

**Southern Pacific Petroleum NL**



# **Greenpeace vs the Future of Australian Oil Shale**

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**The 53rd Sydney Mining Club  
Sydney, Australia  
2 May 2002**

# The History of SPP and Gladstone Oil Shale

- 1968** SPP and CPM founded by Sir Ian McFarlane
- 1973** First oil price shock (US\$2.90 to \$11.65/bbl) - Yom Kippur War
- 1974** Discovery of Rundle deposit
- 1977/81** Discovery of other Queensland oil shales
- 1979** Second oil price shock (US\$13 to \$34/bbl) - Iranian Revolution
- 1980** Exxon secures 60% of Colony Oil Shale Project in Colorado
- 1980** Exxon secures 50% of Rundle Joint Venture in Australia
- 1982** Exxon terminates Colony Project
- 1984** Exxon completes Rundle commerciality study (fluidised bed technology)
- 1985** Third oil price shock (US\$31.75 to \$10/bbl)
- 1985** Exxon pays SPP A\$44.5 million to restructure Rundle Project
- 1986** SPP selects ATP technology for testing

# The History of SPP and Gladstone Oil Shale (cont.)

- 1990**      **Stuart Stage 1 Project designed**
- 1991**      **Federal Government provides excise rebate support**
- 1995**      **Suncor secures 50% of Stuart Joint Venture**
- 1997**      **Stuart Stage 1 construction start by Bechtel**
- 1999**      **Construction completed**
- 1999**      **Suncor takes over commissioning**
- 1999**      **Odour emissions identified**
- 2000**      **Odour emissions assessed and reduced**
- 2001**      **Suncor exits Stuart and SPP takes over operatorship**
- 2001**      **Production ramp-up begins**
- 2002**      **ATP technology proven in Stage 1**

# Australia's World Scale Oil Shale Resources

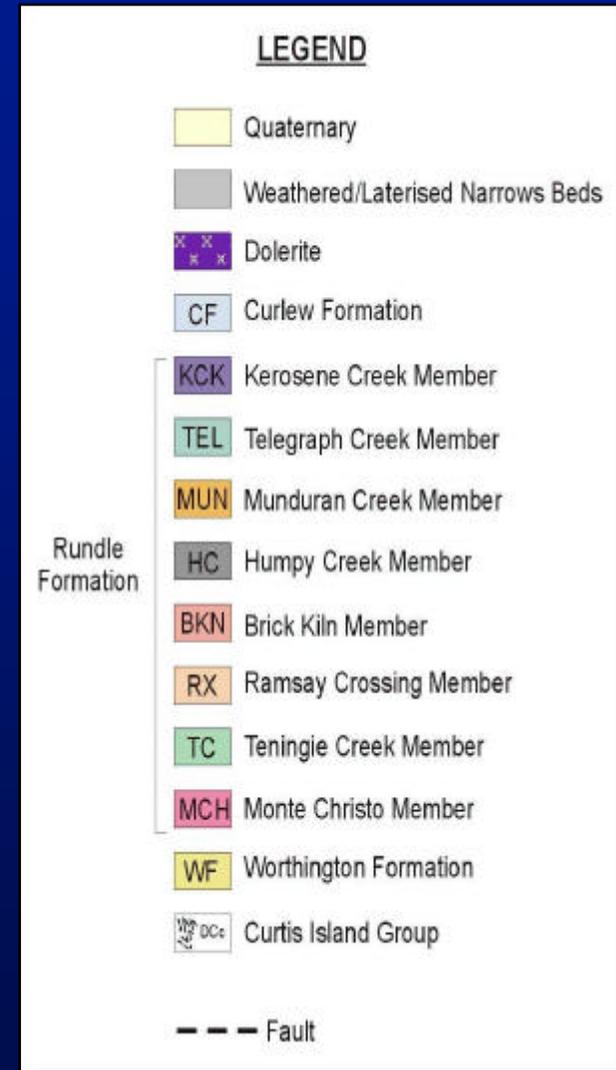
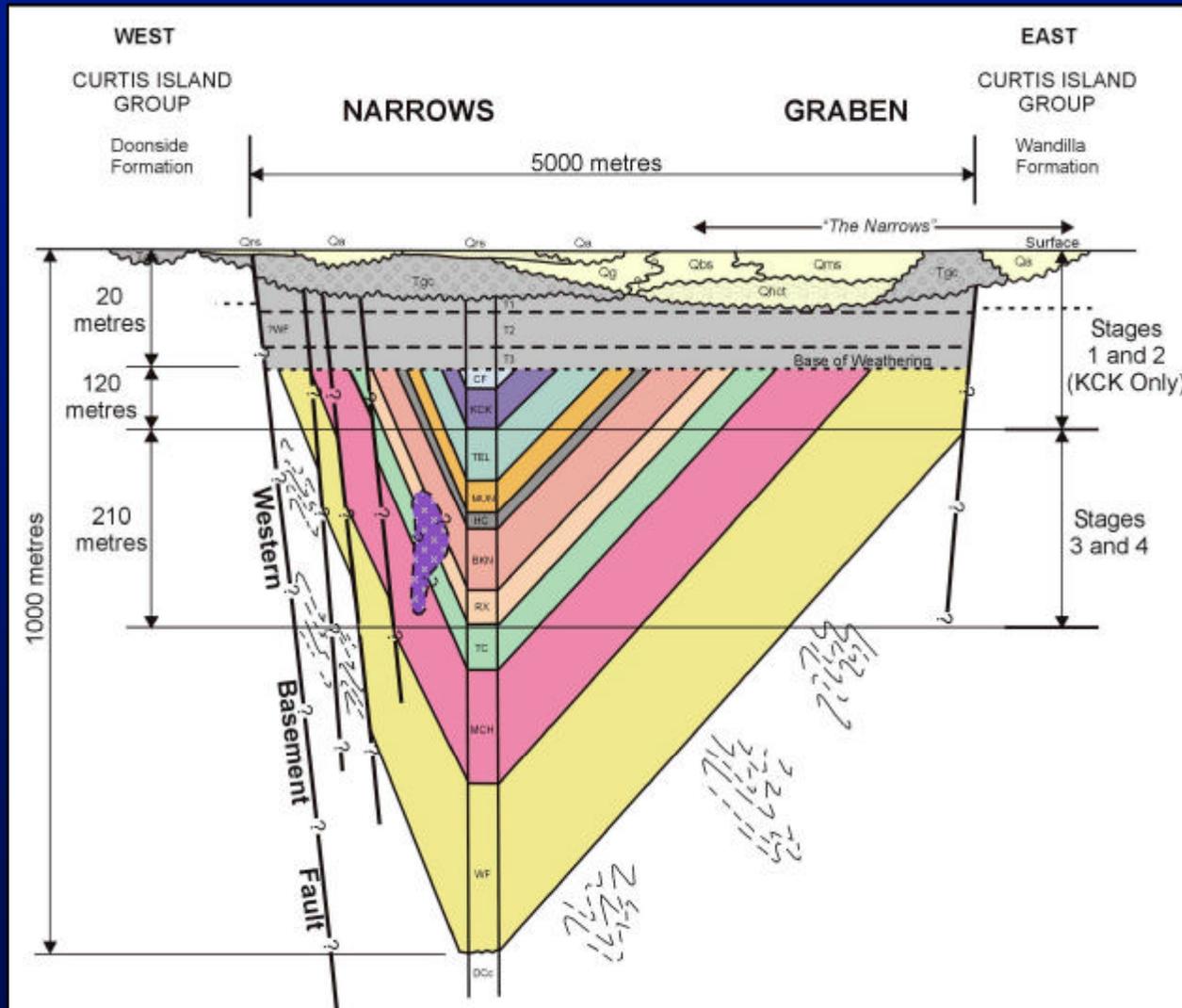


Deposit	Discovery Year	Oil Shale Resource*	SPP Net Interest
Rundle	1974	2.6	50%
Stuart	1977	2.6	100%
Duaringa	1978	2.5	100%
Condor	1979	4.8	100%
Yaamba Group	1979	4.0	100%
Nagoorin	1980	2.4	50%
Lowmead	1980	0.7	50%
Nagoorin South	1981	0.4	100%
<b>TOTAL</b>		<b>20.2 billion bbls</b>	<b>17.3 billion bbls</b>

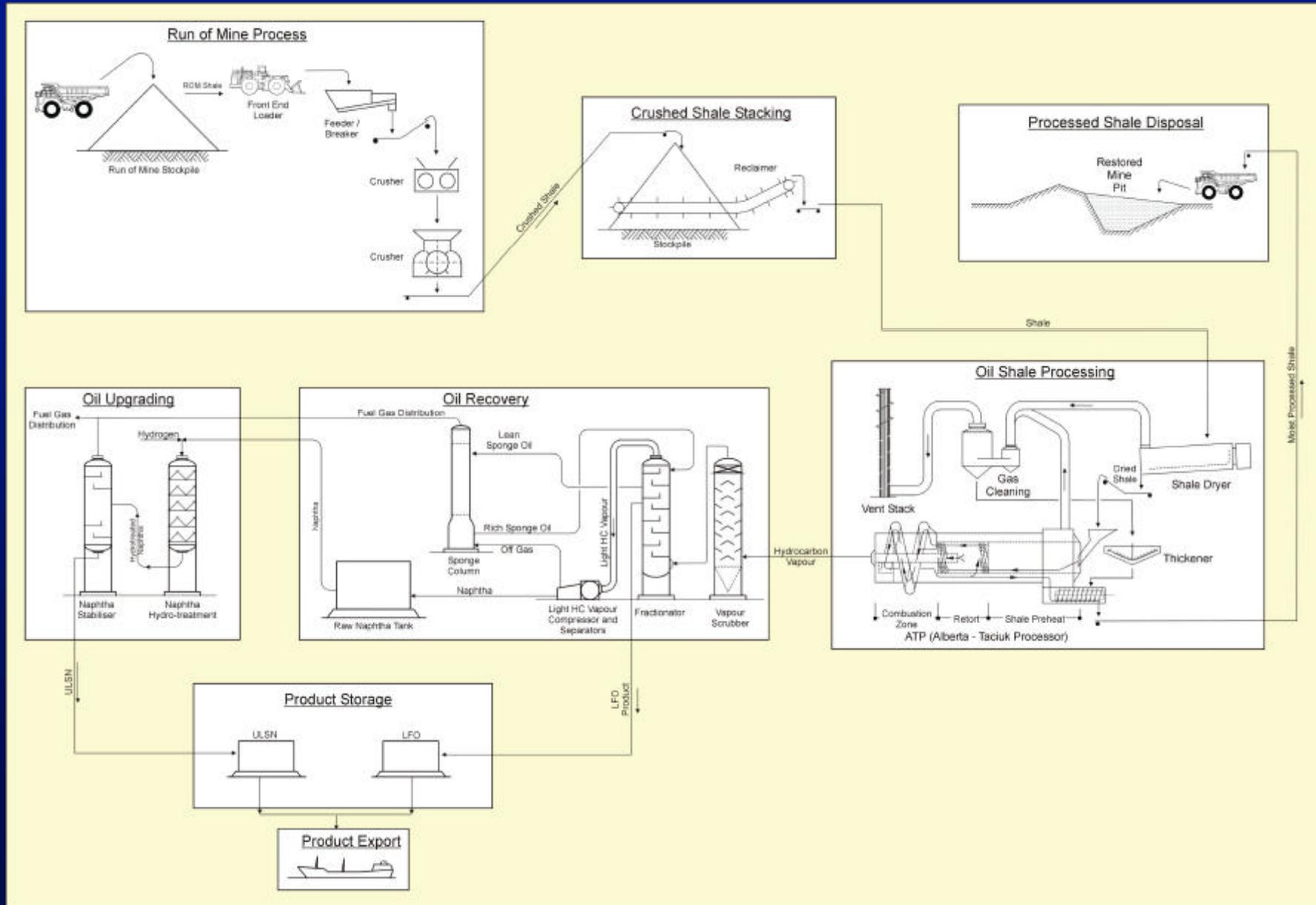
\* Based on a cutoff grade of 50 L/t at zero % moisture. Excludes 9.8 billion barrels (gross and net) of other oil shale in-situ at depths below 500 meters and at high waste-to-ore ratios.



# Stuart Schematic X-Section

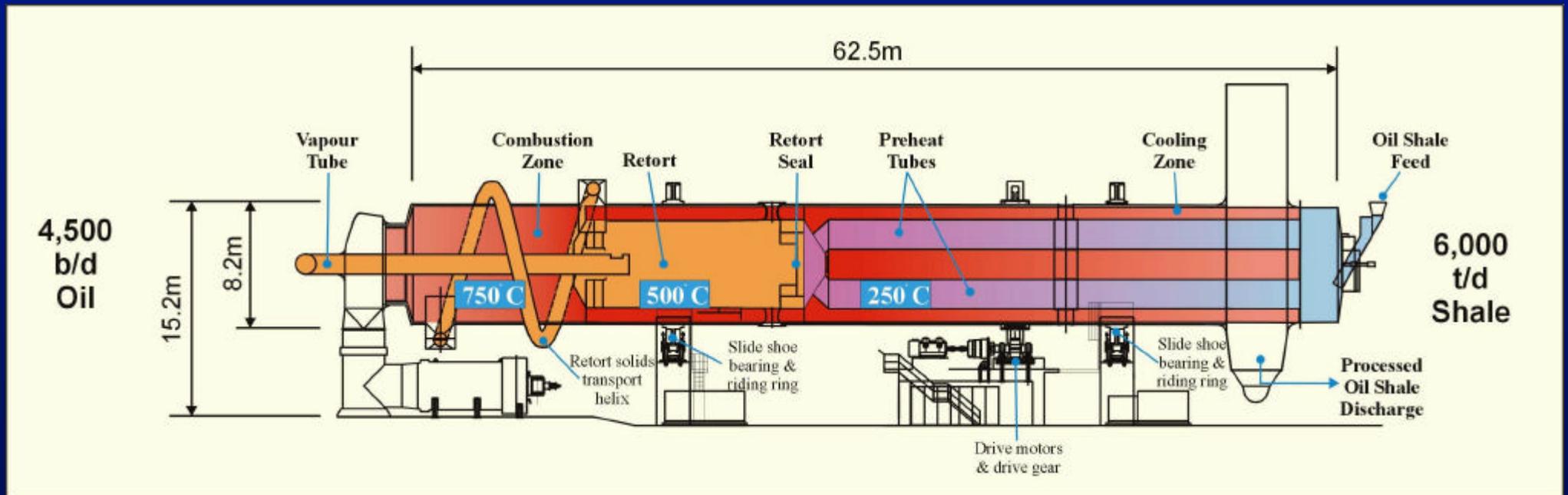


# Stuart Stage 1 Process Flow



# Stuart Showcasing Breakthrough ATP Technology

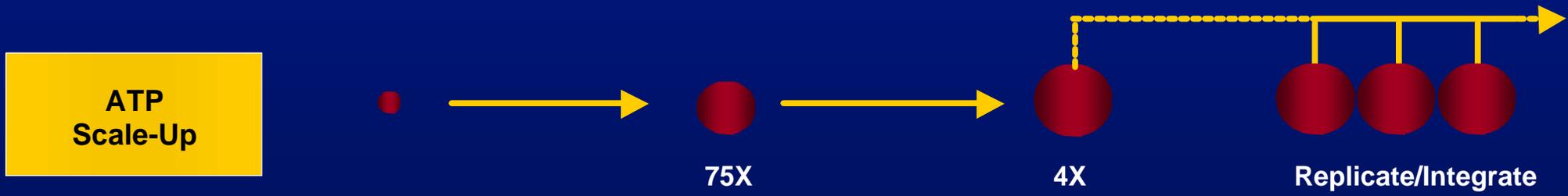
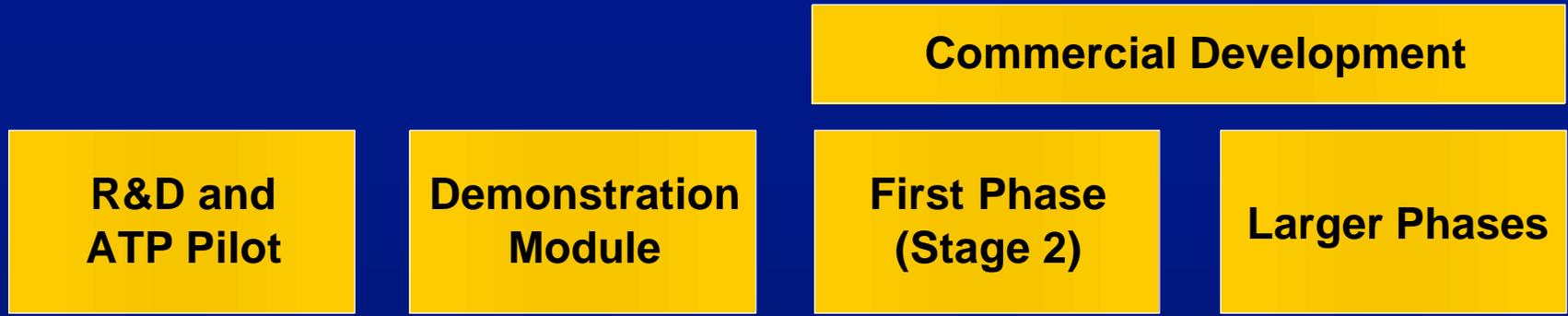
## Stuart Stage 1 ATP Design



Engineering:  
Fabrication:

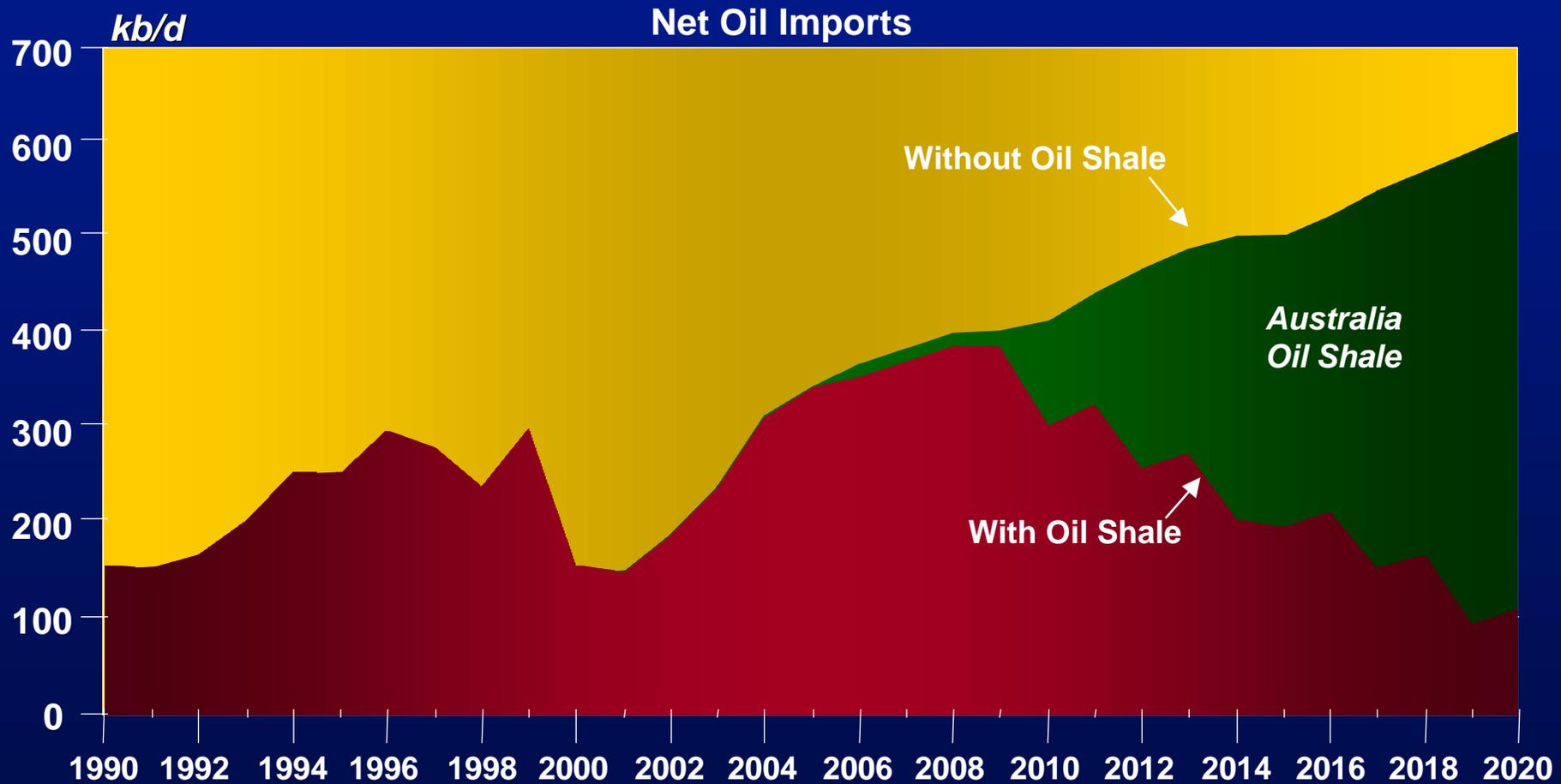
Bechtel (US), Krupp Polysius (Germany), UMATAC (Canada)  
Santaz-Censa (Spain)

# Stuart Phased Development Strategy



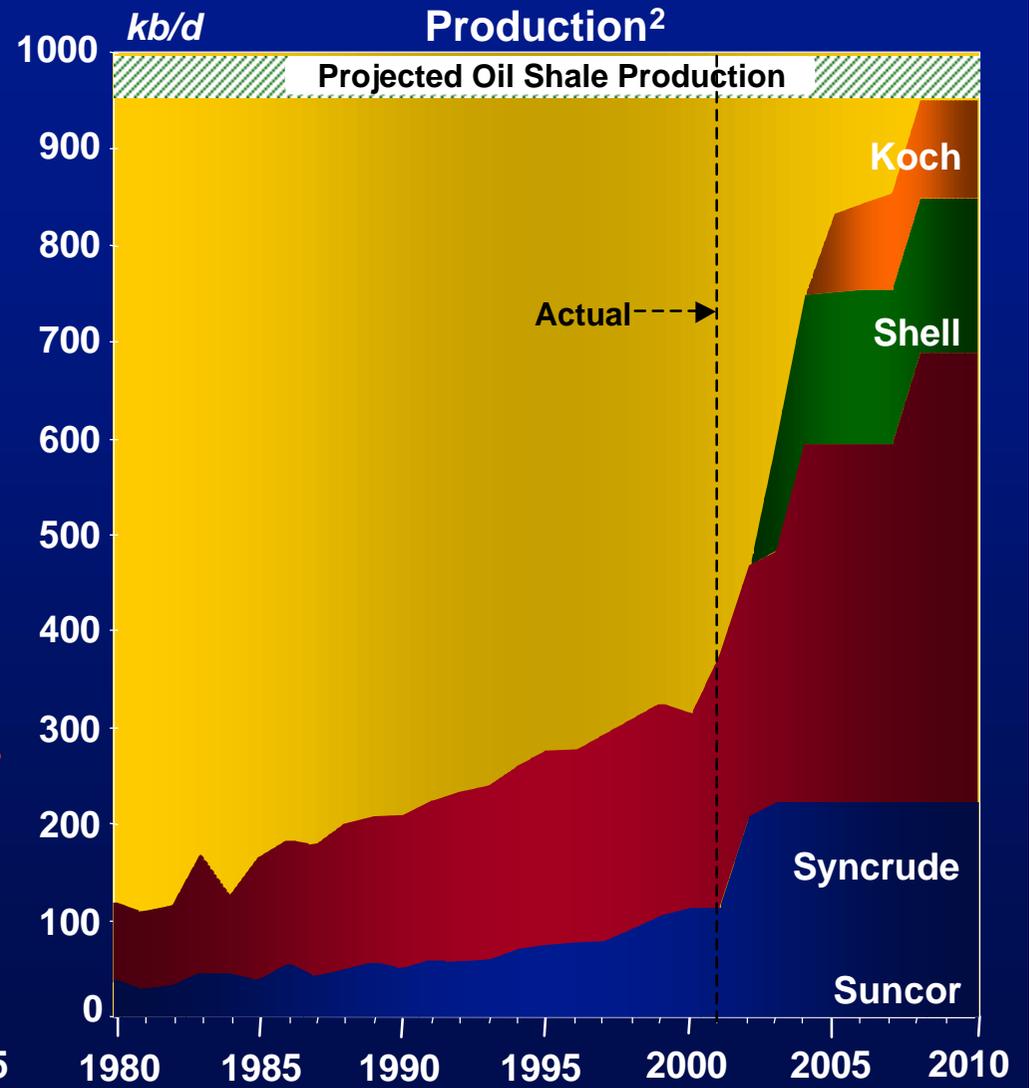
<b>Oil Shale (tpsd)</b>	80	6,000	23,500	380,000
<b>Oil Products (bpsd)</b>	75	4,500	15,500	200,000
<b>Timing</b>	1980's	1999	2006	2009 - 2012

# Oil Shale Could Reverse Australia's Growing Oil Supply Deficit



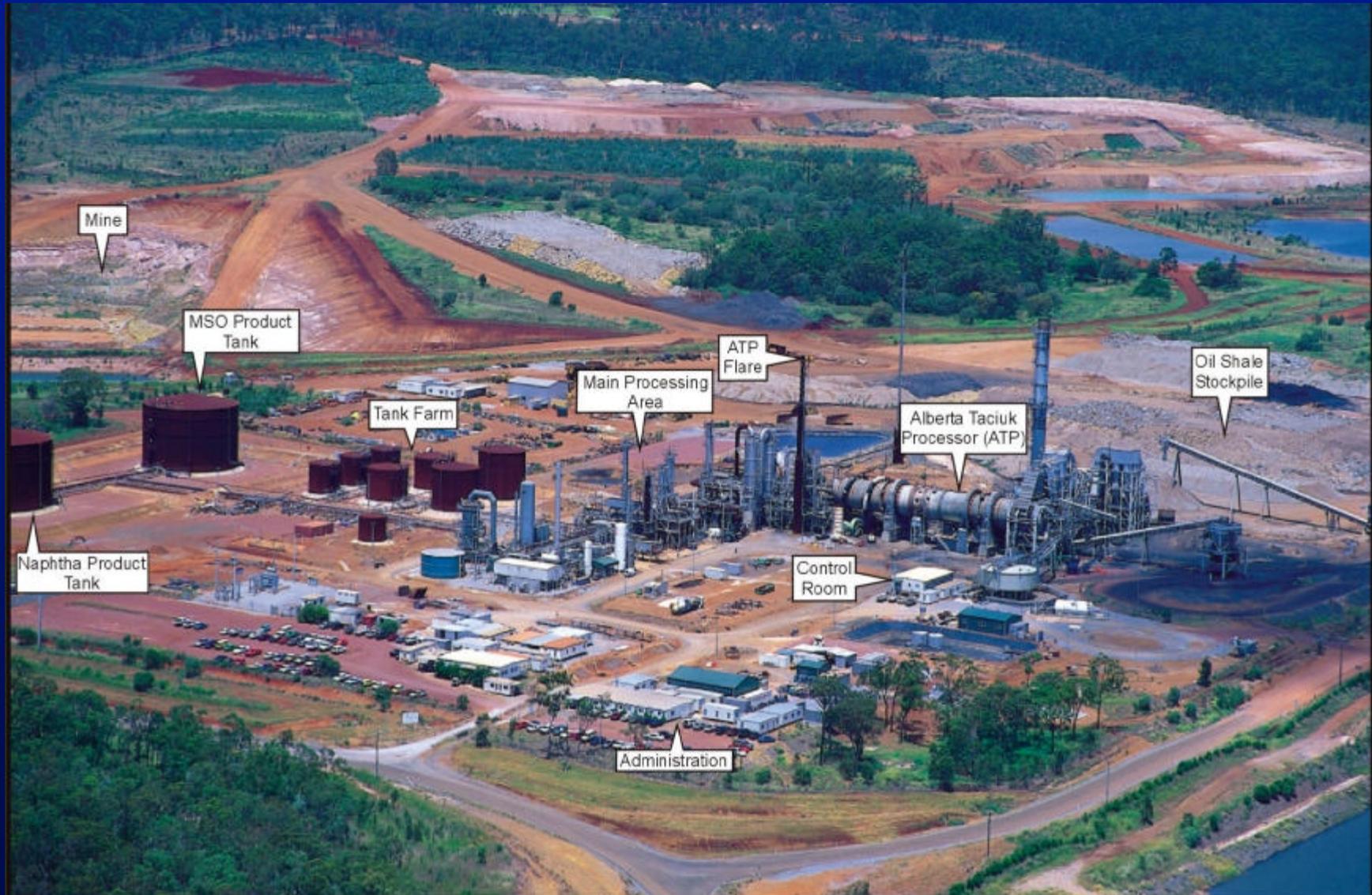
Source: ABARE Research Report November 2001

# Proven Analogy is Oil Sands

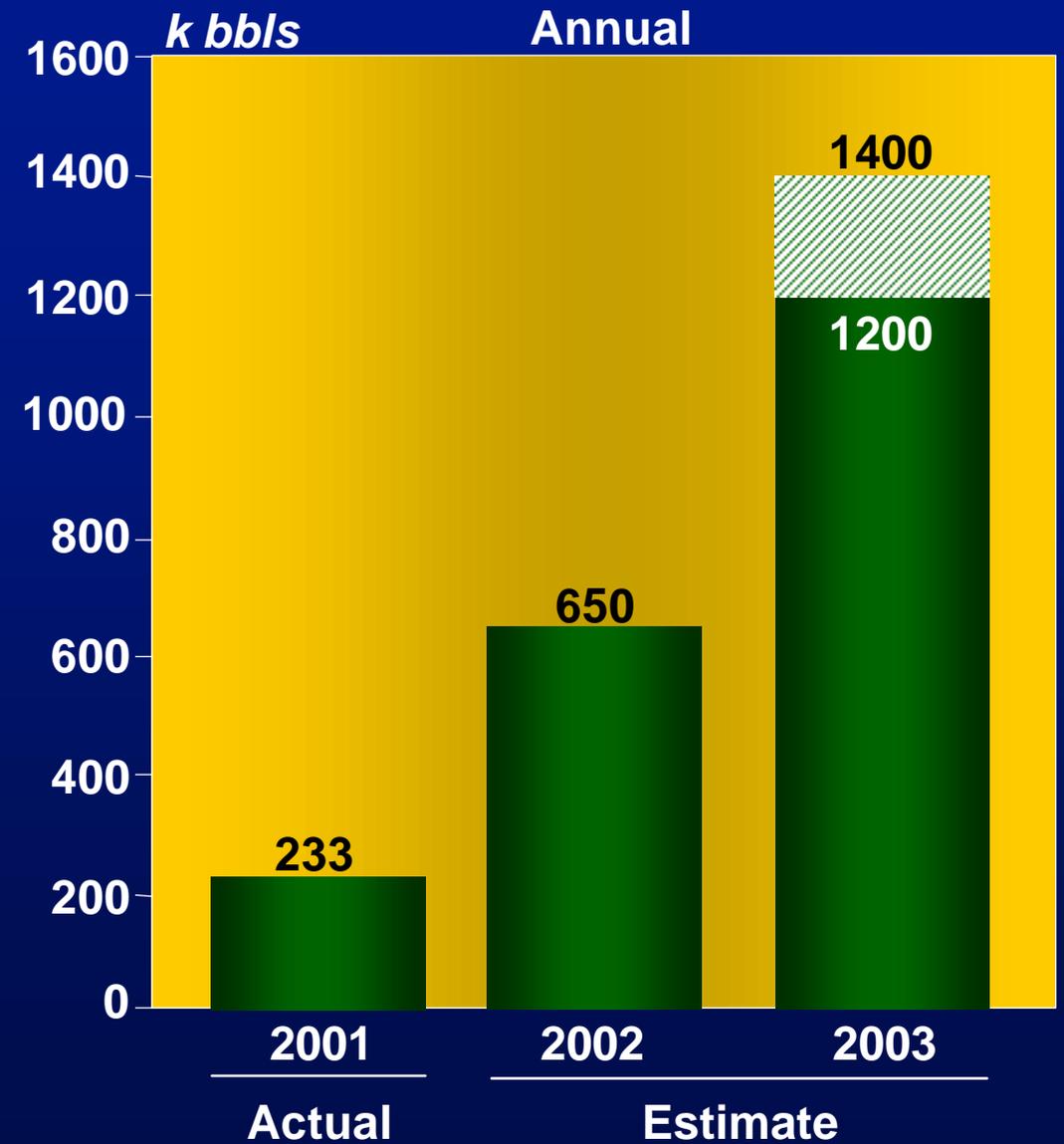
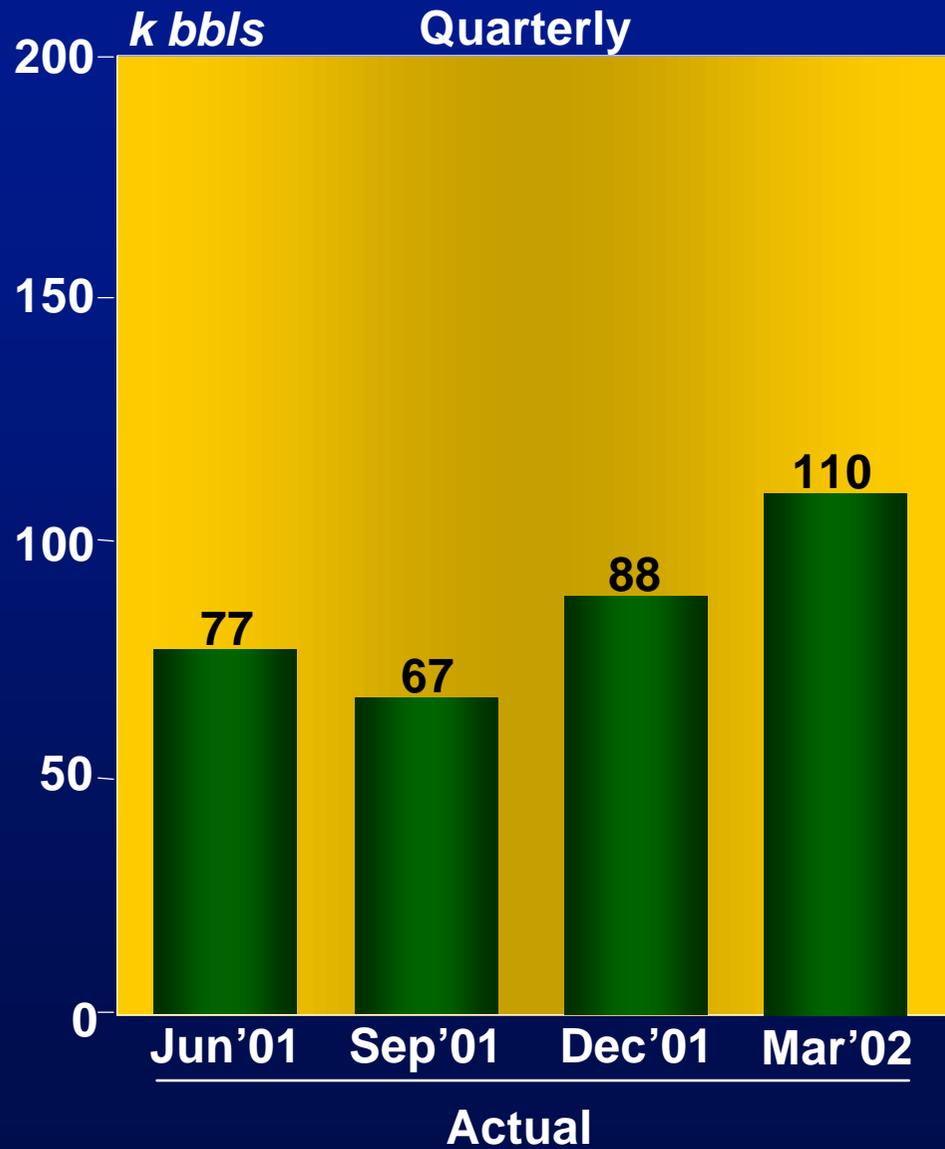


**Notes:**  
 1. 1981-1993: London Financial Times, January 6, 1993.  
 1994-2001: Average of published costs by Syncrude and Suncor.  
 2. Company public reports year 2001

# A\$340M Stuart Demonstration Module Operational

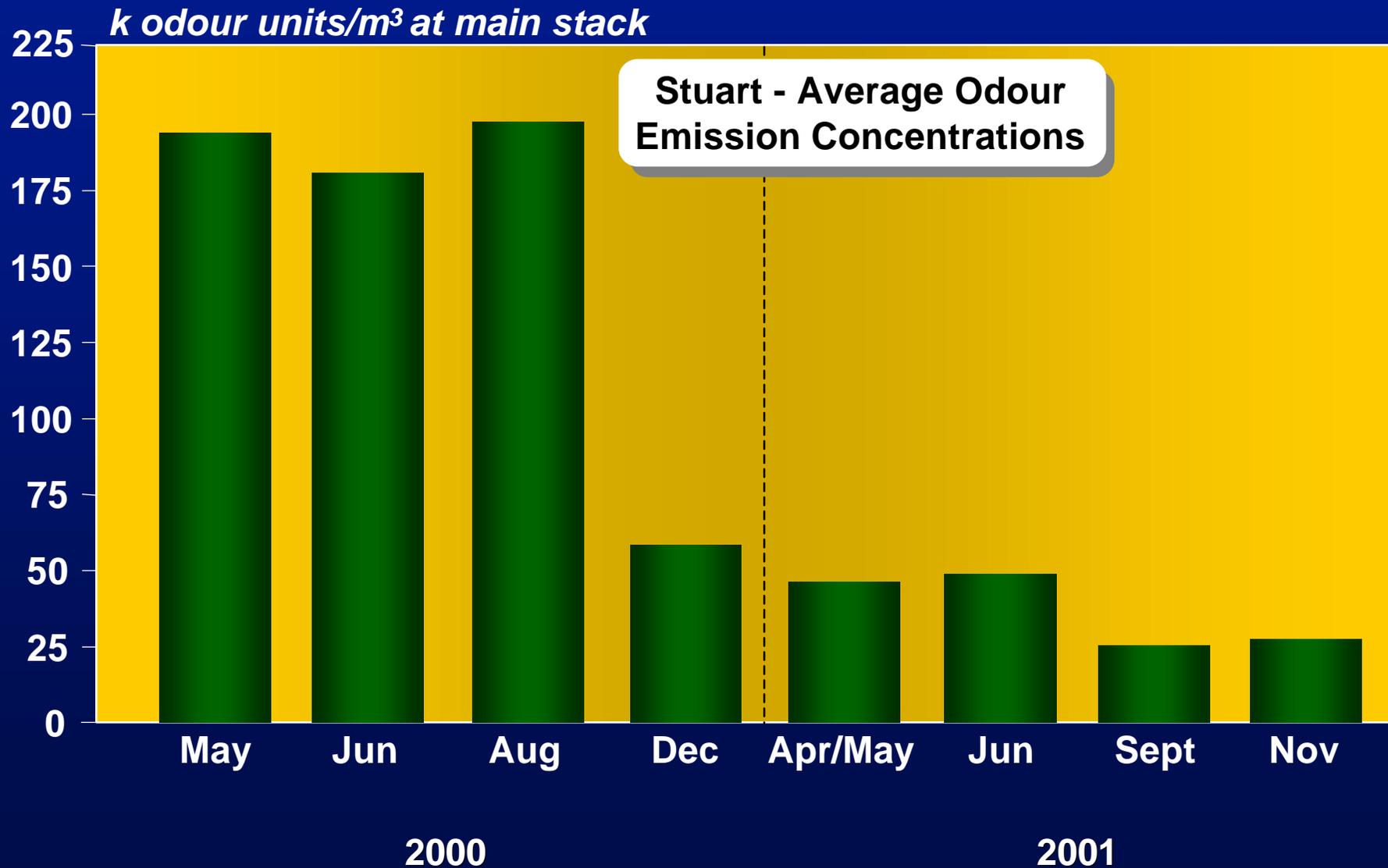


# Stage 1 Production



 Estimate Range (function of 2002 upgrade capex)

# 85% Odour Reduction



# Marketing High Quality Oil Products

	Ultra Low Sulphur Naphtha (ULSN)	Light Fuel Oil (LFO)
API Gravity	65°	27°
Sulphur	< 1 ppm	0.4%
Markets	Australia	Asia/Australia
Use	Petrol, Diesel, Jet	Fuel Oil
% Production	55 - 60%	40 - 45%

# Building a Sustainable Industry

## ENVIRONMENT

- ✓ Best practice air emission levels
- ✓ GHG goal to match conventional oil
- ✓ Dry process
- ✓ Ultra-low sulphur naphtha

## ECONOMY

### Stuart (200,000 b/d)

- ✓ Investment: A\$8 - 9 billion
- ✓ Balance of payments: A\$3 billion/yr
- ✓ 15,000 permanent jobs

### Industry (1,000,000 b/d)

- ✓ Investment: A\$40 billion
- ✓ Balance of payments: A\$15 billion/yr
- ✓ 65,000 permanent jobs

## SOCIETY

- ✓ Regional development
- ✓ Aboriginal partnership