



Enhance Place Pty Limited

ABN: 31 077 105 867

Environmental Assessment



Pine Dale Coal Mine Yarraboldy Extension

Major Project Application No. 10_0041



prepared by

R.W. CORKERY & CO.

PTY. LIMITED ABN 31 002 033 712

August 2010

Background to Enhance Place Pty Limited

James (Jim) Wright Brown, born 1 April 1926 and died 25 April 1998, was an original shareholder, director, first mine manager, and the creator of both the name, Enhance Place, and the 'Hand' as the Company's logo.

Jim's concept evolved from his desire that the appearance of the site of the Company's first mine, being the Newport Open Cut, abandoned circa 1954 and left as somewhat of a moonscape for almost 40 years, would be 'enhanced' by mining the residual coal and at the same time rehabilitating the area. The Company's name, 'Enhance Place', followed. Jim's further intention was to continue his lifetime mining philosophy of dealing with his colleagues by extending the 'hand of friendship'. The logo, the 'extended palm of the hand', followed.

We, who stand in his shadow, have tried to honour his wishes.





Enhance Place Pty Limited

ABN: 31 077 105 867

Environmental Assessment

for the

Pine Dale Coal Mine Yarraboldy Extension

Prepared for:

Enhance Place Pty. Limited
ABN: 31 077 105 867
PO Box 6095
South Coast Mail Centre
WOLLONGONG NSW 2521

Telephone: (02) 4225 9790
Facsimile: (02) 4225 9539
Email: jdoherly@bigpond.com

Prepared by:

R.W. Corkery & Co. Pty. Limited
Geological & Environmental Consultants
ABN: 31 002 033 712

Brooklyn Office:

1st Floor, 12 Dangar Road
PO Box 239
BROOKLYN NSW 2083

Telephone: (02) 9985 8511
Facsimile: (02) 9985 8208
Email: brooklyn@rwcorkery.com

Orange Office:

Suite 15, 256 Anson Street
ORANGE NSW 2800

Telephone: (02) 6362 5411
Facsimile: (02) 6361 3622
Email: orange@rwcorkery.com

Brisbane Office:

Level 3, 1 Eagle Street
BRISBANE QLD 4000

Telephone: (07) 3360 0217
Facsimile: (07) 3360 0222
Email: brisbane@rwcorkery.com



This Copyright is included for the protection of this document

COPYRIGHT

© R.W. Corkery & Co. Pty Limited 2010
and
© Enhance Place Pty Limited 2010

All intellectual property and copyright reserved.

Apart from any fair dealing for the purpose of private study, research, criticism or review, as permitted under the Copyright Act, 1968, no part of this report may be reproduced, transmitted, stored in a retrieval system or adapted in any form or by any means (electronic, mechanical, photocopying, recording or otherwise) without written permission. Enquiries should be addressed to R.W. Corkery & Co. Pty Limited.



Author's Certification

for the submission of an Environmental Assessment prepared in accordance with the
Environmental Planning and Assessment Act 1979 (Part 3A – Section 75).

(a) EA prepared by:

name: Robert W. Corkery
qualifications: M.Appl.Sc, B.Appl.Sc(Hons)
address: 12 Dangar Road
BROOKLYN NSW 2083

(b) Planning Approval application by:

applicant name: Enhance Place Pty Limited
applicant address: PO Box 6095
South Coast Mail Centre
WOLLONGONG NSW 2521

(c) Application Number: 10_0041

(d) Address/land details

properties to be developed Castlereagh Highway, Blackmans Flat, NSW 2790

Land Description:

Area of Activities	Land Title Reference
Existing Pine Dale Mine	Part Lots 21, 290 and 291 DP 751636, Part Lots 27, 29, 30, 31, 33, 35, 36 and 37 DP 827626, Part Lot 29 DP 1096381, Part Lot 100 DP 1145705, Part of the Ben Bullen State Forest and Various Crown Roads
Proposed Yarraboldy Extension	Part Lots 290 and 291 DP 751636, Part Lots 36, 37, 38 and 39 DP 827626, Part Lot 10 DP 877753 and Part of the Ben Bullen State Forest.

(e) Project Outline:

The Pine Dale Coal Mine – Yarraboldy Extension involves the mining of 800 000 tonnes of coal over a 3 year period from a 27ha area centred on the former un-rehabilitated Yarraboldy Open Cut Mine. Annual production will be 350 000tpa with product coal (once crushed) transported to Mt Piper Power Station or other domestic customers. Activities would involve ongoing use of existing infrastructure and progressive rehabilitation of the existing mine and proposed extension and all related ancillary activities.

(f) Assessment of Environmental Impact:

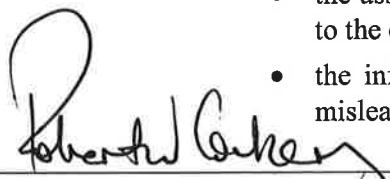
The assessment of environmental impacts of this project includes the matters referred to in Director-General's Requirements provided to the Proponent on 24 March 2010 under Section 75F of the *Environmental Planning and Assessment Act 1979*.

(g) Declaration:

I, Robert William Corkery, hereby declare that I have overseen the preparation of the contents of this assessment and to the best of my knowledge:

- it has addressed the Director-General's Requirements as provided by the Department on 24 March 2010;
- the assessment contains all available information that is relevant to the environmental assessment of the project; and
- the information contained in the statement is neither false nor misleading.

Signature:


Name: Robert Corkery

Date:

6 August 2010



This page has intentionally been left blank



CONTENTS

Page	Page
AUTHOR'S CERTIFICATION	iii
EXECUTIVE SUMMARY	ES-1
SECTION 1 INTRODUCTION	1-1
1.1 SCOPE	1-3
1.2 FORMAT OF THE ENVIRONMENTAL ASSESSMENT	1-5
1.3 THE PROPONENT, APPLICATION AREA AND PROJECT TERMINOLOGY	1-6
1.3.1 The Proponent	1-6
1.3.2 Application Area	1-8
1.3.3 Project Terminology	1-11
1.4 PROJECT SITE HISTORY	1-11
1.4.1 Introduction	1-11
1.4.2 Wallerawang Colliery	1-12
1.4.3 Commonwealth Colliery	1-12
1.4.4 Neubecks Creek	1-14
1.5 BACKGROUND TO THE PROJECT	1-14
1.6 EXISTING APPROVALS AND OPERATIONS	1-17
1.6.1 Existing Approvals and Licences	1-17
1.6.2 Existing Operations	1-17
1.7 ENVIRONMENTAL MANAGEMENT AND DOCUMENTATION	1-21
1.7.1 Environmental Management	1-21
1.7.2 Environmental Documentation	1-22
1.8 THE APPROVALS PROCESS	1-23
1.9 MANAGEMENT OF INVESTIGATIONS ..	1-24
SECTION 2 PROJECT DESCRIPTION	2-1
2.1 INTRODUCTION	2-3
2.1.1 Objectives	2-3
2.1.2 The Project Site Layout	2-3
2.1.3 Outline of the Project	2-5
2.1.4 Approvals Required	2-5
2.1.5 Project Timetable	2-6
2.2 GEOLOGICAL AND RESOURCE ASSESSMENT	2-6
2.2.1 Regional Geology	2-6
2.2.2 Local Geology and Resources	2-7
2.2.3 Resource Assessment	2-10
2.3 MINE PLANNING	2-10
2.3.1 Introduction	2-10
2.3.2 Economic Considerations	2-10
2.3.3 Geological and Geotechnical Considerations	2-11
2.3.4 Environmental Considerations ..	2-11
2.4 INFRASTRUCTURE	2-12
2.4.1 Introduction	2-12
2.4.2 Utilities and Services	2-12
2.4.3 Internal Transport	2-13
2.4.4 Coal Transport Infrastructure	2-13
2.4.5 Amenity Management Structures	2-15
2.4.6 Water Management Structures ..	2-15
2.5 MINING OPERATIONS	2-17
2.5.1 Introduction	2-17
2.5.2 Mining Sequence	2-17
2.5.3 Vegetation Clearing	2-17
2.5.4 Soil Removal	2-19
2.5.5 Overburden and Interburden Management	2-20
2.5.6 Mining Methods and Design Criteria	2-21
2.5.7 Mining Equipment	2-21
2.5.8 Mining Rate	2-22
2.5.9 Water Management	2-22
2.6 CRUSHING AND STOCKPILING OPERATIONS	2-23
2.7 TRANSPORTATION	2-24
2.8 HOURS OF OPERATION AND PROJECT LIFE	2-25
2.8.1 Hours of Operation	2-25
2.8.2 Life of the Project	2-26
2.9 EMPLOYMENT	2-26
2.10 WASTE MANAGEMENT	2-26
2.10.1 Introduction	2-26
2.10.2 Domestic Type Waste and Maintenance Consumables	2-27
2.10.3 Waste Hydrocarbons	2-27
2.10.4 Sewage	2-27
2.10.5 Remnant Mining Debris and Scrap Steel	2-27
2.11 SAFETY/SECURITY MANAGEMENT	2-27
2.12 REHABILITATION, FINAL LANDFORM AND LAND USE	2-28
2.12.1 Introduction	2-28
2.12.2 Rehabilitation Objectives	2-28
2.12.3 Rehabilitation Completion Criteria	2-29
2.12.4 Integration of Rehabilitation with Biodiversity Offsets	2-30
2.12.5 Rehabilitation Domains	2-30
2.12.6 Rehabilitation Procedures	2-32
2.12.7 Rehabilitation with Alkaline Boiler Ash	2-33
2.12.8 Rehabilitation Monitoring	2-34



CONTENTS

Page	Page
2.12.9 Rehabilitation Maintenance.....	2-34
2.12.10 Site Decommissioning	2-34
2.12.11 Final Landform	2-35
2.12.12 Final Land Use.....	2-37
2.13 PROJECT ALTERNATIVES	2-37
2.14 POTENTIAL FUTURE MINING ACTIVITY.....	2-38
SECTION 3 ISSUE IDENTIFICATION & PRIORITISATION.....	3-1
3.1 INTRODUCTION	3-3
3.2 ISSUE IDENTIFICATION	3-3
3.2.1 Introduction	3-3
3.2.2 Consultation.....	3-3
3.2.3 Review of Planning Issues and Environmental Guidelines	3-5
3.2.4 Summary of Environmental Issues and Impacts	3-9
3.3 ANALYSIS OF ENVIRONMENTAL RISK AND ISSUE PRIORITISATION	3-10
3.3.1 Analysis of Environmental Risk..	3-10
3.3.2 Environmental Issue Prioritisation	3-23
SECTION 4 ENVIRONMENTAL FEATURES, MANAGEMENT MEASURES AND IMPACTS.....	4A-1
SECTION 4A BACKGROUND INFORMATION	
4A.1 TOPOGRAPHY.....	4A-3
4A.1.1 Regional Topography.....	4A-3
4A.1.2 Local and Project Site Topography.....	4A-3
4A.2 METEOROLOGY	4A-6
4A.2.1 Source of Data	4A-6
4A.2.2 Temperature	4A-6
4A.2.3 Relative Humidity.....	4A-7
4A.2.4 Rainfall.....	4A-7
4A.2.5 Wind.....	4A-7
4A.2.6 Evaporation.....	4A-9
4A.3 LAND OWNERSHIP, SURROUNDING RESIDENCES AND LAND USE	4A-9
4A.3.1 Introduction	4A-9
4A.3.2 Land Ownership and Surrounding Residences.....	4A-10
4A.3.3 Land Use	4A-10
SECTION 4B ENVIRONMENTAL FEATURES, MANAGEMENT MEASURES AND IMPACTS.....	4B-1
4B.1 GROUNDWATER	4B-3
4B.1.1 Introduction	4B-3
4B.1.2 The Existing Environment	4B-4
4B.1.3 Potential Hydrogeological Impacts	4B-13
4B.1.4 Management Measures and Mitigation Measures	4B-15
4B.1.5 Groundwater Modelling	4B-15
4B.1.6 Assessment of Impacts	4B-16
4B.1.7 Groundwater Monitoring, Contingency Plans and Reporting	4B-20
4B.2 SURFACE WATER	4B-23
4B.2.1 Introduction	4B-23
4B.2.2 The Existing Environment	4B-24
4B.2.3 Existing Surface Water Management	4B-33
4B.2.4 Potential Surface Water Impacts and Criteria	4B-34
4B.2.5 Water Management Measures and Operational Safeguards ...	4B-35
4B.2.6 Site Water Balance for Yarraboldy Extension.....	4B-42
4B.2.7 Assessment of Impacts	4B-45
4B.2.8 Surface Water Monitoring Program	4B-47
4B.3 FLORA.....	4B-48
4B.3.1 Introduction	4B-48
4B.3.2 Study Methodology	4B-49
4B.3.3 Existing Vegetation	4B-51
4B.3.4 Conservation Significance.....	4B-54
4B.3.5 Assessment of Impacts	4B-57
4B.3.6 Design Features, Operational Safeguards, Mitigation Measures and Offset Strategies.....	4B-58
4B.4 FAUNA.....	4B-58
4B.4.1 Introduction	4B-58
4B.4.2 Study Methodology	4B-59
4B.4.3 Results	4B-60
4B.4.4 Biodiversity Management Strategy and Management Measures	4B-66
4B.4.5 Assessment of Impacts	4B-67
4B.4.6 Conclusion	4B-68
4B.5 HERITAGE.....	4B-69
4B.5.1 Introduction	4B-69
4B.5.2 Method of Investigation	4B-70
4B.5.3 Significance Assessment	4B-72



CONTENTS

	Page		Page
4B.5.4	Design and Operational Safeguards.....4B-73	4B.11.5	Contamination Issues.....4B-127
4B.5.5	Assessment of Impacts4B-73	4B.11.6	Erosion Potential and Erosion Hazard4B-127
4B.6	TRANSPORTATION ASPECTS4B-73	4B.11.7	Soil Management4B-127
4B.6.1	Introduction4B-73	4B.11.8	Assessment of Impacts4B-128
4B.6.2	Existing Transport Network and Traffic Levels.....4B-74	4B.11.9	Land Capability and Agricultural Land Suitability4B-129
4B.6.3	Changes to Existing Network and Traffic Levels.....4B-77	4B.12	SOCIO-ECONOMIC SETTING4B-130
4B.6.4	Operational Safeguards and Ongoing Maintenance.....4B-77	4B.12.1	Existing Socio-economic Setting.....4B-130
4B.6.5	Assessment of Impacts4B-78	4B.12.2	Safeguards.....4B-133
4B.7	NOISE.....4B-79	4B.12.3	Assessment of Impacts4B-134
4B.7.1	Introduction4B-79	4B.13	EUROPEAN HERITAGE.....4B-135
4B.7.2	Existing Noise Environment4B-80	4B.14	BUSHFIRE HAZARD4B-135
4B.7.3	Environmental Noise Criteria ...4B-80	4B.14.1	Introduction4B-135
4B.7.4	Design and Operational Safeguards.....4B-85	4B.14.2	Managing Bushfire Hazard....4B-135
4B.7.5	Assessment of Impacts4B-86		
4B.7.6	Monitoring4B-91	SECTION 5	DRAFT STATEMENT OF COMMITMENTS..... 5-1
4B.8	BLASTING4B-92	SECTION 6	EVALUATION & JUSTIFICATION OF THE PROJECT 6-1
4B.8.1	Introduction4B-92	6.1	INTRODUCTION..... 6-3
4B.8.2	Potential Blast Receptors.....4B-93	6.2	EVALUATION OF THE PROJECT 6-3
4B.8.3	Blast Assessment Criteria.....4B-93	6.2.1	Residual Environmental Risk and Impacts..... 6-3
4B.8.4	Design and Operational Safeguards.....4B-94	6.2.2	Ecologically Sustainable Development..... 6-8
4B.8.5	Approach to Predicted Blast Emissions.....4B-94	6.3	JUSTIFICATION OF THE PROJECT 6-16
4B.8.6	Predicted Blast Emissions and Assessment of Impacts4B-98	6.3.1	Introduction 6-16
4B.9	AIR QUALITY.....4B-99	6.3.2	Biophysical Considerations 6-16
4B.9.1	Introduction4B-99	6.3.3	Socio-economic Considerations 6-22
4B.9.2	Existing Air Quality4B-100	6.3.4	Planning Considerations 6-22
4B.9.3	Potential Sources of Air Pollutants4B-102	6.3.5	Consequences of not Proceeding with the Project..... 6-23
4B.9.4	Operational Air Quality Controls.....4B-104	6.4	CONCLUSION 6-23
4B.9.5	Assessments of Impacts4B-105	SECTION 7	REFERENCES 7-1
4B.9.6	Monitoring4B-114	SECTION 8	GLOSSARY OF TECHNICAL TERMS, ACRONYMS, SYMBOLS & UNITS 8-1
4B.10	VISIBILITY4B-115	APPENDICES	
4B.10.1	Introduction4B-115	Appendix 1	Application for Project ApprovalA1-1
4B.10.2	Existing Visual Amenity.....4B-115	Appendix 2	Director-General's Requirements.....A2-1
4B.10.3	Visual Controls.....4B-116		
4B.10.4	Assessment of Impacts4B-119		
4B.11	SOILS, LAND CAPABILITY AND AGRICULTURAL SUITABILITY4B-119		
4B.11.1	Introduction4B-119		
4B.11.2	Soil Occurrences.....4B-120		
4B.11.3	Soil Physical Attributes4B-121		
4B.11.4	Soil Chemical Attributes4B-126		



CONTENTS

	Page		Page
Appendix 3		Figure 4B.9	
Coverage of Director-General's Requirements and Requirements of Consulted Government Agencies	A3-1	Existing Surface Water Management	4B-28
Appendix 4		Figure 4B.10	
SEPP 33 Risk Screening	A4-1	Surface Water Monitoring Locations	4B-29
FIGURES			
Figure 1.1		Figure 4B.11	
Locality Plan	1-4	Proposed Clean Water Management Infrastructure	4B-36
Figure 1.2		Figure 4B.12	
Mining Titles.....	1-7	Proposed Dirty Water Management Infrastructure.....	4B-38
Figure 1.3		Figure 4B.13	
Project Site	1-9	Proposed Final Landform Water Management.....	4B-41
Figure 1.4		Figure 4B.14	
Project Site Land Titles.....	1-10	Schematic Representation of Site Water Management	4B-43
Figure 1.5		Figure 4B.15	
Historical Mining Operations.....	1-13	Vegetation Communities.....	4B-53
Figure 1.6		Figure 4B.16	
Potential Long Term Extension.....	1-16	Fauna Survey Locations	4B-61
Figure 1.7		Figure 4B.17	
Existing Site Layout	1-19	Recorded Threatened Species Locations	4B-64
Figure 2.1		Figure 4B.18	
Indicative Project Site Layout.....	2-4	Fauna Habitat Types.....	4B-65
Figure 2.2		Figure 4B.19	
Geology and Coal Resource.....	2-9	Vehicle Accident Map near the Project Site	4B-76
Figure 2.3		Figure 4B.20	
Indicative Private Coal Haul Road Intersection.....	2-14	Sensitive Noise Receivers	4B-81
Figure 2.4		Figure 4B.21	
Proposed Water Management Infrastructure.....	2-16	Noise Monitoring Locations.....	4B-82
Figure 2.5		Figure 4B.22	
Indicative Mining Sequence.....	2-18	Site Law Analysis for Ground Vibration.....	4B-95
Figure 2.6		Figure 4B.23	
Water Management Flow Diagram	2-23	Site Decay Analysis – Outer Data Envelope	4B-96
Figure 2.7		Figure 4B.24	
Layout of the Proposed Crushing, Stockpiling and Maintenance Area.....	2-24	Sonic Decay Analysis for Air Vibration.....	4B-96
Figure 4A.1		Figure 4B.25	
Regional Topography	4A-4	Sonic Decay Analysis – Outer Data Envelope	4B-97
Figure 4A.2		Figure 4B.26	
Local Topography	4A-5	Ambient Air Quality Monitoring Locations	4B-102
Figure 4A.3		Figure 4B.27	
Seasonal Wind Roses	4A-8	Contributions Of Project Site Activities to Total Estimated Tsp and P _{m10} Emissions.....	4B-110
Figure 4A.4		Figure 4B.28	
Land Ownership and Surrounding Residences	4A-11	Visibility Sections	4B-119
Figure 4A.5		Figure 4B.29	
Surrounding Land Uses.....	4A-13	Soil Sampling Locations and Soil Mapping Unit Boundaries...4B-124	
Figure 4B.1		TABLES	
Locations of Bores	4B-5	Table 1.1	Project Site Land Titles
Figure 4B.2		Table 1.2	Approved Hours of Operation
Groundwater Elevation Contour Map for the Lithgow and Lidsdale Seams	4B-7	Table 1.3	Environmental Documentation for the Pine Dale Coal Mine
Figure 4B.3		Table 1.4	Approvals Process for a Major Project and the Proponent's Indicative Timing
Groundwater Elevation Contour Map for the Irondale Seam	4B-8	Table 2.1	General Stratigraphic Sequence – Western Coalfield, NSW
Figure 4B.4			
Groundwater Monitoring Locations	4B-10		
Figure 4B.5			
Major Ion Chemistry – Piper Diagram	4B-14		
Figure 4B.6			
Saturation within the Proposed Yarraboldy Extension.....	4B-17		
Figure 4B.7			
Local Hydrology	4B-25		
Figure 4B.8			
Existing Site Layout – Features of Significance	4B-26		



CONTENTS

	Page		Page
Table 2.2	Stratigraphic Succession in the Illawarra Coal Measures - Western Coalfield	Table 4B.4	Proposed Analytes for Groundwater Monitoring.....4B-21
	2-8	Table 4B.5	Surface Water Quality
Table 2.3	Soil Stripping Suitability and Procedures	Table 4B.6	Preliminary Mine Void Water Quality Data
	2-19	Table 4B.7	Average Discharge Water Quality at LDP4 and LDP5
Table 2.4	Indicative Earthmoving and Mobile Equipment	Table 4B.8	2009 Surface Water Monitoring Data
	2-22	Table 4B.9	Preliminary Open Cut Inflow Estimates
Table 2.5	Proposed Hours of Operation	Table 4B.10	Annual Site Water Balance
	2-26	Table 4B.11	Monitoring Locations and Frequency
Table 2.6	Potential Species for Long-Term Rehabilitation – Yarraboldy Extension Area	Table 4B.12	Threatened Fauna Species with Potential to Occur within the Extension Area.....
	2-32	Table 4B.13	Results of Tree Hollow Assessment
Table 2.7	Species for Long-Term Rehabilitation – Existing Pine Dale Coal Mine	Table 4B.14	Project Specific Noise Criteria – Monitoring Locations
	2-33	Table 4B.15	Project Specific Noise Goals – All Receivers
Table 3.1	Application of SEPP (Mining, Petroleum Production and Extractive Industries) 2007	Table 4B.16	Construction Noise Management.....
	3-7	Table 4B.17	Construction Noise Goals
Table 3.2	Summary of Identified Environmental Issues.....	Table 4B.18	Predicted Noise Levels – Scenario 1.....
	3-9	Table 4B.19	Predicted Noise Levels – Scenario 2.....
Table 3.3	Risk Sources and Potential Environmental Impacts	Table 4B.20	Predicted Noise Levels – Scenario 3.....
	3-11	Table 4B.21	Predicted Noise Levels – Scenario 4.....
Table 3.4	Qualitative Consequence Rating	Table 4B.22	Road Traffic Noise Levels – Blackmans Flat
	3-18	Table 4B.23	Representative Receptors to Blasting Operations at the Proposed Yarraboldy Extension
Table 3.5	Qualitative Likelihood Rating	Table 4B.24	Estimation of Air and Ground Vibration Levels - Various Scenarios
	3-18	Table 4B.25	Background Air Quality Data used in Modelling Assessment
Table 3.6	Risk Rating	Table 4B.26	Dust Control Measures for Project Site Activities.....
	3-18		
Table 3.7	Analysis of Unmitigated Environmental Risk.....		
	3-19		
Table 4A.1	Mean Monthly Temperature Data		
	4A-6		
Table 4A.2	Mean Monthly Relative Humidity.....		
	4A-7		
Table 4A.3	Mean Monthly Rainfall Data.....		
	4A-7		
Table 4A.4	Mean Monthly Wind Speed Data		
	4A-9		
Table 4A.5	Mean Monthly Evaporation Data		
	4A-9		
Table 4A.6	Proximity of Representative Residences to Activity Areas		
	4A-10		
Table 4B.1	Hydraulic Testing Results for Main Aquifers within the Project Site.....		
	4B-6		
Table 4B.2	Summary of Field Measurements of Groundwater Quality – Yarraboldy Extension Area		
	4B-11		
Table 4B.3	Dissolved Metals – Exceedances of ANZECC (2000) Freshwater Ecosystem Protection Guideline Values.....		
	4B-12		



CONTENTS

	Page		Page
Table 4B.27	Estimated TSP and PM ₁₀ Emissions – Scenario 1 (Site Establishment).....	4B-108	
Table 4B.28	Estimated TSP and PM ₁₀ Emissions – Scenario 2 (Year 2 Operations)	4B-109	
Table 4B.29	Predicted TSP Concentrations - Annual Averages	4B-111	
Table 4B.30	Predicted PM ₁₀ Concentrations - Annual Averages	4B-111	
Table 4B.31	Predicted PM ₁₀ Concentrations – 24-Hour Averages.....	4B-111	
Table 4B.32	Predicted Dust Deposition Rates - Annual Averages.....	4B-112	
Table 4B.33	Summary of Project-Related Activity Data Relevant to GHG Emissions	4B-112	
Table 4B.34	Summary of Potential Project Greenhouse Gas Emissions	4B-112	
Table 4B.35	Summary of Greenhouse Gas Emissions from the Project Site	4B-113	
Table 4B.36	Comparison of the Project GHG Emissions with State and National Totals for 2007.....	114	
Table 4B.37	Physical Laboratory Analysis Data for Selected Soil Profiles – Part 1 [Whole Soil Particle Size Analysis]	4B-126	
Table 4B.38	Physical Laboratory Analysis Data for Selected Soil Profiles – Part 2 [Whole Soil Particle Size Analysis]	4B-127	
Table 4B.39	Chemical Analyses Laboratory Analysis Data for Selected Soil Profiles.....	4B-128	
Table 4B.40	2006 Census Population Statistics	4B-132	
Table 4B.41	2006 Census Employment Statistics	4B-133	
Table 4B.42	Industry Employment Statistics	4B-134	
Table 4B.43	Income Statistics 2006.....	4B-135	
Table 4B.44	Cost of Housing and Household Size Statistics - 2006	4B-135	
Table 5.1	Draft Statement of Commitments for Site Operations and Management	5-3	
Table 6.1	Analysis of Mitigated Risk.....	6-3	
		PLATES	
Plate 1.1	The Former Yarraboldy Open Cut Mine	1-15	
Plate 1.2	Mining Block Area C	1-18	
Plate 1.3	Crushing, Stockpiling and Maintenance Area.....	1-18	
Plate 1.4	Rehabilitation – Mining Area B Pine Dale Coal Mine	1-18	
Plate 4.1	View Southeast from Yarraboldy Extension area towards Lidsdale	4B-117	
Plate 4.2	View Southwards from Yarraboldy Extension area towards Blackmans Flat.....	4B-117	
Plate 4.3	View Northwards from Blackmans Flat. Yarraboldy Extension area (background) Existing Pine Dale Coal Mine (mid-ground) Castlereagh Highway (foreground).	4B-117	
Plate 4.4	View Northwards from Blackmans Flat to Existing Office Area.....	4B-117	
Plate 4.5	View Southwest from Yarraboldy Extension area to Mt Piper Power Station Ash Dam	4B-117	
		SPECIALIST CONSULTANT STUDIES COMPENDIUM*	
Part 1	Groundwater Assessment		
Part 2	Surface Water Assessment		
Part 3	Soil and Land Capability Assessment		
Part 4	Flora Assessment		
Part 5	Fauna Assessment		
Part 6	Air Quality Assessment		
Part 7	Noise Assessment		
Part 8	Traffic and Transportation Assessment		
Part 9	Aboriginal Heritage Assessment		
		* Please Note: The Compendium is a stand-alone document containing supporting material for the <i>Environmental Assessment</i> .	

