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Bell Bay Pulp Mill Project

Expert witness statement of
Dr Michael John Pollington

Prepared for

Resource Planning and Development Commission Inquiry

December 2006

Prepared by: Dr Michael Pollington



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1. Name and Address

Dr Michael Pollington

Senior Environmental Scientist

Pitt & Sherry

199 Macquarie Street

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2. Area of expertise

My areas of expertise are geological / geomorphological / geotechnical investigations, environmental impact assessment, minesite rehabilitation and environmental education.

My qualifications and experience are detailed in my CV in Appendix 1.

I am sufficiently expert to make this statement because I have thirty years experience in the areas of natural resource investigations, environmental impact assessment and environmental education. During that time I have undertaken a very wide range of tasks and projects, as set out in Attachment 1.

3. Scope

3.1 Instructions

I was engaged by Gunns Pty Ltd through Pitt & Sherry to use my expertise in geology, geomorphology and rehabilitation to prepare a geological briefing note and a geomorphological assessment for the shoreline crossing area to assist Atteris Pty Ltd in the preparation of their *Ocean Outfall Conceptual Engineering Study* for the Four Mile Bluff shore crossing site and to prepare a remediation and revegetation report for the coastal crossing area. I was also engaged by Gunns to prepare a groundwater report for the mill site.

I was assisted in this work by other experts within Pitt & Sherry. Following our investigations, I prepared three reports, which are appendices 50, 51 and 53 of the *Draft Integrated Impact Statement*:

- *Gunns Pulp Mill Effluent Pipeline Four Mile Beach Dune Crossing Geological Setting* (March 2006).
- *Geomorphological Assessment – Proposed Pulp Mill Effluent Pipeline Shoreline Crossing Area* (March 2006).

- *Gunns Pulp Mill Effluent Pipeline Four Mile Beach Crossing Remediation and Revegetation* (March 2006).

I also prepared a groundwater report: Pitt & Sherry (November 2006) *Gunns Bell Bay Pulp Mill – Groundwater Assessment*. That report is referred to in Dr Ian Woodward's statement of evidence and a copy is attached to my statement as Attachment 2.

My work addressed the following (*inter alia*) parts of the Scope Guidelines to the extent that they relate to the scope of my commissioned work:

- 4.4 Use and development of infrastructure and off-site ancillary facilities
- 4.5 Construction phase
- 7 Potential environmental impacts and proposed management measures
 - 7.8.7 Hazardous analysis and risk assessment
 - 7.9.2 Water supply and associated infrastructure
 - 7.9.3 Raw water pump station, water storage dam and water supply pipeline
 - 7.9.4 Pipeline to convey effluent to the marine outfall, and construction of the marine outfall
 - 7.10.5 Stormwater control
- 10 Monitoring.

I adopt the contents of these reports as my evidence.

3.2 Reports reviewed

I was instructed to consider or take into account the following reports and materials.

3.2.1 Geological Setting

- Verbal discussions with Mr Eric Jas of Atteris regarding likely aspects of the outfall pipeline, including possible construction methods.

3.2.2 Geomorphological Assessment

- Atteris Pty Ltd, March 2006. *Bell Bay Pulp Mill Ocean Outfall Conceptual Engineering Study*. This report appears as Appendix 52 in Volume 16 of the *Draft Integrated Impact Statement*.

3.2.3 Remediation and Revegetation Assessment

- Stone, T and Stanton, S (December 2005). *An Aboriginal site survey for the proposed Gunns pulpmill, effluent and water supply pipeline routes and temporary accomodation camp near George Town, northern Tasmania*. This report appears as Appendix 14 in Volume 8 of the *Draft Integrated Impact Statement*.
- Wills T *et al* (May 2006). *Gunns Limited Proposed Bleached Kraft Pulp Mill in Northern Tasmania Flora Assessment*. This report appears as Appendix 29 in Volume 12 of the *Draft Integrated Impact Statement*. For the purpose of writing this witness statement I have also reviewed this report.

3.3 Assumptions

I was instructed by Gunns to make the following assumptions in relation to preparation of these reports:

3.3.1 Geological Setting

- No assumptions required

3.3.2 Geomorphological Assessment

- The proposed outfall coastal crossing would occur within a broad zone up to one kilometre east of the Basslink crossing site.
- The report was restricted to the broad outfall crossing zone as far as the low water mark.
- An expected project design life of 50 years.
- Crossing methodology would be broadly consistent with that proposed in the Atteris report (Atteris Pty Ltd, March 2006. *Bell Bay Pulp Mill Ocean Outfall Conceptual Engineering Study*). This report appears as Appendix 52 in Volume 16 of the *Draft Integrated Impact Statement*).

3.3.3 Remediation and Revegetation Assessment

- The proposed outfall coastal crossing would occur in the area shown in the conceptual engineering design report (Atteris Pty Ltd, March 2006. *Bell Bay Pulp Mill Ocean Outfall Conceptual Engineering Study*. This report appears as Appendix 52 in Volume 16 of the *Draft Integrated Impact Statement*).
- An expected project design life of 50 years.

- Crossing methodology would be broadly consistent with that proposed in the Atteris report.

3.4 Limitations and exclusions

3.4.1 Geological Setting

- This report was based on a desktop assessment.
- No site specific geological investigations were undertaken.

3.4.2 Geomorphological Assessment

- This report was based largely on a desktop assessment.
- A site visit was undertaken to view excavations across Four Mile Beach that were being undertaken for emplacement of the Basslink cables and for site inspection.
- No site specific geomorphological investigations undertaken.

3.4.3 Remediation and Revegetation Assessment

- No site specific investigations with regard to remediation and revegetation were undertaken.
- A site visit was undertaken as part of the geomorphological assessment to view excavations across Four Mile Beach that were being undertaken for emplacement of the Basslink cables and for site inspection.
- The remediation and revegetation program outlined is a concept program. The actual program required will need to be clarified during preliminary and then detailed design prior to commencement of construction. At this conceptual design stage, key principles and requirements only can be identified.

4. Provisional opinion

The opinions that I have expressed in this report are based on my experience and the experience and advice provided to me by Gunns Limited and the consultants engaged to carry out specialist studies for the Bell Bay Pulp Mill Project. Subject to any limitations and exclusions identified in this statement, my opinions are complete and accurate in every respect.

I am satisfied through my inquiries that the opinions I have expressed are reasonable in regard to the management of potential impacts that are likely to

arise from the construction of the shore crossing of the pulp mill effluent pipeline.

5. Declaration

I have made all the inquiries that I believe are desirable and appropriate and no matters of significance which I regard as relevant have, to my knowledge, been withheld from the Commission.

Dr Michael Pollington

11 December 2006

Attachment 1

Qualifications

See attached CV.



Curriculum Vitae

Michael Pollington

Geologist/Environmental Scientist

Date of Birth: September 1 1943

Nationality: Australian

Education:

Bachelor of Science (Honours) (Geology)
 Master of Science (Geomorphology & Geophysics)
 Doctor of Philosophy (Environmental Science)

Language & Degrees of Proficiency:

English – fluent written and spoken

Professional Development and Memberships:

Member, Geological Society of Australia
 Member, Australian Geomechanics Society
 Member, International Association for Engineering Geology

Countries of Work Experience:

Australia, New Zealand

Key Skills:

Michael has extensive experience in a number of areas. His main areas of expertise include:

- Geological/geomorphological/geotechnical investigations
- Environmental impact assessment
- Minesite rehabilitation
- Environmental education
- Community-based environmental programs

Michael has considerable experience in the areas of geological, geomorphological and geotechnical assessment of sites.

His main focus in impact assessment has been as a member of multidisciplinary teams researching and preparing impact statements for major development projects, particularly coal related initially but infrastructure related more recently.

He has completed a major study on the impact of fluoride from industrial and other sources on cattle and pastures.

Michael has experience in mine rehabilitation, particularly with regard to the characterisation of soil and overburden properties to determine potential toxic leachate problems and nutrient and trace element deficiencies.

Michael has extensive environmental education experience, both with schools and community based groups. He has been responsible for community and school-based groups involved in water monitoring, the development of catchment management programs and the implementation of water related aspects of resource management strategies.

EXPERIENCE:

2000 to present: Geologist and Environmental Scientist, Pitt & Sherry, Hobart

A wide range of geotechnical and environmental projects have been undertaken over this period.

Geotechnical:

- Gunns Pulp Mill Water Pipeline: preliminary geotechnical risk assessment; geotechnical investigations.
- Gunns Pulp Mill Effluent Pipeline: geological setting
- Duke Energy International: High level geotechnical hazard (risk) assessment, corridor geotechnics (geology, geomorphology, materials) and individual site investigations for the Tasmania Natural Gas Pipeline.
- Powerco: Corridor geotechnics (geology, geomorphology, materials) and planning of individual site investigations for the gas reticulation project; geotechnical assessment of river crossing sites.



- Mersey Sewerage Tunnel: geological investigations.
- Tasrail: North East Line tunnel geotechnical assessment; Main Line tunnel geotechnical assessment; North West Line karst collapse geotechnical assessment; North West Line Ulverstone landslip assessment.
- Lyell Highway, Quenstown: cuttings geotechnical risk assessment
- Lady Nelson Creek Bridge: abutment subgrade geotechnical appraisal.
- Mersey Valley Estates: Subdivision landslip advice.
- East Devonport Drainage Easement Investigation: geotechnical assessment
- Nebraska Road, Bruny Island: Proposed subdivision, geotechnical site assessment.
- West Tamar Highway, Brady's Lookout: Landslip potential assessment.
- Penguin – Ulverstone Highway Duplication: Preliminary geotechnical assessment.
- NETAS – Stage 2: Preliminary geotechnical assessment.
- Boags Brewery Production Facility Extension: geotechnical investigations.
- Regent Street Apartments: geotechnical investigations.

Geomorphological:

- Gunns Pulp Mill Effluent Pipeline Shoreline Crossing: geomorphological assessment.
- Basslink Development Board: Coastal geomorphology, Marine and Coastal Processes Assessment.
- Basslink: Coastal engineering studies (Tasmanian landfall): Coastal engineering assessment to meet EPN requirements.
- Basslink: Victorian coastal engineering study.
- Smithton Woodyard: Geomorphological investigation with particular reference to geoheritage issues.
- Smithton Woodyard: Spring mound investigation and sampling.
- Scamander Ecotourism Complex: Geomorphological investigation and assessment.
- Bridport Pier Feasibility Study.
- Crescent Bay Development.

Environmental:

- Tamar and North Esk Dredging Optimisation and Scour Study
- Australian Cement Holdings: Water management plan.
- EER's for numerous road developments.
- TOTE Tasmania: Elwick Racecourse upgrade.
- Massey Greene Mill: Discharge water sustainability assessment.
- Esk Water: Scour improvement program.
- Hobart City Council: Natural watercourses water quality study.

Remediation:

- Gunns Pulp Mill Effluent Pipeline, Four Mile Beach Dune Crossing, Remediation and Revegetation
- Independent consultant – Savage River Mine Rehabilitation Project.
- Zinifex Rosebery Mine Hercules Mine Site: Minesite closure plan and rehabilitation.
- Mount Bischoff Acid Mine Drainage Investigations: Geochemical and geological assessment.
- Beaconsfield Mine Joint Venture: Mine closure plan.

Groundwater:

- Tasmanian Alkaloids: groundwater investigations and irrigation management plan.

Contaminated Sites:

- Neale Edwards: Contaminated site assessment and remediation.
- McKay Casings: Preliminary contaminated site assessment.

Wastewater:

- Lewisham Sewerage Scheme Feasibility of Wastewater Reuse.
- Dover Sludge Management Plan.

1998 - 2000: Part-time Co-ordinator, Launceston Waterwatch, and Geotechnical, Geomorphological and Environmental Consulting

Part-time Co-ordinator, Launceston Waterwatch:

- Co-ordination of community and school based groups involved in a variety of water monitoring activities.



- Training of groups in water monitoring activities.
- Development of catchment management plans.
- Input to Rivercare plans.
- Membership of the Tamar Estuary Working Group and the Tamar Consultative Committee of Riverworks Tasmania.
- Liaison with other groups involved in water related activities including DPIWE State of the Rivers Reporting, PEV Workshops, Tamar Estuary 2020 and the Tamar Region Natural Resource Management Strategy.

Geotechnical, Geomorphological, Environmental Consulting:

- Marine and coastal processes assessment, Basslink Development Board
- Site and stability investigations, drilling supervision
- Geomorphology, Montagu River catchment study
- Groundwater and salinity investigation, Kate Reed dam site
- Preparation of reports from contaminated site investigations

1993 to 1997: PhD Study, Tamar Valley, Tasmania

The basic aim of this study was to investigate the possible effects of fluoride emissions from an aluminium smelter on a nearby beef breeding property.

The study involved:

- Characterisation of the physical environment
- Long term studies of the cattle of the property
- Utilisation of continuous ambient air monitoring data on the site
- Long term experimental studies
- Use of appropriate control properties
- A number of long term monitoring programs: ambient air, pasture. Cattle and water fluoride levels
- Controlled experiments to investigate the effects of fertiliser
- The development and control of a number of large analytical programs and the selection and direction of a number of specialised sub-consultants
- The oversight of the breeding program
- Liaison with a large number of interested and involved parties.

1983 – 1992: St Patricks College, Launceston, Teacher

Environmental Science, Geology, Geography at Higher School Certificate Level and Science, Mathematics, Geography, Years 7 – 10

Co-setting Examiner, Environmental Science, Schools Board, 1992 – 3

1980 –1982: Croft & Associates Limited, Newcastle, Senior Geologist

The major aspect of this work was as a member of multidisciplinary teams researching and preparing environmental impact statements for major development projects. Tasks included:

- Project management
- Supervision of soil and overburden testing programs for minesite rehabilitation
- Geological investigations
- Existing environment studies

Other Courses Undertaken:

1. Negotiation Skills Workshop (1999), Effective Negotiation Services.
2. Technology of Participation, Group Facilitation Skills Training (1999), Integra Pty Ltd.
3. River Styles: A Biophysical Approach to Prioritisation of River Rehabilitation Strategies. Workshop (1998). Macquarie University.
4. Introduction to Environmental Geology (1998). Key Centre for Mines, University of NSW.
5. Short Course in Statistics (1994). La Trobe University.
6. Written English (1980). Australian Institute of Management, Newcastle.
7. Completed a number of units in Prehistory, Australian National University and some research on lake sediments at Lake Menindee, western NSW (1978 – 79).

Publications and Papers:



1. Pollington, M.J. (1982) Overburden analyses from the Wittingham and Greta Coal Measures. (Abstract). *15th Sydney Basin Symposium, Newcastle*.
2. Fitzsimons, S., Colhoun, E., van de Geer, G. and Pollington, M.J. (1993) The Quaternary geology and glaciation of the King Valley. *Geological Survey Bulletin 68*.57pp.
3. Pollington, M.J., Colhoun, E. and Barton, C. (1993) Palaeomagnetic constraints on the ages of Tasmanian glaciations. *Exploration Geophysics, 24*, 305 – 310.
4. Fitzsimons, S., Pollington, M.J. and Colhoun, E. (1993) Palaeomagnetism of New Zealand glacial deposits. *Exploration Geophysics, 24*, 303 – 304.
5. Augustinus, P., Pollington, M.J. and Colhoun, E. (1995) Magnetostratigraphy of the Late Cenozoic glacial sequence, Pieman River basin, western Tasmania. *Australian Journal of Earth Sciences, 42*, 509 – 518.
6. Fitzsimons, S., Pollington, M.J. and Colhoun, E. (1996) Palaeomagnetic constraints on the ages of glacial deposits in north-western South Island, New Zealand. *Zeitschrift fur Geomorphologie, 7* – 20.

Attachment 2

Pitt & Sherry (November 2006) *Gunns Bell Bay Pulp Mill – Groundwater Assessment.*
