PETROLEUM INDUSTRY ORAL HISTORY PROJECT TRANSCRIPT

INTERVIEWEE: Fred Calverly

INTERVIEWER: Robert Erickson

DATE: December 17th, 1991

Side 1 – 48:00

RE: This is Robert Erickson, Bob Erickson. I'm going to interview today Fred Calverly in his office, 2170 Bow Valley Square, Square Number Four. It's December 17th, 1991. I'm going to turn this over to Fred and ask him to tell a little bit about himself right now. Fred, thank you very much for doing this.

FC: Okay, Bob, you asked me to start with the early days, I'll go back to the beginning. I was born in Boissevain, Manitoba, 1933. A couple more days and I'll have a birthday. My father was the customs officer at the border south of Boissevain. He had his own businesses going into the 1930s and when times got tough he got an opportunity to earn a living from the government and he stayed there until he retired. In 1939 just, at the beginning of the war, I was ready to go to school and my father took an assignment in a small town in Manitoba called Cartwright. I was there for three years then he moved to Brandon and I did the rest of my schooling, through high school in Brandon. And started at Brandon College and took my first years of university there and that's where my interest in geology began. I really can't say for sure where geology became a career path for me; however, there was a big influence at Brandon College. The President of the College, Jack Evans, was a geologist and the Dean of the College ??? Purdue, Doctor Purdue, was also a geologist and I think they had a great influence on a lot of people that went to Brandon.

RE: [inaudible]

FC: Purdue. Dr. Purdue P-U-R-D-U-E. And a lot of my contemporary people at school, contemporaries at school, have gone into geology and many of them are well known in the Calgary area.

RE: [inaudible]

FC: I can name some of them, Gordon Williams is now Dean of Science at Mount Royal, Finn Campbell was at University of Calgary as Head of the Department and also as Vice President, Jim Minions at Sun, Larry Greeves who had gone through the Pacific/Phillips route, Walter Klimchuck, Art Goggle, just to name a few I had gone to school with and were in classes with at Brandon College. In 1954, I had a major injury in 1952, I destroyed a hand and I lost a year, year and a half out of university, but in 1954 we moved to, my parents moved to Winnipeg, and I went in and finished my degree at the University of Manitoba. I graduated in 1957. I spent two summers in the field doing geology prior to graduating. The first summer was with GSC in northern Manitoba with Robert Mulligan as Party Chief. And we didn't see very much geology, there wasn't much outcrop, but I learned a bit about living in the bush that summer. I was 93 days in a canoe party. The following summer having survived with GSC...

RE: [inaudible]

FC: Bob asked what did I get paid that summer, I got paid a hundred and seventy dollars a month. I had to supply all my own equipment. They did give me a train ticket up to the Paw and on up to Ilford where we get off got in our canoes back again. Fed us bowmen dehydes (???) all summer. I think we had fresh meat about three times in the 93 days I was there. The following year I got a job with a mining company in Western Ontario, it was ??? materials, a major raise to three hundred sixty dollars a month. When they asked what I'd done the year before and what experience I had, and I mentioned I'd been with GSC, the question was had I survived the whole summer. And yes, I had so the job was offered. The summer of, that was the summer of '56 and that was the year that the GSC quit their ??? boy policy and moved into more modern era where they paid better. I think they offered me a job that summer at well over $100 more than I'd made the summer before and they started supplying the camps better food.

RE: [inaudible]

FC: Yeah still summer job. In ‘57 I had planned to go to work with Falconbridge, in the mining business and Ron Pierce, who had graduated the year before I did at Manitoba, was working for Gulf Oil in Calgary, or BA Oil at that time, suggested I come out and have a vacation and stay with him, which I did for two weeks. While I was here, he and the other fellows were all going to work every day and they convinced me I should go do some interviewing to put in my time, which I did, liked what I saw, went back to Winnipeg and called the fellow at Falconbridge, who was a friend, personal friend, and told him I would like to not honor my contract with him and come to Alberta. He was not unhappy about it because he had just got the word that Falconbridge was going to lay off about a hundred field personnel, and I just saved him making one decision. So I came to Calgary and continued some interviews. I went, interviewed with 12 companies and ended up by fall having had 8 job offers from those 12 companies. I went with Sinclair Oil.

RE: [inaudible]

FC: That choice ... there was a man who I don't know, I know of, I followed him, his career for years, name was Westy Westmoore who at that time was Chief Geologist with Sun. The first place I had gone to interview was Sun, I just went and knocked on the door and I met him. The reason I chose that was several of my friends were than working with Sun. He said he had had his jobs all filled and there was nothing there, but if I could back the next day he'd like to talk to me again. Now, I'm back the next day and he had two lists he handed me, one list was 15 companies on it and he said, these are companies I'd recommend that you get an opportunity to work with. The other list was equally long and those were companies that he recommended that under no circumstances I go to work for. And he went through each name on his list with me and told me his reasons for putting them where he did. Sinclair was, I believe second on the list of places to go and that was probably the main influence in me taking that job. However, I've never forgotten that somebody took as much time as he took and did as much for me just coming off the street. I've tried to do things like that for young people that came knocking on my door through my career.

Going back to Sinclair, Exploration Manager there was Ken Germont and the Chief Geologist was Glen Cunningham. And I had talked with them before I resigned from Falconbridge. And when I came back, they had offered me a firm job, which I accepted. I had a couple of difficult choices to make but where I went, I'll leave the others out, I talked to. That fall in the oil business, which was '57, there was a crash that wasn't unlike the one, on my mind, it wasn't unlike what happened to us in the 80s, and there were companies going broke, there were people being laid off all over the place. And by 1959 I think it

reached its peak. There were probably as many unemployed geologists as there were employed geologists in Calgary. And a lot of people did career changes then.

With Sinclair, I was immediately shipped to the field. I had started on June the 5th, June 4th, I accepted the job, on June the 5th I had an airplane ticket for the 7 o'clock flight to Fort St. John. And I went home that afternoon of the 4th and said to Ron Pierce, I'm going to Fort St. John, is that near Vancouver? But I found out the next day where it was and I started my well site career, which continued for quite a few years off and on. But in those days small companies like Sinclair were ... the first two years were basically well site, I was in the office I think 4 months of the first 24.

[00:11:24] At Sinclair I was the, with Sinclair Canada, which was the wholly owned subsidiary of the Sinclair Oil Corporation, I was the first geologist that they had hired straight out of school. As it turned out I retired this year, I was the last employee that was at Sinclair that continued his employment through to the, through several mergers to the culmination of our retirements. I was the last one. The Last of The Mohicans. Walter Wilson was the president of, and general manager of Sinclair when I joined. There was the chief landman was a fellow named George Chadburne. And George became quite famous for a couple things, one was he was dismissed shortly after, about three years after that by Sinclair and he took them to court. He won the court case but it was not a thing that ... there's was a lot of that, was almost routine type things in those days, but this particular case with Judge Reilly, he wrote the decision in book form and all the ins and outs of dismissals, wrongful dismissals. And that is the landmark case that nearly all North American dismissal cases are judged against now. So, George made the books because of that. Two or three years later he was in Victoria and there was a tanker truck turned over and caught fire and he tore the door off the tanker truck and rescue three people out of the front seat, and got a medal for it, so he became famous in a couple of areas.

Other geologists that were working there, Bob Cuthbertson was my first mentor and friend to this day, Cliff Burke, he's running the Regina office for them, Jim Tori...

RE: [inaudible]

FC: These people were all Canadians. I'm just trying to think of some more. Lee Metter, who was an American and he went with Mesa and ended up being President of Mesa at one time I believe. Arnold Chouquette, another geologist that was there and he was there until he started a ski resort and left. David Pitts, who's an American, went back to the states a few years after that, we still correspond. Shortly after I started they are two other people I still keep in touch with, Jim Milligan, who had been working for Esso and came there after a year of Esso. And there's Mike Lynch who became the second person they hired straight out of school.

With Sinclair my well site was mostly on the Alaska Highway which was a frontier oil province in those days. The first well I sat on was on Trutch Mountain at mile post 195 back in about three or four miles.

RE: [inaudible]

FC: That was a seismic location based on ??? core records, I looked at them many times since. On that well, I should go back a bit, I joined Sinclair in June of 1957 and in November 1956 they had gone, had merged or had bought out a company called Southern Production, and the merger had taken place the end of the year, Sinclair would been considerable hiring at that time to beef up program. Southern

Production had the year before taking a major farmout from Canadian Atlantic. It was a farmout that required the spending of the reserves at nearly fifteen million dollars, which was a lot of money to spend in those years. And it took them several years to do it. And on the Alaska Highway they were drilling these wildcat exploratory wells, 20, 30, 50 miles from the nearest other location and drilling them deep, drilling into the Devonian.

The first well, Trutch was one of the wells that had ... went 12,000 feet, 12,005 I believe and took from January until the end of July to drill. I did my initial well site training before I went to Trutch, Doe Creek, just outside of Dawson Creek, Doe River I guess it's called. And there was a fellow there named Don Sampson who left a few years later and went teaching school and is still teaching school in Vancouver. I had grand sum of about eight days with Don and then I was shipped on my own to Trutch. And I was on location all of an hour and the driller came running in and said they'd had a drilling break and lost circulation and what should I do about it, and I didn't even know what he was talking about.

From Trutch, when I finished that well and they moved the rig to Mile 142, drilled a well there, a deep test again at Julian, the Trutch well was dry but the Julian well was a discovery in the Triassic Halfway and is still producing gas, as was the well at Doe Creak, a gas well in the Cascade Formation and it's still producing. The Trutch one started in October, or I should say the Julian well started in October and didn't finish until the following July, and I had one break from that well and that was, I stayed there for Christmas because they wouldn't let me come home, but they let me out for New Year's. That's the way it was when you were single and sitting wells in those days. That was the year that the BC Oils' checks started and since I was up there, or going to be up there, I was designated as a scout for Sinclair for the BC check. Which I did, starting in I believe September through to about November when well site had about three checks in a row, there were tests or key intervals on the well, and I couldn't get away from it, so then they assigned a proper scout to do that so. I have a trophy at home that says I was one of the original members of BC scout check. Those were the kinds of wells that were being drilled at that time.

[00:19:30] RE: [inaudible]

FC: Other Scouts that were in that group were, Pacific had they're office in Fort St. John and Rupert Ibbotson was a geologist, looked after their check. Dawson Creek had several company offices, Esso, Phillips and Texaco. Esso had Jim Martin and Jim Daley as their scouts, out of Dawson Creek, Tiger Daily, lots of stories about him. Gil States was represented by Porky Brown who went up each week and the stories go around Porky Brown and Tiger. Tiger was about 98 pounds and Porky was about 298 pounds. They were close buddies and they made a lot of stories together. Phillips had a scout named Bill Sparrow, I can't remember, who was scouting for Texaco at the time. Ray Huffman used to go up for Richfield Corporation from Calgary. Most of the scouts flew up every week from the Red Deer check, they'd drive to Edmonton and fly up and come back the next day.

Ray Huffman, Bernie Ellingson. Ray Huffman was Atlantic Refining. Ray Huffman, Bernie Ellingston and Mac Beaton were the scouts for Richfield. Jack Ainsworth was a scout for Amoco and Pan American at that time. I'm not sure I can think of any more names right now, that's not doing bad for 35 years ago. I did well site almost exclusively in BC on the Alaska Highway from Fort Nelson to Dawson Creek for the next couple of years. I was involved in a few discoveries, the Julian I mentioned, the Beg which is producing field now.

RE: [inaudible]

[00:22:09] FC: Well, I think, I don't know if you heard Bob's question, that was were these discoveries surprises. I think the Julian well, there wasn't anything very close to that. The Triassic was known as possible formation. The prime objective was the Elk Point which turned out to be present, very thin, very porous very wet. A well at Lily, which was a Mississippian well, blew out and hit the Mississippi in high pressure gas, but then the DeBolt had good porosity, good reservoir and sustained production. The Beg well was drilled on the anticlines, which were identified on surface and confirmed at depth by seismic, along with the ??? west Beg structures. At that time they were all drilled at almost same time. Sinclair had their land on the Beg structures.

RE: [inaudible]

[00:23:25] FC: Sinclair had farmed in on this so there was the Canadian Atlantic, which Pacifica than bought, so Pacifica was a partner in it. And Calvan was partner in many of them which then became Fina. Ironically those three companies, Southern Production, which became Sinclair which eventually became Petro Canada, Canadian Atlantic which went through Pacific to Petro-Canada, and Calvan which went through Fina to Petro-Canada all became one, and Ken Johnston, who was the land manager of Petro-Canada when the Fina merger in '81 was completed, said he could throw away 10 files of land documents that he didn't need any more now they were all at home.

The drilling up there, since they were wild cats, they were truly wild cats, it was much like the frontier areas now, you were a long way from control and didn't know what to expect and I sat on wells with blowouts, at least half a dozen of them. The one I missed that I was glad I missed was at Trutch, I was to go relieve the geologist at Halfway River, west of the Halfway River, well I believe it's now call Graham Creek, we called it B51 ... I got to the Halfway River and the bridge had gone out in the flood the night before, so I went back and they said they were sending a helicopter in with supplies that week ???] and then I went back up to Trutch. The next day I went in for the morning report and got to the repeater station, they said the lines were all being held because there was a major oil well fire. Turned out to be the B51 well had blown out of the Triassic and caught fire, the rig had toppled in a matter of minutes, had killed the Sinclair engineer and...

RE: [inaudible]

FC: He was an American fellow, Bob Walton was his name. I'm not sure of that name, Bob Walton was out there, whether he was the geologist or he was he engineer I can't remember. I never met the fellow. I met the geologist briefly, he had been assigned from the States just on temporary assignment for a couple of months and he went back and I didn't see him ever again. But that well had killed two people and burned a couple of others and had I been there as a ??? geologist I would have been on the floor watching that test to see all the things that were going on. I was very curious about it so I think I was very fortunate that somebody looked after me that day.

Just to give you an idea of the Alaska Highway, I thought I'd come to the most exciting place in the whole world when I went up to Trutch. In the first week I was there, first two weeks I was there, the third event was the fire, but the second day I was there, we were driving in for morning reports, at 7 in the morning, all of a sudden an airplane bounced on the road right in front of us and crashed into the trees. We ran down there and the people were still alive. I don't know how ... sheared off a bunch of trees, taken the wings right off the airplane and the fuselage some way had gone between trees. We pull them out and everything was fine after that for them, except they had no airplane and it had been a brand new one. It was a doctor and his wife from Alaska airing this new airplane home. About two days after

that we were going in for the morning reports and there was a moose came tearing along ditch with its tongue hanging out and a grizzly bear right on its heels. We swerved at the bear and drove it off the moose back into the bush, so within a week those events suggested to me that I was in the most exciting business in the whole world.

[00:27:49] Going back to some of the other things in BC that I worked on, it was the second winter I was there, the second year I was there that Sinclair discovered PJ, which just turned up a major oil discovery. It's in the Triassic halfway again. The first play that I felt I had my name attached to it was at Boundary Lake. And Boundary Lake had been discovered on a structure of what is now the ??? field. Hydrodynamics was a new tool and Sinclair was one of the sponsors, with Fred Berry and his group, developing the theories of the hydrodynamics had given him a sponsorship in return for one year or two year exclusive on Leaf??? City Service and Pan-American again. So ??? was the Tulsa Group that had sponsored, the Tulsa Company. And so we were told we were supposed to use hydrodynamics in everything we did ??? at Boundary Lake, Cliff Berg was my leader then and Cliff wanted to apply this concept to it and we took the field, the pressures on and applied the concepts of...

[00:29:19] RE: [inaudible]

FC: In the Calgary office. Where the water line should be for that field because in the Boundary zone there was no water fountain. And on the basis of that and the show that Esso had south of there, we bought some quarter acreage, what is now the south end of the Boundary field. And drilled that against posting for other land. Esso et al. had all the checkerboard acreage that was in the quarter left.

I like to call it a discovery, was really a large step out of about seven or eight miles. Hipazone (???) cored it, got our oil and bought the offsetting land, continued doing that. I believe we ended up with 22 wells in the quarter. By the end of the next year there were rigs all over the place at Boundary Lake. They were starting with the pipeline and I think in the next two years they fully developed the field. I think our well kicked off... It was sort of fun to be tied to that one, it was an exciting one. The same well, I was told to go to the sale, I couldn't stop to do any testing on the way down but we hit the cattemon?? and there was oil oozing of those samples and porosity was great.

I phoned Glenn Cunningham, drove to Dawson Creek, phoned Glenn Cunningham said I wanted to test it, I'd shut the rig down so he said, go ahead and test it. It took about three minutes for the water from that one to hit surface. But Boundary Lake was our prime zone, that was the first satisfying one. I've been associated with a lot of them since. Map Q??? was another one that comes to mind that was different, that was the shallow gas at Gate Post, south of Rainbow.

And that is the only well that I've been involved in where we drilled without seismic, from my memory right now anyway. That was, Esso had drilled a deep well nearby and had tested the lower Cretaceous, the Blue Sky, had a puff of gas and went on and abandoned the well later. I think that well have been '54 and we were up there in the early 70s. Keying off that well, we had bought a couple of townships of permit out of Richfield on the basis of that clay that I'd mapped there for the Blue Sky Gas.

[00:32:14] RE: [inaudible]

FC: I had gone to Atlantic Richfield by that time in the merger of 1969 when they bought out Sinclair. And that turned out to be the big shale gas play that wasn't sure whether that was a discovery to be

proud of or not because the economics were so marginal, I think they still are, but it ended up with a lot of wells on that play. I think Atlantic did quite well on it. They didn't drill the discovery, what had happened was Ranger Oil came to them the next day and said that they wanted ... they had drilling money, but no land money and could they drill the wells for us in return for earning and made a five well farmout to them to earn that land. Which was the number of wells when I sold the clay in Dallas, I suggested that we needed to prove whether it was there or wasn't there. By the end of the third well they hadn't got anything, we had asked them to drill the wells with air and they drilled them with water. ??? to all the indications but couldn't make it produce so they walked away from it without earning. Universal Gas came along the next year, Mercier, I presented my ideas to him and he took it on and they drilled it on a farm for Atlantic Richfield to earn and made the discovery.

The contractor, the farming agreement on that one, committed them to drill the wells with air. And when they hit the formation blew gas right away and then killed it off water. Jumped through the gas zone with water. However, that was the beginning of the gig post, Blue Sky play. I believe that was one of the things that helped make Universal Gas a pretty strong company in those days because they had fifty percent of about 100 wells.

Going through from Atlantic Richfield, '74/'75 I think they, in hindsight made the decision they were going to get out of Canada because we got our exploration budgets taken away. And my memory of 1975 is that I think Atlantic Richfield drilled one exploratory well, all those senior people there took turns going to sit on it to get out of the office and out of the atmosphere. That was at Maxhamish Lake, it was a small gas discovery and still holding land, but it's not tied in. Harold Hornford mapped that thing.

RE: [inaudible]

FC: At Richfield Fred Hildebrand was the president. Jim McDonald when I first went there with the exploration manager. It’s Jim McDonald that's now president of CSPG. And Fred Rare was the regional geologist that I was working with. Shortly after I got there Jim McDonald went down the States and there were two exploration managers, one in the southern part, one in the north part, Sinclair people, Joe Jackson, an American and he went back to the States a few years later, and John Ettmeir who had been the exploration manager at Sinclair at the time of the merger and went over there as the exploration manager in the southern district. Ron Macintosh who was a VP at VEC and is now at Amerada, who was at Atlantic at that time. Bob Potter who’s the VP at AEC now. Cliff Johnson, Harold Hornford I've mentioned. A fellow named Bill McGee, who was an American and now back in Tulsa, retired I believe. A bunch of names I should mention, but I'm going to go by ???. I was at Atlantic from April '69 when they took over Sinclair until August 1st '76 which is when Petro-Can took over.

RE: [inaudible]

FC: Atlantic Richfield, I was working in the northern district and doing subsurface geology and some surface work. It was my first exposure when I was an area geologist for the territories, my first exposure in the Arctic, high Arctic and Beaufort Coast,1973. Atlantic was doing a lot of field work in Alaska and the Yukon Coast areas doing surface work in 1973. I'd been out in the mountains with Atlantic I believe in 1970, west of the Red Deer River, looking at all things?? Nisku reefs outcrop which a few people had identified in the mountains, Burnt Timber area.

RE: [inaudible]

FC: In the Alberta mountains, the Rockies, they had identified these reefs for what they were. And it was the southern group Ed Jensen, Bob Workum, Bob Cuthbertson, Rodger Bains were some of the geologists that worked on that, rightfully identified them. Atlantic kicked off a play from that where they went, where they thought these would be in the subsurface of the up-dip edge of the basin they'd mapped. That was near Barrhead. They drilled some wells, bought some land, drilled some wells on that, found the reefs and they were wet, they identified them as seismic. Two or three years after that Chevron put their play together farther into the basin towards the Foothills and made the discoveries for the famous Nisku Reefs that put much oil into Alberta. That play had been really mapped at Atlantic Richfield and I don't know how Chevron arrived at getting there. But Atlantic Richfield has mapped it from surface work and followed it up, went to the up-dip edge, which was the wrong place for that particular one, it was a reasonable place...

[00:39:27] RE: [inaudible]

FC: Sinclair had one reef which Pecos identified years and years before on seismic, but never had the courage to drill it after the Chevron discovery drilled high condensate gas. In 1975 also, I went and did an assignment for Atlantic Richfield in Alaska, Prudhoe Bay at the North Slope, the subsurface mapping of the Lisburn. I'd worked 15 years, I guess in carbonates at that time and after the Rainbow discovery, I had logged some ten thousand feet up Keg River core, and a couple hundred thousand feet of Keg River samples.

I worked on the Beaver Hill Lake, was involved in the Slave Lake, Sinclair actually posted the first big DR at Slave Lake and something like five companies moved into drill against it and I believe Esso was credited with the discovery on that. Sinclair had two rigs drilling for that and both rigs broke down and we didn't make the sale, but it was Sinclair that had posted the land. House Mountain which is at the north end of Swan Hills, I was involved in the mapping of the wells on that. I had spent my time in carbonates. In 1975, it turned out Atlantic Richfield did not have a regional map on the Lisburn formation, which in the original discovery well approval they had identified a billion barrels of oil and still hadn't mapped it. They had tried to map it, one of these new breed of geologists who work with computers, computer identification, and worked the logs using cross plots to identify the lithology, which hadn't worked, and then they had gone to a detailed paleo, Otto Majeski, in my mind a super paleontologist but a very methodical slow worker, and Otto got his first core and about four months later he was still working on it. So, that hadn't worked and they asked me to go up and kick off a pro mapping program for the Lisburn formation, which...

RE: [inaudible]

FC: No, I went to Anchorage and worked out of the Anchorage office and set up regional cross sections using outcrop and subsurface work and log de-corers that were available regionally. And identified... was able to break the Lisburn down into some mappable units, which I was happy to find out two or three years later from the Arco people that the breakdown had held up and did stand the test of a couple of wells. I did get a little Alaska geology, that's all my foreign work though.

And then with the merger with Petro-Can, actually I was starting to, for the first time in my career, decided maybe it was time to make a career move and I started to look around when the Petro-Can

merger came along, and I thought, well while why change companies, I can have all my good things and get a change and if I don't like it, I'm no farther back or maybe six months back from where I am now. So, I chose to stay through the Petro-Can merger, which was a very emotional time in our oil patch. There was more hate than love for Petro-Can and I was certainly intimidated by the idea of the national oil company prior to going there. But I went there because it was a change, a chance to see something and it wasn't going to cost me anything. Turned out I enjoyed it a lot, and until that time I had been adamant that I was not going to go into management, I was going to be technical person with my geology. A couple years after Petro-Can came along I was enjoying some of the things I was seeing on the supervisory management side because it was such a new organization and a chance to make things happen. They had money to spend and could promote things. And I got involved in that and enjoyed that just as much as I've enjoyed the geology and ended up going the management route with that company. The first couple of years were very difficult, my good friends used to give me all sorts of flack and not all in good humor. But we learned to get along.

RE: [inaudible]

[00:44:27] FC: Petro Can was seen as the intruder, it was a State oil company, and the environment, the North American environment where State oil companies weren't recognized as such and when they had both the Crown lands ownership through the government and the company that was, had an opportunity to use those lands ... there were State oil companies here, but they were considered part of the local scene, the BP's the Shells, the Venus ???. But there was very high emotion, the government that created Petro-Can was the liberal government, was heated on no uncertain terms in Alberta, which was Tory blue at the time. So it was...there were people who felt you had no right to belong if you worked for the company and they stated it in no uncertain terms, the bumper stickers, "I'd rather push this a mile than fill up at a Petro-Can station" came shortly after that. But the emotion lasted from '76 until well into the 80s. It was very bad from '76 until about 1982. And I had a couple of people, for obvious reasons I won't name, who I considered friends, dealt with fairly close to them for 10-15 years, one of them in particular I had to cut off the bread line and find them work. And they wouldn't even talk to me after I chose to stay at Petro-Can, which disappointed me a lot that people would go to that extreme. It worked out, in all of the lumps there was a lot of learning, a lot of fun, and a lot of things to do.

RE: [inaudible]

RC: Well, when I went, when Petro-Can took over, I was a regional geologist, was the title they used at the time, and it was an area geologist at Arco, but I was responsible for all the geology in the area I was assigned and that area was the Arctic Northwest Territories, Arctic West Coast, which was frontier area. Petro-Can had been given the Antarctic shares at the time so they were very active in the North. They didn't... Atlantic had considerable land in the Beaufort and that had to be worked. And the opportunity with the Petro-Can Act, Petro-Can could acquire Crown lands, federal Crown lands, was there. I think it was Regulation 71A, where Petro-Can in any one area had the right to 25% of the Crown lands that have been relinquished by industry, previous relinquished by industry.

Side 2 - 40:00

[00:00:03] FC: I was mentioning the 71A lands, regulation lands where Petro-Can had the right to take 25 percent of lands previously relinquished by Industry, back to the Crown. 71B lands were the ones that were relinquished post that time, back to the Crown. They had the same opportunity and that was

a one-year opportunity. So, a lot of us were put to work, we worked in the north, and our main job was to identify these lands, which we would deem had opportunity, exploration opportunity. And as a result of that, the major program that Petro-Can did in the Mackenzie Valley was on mostly lands that came through that 71A Regulation. There were some lands that Pacific had brought in when that merger came along, Atlantic Richfield had had, and then some lands that Sinclair had had around Great Bear Lake were included. So, in the first year or two, most of the work was done mapping and trying to identify these land opportunities that were available exclusively to Petro-Can. One of the sore points of the...

[tape cuts]

[00:01:46] FC: Following that, in 1978, 1977 actually, one of the fellows that was managing, the manager of the group I was reporting to, Arnold Aylesworth who was a geophysicist was seconded to start working on some international projects. And I was appointed under Bob Maneely, he was there as the Exploration VP, acting Exploration Manager for the North. Well, at the time Arnold was due to come back, Petro-Can decided to go into the heavy oil business. There's a little story there I'll tell, but when they made that decision, when Maneely called me and asked me if I would like to be the manager of that group, which I accepted, that was my trip to management.

The story on the heavy oil was that a fellow named Don Wolcott, an engineer who was quite well known in our oil patch, was the VP of other sources of energy, and included in that was the oil sands and heavy oils. And he was busy working on an upgrader for heavy oil in the Lloydminster area. And, in fact, almost had it to the point where they were ready to go on it. Bob Maneely, at one of the high-level meetings had asked, what were they going to use for feedstock for that upgrader if they built it. And, to the chagrin of a lot of people working on it, they found out that feedstock might not be as easy to acquire as they thought it was going to be. So, they decided to go out and identify some of their own, and that's when they got into the heavy oil exploration business. And I was the first manager of that group. Shortly after that, they put together the program that was known as the shop program, where we were allowed to file on half a million acres in Saskatchewan, with Gulf Oil as a partner, and SaskOil was brought in as the third partner. That was an exciting program, it had some good things. One of the first wells that Petro-Can drilled on it was Cactus Lake, which was on land that they had bought as a drilled reservation first and prior to the shop agreement coming into place, but then was thrown into the shop agreement lands.

RE: [inaudible]

FC: It's... Bob asked... medium heavy oil, we call it heavy oil, and we defined anything under 20 degrees heavy oil. It's about 16-degree oil, it flowed to surface on primary, had about 4% primary recovery and is now on secondary recovery. I think they're looking to recover about 20 percent of that field, and it's producing several thousand barrels a day. So, it was a significant discovery. The shop agreement proceeded with three companies each taking operatorship of part of the area, and we drilled well over a hundred wells a year in that, 120, 130 wells a year into that, ran for the first three years. It was a busy time, exciting time. We were locating most of it with seismic and we were finding a lot of oil. There was a lot of oil in that belt.

RE: [inaudible]

FC: Well, a lot of the plays were in the basal Cretaceous part of the section and lower Cretaceous part of the section. And some of those were channels, the Edmonton channel system goes through that part of Saskatchewan and quite a few of the fields were in there, Marsden and that type. The Cactus Lake discovery was in the Bakken sands, so was the Mississippian. And it was a play that basically I think Ernie Pelzer had kicked off, he was the chief geologist at Petro-Can, the original chief geologist then. And he had the idea that the sands in a well near Cactus Lake that had an oil show in it were not Cretaceous, lower Cretaceous sands as mapped by everyone, as conventional evidence suggested, but that were really at the up-dip edge, sub-trop edge of the Mississippian and were Exshaw or Bakken sands. And, as it turned out, if you're looking at them as Cretaceous, you're on the down-dip edge of the Cretaceous and your oil should have been migrating out, but if they were Bakken you're at the up-dip edge.

And Ernie was right, they are Bakken sands, and subsequently we got them with some lodge-pole over top at places. And therefore, there was a big field sitting there. It really came about by good geology, careful work and good geology. So, that was my first go at managing, and we had a lot of success. We were involved in probably 10 or 12 fields, Cactus being the biggest, but Marsden's a pretty good one, Loose-Land, Freeman. Can't think of any others right offhand, but they're there. Dodd's Land there was some stuff near that. But it was all oil, heavy oil. We found a little gas, some shallow gas which is be useful now as fuel gas and I think they may even be selling some of it.

[00:07:42] From that area then I went to work... about that time the Pacific merger came, in 1979, the merger with Pacific came and there was a total reorganization from a decentralized system to an inline system where all the geologists were reporting to one. This was for western Canada, Petro-Can, when they reorganized, left the decentralized system for the frontier areas in western Canada and it was put under Sid Smith as VP and was set up under the functional lines. And I was offered a chance to be manager of geology. I think it was fortuitous because basically all the people were the Pacific people, but they at that time in Pacific didn't have a manager of geology and so I was asked to fill that.

I became the only person from the Petro-Can side between Sid Smith, Archie Hess was the general manager under Sid, managing all the land, physics and geology functions reported to him. And then, all the area people, with the exception of Harold Hornford were Pacific people. The regional geologists, as we called them, I guess still regional at that time, so Harold was the regional geologist reporting to me then. But he was the only other person that had come through the Petro-Can side, the rest were all Pacific people.

RE: [inaudible]

FC: Bob Cuthbertson was working with Fred Rare. Fred Rare was the chief geologist, Ernie had left. Ernie left just about that time, and Fred Rare... I guess Bob Cuthbertson had been assistant chief geologist under Ernie Pelzer and then Fred Rare came in there as chief geologist. So, they were in a staff group. A side that reported for all 8 units, including the frontier, international and the west. So, that system lasted until I believe it was late 1980. In fact, I know it was late 1980 when Sid Smith resigned. Then they decentralized the western Canada group and put it back into exploration units. I know it was 1980, it was November 1980 because I was at the Banff School of Advanced Management, and Bob Maneely called me there and I got a message on the board. It was the night before Sid was resigning and he told me that Sid was going to resign the next morning, that they were going to reorganize, and he wanted some ideas from me on the reorganization. Sid Smith called me about an hour later to tell me he was indeed going to hand in his resignation the next day. Sid had been my sponsor at Banff, so...

RE: [inaudible]

FC: Well, Sid left Petro-Can at time and he went to Ranger Oil. And he was there for a while and then that didn't work out and he left there and went with Andy Jaensch?? who had left as president of Petro-Can to go to Canso, Sid went to Canso as VP of Exploration.

RE: [inaudible]

FC: Sid went through the Mobil merger, and then he retired two years ago from Mobil and is now living on his land in Arizona.

[00:11:34] When they decentralized, the... again, at Petro-Can I was made manager of the northern Alberta and southern territory there. So, I had responsibility I believe up to the 63rd parallel, the Northwest Territories. And there was one little sojourn beyond that, and that was the Norman Wells area. So, where Pacific had had some land, and Sid managed to keep that in the group for the western Canada and out of the frontier, so I took over all that part. Shortly after that was, I believe, all the Arctic had been put into my group. So, I had... no, I'm wrong. That's another story, I'll come back to that. So, I had northern Alberta and the Territories, southern Territories and Northeastern B.C. in my group that I was managing at that time. And northern Alberta started about Township 60, and then all Northeastern B.C. were there. Some of the exciting things we had going then were the Ivey discovery, Ivey Lake on the Peace River Arch. We had some new ideas at Utikuma, exploited those with seismic and drilled a bunch of good wells there. Trying to think what we had going in B.C. We had Laprise was going strong... offhand, I can't think of other things we were doing. But we were doing a lot because I was signing about 200 AFE's a year at that time. So, that wasn't an inactive district, it was very active.

But, in 1981, they merged with Fina which didn't have a big effect like the Pacific merger did on Petro-Can on the upstream side. It did on the downstream side because they brought in major marketing, the marketing had been fairly small before. But on the upstream side, one of the programs Fina had was in Quebec. There was a refinery tax in Quebec on the refinery they were running and there was a law... it's an education tax on refineries. And a part of the law was that if you spent that, any money you spent on exploration in the province of Quebec, you would recover your refinery tax, dollar for dollar. So Fina had a major exploration program going in Quebec with SOQUIP operating the program and it was all farm-out from SOQUIP. The program was 8 million dollars a year, and with the merger, I inherited that, and I looked after that program for two years. Two and a half years.

RE: [inaudible]

FC: The program was anywhere in Quebec, and we had... at the time I inherited it, there was a well going at Becancour, in the lowlands, which was offsetting, the first well that Fina had drilled there had had a good gas show. This was offsetting and then we didn't find that gas show again. There was quite a bit of program on the Gaspé Peninsula. We did seismic there and ended up drilling two or three wells. And we did an offshore at Gulf of St. Lawrence filed on that land and it was right in the lower Gulf, Anticosti Island outward, across the 'Trudeau Line' as it's called, where Canada claims Quebec has no rights. So, we had that little controversy to work with on the line, but the bureaucrats weren't difficult on that, it was political. So, we had the rights both provincially and federally on those lands. And having SOQUIP on our side didn't hurt in the provincial part of it. We did a program, seismic program in the Gulf of St. Lawrence, the hard bottom problem, we didn't overcome. But we saw some things there, we saw

an outdated find that Logan's line wasn't a very sharp line. The fact is, you really can't identify it. I did a couple of field trips there which were very interesting. I spent eight days on the Gaspe with the chief geologist from SOQUIP, and each day the Quebec government geologist who was working the area that we were in, came and met us and showed us his outcrops. So, for eight days I met with four or five different Quebec government geologists and saw their outcrops in a lot of detail. It was one of the most enjoyable trips I've done. I had my interpreter along and I made out very well.

RE: [inaudible]

FC: Bob wondered why the Gaspe hasn't been successful as an oil province, and I guess there's people down there trying right now again. But the oil is there, the gas is there, you rarely can drill a structure without having shows. And we drilled a well on the Gaspe and we had an oil show in the Devonian, that's what we were drilling for, and it would make about two barrels a day.

RE: [inaudible]

FC: No, it's a structural play, not total thrust in the sense we think about it, but it was structural output. And it's lack of reservoir. There's just no reservoir in all of the wells we looked at there, that I looked at and saw, very little reservoir rock, but shows all over the place. I think if you could find where the reservoir was, you'll find a field.

RE: [inaudible]

[00:18:17] FC: So, I did that Quebec scene for two and a half years. Also, I worked a bit in Ontario. Pacific had a program in Ontario they brought in and we did that, drilled a couple of wells there, without success, but I learned a bit about the trials and tribulations of working in a very populated area. The field work, going back to that. I did field parties in 1976 after the merger with... I did field parties with Arco in '73, '74, missed '75 because I went to Alaska that summer. But '73, '74 I was on field parties, Party Chief in '74. In '76, major field party in the Ogilvie Mountains going up into the White Mountains and Richardson's. And the fellow that was Party Chief on that went out in August and he philosophically didn't want to stay with Petro-Can, so he wanted to resign. There was nobody to send there within my region, so I went up and took over the field party for the last four weeks. And got to see Yukon geology.

I'd been along the north slope a couple of times, in '73, '74. In '77 I took out a field party for a month in the Northern Richardson's to look at the lower Cretaceous section. We had some ideas on that. We had drilled a well, in fact we were drilling a well, had just finished drilling the well then, at Fish Creek. And we used the camp at Fish Creek for our field party base, which was very nice. And the following year, we had another field party to look at the Jurassic section, upper Jurassic section in the same area. I did not go out to that. Jim Dickson was the Party Chief and was working it up when an opportunity came to go to GSC and to make arrangements with Gordon Taylor at GSC to have Jim do the field party for us. So, he, actually, was working for GSC when he was Party Chief on that field party. I went up and visited. Rick Young and Don Norris and I were on a field trip in '78 for the CSBG in that area, and on the Campbell Lake High. And then later that year, I went up and spent pretty near two weeks in the Arctic Islands on a field party with Barry Shade and Ian Mackaray for that. It was a joint field party with Chevron and Antarctic and the GSC.

RE: [inaudible]

FC: Oh, it started on Banks Island, Banks and Victoria Island, they went up on Melville and over to Bathurst. And at peak, when they were on Melville and Bathurst, it was 18 geologist and two helicopters. So, it was quite a major field party. That was the last time I got to go out and hold a pogo stick. But I managed to get to the field for a minimum of a week every year until about 1984, '85. And I just couldn't fit it in that year. And we had a field party in the Yard River area, right at the edge of B.C. and up into the Yukon. Dale Lecky was Party Chief on that and I had pretty much wanted to go there, and arrangements had been made to get me there and it just fell through because there was too much in the office. So, I didn't make that, and that sort of broke my streak and then I have not been back in the field very much since. Though I did get out for the odd day here or there but no 7, 8-day streak. At Petro-Can I... in 1984 I guess it was, or '83. Yeah, 1983, I was made manager of the western frontier and the foothills, both those together. So, I had all of the Arctic Islands, the Beaufort Sea, mainland Territories and the Foothills under me. Which I worked in two units, an Arctic unit and a Foothills unit. That was really my main exposure to the subsurface of the Foothills, and it only lasted two years, but I enjoyed it.

We drilled, I think, about three wells, five wells I think, while I was there. One of them was at Sicanni ??? was successful. I can't remember... all five were gas wells. One was at B.C. mountains... trying to think of the name. Muretco??? I can't... it's where Moose Mountain and Sukunka gas fields, it's right near there. It was one of the, it's tied in. It could have been called Owetco ??? It was a good well, a big well. And then we drilled just west of Calgary, in the Bragg Creek area. I drilled three wells there and I can't think of names now. But they're at the north end of the Turner Valley structure. They were very small little plates, but they were successful. They'll more than pay their away but there's not a lot of development on them. One or two well structures.

RE: [inaudible]

FC: One of them I believe is tied in. Tied in to some Gulf... that had been doing a bunch of that kind of work and had several wells. So, that was my Foothills experience really.

[00:24:35] Then after that, I was moved to the east coast in 1986. And Bob Akland ??? took over for the Foothills and the Territories and Arctic. And I was moved to the east coast when they were consolidating. They had three, four regions there I believe. They had one that was the Labrador area, Labrador and Baffin Island area. They had a region that covered Nova Scotia, the Maritime group. And one for the Jeanne d'Arc Basin, in Newfoundland, the other Newfoundland basin. Plus, a development geology group. So, those four groups were merged, and I was put in charge of that. I got my exposure on the east coast, which turned out to be some of the fun times too. And the Terra Nova Development became a big part of that. We were still working on getting the Hibernia going. And the last job I did at Petro-Can was to design a group, which is now in place, for the Hibernia Company to do their depletion plan as reservoir engineers and geologists and geophysicists. And they did a major 3D program on Hibernia this summer, this past summer.

RE: [inaudible]

FC: We drilled a lot of wells in both Nova Scotia and Newfoundland while I was there. We had the Panuke discovery with Shell, which is going into production next spring, along with **Cohasset, Cohasset** evolved from that sale. I should mention the Terra Nova barrack [???] sighting, we drilled three step-out wells there, and each one made the field bigger, which is quite unusual. I think those are the best reservoirs I've ever seen in those wells. 16 years of 30 percent frost and up to several

darcy's permeability on it. And all oil. In... I can't remember the year. I think it was '88 or '87, I was put in charge of all of the frontiers, then they merged the whole frontier system into one. So, then the Territories and the Arctic Islands and the Beaufort came back to me, minus the Foothills. Along with that, I was given development geology for all of Canada, the geology group and the operations group, which was well-site geology and log analysis and all that sort of thing. So, I had fairly busy times when I had all of those going for me. And that went until 1989 and yet another reorganization, and I was, a retirement package was offered, and I looked at it and thought, I am 33 years in, and the package was attractive, and I said I would like to take that. So, they had to give it to me, but they made an arrangement with me to stay until last spring, which I did. I left there to retire, my last day was June 6th, 1991. With my holidays and other time that I had in reserve, my last day, official day, was July 29th, 1991. So, I went fishing and traveling.

RE: [inaudible]

[00:28:48] FC: Well, CSBG is another story. I have a philosophy that I should put into a community what I take from it. I've been involved in a lot of those things: community work, involved in Minor Hockey, kids' sports at the community level, Triwood Community, I was involved in the building of their arena. And they were the dominant sports community for kids in town, I was the Director. I was involved in all sorts of activities there. Then I got into the AA hockey for a while. In fact, I was treasurer, managed a team, in too big of a way and ended up undertaking to build an arena that's become the ??? Arena. For about 5 or 6 years I was involved in getting that funded and built. Some people say that??? in there are mine, 90-foot-wide ice for one I'm proud of. But when that was finished, we had a lot of financial problems there. We had a mayor names Sykes in Calgary who, since it wasn't his idea didn't like it, did everything in his power to shoot it down instead of having something that would have been easy to fund, it could have been much bigger, with playgrounds and all sorts of things, but he made it very difficult. And we had quite a bit of financial trouble.

I wouldn't leave it when it was in that state. Once it got on its feet I resigned from there and decided it was time to put some effort into the profession that I had taken from for so many years. I made it known I was interested in doing some committee work for the CSBG, but not really anything more. And a couple of months later, maybe three months later, I got a call from Rick Young asking me if I would let my name stand for Business Manager. I said, well, that wasn't really what I intended to do, but I ended up going that route. And from there, it went... the following year, Glenn Hill was the past president responsible for the election, the nomination. And he asked if I would let my name stand for president. I was little more concerned about that. I was very, very honoured but I was very concerned whether I should do it or not.

RE: [inaudible]

FC: I was president February ??? [conversation becomes very hard to understand, very muffled] But I went [inaudible] my job would have to be covered a little bit. [inaudible] So, I let my name stand as president [inaudible] Kept track of time. I had some idea of the time it was taking me. [inaudible] The great part of it was ??? I prided myself that every year that I knew somebody in every geology department, university department in Canada. And most of those contacts I still have. I got to see the inner-workings of our society and our profession. I learned a lot of things that go on in our profession that hadn't occurred to me. [inaudible] 50th anniversary trust fund meeting. And said, this was his last meeting as a trustee, he was finally getting rid of his obligations as a past president. [inaudible]

RE: [inaudible]

FC: No, I did very little publication. A couple of small papers. [inaudible] but I did one, a small one on the outcrop in the Arctic. And I did an article for the field guide with Don Norris on Campbell Lake High. Last year I did a joint publication for a conference in Newfoundland, the NOIA Conference. [inaudible] future of the Newfoundland area, off-shore area is. [inaudible] Hibernia coming on. We don't see it as being [inaudible]

[00:34:42] RE: [inaudible]

FC: [inaudible]

RE: [inaudible]

[00:35:17] FC: Well, I like frontiers and I'm hoping to still be involved in them a bit. Newfoundland is coming on stream and I see it, being activity there pretty well continuously, but not major programming. One field at a time, one project at a time [inaudible] exploration at that [inaudible]. Nova Scotia is going to be on stream next spring. I was involved with the very first oil to leave the shore of the east coast of North America. And it came from [inaudible]. We got 23 thousand barrels of oil ??? a tanker [???] 1987.

We didn't see an opportunity for a lot of oil in Nova Scotia, but they had gas, quite a bit of gas. But not huge from an oil standard. A lot of it, like Venture, is over-pressured. And, I think, very expensive gas. I've always thought the Mackenzie Delta could compete with the Eastern U.S. [inaudible] Venture gas [inaudible] I like the Beaufort. I think first of the Beaufort [inaudible] a small diameter oil pipe. And all of that came [inaudible] The past few years, looked like I was going to be wrong but now I see they're back predicting a small diameter pipeline is going to be the right way.

RE: [inaudible]

[00:37:01] FC: Well, on small, it's defined in the ??? as 20 inch or less. But I suspect it'll be 12 or 14-inch, tied into Norman Wells which has extra capacity. Small diameter you don't have to bring it all the way [inaudible] The Arctic Islands, there's lots of gas there, and some oil. I guess the gas is the thing. I don't know how they could afford a pipeline out of there. LNG or methanol, but I'm not sure that methanol or LNG, it's more expensive than some of the other things we're looking at. [inaudible] The green planning now. You go down to northern New Brunswick last spring and in Saint John they've got something like a thousand... what do you call those big things that you build electricity?

RE: [inaudible]

FC: Megawatts. A thousand-megawatt plant there, all on oil. And very expensive to generate and also rather dirty. Halifax has four generators there, each one capable of about 100 megawatts. One of them capable of immediate conversion to gas. They're all of them [inaudible] And nuclear power is out in North America right now. And gas has a big future in these areas where they're using a lot of electricity as a generating source. The National Energy Program, until it announced ??? it would not allow gas ??? for these electrical generating plants. Where New Brunswick's coming from now, when they're asking for a pipeline to bring gas from Quebec [inaudible] New Brunswick wasn't allowing it before, but now they seem to think they can go ahead and [inaudible]

[00:39:43] RE: Well, this concludes our discussion with Fred. Thank you very much, Fred. We do appreciate it. And good luck in your semi-retirement or whatever it is. All the best.

End of Interview