

Agenda

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1. Industry challenge
2. Life-of-well integrity solutions
3. Overview of Archer
4. Questions

Industry challenge

A typical well...

> 2000 components

harsh conditions

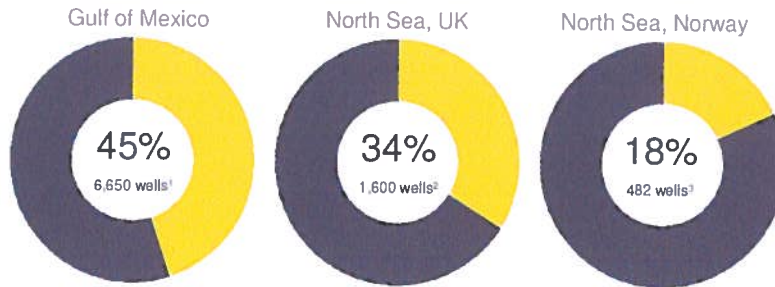
wells fail



A global challenge

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% of wells with integrity issues



¹ US Minerals Management Service survey, 2004. Reported 8,630 out of 14,927 active wells had sustained 30/100" pressure in 30/100" and then GCM.

² SPE forum North Sea Well Integrity Challenges, 2009. Approx. 100 participants indicated no. of wells with at least one anomaly. Average 1,603 out of 4,700 active wells.

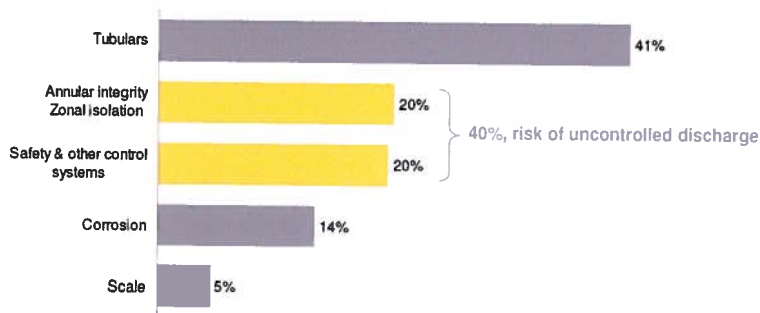
³ Norwegian Petroleum Safety Authority, Well Integrity study, 2008. Study sampled 406 of 2,582 wells. 18% of wells had well integrity failures or issues. 7% ultimately shut-in owing to integrity issues.

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Failures affecting well integrity & performance

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Integrity and performance failures



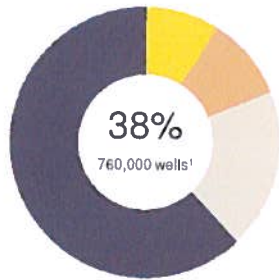
¹ OTM Consulting & Archer market survey 2010. Data shows relative distribution failures affecting well performance indicated by survey participants. Based on global industry sample of 20 well performance experts.

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The cost of well integrity failures

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Global wells affected by integrity issues



■ Shut-in permanently
■ Shut-in temporarily
■ Operating under dispensation
■ Operating normally

19% shut-in, ~\$1 billion/day lost²

¹ OTM Consulting 2009. Calculated percentages of global wells (of 4 gas) operating under dispensation or shut-in permanently or temporarily. Global averages developed from OTM's internal regional market models for oil and gas wells. Issue fractions weighted by number of wells per region.

² BP Statistical review of world energy 2010. US EIA 2009. OTM Consulting 2011. 2009 oil production 79.948 thousand boepd. 2009 gas production 284.4 billion cubic feet per day. 50,271 thousand boepd. Average 2009 oil price \$61 per barrel, average gas price \$4.4 thousand cubic feet. \$25/bce. [BP 2010].

Aggregate global lifting costs (combined oil and gas calculated using \$ per bbl or bce, \$11.50 [US EIA-28 2009]. Aggregate global revenue oil \$48.5/bbl, gas \$12.5/bce. Global operating wells oil: 910,000, gas: ~1,100,000 [OTM Consulting 2011].

Assume 19% of operating wells are shut-in due to integrity issues then production comes from 729,000 wells (average 110 boepd/well) gas 891,000 wells (average 56 boepd/well).

Assume that shut-in wells would produce same average per day then potential production oil is 110,171,000+18,813 thousand boepd, gas is 56,269,000 = 11,704 boepd.

Therefore lost revenue oil is 16,810,48,50 = \$821 million/day, gas is 11,704*12.50 = \$158 million/day. Total lost potential revenue is \$1,089 million/day.

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Life-of well integrity solutions

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Two main types of well integrity issue

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Leak flow

tubing, casing, valves, packers...



Annular flow

cement integrity, packers, plugs...

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Life-of-well integrity solutions

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Cflex™

Annular seal integrity extends well life



VMB™ plug

Safe & secure "zero-bubble" well suspension



Point®

Bringing clarity to well integrity management



Performance eye

3D perspective on well performance

Well delivery

Well performance

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Annular seal integrity & zonal isolation

Annular seal integrity

Cflex™

- From the specialists in well barrier technology
- Annular seal integrity with unique staged cementing capability

Key benefits

- Fullbore ID: No need to drill out
- Slimmer OD: Easier flowpath
- Any material: Inbuilt integrity
- V0 rated: Zero bubble
- Locks permanently: Security



Temporary or permanent well suspension

Safe & secure “zero-bubble” well suspension

VMB plug

- From the specialists in well barrier technology
- Safe & secure V0-rated well suspension plugs
- Precision engineered products take well integrity assurance to a new level
- Temporary or permanent well suspension

Key benefits

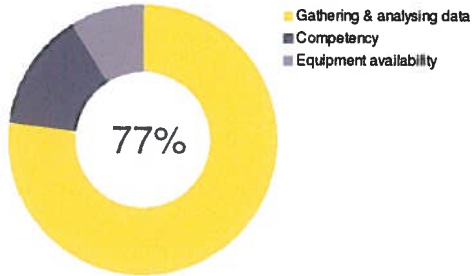
- Safety & security
- Efficiency, lower cost



Diagnosis

Dealing with well integrity issues

Integrity management challenges



*SPE North Sea Well Integrity forum, Nov 2009 & Drilling Engineering Association (DEA) Europe, March 2010. Data compares main challenges faced by operators in managing well performance (101+ operator participants)

Bringing clarity to well integrity management

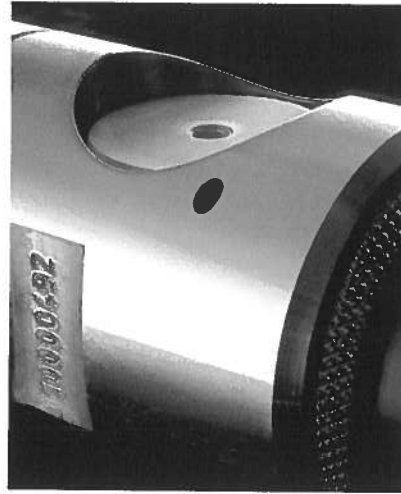
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The Point™ system

- Unique technology reveals serious integrity failures rapidly and precisely
- Bringing clarity to well integrity management, improving well efficiency and extending well life

Key benefits

- Fast, precise location of failures
- Confidently select and target correct remediation

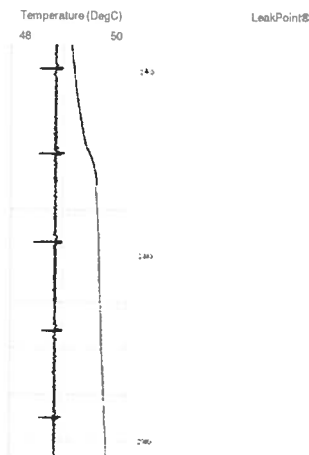


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Where is the leak?

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Better data, better decisions...

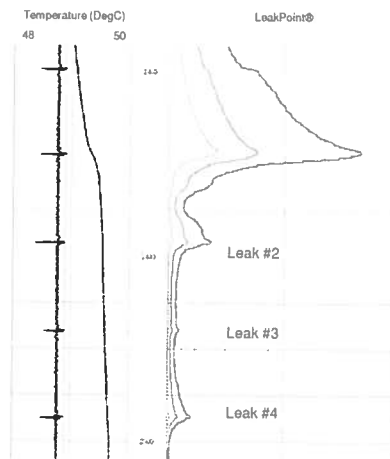


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Where is the leak?

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Better data, better decisions...



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Visualising & measuring the well in 3D

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Performance eye

- Breakthrough in wellbore spatial imaging technology
 - Operates in all well fluids
 - Hi-definition 3D images
- Enabling operators to manage wells more effectively, improve well performance and extend well life.

Key benefits

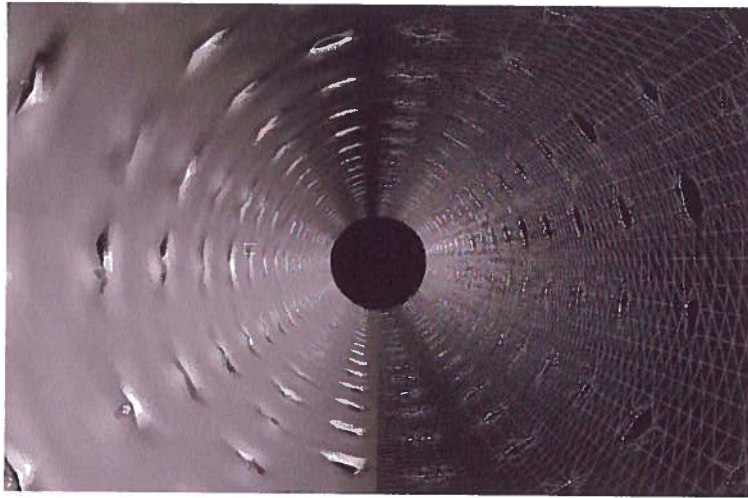
- Rapid, complete diagnosis
- Improved well performance



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Revealing the well in 3D with startling clarity

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Overview of Archer

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Seawell
Noble Platform Drilling
Peak Well Solutions
TecWel
Gray Wireline
Universal Wireline
Allis-Chalmers Energy

We are Archer
The well company

Our purpose:

**Deliver better wells to help our customers
produce more oil and gas.**

Our portfolio structure

Archer



Our global reach

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Thank you.

Questions?