



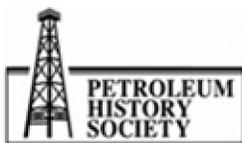
PETROLEUM HISTORY SOCIETY
OIL SANDS ORAL HISTORY PROJECT
TRANSCRIPT

G. R. (RON) GRAY GREW UP IN REGINA, SASKATCHEWAN AND, IN 1948, GRADUATED IN CHEMICAL ENGINEERING FROM THE UNIVERSITY OF SASKATCHEWAN. HE OBTAINED WORK WITH HI-WAY REFINERIES IN SASKATOON AS PLANT CHEMIST. IN 1954, THE COMPANY WAS PURCHASED BY ROYALITE AND BECAME ROYALITE HI-WAY AND, BY 1958, IT WAS A FULLY INTEGRATED COMPANY WITH OPERATIONS IN BRITISH COLUMBIA, ALBERTA AND SASKATCHEWAN. HE BECAME REFINERY MANAGER IN 1955 AND WAS TRANSFERRED TO CALGARY AS GENERAL SUPERINTENDENT OF REFINING ON JAN 1ST, 1957. HE BECAME INVOLVED IN OIL SANDS RESEARCH. ROYALITE AND CITIES SERVICE PARTNERED TO BEGIN DEVELOPMENT AROUND 1958 WITH THE PILOT PLANT AT MILDRED LAKE. IN 1958, HE WAS SENT TO THE HYDROCARBON RESEARCH CENTRE IN TRENTON, NEW JERSEY. HE WAS INVOLVED IN RESEARCH TO EXAMINE THE VIABILITY OF USING HYDROGEN INSTEAD OF COKING IN THE PROCESS. IN MAY, 1959 HE BECAME THE PILOT PLANT OPERATIONS MANAGER AT MILDRED LAKE AS OPERATIONS MANAGER WITH AN EDMONTON BASE. GRAY APPEARED AS AN INTERVENOR WITH THE ERCB ON A NUMBER OF OCCASIONS. IN 1964, SYNCRUDE WAS CREATED TO REPLACE CITIES SERVICE ATHABASCA WITH FRANK SPRAGINS FROM IMPERIAL OIL AS THE FIRST PRESIDENT.

GRAY WAS THE FIRST EMPLOYEE INVOLVED WITH THE GENERALIZED TITLE OF MANAGER OF ECONOMICS AND TECHNOLOGY. SHORTLY AFTER, CLEM BOWMAN JOINED THEM AS DIRECTOR OF RESEARCH. GRAY BECAME DIRECTOR OF ENGINEERING IN 1972. CONSTRUCTION BEGAN IN 1973 WITH THE FIRST BARREL BEING SHIPPED ON JULY 30TH, 1978. GRAY RETIRED IN 1986 AND DID NOT SET UP AS A CONSULTANT. INSTEAD, HE WAS CONVINCED BY DEAN OF ENGINEERING FRED OTTO AT THE UNIVERSITY OF ALBERTA TO RAISE FUNDS TO SUPPORT PROGRAMS. IN THE END, THE PROJECT GRAY HEADED RAISED \$13 MILLION TO SUPPORT CHAIRS, SCHOLARSHIPS AND RESEARCH INITIATIVES.

DATE AND PLACE OF BIRTH: 1926, REGINA, SASKATCHEWAN

Date and Place of Interview: 1:30 June 18th, 2012 at the Gray residence below.



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Address:

#303, 8956 – 156 Street
Edmonton, AB T5R 5Z6
Tel. 780-483-5229
Email gr.gray@shaw.ca

Name of Interviewer: Adriana A. Davies, CM, PhD

Name of Videographer: Jimmy Bustos

Consent form signed: Yes

Initials of Interviewer: AD

Transcript Reviewed by Interviewee: Yes

Date and place of interview: 9:30 a.m. on June 18, 2012 at Mr. Gray's residence.

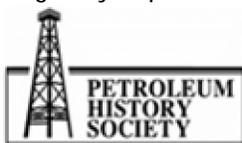
Last name of subject: GRAY

AD: My name is Adriana Davies and I'm a researcher/interviewer on the Petroleum History Society Oil Sands Oral History Project. It is the 18th of June, 2012 and it's 9:30 a.m. And, I'm interviewing Ron Gray in his home. Ron, thank you so much for agreeing to be interviewed.

GRAY: No, problem.

AD: Excellent. Now, could you please give me just a capsule biography, three to four minutes, just the highlights of where you were born, when, educational and then career. And then, we'll move into the questions with respect to your involvement in the petroleum industry, in particular Syncrude.

GRAY: I was born and raised in Regina, Saskatchewan. The oldest of four children, that was back in 1926. And, I went to Central Collegiate in Regina and the University of Saskatchewan and took chemical engineering; graduated in 1948. I was hired by a man, Charlie Hay, who was president of Highway Refineries. And, they had little refineries in Saskatoon. So, on graduation I joined Highway Refineries as plant chemist. At that time, they just had a small refinery, small toasting plant. They ran most of heavy oil, oil from places like Lloydminster, Little Rock and Coleville, Saskatchewan. And, made asphalt in the summer time and primarily bucket fuel in the winter time and the gasoline and the stove oils were topped off the heavy crude and so on and such. And, in 1949, a year after Highway expanded. They put in about 1500 barrels a day of crude there and a Dubz thermal



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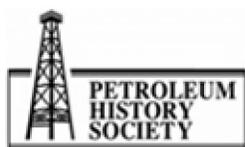


cracking yard. So, that took the heavy ends and converted them into lighter ends. It also improved the octane of our gasoline as well as giving us more to sell because we had a marketing operation. One night, this is several years later I was out of the office, when they built the Dubz cracking yard I became a process superintendent. Up until that time, a fellow by the name of Stan Archer, who by the way had worked on the old Abasand project for Max Ball was the superintendent of Highway. And then, a man by the name of Bob Anderson came in as plant manager and that's, I guess, when I became process superintendent. The compression ratio of all my bills were going up, largely because the oil industry had developed catalytic cracking which produced a gasoline of a much higher octane content. And, the automobile industry was able to take advantage of this by increasing the compression of the ratio of their engines and getting more power for them. But, by the same token you would try that higher octane, the gasoline that we were making in Saskatoon was not of sufficient quality to tackle a hill, a car was going up a hill it would *ping* rather loudly.

Well, Bechtel had built a catalytic cracking yard in Moose Jaw and their gasoline was so high in octane they didn't have to add any tetraethyl lead whereas our gasoline was loaded up to the limit, three millilitres per gallon. So, I talked to Charlie Hay into bringing carloads of catalytic gasoline from Moose Jaw Refinery. We mixed it with our own and loaded it up to the limit and we were able to produce it to better the product. But, I was in the office one day and I was coming through a booklet and Hay happened to wander in and he said, "Well, what are you looking at?" And, I said, "Well, I think we should really have a catalytic cracking yard and Universal Oil Products have a nice little stacked yard with a reactor on top of a regenerator, "which got him thinking about it. So, I said, "That's the only way we can remain competitive in the future." But, Highway was a pretty small operation. And, so he didn't know where he was going to get the money to build a catalytic cracking yard.

Then Gulf Oil came up with a field, a discovery of oil at Stettler, Alberta and it was not connected to any pipelining. So, they had no outlet for their oil. So, Hay made a deal with Gulf that we would buy the Stettler crude and process this at Saskatoon if they'd lend us \$1 Million, which they did. So, we had our \$1 Million to build our catalytic cracking yard. As it turned out, eventually a pipeline was built to Stettler and it turned out that we never did have to take any oil for which I was grateful because it being sour crude I wasn't really looking forward to it. At that time, when we were building the catalytic cracking yard in Saskatoon we also built our pipeline from Mildred, Saskatchewan into Saskatoon. It was a tap off the interprovincial pipeline and we could transport crude from there right up to the refinery. Well, we built a catalytic cracking yard and it was kind of interesting. We had a new design of cyclones put in by a Dr. Birdman who was in charge of design from Universal Oil Products.

We went to start up the refinery and all the catalysts were going out the stack. His new cyclones didn't work. Now to save money we had to put in an access in the reactor. I figured that I'd have to cut a hole in there to put maybe a, every so often or periodically. Well, Universal Oil Products now had sold us some faulty cyclones so Hay talked them into putting a new access in, put some proper cyclones and after that the refinery worked very well. But, we had got our crude partly ready for Leduc and when I was going to school, in the final year, I had to a thesis. And, Larry Eddy and



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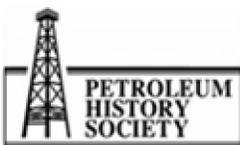


myself got established from Imperial Oil, the first oil that they drilled here was Leduc. And, they were wondering whether the oil in the D2 or D3 levels were connected. And so, we had a Straticator? Tratulator? Stratulator? set up with the refinery and we broke the gasoline components into tiny little cuts and then analyzed them for aromatics, paraffin and naphtha and to see what comparison was. Well, the similarity made a difference too. So, I don't know if we really resolved that question. But anyway, it was quite an interesting thesis that we'd done on the first crude oil that had been produced here. Well, Leduc was a beautiful crude and it made lots of money for us in Saskatoon. But, Frank Spragins had been working with Imperial Oil and once Leduc stood out and reached, well then Red Water reached, stood right out.

So, they developed the Red Water field and they were anxious to buy this Red Water crude. But, it was a lower quality than Leduc and all the simulations I read said that we were going to lose twenty-five, thirty cents a barrel or get that much less than right at Leduc. So, we prevailed on the Leduc crude. But, we still have that little old tire plant making asphalt. And, one day I was asked if we could run some of that heavy oil, mix it in with Leduc and put in the cracker. Well, actually when we expanded the plant, it will be a little technical here.

We had converted a former Dubz Cracking Yard into what you call a Visbreaking Yard, which takes the heavy ends and partially cracks them. Then, you put it into a vacuum tower which cuts the, it will divvy it down to produce a gas oil, a gas oil residue. The gas oil is the feed to the catalytic cracking yard. So, we put in this mixer of coal or crude and the new crude and all the predictions out of heavy crude right, coal oil and only 13 granite crude. Well, you get a quite around a much lower gasoline yield out of their gas/oil components than you would a paraffinic crude at Leduc. Well, when we put this in, there is a reactor on top of a regenerator. And, the regenerator normally which burns the coke off the catalyst before we trade it back up with the crude oil to the reactor. Normally, it runs at about 1100 Fahrenheit. Well, it started to heat up. So, the processors were tied up, so I had to reduce the amount of catalyst reactors. Say, it started at 30 inches, started pretty much to reduce them. And, the regenerator kept getting hotter and hotter. So, it kept reducing the amount of catalyst, eventually down just to the point where you could barely measure it. And, surprisingly it happens that the yields are gasoline far higher than you could possibly have predicted.

And, it was years later that one of the reasons why, but the crude oil takes a regenerated catalyst and expands and goes up this long riser to the overhead reactor and all the catalytic cracking was taking place in this long riser. And, two years later, Shell patented riser cracking. So, we've been doing it for a couple of years, not being smart enough to patent it. But, what had happened, when you regenerate a catalyst you add air, blow air, the big air blower through their regenerator and it burns off the coke. And, usually has a fairly high ratio of carbon monoxide to carbon dioxide. But, in our case, it was burning right through the carbon dioxide. And we had a much higher ratio of carbon dioxide to carbon monoxide than you would normally expect or should have. It was that extra burning that was taking place, converted to carbon monoxide to carbon dioxide that dubbed as the elevator temperature. And, later on we found out that coal with gas oil had an organic metallic iron in it and iron is an oxidation promoter and it was promoting the, when you burn the coke off a cast. Right through from CO to CO₂ and that was where we were getting all the extra heat from and



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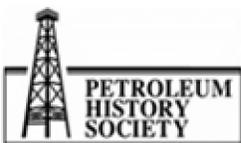


developed the riser cracking. So, that was just a, it worked out to our advantage. But, this is kind of producing a market for coal with crude too, in part. So, Royalite Oil Company was a small company originally at Turner Valley, had some crude production, about a million cubic feet a day gas plant owned by Imperial Oil. Imperial Oil owned Turner Valley and the owned some production down in South America; international oil company in Peru or something, I can't remember the details now. But, they wanted to raise some money to expand some other refineries. And, Samuel Bronfman of Seagrams expressed some interest in buying Royalite. There is some reason Imperial Oil was determined they were not going to sell this to Bronfman.

Well, through some deal they made with Dominion Security or something on the open market, Bronfman ended up getting control of Royalite Oil Company; which is probably small but still produces a little bit of crude oil and a lot of gas. And, he brought in a man by the name of Ray Althouse from Cities Service. This would be back in '52 or thereabouts. Ray Althouse had been an executive for Cities Service. Cities Service had a lot of refining capacity in the United States but not as much production to match their refining capacity. And, Ray also being from a big company had big ideas. And, between him and Bronfman, they decided to convert this Royalite into an integrated oil company. When they built a little refinery out at Coleville in the semi-crude and made asphalt out of it and engaged a couple of individuals called A.B. Lay and Lincoln Clarke from Los Angeles. They named themselves CARBO Engineering. They first became known up here in Canada, Imperial Oil decided to build a refinery up here in Edmonton and Lay and Clarke moved the old Canol Refinery from Whitehorse down to Edmonton for Imperial Oil. I don't think it's saving Imperial anymore but it saved them a lot of time in getting back into the refining business in Edmonton.

So, these two guys kind of became keynote and they were retained by Royalite to build this asphalt plant, made roofing asphalt as well as road asphalt and coal out of this heavy oil. So, they became known to Royalite and since we were buying crude oil and there was another outfit up in Prince Albert that had a little refinery by the power plant and they topped the heavy crude, sold the bunker fuel to the power plant and then sold some gaslight and what not and it was bought out by Royalite. But, the Royalite story goes back a little bit earlier. Back in the depression days, 1930s, these Texas oil had come in, huge volumes of crude oil selling for about ten cents a barrel. And so, a lot of these little prairie are cooperative, prairie owned cooperative sprung up with little refineries around Western Canada and that's how Hay and the Goods Brother at London had built a couple refineries and called it Highway Refineries. So, one day Sam Sackett came up from Chicago with a satchel full of money and he bought up a lot of these little plants and rolled them into one company called the Highway Refineries and Charlie Hay became the president.

Well, Royalite stayed right out of it and bought control of Highway Refineries and Highway Refinery became Royalite Highway. So, now and simultaneously, they built another model refinery at Kamloops. Trans-Mountain Pipeline went close to Kamloops and so Royalite had built a moderate middle refinery, about 5,000 barrels a day at Kamloops. They struck a deal with Trans-Canada to put a tap off and it was hard negotiations, got a pretty decent price because they were only halfway to Vancouver. So, now they had two refineries because they bought out Highway Refinery in Saskatoon, one in Kamloops and these two heavy oil ones in Coleville and Prince Albert. So, in



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nineteen, oh about '55 or thereabouts Bob Anderson who is, now by this time refinery manager and I was process server standard; Hartridge, the original refinery manager was now maintenance manager. So, they moved Anderson to Calgary and I was moved up to refinery manager. So, I was about 29 at the time, possibly the youngest refinery manager in Canada at the time in a small water refinery. In January, 1957 I was transferred from Saskatoon to Calgary as general superintendent of the refinery in charge of Royalite's four refineries and their Turner Valley gas plant.

Now, there are several stories that occurring simultaneously. A fellow by the name of Gordon Cole was said to throw some heavy oil into his wife's spin dry washing machine one time and the sand went to the bottom and the oil, bitumen went to the top and they decided to come up with a new process. And, he had a partner Sam Paulson who... and then they got some other people interested. And, they did some work mostly out of washing machine but they built a plant at Bitumount and I bought the plant at Bitumount from the Alberta Research Council. So, they wanted to convert this into a commercial plant and Royalite, Ray Althouse, was quite interested. About 1980, the Blair Report came out and said Blair had been commissioned...

AD: You mean nineteen...

GRAY: ...with and I worked with a lot with Karl Clark and they brought in the Universal Oil Products and Maddex.

AD: Yeah.

GRAY: A lot of people, they put together a report and just called it the Blair Report, showing you could...

AD: I think you meant 1950, you said 1980, right?

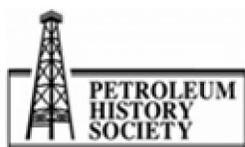
GRAY: 1950.

AD: 1950.

GRAY: Did I say, 1980?

AD: Yeah.

GRAY: Oh, well 1950. So, that attracted an awful lot of interest. Anyway, somewhere in the mid-50s Royalite had picked up Lease 17, which had relatively low overburden, they had 200 thick layer of bitumen, one of the most attractive areas in the entire Athabasca area to start a project. So, then they had this attractive lease and Paulson had a process ready. So, Royalite had decided they had to investigate the Cole/Paulson Process. We set up Lincoln Clarke, the man who had designed the coal plant and also had built the refinery at Calgary for us, makes water refineries. So, very creative fellow; sent him up there to do some research on the Cole/Paulson Process. Well, at first they had to scale up this, the first time they put the diluted oil sand in this centrifuge it went from barely a... I



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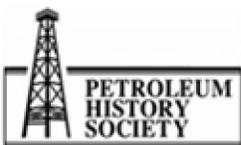


don't know really, it looked like it was going to shake itself to pieces, everybody evacuated the room. Obviously, centrifuges were not going to work on a large scale. But, Lincoln Clarke took some diluted bitumen and put in what you call it, sand tar. Now, the sand of course went to the bottom and the diluted oil came off the top and seemed to work very well. Sometime in there, all of us got carried away and made an announcement in the paper that Royalite was going to spend \$50 Million to build a 20,000 barrel a day oil sands project or something like that. Well, Royalite didn't have the money and I don't know what he was thinking of, frankly. But, in 1957, Royalite brought in Cities Service, Althouse's former company, and a big company proficient in crude oil and also invited Union Oil California. Union, there is a lot of heavy oil in California and Union Oil probably knew more about handling heavy oil than any other oil company.

So, the three companies: Royalite, Cities Service and Union Oil formed a study group in Edmonton in 1957 to look at Lincoln Clarke's work and these other fellows, of course, were very knowledgeable on upgrading and also probably more realistic of the costs of big refineries. And, we looked at number of scenarios and came up with a big report examining all the details of the project and concluded that with crude oil at about \$3.00 a barrel, in those days, the only way you could justify having a project would be to operate it at 100,000 barrels a day. Well, based on that information, Royalite invited Cities Service and Union Oil to join with them with the idea of building an oil sands project. Well, shortly after that one of the companies imported oil into California for the first time in the history of the California oil industry. And, the price of crude oil dropped fifty to seventy-five cents a barrel overnight and most of Union Oil's products went out the window. So, they said, "Thanks, but no thanks," as far as participating in a Syncrude project. But, Cities Service decided they wanted to go along.

So, it became Royalite and Cities Service decided they were going to have a project. Around about the last day of June, 1958, Charlie Hay who was the executive vice-president of Royalite at this point called us to his office and said, "We just entered into a deal with Cities Service to go ahead with the project." I said to my wife, "I've got to meet with Charles Monday morning." We were just planning on leaving on vacation, but anyway, I guess when the boss says you go, you go. I got down there, of course it was July 4th when I got there and everything was shut down. But, I stayed there for a month with Charles helping him set up an extraction test plant and going through their plans for developing the oil sands on a commercial scale. A fellow by the name, Dan Hay, was an idea man for Cities Service and they had a concept all lined out which was based visbreaking the oil, usually a variation of Lincoln Clarke's sand tower using diluent, mix in with the oil sands. And, visbreaking the oil in Saskatoon, I mean up in there... pardon me, up on the oil sands site and extracting and visbreaking it and then transporting the visbroken, lower gravity oil to Edmonton where we built a refinery. And, at that time, I was slated to run the refinery in Saskatoon. Of course, these were all the plans that were being made.

Well, we got up to Mildred Lake, that extraction plant was only so-so as far as recoveries because the oil sand at Mildred Lake behaved completely different than the oil sand at Bitumount. Bitumount had probably very coarse sand and very few fine. Separation was easy, you could add hot water, you could add diluent and you've got a nice, clean separation. But, there was a completely different



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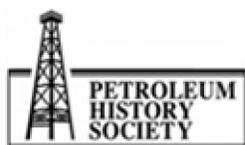


matter when you used oil sand from Lease 17. But, meanwhile, based on that they decided to go ahead and build a pilot plant up at Mildred Lake and set up a camp, beautiful Pan Abode cabins and a pilot plant, which had some unusual concepts involved with it also. And, during that time, another Cities Service process engineer and myself went up to Trent, New Jersey where hydro-carbon researchers were adding hydrogen to everything.

There was a fellow by the name of Doby Keith, who was with some of the men originally from Kellogg worked on the Manhattan project. As a matter fact, it was a Canadian who worked for him, Clarice Johnson, was a man who was able to put that very fine mesh that with a proper backing that allowed the used 235 to be separated, he was the one who invented it. So, Keith had grabbed up some guys after the Manhattan project and started hydro-carbon research and they built a lab in Trenton, New Jersey. And, Clarice Johnson, Sy Sherman and Mike Sherman, some of these guys that had worked on the Manhattan project. And, he was adding hydrogen in everything, adding H iron, H coal, H oil. So, we were looking at H oil, we wanted to see whether we could add hydrogen to bitumen as a better form of upgrading than diluting and coking, for example. And we found, of course, that it worked very well. If you use catalysts it had a lifespan, before it would eventually coke up and get covered with contaminates, metal that plate on it.

Then you would have to take it out, replace it with fresh catalysts. But, we found that if you use that spent catalyst and put a second reactor, use the second one to plate out the bad reactors or bad metallic then you really extended the life of the catalyst on the second one. So, that looked like a pretty interesting process, two stage catalytic... two stage H oil project. One day, I don't know why, we injected hydrogen into a reactor that didn't have any catalysts in it. And, low and behold, it worked beautifully without the catalysts. So, we ran this for months on this. It was just a two inch reactor and we had a process called, hydro-visbreaking. I mean hydrogen, instead of... not thermal visbreaking, but hydro-visbreaking. Now, there are some other things that are... oh, that's 1958. So, at the end of May, '59 I came back to Edmonton. We'd been working up there in Trenton, well I was working part time in Trenton, part time in New York City where Cities Service had their office. Came back to Edmonton and rented a house here because I was not too sure whether this project was going to go ahead.

Still, I owned a house in Calgary but while I was working down there in Trenton, New Jersey they were building a pilot plant up there, at Mildred Lake, putting in the panel boards and the facilities. The Pilot plant facilities, which were designed to produce oil at 1,000 barrels per day, pretty good size, pretty good scale operation. So, it would be on June, 1959, we were just about ready to start. I went up to Mildred Lake. I was the operations manager in charge of the pilot plant. At that time, we had a little plane and it would fly men in half a dozen at a time. They would work in for five weeks, have a couple days off on the weekends and then we'd fly them out for a week. But, these weekends were, of course a waste of time up there. So, they did eventually build a curling rink out of some used lumber and baseball diamond. But, eventually the company got a DC-3 plane and so we could fly a much larger crew in at two flights at a time. And, the men would go in and work 20 days straight and then they'd come out for ten days. So, that's better than being in for five weeks and coming out for a week. So, that was the way we were running it. But, meanwhile, the pilot plant



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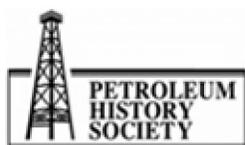


hated the idea the City Services idea was to have a bucket-wheel excavator much along the lines that Great Canadian eventually put in. Chewing into a bank of oil sands and held to an extraction unit, mounted on a Caterpillar tractor base, a mobile base. So, the excavator built in Germany that was used in the brown coal industry of Germany. And, the extraction would move along with it on the Caterpillar treads. So, every so often we'd have to move this. Well, the ground is uneven, of course the tank would all flow over and after a while, I said, "This is nuts. We're spending all our time finding mobility instead of staying with the extraction plant." So, at that point we tied down the extraction plant on level ground and bulldozed oil sands up to the excavator, was loaded into the hopper and fed it into the tumblers. So, at least we knew how to fight this. But, we were still adding diluent and some sands they worked fine.

Then Nexen formed some turbo emulsions and we were putting it through both plug belt and a rowing mill or tumbler. One of the fellows that, which company had sold to us, Fred Siret, the original owner, "Why don't you just go to the hot water, try that," he said, "cut out the diluent." Which, we did." We had a couple a couple of runs, that worked, it worked quite well. Although some of the sand did not separate as well as others. It was the sand with that had the most clay in it. In some places, that alternating layers of oil sand and clay were so close together they were almost like a deck of cards. An area where we ran into this high clay content that resulted in a low recovery of... Well, winter was coming and we decided we would shut down that big \$1,000 a day plant. Which, when they saw the reset level and built a bench yard inside the building on a smaller scale and we would be bringing oil sand in there and it had a small yard set up. And, we use the hot water process there. But then, the froth would have about 10% sand in it or solvents, a lot of sand, not much sand but a lot of clay. Maybe, 25% water and the rest would be bitumen.

So, we had to clean up the froth out of there, we used to spend an awful lot of time looking at ways to do that. Again, we had the same problem with emulsions forming and clean it up. And the best way to clean it up was to centrifuge it. So, that's why we eventually ended up with a commercial plant, something along the lines of what Great Canadian had with the hot water process to extract it. But, in order to overcome this problem with clay, we tested an awful lot of alkaline environments, to carbon to bicarbonate and classic soda. And, once you got it into an alkaline environment then the separation improved enormously. So, there was a complete difference to the way the oil sand at Mildred Lake behaved than what the original at Bitumount behaved. Bitumount had really thrown everybody off. Well, back in 1960, maybe even going back before that. There is a parallel outfit, Lloyd Champion and Tom Clarke were back together and called themselves Canadian Oil Sands eventually became Great Canadian Oil Sands. They had done a lot of work and a lot of us had done some work for them.

I think Frank O'Sullivan managed it and a few other people. He got CPR involved putting some lead in. They applied to build a commercial project at the ERCB, Energy Resources Conservation Board. This would be, oh gosh, around 1961 or something like that. Well, we'd done quite a bit of work, we knew ours had lots of problems disposing the sand right. So, we intervened and were able to flow enough questions for which they didn't have answers at them that their project was turned down. And, at the same time, Royalite or Cities Service Athabasca, pardon me. Now, I'm getting ahead of



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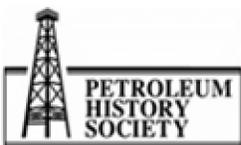


myself again. After that study group and Cities Service decided to join with Royalite and Union Oil turned them down. I got sent down there to try to get everybody to sign the agreement. It was going to be 50/50, Roylite and Cities Service. Well, Royalite has spent, oh something like \$1.7 Million, \$1.8 Million doing research on the oil sands. And, well as part of 100,000 barrel a day project, there is no way that Roylite can afford 50% of that. So, they renegotiated it and it became 10% Royalite and 90% Cities Service. And, so a new company was set up called Cities Service Athabasca but originally we started up in the oil sands, before that was incorporated we operated for a while as Royalite Equipment Company and then it was changed over to Cities Service Athabasca. And, Cities Service were the operator and a fellow by the name of Al Frayne was senior vice president in New York; very gung ho, very positive vibe. But, they started looking at 90% of 100,000 barrel a day project, that's really more than we want.

Well, back in the Depression, there was a company on the west coast, well I guess in Texas as well Richfield Oil Company was going broke. And, the federal government prevailed on Cities Services and another company, Sinclair Oil, I believe, to each take about a third interest in Richfield Oil to keep them from going broke. So, at this point, Cities Service owned, I don't know 31-33% of Richfield Oil Company. So, they laid on Richfield and brought them in for 30%. So, then it became Cities Services 60%, Richfield 30% and Roylite 10%. And, Standard Oil New Jersey decided they wanted in, they have some acreage up there. They didn't want to be left out. So, they came in flying their Canadian subsidiary, Imperial Oil and they took a half of Cities Service. So, they became, 30-30-30-10, Cities Service, Imperial, Richfield and Roylite being the four participants. And, after we had successfully intervened we also applied for a 100,000 barrel a day project. Well, frankly, most of the owners weren't that keen to go ahead. They just didn't want anyone else to be first.

So, Al Frayne, very gung ho and the other owners were very nervous. They didn't know... He decided he was going to be our chief witness, our chief technical witness, senior vice president; he was going to be up there on the stand. So, they were trying to get him to promise to behave himself and Al was being very coy with the owners. So, finally they send Charlie Williams from head office and another senior vice president for Cities Service from New York, to Edmonton to talk to Al. They said, "Al, how long are you going to up here on the stand tomorrow?" He says, "Charlie, you do not know what I am going to say up there tomorrow. And, the reason you don't know what I'm going to say is because I've got it made." And, he was a refining manager for the Cities Service during the Depression and an admirer. Great... one of those Cities Service stocks was about a dollar and a half a barrel I mean a share after the War ended. He was instrumental in getting that big refinery built now in Lake Charles, huge refinery and produced aviation gasoline for the American War effort.

So, Al was worth a lot of money and he was independently wealthy. He didn't care whether he got fired the next day or not. But, anyway, he got on the stand and he behaved himself very well. He gave all the qualifiers a "we'd like to build a 100 barrel a day project subject to fiscal, regulatory and economic" and all of these qualifiers that the owners wanted in there. Well, anyway, we got turned down and Shell got turned down because the Alberta Government didn't want any 100,000 barrels a day projects coming on. They were making on their money from royalties and conventional oil and



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gas. At the same time they wanted to develop it, so Great Canadian reapplied in 1932 and something we hadn't foreseen. We thought that this was really a promotion by Tom Clarke and we didn't realize that Sun Oil had come in at very legitimate, major company, had come in, in his backyard. And, suddenly Great Canadian had a lot more respectability.

AD: So, that was 1962?

GRAY: Yeah, 1962. What did I say this time?

AD: I think you said 1982?

GRAY: Why do I do that? '62 thank you for correcting me, '62. So, they got the approval to go ahead. And, a...

AD: So, really what you're saying is that, of course one hears about GCOS and of course they were the first, et cetera. But what you're saying is, what eventually became Syncrude, they were there from the beginning and that they were...

GRAY: But, ah...

AD: ... but they were jockeying for...

GRAY: Well, Karl Clark was in there also.

AD: Yeah, yeah. They were jockeying for position.

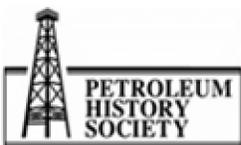
GRAY: That's right, in a sense, yeah.

AD: And, the ERCB of course was reviewing these proposals.

GRAY: The Alberta Government was getting all their royalty and they didn't want to disturb that because the US had import controls.

AD: Yes, yeah.

GRAY: And so, with their 31,000 barrel a day project that GCOS was proposing, that was putting an awful lot... less competition than the 100,000 barrel a day of oil from Syncrude. And, actually, Shell put in an application at the same time and both those were rejected. But, we carried on our pilot plant through the end of 1950, let me stop and think... 1963, through 1963, we ran the pilot plant from 1959 to 1963. And with Great Canadian not having an approval that pilot plant was costing quite a bit of money to operate on the scale we were. So, we decided to shut it down and build a research area, et cetera, here in Edmonton and just ship up truckloads of oil sand and process it on a smaller scale... in a facility here. And, at that time, the company was reorganizing. Up until then, Cities Service had been the operator and we had two committees: one was a tender



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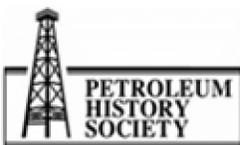


committee formed of seniors for the different projects who had looked at all the details and one of them was a management committee. So, since Al Frayne was sitting there, well that's... the other companies had to put on senior people too. So, at Imperial, people like Vern Taylor and their vice president of production and Blake Souzinger, vice president of manufacturing and so on. So, it was a high level company and they would meet every three weeks, the tender committee might meet more often. And, when they had a management committee meeting, we would go down and make a presentation and bring them up to do date of what was happening. Well, in 1953...1963, they decided to shut down the pilot plant at Mildred Lake. Great Canadian was going ahead to open a research there. And, they reorganized. Instead of being Cities Service, an operator, with others as participants, they set it up as... Syncrude up as a separate company, a joint-venture between the four owners, same ownership, but a joint-venture and Frank Spragins came across on... let's see, January 1, might of actually... but he came on January 1, 1964. And, Syncrude came into being.

So, we'd laid off quite a few people at the... when we shut down the pilot plant. At that point, we had about 13 people up here from Cities Service and they were all sent back home. And, up at the pilot plant, I'd been the operations manager, did give me and I'd been the technical manager. And, Jack Frayne Junior was kind of the researcher, Al Frayne's son; he was the head of PHCL also. But, under Syncrude, those guys all went home. And, Clem Bowman, who had spent some time up there but doing independent research finding some ideas of his own, which didn't pan out, came over to be our first research manager and I became the technical and economics manager. A fellow by the name of Jack Hassman came over from Imperial as a common engineering and mining expert. And, that was the, really the composition of our company. We had a smaller group of engineers downtown and the research lab on 17th Street. As far as Great Canadian, they had a project to go ahead and based on... they'd done some work at Bitumount, Tom Clarke had done some work up there with oil from Bitumount same as we had done originally.

They eventually engaged Bechtel to design a commercial plant for them. And, Bechtel said, "We don't have enough scale up, do you?" And, they insisted on building a pilot plant up on Lease 4, which is I think jointly owned by a small lease on the riverbank, jointly owned by Sun Oil and maybe Canadian Oil Sands. So, they built a pilot plant up there and found sure like we did, that the oil sands didn't behave quite the way they did up on Bitumount. So, they made a number of changes that, I think Tom Clarke was a little unhappy about, but. Great Canadian has something of a pretty good crew of people who work over there. Of course, they have Bechtel working up there also. And they, when their plant started up in '67, it was another crisis. Our owner said, "That is all that is going to be permitted with these import controls. There is not going to be any more oil sands." So, they were ready to shut our project down. And, Frank Spragins says, "Now let me have one more chance. Let me go see Manning."

So, Frank had a big chart, about I don't know dozens of bi-products. "Look at all the advantages this could bring to Alberta if we had more, not just the ethylene, the propylene and the butylene, but there is sand from which you can make glass. All this clay is kiln which you can make a Laguna. There are all sorts of rhenium, zirconium and titanium associated with these... when you float the froth you float all these other minerals up. So, Manning said, "I'll agree to allow another 100,000



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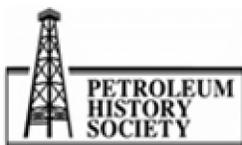


barrels, 150,000 in total." He said as conditions of us coming in and taking it, it had to go up to 45,000 barrels a day and they got it at 45. So, another 50,000 barrels, but it had to be divided between two projects. Well, that was too small a project for us. So, I said, "Well, we can develop some new markets that are not currently served by crude oil. Can we build a pilot at 80,000 a barrel a day?" So, we applied in about 1968, for an 80,000 barrel a day project. 50,000 would be conventional but at least 30,000 of it were new markets. So, I went down there and talked to the steel mills in Youngstown, Ohio and they'd be very glad to use some of our heavy gas oil to back up some of their fuel that they were using at their mills. And we, with our ownership were ready to go the new markets. So, we made an application for an 80,000 barrel a day project, even though Manning says, "Only 50,000 would be permitted." Well, 50,000 plus the 30,000.

Well, we got on the stand and I don't know whether it was Shell or Amoco, one of the other major intermediaries got up there and said, "That's all very well and good. Identify these new markets." I was the chief technical person at Syncrude at that time Al Freyne had been here first. And so, I was on the stand at this point. And, he said, "But the US still has not changed their import restrictions. And, if you put in 80,000 barrels a day, it is still going to go back out 80,000 barrels of crude." In other words, your application is a nullity. And, indeed it was. There was no such thing as new markets. And, we got turned down again. Well, about, oh... '69-'70 things were suddenly opened up. Now, all throughout this process, we usually had to have somebody pushing it in and someone dragging it. Imperial... or Royalite were only in for 10%, but Cities Service were all gung ho to begin with and then they kind of pulled back when the Syncrude Committee came into being. But, Richfield down in Houston, their senior vice president in production, a fellow by the name of Don Hann had conducted a study on area producing oil field in North America, had predicted at these climb rates. He said, "North America is reaching the peak of conventional oil."

So, they became gung ho on the oil sands. So, for a while we had Richfield being a driving force, Imperial was still always kind of a little reticent to go ahead. But, anyway, we got turned on to 80,000 barrels a day because they hadn't looked at their import research. By 1971, things were changed. Things were opening up in the States. They were starting to allow more imports in and there had been no new refineries built for a long time in the United States. They are getting shorter refining capacity and the utilities were expanding. Suddenly, everybody wanted to get in the business. So, for once all four owners were on the same sheet. They decided we'd go ahead and make an application. So, they essentially said to the Energy Resources Board, "We want to build 100,000 barrels a day, based on hydro-visbreaking as a means of upgrading the proprietary process and if we don't get approved this time, we're going to fold it up and shut the whole thing down." We'd been working on research continuously since, well it went back to the Royalite days, about '55-'56. And this is now '68, no this is not this is '69 or '70. So, the ERCB took 11 months to make a decision and they said, "It's a go." So, we started to assemble a crew in '72.

Brent Scott came over as the new president. Brent had just built a refinery for Gulf Oil down at Port Tupper. And, he was used to building a big project, so Frank Spragins was elevated to chairman of the board and Brent was made the president and Chuck Collyer came across from Imperial Oil and was private manager and I was the general engineering manager, in charge of the engineering. Well,



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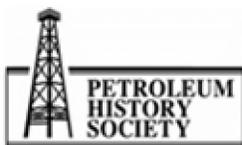


the only work that we had done on this hydro-visbreaker was this little two inch reactor stuff which was when I had it, which was way back there in '58-'59. So, with hydro-carbon research we must build an eight inch reactor. So, Scott and Claire... well, I am getting ahead of myself a little bit again. Well, during all this period when nothing was happening, we would still carry on research at the lab and I was carrying out economic studies and looking at various options. And, I'd had Bechtel examine four upgrading schemes. One was hydro-cracking unit catalyst. One we were using, hydro-visbreaking without the gas. One was delayed coking and one was fluid coking. And, I gone around and visited an awful lot of refineries, including all the existing fluid cokers and so, anyway. We had to scale up the hydro-visbreaking. Scott and I and Collyer, we'd already engaged Bechtel this time, the prior contractor went to hydro-carbon research in Trenton to see how the scale-up was going.

Well, the bitumen that we'd sent them from Mildred didn't behave like the bitumen we'd sent them from Bitumount which were beautifully visbreaking. This came up and the overhead line immediately coked up. We had a long process on Mildred Lake bitumen. And that was the one where we had applied for an application for 100,000 barrels a day baseline. So, Scott looks at me, he says, "Where do we get stand now?" I said, "Well, I have examined four alternatives and the back-up process is a fluid coking." So, we called Esso at Standard Oil New Jersey. Maybe, it was Exxon, probably. I am not quite sure. I said, "We're going to Bechtel and I want you to meet us there." And then, I am informed them that we were, we were going to be basing our project around hydro-visbreaking but we're going to go to fluid coking.

I ran into some fluid cokers that had run continuously for over two years and also, because it runs at a higher temperature, the delayed coker, it makes a higher yield of product but it's a lot lower quality. So, it takes more hydrogen. So, there are some offsets. So, it's a little more complicated process but it's a long continuous process where delayed coking is a fast process. So, I had a little higher marks for fluid coking and so that became our new process. We went ahead with fluid coking as the new process. So then, we had to go back to ERCB and tell them that we're not going to build one based on hydro-visbreaking and we wanted to build the biggest fluid coker that could. That was some 73,000 barrel a day feeds on each. So, I put two of them. Or, when you are getting, of course you lose yield because we've got coke and... I can't remember if that's 62,500 or something, quickly after hydro-treating you have to upgrade the products. You have got to knock out the sulphur and some of the other impurities and saturates and some of the overhead products and it came out to be 125,000 barrels a day.

So, had to go back and tell them that we were going to go from hydro-visbreaking to fluid coking and furthermore, we wanted to increase 100,000 to 125,000 barrels a day and we got the approval on that basis. So, the project was... engineering went ahead. Then we had experimented with a dragline at a couple of plants called, Little Beaver. And, we had a mining guy who was very much into draglines. An idea being that I would get a lot of geological studies. The banks were pretty stable unlike down on Lease 4 where they'd had a lot of trouble with their bucket-wheels going into the banks. So, the idea was to scoop up the oil sands, put it in a windrow behind the dragline and then scoop it up with the equivalent of a bucket-wheel retainer, load it onto a conveyer belt and take it into the plant. Well, everybody was building refineries. Everybody was building everything. We'd



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ordered four big draglines, tore them up, tore up the... send them back to us. They had written more business in six weeks than they had done in the previous 12 years. I said, "If you want to reapply, we'll consider your application to buy a machine." So, we reapplied for it. Two months later they came in, price was exactly double. During this time, there was an awful lot of cost-push inflation going on and Bechtel had done an awful lot more detailed engineering. And the price of the project was originally estimated at about \$1.1 Billion was no estimated at \$2 Billion. It almost doubled. Well, here we've got the same four partners. Instead of looking a \$1 Billion they're looking at \$2 Billion. Richfield was a... had a discovery out in Prudhoe Bay and they were a major partner in the Alaska Pipeline which was going to be built, which was going to take an awful lot of their cash. And they had a big discovery over in Indonesia and suddenly, instead of looking at \$300 Million, they're looking at \$600 Million. So, Richfield dropped out.

So, here we are partway through engineering and we only have three partners in. And the other three companies were very reluctant to kick in the other \$600 Million. So, I guess there were frantic meetings that took place because the Alberta Government, by this time were really wanting to see it go and the feds too. So, meetings were contained between some senior managers of those three companies and Jean Chrétien, I believe, who was the treasury guy for the feds and Peter Lougheed. And then they talked to Bill Davis of Ontario... Anyway, that was always at the... after a lot of negotiations, the federal government agreed to pick up 15%, Alberta government 10% and Ontario 5%. So, they made up for the missing \$600 Million. So, Syncrude got built and came into operation in August, I think it was, of 1978. And, Frank Spragins was there for the opening ceremony. He didn't live long after that. He had developed cancer in behind his eye and I guess it spread to other parts of his body. But, he lived to see that dream come true.

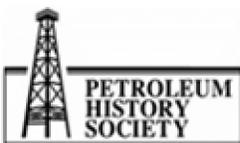
But almost as it was with the opening ceremony, we went to start our coker or something and it blew a gasket or something and it didn't start up. And, we had all sorts of start-up problems: inexperienced people, equipment that was starting to breakdown and whatnot, the extractions were not very good, plant was up and down, you would just start it and have to shut it down for something. But, once we got it steady, operations established, then everything started to work the way I showed. Everything was coming along very well. But, one of the contractors when he built one of the fluid cokers, there was a lot of alloy pipe, chrome sealant. He put in six in a carbon steel pipe. That crude went through it and started a big fire, burned up one of the corridors.

AD: What year was that?

GRAY: That would be about '79.

AD: '79.

GRAY: Yeah. So, there were lawsuits about that one and who's responsible for this. And, so we had all sorts of start-up problems but from that year on. Even those times when the price of crude went down to \$17.00, \$18.00 barrels a barrel. But, from that time on I think the project always showed a positive cash flow even though it had an operating loss. But, it was actually six years before it came



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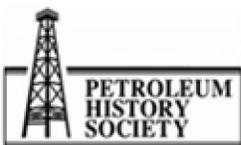
and ran it and designed the pattern. It took six years to get through all the start-up problems and the crew... all these inexperienced people turfed out and other ones gone. So, the plant offered with the problems here there, since did pretty well. In about 1990, this is 12 years after original start-up. They had finished shipping their 500 millionth barrel down the pipeline, that was 1990. In 1995, they shipped down 800 million. And, in '98, they sent down their billionth barrel down the pipe. No other major field in the world had come on and produced a billion barrels of oil in that period of time. It took a lot of time to get going, it was at a very learning curves and eventually expanded the plant. Now, of course, it's been expanded to 350,000 barrels a day.

AD: In terms of your work there, what positions did you hold?

GRAY: Okay, I was in charge of engineering during the design and construction of the Syncrude project. And after that, I was still doing it in Edmonton. So, we changed house a little bit. And as the project got bigger, the titles got inflated a little bit. I was called Director Engineer I believe, at the time we built it but ended up being general manager of engineering. And then another fellow became general manager of engineering and I became general manager of research and development. And then in nineteen... But, we also had a field organization going up. I was constantly shipping my engineers up north to work on the problems. So, they had another engineering group going up there. So, in 1983 they decided to shut down the Edmonton office altogether and move everybody up to Fort McMurray. Brent Scott left and he became a vice president of Bechtel Europe or maybe out east. And, Chuck Collyer who had been our private guy also joined Bechtel and became the worldwide purchase agent then eventually came back to their Canadian operation was called Bantrel and Chuck came back as president of Bantrel Canada.

So, in 1983 we were shipped up to... well we had a field engineer up there. So, I was called general manager of technical manpower. We had 600 engineers and technologists working for us. And so, somebody had to be responsible to lay down training programs for them. Somebody had to be responsible for their career developments through the organization and the people. Throughout all this time, I had been responsible for natural gas procurement. And, then I took over the operation of the laboratory. We had a big lab up there at the plant. And also, environmental operations where we monitored the air quality and the water quality and a big reforestation project; we had big greenhouses filled with seedlings. And so, I guess I was called general manager of technical services or something at this point. There were some kinds of interesting stories about parts of that too. So, I was responsible for trying to find a gas... you know, when we were building the project somebody had to look after these things, like utilities.

So, I engaged the Northwest Utilities to help me locate some gas fields and to design a building... a natural gas pipeline from Edmonton to the plant, because we were going to use about 24 million cubic feet of natural gas here. Well, halfway along the line there were some gas fields. They were of sufficient quality, we tied them into the line and they sat in the mid-point. So, essentially the bottom half of the line was not being used. Now, Don Getty who had succeeded Lougheed said, "Well, we should be giving some of this project to Alberta companies. So, you guys shouldn't own the gas line or the oil pipeline." Well, several companies applied to build the gas pipeline and own it, perhaps



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between some friends of Gettys. But anyway, I selected a company called Simmons Group of Companies, out of Calgary and they all said it was... it was all in several days. I was impressed by some of the people but they didn't have any experience really in running a gas line. So, I engaged Northwest Utilities to operate the line for a year while they trained the Simmons people to take over. And then, more gas was being discovered along the line and so I said to Simmons, "You go out and beat the bushes and if you can find more gas, we'll make a deal with you and so if you cut it in and you send the gas going up and down. And, the stuff going down," I said, "well, you can keep one-third of the project, we'll take two-thirds of the project of the gas going down." And, meanwhile we had struck a deal on the ownership of the line. Well, the oil pipeline was given to Alberta Energy and so they engaged a man to design it. And since we were out of it, each of the owners put in their pipeline experts as the pipeline committee was an oversight. I was there from... I had to work from Syncrude's standpoint.

Most of these guys just sat around and listened to the interviews and so there was a sharp, gung ho, computer engineer working for our mining department. So, I asked her to do some computer simulations and the pumping structure configuration they come up with just didn't seem to be optimum. So, we made a couple of trips down to Calgary to talk to their designer, who eventually came with a very happy configuration, I thought. Really you got your tremendous pump, it went in and eventually we had to put some pump stations in, a lot less power at the front end and they were all... pipe and whatnot. And it came out to a happy resolution but it was owned by Alberta Oil Sands Pipeline, AOSP. Alberta Energy and the gas pipeline were owned by Simmons Group of Companies. At one time, we got involved with Canadian Utilities with building a power plant when we had all this, from the hydro-visbreaking days, all the residual fuel we had. But when that changed, out of the different exchange, we didn't burn the coke; just little tiny ponds of coke, fluid coke. It went into storage and big stockpiles of sulphur, most of which they found a market for.

So, we started out... and we built and operated the power plant ourselves, big or huge plant. But eventually, I believe, I might be wrong that might have been sold off also. But, as far as Frank Spragins' big list of bi-products, it might have helped convince Manning that it was going to be an interesting bunch of sidelines. And, I think actually, there is quite a little project started up at Great Canadian to recover rhenium. I don't know if it's still going on or not. But, the owners, they weren't interested in that. They wanted us to keep our eye on the ball which is producing oil. No one gets carried away with all these sidelines. So...

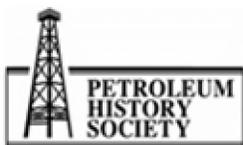
AD: Now, in terms of...

GRAY: ...anyway...

AD: In terms of, did you ever reside in Fort McMurray?

GRAY: Well, I...

AD: I mean, because people did?



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GRAY: Not fully. During the pilot plant days, I spent best part of four years up there. But, I'd fly out occasionally. And, we had a house here and Myrtle was there with the small children. So, then in '83 I went up there. We had one or two children going to university still and we kept our house here. I said to Myrtle, I'll try to get down here on some weekends and some weekends you come up and see me. So, we developed a social life at both ends. So, I essentially resided up there for the period of '83 to '86 but we had our house here. And, I said, "Myrtle, I'll work until I turn 60. So, it'll be '86 and then I'll resign." And, a...

AD: You had some responsibilities for environmental monitoring?

GRAY: Yes.

AD: From 1975 to 1980, there was an environmental and social impact assessment done for Syncrude. And, it started out as a joint federal/provincial initiative that was managed through the new Alberta Environment Ministry. Now, can you comment at all about that?

GRAY: No, I wasn't really involved in that. But, we met all the standards as far as air quality and we put in an awful lot of sulphur recovery. At that point, when people were worried about it, sulphur dioxide; carbon dioxide was not a concern in those days, treating carbon dioxide to go. So, that's kind of a later day concern. This fellow at NASA decided there is a greenhouse effect from the carbon dioxide.

AD: Yes. So, in other words the industry was really pushing all sorts of boundaries and that what is accepted today as acceptable emissions standards, of course were unheard of at the time. And, then it just evolved...

GRAY: Well, the main thing there is carbon dioxide is a concern now.

AD: Yes.

GRAY: And, I guess, you can say the scientists settle or not. But, the fact is they have not come up with a computer model yet that actually predicts the temperature. Like, the world global temperature hasn't gone up for 15 years. And, I don't mean the theory is wrong, it just means that science is really not settled.

AD: Yeah. Now...

GRAY: But anyway, there was carbon dioxide when I was there, was not a concern. It was sulphur dioxide.

AD: Yes, yeah. And, of course, there was evidence. I mean, in terms of Scandinavian forests that sulphur converts to hydro-sulphuric acid...

GRAY: Oh, yeah. Oh, that was...



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AD: ...and all of that was the problem.

GRAY: ...we always did it. We always did a good job of getting rid of that...

AD: How did you do that? Do you want to talk about the technology that was used?

GRAY: When you hydro-treat your products which would normally be like your gasoline fraction and your diesel fraction and the heavy gas oil fraction. You knock out the sulphur in the form of hydro-sulphide and you put in a conventional sulphur plant which converts the hydrogen sulphide to elemental sulphur.

AD: Were markets found for that sulphur or they did they...

GRAY: At times.

AD: ...tough times?

GRAY: It's a fertilizer ingredient and a...

AD: But, it's still stockpiled. I mean...

GRAY: Yeah, they stockpile it but they've sold a lot too. So, I don't know. Like, I haven't kept track of what's happening these days. How they [?], but I don't think they ever found a market for the coke.

AD: Now...

GRAY: Someday, it will. It'll be a resource someday.

AD: Absolutely. Now, when did you finish work with Syncrude?

GRAY: When did I finish?

AD: Yeah, when did you retire?

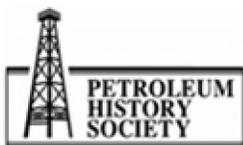
GRAY: It would be about July 1st, 1980.

AD: 1980. So...

GRAY: 1986. Pardon me, '86.

AD: Now, was there a compulsory retirement age or not?

GRAY: I don't know if it was compulsory. Anyway, I told Myrtle I was going to retire at age 60 and about that time, there is really only a small nucleus of older people that had most of the experience



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in the company. But, they'd been in operation long enough they felt that they could... And, Ralph Sever came in with the idea of reducing staff. So, they decided to offer incentives to people retired which coincided beautifully with time I told Myrtle I was going to retire. So, I hung in there for a month or two later then I might've and I got another four or five years of service out of them. And my service had gone back to my early days of highway refineries because it's all one continuous operation highway, Royalite Highway. Royalite was eventually bought out by BA, which bought out by Gulf, which was bought out by Petro-Canada, which has merged with Suncor. So, Suncor actually owns the 9% of Syncrude these days. I think they probably... they've got so many projects of their own, they probably are just happy to get rid of it.

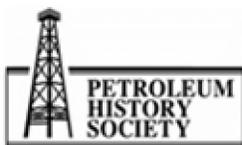
AD: I'm sure that you probably worked for more constituent companies than anybody else, I mean.

GRAY: They're all continuous, all of this...

AD: Yeah. Now, you've told me a bit about your post-retirement project. You want to talk a bit about that?

GRAY: Well, as I said I retired on July 1st or somewhere thereabouts. So, it was a pretty frivolous existence that I had; getting more golf in, I love to curl in the winter time. I started on a few committees and I think it was with that to help sponsor a couple of conferences. And one of these was the Canadian Society of Chemical Engineering was having their annual convention here in Canada. And being a member of the society, I was asked if I would raise some money for it. And, so I contacted some twenty plus chemical companies across Canada. And, I think without exception they donated some money. Well, Frank... I mean Fred Otto was the dean of engineering, also a chemical engineer. They had just cut his budget for a second year in a row and also the provincial government was operating two to one matching grants. If you would raise money, they would match it two to one.

So, Fred said, "They just cut my budget, would you come and see if you can raise some money for me?" I said, "Well, gee-whiz, Fred I raised some money for the church and a little bit for this. But, that's about the extent of my fundraising." He said, "Well you know a lot of people in the oil industry and engineering." Because, I am also a past president of APEGA, you see, Association of Professional Engineers, Geologists and Geophysicists of Alberta. And I said, "Well, I made a commitment. I will make a list of companies and find major industries that use engineers." You know the oil, the utilities, the chemical, the mining and all those companies. And I also talked to all the deans of the different departments to find out if they have money, where would they use it, what do they need most and what was most likely to appeal to them? So, I went around and talked to a lot of these people and I got a pretty good reception from most of them. So, I came back to Fred, I said, "I think we could maybe raise \$2.5 Million," which, if we got two other matching grants, it would \$7.5 million dollars for the faculty of engineering. So, on that basis, I signed on. Can we break for a minute?



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AD: Yes, absolutely. So, Ron you were talking about your fundraising for the faculty of engineering at the University of Alberta. Do you want to give me some more details about that?

GRAY: I think I mentioned that after interviewing these people, I thought we might be able to raise \$2.5 Million, if we got two to one matching grants, we'd be \$7.5 Million for the faculty. But, we decided that we were going to immediately... we needed help with some pretty high powered people. So, with the help of Dean Otto and my contacts, put a list together of some prominent people who had graduated from the University of Alberta or had an interest in education.

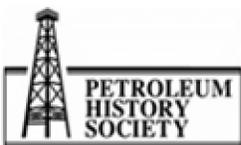
One man who is quite a team supporter was Don Stacey of Amoco and he's a KHC of petroleum engineering. And so, we approached Don and said, "If we can get a committee put together, would you be willing to be chairman of a fundraising effort." So, we eventually managed to convince these people, Ron Bowan, president of Canadian Fracmaster. Ron Dolby, he's another past president of APEGA, who is a president of all the coal. Chuck Hasgrove, president and CEO of Dominion Textiles. Jerry Maier, another retired friend of APEGA who I knew and president and CEO of Trans-Canada Pipelines. Tom Medula, president of Delcor. Al Olson, president and CEO of Churchill Corporation. Don Seaman, another man I knew through president and director of Bow Valley, Simmons is the guy who had given us Bob Saulery, chairman of PCO. Don Stanley, chairman of Stanley Associations within Stanvic. Paul Waco, president of United Cement. John Wood, president and CEO of Canadian Utilities. Then, the three guys from the staff: Ken Bolinger, Bill [?] who only worked in construction engineering, Jerry Williams and, Fred Otto. I did not include myself in here but...

AD: You were the brains but not in...

GRAY: But anyway, I said to these fellows... They all agreed to sign on, once I got Stacey and some of these other guys had been personal friends, agreed. And, so we produced a lot of brochures. Sort of like this one here. Which we would distribute to the individuals...

AD: You called it the, "The Bridge..."

GRAY: The Bridge to the 21st Century. Now this of course is going on, it started in 1987, '88. Well it was a year or two before we got going on that. And, we had a whole bunch of plans for us. We had to solicit a bunch of pictures from company [?]... And, we put together some nice brochures and we had a lot of individual pamphlets on some of the things they were looking for: chairs. Make sure there is a chair for petroleum engineering, chair in construction engineer, chair in safety engineering and some scholarships. Had a list of all these things that might appeal to different companies. Because, if you're going to get money, they want to say, "Well, if I am going to give this money, what's in it for me." I think Imperial Oil, gets over at that time, over three thousand requests a year for money. If you want to get your name near the top of that list, you have to have a pretty good story, something that's going to interest them. So, I went to these... we got this committee lined up and I said, "You open the door for me. I'll write the letter of introduction and say, Ron Grey's going to be visiting you." And then, I'd sign it and send it off and then I would make the call to the



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individual. Well, the person I called on was Dale Simmons, "How do you get into the pay line?" "Well, we got a donation out of you, not a big one but you know \$50,000." Well, you know it was sunny, get the ball rolling. Then I went to Gulf Oil, played the golf, Keith Bollers just back from Korea; Keith and I were classmates together at the University of Saskatchewan. So, we had a good chat and I went out there, there was cheque for \$50,000. So, I thought, now I had the ball rolling. But, not long after that, the provincial government said, "We're going to stop the two for one." So, here I was going... thought I could lead us into \$7.5 Million and now we're going to far short. But, they said, "Well, we're going to replace it with a one for one." So, I thought maybe I'll have to raise \$3.5 Million or \$3.75 Million, whatever. And then, when it came around to it, the one to one turned out to be \$80 Million a year, spread across every post-secondary institution in the province. And, the University of Alberta's share would be maybe 10% of that of which engineers would be 10% of the 10%. So, even the 1% didn't amount to very much.

So, I had to work twice as hard. But, fortunately, I was having pretty good success. And, I thought originally, that we could maybe get this wrapped up in about 18 months, once we launch this financial campaign. We had a very unique wall design to put the donors, had a real engineering theme to it. But, a lot of these companies they don't do their annual budgets until November. So, they're not in a position to comment until they have their budget and then they budget for five years at a time. And, so the process was not quite as easy as I thought it would be. Now, I started out on a part-time basis working three, sometimes four times a week. Of course, I was paid by the way, a professor's salary and pro-rated. So, I made a lot of trips to Calgary, trips to Toronto, trips to Montreal, trips to Vancouver, wherever we had major companies. So, instead of being wrapped up in 18 months, this was going to drag on and it went on.

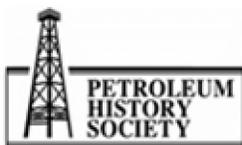
I was winding down my time. And, one of the people, well I won't name a name; well he had a steel company here in Edmonton, a steel fabricating. And a friend of Bob Stollery's, so we sent Bob to talk to him. And, Bob said, "Bill, you should be good for X dollars to support this." And, I said, "Well, I am kind of retiring and my son Roger is taking over." So, Bob talked to Roger and Roger said, "Well, it's appropriate we honour my father in some way, but really, I was thinking of going through the Steel Institute of Canada, rather than a donation to the University of Alberta." [?] some kind of a contact. I am into this, six years now. I'm down to working maybe one day a week or something, two days a week a most. Low and behold, Roger comes in, his father has died. And, I guess there's maybe reason to give some money to charity. And, he comes in with a cheque for \$2 Million.

AD: Wow. Is that your biggest gift?

GRAY: That was the biggest gift.

AD: Wow.

GRAY: And, so it seems that if we planned it five or six years sooner, finally it was all on a major donation. Then we kind of started a campaign within a campaign, different group. Sorry, Bill Weir



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there and Paul Waco but we got working on a whole bunch of construction companies and we got help from some people, oh but it was clearly [?] American Road Construction and he reeled in a lot of little constructions companies for us. So, we got enough money there that the National Research Council, they sometimes fund research chairs, insert chairs. And they agreed to top up the funds for a chair in construction engineering. So, then with Roger had the chair in mechanical engineering, no problem getting people from the petroleum industry. But, an awful lot of them said, "We prefer to go the scholarship route." And this is kind of interesting conversation, Fred Otto sometimes he would go down with me. We had a 1:00 o'clock appointment with [a person?] and Fred and then we reached out and we were looking at our watch, "Oh, we had this 1:00 o'clock appointment." It's starting to get late. We were walking down the street and everybody's looking at Fred rather shady. I thought, "Egads! Did he leave his fly open?" Then some guy said, "Do you realize you've got a napkin hanging from you waist?" He walked out of the cafe with one of those nice linen napkins.

So, anyway, we got to see Eddy whatever his name is and got an \$80,000 donation for a scholarship. And then, one of the coal companies, very like almost out of the blue, decided to give us a quarter of a million dollars. They wanted a scholarship too. So, anyway, I retired seven and a half years later and I'm now 69 years of age and I'm working one day a week. I'm getting quite a bit of money from the alumni by now because we'd done full campaign with them and start... Marjorie started publishing a book called, an annual little...not an annual, several times a year. A little report called, "The Clothespin" and we devote a section in there for fundraising and the names of all these donations and that brought in quite a bit of money too. But anyway, I retired seven and a half years later, at age 69 and when I retired from my second job the development fund had grown by \$13 Million.

AD: \$13 Million, wow.

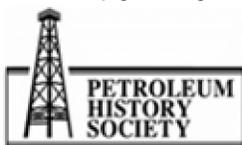
GRAY: That was without the two to one and one for one offered.

AD: You've made me think about something when you talked about fundraising in the construction sector. You were at Syncrude right at the beginning as they were building the plant and...

GRAY: I was Syncrude's first employee.

AD: Yes. Now, can you tell me what construction companies were involved in the building of the plant?

GRAY: Well, Bechtel was the prime contractor. Menetco? Menoco? Eneco? built the power plant. Menetco? Menoco? Eneco? Engineering in Calgary designed it. Bechtel did most of the construction but the engineering was done by Menetco? Menoco? Eneco?. The plant treatment, that's the centrifuge, we got centrifuges the scroll from the Swedish, I think. The disc centrifuges take up the saddle and then there's a high speed rotary centrifuge, Scottson Middleston? That was designed by Simmons out in Vancouver. And, who designed the sulphur plant? Sulphur recovery. And there are companies involved in fabricating modules and whatnot. But, as far as design, there's about... most of the upgrading was done by Bechtel. We had these where Canadian companies had the experience.



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And since that of course, they've learned an awful lot. Much of that can be designed in Canada, but it couldn't be at that time because nobody had any kind of a track record. Even for Bechtel, that was probably one of the biggest projects ever built in the world, our project.

AD: In terms of actual physical construction of buildings and so on, were Alberta companies involved in any of that?

GRAY: Oh, sure.

AD: Can you give me some examples?

GRAY: I can't tell you which companies, because a lot of them had been involved. I know we had a big camp put up there by ATCO. We had thousands of contractors on site.

AD: Great.

GRAY: There's a little interesting story about the pipeline. Brown and Root? were the none union contractor. One day, we decided we would get Brown and Root to build the pipeline, the oil pipeline. Which eventually, just became owned by Alberta Energy and all the workers out in the plant were unionized. I mean, if I was going to get a pail or a bucket of bolts or something, you'd have two guys in a truck. One guy drove the truck and the other guy would run along to pick up the bucket and put it on the truck. That was the kind of thing we had, but it was a unionized plant. So, they finally were talking about getting a non-union contractor to build the pipeline. They threatened to shut the whole thing down. And, after a while, we buckled and we went with a union contractor. So, then we got all the companies mad at us because we'd gone union instead of non-union and the unions were mad at us because we were considering non-union instead of union. So, we managed to antagonize both the companies and the union at the same time. Hard to achieve when you get them both mad at you at the same time.

AD: But, Syncrude remained... the plant itself remained non-union?

GRAY: That's right.

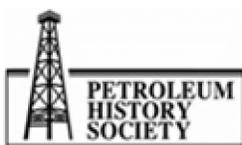
AD: You're talking about the trades and other...

GRAY: I'm talking about the construction only.

AD: Yes, yes.

GRAY: Yes. No, Syncrude they treat their employees very generously. The pay salaries are in the top third range and their benefits are second to none. So, it's remained non-union.

AD: Now, you're going to show me some material related to your work at Syncrude. But, is there anything else that you'd like to share with me before we move on...



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GRAY: One little thing, I think I might've mentioned it to you while we were having lunch. But, it's completely out of sequence from what we're talking about, it just occurred to me. When Cities Service and Royalite joined together, just before that happened, Ray Althouse, who was the president had been responsible for bringing Cities Service into the project. Ray Althouse had been hired by Charles Bronwynn, or something. So, he and Bronwynn were on pretty good terms and I guess the instructions were to build Royalite little company into an integrated oil company. And, they had a board of directors, quite prominent people. But, Ray I guess, had a habit of going around the board and talking to Bronwynn when he wanted approval for something, so he spent literally millions of dollars drilling for deep gas in the Foothills where the fields stand on end; when you hit one, it's really something but if you miss it... And, he spent a million and half dollars on the Syncrude project which some of them weren't too happy about.

So, Ray Althouse who was responsible for getting Cities Service involved which was really responsible for getting the whole thing started. Well, the board of directors got tired of him doing runs up on them, they ganged up on him and they fired him. So, here is a guy who is in large part responsible for getting the whole thing started but fired for his efforts. So, Charlie Hay came over as the president. So, part of the irony is about the project.

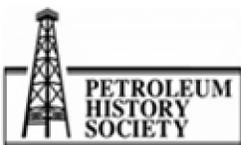
AD: Being a visionary and a bit of your time but playing fast and loose with the fuzz.

GRAY: Well, sort of like Tom Clarke, when he got squeezed out of Great Canadian. He was the visionary but some of them took out and...

AD: So, then thank you so much for agreeing to the interview. So, we'll just stop for a minute and we'll move to your study and you can show us some of your other material. Thanks.

GRAY: Okay.

[END OF RECORDING]



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