

**Brisbane Mining Club**  
**CH4's Scorecard for 2004/05**

**CH4** GAS LIMITED

# Project Status - Moranbah Gas Project

**Delivered first gas to Enertrade:** 1 September 2004.

**Production target achieved:** 33TJ/day (31 million cubic feet of gas per day)  
Enertrade Daily Contract Quantity target achieved.

**Townsville Power Station now delivering 220MW:** base load power produced from Moranbah's natural gas.

**Currently producing 41 TJ/day:** 40 million cubic feet of gas per day being produced sustainably.

**Largest producer in Australia:** producing more CSG than any other project in Australia.

**Built in 19 months:** from project approval to fulfilling contracted gas sales.

**Commissioning complete:** all MGP construction completed/commissioned successfully.

**Delivering Substantial Production**



# Corporate Status – CH4 Gas Limited

**Capital raising oversubscribed:** \$20 million raising completed successfully in March.

**Management Team strengthened:** Greater depth.

**Gas sales to Enertrade:** will total 12PJ in 2005.

**Ergon power station expanded:** Moranbah gas fired power station doubled to 12MW.

**Robust Cashflow:** operating profit expected to exceed project cash requirements.

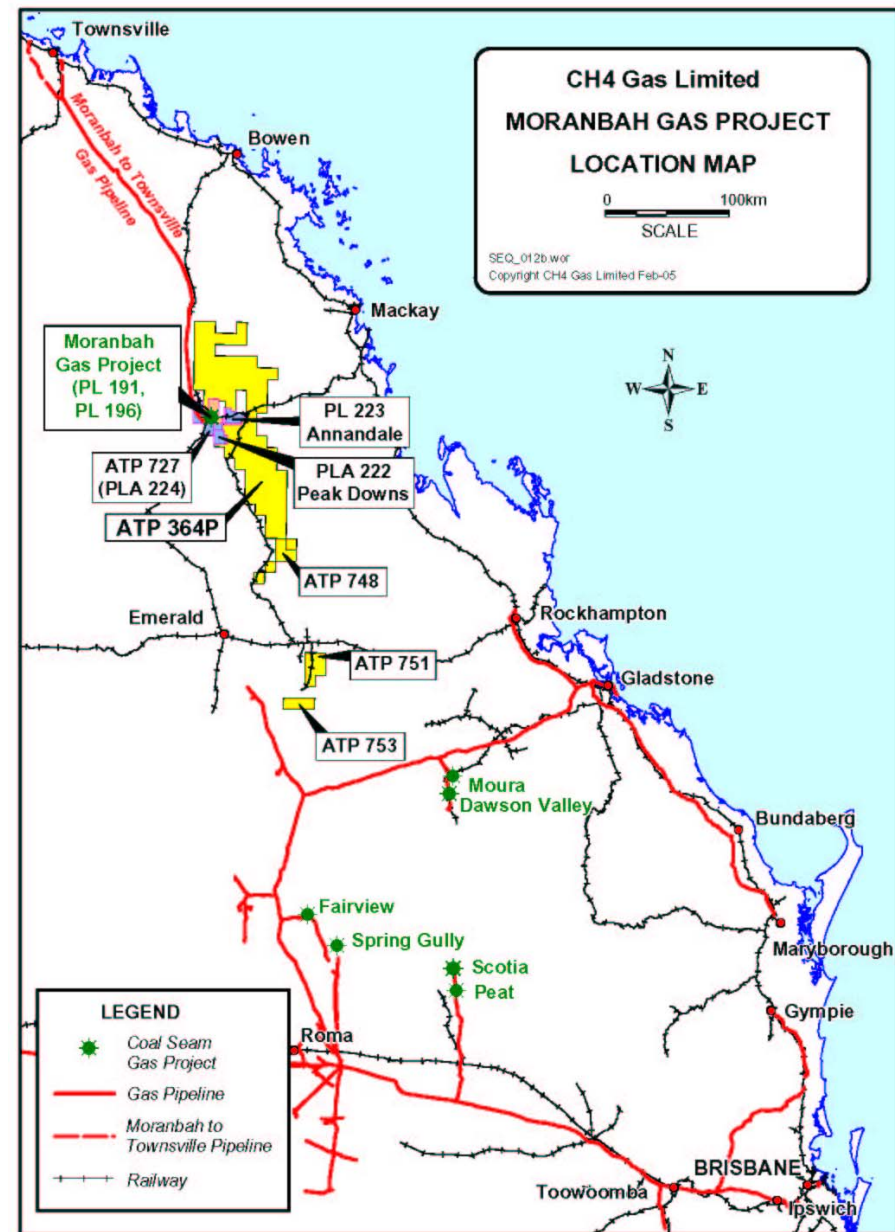
**25% increase in gas sales to Enertrade in 2006:** additional customers.

**20PJ/a spoken for:** QNI have agreed to take 70PJ to 150PJ over the next 15 years; plus Townsville Power Station; and Xstrata.

**Substantial Gas Sales**

# CH4's Fundamentals

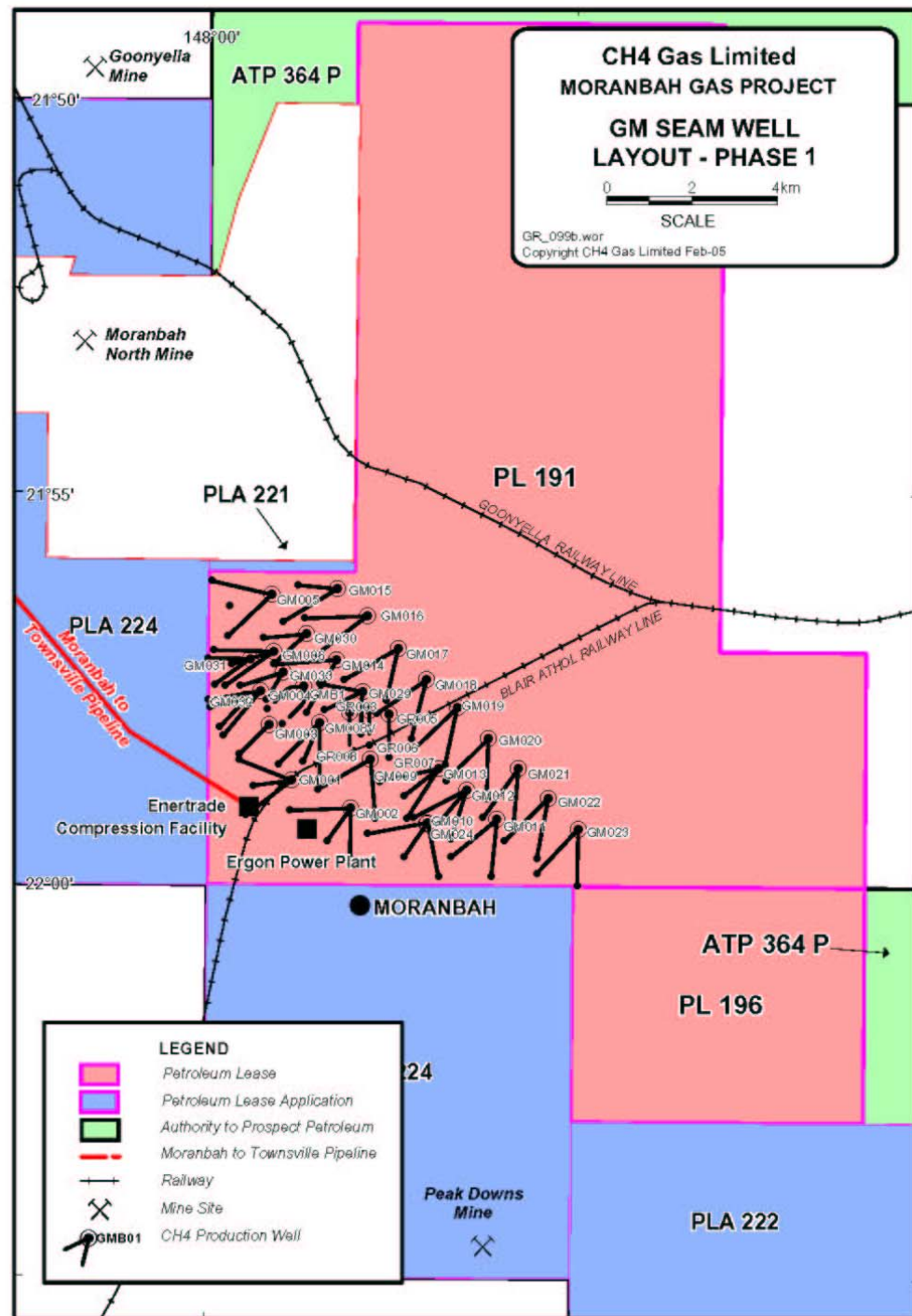
- **Over 7,000km<sup>2</sup> tenements** in highly prospective Bowen Basin
- **Well understood geology** – 30,000 drill hole database → a key I.P. advantage
- **Exclusive exploration rights** to tenements containing in excess of 12,000 PJ GIP
- **Delivering into 300PJ contract** to supply Enertrade from MGP
- **JV with BHPBilliton** on MGP
- **Well positioned for Townsville and Gladstone**, the 2 fastest growing industrial regions in Australia



# Moranbah Gas Project

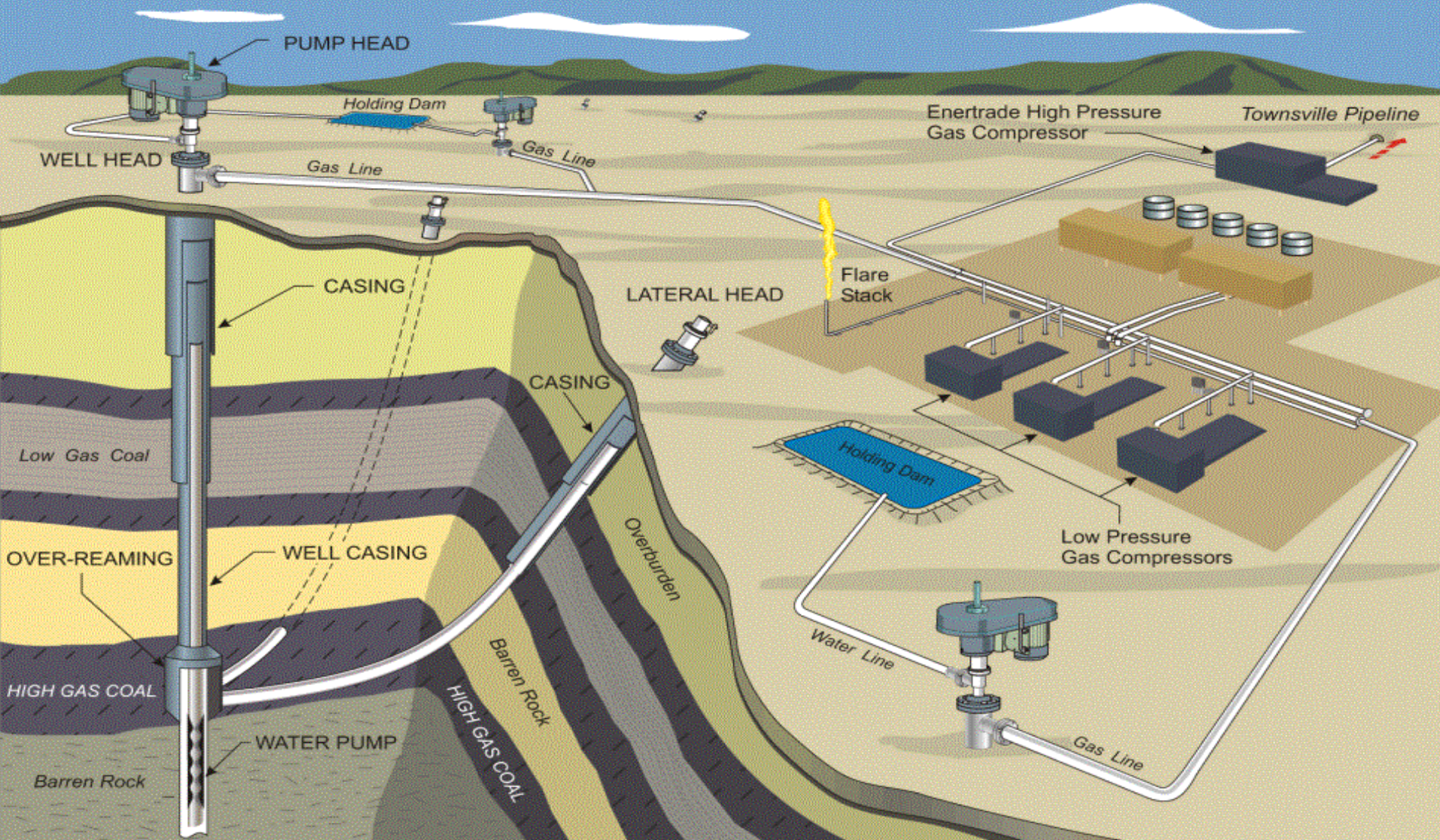
- **384PJ 2P reserve- independently certified**; 3P reserves of 1616 PJ
- **52 wells** drilled to date
- **2 nodes** compressor stations
- **Delivering 41 TJ/day**

**Biggest CSG Project in Australia**





# CH<sub>4</sub> - GAS FIELD SCHEMATIC



- Cartoon – not to scale



- Conventional exploration/coal/minerals drilling rigs
- In-seam steering technology applied
- Increased hole size in Phase 2



- 50 wells installed; 98% availability current average
- Averaging 890,000scfd; GM seam more reliable than P seam
- Lower wellhead cost in Phase 2



- 80klms P/E pipe; 7klms steel pipe
- 50klms roads; 50klms powerlines



- 7x 600kW screw compressors; 3x 300kW screw compressors
- Field pressure 120kPag; delivery pressure 800kPag
- Optimise field pressure and well count in Phase 2

# How did it go?

Observations on completing the project:

- Well dewatering differed from area to area (good and bad)
- Production profile slower than expected (good and bad)
- Stable production longer than expected (good)
- Well decline later than predicted (good)
- Systems development much greater task than recognised (bad)
- Drilling cost over-runs (bad)
- People and supplies shortage (challenge++)
- FIFO expectations in O+G

**Challenge of being the leader**

# What did we have to do?

The results were that:

- We added 6 wells to total, accelerated capital
- All means we spent capital ahead of plan
- Quantum was OK, we spent \$5M more for extra 6 wells and compressors
- Systems development required outside help
- Drilling cost over-runs added 10%
- People have been recruited from outside O+G

**Accelerated capital, plus 10% on drilling**

# What did we learn?

The key learnings were:

- Wells are an averaging exercise, steer a steady course
- We needed to install wells sooner, now balancing out
- The CH<sub>4</sub> technology works
- Geology is not homogeneous
- Avoid drilling out of coal, especially into clay/tuff
- Geological structure is important

**Geological understanding is a key**

# Regional Cross Section through MGP

NW

SE

Class A Wells on flanks of syncline, north of fault, capped by thick sandstones and basalt

Class C Wells on broad anticline south of hinge zone where fault frequency increases, the GM seam floor splits and seam decreases in quality

GM006V

GM009V

GM010V

A

A

B

surface

Standing water level

basalt

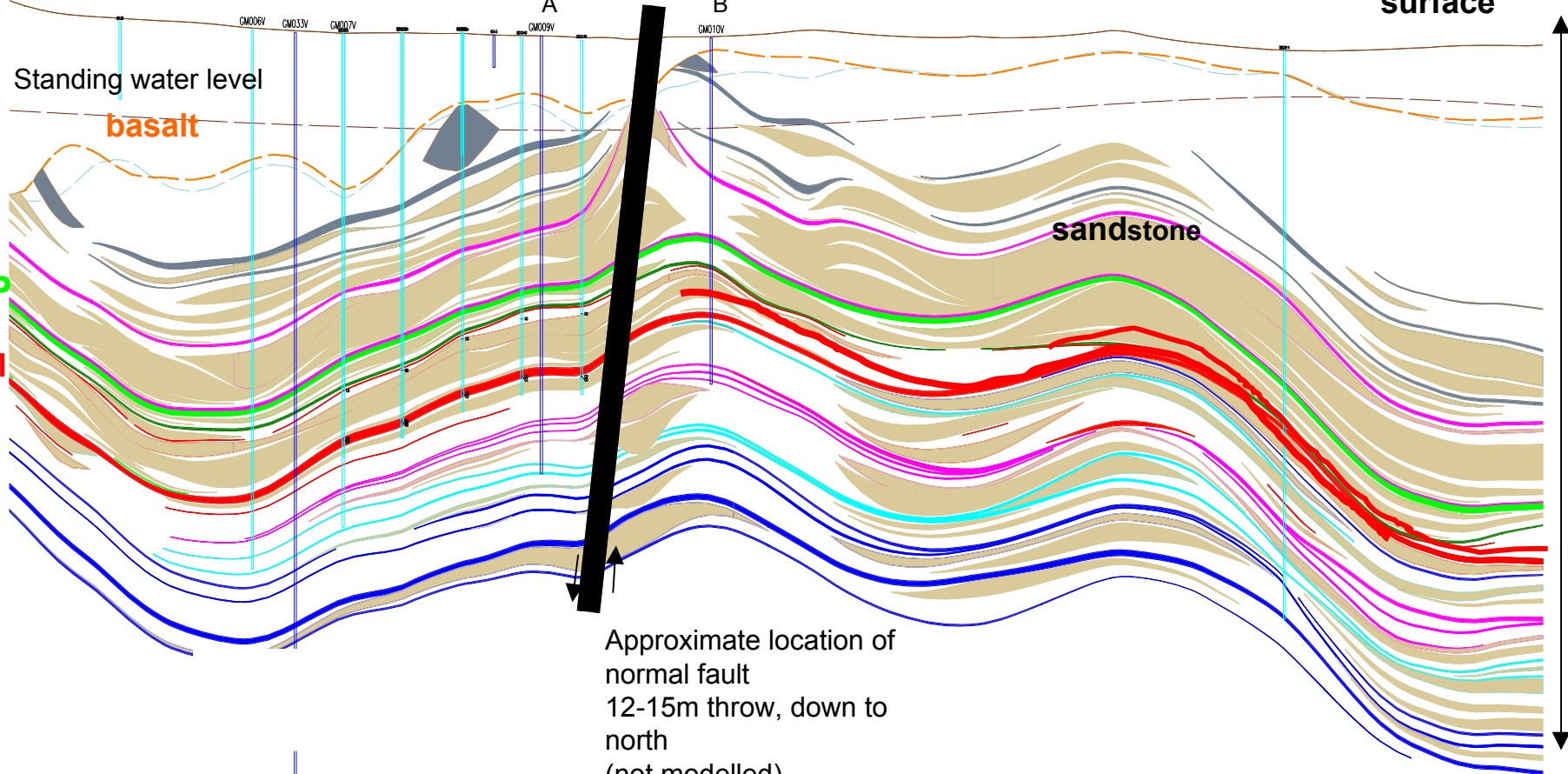
sandstone

P

GM

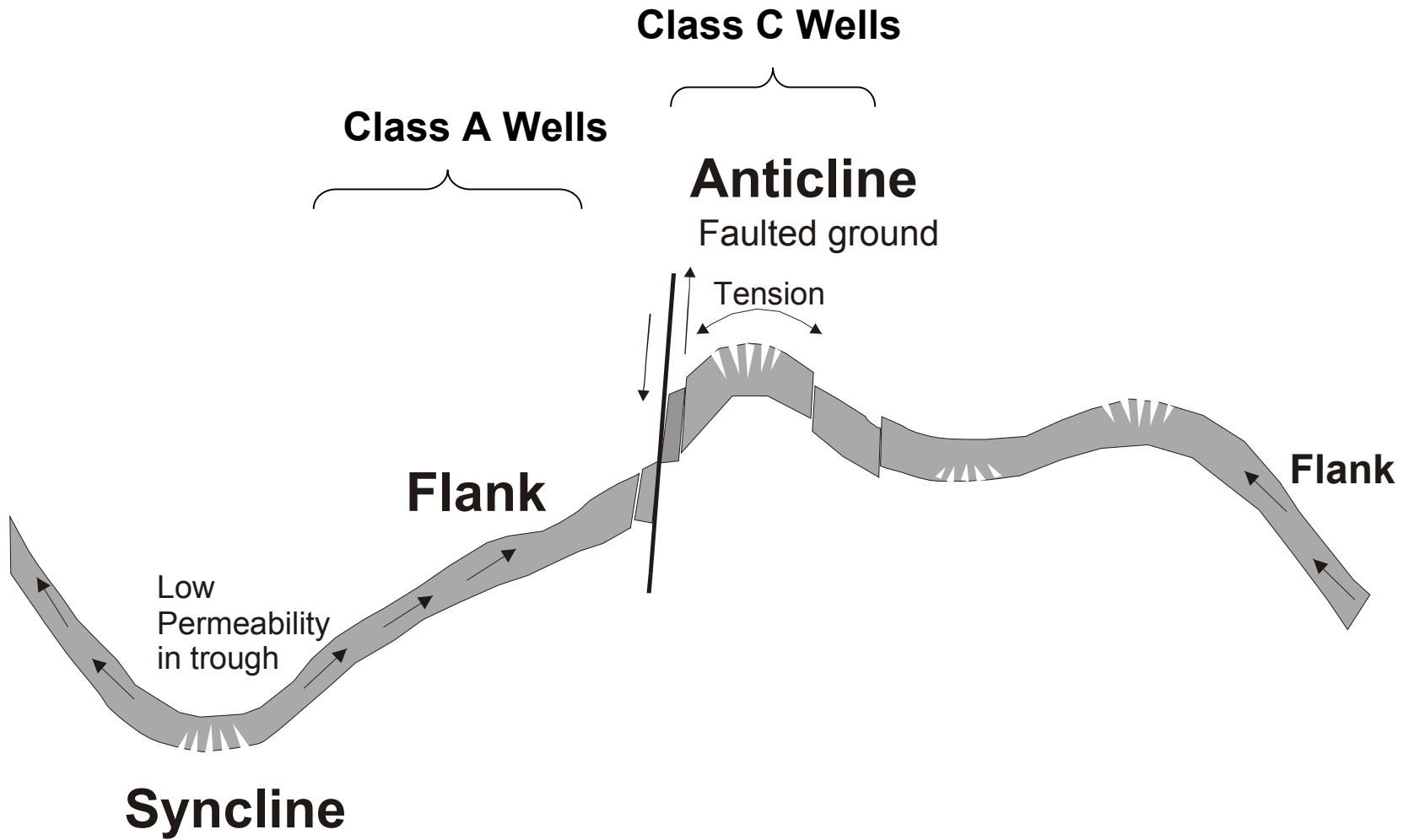
~300 m

Approximate location of normal fault  
12-15m throw, down to north  
(not modelled)



# Conceptual Model

Good production on synclinal flanks



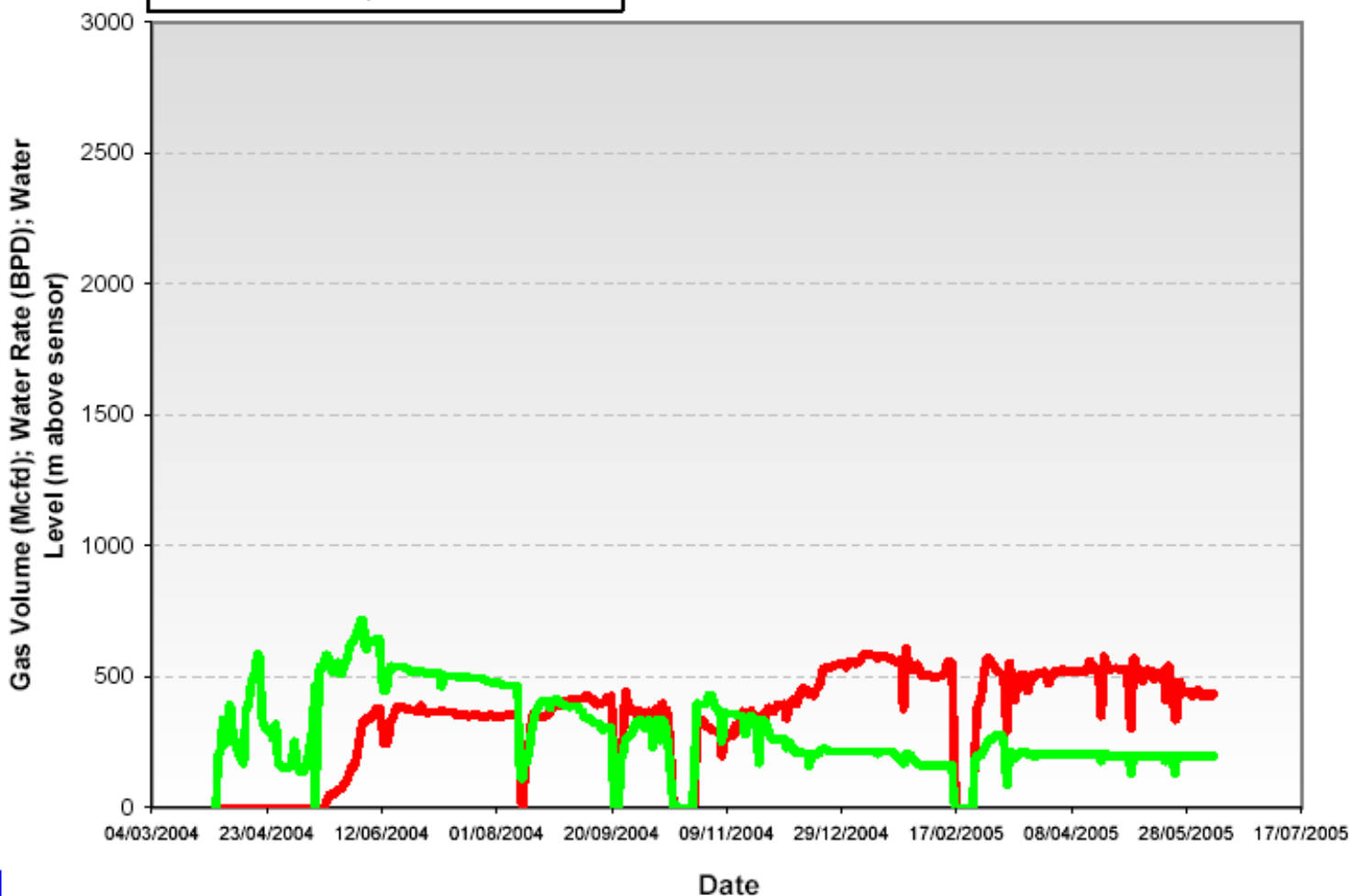
# Production History

Gas Volume (Mcf/d)

Water Rate (BPD)

Ray's Cheat-O-Matic

Metric 
  Imperial 
  Water Level



Class C Well



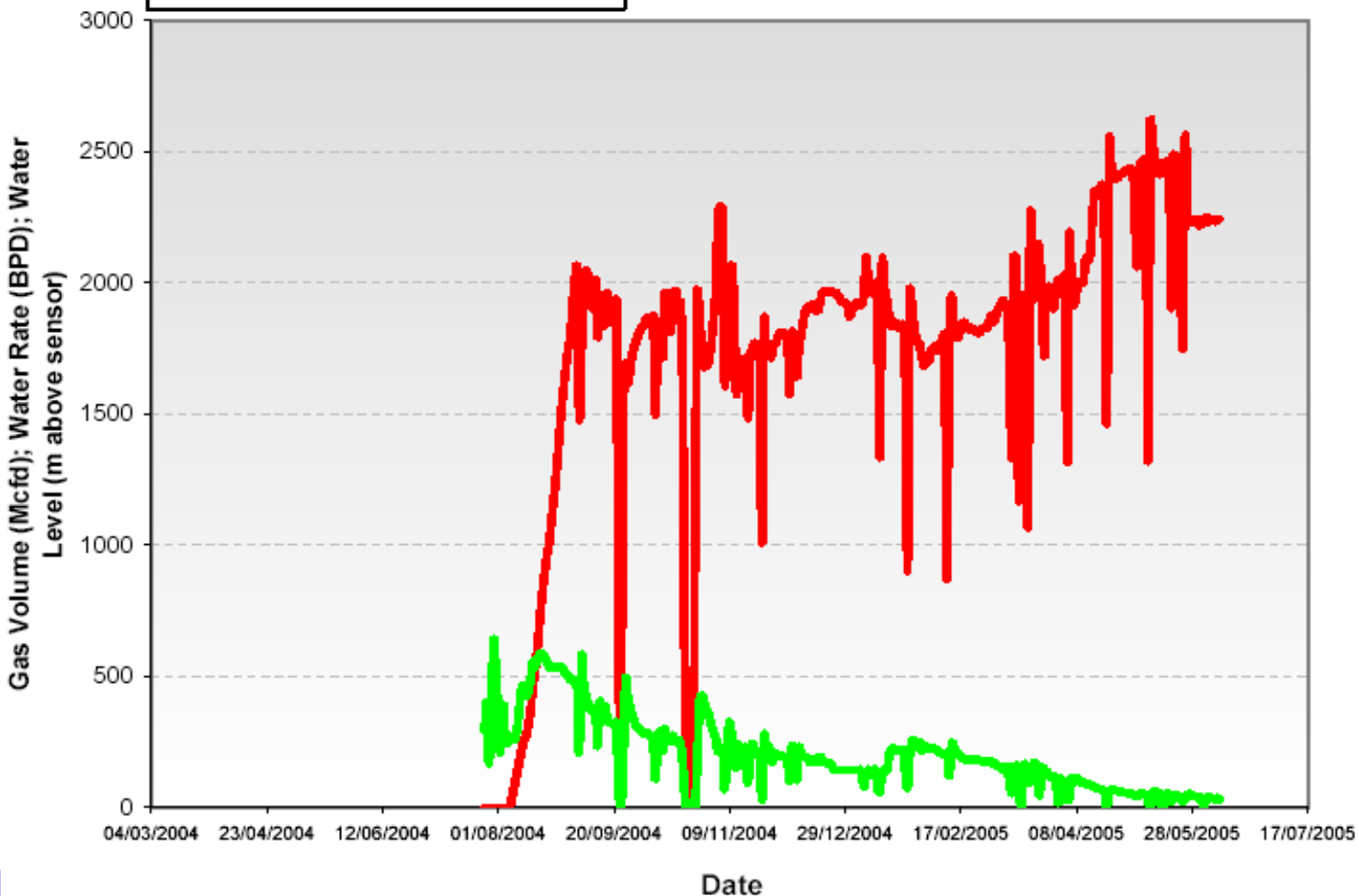
# Production History

Gas Volume (Mcf/d)

Water Rate (BPD)

Ray's Cheat-O-Matic

○ Metric ● Imperial ○ Water Level



- GM001
- GM002
- GM003
- GM004
- GM005
- GM006
- GM007
- GM008
- GM009
- GM010
- GM011
- GM012
- GM013
- GM014
- GM015
- GM016
- GM017
- GM018
- GM019
- GM020
- GM021
- GM022
- GM023
- GM024
- GM026
- GM027
- GM028
- GM029
- GM030
- GM031
- P001
- P002
- P004
- P005
- P006
- P007
- P008
- P009
- P010
- P011
- P012
- P013
- P014
- P015
- P016
- P017
- P018
- P019
- P021
- P031
- Q023
- GM032
- GM033
- GM24 + GM10

**Class A Well**

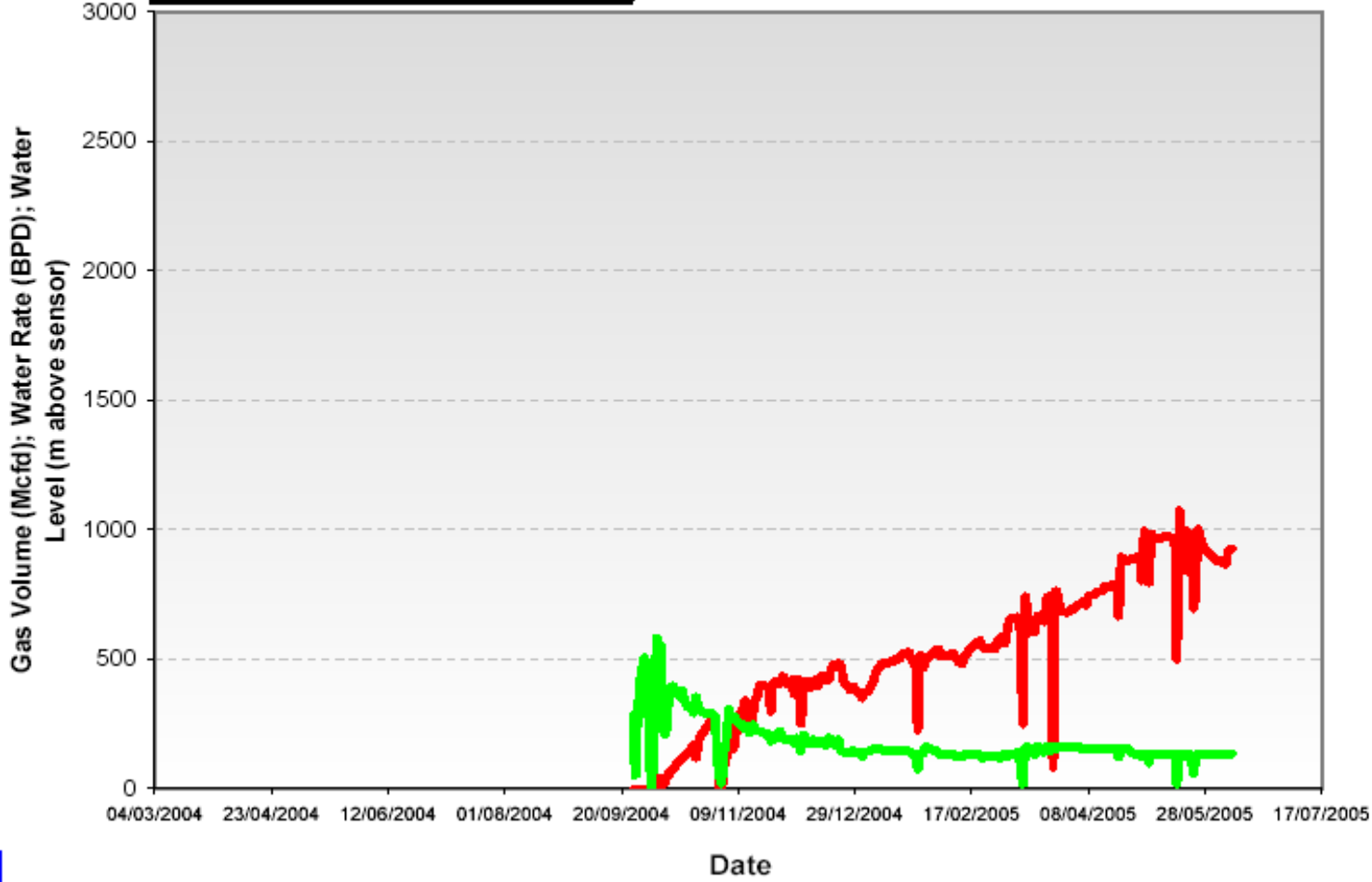


# Production History

Gas Volume (Mcf/d)

Water Rate (BPD)

Ray's Cheat-O-Matic  
 Metric  Imperial  Water Level



- GM001
- GM002
- GM003
- GM004
- GM005
- GM006
- GM007
- GM008
- GM009
- GM010
- GM011
- GM012
- GM013
- GM014
- GM015
- GM016
- GM017
- GM018
- GM019
- GM020
- GM021
- GM022
- GM023
- GM024
- GM026
- GM027
- GM028
- GM029
- GM030
- GM031

- P001
- P002
- P004
- P005
- P006
- P007
- P008
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- P012
- P013
- P014
- P015
- P016
- P017
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- P021
- P031

Q023

GM032

GM033

GM24 + GM10

**Class B well**

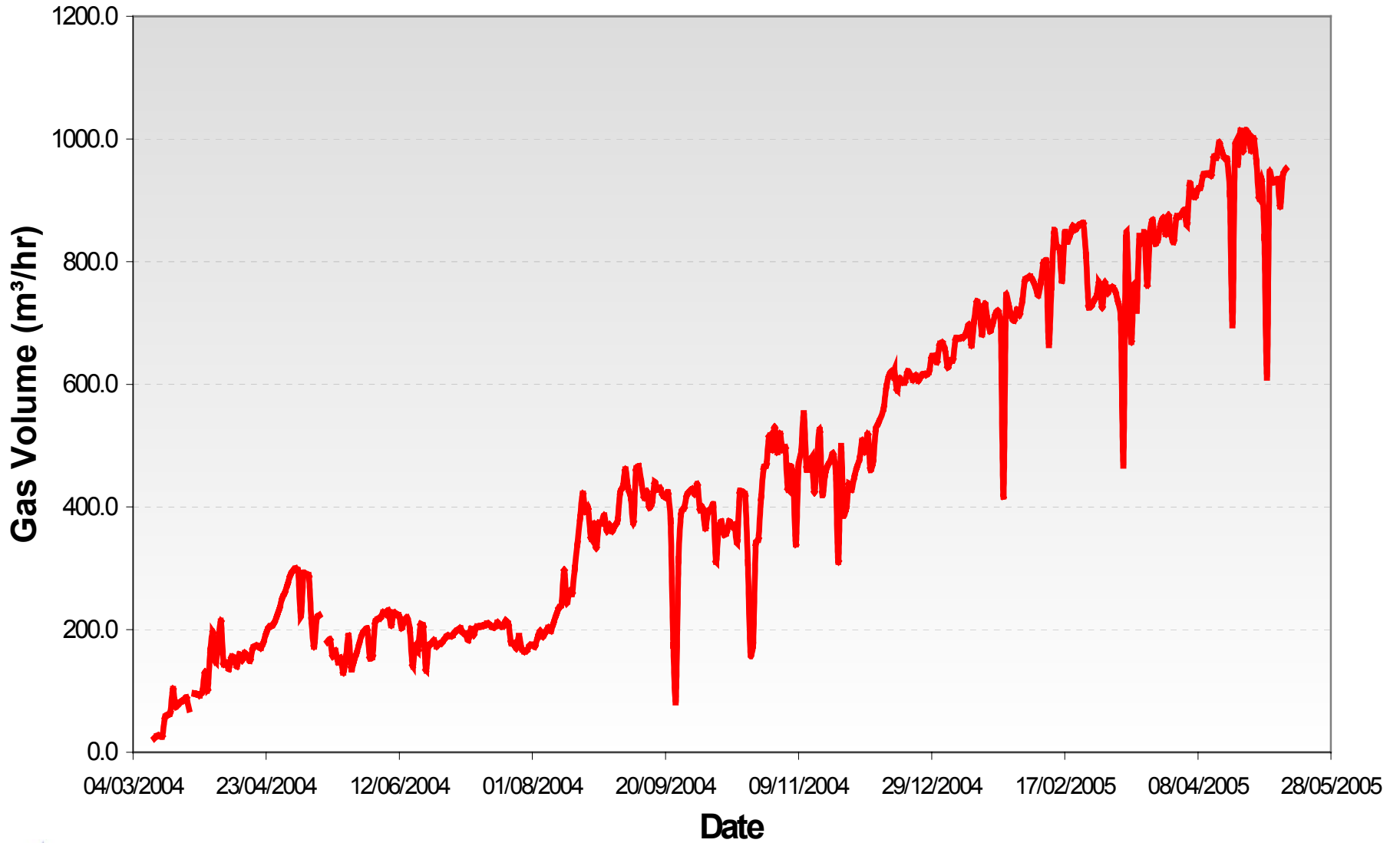


# Some analysis of our wells

- 35% of our wells by number provide 70% of production
- 25% of our wells by number provide 20% of production
- 40% of our wells provide 10%, including our new and developing wells
- Average well is now producing 890,000CFD
- Average well is producing  $\approx 90\%$  of original Feasibility estimate
- GM seam is more reliable than P seam
- P seam contains more tuff bands

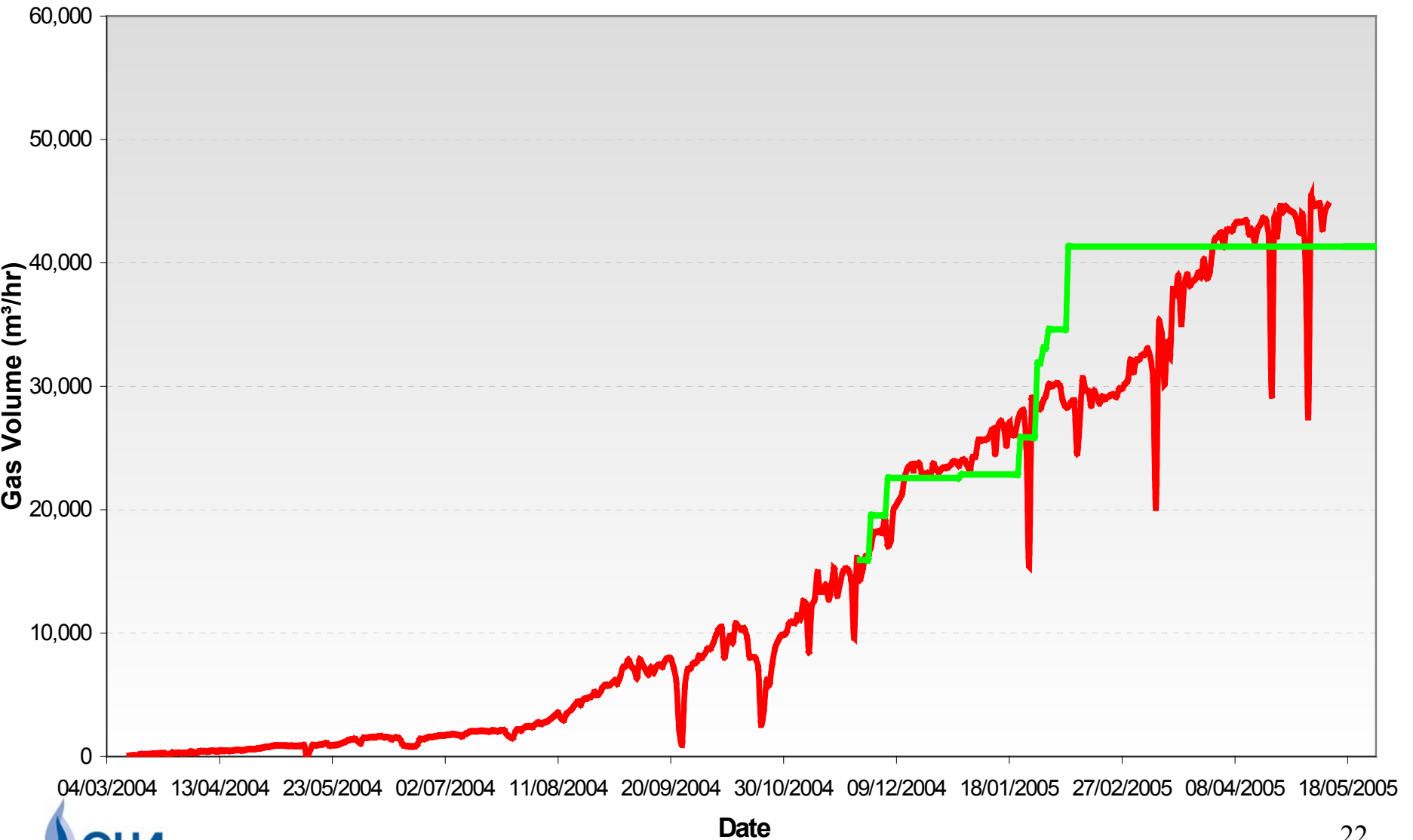
**Oils ain't Oils, Coals ain't Coals and Gas Wells ain't Gas Wells**

# Average Production Rate per Well



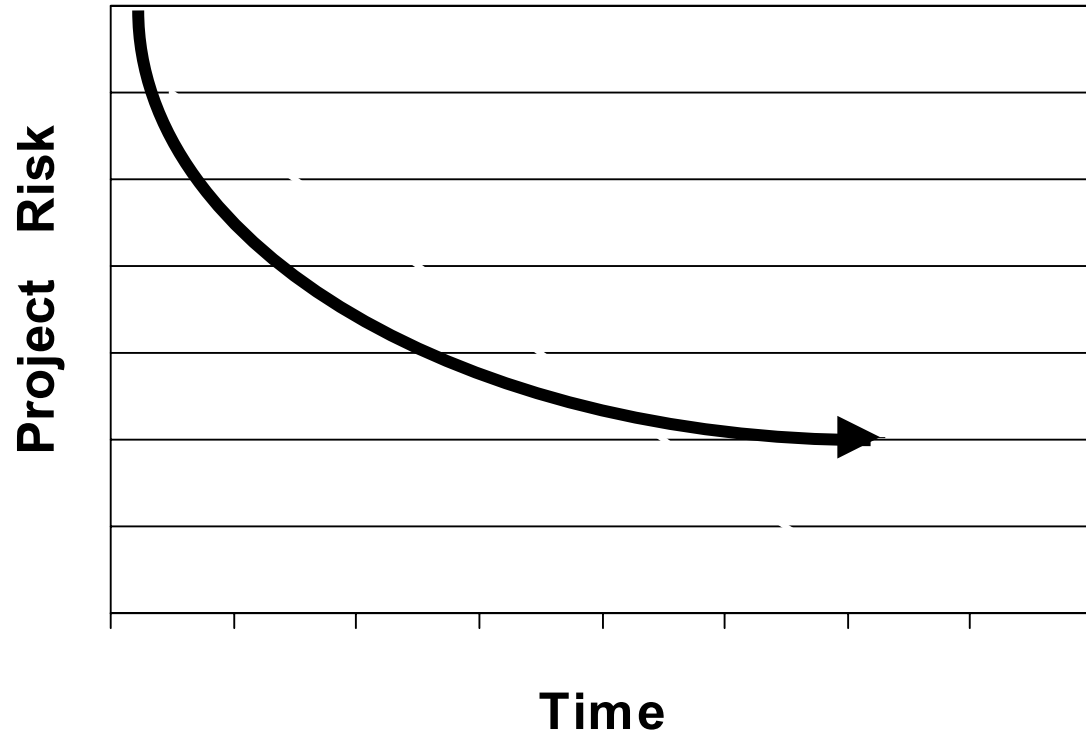
# Total Field Production

— Total Field Production — "Enertrade + Ergon Nomination"



# Experience to Date

- New technology
- New business
- New challenges
- Risk has been reduced
- Future will be easier than past



**Managed Our Way Thru Every Production Challenge**

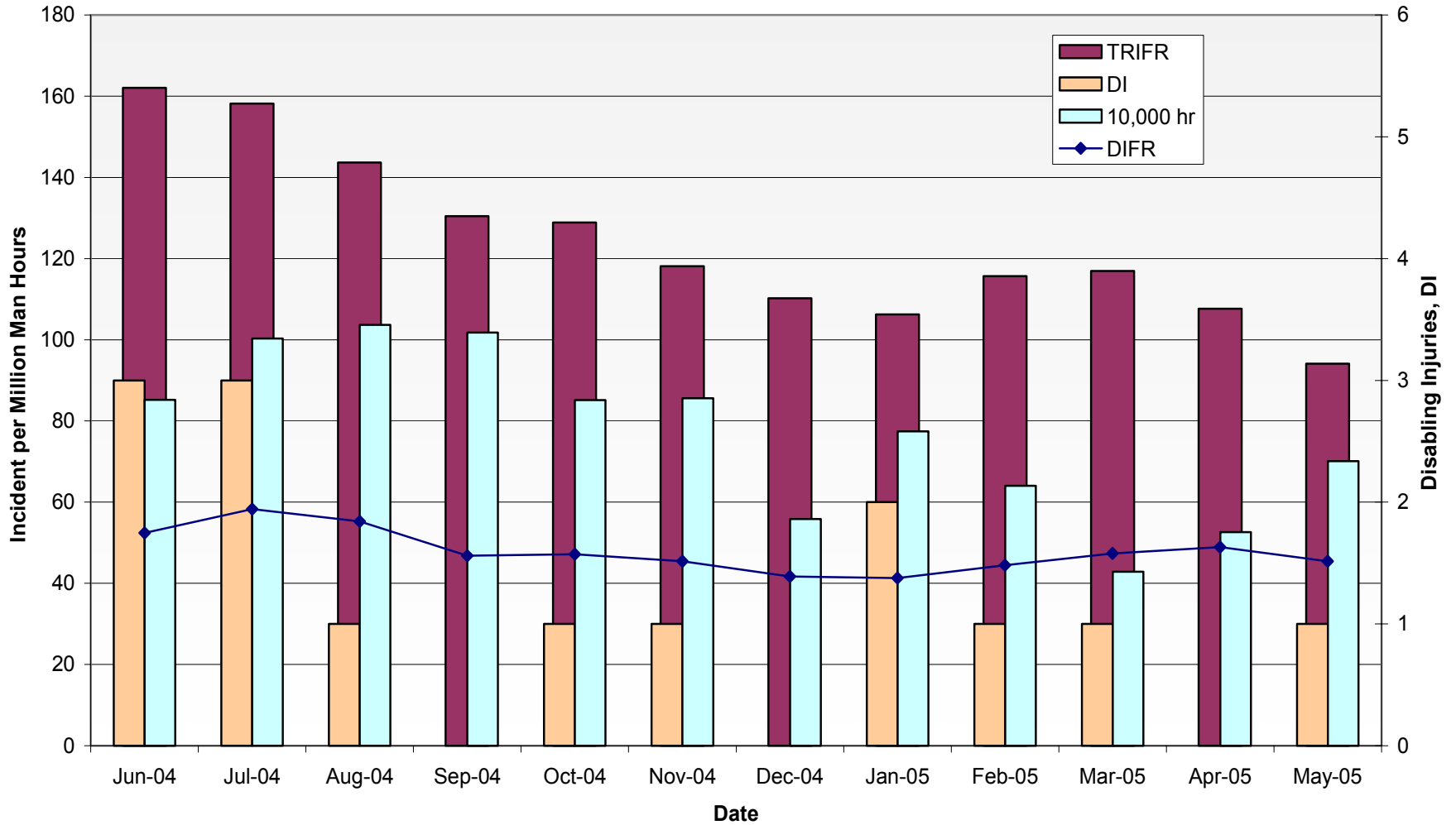
# HSEC

# Health and Safety-

- On PL's CSG is governed by Petroleum Act
- On PL's with overlapping ML's CSG ALSO governed by Mining Act
- Systems and procedures for O+G are much more defined
- Systems are very important but don't ensure safety
- Creating Safety Culture is essential ingredient

**Complex Health and Safety regulation environment**

## Total Recordable Incident Frequency Rate and Disabling Injury Frequency Rate



**If it isn't safe don't do it**

# Health and Safety - Experience

- Mining/other personnel struggle with extent of systems
- Major causes of accidents have been:
  - Slips, trips, falls – especially on/around drill rigs
  - Hand pinch incidents – especially around drill rigs
  - Vehicle incidents
- Major preventative measures:
  - SMP, Risk profiling, Permit-to-work system, Incident investigation and reporting/close-out, prequalification of contractors, drug and alcohol testing, HAZOBs

**The Target is Zero Incidents**

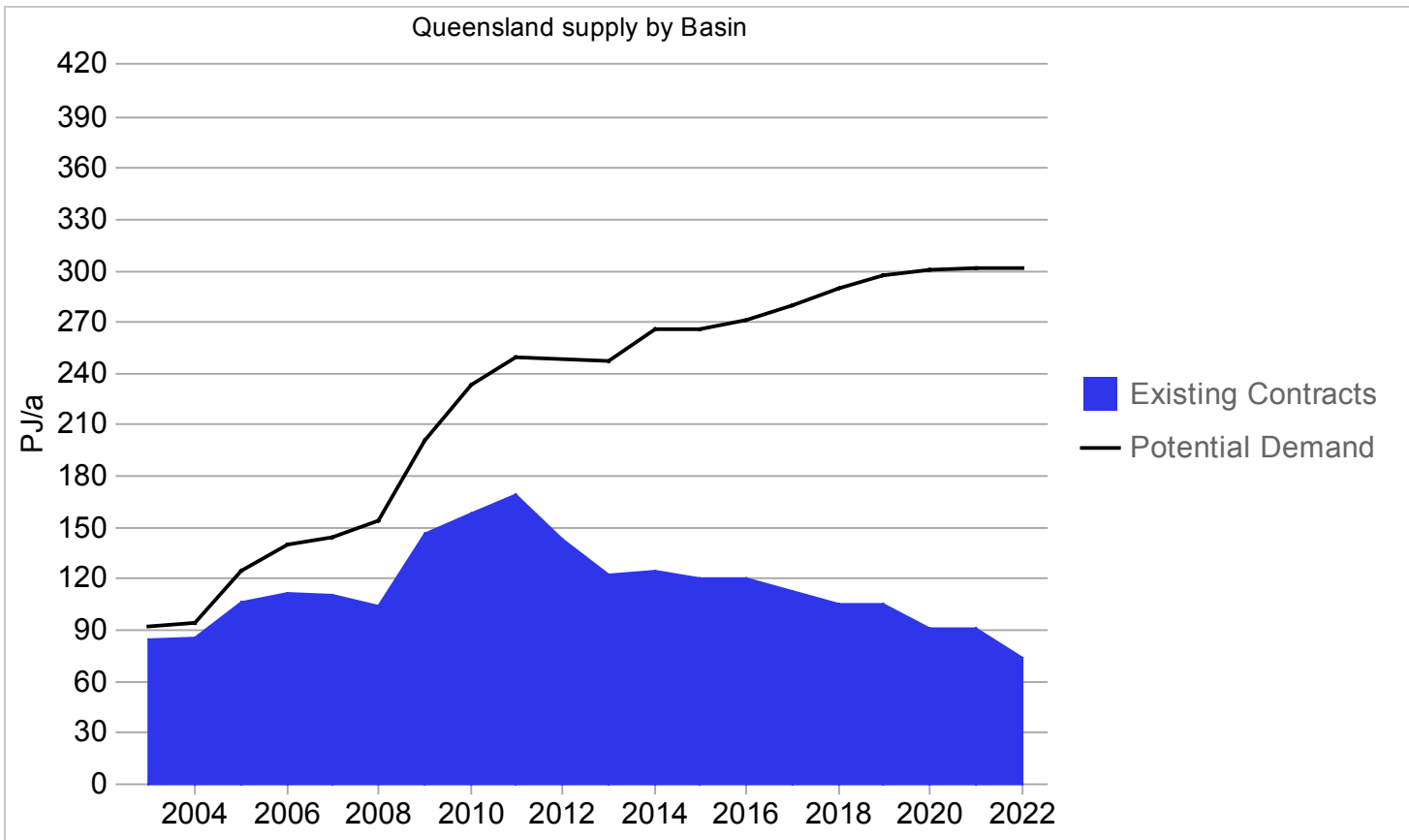
# Environment and Community

- Environmentally low impact, especially after construction complete
- Waste water from pumping operations is used by coal miners and is a major environmental benefit for the local communities
- Water volume not large at 1.5 million litres per day
- Moranbah community has been accepting of the project

**Environmental benefits clear to the community**

# New Business Opportunities

# Growth in Qld Demand Vs Supply



Source: ACIL Tasman

**Significant Market Exists**

# Market Developments

- Enertrade increased 2006 nomination by 23% to 14.8 PJ/pa (may request 110% of its nominated amount up to 16.3 PJ)
- Enertrade signed Xstrata's Townsville copper refinery
- QNI has signed up to take 70 to 150PJ of gas over the next 15 years

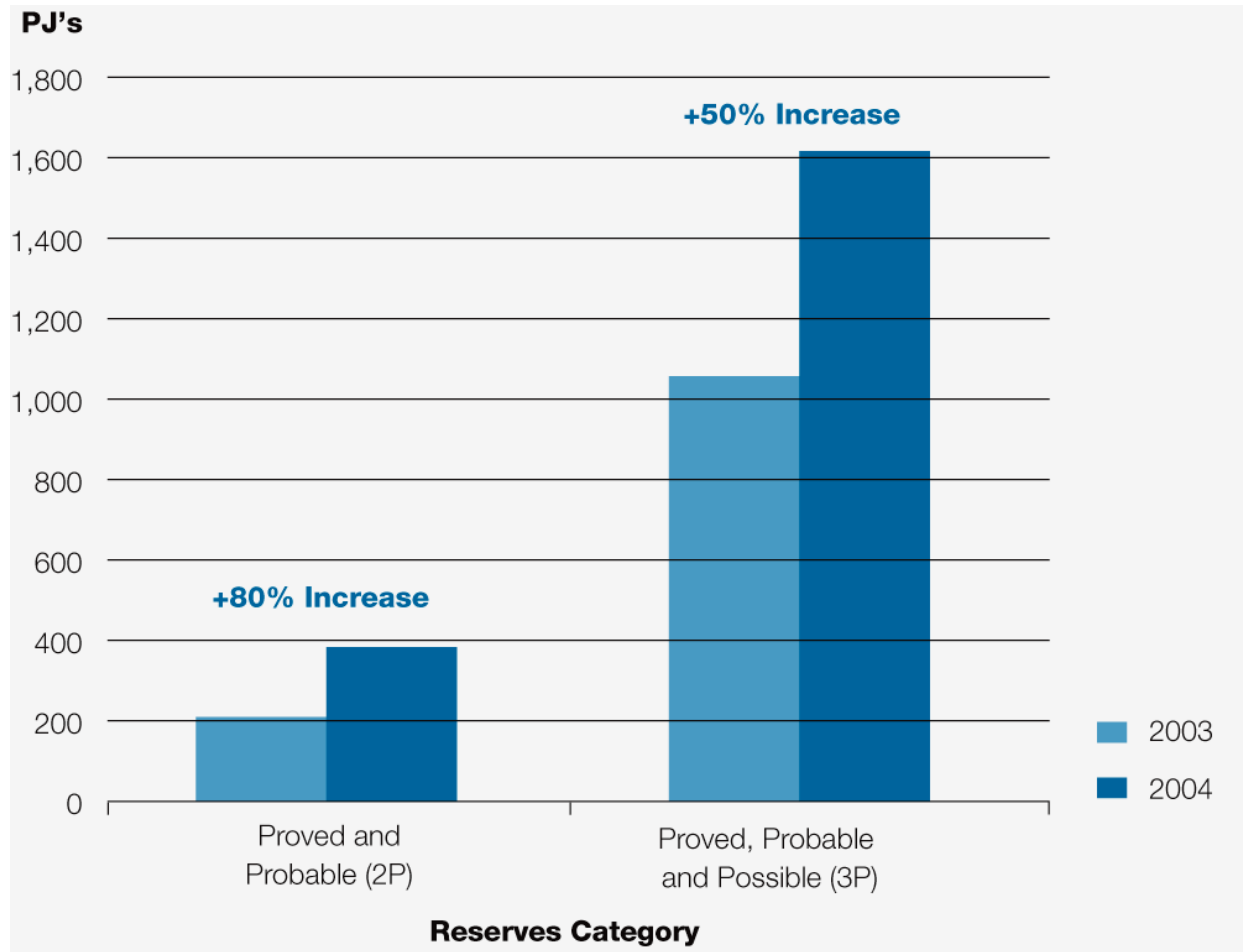
## New Market Demand

- Expressions of interest called for another Townsville Power Station – declared a Significant Project by QLD Government
- Central QLD Gas Pipeline has also secured Significant Project status

**The gas market in North and Central Queensland is developing more rapidly than expected**

# Exploration

# Reserves – Growth in 2004



Reserves for 100% MGP shown

**Rapid Reserve Increase**

# Summary

# In Summary

- **There have been numerous challenges- all have been met**
- **Solid production platform now exists**
- **CH4 now has robust cashflow and strong balance sheet**
- **20PJ/a contract fully committed to Townsville**
- **Market of +40PJ/a in North Qld requires further GSA/GSA's**
- **Market potential to Gladstone**
- **Reserves have increased and committed to exploration**

**CH4 has delivered in 2004/05**

[www.ch4.com.au](http://www.ch4.com.au)