

PETROLEUM INDUSTRY ORAL HISTORY PROJECT  
TRANSCRIPT

INTERVIEWEE: Ralph Edie

INTERVIEWER: Susan Birley

DATE: May 1983

SB: It's May 17<sup>th</sup>, 1983, Susan Birley interviewing Ralph Edie. I wonder if we could just begin with you running through your basic biographical data, where you were born and raised and your early school days.

RE: I was born at Smoky Lake, Alberta, October 2<sup>nd</sup>, 1921, in a small hospital. I grew up in the village of Waskatenau, where my father was Postmaster and Justice of the Peace. I took all my schooling from grade 1 to grade 12 in this village of Waskatenau, which by the way is about 50 miles northeast of Edmonton. One of my teachers was Nora Brown who has two brothers in the oil industry here, Clive Brown and Frank Brown. Nora was an excellent teacher, she was my science teacher. Actually she taught for a good many years, she passed away about 3 or 4 years ago at Leduc, Alberta. I started university early in the war, 1940. I took mining engineering, graduated with a Bachelor of Science degree in May 1945. The war was still on and when I graduated a group of Army officers came to the university and they asked me whether I wanted to join the Army as an officer in the army engineers or go into industry. There had been such a large number of mining engineers at that time had joined the forces that industry was short of technical people. So I was encouraged, actually to go into industry and I went to Flin Flon, Manitoba until August 1945 and then to Yellowknife. I worked in Yellowknife for 2 ½ years and then I decided to go back to university and I went back in the fall of 1947 for my Masters degree at the University of Alberta. My Masters thesis was on metamorphism of volcanic rocks in an area northeast of Yellowknife about 50 miles. My thesis was done under Dr. Robert Fonsby??? and then following the I went on to MIT, Cambridge, Massachusetts and I graduated with a Ph.D. in 1952. My doctorate thesis was on uranium mineralization and wall??? rock alteration associated with uranium mineral deposits at Uranium City, Saskatchewan.

#037 SB: Had you developed an interest in geology before you went to university?

RE: Yes, my father was quite interested in mining and we often used to go down and break glacial boulders and you could see the different minerals, the feldspars and the micas and so on. The other reason that I took mining was at that time, my father felt that he could only afford to send me to university for one year. And the only place that he thought I could get a job and earn my way through university at that time was in the gold mines. We knew another student by the name of Harvey Nogla??? that came from our area that was able to do that. But I didn't like mining, when I was in it, it didn't appeal to me. It didn't appeal to me working underground, 5,000' below the surface in a hot and humid

conditions, dark and dangerous too. I almost got killed a couple of times.

SB: Where did you get your mining experience, where were the jobs?

RE: The first job was at Sudbury. I worked at the Creighton Mine as a student after my first year in mining engineering. I was lucky to get a job. Many students weren't able to get jobs but International Nickle offered me a job down there. They liked big strong husky people and I sort of fit the bill. I don't think it had too much to do with your academic qualifications. I worked underground there and I can still remember my number, I had a number, it was 11519 and the shift boss was a Finlander, an enormous man, probably weighed 250 pounds with big biceps. At the end of every shift, he didn't know my name but when we came back to the cage to go up the elevator shaft, he always called my number, 11519 and I would say here. Somebody had told him he had to keep track of this green student from out on the prairies I guess, make sure he didn't get lost in the dark tunnels underground.

#065 SB: So had you decided to go into petroleum geology. . when did you really make that decision?

RE: After my doctorate work I had fully intended to continue in mining but I didn't have a job in mining and I went back to the University of Alberta and I talked to Ralph Rutherford and he said, you know, I think if you spent a year or so working for oil companies, you'd learn a lot about sedimentation and stratigraphy that would help you in mining geology and he was absolutely correct. I learned a great deal about sedimentary rocks that would have helped me in mining but I didn't go back into mining. I enjoyed it so much, there seemed to be so much to . . there was so much to learn so I continued in oil.

SB: When you were working during the summers when you went to university you worked in the Northwest Territories?

RE: Yes. My second summer as a mining engineering student. . the second and third summers I worked on the Alaska Highway as a surveyor's helper and as a surveyor on the highway that was being constructed by the American Army and the U.S. Public Roads Administration. Then in my fourth summer I worked at Yellowknife in gold exploration, prospecting. It's interesting though, in 1943 I sort of rubbed shoulders with oil with officers of the geological survey, Con Hayden???, whom you may be interviewing was up there and he was doing geological work on the Mesozoic sediments and I had some long talks with Con Hayden and his partner in the evenings. He was camped on the Sicamechief??? River and I used to . . many evenings I went down there and talked to these people and I was fascinated by geology at that time.

#091 SB: Who was Con working for at that time?

RE: Con was with the Geological Survey of Canada and he 'd done foothills work all up and down the foothills. This was up in northeastern British Columbi but he had worked in foothills west of Calgary and Turner Valley and all the way north. That was a privilege actually to meet him at that time.

SB: Did you ever encounter any other students that later on you became involved in the petroleum industry, were there any people working with you in the gold mining?

RE: At Yellowknife, yes. Red Anderson, he was up there with me and he worked later as an engineer for Texaco for quite a few years. He's retired now. Back to your original question, how did I get into the oil industry, Rutherford had recommended I go into the oil industry, I applied with Texaco and Hugh Beach??? was the Chief Geologist. Unfortunately he's passed away because he was one of the top geologists in western Canada at that time. He'd done a lot of field work just like Con Hayden and structural geology. He was a Mississippian expert and he wanted me to continue his Mississippian studies. When I started with Texaco in 1952, Texaco was right in the midst of discovering a number of very prolific reef fields, Bonny Glen, Wizard Lake. So my work on the Mississippian was sort of overshadowed. This was so important for Texaco, they sort of left me alone for a whole year and I was able to . . . nobody seemed to bother me too much, I was able to study Mississippian rocks. They had some production at Madyo??? Lake in the Mississippian, west of Edmonton. So I was able to study cores at my own pace and do a lot of things that I wanted to do, some research on the Mississippian. And then after a year I decided that I wasn't getting paid enough so I left Texaco and I joined Shell Oil Company. They asked me, what have you been doing and I said well, I was working on the Mississippian. Oh, Arnie Cookshead??? was the guy who hired me, I think we'll just keep you right on the Mississippian, you've done a year on it and you might as well continue, we don't have a Mississippian expert. And that fitted me fine because Shell had a large spread of land down in Saskatchewan, right from the beginning development there I was called in to study the limestones in southeastern Saskatchewan, particularly in the Weyburn field where Shell had their discoveries. That was a fantastic job. I don't think there's anybody in Calgary has ever had such a good job as I had with Shell. I could go anywhere, I could consult the libraries, it was like a university job. The only requirement was that I write a one page report every month on what I had done and what I expect to do in the future. When I look back on it, what a fantastic opportunity. I was working very closely with some other research scientists including Peter Moore, who I greatly respect, he's still with Shell Oil Company, Gordon Bassett and Peter Taylor. The three of us worked in one room and we all had our microscopes and we could discuss problems, mutually and you know. . . we were getting paid to sort of go to university, it was like graduate school again. Anyway, when I left Shell after two years, I went with Alex McCoy Associates and I continued my research on the Mississippian and I was able to publish my work on the Mississippian in southeastern Saskatchewan, which is published in the January edition of the American Association of Petroleum Geologists bulletin in 1958. I have given that paper in Salt Lake City in 1957 and then it was published in '58. And then in the fall of 1958 I was invited to give this paper. . . invited to be a distinguished lecturer at the American Association of Petroleum Geologists and I visited 35 cities in Canada, United States and Mexico. Mostly universities, the greatest demand was from universities because here was . . . this had practical applications in the search and understanding of oil in limestone rocks. Before my paper most publications claimed that the porosity in limestones was secondary, it was due to solution passing through the rock and dissolving the rock and forming pore space. My work showed that most limestones, in Saskatchewan at least, had intergranular porosity just like sandstones.

I also showed that these limestones changed facies??? ??? to evaporate and this was perhaps the first understanding of the relationship in Canada between different limestone facies and the basin margin evaporate. It was important in understanding how oil accumulated in those traps. I also published my interpretation of how the oil was trapped, various types of traps, structural and stratigraphic that occurred in southeastern Saskatchewan in all my studies. At that stage I had, I suppose, 4 or 5 years of very concentrated study on the Mississippian by the time I had published this paper. Dr. Schloss???, when he revised his textbook on sedimentary rocks the title of it was Stratigraphy and Sedimentation, he and the other author. . I just forget at the moment. . anyway he used some of my diagrams in his textbook to illustrate some of these scientific findings. I suppose I've fully answered that question

#189 SB: Going back to Texaco, how did you first get the contacts for the job there, who was the supervisor and the other people.

RE: Hugh Beach, he hired me. I think there must have been, I guess about 10 geologists there at that time. There was [Harris Gruen and Dallas Prosser, Gordon Crombie]???, who of course, has passed away, he was the Chief Geologist. Dick Addy was the reef expert. They had an opening for a Mississippian expert. I didn't know anything about the Mississippian when I started, I was as green as anyone was to come in on a job like that. So that's how I started with Texaco.

SB: How did you decide to go to MIT, was there any reason for. . .?

RE: Yes. I had applied to go to the University of Minnesota because at that time I was interested in igneous rocks [in petrography]??? and the top university in the United States at that time was considered to be Minnesota because Professor Grout was there. He had published a book on igneous rocks. But it was right after the war and Minnesota being a state university and being supported by state taxpayers, gave preference to all the veterans that were coming back from the Second World War. So they cut back on foreign students and it was just impossible to get into Minnesota for a year or two, when I wanted to go anyway. It didn't matter what your marks were. So I went to Professor Allan. . no, I went to Fonsby and Fonsby said, let's talk it over with Dr. Allen and Rutherford. So I told them that I wasn't able to get into Minnesota and I'm not sure which one said, but they said, you have an engineering degree, you have all the math and science required to get into MIT and very few students can get in there because they don't have enough math and science. They said, we think you should go to MIT, well, I had never thought of MIT but Dr. Allan, that was his university so I applied. When I applied, I'm not sure who it was, I guess it was Rutherford, I had worked as his graduate student for Rutherford, I had helped him in the lab as a graduate student. He wrote a letter of recommendation for me when I went to MIT. After I had gone to MIT, Professor Shrock??? showed me this letter and I couldn't believe it was me, he praised me to high heaven. I'm sure a letter like that had to have a great deal of influence in getting into MIT because there was a lot of competition. MIT has never been a large university, they've always had a very restricted number of students there so it was a privilege to go but I'm sure the letter that Dr. Rutherford wrote on my behalf had to have an enormous influence.

#243 SB: Did you have any idea about your thesis before you went there or did that develop as you. . ?

RE: It went sort of with the job. At that time I had a job offered to me working for the El Dorado Mining and Refining Company in field work and they were anxious to have research work done on these mineral deposits in Uranium City. So there was another student there by the name of Ted Smith and the two of us were working on our doctorate on those mineral deposits and the wall rock alteration. I had done a little bit sort of gratis when for them. When I was at the University of Alberta I made up a set of rock tags with thin sections and I gave this to El Dorado on my own time. They paid the expenses of making the thin sections but I did all the work on it. So I had a little bit of a head start and it helped I think in the field work to know what types of rocks we were dealing with. Then when I was up there, there was a professor came from Columbia University, Professor Kerr. He wanted to get Ted Smith and I both, to go with him. He said, he had lots of money from the U.S. Atomic energy commission to do research on uranium. But our Canadian Geological Survey people got wind of it and they said, no, if the U.S. Atomic Energy get this information, we won't get it. They were afraid of secrecy so they said, no, we'll support you. So they did. They actually. . . I was married at the time and I had a child, so they gave us a fellowship, both of us and Ted went to Harvard and I went to MIT and we did research work on the uranium deposits. So that actually worked out very well for me.

#281 SB: You were also awarded a fellowship from Shell Oil at the U. of A. at one time.

RE: Yes. I think Professor Fonsby was instrumental in getting that for me. That was towards my Masters degree, which was on hard rock. You can't believe that Shell Oil would support a thesis on hard rock but they give it to different faculties. It was also open to the chemistry department and the mining and geological departments and Shell were pretty generous about it. They didn't seem to care what research was done. You'd think they'd specify something to do with oil or refining or something but they didn't. That was another reason that I was quite anxious to work for Shell because I felt sort of obligated to them, they'd helped me on my Masters thesis. So when I left Texaco, I immediately went to Shell, that was the first company I went to. And they hired me so. . .

#299 SB: They didn't do any suggestion of the direction of your research or anything like that then?

RE: No, Fonsby had arranged that it would be done on these metamorphic rocks in Yellowknife area. That was the field he was interested too at the time.

SB: Did you have any experiences in the field . . .well, your earlier field work that were really outstanding. . well, to begin with I suppose, when you're working in the Northwest Territories on the gold mining, was there anything.

RE: Well, I had some maybe hair rasing experiences. There was a bear came in our tent one time when we were sleeping. I was out with a prospector and a bear, he didn't have the courtesy to come through the door, he scratched a hole in the back of the tent and he came

in. I heard a lot of pans rattling and banging and I thought my partner had got up to make breakfast and he thought the same. All of a sudden I looked out and here was a bear about three feet from us. We both had 22 rifles and I took my rifle, I had it right above my bed and I took it down, it was a single shot, I put a long rifle bullet in it and Mike Peskoff, the prospector I was with said, if you want to shoot a bear, get him broadside and shoot right behind his shoulder, shoot for his heart right behind his shoulder. I hollered and the bear ran out, he did everything for me, he stood sideways about 20' away, so I aimed right behind his shoulder, down he came. My partner, Mike Peskoff had his rifle loaded too. Everybody says we were stupid to try and shoot a bear with a 22 and maybe so but anyway it worked and I still have the bear skin.

#335 SB: Did you have bear stew for the next few weeks?

RE: No, we didn't eat the bear. Some people eat them but we had enough camp food. Mike didn't think they were good to eat so . . . maybe they weren't I don't know.

SB: When you were working out there, you worked there for 7 years, was there any reason that you continued to go back there?

RE: It was all through my university days. For instance, 2 ½ years I was up there more or less continuously, saving up money to go back to university. It was all associated with my university training. I had to earn money to continue and you couldn't spend any money. I'd go to the bush for five months. I left my wife and child in the later years, with her parent in Fort Saskatchewan. So every nickel that came in went straight into the bank. So I was able to put myself through university at a time when you couldn't get student loans from the government at the time. When I graduated I had very little debt. At MIT the last year I didn't pay my fees, I borrowed the money from them. The fees were \$1,600 at that time, which was a lot of money compared to, at the time, it was only \$200 at Alberta. Anyway I borrowed that money and I had to pay it back. But so many students nowadays it takes years to get their debt paid off.

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Tape 1 Side 2

SB: I wonder if you'd like to continue with some other areas that you made a significant contribution to the field?

RE: Yes. I think in the field, understanding the stratigraphy and sedimentation of the Winnipegosis, prairie evaporite formations in Saskatchewan. I think I was the first one to interpret that the Winnipegosis formation in central Saskatchewan consisted of some ancient atoll reefs in which evaporites, mainly anhydrite, some dolomite and salt were deposited in the interior lagoons, in the large interior lagoons of the atolls. And that the best porosity was in the atoll reef margin formed of stromatolite??? and calcirudites, quartzs???. Unfortunately there hasn't been any oil found in these reefs or else I suppose my work would be much better known. It's almost been lost in the literature, it was published back in 1959. It's still possible, particularly down in North Dakota that there will be stratigraphic oil found in these Winnipegosis reefs. So far all the oil that's been found in the Winnipegosis in Saskatchewan, Dome Meadows, Fall discovery, it's all been in small structures. There hasn't been really anything too significant found. Perhaps the Imperial Oil geologists, after I . . . in my paper I predicted it was going to be huge fields found, which didn't turn out. They found the porosity just like I predicted, they found the reef margin porosity but it's all water bearing. The Imperial Oil research people felt that those middle Devonian beds hadn't been buried sufficiently deep to generate either oil or natural gas. So there's still . . . the traps there, but they're water bearing. I guess you'd call that a scientific success perhaps and an economic failure. I didn't put any money into oil wells in Saskatchewan.

#029 SB: Well, you laid the groundwork anyway.

RE: I think I laid the groundwork for a much better understanding of what the oil companies were dealing with and what the problem was.

SB: You did a considerable amount of work in Saskatchewan as well, that's part of it as well.

RE: Yes. And we sat on a lot of wells, see my partner and I, John Andrechuk did well site geology in over 200 wells and I presume somewhere near half of them were in southeastern Saskatchewan and southwestern Manitoba.

SB: So when did you begin working for Alex McCoy, was it . . . ?

RE: In about 1955 I started working for Alex McCoy and John Andrechuk was the person that encouraged me to work for Alex. I had decided as quite a young man that I didn't want to work for any large oil companies. I had made up my mind quite early in life that I wanted to be a consulting geologist. I wasn't quite ready, I didn't have any money to break out on my own when John came along. I had know John. . you see John and I did our Masters theses together, we shared an office at the University of Alberta. When I went to MIT, John went to Northwestern University and then he went to work for Gulf Oil in the United States and I didn't see him for . . . some time after I was in Calgary. I think I only saw him once in that first year, maybe at a convention or two. And then he joined Alex

McCoy and he worked for them for a full year before they started expanding. So he invited me out for lunch and told me there was an opportunity to work for Alex McCoy. I didn't ask too many questions, I just jumped on the bandwagon. I thought this sound like what I want to do. So John and I and a number of other geologists, I think there must have been a dozen at one time, worked for Alex McCoy, for I guess, just the one year. John worked for them for two years and I worked for one year. It was a wonderful experience because it give us. . . you see, we'd worked for large oil companies and it give us the transition, give us an inside look at what the consulting business was all about, so that when we went on our own we had some idea of what clients wanted, what was expected of consulting geologists, the business aspects. It give us confidence I think to go out on our own.

#062 SB: Was it an American based firm?

RE: Yes. Alex McCoy, at that time. . . Alex actually is still in business, he gave a paper here last year and he was well known, his father was an even better known geologist. His father I believe, was one of the founders of the AAPG, Alex McCoy II and this was Alex McCoy III. So he was a well known geologist, he'd worked for Phillips Petroleum. He had a good reputation in the United States and he got some contracts up here. You can't believe the contracts he got, he had a contract with the CPR. Alex McCoy could sell anything, I'm sure he could seel refrigerators to Eskimos. He went to the CPR's head office, I guess in Montreal and he talked them into doing some geological studies on all their lands out here. They'd been farming out lands and they hadn't paid any attention to the oil business. And he told the, well you guys are getting skimmed in the oil business and we'll study the . . . so he did that for them. And he had other contracts. He had another contract with the Texas Pacific and the Pure Oil company and we did their geology for them when they came up here, got them started. Because you know, when a company comes up here and has no background, they need local people. So Alex hired Ed Baldresitis??? and he had good people. . .they really selected really good people. And I think we provided quite a service at that time for the Texas Pacific and the Pure Oil Company to get them started up here.

#080 SB: Do you remember during your period working in the oil patch, did you notice any changes or drastic changes in the type of equipment you were using and the theories, could you . . . was there anything really obvious that stands out in terms of increasing the efficiency of. . .?

RE: I suppose it has come recently. . now, we don't notice it so much in the consulting business. But in the big companies, they've gone all to computers, put all their geological information on computers. I think what the big companies fail to realize is the data they put into the computers is no better than the individual geologists description. One of the advantages that we had was that we stuck with a problem. I still have my core descriptions from the first day that we consulted. And it was a big company. . I realized this even when I was working for Texaco and Shell. . .when I tried to integrate my work with somebody else's. You get a core description and it would say, the sandstone is fine

grained. Well, was it wet wood??? scale, nobody knew, you couldn't tell. And we always used wet wood scale, same on crystal size. We used the same scale on crystal size and grain size. We standardized our terminology whereas in these oil companies they had. . .every one of these oil companies had people that were trained from Holland, some were trained in Oxford, Cambridge in England, some were trained in different schools all over the United States, they all came to Calgary. This was the melting pot and they all had different ways of describing things. Nothing was standardized. And these companies are still faced with this enormous mass of data that still isn't standardized. When they went to computers, they still put all this dope in there. I think this is one of . . .that's one of the reasons why a small company, even an individual geologist can compete with the majors because at least his data, he may not have as much data but his data is all standardized. If you concentrate on a small area and that's what we've always done, just a few townships in one area, we can compete with anybody. It doesn't matter. . . even if we haven't seen all the wells. I think this is one of the aspects that we've noticed over the years is sure, they've made enormous progress in computerizing everything but they still have this enormous problem of standardizing their geological data. You can't make head nor sense of a lot of it. In fact, in some cases, they'd be just as well to throw it out and start over again and standardize.

#115 SB: They might have to do that at some point. So how did you decide to form a consulting firm with John Andrechuk?

RE: We decided that . . .maybe I decided that with this Alex McCoy Associates, we were doing. . .I won't say most of the work, but we were doing a great deal of the work and we weren't getting paid what we thought we should get paid. And we felt that we could do much better. I suppose this applies to almost anybody that goes on his own, he feels he can do better economically and be his own boss. Even though we were considered partners in this consulting firm, we were really employees. One of the things that we could almost tear our hair out is Alex, being such a fantastic salesman, would say, okay, we'll produce these maps for a certain company and we'll have them all done by September 1<sup>st</sup> or whatever the date was. In some cases Alex had no idea how much work was involved to do the kind of work that we wanted to do. And we had a choice, we could either do slipshod work and meet his deadlines, which we didn't want to do, we wanted to make our reputation. Or we could work extra hours, and we worked extra hours, weekends and so on to make his deadlines and we just felt we weren't getting paid for it. So we thought, let's go on our own. When I look back on it, we knew so little, at that time, I thought I had you might say, the world by the tail. I only had, what four years in the oil industry at that stage and I knew so little. Anyway, I found out in the oil business, it's not what you know that's important in the oil business, it's what other people think you know. They'll hire you if they think that you have something, some knowledge that they don't have. So I think that's part of salesmanship I guess. You always have to make your client think that you've got a few things up your sleeve that you're not. . . a few tricks of the trade, and I think as time went on, we did have. By doing your own research we did have a lot of knowledge that was available to the industry if

they wanted to use our services.

#147 SB: Did you draw on your associates in other companies of people that you'd known from before to . . . ?

RE: Yes. It's surprising though. A lot of our best friends seemed to shy away from hiring us. I think they felt. . . I won't name any names but there were a number of our really best friends that never gave us a nickels worth of business. I think they were just afraid with the idea that if this goes sour then I'll get blamed for it for hiring a friend of mine. It had to be somebody that was a friend you might say, but not too good a friend that would hire us. I think everybody was afraid of their position in the company. If they said, he's hiring his friends the. . . particularly if it turned out a flop, that could put him in a bad light. I can understand their position. I might have done the same thing if I'd been a company official.

#161 SB; When you first started out can you remember any of the major contracts that you got in your early days.

RE: One of the first clients we had was the Midwest Oil Company and that was through a friend of John's who came up here. He had no Canadian experience and he needed somebody to get him into the oil business up here for the Midwest Oil Company so we did a lot of work for the Midwest Oil Company. I suppose our most outstanding success was the heavy oil at Saddle Lake, which still isn't being developed but there has to be, probably 200 million barrels of oil in place there at the Saddle Lake Indian Reserve. And a lot of gas, the gas is being marketed now, but eventually I think it will be. . . it will require steam ??? or something like that. And that was by pure accident that I ran into that. I happened to be. . . you see, we did all our own core studies and when we first started doing core studies there was nobody to get the core out for you. You had to have a strong back. I was doing some. . . I suppose Mississippian studies at the core storage centre and in order to get tot he cores that I wanted to get at, I had to move about a ton of core. It was all buried. This oil industry just exploded here and there was so much core coming and the government didn't have core storage space so they just kept . . . a truckload of stuff would come in and . . . So I knew where this core was, they told me what part of the core storage shed it was but I had to move about a ton of core to get at it and some of the core that I moved was some oil stained sandstone. I'd move a box of this sandstone, it was about five feet in a box and I kept going through this and I said, holy smoke, here's all this oil stained sandstone, I wonder where it's from. So I just jotted the location down and it happened to be from the Saddle Lake Indian Reserve. When I got back to the office I thought, I'll just look up this well. Within the week there was a full page advertisement in the Meyers Oil Week saying that this whole Saddle Lake Indian Reserve was coming up for bid. I hadn't done any work so I went right back there and I logged that core. I'd had a quick look at it. I phoned Bob Chase in Denver and I said, we had no time to write a geological report or anything, I said, Bob there is a large reservation, I think it was 24,000 acres, it was coming up for sale on the Saddle Lake Indian Reserve about a week hence and I think it will go cheaply and there's an oil well right in the middle of it and I think

you should bid. There's 50' of oil and gas pay in this well, I guess it was more than that, maybe 60'. Anyway they bid on it, they took our advice, they bid on it and they got it, the whole shooting match.

#204 SB: Which company was he with?

RE: This was the Midwest Oil Company. But you know, here they discovered gas, they drilled about 4 wells, they discovered gas. . . and gas, you couldn't market it. If you could market it you could get 10 cents but it was too far away, it was out east of Edmonton, over 100 miles east of Edmonton. And there was lots of gas here close to markets, close to Edmonton, close to Calgary that. . . the Trans Canada Pipeline hadn't been built and you couldn't market gas. Maybe the Trans Canada Pipeline was just under construction but there was no market for the gas anyway. And the heavy oil, there was no market for it. So they considered that a failure. Anyway as it turns out, Alco??? now have this oil and eventually I think you can. . . and they're producing the gas, producing 5 or 10 million cubic feet of gas a day from it. When the gas is all produced I suspect they'll get after the heavy oil. It's a good heavy oil deposit.

#220 SB: How about later on, other companies that you worked with?

RE: We worked for two types. We specialized in research work. John Andrechuk, for example, took on a project for the Imperial Oil Company on the D1???, he may have already discussed this. We also started quite early working for P. N. R. Morrison and we built his company, essentially from nothing. He was a school teacher and we built his company essentially from nothing, in 1958. To 1981 when he sold his company for \$83 million. We sat on all his wells, we did the research work to tell him where to acquire lands, where to drill and where to perforate. . . the actual zones to perforate in the wells. We did the engineering and the geology on several hundred wells for him. So it was a very successful operation. The bad feature about it was that it tied us down, again we're back to almost employees. We were on call and he would often tell us. . . we'd know he's negotiating for land and all of a sudden he'd sign a drilling contract and he would say, we're going to spud a well. Every time he spudded a well we knew that within 3 or 4 days one of us had to go there and be at the well site. It could happen just at the time you were expecting to go on vacation or sometimes Christmas day or New Year's day, it didn't matter. When the well got to a certain depth, one of us had to be there. I'm not complaining but that's the way. . . He went to the field and he expected us to do that well site work. In some respects it was good because I think we learned an enormous amount by being in the field. We understood, perhaps more than most geologists, we understood how the reservoirs were performing, we understood how to perforate so that we would decrease the amount of gas coning and decrease the amount of water coning to actually improve performance of wells. And when the wells wouldn't perform properly, Mr. Morrison would call us into the office and say, what do we do now. And we'd say, maybe we should perforate a little higher or a little lower. So I think we did a lot for his company but I think the experience that we gained in the field was very valuable experience. We still give much better advice to our other clients because of that field

experience.

#267 SB: Were you basically the two principal employees or did he have other. . ?

RE: He had other employees, he had a bookkeeper too and somebody that looked after the lands for him. But he had no other technical people. When he was trying to get bank loans he hired consulting engineers to write engineering reports on reserves. But we did all his exploration geology essentially and development geology too. Over that period of years, which is I guess 23 years, something like that.

SB: I wonder if you'd like to speak about the . . .

RE: In connection with our research project we often needed financial backing. John did some work on the Redwater reef, actually he had done quite a pioneer study on the faces of the Redwater reef. And I decided that I wanted to continue that type of face study at Swan Hills. At this stage no one in the oil industry had done it, or at least published on it. So I phoned around Calgary to a large number of companies to see if I could get some financial backing and one company said, well, we'll give you \$300 but we want it to be exclusive and we want a copy of the report. We'll allow you to publish it but you have to keep it confidential for a year. There were so many strings attached to this that I said, for \$300 I might as well do it myself. That's all I could raise. Other guys said, we know everything about the Swan Hills, we've made all kinds of electric log studies, we know all we need to know about the Swan Hills reefs and we've made our own studies just from logs. So we're convinced that you really have to look at the rocks with a microscope to really understand what fossils were there and the faces relationships. So I took my own car and I drove into the Swan Hills with my tent, I said, if the oil companies can't provide me with more than \$300 we can afford to do it ourselves. It just cost me basically, my time. So I went up there in September about 1960. The provincial government still didn't have their core storage centre built and each company had it's core out in the field. So if you wanted to look at cores you had to go out into the field. So Home Oil, Gordon Beard was there, Gordon Beard was a very pleasant guy, he's passed away now but he was the Field Geologist in development of the Swan Hills field for Home at that time. So he said, you can just put your tent out there. They had a bulldozer, this was all forest and they'd cleared an area and it was just clay. It was dry clay so I put my tent up and I put spikes in this tent. I think the first night or the second night there was a heavy snowstorm and it was so wet, I guess it was rain and snow and it was so wet that all these spikes loosened and the tent collapsed on me in the middle of the night.

End of tape.

## Tape 2 Side 1

RE: So Gord Beard, after my tent fell down, the next day, Gordon Beard felt sorry for me and he said, I think one of the drillers. . there's an empty cot in one of the dormitories that one of the drillers vacated. So I went in, you almost had to hold your nose in there with dirty socks and everything strung around but anyway it was a bed. And he let me cook my meals in the lab, I had a Coleman stove and all my groceries, I brought them all into this lab and I cooked all my meals and I stayed there for essentially a full month. I worked 7 days a week, I worked from dawn till dark. I had to carry all my own cores, I carried tons and tons of cores. Actually I hurt my back on that trip and I had to have a back operation later but I didn't know enough, when you're lifting these heavy cores, to bend your legs. You know, you bend down on the ground and you have to lift these cores up. Then I came back to Calgary and I worked another month or two on all these samples. I logged the core and took a lot of samples and I restudied all the samples when I got back to Calgary with my microscope. I got published in the Canadian Institute of Mining and Metallurgy in 1961. That was the first paper I think, that showed that the Swan Hills reefs were a series of atolls, super imposed atoll reefs. No one understood the porosity at that time and I showed that the interior lagoon was a dense lime mudstone full of anthroporb??? and that the best porosity again, was on the reef margins for the [stromotoperites and manastromotoperites and staceotis flourish]???. There were companies that had done this and I knew that and I had. . . some of the geologists that worked for the major companies, they couldn't publish on that. And I think they had more or less the same picture so I wasn't the first one to have that picture but I was the first one to publish it. In my paper I give. . . Frank Moretti??? was one of the people that read my paper and he pointed out certain errors and deficiencies from his experience and Andrew Baillie, who had done a lot of reef work at that time. So I always believed in getting experts to read my work and check it over and if there's anything that wasn't scientifically correct, you know. . . as a scientist they would point it out. If you want literature that's going to stand the test of time you want it to. . . nothing is ever perfect but you want to have as many experts as possible. And they could do that. It wasn't against company policy for them to read mine. Because they hoped to gain something from somebody else's literature too, different ideas. Dr. Colin Crakeny??? who was one of the top palaeontologists at the time helped me with identification of fossils for both my reef papers, both the Winnipegosis reef and the Swan Hills reef. He kindly identified fossils for me. Because as you know, I had a hard rock background. I had taken paleontology at the University of Alberta but at that time the concentration was mainly on backeapods??? and I didn't know beans about stromotoperites. Dr. Crakeny took the time and identified fossils for me and I still am grateful to what he did. I think you're going to interview Dr. Crakeny if you haven't already but he's one of the pioneers in paleontology here.

#042 SB: Was that publication useful to some of the companies in making any discoveries?

RE: I don't think so. I think it was more useful for understanding the reservoirs. Mine was a forerunner, there were more sophisticated, more detailed studies following up. Fishbook??? and others did far more detailed work. I think these reservoir studies were more important in understanding the best way to water flat out, the best way to get the maximum amount of oil out of these reservoirs. I wouldn't say that it helped find new reservoirs. I did study the out reef sediments near the reefs and both John and I, I think, became experts at the near reef environment. John was successful in finding a reef for Oakland Petroleum and it was the only reef, that was the Morinville reef and it was the only reef that I know outside of the Norman Wells reef, that was discovered in western Canada without seismic. This was strictly by geological criteria. Particularly John, this has been one of our specialities is recognizing nearness to reefs. Oakland Petroleum, for example, we put them into lands that were prospective for reefs and a lot of our clients. . .we're still doing this kind of work.

#062 SB: What fields were you associated with exploration and development in?

RE: For the Oakland Petroleum group, the first oil that we discovered for them was down in the Pinto field in southeastern Saskatchewan and actually the discovery well was the 1405-2-4 west of 2<sup>nd</sup> meridian. We didn't go down to the well and when they set the pipe on this particular discovery it produced 100% water. I went down to Regina and looked at the core, studied the core and the core analysis, studied all the logs and I decided that it should be an oil well so I recommended that the company try to recompleate the well and continue development. This is exactly what they did, it never became . . .they recemented it and it actually produced oil, it produced a little bit of water. Whereas the engineer that said, oh no, there's no oil here, you might as well abandon but we told them no, you better sty with it, this is an oil field, we've discovered an oil pool. And we were correct. We got Oakland, actually it was Thunderbird Petroleums at that time, that Mr. Morrison had. So he stayed with it and we almost had a dozen oil wells right near that discovery. And some of them were excellent oil wells and some of them are still producing to this very day. That was the Pinto field. then I continued my studies of the Mississippian and we went right over into Manitoba, in the Pearson area, we made a discovery there. There had been a small Pearson pool and from my studies I decided it looked like there was another pool or two over there. So we got Oakland Petroleums to acquire the land and drill the wells. Then we made a discovery there. It wasn't near as large as we had hoped but the wells are still producing. In Alberta we were instrumental in an enormous extension of the Camao??? field, this was a field that had produced gas and oil in the basal quartz formation for a number of years and the wells. . they were poorly competed. They didn't have the logs that people have nowadays and they didn't know exactly where the gas oil contact was and they didn't know exactly where the oil water contact was. Incidentally earlier you were asking if I'd noticed any differences over the years, well, that was one of the things. There were much better logging tools so we had much better information in the field, where the gas, oil and water, oil contacts were. So when we went

in later we were able to have a much better understanding of how to produce those wells than the earlier operators. So we had some excellent wells and a lot of them are still producing. There was something like 40 million barrels of oil in place discovered there by our clients and about 30 or 40 billion cubic feet of gas. For a small company these are sizable reserves. I feel that it was quite a contribution to the oil industry. Nothing compared to the big companies, Imperial Oil, Texaco, but for small Canadian independent, starting with essentially nothing, starting with a shoelace you might say, to build it up into an \$83 million company, I think that was quite an accomplishment.

#110 SB: Would you consider that one of your more significant accomplishments?

RE: Yes. Economically, business wise, to . . . John and I together and Mr. Morrison, I think, were the real drive, I guess you might say, in the success of this independent oil company.

SB: You also continued putting out publications for quite awhile, are there other ones such as the importance of Paleontology in . . .?

RE: Yes. But I don't think either one of us have published very much for 20 years. We became too busy. We got so involved with all the nuts and bolts of an oil company, in the engineering and the geology and the completion and all the problems that we just didn't have time to publish any more. The other aspect was that we didn't also have time. . . before you publish you like to be able to do a lot library research work and we never had that time. We were hitting the high points but when you publish, I don't think anyone has a right to publish unless they study the literature and compare what their findings are with what. . . you know if your findings vary from what somebody else found I think it's only right that you point this out to the readers. I think a lot of papers now that are published, they don't provide this service. So you read somebody's paper, well you don't know, maybe somebody else discovered that 20 years ago. Or maybe you've got a completely different hypothesis or theory. I think you owe it to your readers to point out why you came to that conclusion and why you are going to disregard somebody else's ideas or theories. So I suppose you might say we are maybe too much perfectionists. We could have published papers but they wouldn't have been up to the standard that we would have liked to publish. So instead of publishing we talked with people, I guess you might say. I think we spread our ideas, a lot of our ideas have gone out in geological reports for different companies. So your ideas get. . . you know, they get disseminated throughout the industry. Because we've worked for almost every oil company, even the majors, with the exception of Texaco. We've never done any work for them but we've done work for almost every other company. A lot of the companies that we worked for no longer exist, they've been absorbed by other companies. So your ideas, even though you don't publish them, you still make a contribution by putting them into your geological reports. A company like Amoco, for example, we did work for them, well, our reports are still there and I'm sure anybody who's worked for Amoco can see why we thought the way we did or why we came to certain conclusions. And we still do research work. We'd like to publish but there's no time.

#156 SB: In your line of work, have you felt any influences, changing energy policies or

anything like that?

RE: Yes. Unfortunately the government energy policy has been disastrous for the oil industry. But we've gone through these cycles before. I think looking back. . . John and I have been consulting now since 1956, which is 27 years and we've gone through about three of these cycles. You go through a cycle where, maybe at one time it was you couldn't market the oil, there's always something, or the stock market collapsed. There was too many geologists at different times so they didn't want any consultants. You go through these hard times and good times. We look at the present hard times as just one more cycle, it'll get good again. The wheel will turn again and there'll be lots of oil and gas found here and there'll be markets for it and there'll be lots of work here for geologists here for a long time to come.

#171 SB: A question I also asked Dr. Andrechuk was, what you feel you can contribute the longevity of your association to? A lot of companies are formed and don't last as long as yours has.

RE: I think the best answer is I have a wonderful partner, John Andrechuk. He's very easy to get along with. If there's anybody that's difficult to get along with, it's me. Anyway, I think also, there's a matter of respect. John is a brilliant geologist and I've always had enormous respect for his ideas and no matter how outlandish my ideas are, he's always been a gentleman, he'll never say, you're wrong. We've often had discussions, I guess you might say our philosophies are similar, we've both been scientifically minded, research minded you might say. Money has never been our object in life, our object has been to do good quality work, particularly with the research aspect. It's been exciting. Sure we don't turn down a buck but that hasn't been the idea, the idea was to provide a service to industry and to perhaps pioneer in petroleum geology. We've got a great thrill out of this actually. I think we've both learned a great deal and we're still learning. Gosh, every day there's something new to learn. The guy who thinks he knows it all, he reaches a dead end in this world.

SB: Well, I'd like to thank you very much for participating and we've really enjoyed your story and find it very exciting.