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## BOB SCARBOROUGH

**Date and place of birth (if available):** Born in Carrizo Springs, Texas on July 19th, 1933.

**Date and place of interview:** Bob's House; Priddis, Alberta

**Name of interviewer:** Peter McKenzie-Brown

**Name of videographer:** Peter Tombrowski

**Full names (spelled out) of all others present:** N/A

**Consent form signed:** Yes

Initials of Interviewer: PMB

Last name of subject: SCARBOROUGH

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PMB: I'm talking to Bob Scarborough and Bob worked for Dome Oil and then after Amoco Corporation took over Dome, I think the purchase price was \$5 billion wasn't it? For many years it was the biggest acquisition...

SCARBOROUGH: It was.

PMB: ... in Canadian history. And during the two years after the merger of the two organizations, Bob was involved in basically combining some of the heavy oil assets. But of particular importance to this oil sands oral history project, Bob brought up some steaming technology from California and applied it to heavy oil. He never worked directly in the oil sands, applied it in heavy oil and it helped to lay the foundation for the creation of the modern oil sands business. That's my theory and I'm going to let you just prove it if you want. So, Bob, if I can start with just a couple of general questions. Can you tell me about your...

Oh, right, Now it's Bob Scarborough, Peter Tombrowski is the videographer and me. And we're in Bob's house in Priddis, Alberta. Bob would you begin please by giving us a summary of your biography; your involvement in the petroleum industry, where you went to school, where you born and so on?

SCARBOROUGH: I was actually born in Carrizo Springs, Texas in July 19th, 1933. Educated in Southern California through high school and then I went to Texas A&M where I got a bachelor of science degree in petroleum engineering and geological engineering. From there I joined Texaco in



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South Louisiana. That was 1956. And worked there for approximately five years as a field engineer, reservoir engineer; all aspects of offshore drilling and so forth.

Then I left Louisiana and moved out to California and went to work with Getty Oil in Taft, California. During my stay with Getty Oil I actually headed up their what we called a thermal recovery group, and initiated thermal recovery on the west side of the San Joaquin Valley. And during that time we installed approximately 24 steam generators. These all ranged from 18.5 million BTU per hour to 24 million BTU per hour units. Drilled something like about 1800 new wells and initiated all aspects of steaming; also had an in-situ combustion project underway at the Pioneer Midway Oil Field, just outside of Taft.

I stayed there until 1979 at which time I joined Dome Petroleum here in Alberta. I was brought up here to build a heavy oil department. At that time, Dome had just barely initiated some steps into heavy oil, had about eight employees and was producing approximately 400 barrels of oil a day and had about 10,000 acres under lease. I went up in the Lloydminster area and started looking very closely at that whole area. And we started a sort of an undercover advancement in farming in on a tremendous amount of acreage. We brought the production...

PMB: Do you have any idea how much acreage?

SCARBOROUGH: Yeah, we... when...

PMB: In the Lloydminster area.

SCARBOROUGH: In the Lloydminster area, and I call the Lloydminster area, let's say up to but not including the Primrose Weapons Range, that whole area through there. At the time I first went up there, there was a lot of activity in shallow gas wells, in the Kitscoty area and north of Kitscoty. And at the time, we did a little bit of looking into it and found out that the heavy oil reserves were largely in those gas wells. So we farmed in and actually, I think we grew from about 10,000 acres to somewhere approaching 100,000 acres under lease throughout that whole area. We grew the production up to around 24,000 barrels a day.

Like I say, drilled between us a pile of wells. We started an in-situ combustion project in the Kiscoty field area, which are approximately two sections of land. We also, just south of Lloydminster lying on the border, we had another in-situ project roughly a section in size. And we were improving our in-situ combustion displacement work and found it improved the pattern of raise with the help of steam flooding. Actually, doing some huff and puff steaming in the surrounding, producing wells and that's where we first brought the first steam generators up into the Lloydminster area for that purpose.

PMB: Okay now, Bob I would like you to stop here because you've been talking to your audience as if I know what you're talking about. And so I'd like you to go back to California. What kind of oil reservoirs were you dealing with that needed steam simulation?



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SCARBOROUGH: These reserves in and around the Taft area were very similar to the Lloydminster area crude oil. The sands were much thicker in California. In one area the sands were 100 to 400 feet thick. And in developing those reserves in California, we found that a lot of the wells never really penetrated the full oil columns. So we drilled a lot of wells to get complete control throughout the full section. Well most of the wells in California were gravel packed because there was a tendency to have a lot of sand infill, sanding wells up and so forth. But we found that when we started steaming wells we were able to just put in single wells and actually perforate any gravel packing, just perforate the lower sections of these zones. And then by huff and puff steaming, we were able to reduce the viscosity of the oil so it would flow in quicker. And the steaming from the whole process sort of stabilized the sands, so we didn't have the sand influx that they were having under the primary production.

When I say huff and puff, it means for example, that we would inject maybe eight to 15,000 barrels of 80% quality steam into a well. Let it sit for two to five days and then bring it back on production. And that was sort of the huff and puff scenario is why it was called that way. Now in steam displacement that's where you had a central injection well which was continuously having steam going into it and then pushing the oil to surrounding producing wells. We found that that also helped the technique of raising the temperature in the reservoir, lowering the oil viscosity so that it would move more frequently into the producing wells. So the combination of huff and puff steaming and steam displacement was actually going on in a lot of the zones there in California.

PMB: What gravity oil were you dealing with in California?

SCARBOROUGH: Actually the gravity was raised from about a low of maybe eight (degrees) API up to something around 12, 14, 15 something like that.

PMB: So when you're talking about below ten, you're essentially talking about bitumen?

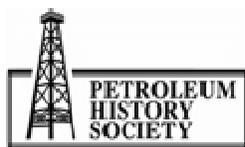
SCARBOROUGH: Well, I would say probably most of it in the Taft area was probably above bitumen. I would say from ten to 15.

PMB: Now the fact that in California you had a very warm climate, would it have made it a lot easier to apply those technologies there than, for example, in Lloydminster. Is that right?

SCARBOROUGH: Well, it was a shock to me to come from California at 72 degrees Fahrenheit to Lloydminster, where the first trip I made up there it was at minus 46. And I was absolutely shocked, where in California if we got down to freezing at 32 degrees, the rigs were shut-in, everything was shut down. It was cold. When I came up...

PMB: Well, in Canada you wait for that and then you drill....

SCARBOROUGH: I came to Canada and found drilling crews working at 46 below zero, drilling wells as fast as we could ever drill them in California. And regardless of weather. As far as when we started bringing up steam generators and such to operate in these kind of conditions, it was really an



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additional price in our steam lines and everything. They had to all be protected. A lot of the flow lines from the wells were buried six feet, so that the temperature at six feet was above 32 degrees. And so we were able to work within those realms without any problem whatsoever.

PMB: So you found that there was fairly small need for adaptation. You could bring these technologies up from California and make them work.

SCARBOROUGH: Absolutely. The only difference that we had to really sort of watch was where we applied the steam (because of) the thickness of the zones. Most of the zones in the Lloydminster were either the Sparky sand or the Lloydminster. The Lloydminster, in some case, got up to 40, 50 feet thick whereas the Sparky sand was usually around 15 to 18 feet thick.

PMB: It was a much thinner reservoir.

SCARBOROUGH: It was thinner reservoir. And so what this amounted to was that on subsequent stimulations, whereas we might peak on the third or fourth stimulation and then you'd have a decline result from further steaming. In Lloydminster, we would find maybe that we would peak on the second stimulation and then following stimulations would follow much faster. Because, let's face it, there was less reserves there. So that was why a lot of the displacement work was started so that we were pushing oil into the producing wells from a bigger area. And that way we could huff and puff stimulate the producing wells and maintain a longer life, you might say, of subsequent stimulations.

PMB: So you used a few of the steam technologies in Lloydminster and also you mentioned combustion projects.

SCARBOROUGH: Right.

PMB: Can you describe them for us, please?

SCARBOROUGH: The only difference between in-situ combustion and actual steam displacement, what we did is, you would actually have inverted five spot patterns where you have a central injection well, five surrounding producing wells. This gave us approximately a ten acre spacing in that total area that we were working on. And with a central injection well we would inject air. Initially, we had an electric heater that we would actually heat up the well bore opposite the perforations until we actually achieved combustion. And then by propagating this flame front or heat wave away from the injection well, towards the producers then ahead of that your oil was being pushed and shoved, heated up and so forth. What we found was that we could reduce our costs considerably when we went to what they called a "COFCAW", by injecting...

PMB: C-O-F-C-A-W, and that stands for...?

SCARBOROUGH: I don't really remember, I'm sorry I'd have to sit and think about that. But I can tell you what it is. We were injecting 200 barrels of water per million cubic feet of air



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simultaneously. So what this did was the water would flash to steam, it would pick up the heat from this hot rock behind the flame front, push it ahead of the flame front as a steam zone. So actually you were steam displacing the oil ahead of the fire front. Which expedited the whole movement of the product to the well bores. I hope that explains it. I'd have to think about the exact wording of COFCAW<sup>1</sup>....

Anyway, it worked. It did reduce our total air requirement per pattern so it did certainly provide a good economic help.

PMB: Now, would you take a couple of minutes and talk about the economics of oil production during that period. Because of course, in the 70s oil went from \$2.80 up to \$12.00.

SCARBOROUGH: When I first came up, I think the first trip I made it was 1977. I think that was when the bottom had pretty well fallen out, I think it was down to \$2.00 or \$3.00 a barrel. And it seemed to me like in '79 we had a big jump from \$2.00 or \$3.00 a barrel up to \$7.00, something like that.

PMB: I think you're ten years behind now. Here's what I remember with oil sands, or with oil prices. In 1972, that was, remember the Yom Kippur War and there was the Oil Embargo.

SCARBOROUGH: Right.

PMB: And so oil went from \$3.00...

SCARBOROUGH: Yeah.

PMB: And then by '78, or something, it was around \$12.00 I think. And then in '79 came the Iranian Revolution and then the war between Iran and Iraq. And all of that, over just two years up to 1981 took the price up to \$38.00 a barrel.

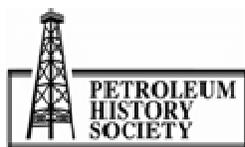
SCARBOROUGH: Right, right. Yeah.

PMB: So I guess what I'm wondering, so in the time that you were, at least the time that you began to do this it was a pretty privileged period; because oil was by far the best price in a hundred years.

SCARBOROUGH: Oh, yeah absolutely. The other advantage I might mention is that when we started these thermal projects, the Alberta Government was extremely helpful. They allowed us to reduce the royalty payments. Seemed to me like we were reduced to 5%, the best I remember. And all that was really helpful. I was trying to think, the initial outlays, for example when we moved in on a section of land. Drilled it up on a ten acre spacing, which means 64 wells we drilled on that property. That, plus all the compression equipment, steam generators, all the flow lines, the drills,

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<sup>1</sup> Combined Forward Combustion and Water Injection



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the whole thing; seemed to me like we were up around \$4 million per section of investment at that time. So every little bit helped, let's put it that way.

PMB: In terms of the lower royalties?

SCARBOROUGH: Absolutely.

PMB: Yeah.

SCARBOROUGH: I might want to tell you this story but you might want to take a name out of it before it's over with.

PMB: I won't take very much out unless you specifically ask me, but do put it in and if you want to protect someone's name.... (Story aborted).

SCARBOROUGH: The ladies that owned the project area that did this in-situ combustion project that we drilled 64 wells on. The first time I met them I was with Allied Land that did our land work up there. And we were standing in the middle of this section and over this field rode these three ladies on horseback. And rode right up to us where I was sort of nose-to-nose with the horses. And they were looking down at me and I didn't know whether to run or what. Very tough looking crew, frankly. After we did all this work, it was very difficult to find those ladies anymore because they were in Hawaii or they were in New York and they were completely differently dressed and did very well. Our surface rights, I think we paid something like \$2,000.00 initially per location, so there were 64 locations on our section of land. And then we paid an annual fee, something like \$1,000.00 or \$1,100.00 per year thereafter. So we helped the community out considerably also.

PMB: Good, very good. That's quite interesting. So the next time you saw them, they'd given up their horses and they were driving Lamborghinis, right.

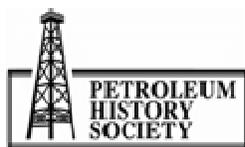
SCARBOROUGH: Yes, they did very well for themselves.

PMB: Good. Well, that's a useful point because the industry has contributed to the community around the Province. Anything else you want to say about that?

SCARBOROUGH: About the only other comment that I might make is that having the opportunity to... with the steam generators we had on location. When we did farm into the Primrose Bombing Range, we went up and put in an inverted five-spot, in-situ combustion project.

PMB: Inverted five-spot?

SCARBOROUGH: That's where you have a central injection well and five surrounding. And as part of the earning for the bombing range, we had a couple of incidences there that left somewhat of a sour taste in our mouths which to this day I still feel so bad about. We had a young man up there that would stay on the lease 24 hours. He was on a night session, a 12 hour shift. He... I guess a



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butane tank or something, heating up the place where he was staying, blew up. And so he was burned over about 85% of his body and he drove out of there.

PMB: Burned like that, he drove out?

SCARBOROUGH: 40 some odd miles to get to where someone could help him. And to this day, I will never understand why we just had one man up there at night. I still can't, it's just beyond me. I didn't really realize it, I guess to how it was being operated and that was probably the worst thing that ever happened to me in developing heavy oil. And to this day, I will never forget that. He did, after numerous operations... he did come out and was fine, but he still was burned pretty badly.

PMB: Pretty scarred.

SCARBOROUGH: It was very, very serious, yeah. But other than that, I think that basically was the background of steam stimulation or in-situ combustion and so forth. In that whole area and from that point I realized today I think there's a successful in-situ combustion project going on in Saskatchewan. And, of course, I really have lost track of what's happening in the bombing range, I really don't know what's going on there anymore.

PMB: But now, the Primrose Bombing Range, or the military base is a really interesting property in terms of the oil sands. I know that you treat it as just heavy oil, but I think there's a large body of opinion out there that says, this really is part of the oil sands. It's an extension of the oil sands that needs to be treated at least to some extent like that.

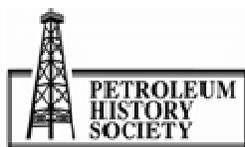
SCARBOROUGH: Let us hope that they don't start tearing up the Earth, thinking that it is oil sands and it's not.

PMB: Well they won't be mining it, that's for sure. It's not mineable.

SCARBOROUGH: I meant, it is not... in my opinion, if you can make 50 barrels of oil a day out of producing an oil well. I don't see how you can call it bitumen. Now they may find some rim or something in there which I am... All the information I had at the time before I left, we had never encountered in the drilling that we did, we hadn't encountered any indication of that low of a gravity.

PMB: I would like you to go back when we first started talking about this a little while ago. You told me that you were really the one who went to the Primrose Weapons Range and you were the guy who got the land and you were the guy who kind of saw what the potential was. Would you mind talking about that a little bit, please?

SCARBOROUGH: Well, I was given the opportunity to look very prematurely at three electric logs of wells that were drilled across the bombing range by the government. And we had started negotiations to farm in on the bombing range prior to it being handed to Alberta Energy Corporation, by the Provincial Government. We then immediately started negotiations with Alberta



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Energy Corporation and successfully farmed in by doing an in-situ combustion project and paying a bunch of money and things like that. But, based on what I saw originally and the mapping that we could do, the reserves in the bombing range represented at the time the largest single reserves outside of the Orinoco Heavy Oil Belt in Venezuela. We were comparing, what I considered to be heavy oil, producible heavy oil versus producible heavy oil in Venezuela. Moving further north, you obviously get into the bitumen situation. For someone to argue, that in my opinion, that this has anything to do with the bitumen further north, then I'd have to ask them, "Why was there a gas cap at the Primrose Bombing Range?" Which Alberta Energy Corporation produced for years before someone got smart enough to shut them down, because it was blowing the cap pressure on the bulk of the reserves of the bombing range and the oil sands. With my geological background I never thought I'd have bitumen on top of gas, on top of oil and think that it's a singular tie-in. I hope that answers your question.

PMB: So gas, light oil, heavy oil, bitumen. You never expected to see that pattern?

SCARBOROUGH: Well it's reversed. You've got bitumen in the oil sands up here, up north. Then you've got a gas cap... There's a bombing range, here's a big gas cap with oil underneath it, producible oil underneath that. So I don't think those reserves are tied together in any form or fashion.

PMB: Oh, I see what you're saying.

SCARBOROUGH: You see what I'm saying?

PMB: But you are saying that there is a lot of, I think in Venezuela they call it ultra-heavy oil, in that reservoir or not?

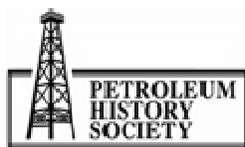
SCARBOROUGH: I was asked...

PMB: I'm a little bit out of my depth here so I really need your help.

SCARBOROUGH: I made a trip to Venezuela and was asked by the government to take a quick look. And I turned down an actual field trip, the Orinoco Jungle. Anyway, in Venezuela they have this very extensive large heavy oil belt and that gravity of that crude oil is very similar to the bombing range. I mean it's in some instances what you find, and actually I guess we might even say that we found this in California, in the real thick zones. You had some gradation of gravity as you were in the upper part of the reservoir. The crude was a little bit lighter. Maybe it was 16 or, I would say 17 or 18 API whereas at the very base which is 400 feet deeper, it may be 16.

PMB: Oh, really.

SCARBOROUGH: It might have been a degree or two of variation within the reserve itself. At Primrose, we didn't see that because I don't think the thickness of the zone is that... the Clearwater wasn't that thick. It would've been something like that.



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PMB: Now you said that you saw an electric log which really was a very telling indication of what was there. So this was a log from a well that was drilled by the Province of Alberta.

SCARBOROUGH: That's right.

PMB: What did it tell you?

SCARBOROUGH: Well it shows actually the zones, the zone thickness. We could then, pretty well, because of the wells that were drilled we could see the extent of it. And so we pretty well knew what Clearwater normally has for process, permeability and so forth. So we could pretty well come up with a pretty good idea of what those reserves would be.

PMB: And you were working for Dome Petroleum then which was a really... a company that everybody just loved in those days. It was sort of a...

SCARBOROUGH: Well, let's put it this way, it was a fun time. And I'm not being derogatory of following generations or timing. But at that time, things were run by geologists and engineers who would shake hands and drill oil. After we had the downturn later on, when prices went all to pieces, companies let their engineers and their geologists go and they were replaced by accountants and lawyers. After that, when the prices started to come back up, they didn't know how to produce oil or do anything with oil. So they had to go back and hire a bunch of consultants who they previously had fired to do the development of the oil reserves. So, I mean, to me a lot of it is kind of facetious in a way. But those times were not so much fun. The legal aspect had grown immensely and so to do anything was one, of negotiating for months and all sorts of contracts, and all sorts of golly knows what to develop anything. Whereas before in the earlier times, gosh, it was fun I mean, it was a wonderful place to work. And at the early stages of Dome, the whole group was just that way. It was just a fun time and full...

PMB: Very, very successful company for the first few years.

SCARBOROUGH: Well, and then they bit off more than they could chew. I mean that's what sunk it, truthfully.

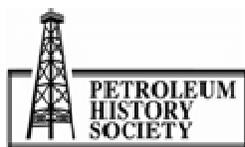
PMB: At some point you became a vice-president of Dome. Do you remember roughly when that was?

SCARBOROUGH: I think I'd been there approximately, a year, a year and a half.

PMB: So this was be '79 or '80 or something?

SCARBOROUGH: '80, it would be in late, late 80s I think it was.

PMB: Late 1980?



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SCARBOROUGH: Yeah, something like that. At first I came up there as a manager of heavy oil. And then, I think it was '81, '82...

PMB: So it was a very quick career move for you.

SCARBOROUGH: Yeah.

PMB: And you took the production from, I think you said, 400 barrels a day to 24,000 barrels a day, over how many years?

SCARBOROUGH: Three.

PMB: Over three years, that's astonishing because in those days there weren't an awful lot of companies that even produced 24,000 barrels a day. Imperial, Shell, Gulf...

SCARBOROUGH: The largest single field production in Dome Petroleum was our Lindbergh Field, heavy oil field. It was the largest single field production in all of Dome.

PMB: When did you start producing that? Was that one of your a...

SCARBOROUGH: That's where we found these gas wells that they popped a little shell of gas sand but they penetrated a whole bunch of Sparky and other missed zones that were there just sitting there. I'll tell you another story. I had a fellow by the name of Bert Cachero, wonderful fellow and my right-hand man and without Bert we'd have never done the things we did. But Bert recognized this Lindbergh area and we went up and drilled a well, popped the Sparky zone and tested it, filled up a 500 barrel tank of oil real quick. Trucked the oil out, got rid of the tank, abandoned the well and then we started farming in on all this acreage in the Lindbergh area.

PMB: On all the what?

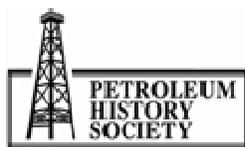
SCARBOROUGH: All this other adjoining acreages. Once we found it was productive, then we went out and started farming in on all this land. And that's how we built Lindbergh.

PMB: I tell you nobody would be doing that today. You would deal with all kinds of allegations with...

SCARBOROUGH: Oh, my.

PMB: Isn't that something.

SCARBOROUGH: You would've been... it was just the way we got a step ahead of anybody else that was looking.



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PMB: Now, Bert Cachero, actually you mentioned his name on the phone the other day. I tried to reach him with no success. Any idea where he is?

SCARBOROUGH: I think Bert, I don't know if he went back to the Philippines. I don't think he went back to stay. His wife did a lot of work with children, was a writer of school books for young children. And they would make trips to the Philippines and she was quite well noted there. I think they actually are living in the United States.

PMB: Okay, that would explain it.

SCARBOROUGH: I'm pretty sure he's down there. But I've lost track of contacts with him, I really don't know.

PMB: I want to ask you a few of the standard questions that we have, obviously having worked with Dome you encountered Jack Gallagher and Bill Richards.

SCARBOROUGH: Oh, yes.

PMB: Any impressions you want to give on them?

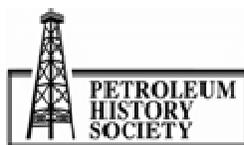
SCARBOROUGH: I'll tell you, they were two different types of individuals. Of course, as you well know, Jack was strongly involved in the north. And wasn't really too interested in anything else but that, the Beaufort and so forth.

Bill Richards was sort of the pirate, you might say. Very knowledgeable, very strong and really would... he was full speed ahead. If you had something that made sense, well he was ready to go. A brief story, when I hired on with him, John Beddome who was their senior vice-president. John took me in to meet Bill Richards and Bill was doing all this talking. And finally I stopped him and I said, "Wait a minute, Mr. Richard." I said, "I want you to understand, I don't want your job or John's. I'm a mercenary. I play for pay. You want me to do something, I'll get it done. And if we can have that kind of understanding, fine, let's do it." And after that, Bill would call me and he'd say, "Bob, can you get us some more reserves? I need some more reserves." I said, "Sure Bill, how much do you want?" and we'd go drill a few more sections and add the reserves. So it was a fun time.

PMB: It was a good relationship.

SCARBOROUGH: Jack, like I say, was really involved in the Beaufort singularly. One of the things that I enjoyed after my retirement, after leaving everything, I would get a call from Jack. And he'd always ask me something, there would be somebody in there wanting him to invest in some black box. And I'd invariably have to tell Jack, "Jack, don't mess with that. Don't put your money into that kind of stuff. It just isn't going to work." And that happened just time and time again and I got to know Jack after Dome better than I ever did when I was in Dome.

PMB: In the early 1980s, Dome...



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SCARBOROUGH: Right.

PMB: ...because of the National Energy Program, Dome bought up the assets at a number of companies. Hudson's Bay Oil and Gas was one of them.

SCARBOROUGH: Right.

PMB: And they had a pretty big oil sands asset.

SCARBOROUGH: Yeah, they did.

PMB: And then Dome had its own pretty big oil sands... I was going to call it heavy oil and oil sands asset. And then in addition to that, of course, oil prices were beginning to drop pretty drastically.

SCARBOROUGH: Drop quite drastically.

PMB: And the bottom line is that Dome had about, I think it's five or six billion dollars of debt.

SCARBOROUGH: Yeah, they were over-extended tremendously.

PMB: Interest rates were at 18% - 20%.

SCARBOROUGH: Yeah, it was impossible.

PMB: It was an impossible situation for any company.

SCARBOROUGH: Impossible situation, yeah.

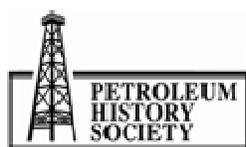
PMB: What was it like to live and work in that environment?

SCARBOROUGH: Well it was... when you had such a group of active people and then to see the sort-of disintegration, you might say, it was a real sad situation because your close friends and everything else were leaving. Every time you turned around, somebody would cross the street to somebody else. And so you know, it was an exodus time. The heavy oil area... we still continued to pretty well thrive because we were still building reserves and we needed that, I guess in all the money games you're playing. But, it was a sad time, it was, it was hard. And you could really see the strain on Bill Richards, because he stood in the gap there for the last year in there. I mean, he was the one that took the bludgeoning, you might say. I can't remember the gentleman's name that came from England?<sup>2</sup>

PMB: Oh, right...

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<sup>2</sup> J. Howard Macdonald



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SCARBOROUGH: I don't know what you call him, I'm sorry.

PMB: I can't remember his name, yeah, he was a very, very... everybody liked him very much. But, he did not have the personalities that those guys had.

SCARBOROUGH: No one that I knew liked him. He was an arrogant...

PMB: Oh, really?

SCARBOROUGH: Oh, tremendously.

PMB: But, his job basically...

SCARBOROUGH: His job...

PMB: ... was to sell Dome.

SCARBOROUGH: Yeah. No, his job was strictly there to settle things. And the thing that really upset me was that he would go through all of the heads of departments and stuff, and dig up all sorts of stuff where he was trying to blame you for this and that and so forth and so on.

PMB: Really?

SCARBOROUGH: It was not a fun time with that guy. I don't know, it was bloody awful, let's put it that way.

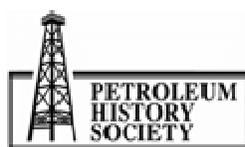
PMB: And then of the course, the other part of that is that all the Dome people lost their pensions because they were all paid out in shares.

SCARBOROUGH: That's an interesting situation too, because we all had the opportunity to elect to go with the pension or go with the shares. And the only person I know out of all the higher mucky-mucks in all of Dome that took the pension was Murray Todd. He's the only person I know of, everybody else took shares. Well, of course, being a vice-president you couldn't sell your shares and you watched your shares go from \$25.00 down to a \$1.25. I sold my options at \$1.25 and I had our Englishman come in and just practically want to sue me and everything else for selling my shares. I didn't have a right to sell those shares. And I said, "Buddy," I said, "You know..."

PMB: Now, now. Watch your language. So, in the end Mr. Mucky-Muck from England, I wish I could remember his name, sold Dome to Amoco for I think as I said, I think it was \$8 Billion dollars.<sup>3</sup> And you were kept on-side. Can you tell us a little bit about that? You had Hudson's Bay, Dome and...

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<sup>3</sup> C\$5.1 billion



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SCARBOROUGH: Well, we had bought Hudson's Bay so we had... we were already melding together their group with our existing group. And, there was a lot of... with that HBOG purchase, there was a different mentality of personnel. Dome people, you worked hard and you gained by it. The HBOG group was more like a military thing, if I spend so much time here I expect to be elevated to lieutenant and then captain and so forth. And so you had that mentality difference and it was hard to try to get this group together with that... it wouldn't... I guess it's hard to explain.

It really worked... you saw it all sorts of different aspects of the business. And then when Amoco bought Exxon and then there's another group, you might say, it was kind of a mish-mash there for a while. Until you sort of sorted things out and got people comfortable with what they were doing. And I could certainly understand when HBOG was bought by Dome they felt like they were sort of subservient and that wasn't our approach at all. We would say, "Well come, join us and let's together get on down the road."

And when the Amoco group came in there wasn't that many, best I remember, there wasn't that much of additional Amoco heavy oil people as compared to other departments, much larger departments. So, it was just one of those things. And I was asked to stay and take care of this, getting it all sorted out and working together. Not only in the office here, but also in the field and so forth and so, it took a little time but it all worked out. It's no fun to go from being an oil man to a personnel man and I was glad to package out when I did because I felt like it wasn't much fun in it anymore, because you were always involved in the personnel squabbles and things. And you kind of got completely away from the oil business.

PMB: Now a couple of people that you know very well from Dome are Bob Taylor and Bill McAffrey, is that correct?

SCARBOROUGH: Yeah, I know both of them. Bob Taylor basically took my place when I left.

PMB: At Amoco?

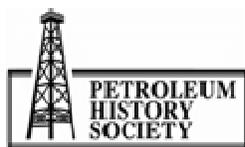
SCARBOROUGH: Well when I grabbed my package away... when I was offered my package by Murray Todd.

PMB: When you were at Amoco?

SCARBOROUGH: And I think Murray was scared to death I was going to turn it down, but I was there at 7:30 that morning to be there when he came in the office at 8:00 to grab it. I believe he put Taylor into my job at that time. I really, truthfully, never had a lot of association with Bob. I really didn't work with him very much.

PMB: Well, you know he later went on to become... when BP took over Amoco, Sir John Browne hated heavy oil and oil sands. He, essentially, got rid of all the properties.

SCARBOROUGH: Yeah.



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PMB: And so Bob and Bill McAffrey, basically were both pushed out the door. Bob went on to become the Assistant Deputy Minister for Oil in the Provincial Government and Bill McAffrey, single-handedly raised \$3.4 Billion to form MEG...

SCARBOROUGH: My God.

PMB: McAffrey Energy Group, MEG Energy.

SCARBOROUGH: Is that right?

PMB: Yeah, and he...

SCARBOROUGH: I didn't even know that.

PMB: ... and McAffrey has...

SCARBOROUGH: That's wonderful.

PMB: ... McAffrey tells me that he has it, on the basis of a lot of bankers, and he has had this fact checked out, that nobody else in history had raised that much money as a non-public entity before.

SCARBOROUGH: Yeah, I could imagine.

PMB: He was the first guy and probably is still the only guy, so then he took his company public and now it is worth about \$12 Billion dollars.

SCARBOROUGH: Well, that's wonderful. I'm glad he was just so successful.

PMB: So those are a couple of guys that came right out of your operation.

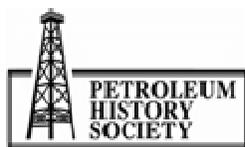
SCARBOROUGH: No, he... McAffrey, I worked with him pretty closely on a number of things.

PMB: Now, McAffrey, and this is why I brought up his name. When I interviewed Bill last December, he told me that Dome had assembled the best portfolio of oil sands and heavy oil assets anybody, up to that time, had ever assembled.

SCARBOROUGH: Yeah.

PMB: And so I find it odd, and I want your comments on this, that you're saying, "Well, we didn't really do oil sands, we only did heavy oil."

SCARBOROUGH: Well, after you go back to how it was built within Dome. The oil sands, when it was first started they had meetings upon meetings upon meetings. I told John Beddome, I wasn't interested in it. And so, John handed it to Murray Todd. Murray Todd went to all those meetings on the oil sands. The oil sands were completely separate.



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PMB: Now this is Dome?

SCARBOROUGH: Within Dome, okay, was completely separate from my operations of heavy oil. I had nothing to do with the oil sands. And so, Murray did all of the... whatever was necessary in all their negotiations and discussions in the oil sands.

PMB: So now, I talked to Bob Taylor. You recommended that I should I talk to Murray Todd. First of all, I wasn't able to find his phone number. I tried everywhere to reach him. And a number of people told me that you were really the better guy to talk to about the oil sands anyhow.

SCARBOROUGH: Well, not really, because I didn't have anything to do with them. I really didn't. I never attended a single meeting on the oil sands.

PMB: So what you're saying then is is that you're heavy oil and heavy oil is related but it's not...

SCARBOROUGH: Right.

PMB: So your heavy oil group was simply a part of Dome and then there was also an oil sands group. But there was no real production?

SCARBOROUGH: Well, actually, no. At that time, there was never any production from the oil sands. I mean, that was all under negotiations that I could see. They were planning and all these things.

PMB: So they put together this great portfolio of oil sands properties.

SCARBOROUGH: Yeah, yeah.

PMB: But, because they went broke, basically.

SCARBOROUGH: Yeah.

PMB: They were never able to produce it.

SCARBOROUGH: Yeah, I think that's probably true.

PMB: And so then I can fill in the rest of the story from there. Amoco acquired all of these oil sands assets.

SCARBOROUGH: Right, right.

PMB: And Amoco and Bob Taylor and Bob McAffrey...

SCARBOROUGH: Yeah.



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PMB: ... were involved in developing them.

SCARBOROUGH: Right.

PMB: And then when Sir John and Amoco took over, or sorry, when BP...

SCARBOROUGH: BP, yeah.

PMB: ... and Sir John took over Amoco, Sir John basically said, "Get rid of the oil sands stuff, we don't want it." So that finishes up... that completes that story.

SCARBOROUGH: I'll be darned.

PMB: And I had to tell you.

SCARBOROUGH: Yeah, because, like I say I wasn't privy to anything in the oil sands.

PMB: And that almost finishes up the questions, the main questions that I had to ask. There are a couple of others. Let me ask this: To what extent are you still following the oil sands technology, oil sands production and development, at all or not much?

SCARBOROUGH: Not much. Like I said earlier, I was not one to push the oil sands. To me it was a job creating scenario, that's all it was and that's what it's been. To me, it's probably the priciest oil you can produce. A lot of people argue that, but all I keep asking is, "What is the cost per barrel of product?" and I can't get anybody to secretly say what it is.

PMB: I can answer that.

SCARBOROUGH: Can you?

PMB: I can. What is called SAGD Oil Sand Production, the operating costs, now capital costs are different....

SCARBOROUGH: No, strictly operating costs.

PMB: The operating costs are about between \$20.00 and \$30.00 a barrel. Now, the capital costs are high but these projects will last for decades.

SCARBOROUGH: Well, yeah. I mean years... decades, absolutely, yeah.

PMB: So, right now even if you're selling it at \$60.00 a barrel...

SCARBOROUGH: You're making money.



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PMB: You're making good revenue, but then the question becomes: "Well what about the capital costs? What about future risks?" and you've got all of that stuff to deal with.

SCARBOROUGH: Oh, well that has to be... you've got all that stuff.

PMB: And I wouldn't have been able to give you those answers a year ago because I've been studying this.

SCARBOROUGH: Well, see, you're the first person that has ever come up with a number for me on that. At the time that that was all started, I kept asking, "Well, what are your costs?" And at that time, I mean, that margin of oil price and that cost I knew had to be only a sliver.

PMB: I remember when I came to Calgary and worked in the oil industry. Our industry produced, I think it was 600,000 barrels a day of light oil and that was in '77. And now, we're producing I'm pretty sure it's 2 million barrels a day of bitumen and oil sands.

SCARBOROUGH: Yeah.

PMB: That's huge.

SCARBOROUGH: It is, it is.

PMB: And that other, the light oil is still declining a little bit. It's kind of flattened out the last few years. But, by golly, that bitumen and the oil sands are still going straight up.

SCARBOROUGH: Well, I mean, like I say it's a tremendous reserve.

PMB: And it has become economic. A couple of other things, I mentioned at the beginning AOSTRA, Alberta Oil Sands Technology and Research Authority. Which started in 1972 and I don't think it finally died until around 1990 and it was actually a Provincial Government...

SCARBOROUGH: Sort of like a research thing, wasn't it working in more research?

PMB: If you, for example, were doing a bitumen... applying a steam huff and puff or something, a fireflood to a bitumen project, then the Province would basically match the money you wanted to spend. So if you wanted to put a \$100 Million into it, Alberta would put a \$100 Million dollars into it and they would keep the patents. That turned out to be a stupid idea because the patents were basically wasted.

SCARBOROUGH: Well that was after... that had to come up after things we were doing, I think.

PMB: Or, maybe it was even mostly over before you came to Canada. A related question: In your view, what is the role of government in that kind of thing, in funding that kind of industrial...?



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SCARBOROUGH: I think if it's strict research, I think that you know, unfortunately as you recall. Most of the major oil companies pretty well did away with their research departments, a long time ago. And, I always said that, it was that group that gave us different opportunities and enhancements and all sorts of different things. And I've always felt like, from a research standpoint that that's something that really needs to be supported. Whether it be it government or, it's unfortunate the industry itself doesn't do more of it. But, another side of that unfortunately is, I have to look back at the industry itself and there really hasn't been that many new things developed out of research. So, I don't know... you're damned if you do, damned if you don't. Sorry, I don't know, but it's a problem.

PMB: But the most important of these new technologies is what's called Steam Assisted Gravity Drainage or SAGD. And that was essentially proved in 1987.

SCARBOROUGH: Yeah.

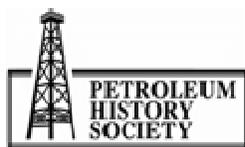
PMB: And, we took a while to kind of get it really rolling. But right now, that is responsible for about half of the bitumen that Alberta produces, far more than any of the oil sands mines are doing.

SCARBOROUGH: Mm-hmm, yeah.

PMB: It's really been an amazing success. I'm turning this off now, unless there's something you want to tell me?

SCARBOROUGH: No, that's it.

[END OF RECORDING]



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