AK: He became the Chief Geologist for the department and he's recently died.

RB: That's right and he also became a personal friend over the years and to him also I owe quite a debt for learning experience. [Interviewer asked for spelling of first name and it was given] Welsh. Winwilock??? was his second name, I. W. Jones he always signed himself.

AK: Right. I knew him well.

RB: A mighty fine man.

AK: Yes. Did you run into Dr. Wickandone??? at all in those...?

RB: Not at that time, no.

AK: My understanding was that he did spend some time down in the Gaspé.

RB: That could well be, I don't recall meeting him until many years later in Calgary.

#170 AK: He started with the Survey in '31. We should put on tape here that you actually got your Bachelor's Degree in 1935 and that was a B.A.

RB: That was a B.A. with geology as a major.

AK: Right and did you take any mining courses at all during this period?

RB: Not mining engineering courses, but courses in Economic Geology and that sort of thing from J. J. O'Neill and Jimmy Gill. It was a pretty broad general course that I took.

AK: So at the end of the 1935 field season with the Quebec government, did you have any feeling about going to another university for your post-graduate work and get the broader education.

RB: Yes, I would dearly have loved to do that and Dr. Clark was very keen on me doing so but again, these were the Depression years, I couldn't finance it on my own and scholarships and student ships and what not were few and far between, so I decided to stay on at McGill, where I did have a chance of getting some scholarships and eventually I had three to finance my way through graduate school.

- #189 AK: So you started in the post-graduate, did you proceed to a Masters degree or did you proceed directly to the Ph.D.?
- RB: No, I took a Masters degree and got that in '36.
- AK: Oh, you just took one year for it.
- RB: I had good enough grades in under-graduate that they allowed me to do in one year.
- AK: And what was your thesis?
- RB: It was on an area near Granby, Quebec, primarily dealing with, what was then called the scillary??? formation, which had been named by Sir William Logan. It's a lowermost ordivition??? slated sandstone formation.
- AK: Is that down in the beakman??? town?
- RB: Yeah, it would be around beakman??? town age. And it trends in a broad belt from Gaspé roughly northeastward up to Leavy??? I just did a small area around Granby and tried to work out the stratigraphy and the structure.
- #202 AK: Okay, so 1936 saw you with your Masters degree and you were saying earlier that at the last minute you got a frantic call to go to work for the Geological Survey. Had you made inquiries about other jobs in other jurisdictions such as the Quebec government or had you. . . ?
- RB: Yes, I think I had an offer from the Quebec government but I wanted the experience of the Shield again because I hadn't made up my mind which way I was going, mining or oil. And this job came up in Manitoba and so I elected to take that and see a bit more of the country because I'd hardly been out of Quebec at that time. But that was sort of an abortive effort because early on in the field season I had an accident, packing over the backbone of ??? portage, I sprained my ankle very severely, tore both ligaments off the ankle bones and had to be, eventually flown out. I spent most of the rest of the summer on compensation in Winnipeg and the Manitoba compensation board wouldn't let me leave the province until they were satisfied that I was healed up and cured.
- AK: Did they pick up your board and room?
- RB: Well, they paid the usual compensation, a portion of whatever it was I'd been earning during the summer, which left me a little short that fall.
- #224 AK: Right, so your field season was really chopped off. You didn't return to the field then?
- RB: No, I didn't. That was a hard luck summer all around. Several people were hurt or fell ill and had to leave the field before the season was over.
- AK: Could you give us just a little background for the record here, of the scrambling and the name of the Party Chief and some of the other people that were on the party that have moved on into the oil and gas business?
- RB: I'm afraid I don't remember too many names except Ash Johnson who was the chief geologist in charge of the operation. He had a base camp set up at Barons River and then he had sixteen sub-parties out from that. Stan Maloof??? who was a fellow student in geology at McGill, and I had two of the parties, and at the end of the month when we checked in. . . we had to make a map and a brief report at the end of every month. . . and

of the sixteen sub-party chiefs who were out, Stan and I were the only two who had recognized that, generally, in that country, there were two ages of granite. Two distinct types of granite and two distinct ages of granite and everybody else had simply mapped granite. I don't know why this was, I think it was because the party was set up and the funding came through so late that more experienced people weren't available to head up these parties. I know one party chief was a mechanical engineer who'd had one course in geology.

#248 AK: What was the purpose of this massive attack? Was there some geological problem that had to be solved?

RB: Well, there was a huge area of Shield, starting at Barons River and running north, up the east side of Lake Winnipeg and north towards Gods Lake. Mine was the second furthest north party and we started on Stevenson Lake which is roughly halfway between Norway House and Gods Lake, which a going gold mine at that time. And there was one other party north of us. And the area was virtually unmapped and knowing that there was gold at Gods Lake and there had been traces reported here and there, the Survey decided they better do this vast reconnaissance. I think it was the first big reconnaissance job like that, that the Survey undertook to the best of my knowledge. And they tried to reconnaissance a huge area to get some knowledge of what was there.

#263 AK: But you see one of the things that was very important, the only thing that was of any economic importance in those days was gold.

RB: That's right.

AK: I mean, all the base metals were not worth anything and oil and gas was not even thought about, so you really had gold. And I remember a lot of work being done in British Columbia on this, just simply looking for gold deposits and of course, to bolster the country's economics.

RB: Incidentally, my assistant that summer was fellow called Graham Murray, a student from University of Manitoba, he took over my party after I was hurt and had to quit. And Graham and I found a tiny little vein about 1/4 of an inch wide with free gold in it on the south shore of Stevenson Lake, I can't remember exactly where now but it's in the records somewhere probably.

AK: You didn't take any samples.

RB: Yes, we sampled it, but as I say, it was a little stringer, not more than 1/4 inch wide with a few little specks of free gold in it. Most of that country was muskeg.

#282 AK: So you limped back from Winnipeg when you got your deal made with the compensation board and returned to the campus.

RB: Well, I started in that fall on a thesis area, again out in the Eastern Townships, partly because Clark was interested in that country, I was interested in it. I had relatives living at Knowlton with whom I could stay and make it a base of operation. So I started on a doctoral thesis, field work, that fall and in those days, graduate students weren't expected to start lectures until well on in October. So it gave me two or three weeks in the fall to

work and then again, a well or two in the spring before I went out on a government party again.

AK: Did you have to lecture?

RB: No.

AK: You were a lab assistant?

RB: I worked one term as a lab assistant to Dr. R. P. D. Graham in the blowpipe analysis lab, which he ran. That was because I held the F. D. Adams scholarship and that involved being a lab instructor in the blowpipe lab.

AK: That was one of the requirements.

RB: That was a requirement, yes. It was one of the few paid teaching jobs there was. They didn't use graduate students to teach in those days like they do now. The professors for the most part took their own labs.

#307 AK: So you had. . . with this scholarship, that kind of kept you alive then for . . . ?

RB: Yes, that saved my bacon that year.

AK: Because you hadn't come back from Manitoba with a big enough grub stake.

RB: Nowhere near.

AK: But here again, from an economic standpoint, you felt that you pretty well had to stay at McGill to . . .

RB: Yes, and by this time I had made friends there and I knew the staff and I realized that it was a good school. We had men like Jimmy Gill, who already had a fine reputation as a consultant and as a geologist and a teacher, Tommy Clark, and he was my supervisor for my graduate studies. Out of 12 graduates students in geology, I was the only one that was on the soft rock side, I was the only one that he had to worry about so I got excellent supervision and attention and instruction. F. F. Osborne, who later taught at Laval was petrography and petrology???, a very brilliant man. J. J. O'Neill was the head of the department. And I guess that was about the staff. And R. P. D. Graham, who was at that time, one of the best mineralogists in the world.

#331 AK: So we move on to 1937. Did you take two years to do your Ph.D.?

RB: I took three actually.

AK: So you didn't get your degree until '38.

RB: I got it in '39 finally. The session of '35-'36 I got my Masters, '37, summer of '37, I can't remember what I did. . . . Oh, I'm wrong, '35, I was up in northern Quebec with Graham MacKenzie for the Quebec government, '36 with the GSC, '37 I went to Gaspé with McGarrigle. Yes, I missed a year there, sorry.

AK: Well, that's all right, it'll be on the tape..

RB: Sure you can sort it out after.

End of tape.

## Tape 1 Side 2

RB: [in mid sentence]. . . and our cook and our canoe man were French, they all spoke some English. Graham MacKenzie and I were the only two English speakers. I tried to talk French, to improve my French, but these students and the cook and the canoe man all spoke English and they wanted to speak English, they wanted to improve their English. They were more keen to improve their English than I was to improve my french. So I didn't speak too much French with them. When I got down with McGarrigle a couple of years later, as I say, we had a couple of packers who spoke no English, and I had to talk French because I worked with them a lot and my spoken French then became fairly fluent and I could understand quite readily. Before that I could understand only if French was spoken slowly and clearly.

#008 AK: So you had to learn, you might call it Jual???, or a form of. . .

RB: Well, these two packers spoke. . . it wasn't Jual, no, but it was a kind of archaic French, particularly the one from Matan??? county, which had, always, up until then, been a very isolated area.

AK: Was this Brittany?

RB: Well, I imagine. . . a lot of the old French. . . you used to hit this in Quebec, and you still do in rural areas, old Franc forms and old words that came across with the early French settlers, perfectly good French, but not current in France today, but still current and good French in parts of Quebec. But there was never any pressure, when I'd go into the office of the Bureau of Mines to report in and start the season, I always had a little meeting with A. O. Duphraise??? and he always spoke English to me, he never expected me to speak French. Of course, his English was perfect. And the stores men and so forth, knowing that I was an English speaker, always spoke English, there was none of this pressure that you sometimes encounter now to speak French.

#019 AK: Right, well that's an interesting side light that I wanted to explore with you. Well let's go on then, you were working on your Doctor's thesis then, were you able to combine your field work with you Doctor's thesis?

RB: Yes, I had tried a Doctor's thesis earlier which was not accepted by the outside reader, it was accepted by the university authorities, which caused some problems, to me and to the university people but we didn't fight it. And I just decided to try another one, completely divorced. And Jones of the Quebec Bureau of Mines arranged for me to have this area on a map which made a good thesis area. It was a classic area that had been worked over many, many years earlier by Dr. John M. Clark from New York. It gave me a good thesis with paleontology and stratigraphy both and a little relationship to the oil business because one well had been drilled in the area. And of course, just to the west were the hundred, odd wells that had been drilled many, many years before in Gaspé.

AK: Oh yes, looking for these. . . follow up these seepages on the anticline???

RB: Yes, well the seepages, as a matter of fact, most of them are in sinclines??? and almost all the wells that were drilled in that early period of about 1880 to about 1900, there was

something around 100 wells drilled by the Petroleum Oil Trust and various other, mostly English companies and almost all of them were sighted very near the trough of a sincline rather than near the crest of an anticline, as we know now.

#035 AK: I don't think it would have made much difference, would it Bob?

RB: I don't know, Gaspé has always been a mystery to me. I've seen these beautiful seeps, I've seen OpO<sup>2</sup> ??? . . . I think it's 17 that's still flowing oil and people in the days of Model T fords would get into the woods and run out of gas and they'd take the crude oil right out of the wellhead, bail it out with a bucket, right out of the standpipe and put it in their tank and get home on it. And I've tried it in a cigarette lighter and it will burn better than lighter fuel in a cigarette lighter, except as the light ends??? evaporate you are left with a lighter full of solid wax.

AK: So there's plenty of light ends in it. Well, that's interesting, maybe there is something there yet, although one can only hope. So we've gotten 1938, with your own field party for the first time. Did you have to prepare a report when you finished your field studies?

RB: Yes, I did a report for the government on that and I wrote my thesis on that. My work was incorporated with work that McGarrigle published several years later, which combined his many field seasons, some of Jones work and mine into one big report on the geology of Eastern Gaspé. But my publication was just in the usual little preliminary report that comes out at the end of each field season.

#051 AK: Was this report published in English?

RB: English and French like all the Quebec reports yes. I wrote it in English.

AK: And so it is something that is in the archives.

RB: Yes, and McGarrigle I think, mentions in his report that the field work in that part of Gaspé was mine.

AK: Good. So then we move onto 1939 and did you say you finally got your Ph.D.?

RB: In the spring of '39.

AK: And that was when you defended your thesis?

RB: Yes. I also got married about a month before I graduated, that is formally graduated, and as usual, as most of us were in those days, I was broke. An uncle of mine had offered to help me out if I was in a bind and I borrowed \$125 from him and that's what I got married on, didn't have a job and a week or so later I had three jobs offered me. One, at a gold mine in southern Quebec, one with the Geological Survey of Canada, a permanent job and a summer job with the Quebec Bureau of Mines again at Anticosty??? Island, where I started off as Party Chief and then a professor from the Sorbonne when he was free of his professorial duties, Edgar Roch???, came out and he took over as Party Chief. And I had arranged with the Quebec Department of Mines that I could leave a month or so after Roch arrived on the job and take this supposedly permanent job at Mole??? River Goldmines, a placer??? prospect, near the town of Compton???, which is 13 miles from Sherbrooke in the Eastern Townships region. That really thrilled me, to work in a placer gold prospect.

#072 AK: Was there placer gold there?

RB: Oh, yes, McGarrigle had done a survey of the area years before and found good gold values at a shallow depth on all the bars in Mole River. We had a huge block of ground blocked out averaging ten cents a yard, which was economic placer mining in those days.

AK: Right. And that was when gold was about, what, \$15, \$18?

RB: Oh no, \$20.67 an ounce it was.

AK: Right on eh. I think we better go back to the Anticosty thing because that island has always intrigued me. It's been the sight of many different adventure in drilling. There have been oil seeps there on the Jupiter River and yet I'm surprised that the Quebec government would be allowed to go on there because it was my understanding that the acreage over the entire Anticosty Island was held in fee by that lumber company. Could you give us a little background on that?

RB: I learned a little about the history of Anticosty when I was there. It was originally a signorial??? grant to one of the early French governors and for the moment I can't remember which one. Then years and years later, Megne???, the French chocolate king who became a multi-millionaire, who accidentally found out how to make [a french name, all I caught was chocolate], the only chocolate that turns white without being old. And Megne developed this tremendous business and became a multi-millionaire and the title to Anticosty Island was still with the heirs of whichever one of the ancient French governors had originally been given this signory??? Megne dickered with them and bought the whole island from them.

#092 AK: Minerals?

RB: Yes, I think everything.

AK: Lock stock and barrel.

RB: Yes, because it was a signorial grant and mineral rights and everything went with a signorial tenure. Megne built a spectacular chalet, he built a town, he imported artisans, he put in a little hydro-electric plant, he built a little railway, he built a dock, he brought these people out, he imported all kinds of animals and he used it as a hunting and fishing preserve and many of the rivers, good salmon rivers, he built camps that he would go visit. There were several on Jupiter River, which I traveled on later on that summer. The chateau has since burnt down but it was still in existence when I was there and I had a tour through it, it was a fantastic building with a secret staircase so that Megne could visit his summers lady love, of that summer without embarrassment. He had a secret staircase from his dressing room up to her bathroom and bedroom. Anyhow, when I was there, Canadian International Paper Co. had bought the island from Megne's heirs. They had to guarantee work for all the people on the island, some of them were the people that Megne had brought over or their descendants. Some of them were old families that had been on Anticosty for I don't know how many years, generations. The only people who weren't CIP responsibility were a few government radio men and lighthouse keepers, federal employees. CIP had never succeeded in making a successful pulp wood operation on Anticosty for various reason which I needn't go into. But they had spent millions and never been able to get any worthwhile amount of pulp off. So they were operating it as a

fishing and hunting preserve because the island had its own fish and game laws. Megne had imported deer and there were no natural predators for deer so they'd overrun the island so deer season was open for does and bucks the year round. And the standard meat in the hotel there, in Port Megne, which was operated by CIP in the days I was there was venison. And they had a cannery where they canned venison. You didn't dare take a salmon, that was all reserved for sportsmen, who came and leased various rivers for a period of time to fish salmon. We could take all the trout we wanted and they were beautiful sea run trout. I'm not saying we didn't ever get a salmon but we were very cagey about the ones we got. The company helped us greatly, they let us use their courier boats to get up and down from river to river and so on. The geology of course, was tremendously interesting. Roch, when he finally arrived from Paris was a fine geologist and a fine paleontologist and a great man to work with. But when the . . . I had left in August to take this job as had been arranged with the Quebec government. . . war broke out in September and Roch was supposed to work to the end of September. As soon as he got word that war had broken out, he took off, back as a loyal Frenchman to serve in the French army. And the party work was finished up by Jean Lavale??? who now I think, is a geologist in Quebec City and a member of CIM, I've seen his name there. He was a student and he had to finish up the field party so from the point of view of the Quebec government it was a rather unsuccessful field season.

#136 AK: Did you run into any oil or gas seeps?

RB: Never saw a sign of any oil or gas seeps there. We never got over to the north side of the island where the black pecuminous??? shale outcrops. Since then of course, I've had something to do with Anticosty at some remove. I know that wells have been drilled there but unsuccessfully. There is a very faint, little gentle anticline in the bay at Port Megne which you can see at low tide, but I don't know, it's not very impressive.

AK: My understanding was that nobody could visit Anticosty unless they had prior permission so to do.

RB: Well, you had to get permission from CIP in those days.

AK: You couldn't land and just say, here I am.

RB: No, you had to arrange with. . .

AK: Very heavy restrictions, but Imperial took on some responsibilities on the oil and gas from a promoter in Montreal who had the whole thing. . . .

RB: That was maybe Payette???

AK: Payette, that's the one.

RB: Payette, who had all of Gaspé sewed up for years and years.

AK: That's right, he had all of that acreage and Imperial took a farm out. And the fellow that will probably give me some help if he's still around is Bill. . . the chap that retired from Imperial many years ago, he was the Chief Geologist for Eastern Canada.

RB: Bill. . . , not Bill Gallup, Roloff???, Bill Roloff, yes.

AK: Yes, Bill Roloff, who I've talked to in Toronto but I haven't taped him yet.

RB: Yes. Bill could tell you all sorts of details about that.

#156 AK: Okay let's move on then, as you say war broke out. You had gone to this placer operation, how did that turn out?

RB: Well, I think it was potentially an economic enterprise. The management was extremely amateurish and the financing of the operation even more so. So just about the time when we should have been starting to build the dredge that had been designed for us by a former placer mine engineer, the company ran out of money. On a Wednesday at noon that manager said, as of Friday, you're through, we've got enough to pay you till the end of the week and that's that. No pay in lieu of notice or anything and I was out on my ear.

AK: That was your first experience with the cold, cruel world.

RB: Well, not exactly but it was my first experience of that kind, having a job die under me. And then again, the good old Quebec Department of Mines came to my rescue and Jones got me a job with E. Obert??? de la Rue???, a French-Swiss, who had worked for many years for the Rothschilds and had taken a contract to map up in the Melorriere???, Manawanke??? area for the Quebec government. And I was sent up there as his assistant, co-chief of party or whatever they called it, I don't recall.

AK: That was getting pretty late in the season though?

RB: No, because I got fired in April.

AK: Oh, the April of the following year, April of '40. So you had a winter at the placer.

RB: At the placer mine and a very interesting winter it was. As I say, we proved up a huge volume of gravels, averaging 10 cents a yard, we'd find the odd nugget even and lots of colours. But the whole operation was amateurish. Then I worked around Melorriere and Manawanke, that area with Obert de la Rue and in the fall went rustling for a job up in the mining country. I had, had an offer in the spring of 1940 from an oil company in Taber called Franco Oil, I think it was and they were going to take me on. I'd be hired by them and I was supposed to move out to Taber. This was great, I was finally going to get into the oil business which was what I had wanted to do all along. But something happened in Europe, I can't remember exactly what, that threw the financial situation into a complete panic and Franco had to abandon all their plans and with it the hiring of R. A. Brown. So I went to work again for the summer for the Quebec government and in the fall went rustling, as they called it, for a job in mining because their were jobs in gold mining. And that was still a time when gold mining was considered an essential war time industry and all geologists and mining engineers were being asked to stay with gold mining rather than enlist.

#203 AK: Yes, this was to keep the balance, the gold foreign exchange balance. This Franco outfit, do you recall the name of the person who contacted you?

RB: No, I'm sorry, his name is gone.

AK: It had nothing to do with that trust company that was very active in the prairies. . . .

RB: I really don't know too much about it. A few years the company's name was still on the books.

AK: Just a couple of personal notes here before we wind up for the evening. You were saying that you married your first wife in '39, what was her maiden name.

RB: Her name was Shaw, Hilda Shaw. Her father was a General Practitioner at St. Andrews

East for many years and later ship surgeon on the lady boats, trading down to the West Indies. We had met in the fall of 1930 when we were in our last year of high school at a Halloween party and neither of us were ever interested in anybody else from then on. We became formally engaged in about '37 or '38 and got married, as I say, just before I formally graduated. You were also asking on a personal note about some of the other people who were in graduate school with me at McGill. Maybe we could just go back a little to that.

#231 AK: Certainly I would like you to do that.

RB: There was Bernard Keating, who was one of the geologists who helped to discover the mineral deposits at Bathurst in New Brunswick. He had previous to that worked for Sigma in northwestern Quebec as a mine geologist. There was a fellow called Frank Buckland who was of a mining family from B.C. I think Frank is now dead. He was considerably older than the rest of us. And there was Stan Maloof??? who has been active in mining and still is in Quebec and Ontario, mainly in Quebec, I understand he's quite a promoter of mining ventures. There was a fellow called Ken Honeyman??? who later became a consulting geophysicist working out of Ottawa, after having worked at various other jobs and Ken is no in very bad health. I'm still in touch with him and his wife. There was Adam Moss, who became Chief Geologist for Iron Ore Company. Let's see who some of the other were. . . . Johnny Rittle??? who was also connected with mining in northern New Brunswick and taught at Carleton.

#251 AK: What about some of the fellows that might have got into the oil and gas game?

RB: I don't think any of them did because they were all on the hard rock side in the mining. I was the only fellow interested in stratigraphy during those three or four years, of the graduate students. So most of them went into mining. Oh, Nowers??? Asbury who was geologist at one of the big asbestos properties in Quebec was another fellow. Heath Gray, Richard Heath Gray who's just about to become President of CIM, he was a classmate in those years.

AK: Were you aware that he had a very short but stormy tenure out here, I think he was either with the Survey or something . . . but he worked one season under George Hume???

RB: No I wasn't.

AK: Yes, interesting that he did have a very short period and then he returned to the Alcan thing and he's a consultant now.

RB: Those were some of the fellows that I was with, I can't recall all of the names. But they're all fellows who have gone far and done well in the geological field in Canada.

AK: What about some of the people that are on the staff right now. There are a couple of names that are rattling around in my head that I can't remember.

RB: I'm out of touch right now. Tommy Clark, I still correspond with him about once every two years or so about something or other. But the rest of the staff there, I don't know.

#277 AK: Okay, when you were on this placer thing, you had your wife with you and you lived in the town.

RB: We rented a house in Compton, from Kings Hall School, which is a famous girls private school.

AK: What was your salary then?

RB: I did pretty well, I was paid \$180 a month. That was good money for those days.

AK: What was your house rent, do you remember?

RB: \$20 a month or something like that. It was a beautiful big four bedroom house on about half an acre of land and Compton was a lovely little village to live in.

AK: You lived like a lord out there.

RB: Oh yes. I traded at the local store which was operated by Prime Minister Louis St. Laurent's brother and his sister was the post mistress at the time.

AK: So it was kind of a jolt to you and your wife then, when you were told that was it. Did your wife continue with you up. . . did she go with you on the field party or did she stay in the house?

RB: That following summer, no. We moved back with my folks for a few weeks and then I got this job with the Quebec department and Obert de la Rue wanted his wife to be with him so our two wives took a little tourist cabin on Lac Castor ??? and they stayed there for most of the summer.

AK: I think probably we'll stop here, the tape is just about finished. This is the end of side 2 of cassette 1 with Bob Brown and we'll adjourn until a later date. Thank you Bob.

RB: Well, thank you Aubrey, I feel honoured to be allowed to participate in this venture of yours.

## Tape 2 Side 1

AK: . . . in Victoria and today is May 27<sup>th</sup>, 1982 and we're in Bob's residence on Langham Court. Last session you had just parted company with your placer operation and you were heading up back with the Quebec Bureau of Mines. Could you briefly outline your summers work, where you worked out of, and also when your field season ended, whether you had to write a report? Just a few details on that.

RB: Sure. We were mapping in the Grenville province, in the area around on the Gatineau River, the headquarters of the Gatineau River, some of the reservoirs there, Mont Laurier, Manawanke, were the towns in the area. Then when that was over, I went looking for a job and caught on with a company called Pandora in the Cadillac camp, worked with them as a sampler first of all and then as assistant engineer to Rider Sturon???, who was the mine captain, a Norwegian engineer. The following spring I heard of an opening at the O'Brien Mine, which was more likely to be a permanent job and I applied for the job and got it. Worked there til June of 1945.

#016 AK: Both of these operations were obviously gold because this was during the war and there was a great demand for gold to bolster the balance of payments. Was both the Pandora and the O'Brien operations underground?

RB: Yes, they were both hard rock, underground mines.

AK: How deep would they be?

RB: The Pandora was shallow, it was . . . the three shafts that were operated were only down to 500 feet and because of the deep overburden there was no 100 foot level, it started at 250, 375 and 500. O'Brien, when I started was down to the 2,000 foot level and while I was there we sank down to the 2,500 and just after I left, they completed down to 3,000 feet and I'm not sure if they ever went any deeper or not.

AK: This O'Brien mine was held and controlled by the O'Brien family who lived in Ottawa. At that time do you recall whether it was a publicly listed company?

RB: Yes, it was. The O'Brien family had retained a controlling interest but they had gone public because of the possibility of getting hit hard with death duties if all the stock had remained in the family. At least this is what we heard. We saw very little of the O'Brien's themselves, the general manager of the O'Brien complex was a man named Allan Scott, a very fine man and a very fine geologist. The mine manager was Harry Sparks and I must say that O'Brien was probably the best managed company that I have ever run across. It was a small operation, about 125 tons a day, but high grade gold ore of course, so it was a very profitable operation.

#033 AK: Maybe you could just outline how you found out about the O'Brien opening and give us a little bit on that and then mention a chap that we both know very well, I'm not sure he's still alive, Freddy Burton, who later got involved in the oil patch through Almanex???

RB: Right. I had made friends with a chap in the town of Cadillac through the fact that we both attended the same church and he was a friend of the geologist at O'Brien, a man

named A.P. Bevan???. He heard that Dr. Bevan was quitting and tipped me off that an opening might be available so I applied and got the job. Freddie Burton had been a field man for O'Brien and he was offered the job, he had left them a short while before, but he was doing so well in selling equipment to government offices in Ottawa, because of the rush of the war that he couldn't afford to take the job. He would have had to make more than a mine manager was making, so he didn't get it and I did. I was cheaper help I guess.

#044 AK: And you position was what?

RB: Mine Geologist.

AK: And that involved. . . .?

RB: Mainly keeping track of the geology as it was exposed with new development underground because O'Brien had a continuous ongoing development program.

AK: And did this mean constructing maps in 3-D to try to portray the . . . .

RB: Yes, I did some of that. And of course, we kept an updated set of level plans and cross-sections normal to the strike of the veins every hundred feet. They had to be brought up to date on a weekly or a monthly basis. We surveyed every two weeks and brought everything up to date. Bais??? Jackson was the engineer and a chap called Dick McVean??? was the assistant engineer. Later on the assistant engineer left and so I took over his job and became Geologist and Assistant Engineer. And I think it was the second year I was there, O'Brien decided to go back into exploration, which they had not been doing for a couple of years and run it from the mine office instead of from head office in Ottawa. So I became their field geologist as well, so at the end of my career with O'Brien I had three jobs.

#058 AK: Did this field work entail going some distance away from the mine operation itself?

RB: Yes. I stayed within the province. We looked at numerous properties that were offered to us. We had prospectors out several summers and I supervised their work and then in 1944 or 5, somewhere about there, O'Brien took on a property down the river from Quebec City, in an old signorial grant where there were prospects for titanium. Titaniferous??? magnetite deposits and I did some work on that, prospecting and assessment work just shortly before I left.

AK: And that of course, is one of the real strategic minerals for the war effort.

RB: The big titanium deposit that's now operating in Quebec was found about the same time and was more readily exploitable, so I don't think O'Brien ever did anything with their property. What they did do though, and why the mine continued to operate through the war, O'Brien had a lot of high arsenical ore and had to take the arsenic out and they had accumulated a large stockpile and arsenic became an essential war mineral. So O'Brien was put on a war time essential mineral basis. And everybody was frozen in their job, even the army couldn't take people away from O'Brien. This was how they continued to operate. They became primarily an arsenic producer, although of course, they had to produce gold too.

#074 AK: So arsenic was the tail wagging the dog so to speak. Three things, first of all, what kind of a salary schedule did you have at O'Brien?

RB: Well, I started off at the regular mine geologist standard salary of \$150 a month. . .

AK: Which included expenses or did you?

RB: No that was a straight salary but I got a house on the company townsite, a 3 bedroom house with electricity, heating and what not subsidized, and I got it for \$18 a month and a man looked after the lawn cutting and so forth so it was a pretty good deal that way.

AK: Inside plumbing?

RB: Oh, yes, it was a nice little house and then somewhere along the way, they insulated all the houses which cut my fuel bill in half.

AK: What were you burning?

RB: Wood and coal

#084 AK: The second thing was, what was your main means of transportation, rail or air or just what was it?

RB: The highway was through by then from Amos??? to Val D'or??? to Noranda, the railroad ran through of course. Very few of us owned cars. I used to drive Harry Sparks car, the mine managers car, he had a special priority for it of course, because it was used as an ambulance occasionally. And very often . . .he didn't like driving and I drove that many times on trips when he had to go somewhere. But I never had a car of my own when I was up there, very few of us did.

AK: So that old car that you had down on the Gaspé, it. . . .

RB: I got rid of that some years before. There was no airstrip except a little winter one and in the winter a few planes used to come in on skis right to the town sight, O'Brien had its own town sight, 45 families lived on the town sight.

AK: Any float planes in those days?

RB: Yes, but we didn't have any lakes close by. There was a little lake about 6 or 8 miles away and before the road had gone through, float planes used to land there sometimes and there was a rough trail into the O'Brien town sight. But float planes were of very little use. In my prospecting part of the job, we chartered float planes when necessary and flew out of Senatair???

AK: And were you able to get enough gasoline from a special allotment from the fuel controller or did you. . .?

RB: Yes, most people who did have cars of course, just had the regular ration. Harry Sparks had a little extra because his car was used as an emergency vehicle at times and there was no problem getting sufficient fuel for the two company trucks because of our priority as an essential producer of war metal.

#104 AK: Perhaps you could update, to what extent you'd care to about your personal. . . had you started to get a family started by that time?

RB: No, not at that point. Although I had a family of surrogate children, of about 30 or 40 youngsters because I was Cub Master and Scout Master there. I had an International League of Nations Scout Troupe, we had practically every European country represented, the children of the various mine workers. And O'Brien always looked after kids from the

town of Cadillac and the children of people who worked at other mines as well. They were a very public spirited organization.

AK: They were well community minded then.

RB: Yes, so I used to carry on my Scout and Cub meetings in two languages, alternately French and English and believe me, trying to explain how to tie a bowline to some kid that's never had a piece of rope in his hand before and do it in French was a little trying but we made out. We had a good Troupe and a good Cub pack and lots of fun.

#116 AK: Now we're entering the stage in your life where you'd, you might say, taken a sharp right turn or left turn or maybe you were going straight ahead and you were now to enter the real soft rock, in the oil patch. Now can you explain how your career with Shell started?

RB: Yes, I was, I should say, perfectly happy at O'Brien and doing quite well by my standards and would have been quite content to stay on. But my widowed mother knew of course, that my original intention had been to get into the oil business. She was living in Montreal at the time and she sent me a clipping out of one of the Montreal papers with a great big ad for Shell saying that they were starting up an eastern exploration department and were looking for geologists. So just for fun, I put in an application. O'Brien sent me down to Quebec City to the Department of Mines on some business and there I met Bill Gusso???, who'd been hired to set up this eastern exploration department. He heard from Dr. Jones that I was in town or coming into town and arranged to meet me, we had an interview and he said, well I'll let you know. He didn't say I'd been hired or not. I heard no more. Went on with my work with O'Brien and was sent down to Bay St. Paul??? on this titanium prospect and on my way back I stopped in again to see the Quebec Department of Mines people and Jones said, there's a call for you, somebody is desperately anxious to get hold of you, here's a number, somebody in Toronto, call him. So I did and it was the personnel manager of Shell Canada saying, what have you been doing, why aren't you on the job. I said because as far as I know I don't have any job and he said, sure Bill Gusso hired you and I said, well, he never told me. He said, well could you start next week and I said, no, I certainly can't, I've got to give O'Brien a months notice. This was the end of May in '45. He said, oh you can't do that. And I said, certainly because I'm on a war time priority with O'Brien and I can't quit them, I've got to give them a months notice. So eventually he said, all right, give them a months notice and then we'll tell you where to report and that was how I was hired by Shell.

#142 AK: And just for the record, Bill Gusso, formally known as William Carruthers Gusso, and Ottawa native, interviewed in. . would that be in April or March?

RB: That would be in April, I think, or very early May, 1945. He had seen my letter of application and wanted to interview me and we just happened to be in Quebec City at the same time. Actually I found out eventually Bill had been trying to hire Jones and McGarrigle from the Department of Mines but they didn't wish to leave the Department.

AK: I would say there probably weren't that many applicants anyway.

RB: I don't really know.

AK: No. And the head office of Shell then was in Toronto.  
RB: It was in Toronto, but Bill was working under the direction of F.F. Davis out of the Los Angeles office, the California branch of Shell.  
AK: Fritz Davis.  
RB: Fritz Davis, yes.  
AK: Right, who later went on to become a consultant to Home Oil.  
RB: Did he, eventually, I didn't know that, I knew he'd become a consultant.  
AK: Yes, because you see, of the connection with Alex Clark, who we'll come to in a minute because I think your path and Alex's crossed.  
RB: Just barely.  
AK: Well, we'll get to that in a minute. So when all the smoke had cleared away and everything was in apple pie order and you'd given your formal notice to O'Brien, did you leave your home at the mine sight?  
RB: Yes.

#160 AK: And where did you go from there?

RB: Well, I went right down to. . . the field season had already started in eastern Canada, Bill Gusso and the other geologist that had been hired, Norm Martison???, were already in the field.  
AK: Where did Norm come from?  
RB: He was a Queens geologist and he had been a mine geologist up in the Noranda area at the same time as I was but we didn't know each other up there. And I met the two of them in Sussex, New Brunswick and started right into work the next day. What we were doing that year, the three of us. . . Norm and I were together and Bill was on his own. . . we were going all over Eastern Canada here and there, with what published maps were available and trying to get some geological information from the oil man's point of view because the maps and the reports of course, were general geological reports and didn't deal with a lot of the things that an oil geologist was interested in. We worked in New Brunswick, Nova Scotia, Prince Edward Island and Gaspé and the St. Lawrence lowlands that first summer.

#172 AK: What was your starting salary with Shell?

RB: \$400 a month.  
AK: Very good.  
RB: Yes, I had been the highest paid geologist in northwestern Quebec because of holding down three jobs. Each time I took on another job, it allowed them to raise my salary a little and eventually I was working for O'Brien for \$310 a month.  
AK: And did you negotiate the \$400 with Shell or did they offer . . . ?  
RB: With Bill Gusso?  
AK: Did they offer it to you?  
RB: Bill Gusso said, what do you want and I had no experience of dickering and I said, oh \$100 more a month than I'm getting now would be nice, \$400 a month and he said, well, we'll think that over. I found out afterwards from Jones and McGarrigle that he'd been

prepared to pay me \$500 a month but I didn't ask for it so I didn't get it.

AK: No, well, compared to what Imperial paid, I know I started off at \$80 a month in '42 and I think I'd gotten up to about \$250 when I was at Leduc near the end of the war, I mean up in Provost. So the salaries weren't that much out of line.

RB: I had no complaints as far as salary went.

AK: So you started right in and you were traveling around, basically by car or. . .

RB: We couldn't get a car and what the company got for us was an army 800 weight??? that the army had declared surplus and was supposed to be in brand new condition, it only had 1,000 miles on the clock. But as we found out to our cost, later on in the season, the thing had been in a wreck and had been very inexpertly patched so it broke down underneath us a couple of times in the field, always in the most awkward and embarrassing places. But we kept it going and eventually drove it up and turned it over to Shell in Montreal at the end of the field season.

#192 AK: Did you have trouble with those Saisotz??? tires?

RB: No, we had good tires on the thing but we took all the tread off the two front wheel tires one time when the tie-rod??? broke and we had to patch it together and drive with the front wheels slanted away from each other instead of tracking straight.

AK: So was this field survey accompanied by any plain table work?

RB: No we were just looking at as much outcrop that seemed to be significant as we could in the time available and covering a heck of a lot of ground.

AK: Reconnaissance.

RB: This was reconnaissance to get familiar with the geology of the whole of Eastern Canada.

AK: Checking different strikes or. . .?

RB: Oh yes. We took normal field observations.

AK: You had a Brunton??? For the record a Brunton compass is a very ingenious device, you can almost do anything with it except fry bacon, but it does have sight on it, it has a level, and a compass and by expert use you can obtain the true dip and strike of an outcrop.

RB: Yes, we were both pretty expert in the use of a Brunton too, Norm and I, we'd both done a lot of that sort of work.

AK: You'd used it in the hard rock?

RB: Oh, yes. And I'd used it a lot in prospecting and in my thesis, field mapping and so on.

#209 AK: What about Bill Gusso, what was his previous experience at that time?

RB: He came to Shell from Alcan, Aluminum Company of Canada, he'd been up at Arvida??? and he was an engineer up there. But he'd been a field geologist around the nickel producing area in Ontario and he'd done some field work up in Abitibi??? in northwestern Quebec.

AK: Did you have any feeling at all, or did Bill or Norm, have any feeling at all about what might lie out under the water, out say, between Prince Edward Island and Nova Scotia and seaward from Nova Scotia to Sable Island.

RB: I doubt very much whether we gave it a thought. There's been this little Stoney Creek oilfield outside of Moncton had been going since 1920 or thereabouts. A bit of

exploratory drilling had been done in southern New Brunswick, quite a bit had been done in Gaspé and of course, there were a hundred or so known oil seeps there. But as far as oil prospecting went, that country was really so little studied, there was so much to be done on land that nobody thought, as far as I can recall, nobody thought of the offshore possibilities at that time. But we're thinking of 1945.

#227 AK: Oh, true, true. Even Gusso, who probably came under the influence of Truzo??? Wilson and perhaps Véganer??? and I must do Gusso sometime in the future. . . probably didn't have that much. . . and of course, from a practical standpoint, the only place that was being looked at was in the Gulf Coast and only out in very shallow water, just barely . . . you couldn't really call it offshore.

RB: Well, it was not real offshore at that stage. They had drilling barges in the Mississippi Delta and that was about as far offshore as they were at that time.

AK: So at the end of the field season, here you, Bill and Norm had all your data, and what did you do with it then?

RB: They set up an office in Ottawa to be near the Geological Survey of Canada, which was our major source of information about Eastern Canada. And we wrote very full reports on our field season. We did all sorts of odd jobs, for instance, I was given the Mining Law of Nova Scotia and New Brunswick and I had to extract from that what regulations covered oil and gas and make a prece??? of the mining law. Great job for a geologist, I was no lawyer. But it was pretty clearly written and . . . Norm did similar things. In the meantime Bill and Dr. Davis and Shell Canada people were starting to negotiate with New Brunswick Oilfields, who controlled all the likely looking land in New Brunswick and we had decided that would be our first and most likely place to start. They were starting to negotiate some kind of a concession or a farmout, it would be called perhaps, from New Brunswick Oilfields. And that thing hung fire for over a year.

#252 AK: Who was the controlling interest in the New Brunswick Oilfields at that time?

RB: It was a British company, British Capital, but one of the things that threw a monkey wrench into the works as far as Shell was concerned, some Boston financiers. . . and Boston financiers had always been very active in all sorts of mining enterprises in New Brunswick. . . some Boston financiers had got some kind of an option from New Brunswick Oilfields. And eventually shell had to deal with this Boston firm, I can't remember the name of it and pay more than they would have if they'd managed to conclude a deal with New Brunswick Oilfields in the first go round.

AK: Probably what you might call a sub-farm out.

RB: Yes, sort of.

AK: You're probably aware that later on, Western Decalta, which has also had some British interest through Charles Lee, got control of the Stoney Creek field.

RB: After Shell pulled out of there, Imperial had a go at it too of course. They'd drilled a well near Amherst, Nova Scotia, prior to that, a company called Lion Oil Co. had drilled a couple of wells up on Cape Breton Island around the Lake Ainsley??? seepage area and one well had been drilled just offshore on Prince Edward Island. And most of those wells

either went into the basement rocks, the pre-Mississippian or into great thicknesses of salt.

#272 AK: At the same time that you were reviewing the Maritimes, it's my recollection that Sun got very interested in Prince Edward Island, is that correct?

RB: They were the ones that drilled a well in the bay off Charlottetown there, yes.

AK: Did your paths cross with any of the Sun people?

RB: No, they had finished their well, abandoned and pulled out before we got working down there, but eventually, either Norm or I, I can't remember which one of us, ran samples from that well.

AK: There was a chap named Ned Gilbert, who I believe was sent up from the States in '44 and was a kind of a landman, whatever, sort of a thing, and it seems to me that he was involved in that. But my only recollection was that Sun had it and I suppose that shortly after that, they dropped it.

RB: Yes, I think after that well was a duster, they pulled out entirely.

AK: They hit a lot of red beds, salt, windsor series.

RB: Windsor series salt, yes.

#287 AK: Now going back to the Stoney Creek, did Shell get to the point where they drilled any holes or did it. . . ?

RB: No, New Brunswick Oilfields retained a block of land around the field, they kept control of the Stoney Creek field. We had access to all their drilling records and everything and I ran quite a few samples from their wells and looked at a lot of wire line core that they had taken when I was working down there, later on. And that first winter, we also started to run samples at the Geological Survey and I think it was that first winter, I ran quite a number of wells that had been drilled in the St. Lawrence Lowlands of Quebec. It was somewhere about there that I got started on that.

AK: I believe that some of that sample catching and. . . you might call it retention. . . involved Bob Wickendan???, but I don't know. . . ?

RB: I'm sure it would have.

#300 AK: I didn't bring that up with him, but he did have quite a contact in earlier years with

Alberta. We've just been talking Bob, about the oil shales, which everybody knew existed there and during the war, there was an attempt, you were saying, to ship the oil shale to Pumpherson??? in Scotland, where oil had been retorted out of oil shales for years. . . as a trial sample to see what would happen. But this had nothing to do with Shell.

RB: Shell was not interested in the oil shale specifically at that time. They were interested but they weren't planning to do anything with it at that time. But this great sample had been gathered, many tons, bagged, ready for shipment and then because of war time exigencies, they never did ship it. When we were down there and started to work in southern New Brunswick in '47, these tons and tons of oil shale, all sacked up, were piled near the old Albert Mines area and never got of New Brunswick.

#318 AK: This is mineralaligic??? known as Albertite.

RB: Well Abertite??? was a bitchumen??? that was in the oil shale, it was not the oil shale itself. It was a vein filling of a thick, black, almost solid. . . at ordinary temperatures, it was pretty solid, it melted quite easily. . . on a hot day you could mold it with your fingers. And this was in veins scattered all through the Albert formation here and there, wherever the Albert formation was shaley, but there were big deposits of it at Albert Mines and it had been mined there for years.

AK: Okay, so during the winter of 1945-46, you were doing studies, you were working up your geology, you were preparing reports, you were studying the mining laws of the provinces and Shell at that time, had not yet made it's deal with the New Brunswick Oilfields Co.

RB: That's right.

AK: So you and Bill and Norm were scattered and could you explain where you went for that '46 field season.

RB: Norm was sent up to James Bay and he did reconnaissance in the James Bay lowland, geological mapping and looking for signs of oil seeps, gas seeps and the general oil geology. He flew from river to river and then went down the rivers in canoes because that's where the exposures are, there's nothing between the rivers. Then I was sent down to Gaspe because I knew that country and by this time we had some Dutch geologists from Royal Dutch Shell who had been slated to go to the Dutch East Indies but the situation there didn't permit anybody doing any work. So we got these fellows for extra training and they were our field assistants. Excellent men.

#347 AK: Yes, when the Japanese were conquered, instead of the Dutch resuming in the Dutch East Indies, the natives rose in great rebellion and that was the end of the Dutch regime of 400 years so . . .

RB: Well, they did get back some years later but not in '46 which is what they had hoped to. So they had these young geologists on their hands, fully trained theoretically but with almost no field experience. They had all worked for Shell all through the war in various jobs. Rein DeVitt???, who I'm sure you know, was one of them, who's become a very good friend of mine and Rein was involved in all sorts of anti-German skullduggery, partly in a resistance group, partly for Shell. Shell did all sorts of things to keep the Germans from finding out that there was this big gas field on the German border which Shell knew about before the war but they never let the Germans know. They faked them out of it completely.

#362 AK: Rein, I guess you're aware came from the Dutch East Indies.

RB: He was born and brought up there.

AK: He was born there yes, and he was one of these young chaps who was sent out to be with you. . .

RB: There was six sent to Canada, two in Western Canada and four in Eastern Canada and then there was another little group sent to Oklahoma to get field experience before they could be sent back to the Dutch East Indies.

- AK: I think Bob Pott??? was sent to someplace in the States, he had served his time in the Dutch army and he was sent to someplace in the States.
- RB: I think most of them went to Oklahoma, the ones I knew about anyhow.
- AK: So how on these field parties then, instead of voyageurs or francophones, you had Dutch students.
- RB: Yes, and in Gaspé, there were very few roads at that time. The Gaspé Copper Mine was still a prospect, you couldn't use pack horses, there weren't any and there was no forage for them. So everything was on men's backs, so I hired local fellows that I knew as packers. And first of all Rein DeVitt and another fellow called Franck Von Vest??? and I did the geology and we had two packers and a cook, local fellows, all men I knew. And then later in the season, Bill Gusso, who had been up on Lake Athabasca with one of the other Dutch fellows, Pete Hacquebard who later became a palaeontologist??? with the GSC,
- AK: Coal palaeontologist, right.
- RB: And when Bill was through with his field season, he sent Pete down to me and Pete finished up with me in Gaspé. We worked a long, long field season from May till. . . I got home, two days before my second son was born on the 12<sup>th</sup> of October, I got back to Ottawa.

- #393 AK: In '46. And by that time, you had put roots down in Ottawa and you were living there. Did you say you were living in the Gleebe?
- RB: Yes, my wife had to do it on her own, I was in the field. She moved down from O'Brien, stayed with her folks in Montreal and then Shell helped us find a house, it was very difficult to do at that time. And we got this apartment in the Gleebe, fronting on Patterson Creek. The address was 42 Carling, but there was no real Carling Avenue in front of us because we had no children. We'd been trying to adopt a child for some time and . . . no, it wasn't my second son, it was my first son, the adopted one. The day I got home, they phoned from the Children's Aid in Ottawa to say they had this baby for us, come and get it right away. And my wife said, well, my husband is arriving home today but he's not here, it will have to wait until tomorrow. So we waited till tomorrow and we brought the baby home. It was the following year, I worked another long field season and got home the day before or two days before my second son was born. I think I've got the chronology straight but, we worked long field seasons is my point.

- #414 AK: Your second son, was that also adopted.

RB: No.

AK: Oh, you finally were able to. . .

RB: The other two were ordinary. So in '46, my job was a funny one. I was supposed to map the very basal Devonian, St. Alban??? formation or its equivalence and that occurs. . . it's lowermost Devonian, uppermost Salurian??? roughly speaking, and it is in three bands across the Gaspé Peninsula and I had to map these three bands from about the middle of Gaspé from east to west, out to their termination on the East Coast. So we were moving all the time because the outcrop width of this formation was only a few hundred feet to a

few hundred yards wide and tens of miles long. We mapped a little on either side to make sure we had it and ran back and forth over Gaspé all summer.

AK: Whose choice was it to select this as a mapping horizon?

RB: Because it was known to contain stromatoperoid??? reefs and it was thought that, knowing something about the geology of Gaspé from Jones and McGarrigle's work, it was thought that the stromatoperoid reefs and the conglomerate associated with them would be the best chance to be a reservoir formation.

#437 AK: Well, did you have any input into the choice?

RB: No, not at that point.

AK: Was it Bill or was it Fritz?

RB: Bill and Fritz Davis between them decided that this was the way to go down there.

AK: And Fritz, I suppose, had taken some trips?

RB: He visited us several time in the field that and succeeding summers.

AK: Out of Los Angeles?

RB: Out of Los Angeles yes.

AK: Probably by rail.

RB: No, he used to fly. Los Angeles was providing the technical supervision. Shell was working in Western Canada and Alberta all this time but it was a discreet and separate effort. We at that time, had nothing directly to do with the fellows who were working in Western Canada. They discovered Jumping Pound about that time.

#451 AK: Yes, '44. The company's name was officially, Shell Oil Co. or. . . ?

RB: What I worked for was Shell Oil Co. of Canada Ltd.

AK: Oh, yes, the marketing end.

RB: Yes, and it was primarily a manufacturing and marketing organization.

AK: But the outfit in Western Canada I believe, was just Shell Oil Co.

RB: Yes, it was an enterprise of the American Shell.

AK: It was a branch of the U.S. parent. So in that sense it was not only physically separate but organizationally separate. Now have you got any background on the people that were involved in there, like Alex Clark and some of the others.

RB: I knew of them rather than got to know them. There were two Clark's I think, with Shell at that time, Con Hague??? was with them at that time, who had been with the Geological Survey. I got to know him later on in Calgary.

#467 AK: There was Les Clark.

RB: Les Clark and Alex Clark, yes.

AK: Yes, Leslie M. Clark, who went on to work for Seaboard and then Pacific and then died. Alex Clark, incidentally, just died about a month or so ago.

RB: Is that so, I hadn't heard.

AK: Yes, he had lost his mind pretty well. So there was another person out there. . . .

RB: Ian Crawford was out there, Fred Kidd was out there.

AK: And what about E. P. Williams, Ted Williams?

RB: Ted Williams, I think, just worked for Shell as a student. When he graduated he went with Hudson Bay Oil and Gas. His father later, was a consultant for Shell, M. Y. Williams, and I worked very closely with him on the West Coast here later on. And I knew Ted through his father. Dr. M. Y. Williams was in Calgary numerous times. He was on a retainer for Shell for years and he made a point of getting Ted and me together and we were in quite close touch for a number of years.

#486 AK: Now we were talking about some of these students that were sent out to work with you and Bill and Norm. Two of them are very familiar to both of us, Rein DeVitt of course, and Pete Hacquebard, who later became a renowned, still is, a renowned coal palaeontologist. When they found out that they had to return to the Hague, they decided to break ranks and try their fortunes with the Geological Survey of Canada. Is that correct?

RB: That's about it, yes. Two did go back, one for health reasons and the other because he elected to stay with Shell but he didn't stay with Shell for more than a few years. . . Jop Faber???, his name was. Then he became Chief Geologist for the Dutch army and is now retired.

AK: Yes, I believe that Rein (spelled out) went west and linked up with the late R. J. W. Douglas working in the foothills of Alberta, while, as we just mentioned Peter, who had done work in the Maritimes, I believe, is still stationed down in the Maritimes and has become a well known expert. . . .

RB: He's back in the Maritimes Aubrey, but he's retired from the Survey now. He was in Ottawa in his last years with the Survey, I saw him there a time or two.

#522 AK: There were at the same time that you were working for the Shell Oil Co. of Canada Ltd., the marketing arm. . .

Tape ended.

## Tape 2 Side 2

AK: . . . [in mid-sentence] who only operated with Shell as a student and I believe when he got his doctorate degree he went with. . . .

RB: I think he went with Hudson Bay Oil and Gas, if I remember rightly.

AK: That's right. Con Hague was also an employee of Shell in Calgary. The head of the operation, I suppose, became Vace (spelled) M. Ash, who you recall was a Petroleum Engineer.

RB: I think he was a geologist or a petroleum engineer.

AK: Did he take over from Fritz Davis.

RB: No, no. Vace Ash had done some time in Canada, earlier in his career with Shell and I don't know anything about that. Then in '47 he took over from the previous President of Shell Canada, who was an Englishman, who retired shortly after and Vice Ash. . . . actually one of the first things he did when he came us from Trinidad, he was posted up from Trinidad, he came down to visit us in the field in southern New Brunswick. We were mapping down there by then. Because in '46, we'd had a visit from the previous President, whose name slips my mind for the moment, and I had taken him out in the field and we were doing seismic by then. He was a non-technical man, he started off as an office boy with Shell in England.

#013 AK: When you were doing the seismic, Bob, did you have a contract crew or was it a Shell crew?

RB: No, it was a contract crew from Highland. Bob Hahn??? was the Party Chief at first and later on, a fellow called Fector???

AK: Did a fellow named Zeigler??? ever show up?

RB: Not that I can recall.

AK: He used to be with Highland. But Bob Hahn, that's spelled H-a-u-n.

RB: H-a-u-n or H-a-h-n. He's living in Victoria now.

AK: G. R., I believe his initials were. Is he living in Victoria too. That's another person I've got to see. And then, did you say you did ground magnetometer???

RB: Yes, we did some magnetometer and we did some gravity down there. The salt caused problems with the seismic. Salt and other things, because there's a lot of diapiric??? development in parts of southern New Brunswick. The Windsor salt evaporates. And we didn't really get the deep sub-surface picture until we combined those three geophysical methods. The anagans??? anticline??? for instance, was just a loss as far as seismic was concerned but when we got in there with gravity and magnetometer, the salt showed up and then we knew what the problem was. There's this great body of salt which New Brunswick is now exploiting. A company called Darcy???, in which Shell in England had an interest had done some wildcat drilling in southern New Brunswick after the discovery of the Stoney Creek field. And they had drilled a number of wells, all of which were dry holes, many of which were quite shallow and went through the carboniferous section and

into the pre-carboniferous complex which is the basement in southern New Brunswick.

#032 AK: Drilled with rotary or cable?

RB: I think they used cable. This would be in the twenties I believe.

AK: Yes, well rotary wasn't well developed. So when you'd gotten your geophysical data put together and coordinated, did you and Bill Gusso and Fritz and who else, get together and try to decide what to do about drilling in 1947.

RB: Yes, what happened was we concentrated on surface mapping and we had four crews down there. And in '46 they transferred Fred Kidd and Ian Crawford from Western Canada and Jim, who later became Chief Geologist for Pacific, I think it was. . .

AK: Jim Scott.

RB: Jim Scott, yes. They transferred him down there and in 1946, Jim Scott and I had the two parties working out of Sussex, New Brunswick and Norm Marteson and gee, I forget who, had the other party working out of Moncton. And we mapped in great detail, in fact we followed every road, and there's a lot of outcrop along the roads because of the way they ditch their roads in New Brunswick. We followed up and down every little creek and watercourse, dry or wet. I waded miles and miles of creek and river, we did all the shoreline. We traversed between roads and creeks and rivers and in a few places where it was critical to get some information and there were no outcrops, we got permission from farmers and we dug test pits in their pastures. We went down 8 or 10 feet, then put a in a little shot hole and blew the bottom of the hole to make a nice fresh outcrop and sampled and got observations on strike and dip and so on. We did quite a number of those.

#050 AK: This was in '47?

RB: Well, it was '47-'48. In '46 we'd got the concession, the end of '46. '47 then we started the field work and we did this very detailed mapping.

AK: Was Bill Gusso, where was he by this time?

RB: He was Chief Geologist for Eastern Canada and he was in the field and in the office and back and forth.

AK: In Ottawa or Toronto.

RB: Ottawa. We kept our office in Ottawa almost to the last.

AK: Whereabouts in Ottawa were you, do you remember?

RB: We were next to the Salvation Army Citadel on Slater St. The building is gone now, it was a little two story office building. That was our first office there.

AK: Was that near the Carnegie Library?

RB: Not that I can recall, no.

AK: Between Bank and the next street to the east, O'Connor, halfway down the block. Later on, we had to give up that office and we got another office, very briefly, in an old office building. . . I don't remember. . . just off Bank Street and then our last office there, we took over from the RCMP tailoring establishment. They had a floor there for their tailor shop where they made the RCMP uniforms and they gave that up and Shell got it.

#064 AK: What year was it that you finally just disbanded the Ottawa office?

RB: In 1949 I guess, yes '49. We moved it to Moncton then because they set up an office in Moncton because we were actively drilling and we operated out of an office in Moncton.

AK: And you had by that time obtained sufficient information from the Survey that there wasn't much to be gained by staying in Ottawa and logistically it was better for you to be in Moncton.

RB: Yes, and of course, while all this was going on, we were doing other studies too. They got Rex McGiehy??? up from Oklahoma and he taught a number of us to run samples and he ran a lot of samples. I ran all the samples for the old wells that had been drilled in the St. Lawrence lowlands of Quebec and Norm and Rein and Frank VanVest??? ran a great many wells in southwestern Ontario. We wrote reports on all this, we wrote voluminous reports on each summers field work in New Brunswick, we wrote reports on our sub-surface studies in the southwestern Ontario, St. Lawrence lowlands regions. Of course, I wrote a full report on my summer in Gaspé and Norm on his report in James Bay. I can remember I wrote a report on my sub-surface studies in the St. Lawrence lowlands and concluded that there was some chance of finding gas but very little chance of finding oil if we ever drilled there. And of course, many years later Shell did drill down there and all they got was a little puff of gas. But I remember Fritz Davis writing back and saying, that's a fine report but Shell is not interested in gas, we're an oil company. Which in the light of Shell's later ventures was somewhat ironic.

#084 AK: Highly ironic. Okay, so . . .

RB: So '47 and '48, we mapped in great detail in New Brunswick and Norm Marteson also mapped in adjacent parts of Nova Scotia because of the oil seeps in the Lake Ainsley area far beyond that and the drilling that had been done at Amherst. Which turned out to be eventually a salt producer. We pretty well mapped the whole of the carboniferous basin of southern New Brunswick and it's extension into the adjacent parts of Nova Scotia.

AK: And then you were getting ready to do your drilling.

RB: Yes, they started drilling, I guess it was in '47, no '48.

AK: Where did you get the rig from?

RB: They brought up a rig from the States somewhere. It was a little self-propelled rig, supposedly good for 5,000 feet.

AK: Was that one of those Franks??? rigs.

RB: A Franks rig yes.

AK: Yes we had one in Alberta and you could move them around pretty good. They were like a glorified shot hole rig.

RB: Yes, but it had a capacity to 5,000 feet rated and when we got it on Dorchester, that's where we started to drill. . . what we started to drill was on Dorchester wildcat. . . and we put it down to about 6,000 feet and then we wanted to go deeper and it couldn't go any deeper so they brought in a rig from Wyoming. Shipped it in by rail. An old standard derrick and we had guys like Angus McNeil and Eddie Shapu??? and Ted. . . I'll think of his name. . . who were experienced rig builders from their experience from out west. And they built the rig and went down to, I don't remember how deep with that one. We kept the Franks rig and it drilled 3 or 4 holes in all and the big rig drilled the real deep test at

Dorchester.

#105 AK: Both of them were of course, rotary.

RB: They were all rotary rigs yes.

AK: Was it by that time that the old Shell procedure, two of everybody?

RB: Yes, they were all ??? wildcats.

AK: You had two geologists, two engineers.

RB: Yes, two geologists, and two engineers. They sent an engineer up from Houston as senior engineer on a job, later. No, they sent two different fellows up, one of whom just retired from Shell, he came back eventually some years ago to work for Shell Canada. John Milburn, when I was well sitting, was the engineer. Sandy Halcrow??? was the junior engineer, whom you probably know. I was the senior geologist in the later stages of the drilling and I had various assistants, John Alsten, who's now an oil and mining promoter in Calgary. Den Vayu??? who ended up Division Geologist with Shell, just retired. Oh, who else. But Fred Kidd sat on the first two wells, the Ernie and the Sapahawkwe??? wells, the first two wildcats we drilled down there the first year. Then they stacked the rig for the winter. Ted Thurston was the other man I was thinking of, who later became Drilling Superintendent for Chevron I think.

#123 AK: So you had by that time, you were in the exploration mode. . .

RB: Yes, and while we were drilling, we were still doing additional seismic, stepping out further from the area we'd covered in considerable detail. And for awhile at that end of one field season, I was kept on till Christmas, Jerry Merritt??? and I were left down there, the drilling had stopped, and we were left down there to do liaison with . . . no, Fred Kidd and Jerry Merritt stayed on well sitting and I was liaison with the Highland seismic crew and whenever they'd finish a record or a line, they'd pot it up, turn it over to me and I would try to integrate it with the surface geology we'd done across that area. By this time, we had the two original shot hole rigs and four local well drillers because drilling was hard. One of my jobs was try and ride herd on these goldarned well drillers, who were a most independent bunch. And I was on call 24 hours a day to cope with those guys and believe me I had some interesting adventures and some long days.

#137 AK: And you were probably having to make peace with the farmers too. Or did you stay on road allowances.

RB: No I did some permitting and we went across farm land but we had no problem down there at all. Only twice did we ever run into any difficulties with farmers. Everybody down there, government, farmers, automobile mechanics, garages, hotel people, everybody wanted us to succeed and went out of their way. In one case, we had to move the Franks rig across a dubious little wooden bridge and we inquired to the Highways Department about it and they said, go ahead, we think you can get across but if you wreck the bridge don't worry, we'll fix it up. Go ahead, don't let us hold you up. That was the attitude.

AK: And you didn't collapse it.

RB: No we didn't, we didn't do it any good either.

AK: No, I'm sure it would probably strain it. So then with this drilling in Moncton and working out of Moncton, did you move your family down to Moncton or did you . . . ?

RB: I moved my family down to Sackville and lived there for part of the summer and then moved up to Moncton for the fall and winter because I'd just been subletting a student's apartment in Sackville. Because by that time, I was well sitting on the Dorchester rig and Sackville was the closest place I could get accommodation for myself and my family.

#151 AK: And that would enable you to get home occasionally.

RB: That was, as I say, in '49 and '50. '47-'48, Fred was well sitting.

AK: Well, then after your first drilling campaign, I suppose you got the notion that the potential really isn't there.

RB: It didn't look too good. We got some bituminous??? matter in the Apahawkwe??? well, we got some very, very tight Albert formation sandstones in the Ernie well but nothing producible. At Dorchester, we got again, some bituminous stuff but there we ran into a salt dome. The core of the anticline, this beautiful anticline that showed up both on surface and on seismic was a diapire???, a salt dome. And when we began to get into this salt, that was when they got the gravity people in to try and get some idea of how big it was because seismic didn't show that clearly. And it looked like a heck of a big thing, we kept on drilling and eventually drilled through it and through a fault and back into Albert, which was our objective horizon. Concurrently with that well, we drilled a shallow test at Memroncreek???, which was supposed to be a stratigraphic test of the Albert formation because it outcropped on a little hill just outside the town. And six inches below the surface we went into the Albert formation, which was tremendously contorted. The dips were everything from horizontal to vertical. And we got oil shows practically from the grass roots to total depth of around 5,000 feet, somewhere around there in that well.

#172 AK: You kept repeating back into the Albert?

RB: Well, the Albert was so folded as I say, we probably went through thrust faults, I don't know. But certainly we went through very intensely folded. . . there was a lot of Albert sandstone faces??? in that well and most of it bled oil and we got very small yields on a few drill stem tests but never anything commercial. And then they drilled one more well on a great big anticline out towards Cape Tormentine and that ran into granite at shallow depths. And they thought it was a sliver of granite thrust faulted into the structure and they drilled, I forget now, I guess close to 1,000 feet into the granite and finally gave up on that one.

AK: So when was the final decision made and by whom, to pack it up.

RB: In the spring of 1950 and I was the second to last Shell employee to leave New Brunswick. Everybody else had been transferred back to Calgary because by that time, Shell had reactivated their western exploration. Jim Scott had left already, the Dutch fellows had all gone by then and Merrill Greg was our office manager in Moncton, who later was in purchasing stores in Calgary, he had 45 years with Shell when he retired some years ago. Merrill left one day with his family and I left the day after with my

family. The others had all gone back to Calgary before that, anywhere from a few days to a few weeks.

#193 AK: And you were transferred to . . . ?

RB: Back to Shell Oil Co. I had to fill out a new application form, was hired by Shell Oil Co. then a short while later, it became Shell Canada again and I had to fill out another application form and was rehired by Shell Canada.

AK: I hope all this switching around didn't affect your ultimate pension that you're receiving now.

RB: No.

AK: You got continuity on your pension.

RB: Got continuity on the pension. Another fellow that worked with me in New Brunswick when we were down there was Bill Parsons, who later went with Chevron. He went back to school and then went with Chevron and rose very high in that organization. He was out in Perth in Australia for a long period of time when they were getting that oil offshore Western Australia. Bill's now retired and living in England.

AK: George Fernival??? was out there at Perth also. Did you have much to do with George?

RB: I knew him slightly.

#206 AK: He was Deputy Minister of Mines in Manitoba in 1936 or so. Let's explore a bit of

folklore and if you can give me your views on it, I'd be grateful. Shortly after Leduc, which occurred in '47, I became somewhat associated with Home Oil. . . I hadn't joined them then. . . but one of the directors was Marsh Porter, who later was elevated to the bench. He was in the law firm of Porter, Allen and McKimmie. He had the story that Shell was working up in Redwater and I'm not sure whether they had that Crown permit, in those days they hadn't quite got their act together about land tenure and land issuance..

..

RB: They had leases I think.

AK: Yes, well whatever they were, and of course, as you know, Eric Harvey was all checkerboarded through there and Eric didn't know. . . but at any rate, the story that I have from Marsh is that Shell and whoever it was with Shell, was working up in there and they got a cable from the Hague that said, you are precluded from continuing in Redwater.

RB: Well, I never heard that story exactly but what I did hear about that was that Shell had leases, or whatever, that pretty well covered what turned out to be the Redwater field. One or both of the Clark's had written a report recommending that Shell could carry on there and do some exploratory drilling. At the time, Shell was trying to rehabilitate their holdings in what is now Indonesia. The report got to Los Angeles which was headquarters for the operation at that time and they had to make a decision where they were going to spend the funds they had. They had a sure thing in Indonesia, they'd had producing fields there. And it was going to take an awful lot of money. . .

#234 AK: And they knew the country down there.

RB: They knew the country, so somebody in Los Angeles, I never heard who, said, well, this is a very good report and interesting but we can't do anything there and they pigeon holed that report and it didn't turn up again until several years later. And Shell gave up all their holdings in the Redwater field and just retained Jumping Pound and a couple of little leases further up north in the foothills. Then they had to get back in the picture again in the days of Robinson.

AK: Isn't it interesting, Bob, that this could have been a real watershed because it seems that with Jumping Pound and we must get into that and we must also get into the Waterton thing because you mentioned your involvement there. . . but this watershed was crossed or reached or whatever you want to say. From there on, Shell never really obtained much of a conventional oil position in the plains. They bought a parcel in Stettler I remember. They never participated in the Crown Reserve sales at Redwater, they got into things here and there and they bought their way in when they grabbed Canadian oil companies off. They got acreage in Saskatchewan and Innisfail. . . oh, and they're in Harmaton??? and Westfordho??? there, but that's more gas. . .

RB: That came a lot later and under different local management.

#253 AK: Right, it's just a point. It's kind of interesting that Porter had this story. Now you know, what mythology there is with it or what. But let's go on. When you got transferred out of the Maritimes, you were assigned to Calgary and who was the stud duck then running the show, when you signed up, you had to sign up with Shell Oil Co.?

RB: A fellow by the name of Ernest Robinson. And he was the Vice-President in charge of operations out of Calgary. By the time I got there, I had the reputation of being a field man and of course, I'd always liked field work. So my first assignment was to go up for Shell, into northeastern B.C., in the old Northern Foothills Agreement group. There was Shell, Gulf, and a couple of other companies.

AK: Shell, Gulf, Texaco and Mobil.

RB: Yes, and I was sent up there to map. That was a terrible country to map in. 50 % or more muskeg

#268 AK: And it wasn't surveyed.

RB: It wasn't surveyed but they'd taken out these great concessions, the Northern Foothills Agreement people and they had to do some field work, that was a requirement at the time. All four companies involved had field parties up there. I had two, Fred Wilken???, who later went with the drilling department of Shell, the production department and he had pack horse experience for Phillips Petroleum up there. So he had a pack horse outfit and I had experience with canoes so I had a canoe outfit but I was nominally in charge of both. Part way through the summer I worked with the pack horse outfit because Fred fell ill for awhile and had to go out of the field and they didn't have a very senior man so I went in with the pack horse outfit for about a month I guess, and then came back to the canoe work. And we got some outcrop along the rivers and I showed on the Fort Nelson River, about halfway between Fort Nelson and the main tributary upstream from Fort Nelson, I showed an anticline. A very gently anticline in roughly the Fort St. John group. The

Sickany??? sands vaguely outlined an anticline. I did a lot of photo geological work as well, when I came back in the fall. And later on, the Clark Lake gas field was discovered, years and years later, but it was right on that anticline. But at the time, most of the upper management were American geologists in Calgary and for some reason or other, they never believed in surface geology. Their experience, in the Gulf Coast largely, indicated that surface geology didn't tell them anything. It was a very slim lead but it was a lead. Now I think people would say, that was significant but at that time they said, no, we've got nothing there.

#294 AK: But by the same token, NFA hadn't permitted that area.

RB: No, they didn't have Clark Lake but they had a permit to the south of that on which this anticline occurred.

AK: But did you work as far back in as the first outcrop of the Triassic?

RB: No we stayed strictly on the plains.

AK: So you'd be around Bucking Horse and Trutch???

RB: We didn't get up as far as Trutch, I went up the Fort Nelson River, to . . . I forget the name. . . and then we went down and we worked up around the Snake River and the lakes north of Fort Nelson there with the pack horse outfit. And Jackfish Creek south of Fort Nelson and then I trucked my canoes away up the Prophet River and we came down the Prophet River and did geology along the way. Very little exposure until we got down almost to the mouth. And then we made a brief trip under great difficulties up the Musqua??? River and we went up as far as we could go, late in the summer with canoe and we ran out of water. It took us about 18 or 19 hours hard traveling by canoe to get up as far as we were able to get and we came back down in 90 minutes.

#312 AK: When you were up in that country, you said you were in charge part of the time, were any of your field assistants. . . did they move on to greater things or do you recall any of your field assistants.

RB: Yes, Jack Churchill became a Senior Geologist with Shell, he was my field assistant, just shortly out of the Air Force. Barney Peach eventually ended up with Shell in their coal division working with Momahana???. A fellow called Liningstone is now a ground water consultant with a practice over in Vancouver, he was a student at the time, he was another assistant. And I had some great local fellows working on that crew, Carl Arhouse???, who's quite a famous character around Fort Nelson and his buddy and partner, another Norwegian fellow, Ollie Low???. Enos Gardner???, who later made a fortune cutting great big trees along the Fort. Nelson and Liard, lower Nahani, Liard??? River and rafting them down to Inuvik for piling for the buildings there.

#331 AK: You're aware that Jack Churchill has passed on? Very sad because I think that man was brilliant.

RB: He was in many ways.

AK: Yes, but he had that problem. Then that was your first field season and you were reporting back to these U.S. geologists and would you care to comment about the other

bit of. . . well I recall, I know from first hand that there was this rivalry between the Shell California, the Shell Oklahoma and the Shell Texas not to mention the Shell Hague people. Would you care to make some comments on that and maybe some examples?

RB: Well, I sw very little of it actually. At that time, Shell was scattered in many little offices that they could get all around Calgary and I worked with my own little group pretty well and didn't work very much with the other people. And as I say, I had the reputation of being a field man, so I was pretty busy writing reports and studying samples and so forth and so on. I guess I should have taken an interest in that sort of thing but the inter ??? rivalries and office politics was something that always bored me silly and I deliberately bypassed it, I didn't try to find out anything about it except the usual scuttlebutt around the office. You know, you heard little stories but I was never aware of any serious rivalry that affected my work.

#354 AK: Well, getting back to the strategy or the, whatever you want to call, the game plan for Shell. When did, with these U.S. geologists that didn't believe in structures and presumably foothills, when did these people start to realize that maybe the foothills were the place to be?

RB: That would be about 1952 or so, we got back into the foothills.

AK: Because you'd discovered Jumping Pound in '44, which is the first big discovery following Turner Valley.

RB: That's right and it had hung fire for years because the price of gas was so low and they didn't do much more than the required development on it.

AK: And then they built the plant in about '50, '51.

RB: Yes, '51 or '52, somewhere around there and they got a contract to sell the gas. It was break even on the gas was what we were told and the profit was out of the sulphur.

AK: And the liquids, the liquids were pretty good.

RB: Well, they Ernest Robinson, who as I say was Vice-President in charge of the operation, he had a thing about the Queen Charlotte Islands and he had got M. Y. Williams as I mentioned as a consultant. And M. Y. knew the West Coast pretty well, so I was sent out in '51 with a small field party to do a reconnaissance of the Queen Charlotte Islands and the objective was, they knew that the north island, Graham had some Mesozoics exposed around Skitigt??? Inlet but a lot of the island was covered with volcanics. And the idea was to circumnavigate the island and do the shore line geology and get inland in a few places where we could fly into some of the bigger lakes and see if we could see any outcrops of Messozoics domed up and exposed as windows in the Tertiary volcanics, which turned out to be a lost cause. And I did shoreline geology pretty well all the way around Graham Island and I got into Cumshua??? Inlet and I went inland some from there and did some of the lakes and so on. All shoreline geology mostly. The country is so jungly that you can't go across country.

#390 AK: Devil's club and underbrush.

RB: And we did most of the Yaccoon??? River. I got at it from the top and I got at it from the bottom and I got at it from the middle but I couldn't quite traverse the whole river. It was

a most interesting place and Bill Gallup had picked a well sight for Royalite and the manager looked at his maps, the manager of Royalite, this is what Bill told me once, and said, well, why do you want to drill there. I can see there's an anticline right on the shore, right by Skitigut??? Mission, just a few miles away, easy to get at, we'll drill there. What Bill could not map because the outcrop ran out under a great long beach that extends for tens of miles up the east coast of Graham Island was that the anticline was one sided only and it was cut off on the north side by a fault. When I was there a year later, a great storm had swept away the beach sand and the fault was exposed and there wasn't any north limb on the anticline that they drilled.

#408 AK: So it was an open anticline.

RB: Yes. But one of the pleasure there was the people of the islands that I met and worked with and that's been. . .

AK: Haidas.

RB: Yes, I met quite a few Haidas but some of the people like Philip Turner and old Charlie Valley who was an old timer on the island, a most interesting man, with all sorts of interesting geological theories.

AK: In the Queen Charlotte's you were not involved in the offshore which Shell permitted some years later but you did turn into a geochemist and you did some geochemical work on those wells. Let's turn quickly to the next phase. Would you say that one of you next major phases was Waterton?

RB: Well, I got involved in the foothills in '52 and I took a field party out and mapped on the Burnt Timber area and Walt Toval??? who's now one of the curators of the Royal Ontario was my field assistant and Willie Norris of the GSC was another one. And Shell was beginning to get interested in the foothills again at that point. In the winter after I wrote my report on the summer work, I was assigned to go over all the available information about the foothills and see if I could see any indication on the surface of likely looking structures. One of the good maps was one of Con Hague's in the Beaver Mines area. So I worked that over and over and over and did bus cross sections and so forth and convinced myself and eventually convinced management that the surface geology indicated a strong possibility of anticlinal structures at depth. And I recommended that we take up a permit. When I was preparing to make my presentation to management, to George Lewis actually was the first step, I went over the whole thing with Jerry Merritt, who had also been doing foothills work, just to get all my thoughts lined up and get his criticism of my presentation. Unknown to us, we were in the office with just bankers partitions and there was an employee of another company standing in the corridor and he listened to all this. Early that afternoon I presented my ideas to George who immediately took them up to the office and Shell said we'll move on it. They sent a landman up to Edmonton the next morning to file a permit and when he got there the permit was already gone. This other fellows company, he's gone up the night before after hearing my explanation and filed on it and eventually Shell had to buy it back from that other company, whose name fortunately I've forgotten now.

#455 AK: Was it Plains Pete???

RB: It could have been, Shell was in a joint venture with them somewhere else.

AK: There was a fellow named Faulkner who had some acreage along the trend, I don't know whether it was around Carbondale or where it was, but he worked out of New York City.

RB: No this was a local fellow for a small company in Calgary. And we were drilling a joint venture and he used to come in every day to get our drilling report to take back to his office and this day, he was on his way down to get the drilling report and he overheard me talking to Jerry Merritt and stood there as we found out afterwards. . .he admitted it afterwards. . . he stood there and listened, found out exactly what we were talking about and rushed up to Edmonton and filed an hour or so before our landman got there.

AK: He should have kept an override.

RB: Well they did something like that. He came around then a few days later and said, I understand you wanted this acreage down in the Pincher Creek, Waterton area, we've got it, we'll sell it to you. And they made some kind of a deal, I don't know what. But the shell went down and did seismic and eventually the Waterton field was discovered but George Lewis says it was my analysis of Con Hague's map and the credit really goes to Can Hague for the very, very good surface mapping that led to the discovery of Waterton. But of course, seismic had a far bigger role to play. We never did do any surface mapping down there.

#481 AK: And this structure was right out under some of those pre-Cambrian over thrusts, wasn't it?

RB: No.

AK: Well, they were drilling wells up some of those draws.

RB: Yes, the discovery well, I don't think. . . .

AK: No, I didn't mean the discovery well but I meant the structure, the reservoir went west.

RB: Probably yes, under the McConnel??? thrust, I guess it is, or the Lewis thrust.

AK: Just to go back a bit, Bob, you were saying that when you returned from the Queen Charlottes, you were asked to go down to scout the Pacific-Kalispell flathead well. . . which, I mean, you had to get into it from Kalispell and this was a well that was drilled through the Beltian??? pre-Cambrian rocks and hit a large flow of gas which turned out to be carbon dioxide. You were saying that you were up there with the Customs Officer.

RB: Yes. A man called Stevenson and he was listening to their radio broadcast to the Calgary office and the Calgary office radioed back to them at the well sight and telling me, what they were reporting. One evening I came in and there was all this excitement about the gas and then the next day, Stevie heard that he heard this transmission back and forth and the office had told the guys at the well to light the flare, they were drill stem testing, and tell them how long the flame was and they got back on the air a little while later and said that the stuff wouldn't light. That was when they realized they had CO<sub>2</sub>, not methane.

#512 AK: Just for the record, Shell drilled two very deep holes in the general area to the north, accessible of course, from the Crow and the word is now that they're trying to harness those wells up because they obtained carbon dioxide in those wells as well, so

there's some indication that they might even build a pipeline to bring the carbon dioxide in to Alberta to use for Tertiary stimulation. And I think on that note Bob, we'll stop that tape here and once again, thank you.

End of tape.

Tape 3 Side 1

AK: Friday, May 28<sup>th</sup> and this is session #3, cassette #3 with Dr. R. A. Brown, Langham Court. Maybe for the record we should put in here that the R.A. Brown that is being interviewed today is not the Robert A. Brown Jr. of Home Oil notoriety. No relation.

RB: No relation but we were of the same age, within a month or two and frequently mixed up when I lived in Calgary. It was hilarious how frequently I was mistaken for him and he was well known and famous and wealthy and I was just a newcomer geologist.

AK: Did we put on the record where you lived when you were in Calgary, what part of the town and what school your children went to and that sort of thing?

RB: The boys went to a lot of different schools as they swapped population around from school to school, they were building new schools at that time. That was in southwest Calgary, mostly in the Killarney, Glengarry district. Eventually I built a house in a new district that opened up immediately west of the old Currie barracks in the airfield there, right on the edge of the flight path. that they left as a swath running west from the old. . .what was is, Lincoln Park field or whatever.

#013 AK: And that would be near what is now known as the Crowchild Trail which is being widened. They've torn out a whole bunch of houses between 33<sup>rd</sup> Ave. And 17<sup>th</sup> Ave.

RB: It was 31<sup>st</sup> St. S.W. I lived on. They built a whole bunch of new show homes in there and I arranged to get one of the builders of the show home group to build a house for me. And I just lived there for about two years, having been assured that I was going to be in Calgary for the rest of my career with Shell and in about two years I was moved to Edmonton.

AK: What was the reason for your move to Edmonton, Bob?

RB: This was one of the numerous episodes of decentralization and recentralization that were going on all through the oil industry at that time. So they thought I could work better out of Edmonton in the Northwest Territories than out of Calgary although it really didn't make all that much difference.

#023 AK: So your assignment was that area north of 60 degrees and as far north as you could go.

RB: That's right, right to the Arctic Ocean. Gordie Bassett had done reconnaissance around the west end of Great Slave Lake in '53 and then they decided to really get into it and then in '54 they set it up as a district and I was made District Geologist. And we explored there continuously for about 5 or 6 years doing both detail and reconnaissance mapping.

Very little was known of the geology, so we mapped up and down the McKenzie River and then gradually went further and further east and west of there. We didn't go much east of Franklin mountain range, east of the McKenzie, although one year, Peter Gretner???, who's now teaching at University of Calgary had a party out and he did a very big area, as far as the west end of Great Bear Lake and north of there, just up to the edge of the treeline and the headwaters of Anderson River and in through that country. And then we were working out of a base camp in Inuvik, on the little lake between the airport and the town, it's now known as Shell Lake I understand. We had four parties out from '55 on, we had four parties out every season. And at one point, I guess Shell had done more geological mapping up there than any other company and you know, we had a pretty good general idea of the geology.

#039 AK: It was about that time that Andy Baillie, then with Gulf, now retired, recalls that he

went up to do reconnaissance work, I believe it was in the '50's but maybe it wasn't until the '60's. . . .no, it would have to be in the '50's because they drilled a well at Reindeer. Do you remember the Reindeer well, which went through 12,000 feet of Tertiary sediments.

RB: Yes, I think that was a bit later.

AK: Yes, that was '65 probably, that was maybe 10 years later. But when you were working there, you were drilling some holes which were farther south and perhaps more into. . .

RB: We eventually came around to drilling. The first well was at Liard??? Rapids on the Liard River. That's the one that ran into pre-Cambrian basement at fairly shallow depths. A surprising and not happy result. Then we found a lot of good anticlines and we drilled quite a number of . . . .by that time I was given other assignments. I was still on the job when the Liard Rapids well was drilled and after that I was only peripherally involved with the Northwest Territories.

#054 AK: Perhaps you should go back and explain from the geophysical standpoint what went wrong at Liard Rapids.

RB: Well our regional mapping gave indication of some kind of an anticlinal structure or a high that ran from roughly Liard Rapids up towards Campsel??? Bend. Most of the country there is covered with Cretaceous sediments and very little exposure but there were some indications and one other company had drilled a well or two around Campsel Bend and around Fort Simpson. So we did seismic over that area and one thing we ran into was a buried loop, a glacial in-filled loop of the Liard River which had 1,400 feet of unconsolidated sediments in it and we got reflections off the original rock valley walls. It took a while to sort that one out. Then we got deep reflections indicating a good anticline with closure at considerable depth, I don't remember just what, and it seemed to correlate with the top of what was then known as a hune??? formation, a limestone formation that was known to be good reflector. And that fitted reasonable well with our stratigraphy and our ideas the little bit of information we had from these few fairly shallow wildcats that had been drilled to the north of there. So from experience in New Brunswick, where we'd

found that we got reflections out of the pre-Mississippian crystalline basement rocks, to everybody's surprise, we questioned whether or not we might be getting reflections from a pre-Cambrian high. But the geophysicist assured us that that was impossible. So we went a head and located that well and drilled. There were a lot of logistical difficulties because of a year of exceptionally low water, when we tried to get equipment down the Fort Nelson and Liard Rivers. However it turned out that these reflections were coming from the pre-Cambrian crystalline basement at depth and that was the story of that one.

#076 AK: Now before we leave the Northwest Territories, perhaps you could explain Bob, how the land tenure was arranged. You were saying that you would take out large blocks of land and try to evaluate them and then after having, either evaluated by seismic and/or by drilling then you would drop them. Was this the case?

RB: Well, it was not quite like that at the start. The rules at the time allowed you to take permits for an exploration commitment and the first years we simply did surface geology, surface mapping. And each winter we'd select a number of permits equivalent to the amount of work we planned for that year. We were going to do the work anyhow as we figured we might as well get a land position with that. Then we'd do the geology and if the permits looked good, we'd hang on to them, if not we'd let them go. So Shell had millions of acres of permits in the Northwest Territories through those years, '54 to about '59 or '60. And we took up many permits and dropped them again but we hung on to some and eventually drilled them. We started to drill I guess, in '58 or 9. Some of the fellows that were involved with me, Walt Tovell??? was a Party Chief for me for a couple of summers, Peter Gretner???, who now teaches at University of Calgary, did both geology and geophysics for us up there when we got into doing seismic. Shell kind of pioneered the use of helicopters for moving seismic outfits, at the Liard Rapids sight. And we pioneered a few things like that.

#095 AK: Going back to that famous Shell hole, I was told that there were great stockpiles of mud that had been brought in, in preparation to drill a very deep hole and of course, naturally they weren't used.

RB: The hole was projected to 10,000 feet I think, and I believe it only went to 5 or 6, something like that, so undoubtedly there was some mud left behind.

AK: Did you field men double as well sitters?

RB: No, not as a rule. Somebody from the stratigraphic crew usually went in to do the well sitting or they flew the samples out and they were run in Calgary.

AK: Did you have Art Roop??? there in those days?

RB: Yes, Art Roop was there at that time. But he was still concerned mainly with carbonate reservoirs in the plains area.

AK: What about Jasper Dooge?

RB: Yes, Jasper had worked with me in the foothills and stayed on in that for a while. I don't think Jasper was ever in the Northwest Territories at that time. Later on he was in the Northwest Territories district doing sub-surface studies and so on. And then he was set down to the States for a number of years on assignment.

#109 AK: You'd be interested to know that I contacted him in some work that we were doing in southwest Ontario, he was doing the stratigraphy of southwest Ontario. And he'd spent weeks and months running the samples in London, Ontario. But there were two things I wanted to ask you about the Northwest Territories. At that time, did Shell make any attempt to follow up on Norman Wells?

RB: Not directly. Norman Wells was. . . we acquired all the old Canol Reports and studied them very thoroughly and made good use of them. That was very useful information but we sort of stayed away from the Norman Wells area and the area that had been tested in the days of the Canol venture, the Canol drilling. Because we thought that those were pretty valid tests and there wasn't too much point in going and drilling again close to where one of those wildcats had already been drilled and found dry.

AK: They did a very massive wildcat program around Canol.

RB: Yes. They went far afield from the ??? field and the Canol camp.

AK: Yes. But what I was thinking of was the concept of more reefs as you went downstream, down the McKenzie River, along that kind of long linear stretch of the river.

RB: Oh yes. This was very much in our minds and the reason that we did so much stratigraphy and so much consideration of the carbonate possibilities. And we measured many, many sections in detail of Devonian carbonate sequences and so on. As well as getting the general geology. Another company that went in there, all they did was find a good exposure and measure and map a section in detail and sample it and so on. But they never, at that time, related it to the general geology. Our concept was that it was no good knowing all about a section if you didn't know where it fitted into the overall picture, so we did both. We did detailed sections and we also did. . . it was a little more than reconnaissance mapping but not quite detailed mapping. We sort of went where there was lots of outcrop and mapped it as thoroughly as time allowed and it was a short field season.

#136 AK: That's true. The other question was, was you or Shell looking at, right down there around the delta of the Mackenzie.

RB: At first our feeling about the Delta was that it was probably very young sediments, quite likely lying on a very shallow basement. There were indication of that from the geology on either side. Then another company, the same one that had been doing the detailed stratigraphic sections, thought that we were very much interested in the delta so they jumped in and took some permits on the delta, thinking that Shell must know something they didn't. Then Shell said, well maybe that company knows something we don't. And I was on a course up at Banff and I was called back and in a matter of 24 hours, we acquired a bunch of permits on the delta simply because this other company had done it, thinking they knew something we didn't. A few weeks later I met the Chief Geologist at this other company, whom I'd know years before, at a party, and he was feeling fairly happy and he said, you know, the reason we took out all that acreage on the delta was because we thought you knew something we didn't and we didn't want to be left out, but because you'd been doing so much work around the delta. So each company gave the other one credit for knowing something that neither one knew. So we got into the delta

sort of by luck rather than skill and of course, it turned out to be worthwhile.

#154 AK: Yes, but really with that tremendous drilling program that went on after Taglu??? was discovered in '71, Shell really didn't find very much in there.

RB: No, no. The offshore has been far more productive than the delta, but the studies in the delta led to the offshore.

AK: That's right. Did Shell ever think about filing on the offshore acreage?

RB: Not at that time, no. We had taken over Cree and acquired some acreage on the islands, when Shell took over Cree. I remember Ted Link at a meeting saying that he was very happy that Cree had turned over their acreage in the Arctic to Shell and thereby bailed out Shell out of a difficult situation. Typical Ted Link remark. It got a big laugh of course.

AK: Yes, I think that was around '60, '61.

RB: Yes. That led to another phase of our operations there. We had this acreage that we'd acquired from Cree and we didn't know anything about it. Cree had done very little work on it, so we had Jop??? Albrecht???, a very, very expert photo-geologist and they put him on to doing a photo-geological study of that acreage as a way of deciding whether or not we were going to retain it. And Jop had done quite a bit of photo-geology already. We had had photo-geological contractors working on the Northwest Territories to fill in the gaps of our groundwork and we also had a fellow called Len Walpole, an old Royal Dutch Shell man, who'd had experience all over the world. Len worked with me for a number of years, both in the field work and photo-geology and Len was a super experienced photo-geologist and all the time we were doing surface mapping, Len was helping to supervise that in the summertime and then he was doing very detailed photo-geological studies and evaluating the photo-geology that the contractors were doing for us. So we did a tremendous amount of photo-geology, then I was taken off that and put with Jop Albrecht and he and I did photo-geology all over the Arctic Islands. And we did detailed photo-geological studies of a very large proportion of the Arctic archipelago. That lasted for a couple of years.

#182 AK: Do you recall what years those were Bob?

RB: That would be in about '67, '68 I think.

AK: Oh, that far along.

RB: Yes. Earlier Shell had got another fellow from the international group, a fellow by the name of Jack Hansinlow???, also a very expert photo-geologist and he had spent better than a year in Ottawa around 1954, studying the old Trimet??? photos of the Arctic Islands. And long before there was any kind of a detailed map of the Arctic archipelago from surface work and photo-geology, Jack had put together what turned out to be, a very accurate, very excellent geological map of the Arctic Islands based on this study of the old Trimet photos. Which is a fantastic feat because they're very, very hard to work with.

#192 AK: What influence or what importance would you assign that massive program called Operation Franklin, which Yves Fortier??? headed up in 1955?

RB: Well, that gave us a lot of really useful detail on the Arctic Islands. Prior to Jack

Hansinlow's photo-geological study, there was a little scrap of information known here and there and bits of information from early exploration which Jack ferreted out from the old literature and interpreted in terms of geology and put together a voluminous report and a whole great series of maps, which was a tremendous help to us later on. But the Geological Survey's efforts in there, when they really got going, Fortier and Thorsteinsen??? and those fellows, that was a tremendous help to understanding the geology of the Arctic Islands.

AK: Were you aware that Thorsteinsen got the Order of Canada?

RB: Yes, I'd seen that.

AK: That was a very well deserved. . .

RB: And I've had a student the last two years, a girl geology student who worked for two summers in the high Arctic for Thorsteinsen's parties up there. She worked as a cook, not as a geologist, she was just starting to study a little geology at U.Vic. But she came to be quite an admirer of Ray Thorsteinsen.

#209 AK: Certainly would. But let's get back on the mainland for a moment. You were saying that after you got some of these wells going that your activities in this Northwest District weren't as intense.

RB: No, I personally, then, was transferred to being a photo-geologist. And after doing the Arctic Islands and some mainland with photo-geology, then Shell got interested in the possibilities of the interior of British Columbia. And for two years, my assignment was putting together all the published maps and correlating the stratigraphy from map area to map area. You know, this was a multitude of formational names and the maps had been made over a long period of time and the same formation was shown in different colours and symbols and so on, on different maps and I had to try and correlate it all and make a general map and then fill in some of the gaps, which were very numerous at that time, with photo-geology, which I must say was remarkably unsuccessful. It's very, very . . . .people far more expert than I tell me that you cannot do useful photo-geology in the interior of British Columbia and not at all on the Coast and I've proved that to my own satisfaction since.

#226 AK: What year was this that you were working in British Columbia?

RB: That would be in the '60's, I can't remember the exact dates, but it would be in the '60's, up to about, let me see. . . '66. And in '66, I was given another assignment and sent down on an intensive course in Petroleum Geochemistry to our training and research centre in Houston and became Shell's Petroleum Geochemist and I did that up until the time I left in '70. That involved the whole of Canada, wherever we could do petroleum geochemistry, anywhere in Canada, I got to do it. A most interesting assignment that was.

AK: Could you explain what that entailed?

RB: Well, we studied samples taken in the field, we studied samples taken from core. There are various techniques, one is to make thin sections of suspected source rocks and if they contain carigen??? from the colour of a thin section, you can make a rough estimate of whether the source rock is immature, mature, or over mature, whether it could have ever

generated any hydro-carbons or not. There is a whole battery of chemical tests that we had made. Simply the recording of all this and getting it on the map so that it's interpretable is a major task in itself. Then we got into vitronite??? analysis, we never had the equipment to do it at my time but we farmed it out, either to Houston or to the Hague. And that is relating coal rank from the reflectives of the vitronite in the coal to the level of maturity. As Shell called it the LOM, the level of organic metamorphism of the source rocks. And it also involved trying to trace migration paths and time of migration and time studies and depth of burial studies and so on. Just putting together every scrap of information you could and eventually we got some of our own lab equipment in the little research centre we had at that time in Calgary, which was still fairly small.

#256 AK: That was up on the Edmonton Trail.

RB: Yes, so we could do some of this chemical testing ourselves, we didn't have to farm it all out to Houston.

AK: But the information would be correlated with wire line logs too? Did you correlate. . .

RB: Oh yes. For instance, my assistant, Bill MacIntosh and I spent many days at the core storage section in Calgary and we got permission to take little. . . you only have to have a few grams. We went through thousands of feet of core from areas that were of interest and took these little tiny chips of what appeared to be organic bearing sediments and then had them analyzed to determine the level of organic metamorphism. Then one of my jobs too, was lecturing to people in the company to try and explain to them how this all worked, what the theory was and explain to the what kinds of samples we needed so the stratigraphers could watch for stuff when they were running samples and pick out suitable material for analysis. And that got me into teaching and lecturing. I had to condense a seven week course, which was the equivalent of two years university chemistry, I had to condense that sometimes into a two hour lecture for my fellow employees. That was what got me interested in teaching geology.

#277 AK: Well, that's just what you're doing now, Bob, so the combination of that sort of experience and perhaps also as aside, what you're going to do this weekend going up to Savalas??? is also certainly in line with your vast experience with the hard rock in Quebec and Ontario. Let's go on, just to review some of the chronological periods there, 1954, you were saying that you had been given the Northwest Territories assignment as District Geologist and in 1958 you moved up to Edmonton and by that time a more intensive drilling program had started. Where did you live in Edmonton?

RB: First of all, in . . . I can't remember the name of the district, it was 114A Street and 72<sup>nd</sup> Avenue, just a little bit south of the University campus. Then four years later, in '62, some new lots came open in Grandview and I got quite a good deal on a lot in Grandview, which is where I'd wanted to live in the first place, and a pretty good deal on a new house there and had a house built in Grandview and that was where I stayed until I left Edmonton.

AK: Where is Grandview?

RB: Grandview is west of 122<sup>nd</sup> street, it's immediately west of the university farm and

immediately north of the western extension of the university farm area. Its a little square between the university farm on the east and south and Whitemud Creek on the west and the Saskatchewan River on the north. So it's just a small block of ground in there with a little caim??? on it, a little dome which gave it the name Grandview. You can see a little further from the top of that knob than elsewhere.

#304 AK: The other thing I'd like you to explain a little bit, is the method by which Shell operated. I recall two very separate, very distinct departments, the Exploration Department and the Production Department. Could you explain how that worked when you went out to drill a wildcat?

RB: That's right. The Vice-President in charge of the Calgary region or whatever they called it at the time, the names changed from time to time, was in charge of both Production and Exploration Departments. Overall charge of the whole operation, but then there was an Exploration Manager and a Production Manager and when the Exploration Department decided it was time to drill, they then worked with the Production Department or the drilling division of the Production Department and decided how deep to drill and what kind of a rig was needed and then the actual logistics of getting the rig on site and drilling was entirely the job of the Production Department. Exploration very often had a man well sitting, if it was a real rank wildcat, but Production Department had full charge of what went on at the well and selected the rig and all that sort of thing.

#323 AK: Well, did the Exploration Department call tests, say if there was a break in the drilling speed and the samples showed up and there was some shows, fluorescence, was the well site geologist able to overrule the production people and say, hey, I want a test.

RB: Well, that was often a matter of negotiation. Usually what we did when a well prognosis was drawn up, we would say, we want to allow for so many tests, so many feet of coring and so forth and so on. That was left pretty well to the Exploration people, in the wells I had anything to do with, but Production could always say, well, for mechanical reasons, we can't test right now, we'll have to drill another few feet, or we can't core in this formation, that sort of thing. So it was usually a matter of negotiation between the two departments. But Production Department had a pretty good record for drilling efficiently and at fairly low cost and they were always very much aware of that and it was sometimes a little difficult to persuade them to allow for the amount of coring and so on that the Exploration people would have liked.

#340 AK: Did the Exploration Department prevail over the Production Department when the hole was completed and there was a marginal looking sand or carbonate bed that the explorationist thought should be more fully evaluated so to run long strain???

RB: Again, that was usually negotiated and there were a few mistakes I guess, both ways, but I don't think there was ever any real serious hassle over it.

AK: The Land Department came under Exploration, did it not?

RB: Well, the Land Department was sort of a department to itself. It worked very closely with both Production and Exploration. When Exploration would decide that they wanted a

permit, then they'd work with Land Department and Land Department would go through the mechanics of getting it and kept track of the land and the obligations on it and so forth and notified Exploration that another quarter million dollars had to be spent on this, that or the other permit. And they did the same thing for acreage, which seemed to be productive and then was transferred to the supervision of the Production Department. Exploration, once production was established, then they surrendered all control and Production Department had their own geologists and well log specialists and so on, who continued to then, develop the productive acreage.

#363 AK: Let's name a few names here Bob. You were mentioning Ernest Robinson, was he a Californian?

RB: I don't know what his background was to tell you the truth.

AK: But he was the Vice-President. . . .?

RB: When I first went to Calgary.

AK: And he was succeeded by Paul Kartzke, who had previously worked in California and Wyoming. Quite a gregarious person. He was quite visible.

RB: He was a very outgoing, friendly man, who insisted on even very junior people calling him by his first name and trying to get to know his staff and their families. I found it very congenial working with Paul Kartzke, I had him on numerous trips in the Northwest Territories, he loved to work in a little fishing and hunting, fishing mostly.

AK: And under Paul, you had a Production Manager, and an Exploration Manager.

RB: That's right.

AK: Who were they?

RB: Bob Wing was the Exploration Manager for quite a number of years and I think he was succeeded by Fred Kidd later on.

#382 AK: Where had Wing come from?

RB: I'm not sure where he'd been. He'd worked in numerous places in the United States.

AK: But he was U.S.

RB: Yes, he was a U.S. person.

AK: And the Production Manager was Metz, did you say?

RB: No, Sutton Metz??? preceded Bob Wing as Exploration Manager. The Production Manager a lot of the time, was Mac Machlaclan??? who had originally been a hard rock mining geologist or mining engineer. And then he, like me, got out of mining and into oil.

AK: Did he not move out here, and he died, didn't he? He had a heart attack.

RB: Yes, Mac had a heart attack before he retired, continued for awhile and then took a somewhat early retirement. I'm not sure if he came to the coast or not, and then died quite suddenly and quite young.

AK: I have a recollection he moved to Nanaimo, but I remember Mac very well, but I'm trying to remember in what context. The other name that we should discuss is George Lewis, the Welshman, who is living here in Victoria and I seem to recall having quite a bit to do with him on the Priddis well, which was drilled with jointly owned acreage of Shell's and Home's and it was right on the edge of the Sarcee Indian reserve. Do you remember that,

that was in 1954?

RB: That was about the time that I got out of the Calgary. . . I think they called it the Calgary District or Foothills District or something. I was 2IC to George when he was in that subdivision of the Exploration Department. If Priddis was drilled in '54, that was just the time that I went to the Northwest Territories and my time was pretty well taken up with that.

#413 AK: You don't recall any of the details of that?

RB: No.

AK: It turned out to be a pretty modest thing, I think there's only one well on the structure and they drilled dry holes up on the Indian reserve, which later on, I was in charge of, with the government. Okay, the other name was. . .there was a fellow that was in the Land Department, running the Land Department that was there for many years.

RB: Jack. . . . oh, my memory for names is slipping badly. I know the fellow you mean.

AK: Well, we mentioned George Cormack, who was in the drilling department and Ralph Archibald, who had been with Imperial but went to work with Shell as a safety man. And I would imagine from your standpoint, you wouldn't have too much to do with them, but I believe you were saying that because the Shell staff overall was rather small, relatively small in those days, that you . . . .

RB: Yes. Everybody knew everybody, pretty well.

AK: And you were saying earlier that you were scattered all over in small offices here and there. Did you get yourself all together in the old Palace Bakery or the Barons Building, which was it?

RB: Well, we were in the Barons Building, Shell bought that old bakery and remodeled it, practically rebuilt it and made it their Head Office for Western Canada for Exploration and Production.

#439 AK: That was 1027 - 8<sup>th</sup> Avenue S.W.

RB: Yes. And they still couldn't contain everybody and the gas company built a new building, just back of the Hudson's Bay there on, what would it be, 6<sup>th</sup> Avenue. . . .

AK: 6<sup>th</sup> Avenue and 1<sup>st</sup> Street S.W.

RB: That's right and Shell took over several floors in that and I had an office there for awhile. When I was first in the Northwest Territories District, I had an office in the basement of the old Calgary Stock Exchange and I remember somebody had had the office before and one wall was painted magenta and three walls were painted pea green. And the first time Paul Kartzke walked in and looked at that, he said, how can you stand to work in this place with this paint job and I said, I keep my back to the magenta wall, which I did.

AK: Did we put on the tape about your moving to Edmonton?

RB: That was in 1958, when the activities in the Northwest Territories expanded greatly and we got into drilling and a lot more seismic. And I lived in South Richmond Park, I believe the district was called and then four years later built a house in Grandview and lived there the rest of the time I was in Edmonton.

AK: You were saying that was kind of hemmed in between Whitemud Creek and the North Saskatchewan River and the university farms. A very pleasant spot.

#466 AK: I think the other people we should talk about a little bit are the ones that are the very senior executive positions right now, Jack McLeod, who you probably saw rise through the ranks. Could you say a little bit about Jack?

RB: Yes, I don't remember exactly when it was that Jack started with the company, but he was a young engineer and our paths did not cross very much. I think he was more involved with the wildcatting and production matters in the plains region. But I remember, he wanted to join CIM and I was one of his sponsors and Bill Daniel, again, being in Production Department and he was in another district to anything I was working in, so. . . I knew who he was and we chatted a bit and we have corresponded and met at retired employees meetings the odd time. Strangely enough he remembers me. From the very first, both of those fellows, it was obvious that they were going to go somewhere in Shell.

#487 AK: I remember that when we were doing the Priddis thing, that Bill was quite heavily involved, but he went on to greater things. What about the chap that succeeded Kartzke, you were saying you couldn't remember the name of that gentleman. That isn't all that important, but under him, who were the Exploration Managers and the Production Managers.

RB: Bob Wing was there, Bill Grossman was another chap, who was . . . they decided that he was going to move on up in the organization and after Bob Wing left, or no, I guess, when Bob Wing was still there, Bill was made Production Manager, so as to learn something about that because he had been an exploration man all his working life with Shell. And then after Bob Wing left, Bill Grossman became Exploration Manager and then eventually Vice-President in charge of Western Operations.

AK: And you recall it was Fred Kidd that succeeded him.

RB: Fred Kidd I guess came in after Bill Grossman then.

AK: But Fred was moving up through the ranks and I guess it was at this time that Shell was changing its image a bit and I believe in there somewhere, Shell Oil Co. became Shell Canada Ltd. or something like that.

RB: Well, Shell Canada Ltd. acquired much more independence and they went public and started to sell shares somewhere in there. That was around about the time that the Canada Pension plan came in, or maybe a year or two before that, because people had the option, instead of just putting money into the provident fund, of buying Shell shares.

End of tape.

## Tape 3 Side 2

AK: . . . [in mid-sentence] the U.S. subsidiary.

RB: Not as far as I know.

AK: Nor was there any, I suppose, with the Royal Dutch Shell, for people of your level, there may have been some for maybe, executives.

RB: Yes, but certainly not for Canadian employees. And it was when Shell Canada went public, in the late 50's or early 60's that the provident fund, the arrangement whereby employees could contribute a portion of their salary and Shell matched it dollar for dollar, became changed so that instead of putting it all in in cash, you could put some of it or all of it into buying shares of Shell Canada. And many people have taken advantage of that of course.

AK: Yes, well that would have come in later.

RB: Yes. That was as I say, in the late 50's or early 60's. The plan coincided, about, with the time when the whole Shell pension plan and provident fund plan had to be revised because of the Canada Pension Plan coming in. And a certain number of us, who had a certain amount of money accumulated in the provident fund, which ordinarily we couldn't have withdrawn until we retired, we were allowed to take it out. There were 17 of us, I think, who had enough in that we were allowed to take all or most of it out. Otherwise we were going to suffer a terrible tax penalty. So the company said, this isn't fair and they changed the rules and 16 of the 17 of us, who could do that, took our money out.

AK: In cash.

RB: In cash yes.

#015 AK: And was it deemed non-taxable.

RB: It wasn't non-taxable, but it was taxed at a much lower rate than it would have been if we had left that amount of money in until retirement. And you could do things with it, you could invest it in certain ways that diminished the tax bite.

AK: Oh I see, this was before the RRSP's.

RB: It was before RRSP's but you could buy annuities and I did that with some of mine and I bought out my mortgage and remortgaged at a smaller amount and a better rate and saved myself about \$16,000 in interest. So it was a nice of the company to do it.

AK: Speaking of pensions, there always seemed to be two levels of pension. Like Van der Sheldon??? had worked for Shell in foreign service, he came to work for me with Home Oil and then he went back to Shell. He'd already retired once. Could you very briefly explain the two types of pensions, for those on foreign service and those in Canadian service.

RB: I don't know all the details of that.

AK: Well, the year, you know, the number of years, the formula.

RB: Well, the people who were on foreign service, like Ben Van der Sheldon and Len Walpole got credit for two years service for each year that they served foreign. And so that meant that on the Shell retirement scheme, when you could retire when you had accumulated 80 points, so many years of accredited service, plus your age, totaling 80 points, that they could get to retirement much younger than people who were on the ordinary scheme that the rest of us were on where each year counted for just one year. And so some of those fellows who had a lot of foreign service were able to retire early with a vested right??? and a full pension. But some of them, because of the different pension schemes in Royal Dutch and Canadian Shell and American Shell and so on, and Ben was one I think, ended up with a rather small pension.

#035 AK: Well, his pension was being paid in guilders.

RB: Yes, I think this was maybe what. . . .

AK: So that was a help because of the exchange rate.

RB: I know Ben used to be concerned about his pension and mentioned it a few times, I knew him socially a bit, but I never knew just exactly what the situation was. I know Len Walpole retired when he was still associated with me in the Northwest Territories. Retired quite happily and satisfied that he was well looked after as far as pension was concerned.

AK: Right. One of the jobs that you had besides being involved in the Northwest Territories was looking after everything, you might say, from Ontario east. Could you explain that a little bit and how that worked with your scout in Ottawa.

RB: Well, Shell didn't want to write off the rest of Canada completely but they didn't want to be active, they were so involved in Western Canada and the Northwest Territories. So I was given the job of keeping track of what was going on, if anything in Eastern Canada and trying to keep track of the literature and activities of other companies. Because for instance, in New Brunswick, Imperial took over after Shell pulled out, Imperial took over much the same concessions and did more work and more drilling down there. So eventually we put a scout in Ottawa and he kept track of things from Ottawa and had very good relations with various government people there.

#052 AK: What year was that?

RB: That would be in the fifties, generally speaking, '54 to about '60 roughly. For instance, Shell asked me to see what I thought of going back into. . . or going into southwestern Ontario. So I did a study of possibilities in southwestern Ontario with the conclusion that there was a possibility but there was no possibility because of the way land was held and oil and gas rights held by individuals, of getting a whole pool. So they decided that they could spend their money better in Western Canada where, if they discovered something they could get, had a chance of getting control of a whole new oil pool, which was impossible in southwestern Ontario.

AK: And yet, you may be interested to know that as a result of some of their permitting with

some of my land at Indian Minerals, that they did extend a gas field down there.

RB: Oh yes. And some of the companies like Imperial had been in there for years with Bill Rollop??? and they had got options and so forth, so they did control big blocks of acreage but at the time Shell was thinking of the possibility of going in, there was no way one company could get a big block of acreage. And that was always Shell's idea, to get control over a big block of acreage.

#066 AK: Yes. This was the Royal Dutch Shell idea of concessions, such as existed down in Venezuela and other parts.

RB: Yes. They'd had success with that mode of operation and they tended to stick with it. Later of course, Shell did acquire huge blocks of land in the St. Lawrence lowlands of Quebec and drilled several wells down there, I think they were all dusters. But they did drill a number of holes there.

AK: Did they not team up with Soquip???

RB: They must have had some relationship with them because Soquip was getting going at that time.

#073 AK: Going back to British Columbia and your work in trying to correlate the geology, did you follow through very much with the NFA group or was that taken over by other people?

RB: That had been dissolved by the time I got to working in British Columbia or pretty well dissolved or companies had gone each in their own way.

AK: I recall in the early sixties, Gordon Crombie???, who's now dead, being the superintendent of the. . . kind of a coordinator of a thing, with Texaco being the. . . .

RB: Texaco became the operator.

AK: Yes. But his remarks led me to believe that there was an awful lot of bickering and they couldn't agree on very much.

RB: When I had anything to do with the NFA group, what seemed to happen always, they'd talk about an exploration program or a drilling program, three companies would agree and one company would disagree and they sort of had a right of veto. And it was very difficult to get anything going and have it go to completion.

#084 AK: Well, there's still a lot of that acreage, of course it's all gone to lease long ago, but a lot of those lease blocks are held by one well you know, and they're probably not very good wells but they're being held. Okay, let's turn to personal matters if I may, and to the extent that you care to tell me, you had said earlier that your first wife died in 1966.

RB: No, 1965.

AK: And was that as a result of some. . . .

RB: She had fought leukemia for quite a number of years and it had been about 1962 that she was diagnosed as having leukemia and she fought it off for quite a number of years, had remissions and so on. Then finally very, very suddenly the situation changed and her doctor phoned me on a Monday and said, she has only a week to live, very early the

following Wednesday morning she died. Prior to that, he'd thought she was all right. She'd been in hospital having some treatment and so on and he'd allowed her to come home on the Sunday and she came home and between us we cooked dinner and had a family reunion because she'd been in hospital for a week or so and the three boys and she and I had a very happy Sunday and three days later, practically two days later she was dead. On the Monday, she had been organizing a big home and school convention, she was Vice-President of the provincial association, slated to be President, but she knew she wouldn't be able to do it. And she met with a number of people who were coming up to the convention, in hospital on Monday and made some last minute arrangements.

AK: Worked right up to the last eh?

RB: Worked right up to the last.

#104 AK: Had she trained as a teacher?

RB: No, she was a bilingual stenographer and private secretary to the Vice-President of the Gurney Foundry Co. for many years, prior to our marriage.

AK: After you married, did she work or did she become a complete homemaker?

RB: No, she elected to be a homemaker. She did occasional jobs on demand, she did a little bit of work for O'Brien when I was still there because they needed somebody to do some.

AK: Well, that was during the war and there was a shortage.

RB: Yes. But no, she never went back to work. She preferred to stay home but she became very active in Home and School after we came to Alberta and built herself a very good reputation with the Home and School Organization.

AK: Yes, well it certainly sounded like this. Then you rebuilt your life with her being gone and you stayed on with Shell. After her death did you feel that you might want to change directions or did you have any feeling. . . .

RB: Well, it was a pretty upsetting business, we had been married for 26 years and we had been going together as the phrase has it, for 36 years. So it was a pretty bad blow to the boys and to me, but it had been her realization and understanding that I would not be happy as a bachelor so she said, now I don't want you to stay single to long. I want you to marry again when you find the right person. And very luckily through the Scout movement, in which I was active, I had met my present wife, who was also on the training team of the Scouts and we'd worked together on some training courses and she was a neighbour in Grandview. So about a year later we got married.

#125 AK: Was she a widow as well?

RB: No, she had never married.

AK: Oh, she was a spinster.

RB: She was a spinster.

AK: So it was a new career for her.

RB: And she took on a family with three boys.

AK: And they were what, high school age?

RB: High school and university age. There's a spread of seven years between the oldest and the youngest. But she had worked you see, with boys in Scouts, with Cub age, but she

knew kids and boys particularly. So the boys were happy with the arrangement and of course, I was, and she was.

AK: Maybe you could just give a little outline as to where your boys are now, what they have achieved, or would you care to?

RB: Well, starting with the youngest, he graduated a couple of years ago from U.Vic. with a Bachelor of Social Work and is working in North Vancouver for the provincial Health and Welfare people as a counselor in family counseling. The middle boy, who's going to be married on the 3<sup>rd</sup> of July, is the wanderer of the family. He's attended I think, four or five universities, ended up eventually with a Master of Public Administration from Dalhousie, and is now in External Affairs, stationed in Ottawa for the time being. He's had a couple of foreign assignments.

AK: And he's the one that's going to be married in the Barbados.

RB: He's going to be married in the Barbados in July. The oldest boy went into teaching and there, in the faculty of education at U. of A. met the girl that he eventually married. He rescued her from a stuck elevator which was how they met, which impressed her no end and very favourably.

AK: Was this in Edmonton?

RB: In Edmonton at University of Alberta.

AK: Was the elevator on the campus?

RB: In the new education building yes.

AK: So have they got some children.

RB: They have adopted two beautiful children, a boy and a girl. Michael himself, my oldest son, was adopted because it looked at that time that we weren't going to have any children. The doctors told us we would never have children so we adopted and then about a year later Chris was born and then five years after that Stephen, they youngest one. And Mike taught school, and his wife, both for a number of years, then they adopted two children, about two years apart and last year Mike decided to change careers and he's now attending NAIT and studying accountancy. And his wife is back teaching. She's a linguistic specialist, Nina, and speaks fluent French. Shortly after they were married, she applied for a scholarship to a summer course in the University of Toronto in French and was the only one accepted from all of Western Canada for this scholarship. So she got down there and found that instead of being a student, she was assistant to the professor who was giving the course and studying at the same time. She's a pretty bright girl

AK: And they're still both living in Edmonton.

RB: Both living in Edmonton, in Sherwood Park.

#162 AK: One of the thing that slipped my mind, Bob, was, in your final assignment with Shell as a geochemist, you finally got out onto the offshore by working on the samples from the offshore holes that were drilled in the inside passage out here north of Vancouver Island. Perhaps you could say a few words about that?

RB: Well Shell had started that West Coast offshore and also the East Coast offshore drilling, off Sable Island and so I got samples from all of that drilling and we worked vitronite reflectant to determine maturity of the source rocks. The problem on the West Coast

offshore was that there didn't seem to be very many source rocks and we kept finding that they were either immature or over mature. So from my point of view that didn't look too hopeful. In the East Coast offshore, we had problems because we were getting detrital??? coal of Mississippian age mixed in with the sediments and we had to sort out, which coal we were looking at to make accurate determination of maturity. We eventually sorted that one out. Then as I say, I got interested in teaching and found I liked it and seemed to be able to get stuff across, so I came out to Victoria on holidays in the spring of '70 to see if I could get a job teaching at University of Victoria, not knowing that they didn't have a geology department. By luck, the one course in geology that they were giving at that time was given by Charlie Howittson??? and he was going on sabbatical. So they said, well if you want to fill in for a year and take your chances, we don't want to discontinue the course, so you can give the course for that year. There were thirty students taking geology at that time or thereabouts. So I gave the course that year and I liked it and I liked the teaching. So then I enrolled as a graduate student in the Geography Department so that I could be the lab instructor for Charlie Howittson and continue in the course. And then eventually we instituted two new courses and I got to teach both of them and am still doing so and I both, give the lectures and do the labs. And those courses have grown from 5 or 6 to start with to nearly 40 student now in each of those courses, each year. And then Geology 100 has grown from 30 students in the 1970-71 session to last year we enrolled 120 or so in September. There's always quite a drop out in that course and it ended up with I think, 97 or 98 students wrote the final exam. I taught the labs in the course for a number of years and then there came to be more lab sections than one instructor is allowed to teach so I recruited George Lewis as a lab instructor and he's been doing the labs now for a couple of years.

#196 AK: Very good. When you had this first trial period, did you talk to Effie and say, well, this looks like what we should be doing . . . or how did you. . . ?

RB: Yes, she had visited Victoria many times on holidays because friends of hers who've become friends of mine, had a cottage here which they lent to her several times for holidays. And the first year we were here, those people were going to be away for a year so they rented us their house for 8 months. We lived out at Moses Point on the north end of the peninsula.

AK: So you weren't unfamiliar.

RB: No. And I had been out here with Effie on holiday trips.

AK: So you sold your house in Edmonton.

RB: We didn't sell it immediately, until we made up our minds for sure, we rented it to Herman Tennison??? of the Philosophy Department at U. of A. for 2 or 3 years and then finally decided to sell it.

AK: And then you settled in Sydney first did you.

RB: Yes. So we were in Deep Cove for the first winter. And then we went back to Edmonton for the summer and then while we were at the Martin's house in Deep Cove, we made friends with Gordon and Allison Brown, who lived on the other side of Moses Point and they were going away for six months the following winter and so they wanted somebody in

their house, so we rented their house the next year.

AK: You were kind of a house sitter? That's very convenient.

RB: Yes and we became friends with the Browns and Gordon and I are partners in this mining syndicate.

#214 AK: So in retrospect, it was a good move. Your having reached the golden formula age with Shell, that was 80 points, which is the sum of your age plus the number of years service.

RB: I had 55 years service and . . . sorry, I was 55 years of age and I had 25 years service, which makes 80 points and I elected to retire.

AK: Good. So since then you have seen your department expand here, do you have tenure?

RB: Oh no. I have worked as what they call a sessional lecturer on a year to year appointment. And I've done a little consulting. I was associated for awhile with a group in Seattle that held oil and gas leases in the Cook Inlet area in Alaska and I was their geologist for about 3 or 4 years and did some studies on Cook Inlet for them and made a couple of trips to Alaska for them.

AK: Have you had much to do with any of the people here in the department, Provincial Department like Wally Young or Bob Moth???

RB: Not in the petroleum side, oddly enough. My interested here have been more with mining and I've got to know quite a few of the geologists on the hard rock side, who have been extremely helpful to me in the couple of mining ventures I've become involved in.

AK: Did you know Jim Files???

RB: Yes, I had his son once, as a student in geology, Robert.

AK: I wondered how he is. I understood he had a very bad malignancy in his jaw.

RB: I wasn't aware of that. I knew that he hadn't been in too good health and I think he retired a bit early.

AK: Yes, his brother you know, I think is Chief Geologist for the Survey in Ottawa, John Files.

RB: It was he who put me on to my present partner in the Ab Syndicate, Angelo Orundi???. and then through him I met Nick Carter, who's now left the Department of Mines here and Nick had done a lot of work in the Alice Arm area and gave us all sorts of useful, helpful information, tremendously helpful, he was.

#244 AK: Bob, I think we're just about wound up here. Would you like to make any philosophical comments about life. I guess the other thing we didn't really mention was your professional affiliations and all through the pieces, the CIM keeps coming out. You've been a staunch member of that and you were given life membership I believe.

RB: Last January.

AK: Which is a very great honour. Are you registered as professional engineer?

RB: With Alberta.

AK: With the P.Geol???

RB: P. Geol. in Alberta. In B.C., unlike Alberta, they're trying to get geologists and

geophysicists registered as such but at the moment you have to be an engineer and I refuse to do that. I'm not an engineer, I'm not going to say I am. So I am able to write reports and so on as a professional geologist that are acceptable to the government here and that's what I've continued. You asked for philosophical remarks. I've been lucky enough to work in every province of Canada except Newfoundland, which I regret, and have seen a lot of Canada, moving back and forth, and I've met people all across the country. And without exception, they've been great people and one of my biggest thrills has been meeting people who have nothing to do with mining or oil or whatever. Fellows like Wilfred Helmer???, the well known guide and outfitter and the last big horse rancher in Alberta. Fellows like Dick Turner, who's written several books on the Nahani country in the Northwest Territories, who worked for me as a boat man. People, many, many people like that, that geology has put me in touch with. And this had been one of the greatest rewards, is getting to know people in totally different walks of life and becoming friends with them and learning from them. It's been tremendously rewarding.

#270 AK: I think that's very important. Do you plan on continuing with the University as a sessional lecturer?

RB: As long as they want to have me. As long as I can. My old professor wrote me a while back when he retired. He said that McGill was letting him stay on in some capacity and he's been told that although he'd reached official retirement age, he was going to be allowed to continue as long as his physical and mental health stayed sound and his moral character remained satisfactory. He said, my friends tell me, they have very little doubts about the first two criteria but grave doubts about the last, and I like to think that maybe I'm in the same situation as Tommy Clark whom I have admired for many years.

AK: Would you like to make a comment about the influence of older people on the lives of younger people, now I'm sure that many of the young people that pass through your hands have different views. Some of them, probably very forgettable. Do you get any satisfaction from pointing the direction for some of these people who really would like to have help?

RB: I think I have. . . from what some of the fellows who've worked on my field parties as student assistants and so on have told me. . .that they have been. . .because I'm rather simple minded person, they've been able to learn things and get clear on things from me because of my rather simplistic way of explaining things. And I take a little pride in that, that I've helped some people to understand geology a little better. I think I've encouraged some people to go into geology. Of late years at U.Vic., we've had several students who've got, so to say, turned on to geology because of courses they've had from me and have gone on to other institutions to continue in geology. And I like to think that I've possibly encouraged a few people to go into geology who will eventually be good geologists. This has been a great satisfaction. I don't know that I've ever made any great contribution but I've been involved in quite a number of aspects of geology and enjoyed it and hopefully have made some small contribution.

#303 AK: There's no question of that. I think we'll wrap it up there Bob, and once again, it's

been a very great pleasure for me to interview you while you're vigorous and young and still got quite a few years. I don't call this the final interview because maybe we'd like to come back in a year or two and maybe get some more philosophical thought from you and also names. I'm going to try to look up George Lewis and a few others but I think we'll sign off at this time and thanks very much Bob.

RB: Well, thank you Aubrey, I've enjoyed our sessions together and hope that I've been able to tell you something that you'll be able to make use of in your venture of putting together this book or just whatever it's going to turn out to be.

AK: I don't think it's so much for me but I think it's for the generations to come. Somebody 25 years from now will play this tape and say, who the hell was Bob Brown and Aubrey Kerr, so I think that's the big value of this.

RB: I've enjoyed meeting some of the old-timers, like B. R. McKie??? for instance, a most interesting man, from whom I got all sorts of anecdotes, from and about and maybe somebody else will get a charge out of listening to our conversations.

#324 AK: I suppose I should have asked you for anecdotes. That was one of the things I meant to get. Just as a parting shot, is there any anecdote in your career out in the bush or some place. I know you told me about that fancy cheque but something that's more appropriate to . . .

RB: Well, one that's strictly geological, Aubrey, that I love to tell to students. I worked in the Queen Charlottes with an old timer called Charlie Valley??? who was a prospector among other things and had made himself quite knowledgeable about geology. And one day I was breaking open concretions???, looking for ammonite fossils in the centres of the concretions. And Charlie said, Bob, do you know how them concretions are formed and I said, no I don't, I've never read a satisfactory explanation, he said, I know, I said, tell me. He said, well, you know how a sea urchin eats a clam, it sort of turns it's stomach inside out and takes in the clam and then digests it. He said, now and again, when a sea urchin would do that, he'd get a belly full of mud and then he'd die and that belly full of mud in the sea urchin would turn into a concretion with a fossil shell in the middle of it. And I said, well that sounds like a very interesting theory Charlie, it's the first time I've ever heard anybody explain concretions, but I said, How about these enormous ones that we're looking at right in front of us that are five and six feet in diameter. He said, well, I'll tell you Bob, back in them Cretaceous days, there was some terribly goddamn big sea urchins.

AK: Well, on that clever note, we'll stop and thanks again Bob. And this is Friday afternoon, it's now ten past five and we'll adjourn. Thank you.

