



PETROLEUM HISTORY SOCIETY
OIL SANDS ORAL HISTORY PROJECT
TRANSCRIPT

MARY CLARK SHEPPARD, DAUGHTER OF KARL ADOLPH CLARK, THE SCIENTIST WHO DEVELOPED THE HOT-WATER RECOVERY TECHNOLOGY FOR EXTRACTION OF THE OIL FROM THE ALBERTA OIL SANDS. AUTHOR OF OIL SANDS SCIENTIST: THE LETTERS OF KARL A. CLARK: 1920-1949 AND ATHABASCA OIL SANDS: FROM LABORATORY TO PRODUCTION – THE LETTERS OF KARL A. CLARK, 1950-66.

Date and place of birth: Edmonton, Alberta – January 29, 1927

Date and place of interview: 10:45 a.m., May 23, 2011.in Mrs. Sheppard's home at

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AD: Mary is the third child of four born to Karl and Dora Clark. She attended the University of Alberta from 1946 to 1949 in a general Arts program. She then went to Toronto to attend the Royal Conservatory of Music, but her studies were cut short by her mother's illness. Eventually, she ended up working for about ten years in the 1950s in the conventional oil industry.



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AD: Can you tell me when you were born?

MCS: I was born in Edmonton here, right by the University of Alberta, in our house on 89th Avenue on January 29th, 1927, so I'm 84 now.

AD: When did your mother and father come out to Alberta?

MCS: They came out in 1920 on the invitation of President [Henry Marshall] Tory, of the University, to join what they were setting up then, what they called the Research Department. And this was a forerunner to what he and the Premier had decided to set up, i.e., what is now the Alberta Research Council [Alberta Innovates Technology Futures], but then was called (formed on 1 January in 1921, now I've forgotten what it was called [the Scientific and Industrial Research Council of Alberta]), but in 1929 it was renamed the Research Council of Alberta, and that's the name I grew up with, the Research Council of Alberta.

AD: What was your father's training and background? Maybe begin with where he was born and when, and his education background.

MCS: He was born in southern Ontario in a town called, now that's escaped me too although I should know it, in 1888 [AD: Georgetown, near Woodstock]. His father was a high-school teacher in this little town outside Toronto. But in 1890, McMaster University [MCS – which was a Baptist University], which was in the process of being set up in Toronto, asked my father's father to be a professor of modern languages, particularly French and German. Poor guy, he'd saved his money, gone to the University of Toronto for his undergraduate degree and his graduate degree and he was in Hamburg, Germany, studying for a PhD. He got all his studies finished but he didn't get his thesis finished and he ran out of money and had to come back home. So he never got his PhD, but McMaster University said they didn't mind that – that he didn't have the degree – but they felt he had the qualifications. He was, of course, a staunch Baptist, and so they moved to Toronto and he became, really, the first professor of languages at McMaster University. So the family came, my father would just be a baby when that happened, so he grew up in Toronto and went to McMaster for his Science degree and his Master's, and then he went to the University of Illinois, in Urbana, for his PhD in what was then called Inorganic Chemistry. I think they call it Physical Chemistry now but it was Inorganic Chemistry then. So he came back in 1915, going on 1916, with his PhD. That's my father I'm talking about.

He tried to join up in the armed forces, because the war was going on then, and to his astonishment he was rejected. And they said he was rejected because of his eyesight, which didn't really make much sense, because he certainly got through school and university. Furthermore, all the time he was an undergraduate at McMaster, every summer he worked as a fire ranger. Of course, they have to climb up on these big lookouts and look out to see where the fires were beginning, so his eyesight must have been all right. What is generally believed is that it was because of his name, Karl Adolph



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Clark – Karl and Adolph were two friends of his [father's father] in Hamburg, so when he came to leave Hamburg and had come back, he named his first born after his two great friends, to remember those days in Hamburg. Of course, we think that that had a lot to do with that . . . , and also the fact that my grandfather had a German-speaking member on his staff, which was very normal for language departments. His name was Mueller, and he was shown quite a lot of prejudice – and it was nasty – and finally my grandfather spoke up about it. It all got in the press, just before my Dad came back to join up. We suspect that that was really the reason, because he tried three times, he got people in Ottawa, from the Mines Department and Geological Survey, to support him, but it didn't happen.

AD: So he was here at this exciting period when we had the Research Council being established. You were his biographer, so maybe you can tell me about that period, partially from memory but partially from your biographical research.

MCS: Yes, of course I wasn't born then My mother and my father and my sister – who was only three months old [MCS – 6 weeks old] – she was born in 1920 in July and they came out in September, the end of August. So when you think my mother came across, all the way across Canada by train, which in those days would have been four days and four nights, if not four days and five nights from Ottawa, with a two and a half month old baby[MCS – 6 weeks old] , which is extraordinary when you think about it now. And they arrived in September 1920, and he immediately took up his research at the university. In 1921 they bought a house in Garneau, and that's where I was born – long since gone now since the university's built over it. And there he worked. As I grew up, I knew that Daddy's at the University working on the tar sands. At the University, which was very small in those days, he worked in the North Lab on the second floor up, and I knew that that's where he worked, but I didn't know much more until the time, well the time I really got interested was when I was at University, and that was 1946.

Well, I suppose I should backtrack a little bit, because I did know about the Ball family. Max Ball was one of the people who was working at the sand. He was the promoter, well the chief executive I guess they would call it now. And we knew the Ball family, during the war. I'd heard about the Ball family, but not very much, but during the war we saw quite a lot of the Balls. And Mr. Ball I remember very well. He was a very jolly man, round faced, and a great talker. I don't remember much about Mrs. Ball, Molly. I think she probably mostly listened – poor Mrs. Ball – and then they had two children: a really juicy son, who I thought was absolutely super and a daughter, who was the age of my sister. So I knew about at the sand, but not the technicalities.



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To go back, when I was at University, that was when the Bitumount plant was being built [MCS – starting 1946] – the government Bitumount pilot plant – and by then I was more aware of things. I loved to hear my dad talk about bitumen. There were a lot of problems. They had to set it up; they had to negotiate with Fitzsimmons [Robert C., President, International Bitumen Co.] – no, Champion [Lloyd R., Financier, promoter of Oil Sands Ltd.], who had taken over Fitzsimmons plant – so he was the man who was running things financially. So they had to get all those contracts sorted out financially. And then they had to get, decide, Dad had to help with the design of it.

I think Borne Engineering were the designers, in the States, and there was lots of trouble there, too, and I know this from since then, that you have Americans consulting engineers and they didn't know what the climate was like. In the old days – perhaps they know better now, but they didn't used to. And there were all sorts of problems to get them to change this and that because of the climate. And of course it was entirely new technology too, and they had to embrace that and understand it.

And then, they got the plant nearly ready, and they had a big fire, and that delayed things for nearly a whole year. So anyway, by 1949, the year I graduated, the plant actually operated, and that was a very tense time, as things were always breaking down. And Mr. Tanner [N.E., Minister of Lands and Mines, Alberta; Chairman of the Research Council of Alberta], who was the minister of lands and mines or mines and minerals, I can't remember – they kept changing it – and he was the man who was in charge of the oil and gas industry, really. So he was my father's political boss. He'd been the nominal head of the Research Council, so my Dad ultimately reported to him. And I knew Beth Tanner – I went to school with her – and they just lived on 89th Avenue. So I knew Mr. Tanner and I'd been to their house, not a lot, but we were friends. Mr. Tanner was the political defender in the house of the pilot plant, which was costing a lot of money in those days. Often, they worked together, because my Dad had to make sure he had the information he needed to fight them, because the Opposition were causing a lot of trouble. They were very worried about all this expenditure, so Mr. Tanner was very involved, as so was my Father, and I hear a lot about that – not a lot about Mr. Tanner but I surmised this. Anyway the plant operated in 1949 in the summer, and it was a big success. I think they had last minute troubles. It was sort of like a curtain raiser where things go wrong just before they raise the curtain. But it did, and the opposition went up.

All the Government people went up first, and the following week all the Opposition went up. And every body was very pleased with what they found. And the very important thing about Bitumount, the pilot plant, because there were a few plants that had been built between the twenties and '49 that were of interest, because the oil industry, the conventional oil industry, had kept an eye on it but it was just an innovation. But now in 1949 with the pilot plant, which had been very well engineered,



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and they kept all the information like the heat and the water, the additives, and the this and the that – it was all recorded in a scientific way. So now the oil industry began to take note.

And the other thing that was very important to all this was that in 1949 the catalytic crackers had been well developed, and now the tar sands, as we kept calling them in those days, could provide a bitumen that could be upgraded to a crude oil. Before that happened it was just bitumen and they could get a low-grade sort of oil, but now they could produce crude oil. By then, the oil companies, North American and probably worldwide, actually, said, “Oh, here’s a new source of crude oil.”

So they really began to take notice then, so Bitumount was really a very, very important point in this development. In fact, I think it was the top of that twenty years, twenty to ‘49, development period. Bitumount was a crucial point. Then, after that, I’ve left University, right after the plant only worked for the summer. My father wanted to keep working, but the Government thought it was too expensive, so it was just mothballed in a way. They left two people in the plant, and they stayed and kept it going. My father stayed in touch with them for quite some time. Then, it was decided that the next stage ... And I should also say that the next stage, just after all the who-ha died down, Sid Blair, the government agreed that Sid Blair and someone called, from U of T [MCS – Ed Nelson of Universal Oil Products in Chicago], -- I know his name perfectly, but I can’t recall it at the moment. They were flown up with my father to see the plant, and they went all through the plant, and they said, “What is the next step, what do we do now?”, and Ed – that was the name of the man from Chicago and the other name will come in a minute – but they said the next thing to do now is a technical and economic survey – a very detailed survey of this, both technically and economically, and Ed said, Can you do this, you want to get Sid to do it because he’s got the broad picture and he’s done this for oil companies and he knows what to do.

So it was decided that Sid Blair was the person to do it, so straight away, even before the ink was signed on the contract, it was agreed that this big survey would be done and they would survey all the work that Alberta had done and also all the work Ottawa had done, because they had a process of their own, which they called the cold water process. The difference between the two was that Alberta – it was called the hot-water process because if you heated the bitumen up to a certain temperature, I think it was 180 degrees Fahrenheit I presume, the sand would drop out. The sand would drop out of the oil and the water, and the Ottawa people had a process that used much colder water. And they would say, “You’re using a lot more energy when you’ve got the hot-water process.” And they did an exhaustive examination of both processes. [MCS – Another study was being done at the National Research Council by a former student of Dad’s – Paul Gishler.]

Sid Blair was very good. I don’t know if this is germane to the story (it is in a way but I’m not sure that it wouldn’t complicate things), but all the time my Father was working at the Research Council of Alberta, the Ottawa Mines Branch was working on their cold-water process. There was a certain amount of animosity between the two government departments, and it had



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to do a lot with the fact that the federal government, really from 1882 when they first started officially taking note of the bituminous sands, as they called them then. They were bituminous sands, always officially. The term tar sands was just a nickname, as the term bitumen, some people said bitumen was just a tar. So they called them tar sands, but they were always called bitumen. Indeed, Sid Blair's report, which was called "The Development of the Alberta Bituminous Sands" became dubbed as the Blair report, was described as the technical report on Alberta's bituminous sands or the bituminous sands of Alberta. Officially in 1950, they were still being called that. However, after the report came out, the oil companies, of course, were even more interested. Oh yes, Blair concluded, even though the price of oil was only \$3 a barrel – it seems hard to believe – his reckoning was that you could produce it for \$2.50. That was challenged later as they said he didn't take into account all the capital investment for background things like roads and whatnot. That was assuming everything was in, which of course it wasn't.

But anyway, the oil companies became even more interested, and so then they decided, Blair decided, that they would have a big symposium. So in 1951 they got together all sorts of people to give papers, including people from Ottawa, and I've got a copy of that – that's somewhere and they're as scarce as can be – and 120 delegates came to that. It was held at the university campus in September (I remember that very well), and for that time.

It was in the aftermath of the symposium when I went to Toronto. I went to Toronto to be with my two great friends that I'd met at the Conservatory, but had to leave because of my mother's illness. We'd always said we kept in touch and that we'd get together again. So I went to Toronto for that reason. Blair always said, "You'd better come to Toronto and work for me," but you couldn't pin him down. I thought if I'm going to go I've got to pin the job down, but he wouldn't be pinned down. I remember thinking after how clever he was, because he wasn't going to be responsible for me coming to Toronto on the basis of a job with him. I had to make up my own mind I was going to come. I didn't realize that at first, but since then I have. Not long after, I realized.

So I went down to Toronto – burnt all my bridges – I went to Toronto and met the Blairs not long after that, and that's when he said to me, "How about coming to work for me." I didn't really want to, as I thought a) it would spoil the relationship I had with the family, as a family friend, and b) I didn't think I was qualified – I was very scared – and it so happened that there were two Bechtels. He was consulting for the Bechtel Corporation, as they had set up a Canadian Bechtel company. But he was reporting to San Francisco, to Mr. Bechtel himself, and other two people. But there were two Bechtel secretaries up, and someone else – I think it was an engineer but I've forgotten – and we were all invited to the Blairs' place in Bolton for supper and having an afternoon and evening. I was very interested in listening to these men. It must have been in the evening; we must have stayed over



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night. They were setting up the TransCanada Pipeline – that was in the offing. I was upstairs with this one secretary. She was from New York. She asked me what I was up to. So I said, “Well, Mr. Blair’s asked me to come to work for him. I really don’t know if I want to. I’m not experienced enough. I’m not good enough yet.” I spelled out all my misgivings to her. She said, “Oh I shouldn’t let that bother you. During the war all sorts of people took on jobs. They took on jobs because they had to. Don’t let that discourage you.” I think I shook a couple of times I was so nervous, even talking to her.

In the end, my other contact hadn’t got back to me yet, and I decided a bird in the hand was worth two in the bush, and I decided to go work for him. And it was a huge learning, huge learning curve, because very soon after, well within a month, everything broke loose about setting up the Trans Mountain Pipeline. And people piled into this little office -- engineers and accountants – and Mary, this other secretary came. They were put there permanently until all this was over. They lived in a hotel. And the man who was in charge, normally he was a lawyer from San Francisco, lovely man called Mr. Robert Bridges. All three of them lived at the hotel. We just worked. I got there about 8 o’clock in the morning and we worked there until about 8 o’clock at night. The three girls, and these typists they were typing away like mad. They were very experienced and able, these girls. And in the end I spent most of the time ... Back in those days, you made ten copies of everything. And piling all them all ... They had electric typewriters and everything. And I learned on an electric typewriter, really, that was my first experience, and they said, “You’re lucky. It’s been quite a transition going from a manual to an electric. You know, so you’ve taken it up without any trouble.”

In the end, I used to just spend my time piling up all the paper for them. I was just the dogsbody for these two girls. Well, I reckon, they were very able, they were working for their bosses from New York and San Francisco, so I just turned myself into a kind of a dogsbody, making things easy, answering the phones, so they didn’t have to stop. I knew they were so vital to the project. Anyway, that lasted six weeks, and it was all very good. We all became good friends; we all kept in touch for years and years.

So it was a very exciting time, but very demanding, and I remember it was over, they all went home for Thanksgiving – you know an American Thanksgiving. I’ve never been so pleased for an American Thanksgiving, so they all cleared out of the office for four days. They didn’t go home for Christmas until about the minute before but Thanksgiving was so important, and I hadn’t realized how important American Thanksgiving was until then. So anyway, that was a big experience, and I had thought, well, and in fact it was true. Because then when it was all over, that huge business --- it was all to do with the financing and getting bonded and getting bonds.



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I didn't know anything about it. I mean I had no knowledge of it, like Wood Gundy and McLeod, Young and Weir, and all these names. I'd never heard of them before, but boy I sure knew about them now. Prudential Insurance, and all these people who were being financiers of this big pipeline. So it was very, very interesting. In the meantime, of course, all sorts of correspondence was piling up about the oil sands, coming out of the Blair report. Mr. Blair would dictate. They were sitting all over his office, because we only had two offices –his office and my office and the little hallway. So anyway, I had taken some dictation, and when it was all over and they'd cleared out, I couldn't read my dictation. I hadn't done these letters, because I was too busy helping these girls. Boy, was he mad at me. I got a real ticking off. However, I thought I could bear it. I thought I had done a good job, and if I had to have a strip torn off me, well that was all in a good cause. So I survived that, but it was a bit tough. Anyway, we finally got back to some oil sands, and in fact all the time I was there, all the two years while the Tran Mountain Pipeline was being built, Blair was also consulting on oil sands things. It did rather take a back seat, but nevertheless it did keep my interest. I can't think of anything specific right now, but there certainly was correspondence.

AD: You mentioned the rivalry of the Alberta scientists working on the oil sands, led by your father, and the scientists in Ottawa, at the National Research Council. Do you want to talk about that?

MCS: Well, it wasn't the National Research Council. Well, yes and no it was the National Research Council. It was mostly the Mines Branch that took up the oil sands. As I said, it was in 1875, when there was a survey going through what was called the northern line. There were two lines (railway lines) that were proposed – one that was the southern line that became the Canadian Pacific. But there was also the northern line; they also had to explore whether there was a passage through the mountains in the more northerly end. And that's in 1875, mustn't get my centuries mixed up here, and that's when they first started taking note, and there was another note, some other hearings in 1888, or somewhere in there, and that's when the Mines Branch started getting interested. At first it was the Geological Survey but then it became the Mines Branch. In the end, in 1996 or so, they sank two wells. The second one was in Pelican Rapids; I've forgotten where the first one was. Anyway, they were both problematic. They hit gas, and they couldn't cope with it.

AD: That's in 1890?

MCS: Yes, that's in 1890 at Pelican Rapids, and they both had to be capped and abandoned. They didn't find any oil, in other words. They got a bit of gas and it threw up rocks and stones, and they just capped them. After that, the Mines Branch let it be, and the federal government's policy then became we'll throw it open to private entrepreneurs. Government withdrew. That was the case until about 1920. No, well in 1910, several people had tried to do something with the tar sands, bituminous sands. Then the Alberta government – by then it had been formed – and they began to



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get worried how people were being drawn into bogus companies, and fraudulent things. They decided they didn't like this. They were concerned that innocent people were losing their money. They had a survey of their own – professor Allan [John, Professor of Geology, University of Alberta and part-time member of the Research Council], whom I knew; I grew up with his children – he was one of the geologists at the university, he did a big survey of all the natural resources. I think actually that was in about 1918, 1919, but before that our Alberta government were concerned, and I think probably that President Tory who of course I think he was a mathematician, or so I've read, but he was very interested in science. He was scientifically drawn, and he was worrying about this, about natural resources. Anyway, then the war intervened. The next thing that happened, well there were three things that happened: John Allan's big survey of natural resources happened after the war; President Tory came back from setting up the Khaki University overseas and began taking up cudgels; and then they built the railroad to just outside Fort McMurray, near Clearwater. In Ottawa, during the war, there were studies made of bituminous sands because there was worry, they want to find elements for explosives, nitrates, I think, and as I understand it Chile was where they got all their previous nitrates. The British navy set up a blockade so that the Germans couldn't get nitrates, what did I say, Chile or Argentina – Argentina probably. In the end, the Germans figured out how to make their own nitrates, because they were pretty advanced in the chemistry industry. The British government reckoned maybe the tar sands might be a source. I'm not a chemist but they did find thallium, keeps being mentioned as one of the ingredients.

Anyway, the federal government got drawn into this and Sidney Ells [Sidney c., Mining Engineer, Division of Mineral Resources, Mines Branch, Ottawa] was sent to look out over the bituminous sands deposits, and they got into this, and they got interested in the tar sands that way. Also, Alberta had written them a letter at one time – Coté [J.L., MLA, Liberal; first chairman of the Industrial Research Council] had written them a letter, signed it, saying they wanted to know a bit more about what was going on – you know, the tar sands. So here you have Alberta taking an interest because they didn't like the fraudulent things going on and then Tory was interested in scientific things and was interested in natural resources, which was what all Alberta had. In the meantime Ottawa discovers that nobody knows much about the tar sands, after they got this letter from Alberta, and then because of the war thing and interest in nitrates, and whatnot, they got going on it. And their man was Ells, Sidney Ells, who was the son of somebody big in the Geological Survey who was – he wasn't an idiot or anything – he had a degree from McGill University, in science of some sort. He had a B Sc.

In Ottawa, under Ells, I think he was with the Mines Branch, he had a lot of power. The important thing in those days, what do you call it when your family (AD: nepotism). Nepotism, that's it, was rife in Ottawa in those days, of course, so anyway, and Ells was (and you know, he wasn't an idiot),



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but he wanted to go out – he heard about this letter – and he said, “I want to go out to Alberta; let me do that.” And so he was sent out, and he started surveying in 1913, and then he – and he did a lot of surveying. My father was always very complimentary of Ells’s work in surveying. Ottawa sent him down to the Mellon Institute for a year to do more studying, and what he did was to ...

He was good at doing a bibliography. He was good at gathering up everything everybody had said, and that was wonderful. And he did that in the States; he found out anything there was about work with bitumen and bitumen sands, shales also. Then he came back to Ottawa, at the beginning of 1916. He was supposed to write up his report, of course, after one or two years’ work – I’ve forgotten – down in the Mellon Institute. During that time, he’d also thought about a way of extracting oil, and he called it his super steam, again hot water but I mean steam. He had his own ... Anyway, he was supposed to write it all up, but Ells was, like all sorts of people, he was very able: he was a great camper, he had to really camp up in those days, and he had to go up (there was no railway when he went up) he had to go up to Athabasca Landing, as it was called then, and then ride down over the rapids and climb back up over the rapids, and camp all the time. You didn’t need to take along a few cans of this or that. You did it the way the Natives did. And my father did that, too, of course. But, in the way of camping. Anyway, poor Ells, he couldn’t write his report up properly – you know he would stumble around and he did something and I guess he said, “Well, stuff this. I’m going overseas.” Which was what he really wanted to do, so he went over in 1917 – he went overseas – so his report was never completed, which was his undoing in a way, but just only in a way.

After the war, then the federal government gets really interested in the oil sands and they decided they were going to do a bit more, and Ells was the man that would do it. He was about the only person they had, actually. When he was supposed to go ... They fixed up for him to go out to Alberta, where it was near for him near the source of the tar sands. He was supposed to work at the University of Alberta, but under their supervision and direction completely. When Tory found this out, he wasn’t going to have it.

In the meantime, John Allan, Professor Allan, had begun reading this report that Ells had done, because that was sent out too, and he didn’t like it. And who was the other person who ...; he was very unhappy, too. Was it one of the chemists? So they said, “We don’t want this man on the campus and he certainly can’t be ... If he’s here, it must be under our direction.” A big fight started up between President Tory and -- now who was the man in, McCallum was it? (I’ve forgotten who was the head. Anyway, somebody like McCallum) – in Ottawa [likely R.C. McConnell, Deputy Minister of Mines]. My way of explaining it in my book was that you had these two generals in



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Alberta and Ottawa, and they were having a fight, and then poor old Ells was a foot soldier in the Ottawa camp and my father, by then, well not really but later on, my father was also on the wrong side. And the other side. So they were the two foot soldiers that got caught in this fight. In the end, Alberta won, and Ottawa and Ells lost. And Ells never forgave my father for that. He was very, very critical of everything my father did. Even after he died he was still criticized, even after my father was dead, he was still saying derogatory things about Karl Clark, which was really very sad.

AD: You mentioned that your father's PhD was in inorganic chemistry. How did he make that shift to organic chemistry, which is what any petroleum product is?

MCS: Funny, nobody's ever asked me that before. I've never thought of it either. Well, because it was colloidal chemistry that the first separation was really based on, and it was when he was in Ottawa, working – you see he worked for the mines branch, too, which also complicated things later on. You see Ells didn't come back until 1919 [?]. By then my father had been made – the Mines Branch had set up what they called a roads laboratory, because my dad had been doing road work, because that's how he got into the Geological Survey after/during the war, and after he got sent to the mines branch and they set up this roads material thing. And my dad done soil surveys through Ontario – Quebec, Ontario – and then he was sent out to Manitoba.

When he was in Manitoba, around Brandon where we're talking about now, of course, that was where (I'd forgotten all about this), that part of geologically – the geologists talk about that part of Manitoba (now look, it's just gone now – this is what happens when you're old, you know. You suddenly forget ...) Agassiz, Lake Agassiz, and it was all soil, see, and they hadn't found any gravel by then, because all this lake had soil over it, I guess. So that's when he began to wonder, because it made wonderful roads in the summertime when it was hot and dry, but the clay – everything slipped apart when it got wet, and he thought if you could only [laughter] – it sounds pretty simplistic now – if he could only waterproof the clay then that might be a way of preserving roads. And of course, after the war and certainly by the early 1920s, roads were big. I mean everybody had a car then, and farmers had to get things to the railway and all the rest of it, so it was very important to have passable roads. That's how he got drawn into road work.

So back in his lab, in Ottawa in the winter, he got some tar sands, came into his hands, and he thought if he could emulsify them – I'm not a chemist, I don't know really about emulsification – but it seems as though if emulsification, he thought, if he could emulsify and then you could put this emulsification on the road, I guess. Well, instead of getting emulsion he got a separation. That was the big "ah ha" moment. That was his big ... He got this separation. So everybody was very excited about this, but for some reason or another he was told to stop work. It came down from on high.



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This would be 1919, yes, Ells has come back, and they're having this big fight with Alberta, and Karl Clark finally gets a separation of the oil and the sand. But it was a problem, because he'd got – now I have to get this right – he got sand in the bottom, oil in the middle, and water in the top. So he'd got these three things, but he had to get the oil out without the sand and the water, particularly, the sand. And so he tried everything possible but, you know, the oil and water, they got mixed up again.

AD: In other words, he was really at a macadam-like substance to be able to coat roads.

MCS: Well, that was really Ells's big idea. He was the big macadam way of covering. But, and when did he – he did that in the 20s, which is another story. Well, I'm not sure, I think that he was thinking that if he ... I think they knew about oiling. In fact they were oiling in the States, oiling roads, a bit then. Well, they put oil down on the roads. They were certainly oiling roads when I was growing up, too. Gravel roads.

AD: But your father was the first in getting ...

MCA: Well, I think he was the first to get the separation. And of course, it was by mistake. That's what often ... that's what always happens. It's that these things happen by mistake. I mean, my father was very ... [I] wanted to say that he was playing around, and he makes the discovery. He didn't get what he was looking for; he got something else that was even more important. So anyway, it so happened that President Tory was in Ottawa at this time, 1919, and he was looking for somebody to take over oil, coal studies in Alberta, because coal was the big thing in those days – coal, ranching, arable farming, and that was about it. And so Tory was keen that they should develop what natural resources we had, and that was coal and maybe the bituminous sands up in the Athabasca. So it happened that Tory was there, and he knew, Dr. Tory knew where the demand for coal was, who was Professor Stansfield, who was a great friend. We knew the Stansfields, and then from, in the mines branch, he heard about the great excitement in the lab, you know, roads materials in the labs that this man had found and a way of separating the oil and been stopped. It didn't take long for Tory to know what to do next, and he went straight to my dad and persuaded him to come out to Alberta. Professor Stansfield, Edgar Stansfield, was very well known. He was an Englishman with an international reputation, and he couldn't leave at the drop of the hat, but I think I'm a little bit wrong here, because it was the spring of 1920 that Dr. Tory found him. And by September my mom and dad were in Alberta. But my father always said that Edgar Stansfield had too many international things to tie up. It would have taken him a whole year before he could come out.

Because of that, my father became the first full-time member of the research department, and indeed the research council, so maybe it was longer than a year. It was after 1921. It was called the Industrial, the Industrial and Research Council, something like that. It had a different name. I used to know it very well. And then it became the Research Council of Alberta in 1929. So, where were



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we? Anyway, the research Council was set up in Alberta. By then, there was a railway line up to Fort McMurray, so you could get up and you could get materials back down easily. And so Alberta was set, and they were really keen.

They really didn't like the proprietary (?) act of the – what's new? – of Ottawa, and furthermore, Tory, I think quite rightly said, "If this is going to go on in my university, it's going to be under my control," which Ottawa wouldn't agree to. So Ells continued to survey all through the 20s, but relations between Alberta and Ottawa were very thin, and there was a certain amount of animosity, and in 1922 Sid Blair joined my father, and Sid did some surveying up in the north, too, because he had to do all that for his own master's degree program, which he was on. Sid told a lovely story about ... told me this. Of course, when I was working in his office, I heard lots of stories about all sorts of things. He was really generous in telling me things. And apparently Sid Ells, during the ... , Sid Blair was there between 1922 and 1926, so it happened during that time. Ells got the geologic, whoever is overseas naming mountains and rivers – I've forgotten what they are called – but that agency named the Ells River, because it had an Indian name before that, which my father and Sid Blair knew. They knew it, and then it got changed to Ells River. Sid was particularly incensed about this. Sid was a lot more aggressive than my father. You know, he was an aggressive go-getter, and you know and very able. So apparently, Sid told me, on the prairie, on the flat bit between McMurray, Fort McMurray and Clearwater, there's a big flat place there. Sid said, he got six poles and he pounded six poles into the ground and he hung bells on them, and he had a big sign saying, Ells Bells (laughter), just where Ells could see it. And Ells was furious. Sid said, when he came back to Edmonton, to the Macdonald Hotel, I was summoned by Ells to explain myself. He didn't tell me what was said. He just said, "Ells was pretty mad about it" (laughs). I didn't hear what Ells had said to him, but, anyway that was the sort of thing that ...

AD: In terms of your father's and the teams' research and findings a number of patents were filed. Do you want to talk about that?

MCW: Well, yes, there were patents made. The last one was done in – what? – 1953 or 54, when they, well, I think it was then; was it before? Well, it was after the Blair Report, and there was all this interest in things, but there were also ones in 1928 and I think there were also ones in 1927, '28. But there is a lot of correspondence about that that I haven't published. And my Dad got pretty fed up with it, because he said they didn't know what they were talking about. And the legalese got very complicated. Anyway, there were patents, but they didn't do my Dad any good, because they all belonged to the Research Council, which was the Alberta government, so I always like, well not always, on occasion I've have to say to people, "Don't think I'm an heiress," because my Father didn't get anything from these patents. And in the end they were given to GCO, well given or



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something, to GCOS [Great Canadian Oil Sands], fine company took them over. In the times, I don't think it matters. After all, Alberta had funded all this work, so of course they – it was logical – that they should have control of them. I don't think, well in the end the government got a lot of royalties out of it, but there was no harm in it.

But nowadays I don't think it works quite that way. I know that my father's other associate, who worked for him as a student and then as a PhD graduate, Hobson, there again I know perfectly well his name, Gordon Hobson, he told me in 1980, you know, that people at the research council who get patents, they get something out of it. And he, Gordon himself, he had patents that he was getting income from. But it didn't happen before then, so dad didn't get anything from them. However, I don't think he was ... My father was never interested in business particularly. His real interest was research. He was an absolute, total research man. And he was just ... He'd been charged to come to Edmonton to find a way of making the oil, bituminous sands an asset for the province and that was what he was trying to do. And the rest of it didn't really interest him much.

AD: Now between 1951, you know Blair Report, and your father's death in 1966, what did he do? Was he still involved with the research council? The university? Was his research continuing until his death?

MCS: Yes, yes, yes. The Blair Report came out in 1950. The big symposium took place in 1951, and then, of course, the oil companies were very interested. They were still very cautious, but he was still a professor at the university. In fact, he was still heading up the Mining Engineering Department in his last five years. And, you know, because of retirement. And I think it was, was it '58? Anyway, no '48, it think, was when he became head, because the head of the department, Norman – now I've forgotten his name too – he'd retired. And so dad took over the headship. So he had a lot of administrative duties to perform at that point, and he was still teaching, doing lab work. Had students, you know, who had to take labs. He had a very good lab assistant, so I rather think Scotty did a lot of the work. But, and then he retired from the university officially in '54, but he was kept on for another year because they couldn't find a replacement for him. And so he carried on until '55.

And when he was retired from the University, and he was still a member of the Research Council, part time, they wanted him to stay on. And they reasoned that, because there was quite a debate in the, after the Blair Report came out, and particularly after he retired from the university, the oil companies wanted him to consult with them. And as a member of the Research Council, always before he could, anybody who wanted to consult with him could consult with him, and that was part of his job as a civil servant. But now the private companies that were really sort of big business people, they wanted to consult with him, and they didn't want to consult. They wanted to make sure that what they told him and revealed to him was private. And so the Research Council had to make



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a decision, a policy decision, and they decided that he should be allowed to do that, and sign contracts with them, and get paid a little fee. It wasn't much that he got, but it was still nice – gave him a bit of icing on the cake. And they reasoned that because they really wanted ... the whole point was for the bituminous, the tar sand – now I've forgotten I should have said this – but now were calling them oil sands, and I'll go back to that.

The oil sands, the province wanted the oil sands to become an asset, that was the whole rationale of the whole 30-year project, and so if they stopped the man who knew the most about them from talking to these people that wasn't very smart, that didn't promote the whole project. So they decided that they would waive, that that could be got around, which they did.

So starting in about 1960s, the consulting got more; he was still at the University. I think it got going more and more, but a little bit before that, he got consulted by the oil companies. And that was very interesting for him. And of course, the geologists were really into it. The geologists, the palaeontologists, they were big, they were all over the ... Dr Allan and Dr Warren and (AD: Charlie Stelck) Charlie Stelck was the big, ya Charlie Stelck very much so. Of course, I know Charlie, and they were buzzing around them like candy [laughs].

Anyway, after the Blair Report came out, and particularly the symposium, then of course the oil companies began to take a lot of interest in it. There was one group in Calgary. I think about 10 of them got together (I've forgotten the exact number), but that was one group. And then of course, Sun Oil of course was always interested and I've forgotten – I've recorded it somewhere but I've forgotten now – exactly who they were, but there were three or four. Sometimes he would talk to one company, and they were smaller companies. And that was very interesting. But of course the oil companies were gathering ... They took out leases. They were allowed to take out leases, under the legislation, that were announced at the symposium by Mr. Tanner, and they had, to take out a lease, they had to do a certain amount of consulting and work. And one of the best things that happened out of that period is that, of course, they were core drilling. They were drilling. They took out a lease and then they would drill to find out what the lease had in it. And Gordon, Charlie Stelck, and the other man, who was Charlie's great mentor, what was his name, Pemberton – George Pemberton told me that Dad insisted that a piece of all the cores ... you know when they drilled the cores they cut them lengthwise, and examined them lengthwise, because it was the gradation that was of great interest. And they, normally they just cut the core in a certain way, and then they chucked all the rest of it away, for mines and things like that. And the Research Council, largely because of my father, so Dr. Pemberton said, they were required to save all the bits of the core that they weren't using. And then it was quite funny because at first the Research Council stored them, and then they got too many. They couldn't cope. There was a big palaver about that.



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And in the end, I think it was the Conservation Board came, George (I can remember the first name) Govier - George Govier [Chair of Department of Chemical and Petroleum Engineering and Dean of Engineering, University of Alberta] was the head of the Conservation Board then, and he came to the rescue and said that they would set up facilities to keep all this core material. And so all the geologists, according to George Pemberton, that's been a huge source of information for the geologists and been very important. So the geological work that was set up in the 50s was of great importance. They also did work on a lot more studies of separation, at the Research Council. And there was a third prong – the geology, the separation, and what was the other one? Forgotten now. It might come to me. There were three ... there was three prongs for all the research that was connected with the leasing. Because of course the people who leased, they had to provide reports. I'm not sure who read the reports or that they were made public. Maybe after a certain amount

of time. But Dad was consulting during that. The thing that was, the thing quite evident was that the big companies, especially the big companies during that time, he said, were very interested. They knew that the oil sands were going to be big. But that's what I was going to talk about the oil sands. You see, and I must make this clear right now, they were always known as bituminous sands officially. They were known as tar sands colloquially. It was like a nickname – a loving nickname. But that's all it was, but after the Blair Report came out, and they knew that they could produce a crude oil because of ... refining techniques had so improved. Then, dad and Blair said they should no longer be called bituminous sands, or tar, because we now know they are a source of crude oil. And so that they were misnomers, calling them bituminous or tar sands. They were now oil sands, and so officially by the Research Council, by order of something or other. I've got it written down in one of my books. That's when they were officially reclassified as oil sands.

So you see, because I grew up in the period when they were tar sands, I automatically call them tar sands. And sometimes I call them oil sands. But that was when they were officially oil sands. And when AOSTRA was set up by Peter Lougheed in 1973, he officially called them oil sands because that was what AOSTRA, the Alberta Oil Sands Authority, that's right, Oil Sands Technology Research Authority. That's right, Alberta Oil Sands. So that's, they became oil sands then. But Dad said they all knew that there was oil up there and that there was potential. And my father always said that it was going to be big when it happens, but not until it gets into it. But they were all ... None of them wanted to start it. They were all very nervous, and my father categorized it by saying that they all knew it was going to happen by not yet, please. That was sort of their attitude, you know, we're not quite certain yet.

AD: Did your Father have any sense of how big it was going to be, because I mean, you know, in the late 70s was when the push happened, and of course he died in '66. Do you think he had a sense of what it would become?



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MCS: Well he has said – I've got a letter, a published letter in which he says when it happens, well, it will be big ... because they knew. The reserves, the estimate of the reserves have just gone up exponentially. I mean back in the early days, they were quite big, but they've got bigger and bigger and bigger as they've got better ways of estimating. After, when the legislation saying how they could take out leases in 1951, then the oil companies began to take out leases.

Before that, they only knew what the outcroppings, and my Father and Ells went up all the tributaries and looked at everything that was outcropping, and both of them did that, but Ells particularly made very good maps, which my Father always acknowledged. And but now they can drill way back, I mean two or three miles, if not further from the river, and the tributaries. And now, they can test all over the place. So the estimates of the amount of the oil sands got greater and greater and greater. And then they went way up, and you know, in the area around Slave Lake and Peace River. So all over the place they found oil sands.

AD: Would it be fair to say if the government over this crucial period of thirty to forty years had not subsidized extensively the research that the exploitation of the oil sands couldn't ...

MCS: Oh, I would say without doubt. You mean starting in 1920. The Alberta government deserves huge credit; all different colours. It started in '20 with the Farmers [United Farmers of Alberta] or whoever was in then, I've forgotten. And then the Social Credit got in, which is more the period I remember, because I knew the Tanner children, and I knew ... We had three ministers' children in our class at school, in high school. So, in fact four, and the daughter of one of the deputy ministers as well. So when I grew up in high school, and even before that. So I knew all about the Social Credit government, and I mean back in Aberhart, my aunt taught in the same school as Aberhart had been principal of, at Crescent Heights. But as everybody was very scared at first, with this new government. My parents didn't have any money, but what they did have they sent to Vancouver, but it came back. My Father said that during the 40s and 50s they settled to being a good government, with a small "c," really, but it was a conservative government. And he had no trouble with it then politically, and anyway he wasn't a political animal. But, oh, without doubt. The Social Credit people took up the research without any trouble, excepting of course during the Depression. Between 1932 and 42, there was no research council, and that was when my father was taken into the University as a professor. Tory made sure he had the title of Professor of Research and that he had tenure, which was very good of him, because there were only three people left in the Research Council when it went out of business. Stansfield, my father, and of course I know his name perfectly well and it's gone. He was the secretary. And they were retained. Everybody else had lost their job. But it was reinstated in 1942 under the social credit government, and that's when N.E. Tanner was made head



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of the Research Council. He was head of the board, as it were. And then that carried on and Lougheed said ... Well, the research stopped, the research depended considerably on oil sands work, and after GCOS got built. Because the government said, well, well and I understand it [glitch in recording] lost.

I went to England in 1961, well '59 really to work, and then I got married in 61. And so after that all I got was letters. I heard about it through my Father's letters, most of which I kept, fortunately. Not all of them, but a lot of them. And as I understand it, the government said well now it's GCOS, and they're going to start making money from it so we don't need to, we don't have to finance it, so it drew back quite a lot at that point. However, it became clear, obviously to Peter Lougheed, that's when he set up the AOSTRA, and I guess more research got going in the Research Council and in Calgary, too, for this whole industry that was growing up. So really, I think you might say that my Father got drawn into the company. The GCOS was incorporated in 1954 and, at the same time, the company that, and I've forgotten its name now, but it became Syncrude in the end. So those were the roots of the two. And isn't it funny that I've forgotten the name of that company in Calgary. They didn't know much about it, and my father and the Research Council were very wary of it, because they were very secretive. They wouldn't say anything. In fact, it was a lot of American money that was backing it, and they didn't want ... you know, they were in competition as it were, and so they ... It got going sort of independently.

By 1954, dad was talking to GCOS and its backers, Ryan Company, and the leader was Champion [Lloyd R., a financier and promoter of Oil Sands Ltd.], but he just got shares or something in it. So after that, he was really consulting with GCOS mostly. And with them, I mean he consulted in all sorts of ways, and so I didn't hear much about anything else after that. It was all GCOS. And in 1958, they actually started paying him. Before that they didn't, well you know, they couldn't afford to pay him anything. And Tom Clark was the guy heading that. But starting in 1958 they paid ... I think they paid him \$200 a month for ... he was sort of guaranteed \$200 a month, I don't know for how many days, for very little or a lot (AD: A retainer.) A retainer, that's all it was. But he didn't, he wasn't in it for money.

By 1954 he was talking a lot to Tom Clarke [The first GCOS managing director] and his backers, [MCS – requested that the following be cut, I assume, because of a memory lapse – “who were Finning, Ryan Company. He never talked to Champion – he was out of it – but it was Finning Company, and he got to know them and they all liked each other very much]. Then in 1958, they had enough money so that they could pay him, and they gave him this little retainer, which he got until he died. I don't know whether they upped it. I said it just put some icing on the cake. In fact, that's not strictly true because I know in 1954, when he realized he was retiring, he was very worried. Because his pension that he'd paid into ... so many people were caught after the war. The inflation



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reduced it to very little, and he was pretty worried about how they were going to live in any sort of standard – the standard to which they were accustomed, which was very simple. My family didn't live extravagantly in any way. For instance, a lot of my friends, when they finished university, their parents sent them over to Europe for a summer to travel. Well I worked for 10 years before I (laughs) ad enough money to do that, because my parents couldn't, weren't in that bracket at all. And so he was very worried, I was shocked when I realized how – in fact, my Father was almost embittered in 1952 when he was looking... we drove across Canada together. They were visiting in the east, and I came back, drove back with him. Yeah, the first year I worked with Blair, I drove back with him, and that's when I found out how worried Dad was about his finances. So he was retained by the Research Council and he was given a little retainer by GCOS, and all the oil companies that talked to him gave him a little bit but I don't think it was much. In the end, they were able to live OK. But his consulting didn't bring him in a lot of money, but it did mean that they could do a little bit. They did travel out to visit my sister when she did a teaching exchange with New Zealand. So they went out to see New Zealand. They were able to do that.

So anyway, the research really, he began to be drawn more and more into GCOS, and he was there when they had the first turning of the sod. And then of course Suncor, well Sun Oil, got drawn in, and he used to go down to Philadelphia. Was it Philadelphia? I've forgotten now. I know perfectly well. Where they were headed, anyway, and in New York. There was a research place there. And two things happened that were quite nice with Sun Oil. We thought, or so my brother told me, because I hadn't heard this, but my brother told me. He lived in Virginia at that point, he was working for Lummis, and so Father used to stop and see him when he was in the east. And apparently, J. Howard Pugh, who was very interested in oil sands – always had been. The Pughs, Sun Oil, even in 1942 and 44, they were interested in oils sands, kept an eye on it. And he had said, "I hate flying, and I don't like flying. And if Dr. Clark doesn't like flying either, he must be able to travel any way he wants to get out here. If he wants to come by train, he must be paid from the time he leaves his house. By train, anyway he wants, because I don't want him to suffer when I have to when flying" (laughs). Which I thought was very nice. My father didn't mind flying, and he didn't want to take train travel across Canada to the States. And the other thing they did, when he died, and of course, Sun Oil was still involved, but they didn't call it Suncor then. When he died, one of the directors came out to see my

Mother. She was living – they had joint houses – duplexes. And he came out to find out if Mrs. Clark was OK. Would she have enough money, in her, as a widow? And my aunt was able to say yes, she was OK, because she was. So my aunt said yes, she's perfectly all right. But the inquiry, I thought, was very gracious.

AD: So Mary, when did you decide you wanted to do a biography of your father and set some of this down? And do you want to tell me about that process?



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MCS: Well, it hadn't occurred to me until I was taken to the University Archives, and this would be 1977 - I had a friend, an old, old school friend, from childhood, who was doing volunteer archival work at the University of Alberta. She also did it at the City Archives, too, incidentally. But she worked at both archives. And she knew Jim ... Jim Parker, who was the Archivist there, had said to Mary, because he asked her a question about Dr. Clark, because he had been reading through the Research Council files, and he got interested in Dr. Clark's letters, because he had himself worked up at Ft. Chip, as I understand it, and he found my father's letters very interesting. And so he said to Mary Campbell, who was Dr. Warren's daughter, the geologist's daughter, did she know anything about the Clark family? And Mary said, "Well, of course I do. I mean, I knew them all but particularly Mary, who (we went all through school together) and she's living in England at the moment, but she's going to come over before long, I happen to know." So he said, "Well, I'd like to meet her and talk to her." So I was taken over to the Archive by Mary Campbell and introduced to Jim Parker. And he talked to me about, said very complimentary things about my Father's letters that he'd been reading. And he said, "Have you ever thought of publishing any of these?" And I said, "I hadn't actually, but I certainly understand when you say how interesting they are, because he wrote a family letter every week. He always wrote to his mother, every week." And then when my grandmother died, but before she died, but both my older brothers and sister had been away; my sister during the war. She was teaching in the country. He used to slip in a carbon copy, so they got carbon copies, and then anybody that was away at the time was given a carbon copy of the "Dear Mother" letter, and so my brother and sister said would you continue writing the letters to "Dear Family" or whatever you want. So he did that, and so whenever I went away I got a copy. I don't think I got a copy when my grandmother was still alive and I was still at home. She died while I was still a young person, in other words. So when I went east one summer, I got a "Dear Family," "Dear," I think he called it, "Dear Family" letter. And so that continued until he died, really, and alas I didn't keep all the letters, but after I got married I kept them all. So that was too bad because there were some critical letters, when I was working for Blair, that I should have kept.

So, anyway, when I went back home and got thinking about it, I thought, you know, I do understand this, because my family ... and Jim was very interested to hear that I had all these family letters. And in fact, I was persuaded to give him the originals (I've got copies), and in fact I think I got paid a little bit of money for it, which helped me allay my expenses, of traveling. And so, in the end, starting in 1977, I went back to England, and I began; I dug out all these letters and read them all over. And, in the meantime, Mary Campbell was set to pull out all the letters from Karl Clark in all the Mining Engineering [Department], but, particularly, the Research Council files, which Scotty - my father's old lab tech - who was now a more important person. I've forgotten what he did but anyway, when he retired he made sure that all the Research Council files were sent, and the Mining



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Engineering but particularly the Research Council files, were lodged in the Archives, which I think were set up in 1968 through the influence of Dr. Johns. And so they were all there. So Mary was set to go over all these files, and she pulled out all the letters written by my father. And so, in 1981, it was agreed – I went over in January 1981 for five weeks and I went to Toronto first and I went out to see Sid Blair. And that was the last time I saw him, because I think it was 1981 he died. Anyway, that was the last time I saw him, and we talked tar sands all the time. So during that five-week period, I read over all these letters that Mary ... and I had to sort out which ... you know, what were important. And I took copies, I think, of all these. I sorted them all out the best I could, and I must have taken copies home and read them back in England. Of course, I had family. I couldn't leave for more than that time.

The problem I had was to understand these letters, and I had to wrack my memory and think what could I remember. And then I had to make sure that my memories were correct. I had my memories to go on but then I had to have paperwork that substantiated them, that made them credible. What's the word I want? That made them, gave them credibility. So, if I was going to publish these letters, then, I realized that I had to write a foreword that tied them all together. I had the advantage of remembering these times and remembering the people, because, as I said, I knew the Balls, Max Ball. I didn't know Fitzsimmons, but I'd heard lots. You know, I knew about Fitzsimmons. I think my brother went up, and I think he worked a summer in Fitzsimmons' plant. I'm not sure about that, but Malcolm certainly went north for a summer. Was it before he started university? I think perhaps it was; just before he started university. It was during the war. He went to university for two years, and then he went off to the Navy. And, but I sure had make sure my memories were valid. Validity was the word that I was trying to get. So that was the, that was the big thing, and so I sat down, and I read everything, and I got out, finally, the source of all validity was the Research Council, was the Research Council annual reports and all the papers that were published, documented by the Research Council. Now how did I get a hold of those? Were they at the Research Council? I guess they had copies in the archives, the U of A archives. And so I found out that that was where I could substantiate everything; because all my father's papers were there. It was a huge task of understanding [laughs] and scraping memories out of my mind. But they were pretty good. But it was setting down and understanding. Have to understand how the process worked. I had to understand the geology, and that's when I first met Charlie Stelck. I'd heard about Charlie Stelck.

And in fact I knew his mother and one of his sisters. But he very kindly came over; I asked if he could come over and talk to me and we sat down. And that's when I first heard about Lake Agassiz. He was the one that told me about that and how that tied in with the soil work that my father was doing. So then I talked to various other people. People were very kind. I only had to say who I was,



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and they were very kind. They all said "come and see me." One of them was Mr. Somerville, who was Mr. N.E. Tanner's deputy minister. He had sort of two deputy ministers, and Mr. Somerville was the one who had to do with the oil sands. Did I talk to George Govier in that period? I did go and see him later on, when he was older about the ERCB or the Conservation Board. But anyway, people were very good. I was quite humbled. I mean, they only talked to me because of my Father, of course, but the fact that they were so pleased to talk to me did represent the respect that my Father had, which I benefited from, and I was always aware of that. So I just worked my way through all this, all these letters and Research Council papers and all their annual reports. So it was a huge job.

And the other thing I did was I got in touch with Gordon Hodgson in Calgary, who was by then working for the Arctic Institute of North America, I think it was called. He had been in the oil sands, worked with my Dad in the oil sands, until Dad retired. And then Gordon became the head of the oils sands research sort of little section, and Dad became his sort of second in command. But they worked together, very closely, until my Dad died, and then Gordon left the Council not long after. After Dad died, I think it was then the Research Council funding withdrew, because the government decided that now the oil sands were going to be taken over by GCOS, and there wasn't much work for him, for Gordon to do any more. Then Gordon got drawn into NASA's work, in examining the moon dust. So he was down in the south with NASA for a number of years. I mean, not a huge number of years. When the moon dust research began to finish off, all the people, many of the people he worked with, because they examined the moon dust because they all had very finely honed skills at examining small particles which Gordon was very good at, because he'd done all this research in the oil sands. And he was a chemist. He was a proper chemist.

My Dad got drawn into being an engineer, of course when he became, started work with the Mining Engineering department. He was accepted as an engineer by the Alberta professional engineers. He was an engineer as well as a chemist and had the ability to do that. But Gordon was drawn into really the excessively fine analysis work, and so when that ran down they all went into environmental work. That was the natural thing for them because they weren't the band totting types. They were the ones that were absolutely examining what all these pollutants were. And so he was in Calgary doing this, and I went down and talked to him, and he was very interested. He didn't know the history of it, but he knew what happened from 1951 onwards. And, when I finally got it all written down, which was an enormous job, which I did in Sheffield [AD: England, her home] on our dining-room table, which was covered with papers. And I'm not really a writer. But anyway, I got it all written down, and took it over. And he said to me, when I took it over, "My God Mary, you've



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done a PhD thesis" [laughs]. So anyway, then he helped me get it put on a computer, taught me how to use his computer. And, by then, Blair had come in to finance, well had shown an interest, and I was really working for Alberta ... I had a little contract that was drawn up between Parker and Alberta Culture, in which Karl Betke was sort of the historian and {Frits] Pannekoek was the head [AD: head of the Historic Sites Service and responsible for research and publications]. But we weren't getting anywhere, and Parker wasn't pushing it. He had ideas, but he wasn't doing anything. And something I'd said in a Christmas card to Robin - he and I exchanged Christmas cards. I don't know how that got going but we did.

AD: Is this Bob Blair?

MCS: Yah, Bob Blair. who was known as Robin Blair in his childhood. And anyway, I had this little contract that helped pay my way to go and work with Gordon during that summer to put it all on a computer, which helped pay for my trip over and my expenses – just. But that was great. And then Gordon Hodgson was interested in this, and of course Gordon Hodgson was a highly regarded scientist. There's no question about that. He had a reputation. And finally he went up to Alberta Culture, and sort of pounded on the desk, and said, "Look, what are you doing about this?" And that helped. I guess he must have seen Pannekoek. He went to Alberta Culture, which must have been Pannekoek at that time, and Blair being Blair, he said, Bob said, "Well when is it going to be done? Are you interested in this or are you not? And is it going to get done?" And Pannekoek said, "Well I guess we can if we've got help doing it." So Blair must have said, "Well I'll help." He'd do it through his foundation. I don't know much about it, actually. Pannekoek is the one who'd remember that exchange. I worked with Carl Betke, but they did drag their feet. They had my manuscript by about 1984. It wasn't until 1989. But that's how finally it got going. It wasn't until Blair got it going.

AD: And it was published by the University of Alberta.

MCS: It was subjected, what's the word, that's not it ... submitted to the U of A Press, because I'd been in touch with – what was her name, that was the head of the U of A Press for so long [AD: Norma Gutteridge]. And we'd submitted it – Parker did this. He gave it to the head of the U of A Press, and I gave it to a friend of mine called Jack Margesson, who was a professor of literature, of English, at Cambridge as well as in the University of Toronto. And they both read them, and they gave us a very positive review. That was the first thing. I'd forgotten all about that. That was a very positive thing. They both said these letters are worth publishing. So that was one of the big steps forwards.



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And, then, I got my introduction together, which was about 80 pages. It was quite a long introduction when it was finally published. And they were submitted to the U of A Press, and they said, I had to have a proper historian attached to it. I wasn't, I didn't have the credibility. So then Carl Betke undertook to do it, and he kinda rewrote the introduction. Full of interest. I was keeping Bob Blair abreast of what was happening at this point, and Betke worked on it all one summer, and when we got it, I read it and I thought well, OK. When my husband saw it; actually, now I should say this. My husband was acting as my editor. He's very good at that. And when he read it, he nearly hit the roof. He said, "They've turned it into a boring PhD thesis." I don't think he'd ever read a PhD thesis, but he wasn't very sympathetic to academics. He was a chartered accountant [laughs]. But he was quite good at writing, because, you know, he wrote business letters without any trouble. That was 1988, finally. And so I went back that summer, this is 1988. So Pannekoek must have sent it over.

And it took them a long time to do it. I bet he was mad that he had to do it, actually; now I think about it. And we kept saying, "When are you sending it over, when are you sending it over." Finally, it came. And when my husband saw it, he nearly had a fit because we had worked on it together. We had edited and edited, after we'd got it on the computer. And, you know, it had gone over several reincarnations in a way. And so that spring, he and I set about to rewrite it and get back the interesting bits and take out the boring, you know, historical things that we didn't think added anything to it. And we resubmitted it, and we sent it back to Carl Betke just before – and I remember this well, because it was just before we were going out to our summer place in the north. We have a little flat there, and my sister was coming over, had come over, and the week before we flew out I had to say to Carl Betke – and Mike and I, we got up every morning at 6 o'clock in the morning to work over the letters that we're passing, and I finally had to say to Carl Betke, "It's got to be my way or not at all." So I had to put my head on the block, and Carl Betke said, "I don't think it will pass, Mary," you know, you're cutting your head off. Well he didn't use that expression, but that's what he meant.

So it was resubmitted to the press, the U of A Press, and I said to – I keep forgetting her name. It's on the tip of my tongue. There's no point in asking historians about this, although they might have a little information. The person you want to talk to - and I gave them the name of, I said, I just said who he was the head of the Conservation Board [George Govier], or Charlie Stelck. I said, because I remember saying to ... Norma Gutteridge, Norma Gutteridge is her name. Norma. I said to Norma, "Well, maybe you shouldn't send it to ..." I gave her another name, but I can't remember who that was, "Maybe Charlie's not as interested as he once was." It was because Charlie's son had died. He'd been killed in a darn drowning accident, and of course he was involved in that. But I had an idea. Because I saw Charlie at church (we went to the same church). And so that's who she went to. So



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anyway, I don't know what happened but it was passed, and they agreed to publish it. And I saw Charlie several weeks later, and he said to me – first thing he said – “Well, Mary, I did the best I could for you. I hope it was OK.” So, it was. That's right, he said to me, “One of the questions they asked me particularly, they said, ‘Well, she's Dr. Clark's daughter. Has she got a bias?’” And he said, “Well, she's his daughter. Of course, she must have a bias, but it doesn't show in what she's written.” That was the kingpin. So I owe Charlie an awful lot [laughs].

AD And then you were motivated to do the 19 ... (MCS: the next book.) The next book.

MCS: Well I was exhausted when that was over. And I have to tell you when I went out to our holiday in the north there, I was exhausted. I had to go to bed for about two days. I didn't want to see anybody. I didn't want to talk to anybody. And my sister was there, and she took umbrage over that. She was very cross about it. I don't think she knew what I'd been going through, because we didn't broadcast it. Mike and I just got up early and we worked and worked over this letter that we had to send them, and I was in a state of near collapse. And anyway, it was done, and we had this wonderful publication. You know, we promoted it. And people were interested in it because there were enough people alive who still remembered it. And I mean, I remember Norma Gutteridge telling me that people came into her office, who were highly regarded – I've forgotten their names now – and they said, “Where is this book? I want a copy.” So they sold quite a lot. Well, they had to do a second printing, but in the end they didn't sell it all. And I've got copies. So I didn't do anything. The last thing I wanted to do ... So I didn't think I took much notice. See that was 1989. Well, all this excitement – I remember now – about Klein and GCOS and Suncor and – what's his name? – that were very much involved in promoting, in the oil sands stuff in the '90s.

I just wasn't interested. The last thing I wanted to deal with was oil sands. I was exhausted. But about '98 or so, I remember, suddenly it came into my head, because Gordon Hobson was always keen that I should do a second book. Straightaway he kept saying, “Come on Mary. You've got to tell the rest of the story.” But I wasn't interested. I'd had enough of oil sands. Anyway, it crept into my head, Well maybe, maybe I should do what Gordon wanted me to do. Perhaps I could do it. Anyway, I pondered on that for about a year. And something intervened which was very interesting. I got drawn into something at the museum actually, which I won't go into. But that occupied me for a year, and I was fascinated with it all. And after that was over, I thought, Yes, I'm going to do this. So then I began to get in touch with people - there were still a lot of people I could talk to. And I talked to all the people involved – the people involved in government – I've listed them all in the book – and I even got to talk with Mr. Paulson, at Can-Amara. And, who else did I talk to? And Tom Clark, and I think I talked to Clark. No I did Tom Clark when I was still doing the first book... but



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I had all the notes. Since I've published, all sorts of other people I realize I could have talked to that would have been interesting. Because by then, you see, there were a lot of people that had worked for Suncor. And Bob Bowman; I talked to Bob Bowman. He was very much ... Of course, by then he'd been the head of the Research Council. And Maurice Carrigy – I talked with

Him; all the people who'd been around after the time of this book. So it was lovely. I talked to so many people, and they were all so interested. Nobody turned me down. And I had to transcribe everything they told me. You know all about that. And it was absolutely wonderful. But it was a bit disappointing, because I turned it over to the U of A Press and they turned it down. Well, they said, "Well if you can get enough money - so many thousands of dollars. We'll publish." When I did ... Oh I did work through the person at what Alberta Culture had become. I've forgotten. I had a very good relationship with one of the girls at St. Stephen's College [AD: likely Monika McNabb who was in charge of the Alberta Historical Resources Foundation grants program]. And that's when I met the person – now what was his name? Of course, I've got them all written down. I know perfectly well. He's left now. I think he's in Ottawa. I [indecipherable] my letters together and he read them all over [AD: Michael Payne]. Michael Payne, of course, Head of research. And Michael Payne and I, we were good friends, and he read them all over and said, "Yes, this is worth publishing Mary. I think it's a good thing to do." So I had to do the whole thing over again. I got the letters, and I had to verify them. But when I came to publish it, U of A wouldn't touch it unless I got them some money. The girl I spoke to at St. Stephen's College, she said, "I think that's terrible because we give them funds for doing this."

Well, all I could think was, well, they'd had enough of me because I did have a little shaky relationship with the press. Because they kept trying to edit out things that I didn't think should be edited out. Norma Gutteridge - one time I used the word lab plant. Well, "What's a lab plant," she said. "There's no such thing as a lab plant." Well, I knew damn well there was, but she wasn't to be told. You know, we argued about things like that. She wanted to change things, and I didn't think she had much credibility, as far as a scientist went. She might have known all about publishing, and maybe editing, but she didn't know this sort of thing. Anyway, I fooled her, because I found a picture of a lab plant, published in that book. Lab plant, it says.

AD: So basically ...

MCS: I think they didn't want to do it. I think she didn't want to do it.



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AD: Self published.

MCS: Well no, then, I made a big mistake. I should have gone down to Calgary and talked to the University of Calgary Press. And I regret that. Because Pannekoek was there, and he would have known, you know, a bit about the first book. And I might have had a bit more success. Anyway, it so happened that one of the people who worked with my Dad. Now I've forgotten his name. I must tell you his name. Because he was the one that published it in the end. Oh well, I won't spend time looking for it now. I know perfectly well. It will come to me. Anyway, he had worked with my Dad, and when I was talking to Maurice Carrigy, he kept saying, "Talk to Brian Hitchin. You've got to talk to Brian Hitchin. He knows about this." So I got in touch with Brian. Well, Maurice recommended that I send my, my chapter on geology to Brian Hitchin, because Brian Hitchin was at the Research Council. And Brian wrote back, "I haven't got time to do it. I'm too busy doing something else," which I thought was a bit off-putting. But he said, "I might be interested in publishing it, because I'm into publishing."

AD: I think the important thing is that they're pioneering books about a new technology (MCS: Yah). And I think that they're there for the public to ...

MCS: Well, I'm glad it's done. I don't think it sold many copies; he's got them. And I'm curious to know ... In fact, I must get in touch with him. And I hope he's still alive. He was interested in the subject, and he was wanting to do it, and he'd done things for the Research Council before. And, no, the geological society, and then all their members just bought things. He didn't know anything about, about ... (AD: Actual publishing) Yah, no. Then, in the end, I had to put on the big launch thing, because he didn't know how to do it. I paid for that myself. He did give me a royalty on anything he sold, which wasn't bad. I mean, it was quite a good royalty. Better than the U of A gave me. But he didn't know how to get book reviews.

You asked me if there was anything more I wanted to say about my Father. I think that the thing that I would describe him as universally respected. I don't think there was, excepting for Ells – Sidney Ells hated him, almost, until the day he died. He did come and see him after he retired. I remember Dad coming home at lunch and saying, "Well, you'll never know who came to see me today, as nice as pie. Sidney Ells." And my mother said, "What," because my mother had heard all about the problems over the years. And he said, "Well, he's retired now and sorry he's out of it," said Dad. My Dad kept in touch with what was going on at Bitumont. He wrote to him, and Sidney only wrote asking for information, and my Dad was so good to him. But when this letter I saw, that Jim Parker showed me, that had to do with Suncor, I mean it just showed. It just showed he still hated Dad. He resented bitterly what had happened.



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AD: Professional jealousy.

MCS: It was professional jealousy, and it was so sad, because Dad wasn't interested in crowns. He was only interested, give him a job to do, and even before that happened he was fascinated with the oil thing and colloidal chemistry and how it evolved with the oil sands. And, you know, people wrote to him – I published them in this book. People wrote with their ideas, and he always said, "Well, I keep it all to myself." They trusted that he wouldn't pinch their idea. He was a man of enormous integrity, personal and professional integrity. But, on the other hand, I have to pay tribute to Dr. Tory, because I think, from what I've read and heard, that it was Dr. Tory who perceived that the oil sands, well the tar sands, the bituminous sands, as they were then, were an entirely new industry.

Just as you've said. It was something entirely new. You couldn't apply old techniques that had been developed in England and Europe over the years, like in the mining engineering and the milling thing. This was something new, because CMNS, Canadian Mining and Smelting, had always been interested, but they didn't have the answers. They thought they did at one time, but the work all came to nothing. And it was Tory that thought - this is something entirely new that's got to be developed and Alberta's going to do it. And we'll set up a research council, and don't forget the Alberta Research Council was the very first research council that was set up. The National Research Council wasn't set up until 1929. Correct me if I've got the dates wrong. I bet you know all this. Was it Rutherford who was premier in those days. I mean I knew the Rutherfords, I knew his daughter ... their daughter. Mrs. McQuaig was a friend of ours, and I knew their children. And so I think that he was such a mover in that way. And then, of course, the other great person was Ernest Manning and J. Howard Pugh. They hit it off like that. And I've been – Blair said this and I've been told by other people – that. You know, the fact that those two men, they had the same sort of beliefs. They were both religious people who were dedicated Christians. They lived by Christian principles, and the two of them jelled. And because Manning promoted GCOS and Pugh was part of that, that was a great combination. So there was Tory, and there was my Father, who was a man of great integrity, there was Manning, Ernest Manning. You know, he was a decent person. He ran the government as honestly as any government can be run. And then Pew.

So it was blessed to have these people of great integrity get involved in it. And I think that people like the one I mentioned who was president of Sun Oil, they were fine people, too. There were a lot of really fine people. Bob Bowman was a fine person. And Gordon Hodgson – good Presbyterian – and it was very interesting when I think of it.



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My Dad apparently reported to the Baptist church here – the little Strathcona one, just around the corner from here, which I grew up in – that he was a scientist and he didn't believe in all that stuff, but he still wanted his children to have a good Christian education. My mother was the one that was very religious. Her father was the one that was a very big sort of promoter of Christian principles. So I think that the oil sands had a lot of fine people involved in it, and I think they appreciated my Dad and my Dad recognized this. Oh yes, N.E. Tanner was another one. Good Mormon, and he was a big person in the oil sands story. So there is; it was a really lovely story in lots of ways, and I'm glad I was able to have a chance to ... I don't think this book will be read much, but it's in the record, and I think that's good. So I'm pleased about that.

AD: Thank you so much for speaking to me about this.

MCS: Well I don't ... I think it's a lot of rubbish perhaps, but anyway I hope you can sort it out.



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