Deepwater Horizon Oil Spill and Other Offshore Disasters

May 6th, 2011

South African Marine Conference

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May 6th, 2011

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Agenda

Section 1	Review of the Event
Section 2	Possible Market Exposure
Section 3	Market conditions pre and post Deepwater
Section 4	Issues Raised
Section 5	Other Losses of Note
Section 6	Closing Remarks

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Review of the Event

Section 1

April 20th, 2010

An explosion on the Deepwater Horizon offshore oil rig owned by British Petroleum caused a massive ongoing oil spill in the Gulf of Mexico.

In what is now considered the largest offshore oil spill in United States history, official estimates from the U.S. government indicate that upwards of 35,000 to 60,000 barrels (1.5m to 2.5m gallons) entered into Gulf waters daily starting in late April and continuing into mid-July.

The explosion killed 11 workers aboard the rig and led to extensive environmental damage along with significant disruptions to fishing and tourism industries.

The oil slick covers an estimated surface area between 2,500 to 9,100 square miles (6,500 to 21,000 square kilometres), with the exact size and location of the slick fluctuating daily depending on weather conditions.

Figure 1. The Deepwater Horizon oil rig fire (Source: U.S. Coast Guard)

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Spill Flow History

Section 1

April - July 2010

The rig, located approximately 41 miles southeast of the Louisiana coastline, sank on 22nd April. United States Coast Guard representatives estimated that 8,000 barrels of crude oil were leaking into Gulf waters per day.

During the first days of May, oil continued to slowly wash ashore along parts of the outer Louisiana coastline as the size of the spill grew exponentially. After several failed attempts to plug the hole, the oil continued to leak and the amounts of estimated oil leaking jumped to 20,000 barrels a day.

As the month of June began, additional fears of an active Atlantic Hurricane Season were added. By June 11th new estimates of oil protruding from the rig reached 40,000 barrels.

By July, the total volume of oil spilled from remnants of the rig reached over 150m gallons, overtaking the 1979 Ixtoc I spill to become the largest ever recorded in GoM.

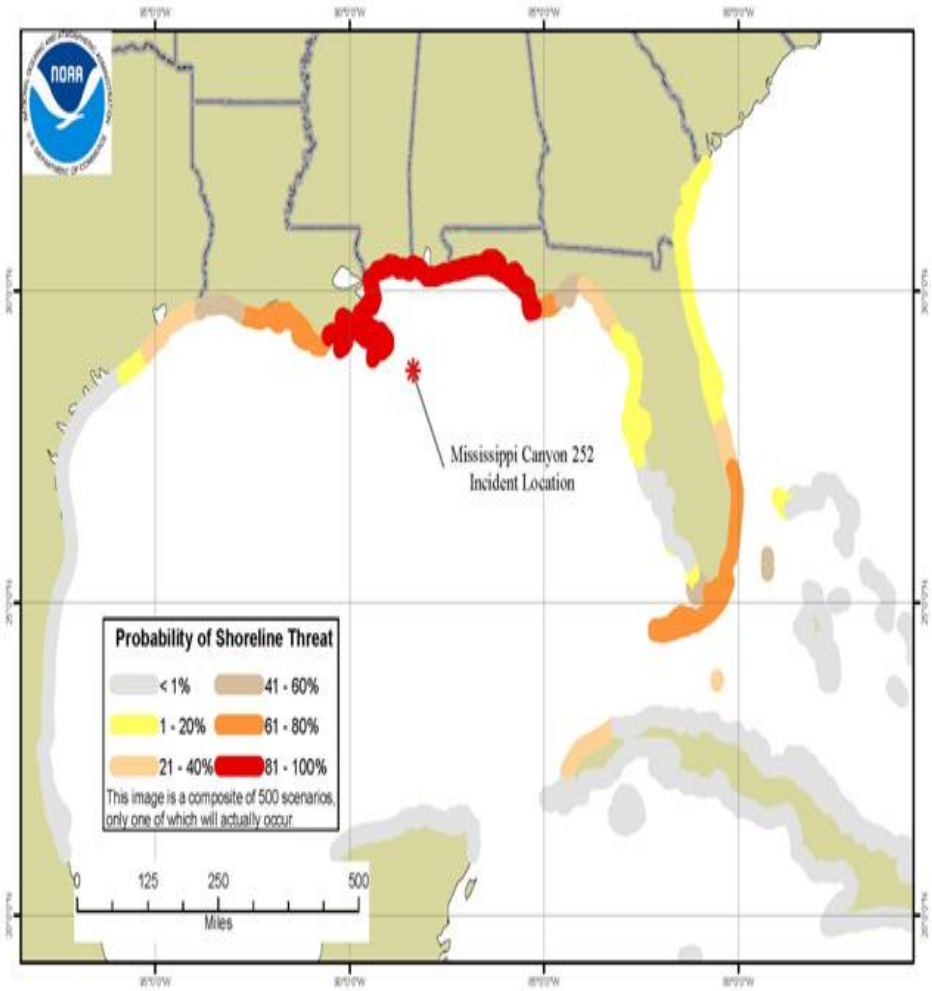

Figure 2. Projected oil shoreline threat probabilities on 22nd April, 2010 (Source: U.S. Coast Guard)

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Largest Worldwide Recorded Oil Spills

Section 1

Spill / Tanker	Location	Date	Barrels (000's)	US Gallons (000's)
Lakeview Gusher (onshore)*	Kern County, California	May 14, 1910	9,000	378,000
Gulf War oil spill	Iraq, Persian Gulf and Kuwait	January 23, 1991	2,000 – 8,000	84,000 – 336,000
Deepwater Horizon	**United States, GoM**	**April 20, 2010**	**2,800 – 4,800**	**118,000 – 203,000**
Ixtoc I	Mexico, GoM	June 3, 1979	3,329 – 3,520	139,818 – 147,840
Atlantic Empress	Trinidad and Tobago	July 19, 1979	2,105	88,396
Fergana Valley (onshore)	Uzbekistan	March 2, 1992	2,090	87,780
Nowruz Field Platform	Iran, Persian Gulf	February 4, 1983	1,907	80,080
ABT Summer	Offshore Angola	May 28, 1991	1,907	80,080
Castillo de Bellver	South Africa, Saldanha Bay	August 6, 1983	1,848	77,616
Amoco Cadiz	France, Brittany	March 16, 1978	1,635	68,684
MT Haven	Italy, Mediterranean Sea	April 11, 1991	1,056	44,352
Odyssey	Offshore Nova Scotia	November 10, 1988	968	40,656
Sea Star	Iran, Gulf of Oman	December 19, 1972	843	35,420
Exxon-Valdez Oil Spill	Prince William Sound	March 24, 1989	750	32,000
Irenes Serenade	Greece, Pylos	February 23,1980	733	30,800

Note: Oil spills are all offshore unless noted

The Lakeview Gusher was an out-of-control pressurized well that lasted 18 months in the southern Central Valley of California beginning in 1909. The geyser of congealed crude oil amounted to nearly nine million barrels of oil and flooded the entire valley and destroyed the entire reserve and drilling area. The site of the Lakeview oil geyser is located about half a mile east of the Taft-Maricopa Highway, in the Midway-Sunset Oil Field in Kern County, California.

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Types of Coverage

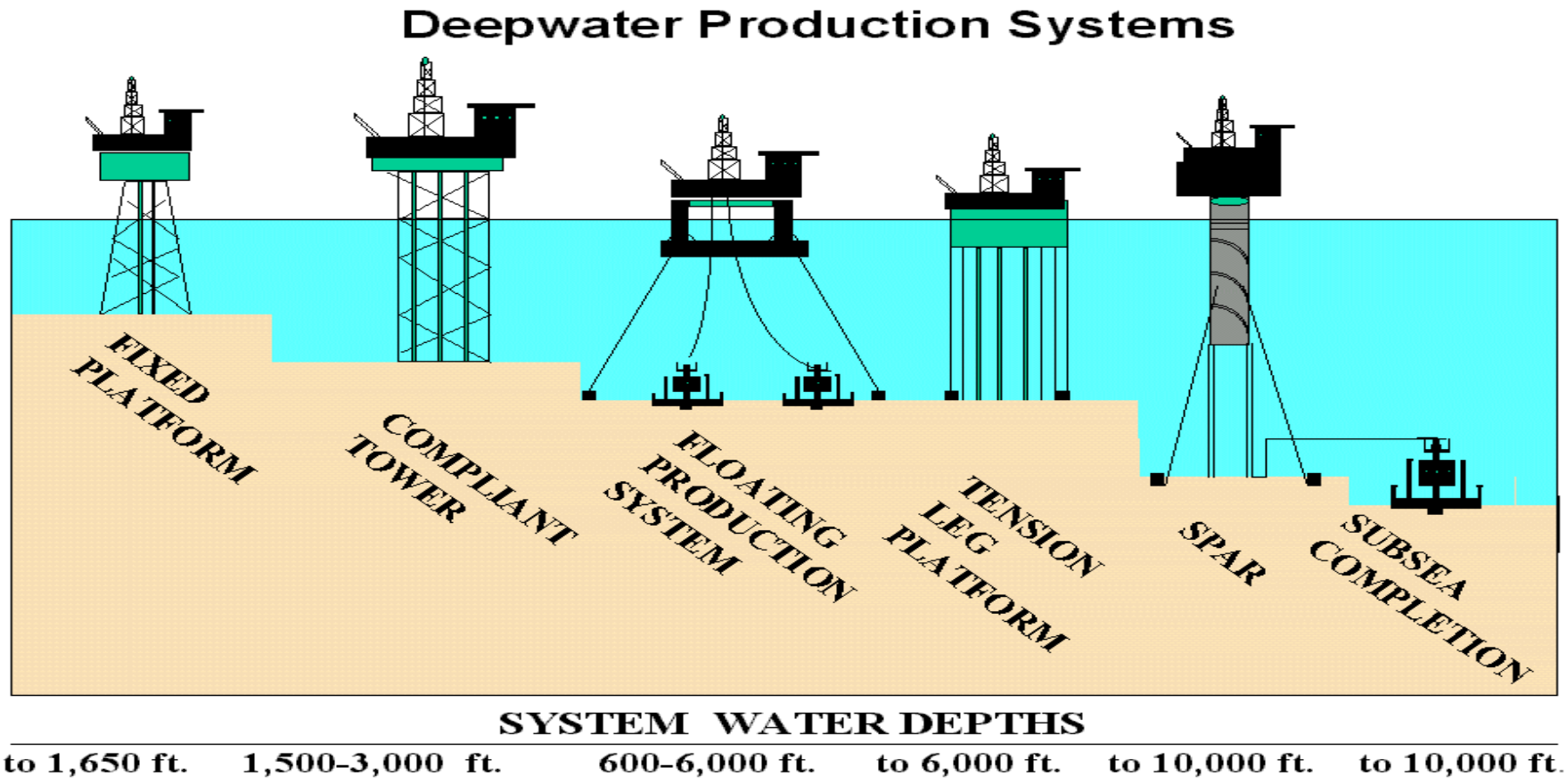
Section 1

- **Business Interruption/Loss of Production Income**
  - Provides coverage for energy businesses against loss due to temporary interruption in oil/gas supply from an offshore facility as a result of physical loss or damage to an offshore facility.
- **Comprehensive General Liability**
  - Provides coverage for claims an energy business is legally obligated to pay as a result of bodily injury or property damage to a third party.
- **Environmental/Pollution Liability**
  - Provides coverage for bodily injury, property damage, and clean up costs as a result of a pollution incident from a designated site.
- **Operators' Extra Expense (Control of Well)**
  - Provides coverage for costs incurred by energy businesses when regaining control of a well after a "blowout". Coverage may include re-drilling expenses incurred in the restoration of a well after a 'blowout' as well as the legal expenses emanating from an incident such as the sinking of a rig, or oil spill.
- **Physical Damage**
  - Provides coverage for physical damage or loss to a company's offshore property and equipment, including offshore fixed platforms, pipelines and production and accommodation facilities.
- **Workers compensation/employers liability**
  - Covers energy businesses for claims arising out of injury or death of employees incurred while in the line of duty.

Figure 4. Coverage that might apply (Source: http://www.iii.org/insuranceindustryblog/; http://www.iii.org/articles/offshore_energy_facilities_insurance_considerations.html)

Types of production systems for water depths

Section 1



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Possible Market Exposure

Section 2

Insured	Policy Type	Insured Value	Deductible
Transocean	H & M	448,000,000	125,000,000
	IV	112,000,000	
	ROD	140,000,000	
	Collision Liability	140,000,000	
	Sue & Labour	140,000,000	
	Contingent OEE	100,000,000	
	TPL 1	150,000,000	50,000,000
	TPL 2	150,000,000	200,000,000
	TPL 3	200,000,000	350,000,000
	TPL 4	200,000,000	550,000,000
	TPL 5	250,000,000	750,000,000
Co-Ventures			
Anadarko	OEE	62,500,000	
25%	Liabilities	37,500,000	
Mitsui	OEE	30,000,000	
10%	Liabilities	15,000,000	
Cameron	Liabilities	475,000,000	25,000,000
Haliburton	Liabilities	595,000,000	5,000,000

All coverages:
3,245,000,000

Liabilities:
2,072,500,000

Estimated Global Offshore Premium:
3,500,000,000

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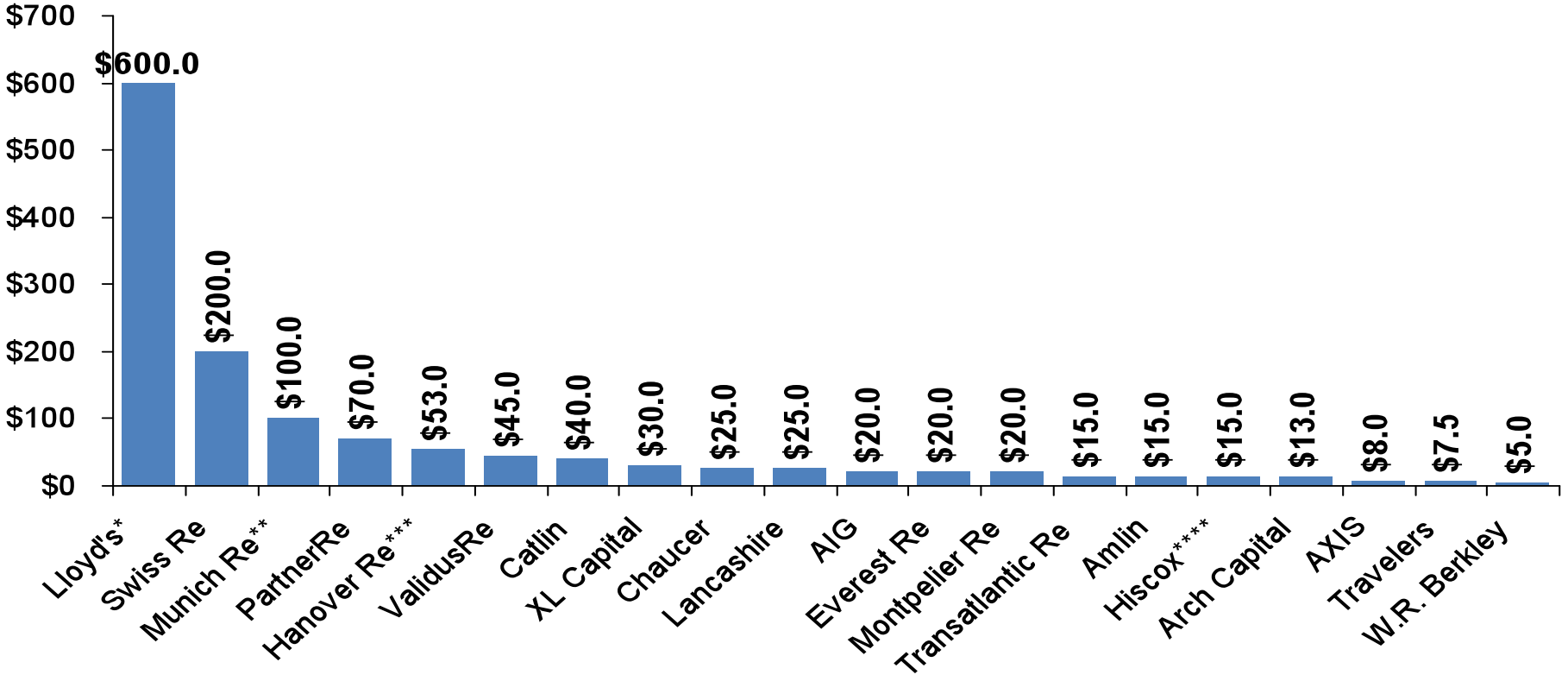
Announced Losses

Section 2



Lloyd's estimates net loss to the market of $300 million to $600 million. Includes estimate across all Lloyd's syndicates.
Those syndicates that have reported losses individually are also shown in this chart and included in the Lloyd's total.
**Munich Re expects low triple digit million euro loss
***Hanover Re expects a Eur40 million loss
****Hiscox expects net claims of below GBP10 million ($14.8 million)

Source: Insurance Information Institute (I.I.I.); Company disclosures, SNL Financial Citi research note 05/04/10; Barclays Capital research note 05/10/10

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Possible Loss Scenarios

Section 2

Deepwater loss – Four Loss Scenarios

- **Scenario 1 (Market Loss circa. (1.2bn)**
  - PD total + $20m S&L to Transocean
  - TPL of $350m to Transocean
  - Anadarko / Mitsui OEE and Liabs total loss
  - TPL of $100m to Haliburton
- **Scenario 2 (Market Loss circa. (1.8bn)**
  - PD total + $50m S&L to Transocean
  - TPL of $700m to Transocean
  - Anadarko / Mitsui OEE and Liabs total loss
  - TPL of $170m to Haliburton
  - TPL $6.25m Tidewater
  - Cameron $100m
- **Scenario 3 (Market Loss circa. (2.1bn)**
  - PD total + $50m S&L to Transocean
  - TPL of $700m to Transocean
  - Anadarko / Mitsui OEE and Liabs total loss
  - TPL of $420m to Haliburton
  - TPL $12.5m Tidewater
  - Cameron $150m
- **Scenario 4 (Market Loss circa. $2.7bn)**
  - PD total + $50m S&L to Transocean
  - TPL of $950m to Transocean
  - Anadarko / Mitsui OEE and Liabs total loss
  - TPL of $595m to Haliburton
  - TPL $25m Tidewater
  - Cameron $200m

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Deepwater Horizon Vs. Exxon Valdez

Section 2

Deepwater Horizon

- Year: 2010
- Size of spill: 4.9 million barrels
- BP's initial estimated cost to September 2010: US$ 9.5 billion
  - Spill response, containment, relief well drilling, static kill, cementing and restoration.
- Court cases beginning
- Final costs remain unknown

Exxon Valdez

- Year: 1989
- Size of spill: At least 250,000 barrels
- Clean up cost: US$ 2.5billion
  - Total costs (including fines, penalties, and claim settlements): estimated to be as much as US$ 7 billion
- Court cases ongoing
- Final costs remain unknown

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Market Conditions pre Deepwater

Section 3

- **Losses**
  - Impact of upstream energy risk losses of Montarra/West Atlas and Ekofisk minimal on reinsurance market at 1st January Renewal
- **Capacity / Premium Levels**
  - Relatively stable capacity circa. $3bn Global Capacity
- **No significant new entry into the market but '08 start ups continue to grow**
- **Circa 30% of premium in respect of interests in Gulf of Mexico**
  - Global Premium base circa $3bn - $3,5bn for 2009
  - GoM Wind rates reduced by up to 20%
- **Softening of coverage**
  - Risk rates reduced by circa 10%

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Market Conditions post Deepwater

Section 3

- **Losses**
  - Impact to Energy and Casualty sector potentially significant
  - PD Loss - $560 Million
  - Casualty loss $1 Billion - $3 Billion

- **Capacity / Premium Levels**
  - Relatively stable capacity circa. $3bn Global Capacity
  - Global Premium base circa $3.25 Billion - $3.75 Billion for 2010
  - GoM Wind rates flat
  - Risk rates + 10%

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Issues Raised

Section 4

- **Issues raised**
  - Do companies need to aggregate PD and Liabilities exposures?
    - Is the data available to do this?
  - **What is the severity of this loss in modelled terms?**
    - 1 in 10 yr, 1 in 25yr, 1 in 50yr, 1 in 100yr or 1 in 250yr?
    - Does the limit purchased need to be subsequently re-evaluated?
  - **Multi party coverage is extremely common on offshore risk losses**
    - What additional buying metrics should be considered?
    - Is it efficient to buy multiples of maximum line?
    - Effect of extra cover versus capital relief
  - **How is it going to change pricing and coverage afforded by insurance a reinsurance markets?**

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West Atlas – Date of Loss 21st August 2009 USD 800M

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Aban Pearl – Date of Loss 13th May 2010 USD 235M

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Maersk Gryphon – Date of Loss 4th February 2011 USD 800M

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Pemex Jupiter – Date of Loss 11th April 2011 USD 160M

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So To “Recap”

- Just how big was that Spill
- “Well”, for the statisticians amongst you
- 203,000,000 U.S. Gallons – 768,438,592 Litres
- An Olympic size swimming pool is :-

  25 metres wide

  50 metres long

  2 metres depth
- Which holds 2,500,000 litres of water
- So the spill was equivalent to 307.37 Olympic pools
- If you are still having trouble coming to terms with the magnitude of the spill
- Let’s “Drill” down a little deeper

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So To “Recap”

1,352,884,845 Pints of Ale

I THINK YOU ALL DESERVE ONE

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Deepwater Horizon

Thank you for your patience

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