

Comments on:

**Texas Company Tapping \$2.8 Trillion Oil Reserve... Under the Eiffel Tower**

<http://www.oxfonline.com/MMR/MMRTor0909autonobk.html?pub=MMR&code=EMMRKA41&o=35728&s=37154&u=47408294&l=56636&g=96&r=Milo>

The author Mike Ward says some truth (there could be 40 Gb or much more of oil resources in the Paris Basin source-rock) and some lie (these 40 Gb could be extracted representing 2.8 T\$ at 70 \$/b).

The so-called tiny company is Toreador Resources Corporation which says on their site: [http://www.toreador.net/about\\_us\\_overview.html](http://www.toreador.net/about_us_overview.html)

*Headquartered in Paris, France, Toreador Resources Corporation is an independent, international energy company engaged in the acquisition, development, exploration and production of natural gas, crude oil and other income-producing minerals.*

*Toreador is a thriving company at the forefront of international expansion and oil exploration.*

*The company holds interests in developed and undeveloped oil and gas properties in France and **has successfully moved its corporate headquarters to Paris to focus on the Paris Basin Oil Shale – where an estimated 65 billion barrels of oil are believed to exist.***

<http://www.toreador.net/strategy.html>

*Toreador is successfully implementing its new corporate strategy to create a unique, leading pan-European and Mediterranean exploration and production company.*

*Toreador intends to maintain an efficient base business, execute steady growth in its France assets, and deliver step-change expansion that includes a phased development of the **Paris Basin Oil Shale**. In addition, the Company will pursue corporate and assets-based transactions as they become available.*

*As part of its strategy, Toreador Resources has successfully completed the consolidation **and relocation of its corporate office to Paris, France**, reducing its U.S. presence to focus only on securities exchange requirements and investor relations. In addition, the Company has retained third-party consultants, including Gaffney, Cline & Associates, an international oil and gas sector advisory firm, to manage all future reserve verifications.*

[http://www.toreador.net/our\\_history.html](http://www.toreador.net/our_history.html)

*Toreador Resources was formerly the Toreador Royalty Corporation. A reputable, old-line mineral and royalty company, Toreador Royalty was incorporated and listed on the National Market System and the London Stock Exchange in 1951. In 2000, management changed the company's name to Toreador Resources Corporation to more accurately reflect its commitment to build a diverse portfolio of natural-resource assets.*

*The acquisition of Madison Oil Company in late 2001 provided Toreador with valuable overseas properties including onshore oil production in France and Turkey*

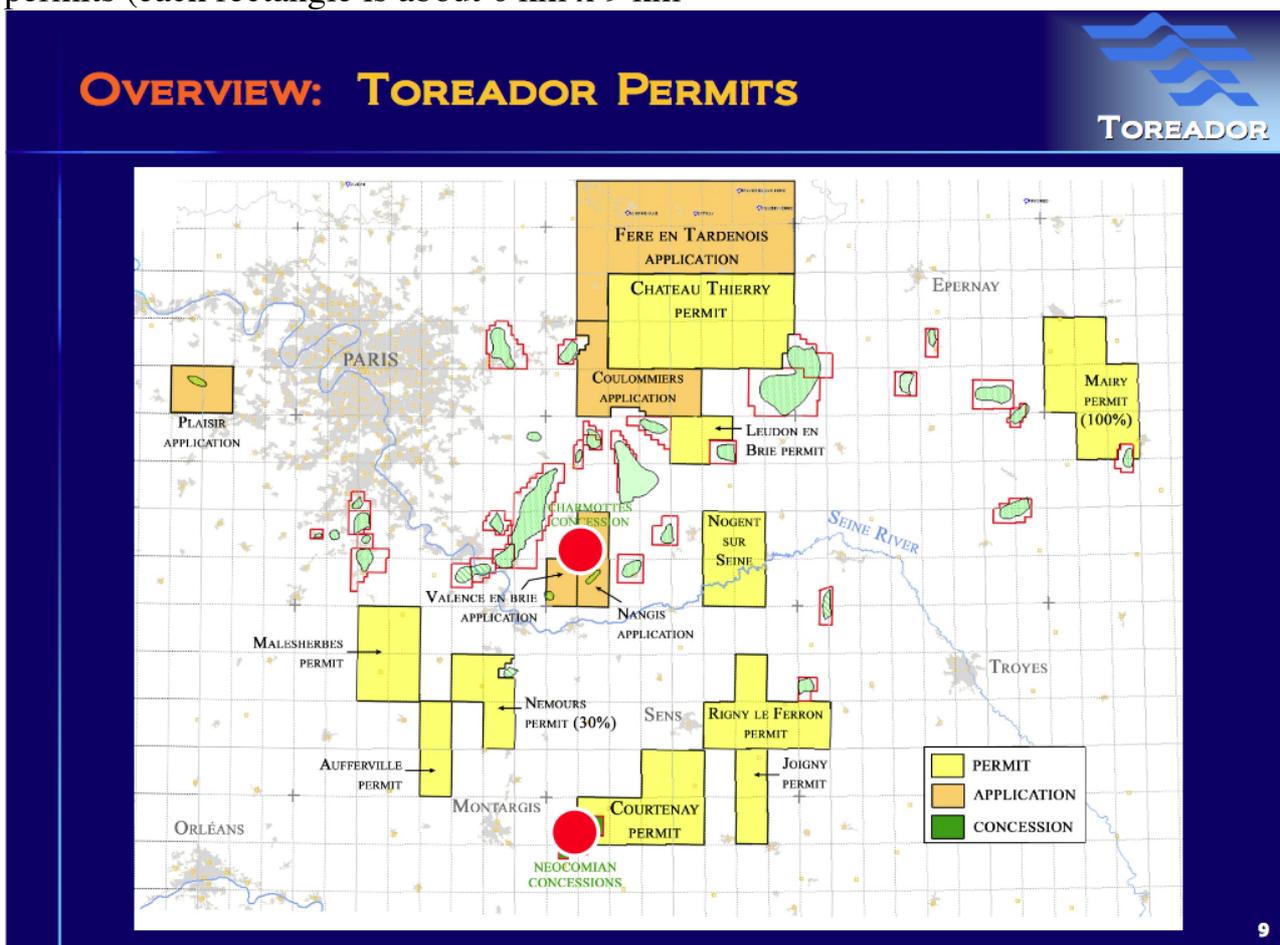
as well as exploration permits offshore Turkey totaling close to one million gross acres. In 2004, Toreador sold its U.S. mineral and royalty assets and successfully drilled the first ever commercial gas discovery offshore Turkey in the Black Sea, in an area designated as the South Akcakoca Sub-basin. In June of 2005, Toreador entered Hungary through the purchase of the assets of Pogo Hungary, Ltd., which included an exploration license of over 764,000 acres.

2009 has been a transformational year for Toreador. The Company announced a cohesive plan to unlock shareholder value, which included cutting overhead, divesting non-core assets, reducing debt, and improving its core operations. As part of this strategy, the Company sold its 26.75% interest in the South Akcakoca Sub-basin, sold Toreador Turkey Ltd. and Toreador Hungary Ltd., effectively exiting the two countries to focus on developing the low-risk conventional exploration of its French acreage and *unconventional exploitation of the Paris Basin Oil Shale*.

[http://www.toreador.net/images/presentations/TRGL\\_Presentation\\_01October09.pdf](http://www.toreador.net/images/presentations/TRGL_Presentation_01October09.pdf)

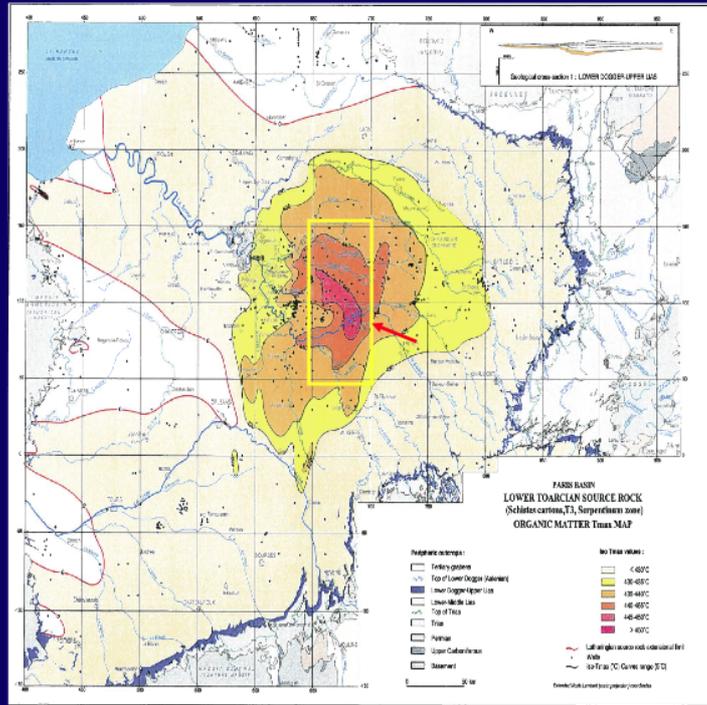
In a presentation on 1st October 2009 IPAA: OGIS San Francisco chairman Peter Hill displays many graphs:

-map of Toreador permits showing that the Eiffel Tower is far from Toreador permits (each rectangle is about 6 km x 9 km)



-Paris Basin Shale oil map

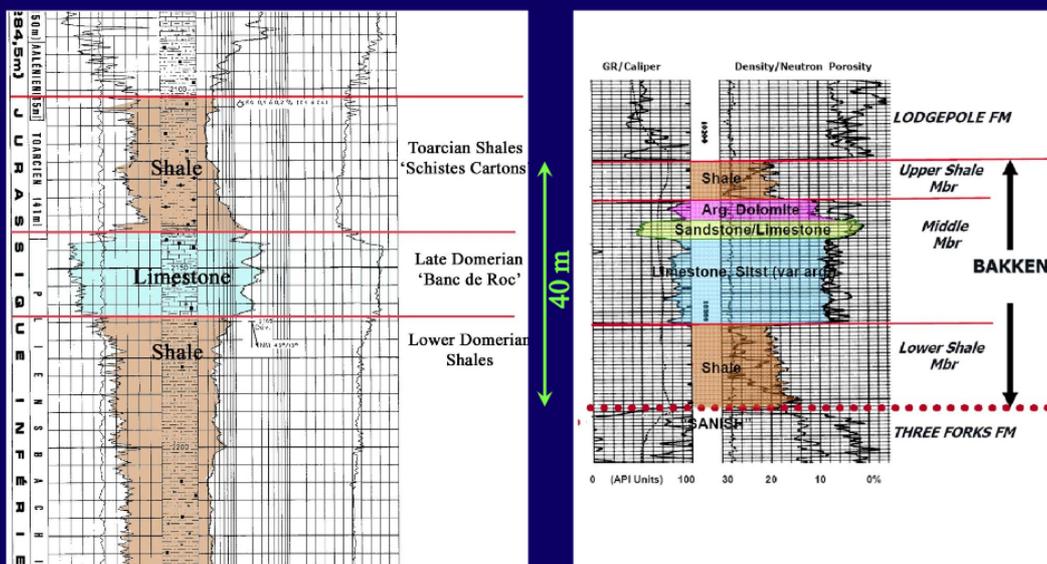
# STEP CHANGE: PARIS BASIN SHALE OIL



17

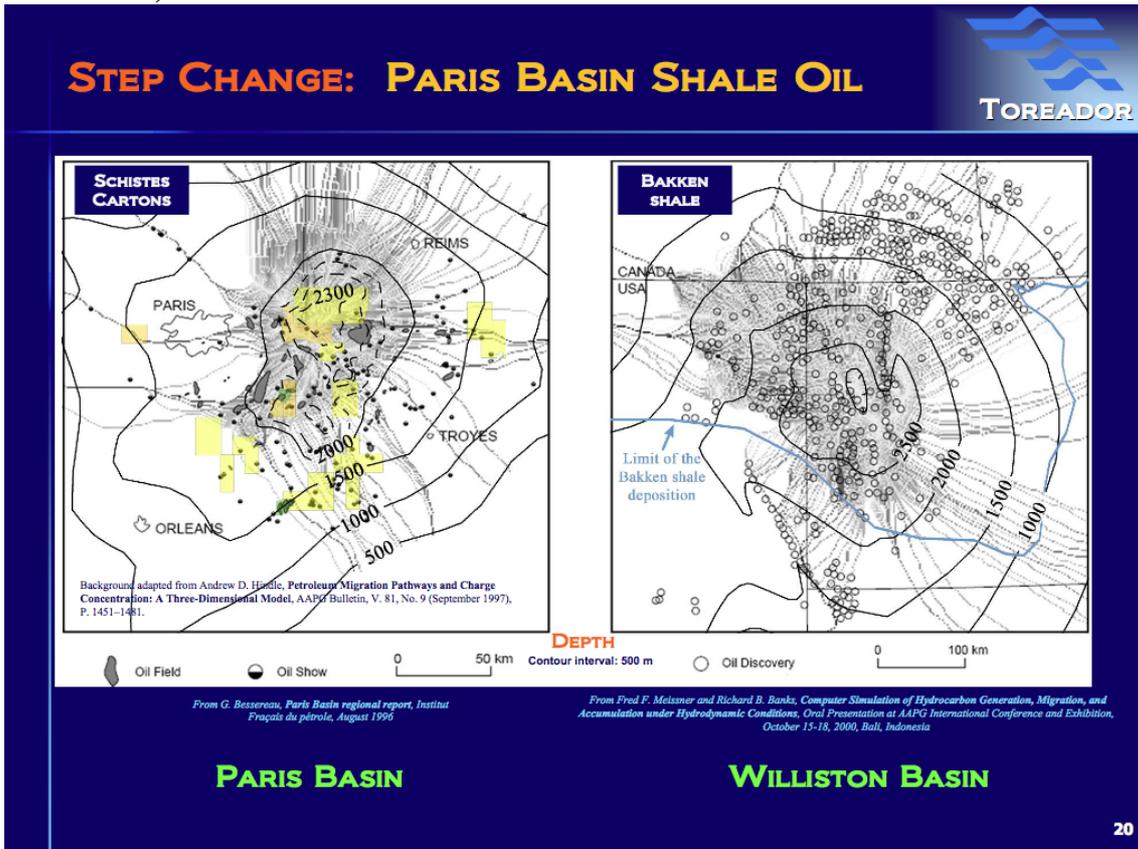
-Paris Basin source-rock (Toarcian shales) is compared to Bakken source-rock in US

# STEP CHANGE: PARIS BASIN SHALE OIL

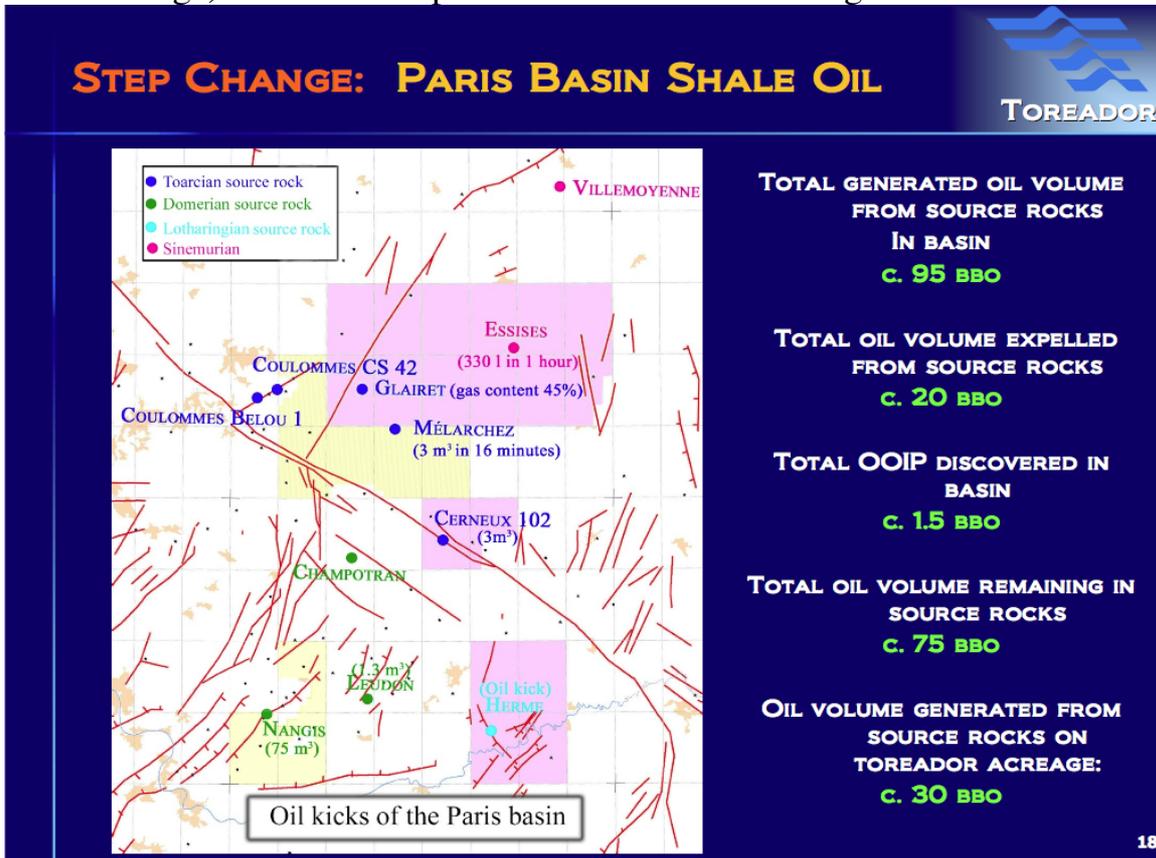


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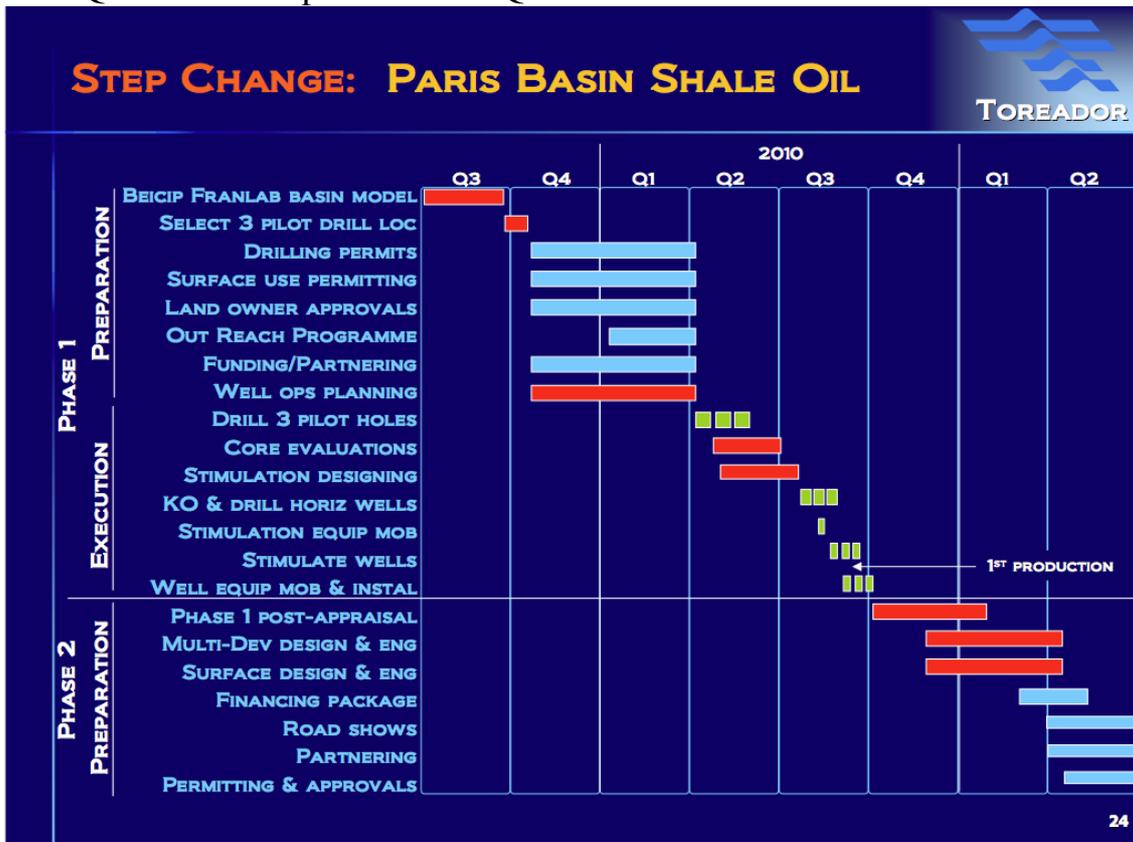
-Paris Basin source-rock (schistes cartons) is compared to Bakken shale (different scale)



-Paris Basin source-rock generation is estimated at 95 Gboe (30 Gb on Toreador acreage) and 20 Gb expelled with 75 Gb remaining in source-rock



-Toreador plans to drill run a Beicip Franlab model on 3Q 2009, to drill 3 pilot holes on 2Q 2010 and to produce on 3Q 2009!



**But what are the facts?**

Toreador, which was at beginning mainly a financial company, entered into oil production by buying Madison with production in Turkey and France (Paris basin with Toreador Energy France). They went into exploration in Black Sea, found oil but the development was much more expensive and reserves less than anticipated. They sold their assets in Turkey and Hungary to concentrate to France where they moved their headquarters to make savings and they started to move into unconventional exploitation of Paris Basin oil shale to promote the stock market with a fashion play.

Toreador production in France is declining

Annual production France Mb

2006	0,44
2007	0,38
2008	0,36

Their financial results are not good for the second quarter 2009

## SECOND QUARTER 2009 FINANCIAL RESULTS

(\$ millions, except where noted)	Three months ended		Change (units)	Change (%)
	June 30, 2009	2008		
Revenue	\$ 4.5	\$ 11.0	\$ (6.5 )	-59 %
Operating loss	\$ (4.6 )	\$ (3.9 )	\$ (1.8 )	46 %
Income (loss) from discontinued operations	\$ 4.6	\$ (58.6 )	\$ 63.2	-108 %
Income (loss) available to common shares	\$ 2.9	\$ (65.8 )	\$ 68.7	-104 %
Basic income (loss) per share (\$/share)	\$ 0.14	\$ (3.33 )	\$ 3.5	-104 %
Diluted income (loss) per share (\$/share)	\$ 0.14	\$ (3.33 )	\$ 3.5	-104 %
Capital expenditures	\$ 0.46	\$ 1.60	\$ (1.14 )	-71 %
Production (MBOE)	81	94	(13 )	-14 %

Their share went up from 2 \$ in March with the promotion of oil shale to over 9\$ in October



The increase looks good in 2009, but not so much looking at the past with a peak in 2006 at 35\$



Toreador needs drastically new production and promotion, last year they claimed to have good prospects close to Geneva (<http://www.tdg.ch/geneve/actu/2008/01/14/francais-vont-chercher-petrole-geneve>).

Now they claim the potential of Paris Basin similar with unconventional Bakken oil play in the US.

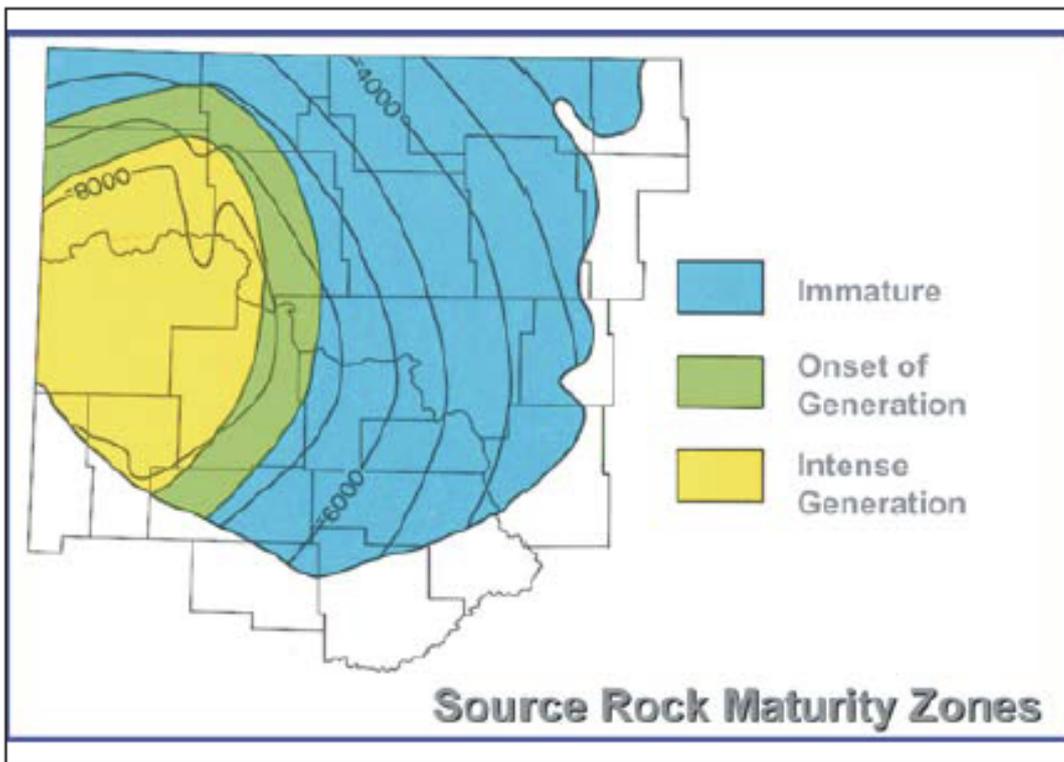
The Bakken oil play (where the source-rock is also the reservoir and can be produced thanks to horizontal wells and to heavy fracs) attracted the medias by the recent USGS estimate of undiscovered 4 Gb.

But, as usual, USGS is over-optimistic hoping that the good conditions of the large oilfield Elm Coulee (stratigraphic trap) will occur in the entire basin. USGS calls *continuous-type accumulation* what is called unconventional field by others, where oil or gas is everywhere in the play, without no water contact, but USGS seems to assume that the characteristics of the reservoir are also continuous.

But geology can vary largely and quickly.

Elm Coulee field is an exception in the Williston Basin, because the carbonate inside the shale was dolomitized, improving the porosity. But this porosity improvement does not occur for all the source-rock, like the maturity, and extrapolation could be dangerous.

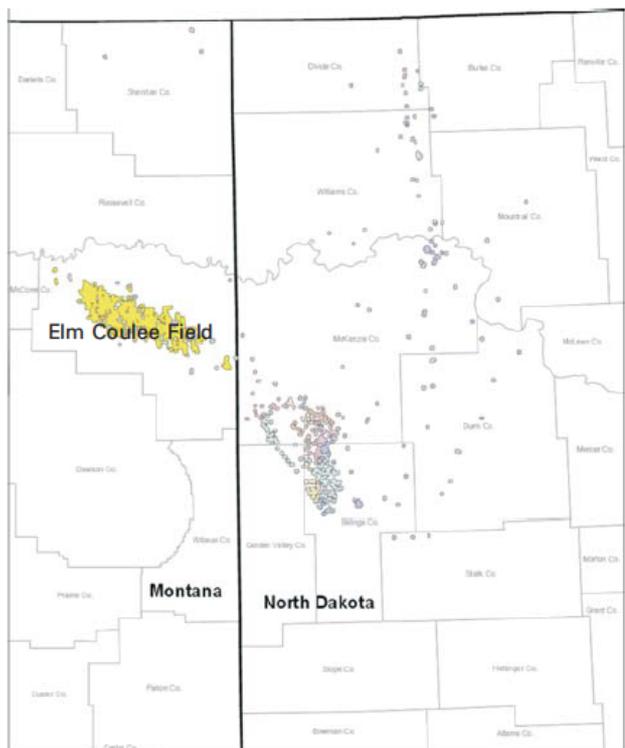
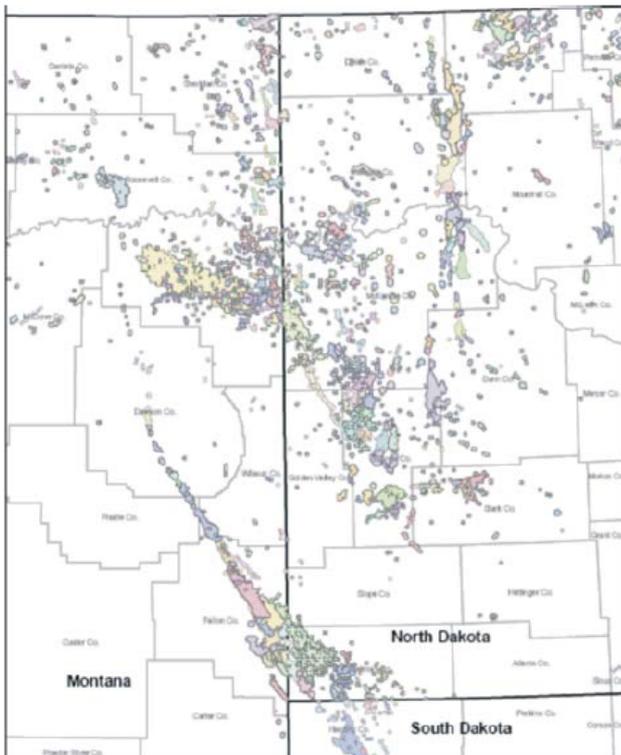
Figure 6. An Estimate of Source Rock Maturity in ND

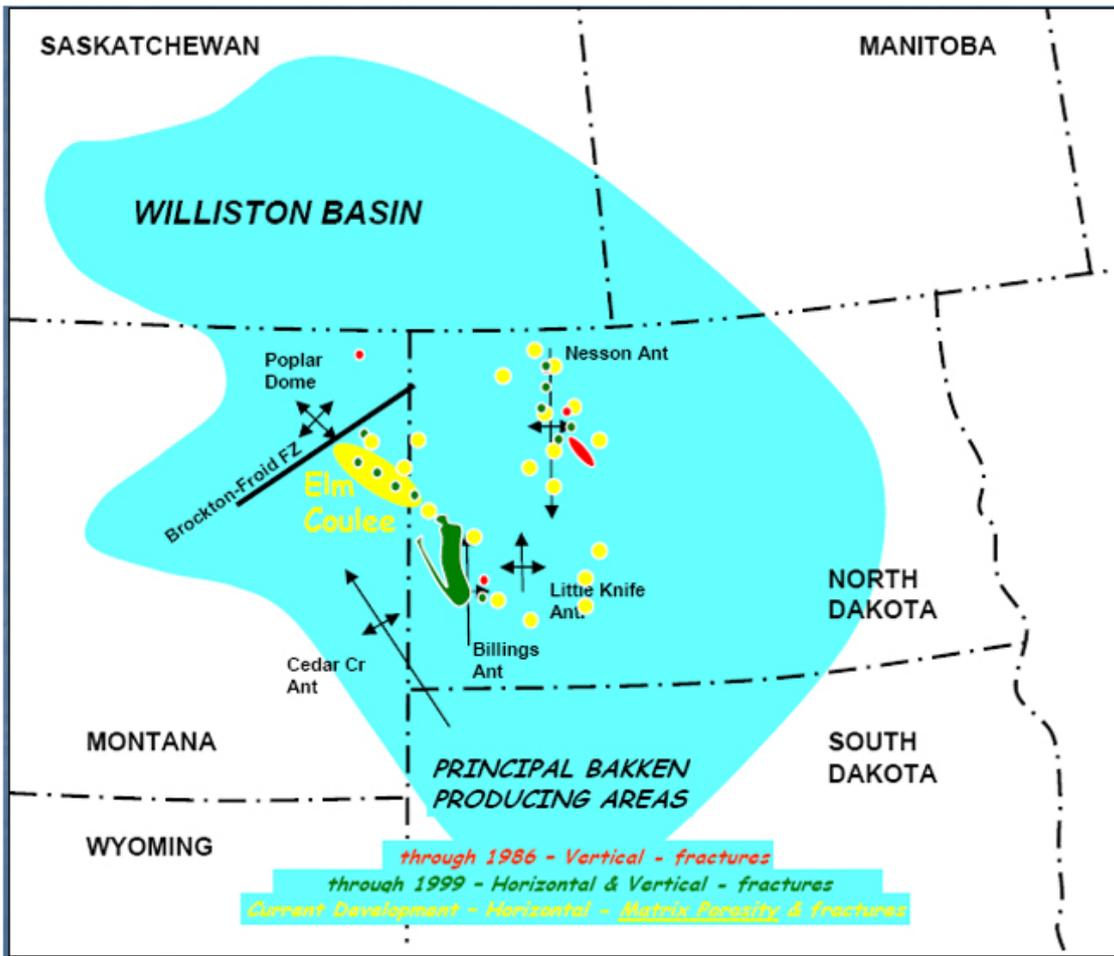


Source: North Dakota Geological Survey<sup>7</sup>

Figure 12. Location of all known fields of the Williston Basin at the Montana - North Dakota border.

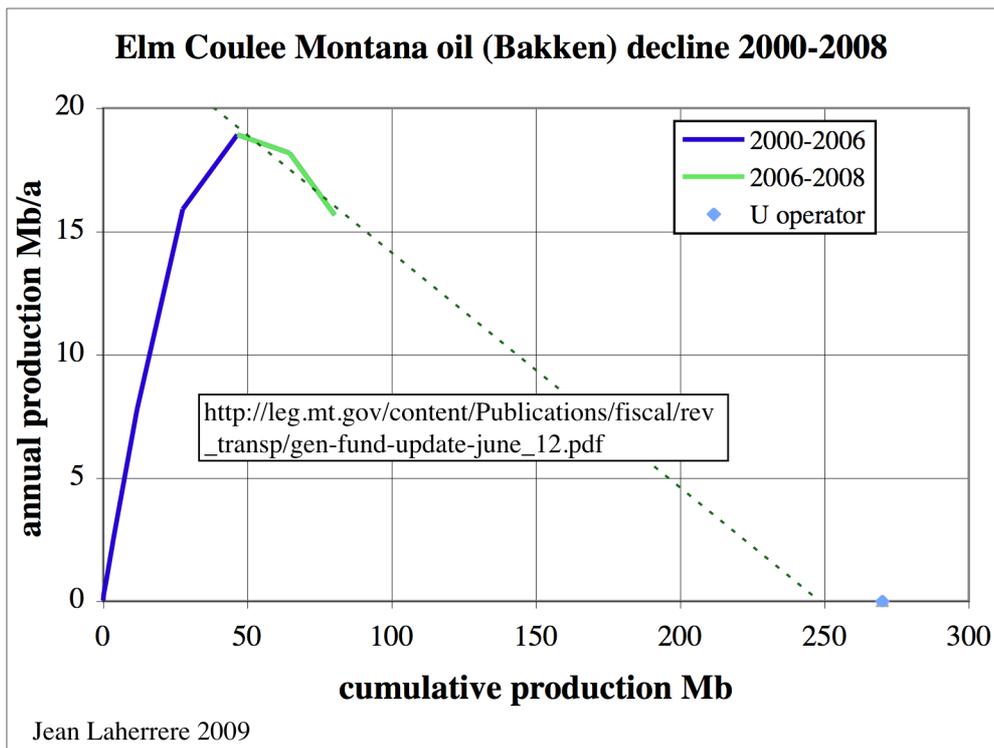
Figure 13. Location of all known fields of the Williston Basin with Bakken listed as a reservoir.





Principal Bakken producing areas, Williston Basin.

Elm Coulee, which started production in 2000, is already on decline since 2006 and the ultimate is about 250 Mb.



Most medias also confuse **shale oil** and **shale gas**:

<http://www.oilandgasinvestor.com/Headlines/2009/WebOctober/item46047.php>

*Europe Awaits U.S. Unconventional-Gas Expertise, Exploration, Exploitation*  
*IHS VP Pete Stark says, there are excellent opportunities for U.S. independents who have the technologies and management experience.*

Article By Nissa Darbonne Published Oct 2, 2009

***Toreador is shale gas player** who obviously can't be kept on the farm once they've seen **Paree**. But what could make guys from Dallas venture into the land of cheese? We figured money had something to do with it*

*More **shale-gas** exploration is under way in Germany (by ExxonMobil Corp.) and in Poland. OMV has identified shale gas in Austria. Producers exploring the continent's shale, besides ExxonMobil and OMV, include ConocoPhillips, **Toreador Resources Corp.**, BNK Petroleum Inc., Composite Energy Ltd., EUR Energy, Layne Energy, San Leon Energy Plc, Schuepbach Energy LLC and Total SA.*

There is also the confusion between “**shale oil**” with mature source-rock and “**oil shale**” with immature source-rock. There is a huge potential of oil in **oil shale**

(Laherrère J.H. 2005 «Review on Oil Shale data » September

[www.hubbertpeak.com/laherrere/OilShaleReview200509.pdf](http://www.hubbertpeak.com/laherrere/OilShaleReview200509.pdf)), but mining is uneconomical with too

many environment problems, and in situ process is still at research stage (Shell Mahogany ICP). Shell plans to decide for a commercial pilot only 2012 or later! USDOE/EIA Guy Caruso Administrator «*When will world oil production peak?*» 10th Annual Asia oil & gas conference Kuala Lumpur June 13, 2005 *Oil shales A huge in-place kerogen resource ... but the technology to economically produce large quantities of synthetic oil from them does not exist and is not likely to in the next decades.*

France was the first country to start producing oil from Permian shale in Autun in 1837, but production was stopped in 1957. A thorough study was carried out (GERB 1973-1978) with coring and the conclusion was that the resource is large, but production should be marginal and not economical.

I remember that one day our management asked us to explain why, in the press, the Russians were claiming to have trillion of barrels at Salym. Nehring estimated in 1982 a potential of 12 Tb for the Bazhenov in Western Siberia (much more than Paris Basin!).

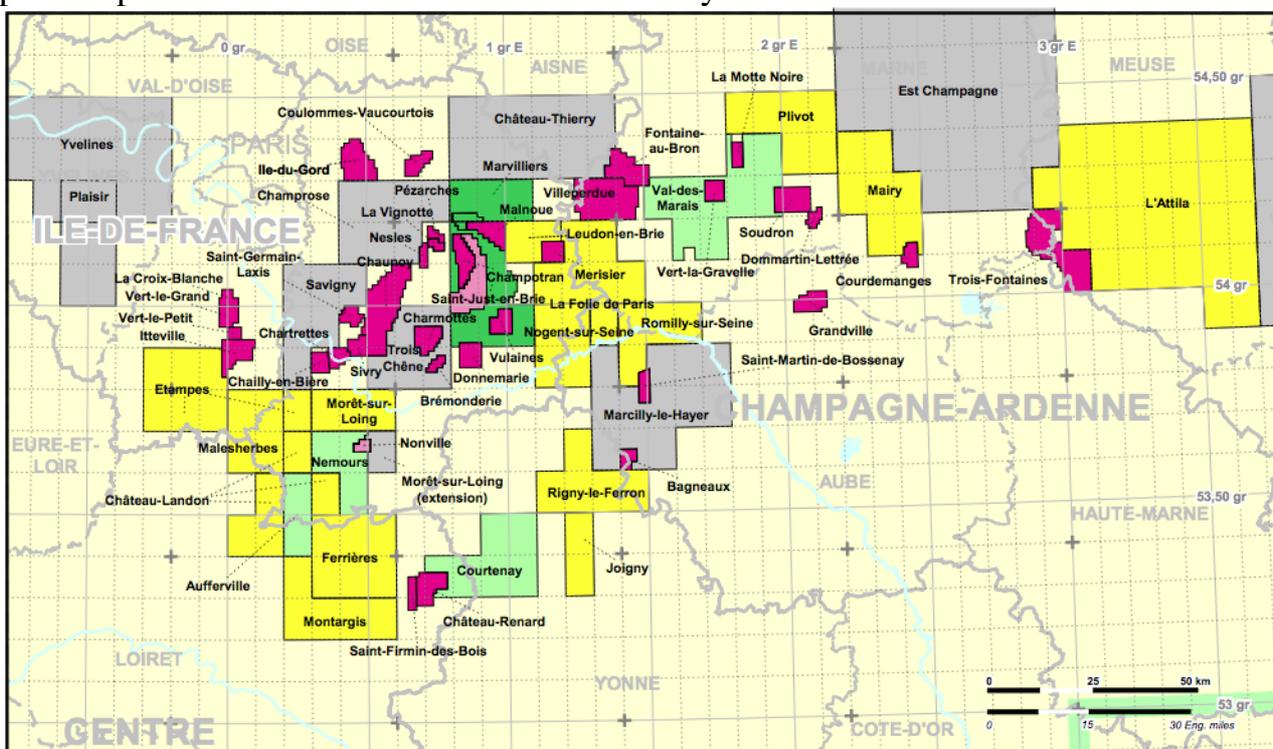
We answered to our bosses that the Russian was claiming to be able to produce oil from the source-rock (Bazhenov generating 90% of oil in the basin) of the West Siberia basin by using atomic bomb to generate oil. It is rumoured that the Russians tried nuclear explosions (21?) in source-rocks or in tight reservoirs, but it was a failure.

Toreador is playing on the confusion between reserves (what is estimated to be produced in future) and resource (what is in the ground).

Paris Basin source rock is known for a long time and in our report Laherrère J.H., A.Perrodon, G.Demaison 1994 “*Undiscovered Petroleum Potential*” Petroconsultants report, 383p we estimate the potential of Paris Basin Petroleum System of the black laminated anoxic shales of Liassic age with a TOC of 2 to 5% and a Source Potential Index (measured with Rock-Eval from cores) of 7 to 10 tHC/m<sup>2</sup>. The Toarcian, part of the sequence is mainly immature, whereas the Hettangian, which is leaner in source-rock but mature, covers 20 000 km<sup>2</sup> in the centre of the basin and has generated about 1100 Gboe. The efficiency (what will be ultimately produced over the amount generated) of the Paris 0,03%, compared to 0.4% for Gippsland, 0.6 % for Niger Delta, 0.8 % for Saharan Triassic, 1% for North Sea and 1.4 % for Arabo-Iranian PS (Laherrere 2008 «Presentation Statoil» 14 August 2008 Oslo [aspoFrance.viabloga.com/files/JL\\_Statoil08\\_long.pdf](http://aspoFrance.viabloga.com/files/JL_Statoil08_long.pdf))

There is real oil under Paris. I remember that one morning (I do not remember the year) I found geophones along the footway of my street in the suburbs of Paris: Elf and Total was vibrating a seismic survey covering Paris and les Champs Elysees. We drilled and found oil within Paris agglomeration in Ivry 101 D in 1988 and I have a sample of it at home. But Ivry was not economic (reported reserves 50 000 b) and the well was abandoned.

There is New Field Wildcat named *La Folie de Paris* drilled in 1985 which got some shows, but it is located about 100 km east of Paris close to Nogent sur Seine: see the present permits in Paris Basin from the ministry



Of course there is a lot of oil left in the source-rock, but it is not easy to produce it. The main problem with unconventional oil (or gas) is that the size of the tank (reserves) does not matter, what matters is the size of the tap!

The amount of gold in seawater is huge, but no one is planning to extract it. It could be a huge amount of gas in oceanic hydrates, but no one knows how to produce them. There is a huge amount of dissolved methane in geopressured aquifers but the pilots in the 70s showed that the problem of brines disposal is too much and no one is talking anymore about this dissolved gas.

I will not argue on the 40 Gb (Ward) or 65 Gb (Toreador overview) or 75 Gb (P.Hill) of potential oil in the Paris Basin source-rock because in fact there is much more, but I am very sceptical about how to extract them.

We will see the answer quickly next year if they drill the planned three holes.

Mike Ward stating that «*The French Oil Ministry has confirmed more than 40 billion barrels*» looks like a lie to me because I did not find anything about it (there is no oil ministry) and because he connects the 40 Gb to 2.8 T\$, assuming that the 40 Gb are reserves, which is oil to be produced.

It is wrong to confuse reserves and resources.

In France we have still coal resources, but not anymore coal reserves!