

Drilling CSM Wells With Hybrid Technology in a Safe & Efficient Manner

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Drill-Safe 2004

Background



- Bachelor Petroleum Engineering UNSW

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- Century Drilling

Background



- Bachelor Petroleum Engineering UNSW
- Century Drilling
- Sydney Gas Ltd

Drilling In NSW



- Limited Traditional Oil and Gas Industry

Drilling In NSW



- Limited Traditional Oil and Gas Industry
- Dress-down Conventional Oil and Gas Drilling Rigs

Drilling In NSW



- Limited Traditional Oil and Gas Industry
- Dress-down Conventional Oil and Gas Drilling Rigs
- Dress-up Traditional Mineral Rigs

SGL Drilling History



- Drilled 66 wells in Camden to date, depths between 600 to 1000 m. Over the past 4 ½ years

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- 2 Wells in Wyong and Hunter Valley
- Three Different Drilling Contractors Used
- All operations conducted 5 1/2 Days/week

Drilling Safety Performance



- One lost time injury – fall of rod trailer

Drilling Safety Performance



- One lost time injury – fall of rod trailer
- Near misses and light injuries related to mainly manual handling

- Changing Attitude

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- Recording Daily Safety Meeting

QHSE



- Changing Attitude
- Recording Daily Safety Meeting
- Incident Reporting

- Changing Attitude
- Recording Daily Safety Meeting
- Incident Reporting
- Evolution of Rigs

Evolution of Mineral Rigs



- Technology
 - BOP's and Well control

Evolution of Mineral Rigs



- Technology
 - BOP's and Well control
 - Rod Handling Equipment

The “Old” Rod Handler



The “Old” Rod Handler



The “New” Rod Handler



The “New” Rod Handler



The “New” Rod Handler



The “New” Rod Handler



Evolution of Mineral Rigs



- Technology
 - BOP's and Well control
 - Rod Handling Equipment
 - Running Casing

Casing Running Platform



Casing Running Platform



Evolution of Mineral Rigs



- Technology
 - BOP's and Well control
 - Rod Handling Equipment
 - Running Casing
 - Silenced Air Compressors and Rig Motor

MCDD Rig # 15



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Future



- Introduction of Niche Drilling Rigs for growing Market CSM Segment
 - Drill-Mec, Schramm, Ingersol Rand, others

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- Rod Handling
 - Minimal handling of drill pipe, all automated
- R3 Casing
 - Rod handling equipment is also designed for picking up and running casing