

PETROLEUM INDUSTRY ORAL HISTORY PROJECT
TRANSCRIPT

INTERVIEWEE: Ed Galvin

INTERVIEWER: W. J. Wood

DATE: June 1984

JW: Today is Tuesday, May 29th, 1984. I'm at the office of Mr. Ed Galvin at POCO??? Petroleum in Calgary. My name is Jim Wood. Ed, I wonder if we could start then this morning by finding out a little bit about yourself and specifically when and where you were born?

EG: I was born in January 1913, in Richmond, California, which of course, you know, is just across the bay from San Francisco. At a young age we moved to southern California and basically I was raised in the Long Beach, Wilmington, Seal Beach area of southern California.

JW: Were you aware in those days, even Richmond too, of the oil activity in the Long Beach area at that time?

EG: Well, actually my father did work for Union Oil Company at the refineries on the San Francisco Bay and that was the reason. . he was transferred from the Richmond area to southern California to work for Union Oil on refinery construction projects. Our residence was basically on Signal Hill, which was the old major California oil field and I literally grew up among the derricks there because we did live right on Signal Hill.

JW: I've seen photos of that and that was a forest of the wooden derricks.

EG: Yes. But of course, having that background that's the reason that I presume that I worked in the oil industry even as a very young person. And with this oil and gas background it just continued through my life.

#022 JW: Did you have any brothers and sisters?

EG: I have an older sister and younger brother. Neither of course, of which are in the oil or gas business.

JW: You attended U.S.C. then didn't you?

EG: Yes. That was an outgrowth of being in the oil and gas business because I was employed by the Texas Company as a labourer and one of the persons to whom I'm greatly indebted, encouraged me to go to university. This I did, I enrolled in the University of Southern California in Petroleum Engineering, and at the same time did continue working for the Texas Company. It was through that association that I was able to get my education. Through the four years that I was in university I worked on weekends and holidays and so this of course, financed my education and to the Texas Company I'll always be grateful.

JW: Okay. Maybe you could just talk a little bit about what you were doing for the Texas Company. You had graduated from high school?

EG: Yes. I went to work as a labourer. This was mostly on pipeline work. In those days a lot of the pipeline work was done by hand. In the oil fields where they run gas lines or connected oil production from well heads to batteries, all that labour was actually hand done. Of course, that was a long time ago, that was back in 1933. But having started back to school, I got an improvement in my job in the Texas Company and was put in the gas measurement department, where we measured gas production from wells and from batteries and I achieved the position of what they call the meter man. Not only did I go out and pick the charts off the meters but then you also repaired them and kept them in maintenance. That was one of the sort of better mechanics jobs at that time. In any event that particular job was kind of interesting because I was all over the Los Angeles basin and visited their many oil fields, like Santa Fe Springs and Montebello and Wilmington and Huntington Beach, all those were producing oil fields and this particular job I had carried me to all those various places. So I had quite an exposure to all that was going on in the field.

#058 JW: So that was a good background. How come you selected U.S.C., just because it was close by and you could stay working?

EG: Yes. It was close by, it was only about 19 miles from Long Beach and I was able to commute daily. It offered this course in Petroleum Engineering, which at that time wasn't available at U.C.L.A. U.C.L.A. of course, was a State university and U.S.C. was a private university and there was a difference in cost of going to school but I went to U.S.C. because it was a Petroleum Engineering school.

JW: That was not quite unique but not a common course.

EG: That's true. The Petroleum Engineering course at that time was one of the first they offered. There were schools in Texas I think that were giving Petroleum Engineering degrees but. . . there was a good Petroleum Engineering degree at the University of California at Berkeley but that was a little far away.

JW: Right. Could you, if you recall, just describe the curriculum at that time and perhaps who some of the more influential professors may have been?

EG: One of the professors who was well known and highly regarded in the oil and gas business was Professor John Dodge??? and John Dodge was interestingly associated with the Buckley family and historically would relate back to what we know here in Canada today as United Canso???. But John Dodge was a very highly regarded professor who had many contacts and whose background was consulting. He was one of the first engineers who did a lot of work in the matter of estimating reserves of oil and gas in the ground. There were different schemes at the time in which that was done but he was one of the persons that refined the processes of well reserves determination as they were in the reservoir. One of the first to use factors of permeability and porosity and approach the reserve estimation from a volumetric point of view. At that point in time, very interestingly, one of the methods which was used to determine reserves was what they called the family curves and these curves took the production history of wells and plotted them as a family group and that family group of course, had a decline as the reservoir was depleted and presumably from that decline you could project the life of the field and the

amount of reserves that you would get. But it basically was a rather crude method of doing it but that was one of the means by which properties were evaluated and that was back in 1935-1936.

#101 JW: Could you just talk a little bit perhaps about the activity in the California area, the kinds of things that were going on when you were starting out in the mid to late 1930's, was it a really booming area at that time?

EG: California was a very unique situation. In those times there was very little regulation and virtually no legislation which controlled oil and gas development. The rule of capture applied in . . . I guess you'd say to a maximum it was, he who reduces to possession. There was a lot of unnecessary drilling, wells were drilled on very close spacing. Of course, you appreciate that California basically was. . .the sands are relatively thick as you relate them to Canadian operations. These huge thick bodies of sand were very prolific and very productive. The operators were . . .it was sort of catch as catch can. You went in and if you did have a sight at which you could drill a well, why you drilled this well rapidly and produced it very rapidly. To produce wells at rates of 4-6 thousand barrels a day were common in California. Mind you there life history's were relatively short by reason of that. But the initial rates at which wells were produced were. . it was just sort of a matter of drilling into the zone and then opening it up and letting it flow and in many cases in the San Joaquin Valley, in order to capture as much of the oil as they could, some people would just run the oil from the well into earthen sumps. And capture at the surface as much oil as they could, shipping it at some later time but actually building little dams in the aroyas??? and low places where they could actually dump the oil and leave it, but to get it out of the ground before your neighbour got his fair share.

#133 JW: This would seem to me to produce quite a bit of waste too, or not?

EG: Yes. Well, it was reservoir waste and also physical surface waste too, but that was one of the ways they did it. Later, in the 40's, about the time of the war, there was attention then paid to conservation. So this wild sort of unfettered drilling, to capture, quickly as much oil as you could, those days sort of, well, they disappeared.

JW: Were they teaching conservation at U.S.C. when you were in Petroleum Engineering?

EG: Well, not in the same sense that we would know it today because the techniques of reservoir performance weren't then well understood. It was maybe the late 40's before people began to realize that by selected means you could enhance recovery of oil from reservoirs and more attention was paid to that. But that was sort of an evolution. I think historically you could go back and you could find the advocates of conservation. The theories that were put forth were certainly, well there were early people who saw what could be done but in practice not much of it was utilized. Even in the late 50's in California we had experiences of finding new oil pools which were rapidly exhausted, well rigs of 5,000 barrels a day and that would be in the early 50's.

JW: You mentioned it was unregulated, there was no Conservation Board equivalent there was there?

EG: Nothing as we knew it in Canada and no information. Many wells were drilled and there

was no responsibility in the way of reporting the well logs. Of course, when I say well logs, I'm not now talking about electric logging and those things, but the physical logging of well by sample and the knowledge of what it was that you were drilling through by ditch samples. There was no responsibility to report that sort of thing and so many, many wells were drilled and no information would become part of permanent record. Here in Canada, of course, the system here, everything that's done in the sub-surface has some kind of a record. In California in the early days there were no such records at all.

#177 JW: I know I guess Turner Valley was about the only activity in this area in the 30's of any significance, were there the same kinds of several large companies, Texas Company Union perhaps and then lots of small entrepreneurs or small one and two man operations active in California?

EG: I would think there was a great amount of promotion in California, where individuals would drill a well and they were not even companies in the ordinary sense, they would just be syndicates of. . . some person would go out and solicit a group and they would buy shares for \$1,000 or \$2,000, you would buy a proportionate share in a well which was to be drilled. Wells in those days might cost from 40-60 thousand dollars, some perhaps more than that and maybe a lot, in some cases less. An individual could syndicate a well and sell the units and it wasn't like you were dealing with any kind of public securities commission. There was no such thing, this was just done by agreement among individuals and there were a lot of abuses that come out of there as you can well imagine. But to answer your question, yes, there was a very active group of, shall we say, independents, who would drill wells singularly or sometimes they would have room enough to drill two or three. There was one instance near the town of Newhallorsagus??? in California, where there was a new oil pool discovered and there were 90 wells drilled on 70 acres.

JW: You could just walk from one to the other.

EG: You can imagine the density of that. The interesting thing about that particular. . . the reason for that was that this particular block of land had been raffled off, way back in the 1800's at the St. Louis World's Fair and people were given title to small pieces of land and there were literally thousands of owners on this block, which, as I say was 70 acres. Of course, no one had any title and these entrepreneurs just went in and put a well on and drilled and started to produce oil without any kind of title, which you couldn't do in Canada.

#223 JW: Most of the people at that time, in the industry, had I suspect, come up through on the job training and job experience, there were very few people with degrees, especially in Petroleum Engineering at that time, is that correct?

EG: Well, that's correct, there were not very many Petroleum Engineers. The curriculum on a Petroleum engineer at that time, was more oriented to the practical matters of drilling wells, the physical application of machinery and equipment, to finding a developing oil. And not so much to the technology of production. But that changed and the span of years was not all that great. As more and more people became . . . acquired technical background, then the technology of oil production sort of improved. But in the beginning

it was more a matter of mechanical techniques of how you drilled a well, what kind of bits you use, much of the work you did was calculation of casing strings and what weight of pipe you would have to use for certain depth and how much cement you would have to put in a well. All of which is still technical handling even today, but the emphasis was more on the mechanical handling of the well.

JW: When you graduated, was that degree. . .by the old timers, did they look favourably on that degree or did they say, oh, here's a guy just out of university. . .you know. . .or were you a sought after commodity at that time?

EG: Yeah, I think that the fact that you had acquired a degree in Petroleum Engineering did give you an advantage because there was a sort of a void in the need for technical application. I don't particularly recall that the old timers ever really resented young engineers. As a matter of fact, my one experience would have been that it would be the other way.

#262 JW: Through that time, your university and late 30's and so forth, were you aware of what was going on in Canada or was the California oil patch aware of Canada in any form or degree?

EG: Not really in the sense that you had . . . working in California and working in Texas or Oklahoma were very contrasting. The methods used and the things. . . and some of the way things were handled. Of course, in Texas you see, there was regulation and there was some control of the industry, although not in any sense as we know it today but both Texas and Louisiana and to some extent Oklahoma there were some controls, as different from California. But the techniques of operation, the application and so forth, it was very interesting, even though it was in the United States, there was some rather substantial contrast in how things were handled and how things were done. Texas, there was a lot of cable tool drilling, which California, although it had a lot of cable tool drilling too, in the San Joaquin Valley, it was sort of the forerunner of the rotary drilling. That in time, of course, it was all rotary drilling, but Texas and Oklahoma, for many years was sort of stuck with the cable drilling. Particularly in Oklahoma. Canada, when you asked whether you were aware of what was going on in Canada, the answer then was really no. Of course, the discovery of Leduc, that sparked everybody's interest, but before that, I don't think that very many Californians would have known anything about Turner Valley or Bow Island or any of that.

#305 JW: You mentioned California was the forerunner for rotary drilling, why I wonder?

EG: Well, I wouldn't be able to answer that but I could say with some reasonable certainty that there was much more rotary drilling in California than there was in either Texas or Oklahoma, given the same time frame. Obviously there's no cable tool drilling now. . .well, I guess there still is. . .

JW: Heritage Park.

EG: But I think that what happened was in this business, if you go back to the rule of capture, that he who reduces to possession, the guy that got there first got the most and so those methods like the rotary drilling, you could put a well down faster than you could with

cable drilling. That might have encouraged California operators to be more aware of and in the use of rotary drilling. That doesn't suggest that they weren't using rotary drilling but the emphasis on rotary drilling in California was much more than it was in some of the other States.

JW: Okay, I'm going to turn the tape now.

Tape 1 Side 2

JW: [in mid sentence]. . .back then, upon graduation from U.S.C. to the Texas Company.

EG: Yes, I worked for the Texas Company until the war came and then I went to work for the Petroleum Administration for War in World War II.

JW: You ended up as a Plant Foreman, didn't you, for Texas Company?

EG: I had left the Texas Company and gone to work for a small company called . . .yes, that's true, I was a Plant Foreman with Texas Company, but before going with the Petroleum Administration I was working at Duvalier???. And then went with the PAW and then after the war was over I went to work for Gulf Oil.

JW: What was Duvalier?

EG: It was a small independent company, which was designed to take gas off of well heads and process for gasoline content. It was a sort of tea kettle outfit type of thing, that . . .actually it was a small absorption plant, it processed the gas and removed the gas liquids and then..

JW: What was your motivation for going there from a company like Texas Company?

EG: I think it was a job opportunity because having gone to Duvalier Gasoline, I was the Chief Operator or the Plant Foreman as they were called and to have stayed with the Texas Company I probably would have had to spend a few more years just being a plant operator. There was more opportunity for a technically trained person to work for a small unit than there would be staying with the Texas Company, which you had to, sort of by tenure, work your way through.

JW: So you had a lot more responsibility a lot more quickly?

EG: Yes.

#029 JW: Okay. World War II came along and so did the Petroleum Administration for War, what was that, what was their role.

EG: The Petroleum Administration for War was. . . in effect, the start of World War II, there would be an enormous demand for petroleum and petroleum products, all of which would be directed into the war effort. At that point in time there were restrictions on the amount of gasoline people could use and efforts made to generate more oil and gas production. All of which was very successful because in the PAW, California was producing, pre-war, about 780,000 barrels a day and by the end of the war it was up over a million barrels a day. This was done basically, out of the Petroleum Administration, which as a government agency, did encourage projects which would produce more oil. Similarly this

happened in gas. There was increased activity in gas well drilling, to substitute for oil consumption. Oil was a somewhat cheaper commodity than gas by reason of its mobility. You could truck oil here and there and you have to pipe gas, so there were projects in which, gas found its way into industrial uses to supplement or to substitute for oil consumption, which oil consumption in turn, was available to ship overseas or whatever was needed. It effectively was a very useful program and there was encouragement to drill and explore for oil and gas. And I think the numbers were, in themselves, showed that the program was successful. And of course, the same thing happened in other oil and gas producing states, they were divided into districts. But the object was to improve productivity and that object was obtained.

#061 JW: It also, it seems to me, had a long term benefit of creating a greater market for gas than there may have been or probably would have been, had not the war come along and motivated people to change factories and so forth to consumption of gas.

EG: Of course, California was not a gas prone area, much as we know it here in Canada, for whatever geological reasons, California was more oil prone and today still is. There are not very many sort of, independent gas fields, as again, we would know them here in Canada. Rio Vista is probably the big. . it is in the San Francisco Bay area and it really was a big gas field and in that same region there were other dry gas fields found, but as you went south, from the Salinas area, down through the San Joaquin Valley and into the Los Angeles basin, that basically was oil prone. Even some of the major fields, which of course, contained a lot of gas, like the Kettleman Hills, they still were oil fields. There were some deep seated single phase reservoirs that were discovered in the south San Joaquin Valley, like Paloma and those were. . . well, I presume that you would still call them oil fields, because the object was the cycling of the gas and the recovery of fluids at the surface and then the reinjection of the gas. But California was basically oil prone.

JW: Were you more or less drafted into the PAW or was that something you volunteered to do?

EG: Yes, I was sort of, by reason of this particular experience I had, it was suggested that maybe I would be serving my country better by working for the Petroleum Administration than being out in the field.

#093 JW: Just as almost an aside, San Pedro, Long Beach, Terminal Island, all the port facilities there were probably somewhat vulnerable to attack, were you involved in planning the defense or security or anything like that.

EG: No. Actually there was a lot of that done. In the area I worked there was none, but in effect, they sandbagged well heads and things of that sort. But the Los Angeles Basin area, to my knowledge, was never subject to attack. There was a couple of submarine attacks off the coast of Santa Barbara, where Japanese vessels surfaced and shot at some surface installations on shore but southern California was never really attacked, nor do I remember that there was any sabotage or anything of that sort.

JW: Even well heads, say in the San Joaquin Valley, were they also sandbagged or just in the

Long Beach, coastal area.

EG: I think it was just in the Long Beach, coastal area. Mind you there were all sorts of field committees that were set up. Much in the way of. . what were these groups who took care of people under bombing raids?

JW: The wardens.

EG: Wardens, yes. The warden system sort of applied in the oil field, where certain persons were charged with emergency measures, where if certain things happened then they would respond in a certain way. There was quite a lot of that. But I don't recall that there was, in the San Joaquin Valley, any particular measures which would protect well heads as such.

JW: Were you able to get additional ration coupons, being with the Administration?

EG: No, I don't think so. As a matter of fact, it would be a little bit on the contrary I think. It seems like your friends could always turn up with more.

#122 JW: After the war, then you went back as a Petroleum Engineer with Western Gulf, in Los Angeles?

EG: Yes.

JW: Now, I take it Western Gulf is part of Gulf Oil?

EG: It was a California subsidiary of Gulf Oil, yes. It was called Western Gulf, in that it was sort of its own unit, it had its own manager who reported to Pittsburgh but operated as an independent company.

JW: What kinds of things were you doing for them?

EG: Well at first, after the war I went to Western Gulf as a Senior Petroleum Engineer and shortly thereafter became the Chief Petroleum Engineer. Then they made this discovery of one of these deep seated, single phase reservoirs, which was the Paloma Field. They decided they would cycle this field on a pressure maintenance basis and so I was sent to Paloma as Plant Superintendent. That operation was, at that point in time, a very highly technical one. The injection process, the plant systems operated at about 4,000 pounds and it was the business of putting gas back in selective wells and producing other wells selectively to pressure maintain the reservoir, taking out the wet gas and putting the dry gas back. It was that process that brought me to Canada because in the Gulf system, in Canadian Gulf, they had made the Pincher Creek discovery. Pincher Creek seemed to be a logical cycling arrangement. It too was, at that time, thought to be a single phase reservoir and the idea was to build a plant and recycle the gas there. Of course, it had special problems which were different than the California experience because the gas in Pincher Creek was sour gas and most of the gas in California was all sweet. So I was sent to Calgary, in the early stages of the Pincher Creek process, with the idea that I would be here for a couple of years and sort of help to get the Pincher Creek process under way.

#165 JW: I should add, that was 1954 when you came up.

EG: 1954, yes.

JW: We'll get into that very quickly. I just wanted to ask, you mentioned a minute ago, Leduc. Do you remember how you heard in 1947 about the Leduc discovery or what kind of

interest that generated there in California?

EG: No I really wouldn't. Personally I wasn't really very much aware of Leduc until I came to Canada. By this time, of course, in 1954, the Big Valley reef discoveries had been made and there was a lot of development there and the Redwater project. . of course, the Redwater field was. . . . But I don't have any memory of having the Canadian scene brought into focus when I was in California.

JW: Did you look forward to your transfer to Calgary?

EG: Certainly it was an adventure and I thought it would be a very . . . I had had this exposure to this high pressure cycling operation and had the notion that I could make some kind of a contribution. Of course, at the time, it was supposed to be a two year assignment.

JW: Had that high pressure cycling that you had done in Paloma, was that something that you designed or was largely your innovation?

EG: No, actually the forerunner of that was in Texas. The big Cotton Valley project there and there were other cycling operations that application had been made in Texas, and the technology was sort of transplanted to California. There were many type of reservoirs in the Texas area that were susceptible to that kind of handling and not too many in California. As a matter of fact, there were only relatively a handful of fields, like South Coast Levy and Rio Bravo and some of those where they were deep seated and were in the proper environment for this cycling operation. The basic technology of cycling came from Texas operations.

#210 JW: What was your perception and/or recollections of Calgary when you arrived from Los Angeles, which was a little bit more metropolitan.

EG: When you arrived in Calgary in 1954, you remember that the airport buildings were Quonset huts. You really sort of had a feeling that you were coming to a rather remote area. You were coming way north. I don't remember exactly what the population was in 1954 but I think it was around 176,000, which was quite a size, but you have to remember there weren't such things as television here and not very many restaurants and very limited number of hotels.

JW: You went to the Palliser, I bet, at the beginning.

EG: Yes, I think that's correct. I think the first stop light when you approached Calgary from the south was at Mission Road. You were a long way in town then.

JW: Did you arrive in summer or winter?

EG: We came in August, which was a good time and that winter was a very mild one as we remember it. We really didn't see very much snow until Christmas. And that of course, was an experience, because we had never lived in snow before.

JW: Where were Gulf's offices located?

EG: They were on the 3rd floor of the Hudson's Bay Building, would it be the 3rd floor or the 4th, I guess it was the 4th floor.

JW: They added a couple of floors didn't they, to the Bay, or not?

EG: Yes. In any event we were on the top floor of the Hudson's Bay building and occupied all of the space on the top floor and the entrance was on the 7th Street side and there was an elevator that took you up to the office space. It was all wood paneled and I think, in those

days, was sort of the prime office space in town, because many other companies, you know, they had converted a lot of the old buildings on 8th Avenue into offices and those were all old warehouses. Pacific Petroleums, they were in a series of. . . and they literally were, they were old warehouse structures that had been converted into space.

#264 JW: And then the Lancaster was the other, probably. . .

EG: Of course, the Lancaster Building was an office building. But those buildings on what was 9th Avenue, not on 8th, 9th Avenue, they were the warehouse type buildings.

JW: And there were companies in there, I didn't know that.

EG: Pacific Petroleums. . . a company we later acquired along the way, General Petroleums, it had a building which. . . it was just opposite what was the new post office on 9th, just off of 1st. But that course was sort of the industrial part of Calgary then.

JW: How many people were at Gulf when you arrived, employees, do you recall more or less?

EG: No, I really wouldn't be able to pick a number. Canadian Gulf activity was substantial. They had made major discoveries in Fen, in Big Valley and they had a very substantial field staff, people who lived in Stettler, who lived in Redwater. I think a lot of them lived in Camrose.

JW: Who did you work for when you got here, who did you report to?

EG: Who did I go to work for? Actually, my boss was a person by the name of Eddie Gallagher and he then in turn reported to Locknee. I got in Canadian Gulf just shortly after the time that Locknee had been sent up from Tulsa. He was the. . . I don't know exactly what his title would have been here but he was the head person. Then Ed Gallagher handled the production side and was in charge of all the field operations and then I reported to him on sort of the gasoline side, having in mind that my activity was to be around the Pincher Creek deal.

#314 JW: How were you received when you got here?

EG: Great. There were a whole host of young engineers, who as Canadians, had gotten their educations and become Petroleum Engineers at places like the University of Texas and particularly the University of Oklahoma. These young engineers were. . . well relatively my peers, perhaps most of them were younger than I was. But having come to Calgary you were most welcome. I will always remember almost the first day I was here, they all took me down to the Hudson's Bay store and I had to buy a shotgun because we were all going to go duck hunting. That was the start of what was a lot of rather continuing associations. There was a whole host of people, that, since having left Gulf and gone out into other things, but you still have that connection. Rob Lawrence and Johnny Yurnell???, Rob, you will remember, he was the President of Super Test for awhile. Yurnell, he was Locknee's assistant. These were all young people and all interested and all hard workers.

JW: I'm going to change the tape here so we'll take a short stop.

Tape 2 Side 1

JW: This is tape 2 of my interview with Mr. Galvin. How would you compare, especially from your point of view as a Petroleum Engineer, the technology or I suppose even the state of the art here in Canada, relative to where you had come from?

EG: Well, I'd have to say that in Canada it was much more advanced because, being a new area, new development, all the best people were sent here by companies such as Gulf and Shell and others who . . . it was a boom sort of circumstance, everybody reaching out for land and drilling at a great pace and I think that Canada had the benefit of getting all the top grade, experienced people who came from the States. There were areas in which that was resented but on the other hand, the technical advance of the industry was perhaps more rapid than. . . And you have to remember there were a whole host of young Canadians that were sent to U.S. universities to get educations in petroleum or chemical or whatever. So I think Canada as a new oil and gas development did benefit largely by the fact that major companies were here and they brought in a lot of technology, which really, in my view made the Canadian industry one of the best in the world. It's like your Conservation Board, you know, you can go over. . . everything was recorded, everything was done in an orderly manner, there were rules by which you worked and I think a lot of the rules came about by the obvious mistakes that were made in the U.S.

#034 JW: How did your activities go at Pincher Creek?

EG: Pincher Creek was not what you would consider to be a success in terms of what was originally thought to be there. They had thought that it was a major gas field, holding somewhere between 4 and 5 trillion feet of gas. Drilling at that point had been rather sparse. They had been influenced by seismic and it seemed that they thought that there was a very large structure and a very thick pay and therefore a very substantial amount of gas. A lot of things were done around that concept and it proved later that it really wasn't there. As you know, Pincher Creek currently, now is sort of in its last stages of depletion and I don't know finally what it did produce but it was nothing like had been previously estimated. So one of the interesting examples of how you sort of misjudge things is that they built this 130 mile gas line from the Empress area down to Pincher Creek and that line was of course. . . well, I don't think it was every utilized in terms of its capacity. Although you remember that Shell finally. . . they had operations there at Pincher Creek too so there were other reservoirs. But I think on balance, Pincher Creek was a disappointment. It was a very complex reservoir and I think it surprised a lot of people. Mind you, it did operate. . . I guess it was an economic success in the end. The plant was built and went on for a number of years. But it wasn't, certainly as big as it was originally thought to be.

#063 JW: It was about this time then, that you made a rather abrupt transition in your career, didn't you?

EG: Yes. I went to work for an independent company called Pathfinder Petroleum. This was about a year and a half after I was in Canada. This came about by reason of associations that I had in the U.S., where, again, I suppose that the reason that I went with Pathfinder, was that I had some experiences that were needed, they were useful to a smaller company. It hadn't been doing too well, it was kind of a management problem. I had these connections in the U.S. who sort of, thought it might be a good idea if I would leave Gulf and take this particular operation over.

JW: Who were these connections, if I . . . ?

EG: Basically, when I was in California I had some very close friends. . . all sort of derived from university associations, who were with Degauger, McNaughton??? in Dallas. They had tried from time to time to induce me to go to work for Degauger and McNaughton in Dallas and I had always declined. So when I came up here for Western Gulf, very interestingly D & M had very substantial activity here in the way of appraisal and analysis in Canada. One of the D & M employees at that time, was Vern Hortie???, he was a D & M employee. Anyway they sort of thought that even when I came up here it might be a good idea to go to Dallas and then this other situation came up where this Pathfinder. . they had some problems and so these D & M people that I was associated with said, why don't you talk to Galvin, he's in Calgary and maybe he'd be interested. And that's basically the way it happened. And I did become interested in the Pathfinder thing and so that was it. Basically they were my only employer in Canada right through to the end of Norcen because it was really the same assets that kept compounding. A change of name would occur once in a while but what is now the oil and gas assets for Norcen really had their base beginning in this Pathfinder deal.

#104 JW: Maybe you could just talk a bit about Pathfinder as it existed in 1955, I think first of all they get underway in '52, a couple or three years earlier.

EG: Yes. It seemed after Leduc, it was very popular or fashionable might be the better word for financial houses in Toronto to sponsor an oil and gas company. So all of the financial houses had their own little company that they were providing funds for in one way or another. Pathfinder was promoted by a company called Walwin, Fisher??? and Walwin, Fisher, of course, is a forerunner of what you now know as Walwin, Stodgel. Of course, Jack Walwin is dean now, but Walwin provided money, they raised 1 million and a half dollars for. . . well, I have to get this sort of straight, but there was a million and a half dollars, went into the purchase, from Harold Siebens, of a group of land holdings that he had put together. Now, this was Harold Siebens second go at this. The first land group that he sold was to Bailey-Selburne, which was Alec Bailey and Selburne from Winnipeg. Harold went out on the second go round and put a portfolio of lands together, which he sold to Walwin, through Pathfinder. Well, Pathfinder acquired them, Walwin raised the money and Pathfinder acquired them. I think that Pathfinder paid a million and a quarter for the lands and then there was about another million and a half dollars, which was supposed to explore these lands and that money was also raised by Walwin. Now, that

didn't work so well because the oil and gas business is rather difficult as you know and there was a lot of risk involved and so the million and a half dollars, which was to be used for exploration, didn't last too long. But in the meantime, the managers of the then Pathfinder had made some deals with some old existing. . well, I say old, they weren't really old, but they were small companies who had gotten involved in the Leduc discovery. One of them was called Ashmont??? and the other was McDougall-Sieger???. McDougall-Sieger was an original Turner Valley company but they had gotten into the Leduc play and so they owned some producing lands. And so there was Ashmont, McDougall-Sieger and another company called Jett???, all of which had Leduc production and they were induced to go into this Pathfinder scene. This all before I got there. That put some production and some income into Pathfinder but it still had its problems, because it had this land account, which at least at that point in time, hadn't turned out too well and they were sort of out of funds. So this New York group came along and they. . .of course, the people in Pathfinder, through Walwin, had been looking for some additional financing and there was a New York group came along and they represented some very wealthy clients, the tin people, Petino???, I think their names were. Anyway they put up some money but only on condition that the management changed and that's where I got in the picture. So there was an infusion of . . .it wasn't a large amount of money as we know it today, it was only a half a million dollars or something of that sort. But there was a production base in the Pathfinder and you have to sort of know that some of the early goings on in the oil business were greatly influenced by these brokerage houses and their inter-associations. So there was more money brought in from the U.S. but Walwin, but also he had connections with the Withall??? family in Vancouver. And the Withalls, as you know, they were brokers too, they had a company called Yankee Princess and this was Dick Withall's little deal, and Yankee Princess, it had some production too. So out of this there was an amalgamation between Yankee Princess and Pathfinder. That sort of keyed it off there because that new company. . . in those days, if you amalgamated companies you had to have a new name, and so there was a new name selected called Medallion. And then Medallion, from there on went through a series of collecting other units, either by share exchange or by acquisition.

- #187 JW: These eastern and in some cases western financial, these weren't representing pension funds then were they, they were more speculators?
- EG: No, they were not representing pension funds.
- JW: Or that kind of money.
- EG: As a matter of fact, there wasn't that kind of money available, it was all speculative type of funds.
- JW: Why wouldn't they have said, all right, instead of risking our money like that, let's give it to Imperial Oil, Gulf Oil, some of the more established larger companies. Was it just the notion of you had a better opportunity, the profits might be a little better.
- EG: Oh of course. I think you have to remember what . . basically you have to use the term leverage. Somebody like a Walwin would go out and raise funds from clients who were willing to buy the shares of the stock of his company on the basis that there would be

manifold rewards, far in excess of anything that you would get if you bought a share of Imperial Oil. So these were promotions, the fund raisers, they always got. . . well, they were rewarded in different ways but they always were well compensated, either by getting some kind of a substantial fee for having put the money into the pot, or in some cases, getting what you would call founders stock, which is a polite word for promoters interest. So they'd be able to buy stock at 10 cents that they were selling in the market at \$1 or something like that, or that they were promoting for \$1.

#222 JW: When you decided to go with Pathfinder, they had not been very successful in their exploration efforts, was that because their land position wasn't good or just because they weren't managed well or the exploration activities weren't conducted properly.

EG: I don't think that it reflected anything that was any different than it is now, the oil and gas business is a risk business and some people were more, shall we say, maybe they had opportunities for better exposure in terms of plays. But Pathfinder didn't really have too much success in the finding. As you know, it had relatively limited incomes, so it wasn't able to explore out of income. One of the fatal things is to explore out of capital, so maybe you had to do something different and I think that's what we did. We sort of acquired or amalgamated with other units, that shall we say, were having the same kind of a problem. Which is the case, we made . . . I don't know how many there were in Medallion, but it could have been 26 or so different arrangements, some by share exchange, some by cash purchase and so forth, but they were acquisitions of companies who couldn't see their way through. A company in those days was in a little more danger of sort of going down the drain, than companies are today. Companies today who have large bank debts seem to be protected because really the bank doesn't want to take them over and run their business. In those days, they were a little more brutal, if a company couldn't meet its obligations to the bank they sort of went down the drain. And in defense of that they would come in and amalgamate. Today, there are many small companies that have problems, but they have no need to resolve the problems because the bank is still sitting and everybody is waiting for the gas markets to improve or the general . . . you know, the industry to be in a more favourable mode. But some years back that really wasn't the case, if you sort of got in trouble with the bank, you had to run out and do something else.

#275 JW: So you would, or the interests behind Medallion would pick up these companies inexpensively?

EG: Well, a lot we did on a share exchange, you appraised their interest and you appraised yours and there'd be something of value, a company may be just having a hard time. I can think of a number of them, there were a number of them that came off of some of the Pacific Petroleum operations, there was a whole host of little companies that had been organized around Pacific's operations and they along the way had a little production, but they also had some bank debt and they really didn't have any future and so they say, well, we'll put these assets in. . . . It was a very logical, orderly sort of a thing. But Medallion,

we were not explorers. It's different than this arrangement here in Poco now, we're exploring all the time, we spend a lot of money drilling every day. In Medallion our interests were. . . well, you see one of the things we had in the company was an engineering background. And we were . . .if I might say this, we sort of knew what we were doing and we knew how to appraise properties and this really was true. We had people who were knowledgeable and who had a real good feel of what it was that you were acquiring and we were always happy to put something together that looked like there might be some growth or prospect in it. When I say prospect, not necessarily risk prospect, but prospect for improved gas sales or improved recovery technology in oil and things of that sort.

#319 JW: So you would take existing production and enhance it or make it more efficient?

EG: Or more economic. Sometimes it might even mean that you went the other way, that you actually, in order to make it more economic, you would reduce. Instead of trying to produce 200 barrels a day, you might be very happy to settle back to 120 on a very much improved economic basis by eliminating overheads of people and field operations and things of that sort.

JW: When you mention we, who were some of the people you were actually working with in the engineering

EG: One of the people is Eddie Battle, who, just shortly after we formed Medallion, he was a Texas A&M graduate who was working for Continental Oil in Louisiana and we had decided that we needed some engineering help and so I went down to Texas and interviewed a number of university graduates there and he decided that what we had to offer in Canada was attractive and he came. He was a very bright, capable. . . had some kind of a magic touch of being able to sort out the good pieces and the bad pieces and of course, as you know, he's the President and Chief Executive Officer of Norcen today. First of all he's a very bright guy and secondly he had two degrees, he had a degree in Geological Engineering as well as Petroleum Engineering. I think we made a very effective team because we could get down to the business of assessing really, what it was that we were looking to acquire.

JW: Ed, I'm going to have to stop here now.

End of tape.

Tape 2 Side 2

JW: Today is Monday, June 4th, 1984. My name is Jim Wood and this will be my second interview with Mr. Ed. Galvin at his office in Poco Petroleum, this is tape 2, side 2. Mr. Galvin I noticed in the June '84 issue of Canadian Business that Norcen is ranked #70 now, of Canadian businesses. I wonder if you could just talk a little bit about the formation of that company, especially relative to some of the smaller companies that you were involved with, previous to that.

EG: Norcen was a product of a number of companies. It had a sort of split personality in that it currently is made up of eastern utility companies. . .well, I have to qualify that, it was not all eastern utilities, Greater Winnipeg Gas is also involved. But on the energy side, the oil and gas assets of Norcen, as they exist today, started with the formation of Pathfinders back in 1954, and there was a succession of mergers and acquisitions, through the course of time, I think up to the time that. . .well, Pathfinder was the base company, it by amalgamation, became Medallion and Medallion in turn became Canadian Industrial Gas and Oil and Canadian Industrial Gas and Oil in turn became Norcen. Now, in the history from Pathfinders through to CIGO, there were about 26 amalgamations or acquisitions of other companies. It was these companies that created the base oil and gas asset in Norcen. Going back, Canadian Industrial Gas was an oil and gas company and a utility called, Northern and Central Gas made an offer to acquire the shares of Canadian Industrial Gas back in about 1964, somewhere in that time. That offer to exchange shares of CIGO for Northern and Central Gas was less successful and Northern and Central Gas ended up with about 90% of the Canadian Industrial Gas and Oil stock. Of course you understand that Northern and Central Gas was basically three utility companies, being Northern and Central of Ontario, Greater Winnipeg Gas in Winnipeg and Gas Metropolitan in Montreal. After a time it became apparent that the oil and gas assets were, in terms of their total value, a much bigger entity than the utilities themselves and so there came a time when it was decided that they would put the oil and gas assets on top and put the utility companies on the bottom. This was the creation of what we now know as Norcen. Norcen, in its new name and new character is an oil and gas company, with gas utilities as subsidiaries. The growth of course, in the energy side, was rather substantial and Norcen today, of course, is about \$1.5 billion corporation, but basically its growth was through the energy side.

#051 JW: What was Maurice Strong's role in the formation of that company?

EG: Maurice Strong was more or less the architect of this whole affair. He, in the first instance, owned an interest in a company in Alberta called Ajax, which was a small gas transportation company in and around Edmonton. Ajax, when Maurice Strong took control of Ajax, he changed the name to Canadian Industrial Gas. Canadian Industrial Gas was his company, and in turn, he had made a deal with Midwest Industrial Gas, so

basically they were gas transporters. In turn, Maurice Strong was offered the Presidency of Power Corporation and so, he left Calgary and went to Power and when in Power, he thought it would be nice if he. . . well, his plan was, the Canadian Industrial Gas and Oil, as we now know it, would take over the utility companies. And the utility companies, Greater Winnipeg Gas and Northern and Central Gas were partially owned by Power Corp. So it was through that association that Maurice Strong sought to put the utility companies and the oil and gas companies together. His argument, which was an interesting one, was that the shareholder in a unit which contained gas utility companies and oil and gas companies would have the best of both worlds, in that they had the security and the non-risk in come generation of gas utilities and at the same time would have the risk exposure and prospects that would exist in oil and gas development. Actually what happened was that it proved that Maurice was wrong in the assumption that there would be the best of two worlds because what in fact did happen, from a market point of view was that the people who wanted oil and gas investments, did not want to be carrying a portion of their interest in utilities. Conversely the persons who were looking for the security of a utility investments were not interested in the risk aspects of oil and gas ventures. So the circumstance then was, that that theory really didn't work and in fact it was contrary. So it was that, that led to the finally, creating Norcen, by turning the ownership. . . by rolling it over and putting the oil and gas assets up on top, so that the energy would look more like an oil and gas operation rather than a utility operation. But for many years, even though the major part of the assets, which came out of the utility, oil and gas amalgamation, it was always recognized that they were a utility company and never an oil and gas company. So this move to create Norcen to make it outwardly appear to be an oil and gas operation rather than a utility operation was one of the reasons for the turn over. But of course, by that time, Maurice Strong had been long gone, he had left Power Corporation, but it was his doing and his imagination that took this rather unusual company of a utility company ending up with oil and gas assets.

#099 JW: I think it was Peter Foster in his book, Blue Eyed Cheeks, talks about the reluctant melding of I guess, Canadian Industrial Gas and Oil and the Northern and Central Gas.

EG: That's correct. The reluctance was on the part of the people who were associated on the oil and gas side. They'd sort of be a bit for the reasons I've already covered. It being owned by a utility company kind of took some of the glamour out of the oil and gas ventures. There definitely was a reluctance on our part, that is the people who were here in Calgary, like Eddie Battle and myself. The reluctance was not anything with any kind of bitterness or difficulty, it was not that kind of a situation. But it was one that, on the oil and gas side, we didn't believe that that was in fact, the best way to go. And I think that as it turns out that was later proven because. . . well, finally we did put the oil and gas assets up on top and it was the creation of Norcen.

JW: Was Norcen, the oil and gas aspect of it, was that controlled fairly autonomously here in Calgary, or was there still direction from Toronto?

EG: The oil and gas assets were totally managed and run out of Calgary. The people on the

utility side, not having any experience in oil and gas operations didn't interfere and depended on the oil and gas people here, in Calgary, to operate. We made our own budgets and effectively operated totally independent of the utility side, being responsible only to a Board of directors, which interestingly was somewhat dominated by the people with utility backgrounds.

#129 JW: How did that work? Were you able to . . . ?

EG: There was never a time when there was difficulties. There was never strains or stresses that one might imagine. The oil and gas operations were somewhat in the hands of the people who were running them and I think that those people with the utility backgrounds respected that and really never interfered. I suppose the only real difficulty we had was in the matter of dividends. This on occasion, created problems because on the oil and gas operations, we were always trying to put all the money, which would flow out of the operation back into the business and on the contrary, the utility companies of course, are structured on dividend payments. So there was always this reluctance on the part of the oil and gas side to . . . well, shall we say to pay dividends. And on the other hand the utility people felt that was one of the parts of that business, was to have investors who had returns. So there were always some kinds of conflicts there as to what the dividend rate would be, with the oil and gas people wanting to pay no dividends and the utility people feeling that something had to be done in that respect. However these things were not . . . they created no special problems, no animosities. At least in my own experiences, some of my very close friends came out of the utility side of the business.

#159 JW: I guess it was about 1960 that IPAC was formed and you were a founding member of IPAC I take it.

EG: Yes.

JW: What was the motivation behind the formation of IPAC and was your original mandate?

EG: IPAC was created because it was about five independent petroleum producers, as distinct . . . from major oil and gas companies, probably at that time the integrated companies, they were not being fairly treated with respect to the sale of Alberta crude. In that the major producers had offshore access and were in fact, bringing very substantial amounts of imported crude into Montreal and into the Ottawa valley. IPAC was created as . . . well, as a protest group to say, we don't think that's fair, we're sitting here in western Canada and we have lots of oil to sell and we have no market for it because the larger integrated companies prefer to bring in their own offshore crudes and service the eastern markets. That was the reason for IPAC, it was totally a . . . it was an organization that was set up to influence government or whatever to put more western Canadian crude into eastern Canada. Of course, the theme of this was probably the Montreal Pipeline, that there should be pipeline connection from Sarnia to Montreal, which would carry western Canadian crudes into eastern markets. Of course, the economics were not favourable as you might know, it was easier for major companies to bring offshore crudes in. They were all tidewater crudes from Venezuela or the Gulf or wherever and could be delivered and laid down in Montreal at very much less cost and in fact, could be brought into Toronto at

less cost than you could transport it from western Canada. Anyway IPAC was a representation of some relatively strong independent producers that were in fact seeking the market and that would be its simplest.

#197 JW: I take it when you talk about pipelines from Montreal, Bob Brown was involved in Home Oil, in the formation.

EG: Yes. He was kind of the spokesman for the group in that he was independently advocating this and it was through his efforts and through. . it was he who sort of brought this thing into focus, and in turn created the momentum which in turn resulted in IPAC. Bob Brown was what you might call the industry spokesman. I suppose in the minds of many, it would have been his idea that we needed a Montreal pipeline. Of course, being rather an outstanding entrepreneur, I think he had visions of building the line himself.

JW: Well, he did. Was this, the formation coincident, before or after the Borden Commission Hearings?

EG: I couldn't tell you, I think it was after.

JW: Because I think in talking with Ian Drum, who was Bob Brown's assistant, basically, during all that time, that he had the economics figured out where there was only about a nickle a barrel difference, with his idea of a pipeline versus the integrators bringing it in. So apparently it was more political perhaps than economics. I wonder ultimately, why the pipeline wasn't built.

EG: I don't know.

#225 JW: Okay. Who else was actively involved in the formation of IPAC at that time, 1960?

EG: Charlie Hay, who had been with Royalite and ultimately went to Gulf. Charlie, representing Royalite was the first IPAC President. There were others, all of which I would have difficulty naming. Charlie Lee of Western Dalcalburn???, Jack Gallagher of Dome. . I'd have to sit down and sort names out, but all of the leading oil and gas companies did participate in IPAC in its beginning, it had good support. Of course, I think that support has been maintained through the years. I think IPAC now, is recognized as being. . well, I suppose recognized by government as being an important voice in the industry.

JW: That's good. You were, however unsuccessful in getting a pipeline built into Montreal. What early successes did you have?

EG: I wouldn't really know how you would measure those. I suppose that when the associations did in fact. . .when they were in fact recognized by government, then it seems like there were times when governments would give warnings of proposed changes in legislation and the IPAC would have the opportunity to comment and to work constructively in the matter of how these changes in regulations might affect the industry. I don't know that there were any sort of, single major events which resulted from IPAC, but it had to be a thing of many parts and the fact that government recognized that the industry did have a voice and the fact that they did consult with the industry was I think, a very important contribution.

#266 JW: That recognition and listening to. You mentioned last time as well, your involvement with the Canadian Petroleum Association, I wonder if you could just talk a little bit about that.

EG: Well, I was Chairman of the Petroleum Association and having had the experience in IPAC of dealing with governments, I thought it was important that we have a greater industry contact with the people in Ottawa in Indian Affairs and Energy and in Finance. So we sent to Ottawa, as a resident manager, Dave Furlong, who was the manager for the CPA and the decision was made that his office should be in Ottawa and not in Calgary, which is a rather interesting thing. Because up to that time the manager of the CPA had always been resident in Calgary. The idea being that the manager would have a greater area of contact, he would be on the site and he would know about all those things which are going on which might affect the oil industry. I suppose using the word, would be a semi-lobbyist. So Dave took quarters in Ottawa and then the scheme was that once a month or perhaps more frequently, if the opportunity presented itself, we would have meetings with officials of the various departments or the various ministries which would have effect in the oil and gas business. This was a rather major disappointment to me because it became clear that . . . and I don't say this out of bitterness, I just say this out of fact, that the government, people, both the elected officials and civil servants were not really very interested in the oil and gas business as it existed in western Canada. It was there and it was something they had to deal with but they never really looked much beyond the eastern borders and they're not very sympathetic in terms of the western area. As a result these clients were dealing on a ministerial level in oil and gas matters but it really didn't work. Dave would do his best to set up some kind of a session, where we would have a lunch or a dinner or something and talk about the problems of the industry and they really never succeeded. We were always pushed down to some . . . not even the Deputy Minister's level, you sort of ended up by wasting your time going to Ottawa and then having dinner with some person at some semi-senior level. In addition to the monthly visit, we tried to have one grand affair which would bring all the ministers together for a sort of, a major afternoon session and dinner, having as a subject, the problems affecting the oil and gas industry. There also in my view, were not successful. After doing this for a year I had the feeling that the time was pretty much spent without any kind of real benefit.

JW: Okay, I've got to change the tape here.

No tape 3