



Forty-four years later

To commemorate the discovery of Devonian oil at Imperial Leduc No. 1, February 13, 1947, Aubrey Kerr submits another excerpt from his book, LEDUC. This episode describes the events leading up to that memorable day.

HOW CAN ONE VISUALIZE THE PRIMITIVE CONDITIONS OF THOSE DAYS ... NARROW RUTTED DIRT ROADS, PARTY PHONE LINES, CARS WITH BLANKETS OVER THEIR HOODS, AND ABOVE ALL, THE "no oil" mind - set prevalent in the faltering industry of 1946? The Alberta Society of Petroleum Geologists boasted less than 100 members, many of them not even earth scientists ... Canada was considered a foreign assignment ... The only oilfield supply stores were in Okotoks.

No wonder Walker Taylor, Imperial Oil's Western Producing Manager, was cautious that frosty February afternoon, "it is much too early in the life of the well to make any statements of its production abilities". Even though that light gravity crude was spewing out of the flare line, it was difficult to believe that the drought had ended and a whole new era was beginning, but how many gathered for the occasion realized what it would ultimately mean?

Sometime in late September 1946, Jim Ziegler, Heiland's seismic party chief was confirming a vague anomaly uncovered earlier in the year by a Carter Crew. Imperial Oil's Division Geophysicist, Ray Walters called him in to 606 - 2nd Street S.W. to meet with Jack Webb, Exploration Manager. They made the right recommendations for the wrong reasons, because no one dreamed what this hickey would really mean. As one Carter senior geologist was reported to have said, "who ever heard of finding oil in a coral reef?"

Don Hunter, Edmonton oil executive, remembers when he was just a school boy driving over from Provost to a spot west of Leduc with his dad in October. They were to meet with Walt Dingle, Imperial's surveyor and Mike Turta the farmer on whose land the hole would be located (5-22-50-26W4M). Vern had earned his title of "Dry

The next
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will feature
Roland Priddle,
Chairman,
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Wednesday, December 11
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Noon

*Further details will follow. To register,
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Hole" because he was just finishing up his umpteenth abandonment at Provost. "We knew darn well if we got up right near Edmonton we'd never find anything". It was for this reason that Vern agreed with Mike Turta that the access road should merely go through the farm yard making it easier to move the rig out after abandoning this 7000 ft strat test.

A standard derrick (such as the one now gracing the Devon skyline and erected with Don's leadership in the summer of 1990) was brought in and bolted girt by girt.

Winter had started to set in with a vengeance delaying rig-up. The stand pipe froze up but fortunately

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Executive Comment

THE PETROLEUM HISTORY SOCIETY HAS, AS ONE OF ITS PRIMARY OBJECTIVES, THE ESTABLISHMENT AND OPERATION OF A CENTRE FOR PETROLEUM INDUSTRY HISTORY. DURING THE PAST summer, the Society formally presented a proposal to the Turner Valley Gas Plant Advisory Board that such a Centre be established as part of the Hell's Half Acre Interpretive Centre at Turner Valley.

The proposed Centre for Petroleum Industry History would serve the following purposes:

a) The manager of the proposed Centre would be responsible for providing authoritative documentation and interpretation of artifacts maintained at Hells' Half Acre.

b) The Centre would further research and study into the history of Canada's petroleum industry through:

1. Taking advantage of Hell's Half Acre's unique position as a focal point for individuals with an interest in Canadian petroleum history, to establish and to maintain contacts with professional and amateur historians and with old-timers who had firsthand experience in early oil field operations.

2. Training knowledgeable personnel to conduct tours of the site and offering presentations on the historical significance of the facility (or of other aspects of Canadian petroleum history) to tour groups.

3. Maintaining an information centre;

4. Publishing relevant materials in appropriate journals and periodicals;

5. Applying for appropriate grants and funds to undertake specific research projects; and

6. Where possible, offering support to university students specializing in Canadian petroleum history through summer employment and participation in research projects.

The Petroleum History Society believes this proposal would not duplicate the work of such existing facilities as the Glenbow and Provincial Archives or of the academic community. It would serve as an interface between institutions and the Hell's Half Acre facility.

The Centre would have an academic function, but would also help provide credibility and authoritative credentials to the Hell's Half Acre facility. Being located at the Turner Valley facility would provide unique access to information and individuals. The Centre would provide an overview perspective to the Canadian petroleum industry and would support the efforts of regionally focused interpretive centres, such as those at Petrolia, Ontario and Fort MacMurray. Also, the Centre would support other related projects as they develop, such as The Petroleum History Society's Oral History Project.

The Turner Valley Oilfield Society Board of Directors is currently studying the proposal and have already identified several areas requiring further discussion. As Larry Clausen, a Director of The Turner Valley Oilfield Society, recently commented about our proposal: "... I do believe we are on the right path and based on the many favourable comments about our joint venture, success should be enjoyed by all".

*W. R. S. McLellan,
President*

In Perspective

AMONG THE PLANET'S GEOLOGICAL TREASURES, THERE IS NONE GREATER THAN OIL. SINCE THIS CONTINENT'S FIRST OIL WELL went on production in southeastern Ontario in 1858, oil has become the world's biggest business.

During the late 19th century, oil's primary use was for kerosene for lighting. But after the First World War, it became important as a transportation fuel. In his best-selling history of the petroleum industry, *The Prize*, Daniel Yergin describes the importance of oil.

Especially through the automobile, it has shaped our lives and the cities and towns we live in. It provides the transportation and heating fuels which enable huge cities to exist. It fuels factories. It fertilizes agriculture and enables farm machinery to operate. It provides plastics and chemicals which "are the bricks and mortar of contemporary civilization, a civilization that would collapse if the world's oil wells suddenly went dry."

How much is the world's oil worth? Last year, oil companies around the world produced nearly 24 billion barrels of the stuff. Based on world oil prices, that was worth about \$675 billion - or about the same as the entire Gross National Product of Canada.

Here are a few other ways to look at the value of last year's world oil production.

Suppose you got paid for that oil in loonies. You'd have enough loonies to stretch around the world's equator 44 times.

Or let's compare its worth to that of gold. The cash value of last year's oil production was about 1900 times more valuable than the world's gold production.

And if you took payment for that oil in gold instead of loonies, the gold's weight could sink 39,000 Spanish galleons.

Yes, oil is treasure indeed.

Leduc

(Continued from page 1)

live steam from the boiler house provided "19 1/2 lb heat". The well spudded November 20th. The Cameron single ram mechanical blow-out preventer which took three men to wheel open and shut (no hydraulics!) was described by Fin Lineham, one of the drillers... "There was only one set of rams with two bleed off lines, one running out to the sump and the other over to the boiler house. The BOP would sand up and had to be cleaned out every once in a while. There were no ERCB regulations regarding installation let alone testing schedules.

One of the main targets was the Lower Cretaceous sand. The location was believed by Lewis G. Weeks, Jersey's guru, to be along a hinge line, the fancied locus of thick sand deposition. Early in January 1947 the well drill stem tested 4MM cf/d of wet gas. The Weeks faction must have been jubilant. It was at this time (through Weeks' influence?) a down dip step-out was planned. The results from that follow-up well (Imperial Leduc No. 2) would far over-shadow anything that would happen at No. 1.

Drilling resumed and it wasn't long until the anhydrite and red beds (Darling Silt later termed Graminia) showed up. George Tosh, one of the drillers, recalls McClintock one of the well-sitters, a veteran of Saskatchewan lithologic columns, throwing his hands up. "We hit these red beds. And ... he came out and looked ... 'God, another Saskatchewan, yep, it won't be any good'" ... George McClintock had mistaken this zone for deep

Devonian in Saskatchewan below which there would be no hope.

But despair quickly changed to joy when Vern described what happened next ... "I can remember that night. He (George) was looking at the samples, 'gosh it's good porosity looks like oil staining it has a drilling break ... let's core' ... well I sure agreed with that ... I was pretty disappointed, there was no oil bleeding out of the core but there was good porosity" ... The D-2 test confirmed the importance of this brand new zone when oil almost flowed to the surface... Vern remembers further ... "Just to keep on coring and testing and so we would take 20 ft of core and test again ... everybody started to get scared." "We had maybe a 100 ft opened up, and (it) would make a good well."

Steve Cosburn, another of the well-site geologists, gives his version of the discovery ... "Late one cold afternoon at 5029 ft, drilling speeded up and I gave orders to circulate till I had a look at the bit cuttings causing the change ... showed porous dolomite with clean yellowish fresh oil in the pores ... as I dashed into Leduc looking for the tester, I met Jim Tod, our mud man, sitting in the writing room of the Leduc Hotel. I told him we were going to test. Jim looked at me and said: 'For Christ sake Cosburn, you are another Sproule'" (Cam Sproule, Saskatchewan Chief Geologist had a predilection for drill-stem testing.) I think I made a quick exit although I always like and respect Jim and figured he was one of key men in the discovery."

"At a total depth of 5066 ft it was decided to complete barefoot, that is, hang the seven-inch at top of the D-2 (5029 ft). This would obviate the need to perforate or acidize. Used (not new) casing, as stipulated on the license application, was run the night of February the 6th. It was cemented by Dowell. Bill Wedderburn (hired November 1946, who went on to become Manager at Nisku, now retired) recalls that night, "Nearly everything froze up ... to make matters worse, the cementing head had to be flown in by Roy Graves (Manager). The load was far too heavy for the light plane and the ski sank in the deep snow; we had to drag the head over to the well-site on a sled."

Conditions were now perfect for Imperial to do a P.R. exercise and, with this in mind, Vern Hunter was asked to pick the day to officially bring in the well. On the designated date, chosen by him after consultation with Walker Taylor (Feb. 13, 1947), Hunter quipped, "It's always a mistake around rigs to say you are going to do anything at a particular given time - something always happens."

Rousted out of bed in the middle of the night (this is not quite right, because another version said he was eating bacon and eggs) Hunter got word that the shaft of the swabbing unit had broken. This is not surprising because there never had been any occasion to use it (all dry holes). Maurice Paulson, engineer was out there trying to repair the unit.

The Publisher

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Submissions on historical topics related to Canada's petroleum industry are welcome. For information on membership or society activities, contact society president W.R.S. McLellan (403) 290-2840.

Lew Minkler (then truck driver, now retired from B-J) recalls a mishap that also delayed the swabbing.

"... Alex Baillie (deceased) and I went to load up the spare sand line over at No. 2 well and brought it over to No. 1, ... and I had hitched up in the approved manner - to come up over the roll - and Alex, 'Suck! ... it was an old spool .. and got almost over the roll when one side of the spool fell off. You know what happens to sand lines when they're ... 'cat's-assed'. So we had to lay the sand line and spool on its side on the rotary table .. just turn the table slowly and haul that line up over the crown, spool it on to the draw works drum (no sandline drum on Vern's rig). It took quite a while."

George Tosh, driller at No. 1, in a 1984 interview, describes the big day ... "We got everything all ready to go ... they invited a bunch of dignitaries out ... they had it all set up to open the valve. But things didn't go quite as good as we planned on. We had just a half broken down swabbing unit stuck in the corner of the rig. We just got nicely started to swab and the swabbing unit broke down. So we had to take the drilling line, lay the blocks down and take the drilling line off from the draw works and re-spool it on a spool and take the sand line off the swabbing outfit and spool it on the draw works drum to swab with. So everybody was standing around. Every once in a while Mounted Police or somebody would run up, "When's the

well coming in?"

By noon a crowd had gathered. By four o'clock the less hardy had shivered their way back to town, but the faithful saw a beautiful ring of black smoke go floating skyward - a good omen of the oil industry in Western Canada. Vern Taylor, the Operations Manager for Western Producing Division present at the ceremony ... "I distinctly remember we got 41 barrels the first hour."

Vern Hunter knew Leduc would "come in". Headquarters was jubilant ("the guys in overalls don't get too excited"). "Nobody realized the significance." Hunter was pooped out, skipped the celebration party at Edmonton and went home to bed, having played midwife at the birth of the modern petroleum industry. However, he saw to it that the hands at the rig had enough booze for a party.

Hunter philosophized in his 1983 interview with the author: "As a matter of fact, I would say that the biggest problem we had when we hit Leduc No. 1 was that we had become experts at abandoning dry holes, but to bring in a producing well we had to start thinking back to what we did in Turner Valley under different conditions. Some of the drilling crew were actually disappointed when we hit Leduc No. 1 because it meant they were going to have to stay in one place. A lot of them were young, and they'd get tired of the girls in one town so they would want to move on and meet some new ones."

Books

An ounce of prevention

An environmentalist's look at the Exxon Valdez oil spill offers balanced and sensitive insights.

Art Davidson, *In the Wake of the Exxon Valdez*, (Vancouver/Toronto: Douglas & McIntyre, 1990) 333 pages.

MORE THAN TWO AND ONE HALF YEARS AGO, THE SUPERTANKER EXXON VALDEZ RAN AGROUND ON BLIGH REEF IN THE GULF OF ALASKA'S PRINCE WILLIAM SOUND. EXXON HAS AGREED WITH the Alaska and federal governments to pay U.S.\$1.03 billion for claims arising from the 240 000 barrel oil spill, but still faces lawsuits from private litigants. In addition, the company has paid more than U.S.\$2.5 billion for clean up.

That spill, its costs and the public outcry it sparked sent shock waves through the world's petroleum industry. Although Exxon Valdez was a shipping accident, the upstream sector of the Canadian oil industry quickly set up a task force to see how ready it was to deal with oil spills. The downstream sector did the same. And the

federal and British Columbia governments set up commissions to investigate the problem.

After the task forces and commissions, the incident began to affect industry operations directly. For example, Canada's industry has begun spending millions to improve its clean-up equipment and systems. And last year, the Inuvialuit's Environmental Impact Review Board turned down Gulf Canada's application to drill in the Beaufort Sea, arguing that the company might not be able to bring a major oil well blowout under control.

So far-reaching was the aftermath of Valdez that it is refreshing to find a book which offers an insider's look at the incident. An Alaskan, Art Davidson began his association with the state's oil industry in the 1970s as an

opponent of the Alyeska pipeline into Valdez. The spill confirmed his worst fears about the pipeline's environmental impact. He maintains his strong green bias in this book.

Perhaps Davidson's distinct point of view makes his book the more fascinating to read: well researched, well written and provocative. The first part is an hour-by-hour discussion of the spill itself. Then follows an account of the response: how the players - Exxon, governments and agencies, the Coast Guard, locals and concerned people from far away - eventually met most of the challenges the spill presented. Davidson describes bungling at many levels, turf wars, and men and women who worked themselves to exhaustion to control the spreading oil.

In part III, he discusses the environmental damage with sensitivity to the problems, empathy for the people, compassion for the birds and mammals sickened and killed by the oil. Only a local, I suspect, could have written so knowledgeably and with such force. That said, Davidson makes a real effort to offer an even-handed study of the spill.

This even-handedness is particularly important in an epilogue entitled "Reflections." Here, he considers the lessons the spill provided, commenting on what went wrong and how to prevent another disaster. He does not condemn Exxon. Indeed, he acknowledges that "the company responded faster than any government agency and marshaled enormous resources to fight the oil. Lightering 40 million gallons of oil from the stricken tanker was a major accomplishment." He also notes that "the company promptly established a claims process, which no law required."

Davidson is more critical of government. He quotes Exxon Shipping president Frank Iarossi as saying "I had the world's biggest checkbook and I could purchase or mobilize anything in the world that would have helped. But once I got things to Valdez, I was powerless to use them. That depended on priorities defined by the state - inputs that needed to be developed, permits we needed to use things, plans that needed to be approved."

While the industry and government authorities have developed better contingency plans since the incident, the technology for cleaning up spills is often quite crude. And mobilizing enough equipment and personnel fast enough to deal with a large spill will probably always be a problem. Add to this such variables as darkness, sea conditions, weather and the physical properties of the spilled oil, and the difficulty of the task looms larger still. And then there is the question of time and place: In one report on the Valdez incident, *The Economist* called it "the worst accident in the worst place at the worst time of the year possible."

So what to do? Prevention. Eight thousand seven hundred tanker trips preceded the *Exxon Valdez* with only minor spills - despite the flagging standards and preparations which Davidson documents. Since Valdez, standards have greatly improved, and the likelihood of a future lapse is small. After all, the last one cost nearly \$4 billion.

Peter McKenzie-Brown
Canadian Petroleum Association

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