

TABLE OF CONTENTS

STATEMENT OF VALIDITY

EXECUTIVE SUMMARY

GLOSSARY OF TERMS AND ABBREVIATIONS

PART 1 INTRODUCTION

1.1	Statement of the Proposal and Description of the Site	1-1
1.2	Operational History of the Site	1-3
1.3	Planning History of the Site	1-5
1.4	Need for an Environmental Assessment	1-5
1.5	Director-General's Requirements	1-8
1.6	Structure of the Environmental Assessment	1-10
1.7	Project Team	1-10

PART 2 THE PROPOSED DEVELOPMENT

2.1	Introduction	2-1
2.2	Overview of the Proposed Development	2-2
2.3	Project Design	2-3
2.4	Site Preparation and Construction	2-3
2.4.1	Earthworks	2-3
2.4.2	Water Management	2-4
2.4.3	Access and Circulation	2-5

2.5	Projection Operation	2-7
2.5.1	Gates, Office and Weighbridge	2-7
2.5.2	Stockpiles of Raw Materials	2-8
2.5.3	Primary Crusher	2-8
2.5.4	Picking Shed	2-8
2.5.5	Secondary Crusher and Primary Screen	2-8
2.5.6	Product Stockpiles	2-9
2.5.7	Workshop	2-9
2.5.8	Dust Suppression	2-9
2.5.9	Staff Lunch Room	2-10
2.5.10	Component Requirements	2-10
2.6	Hours of Operation	2-10
2.7	Employees	2-10
2.8	Traffic Generation	2-11
2.8.1	Directional Distribution of Trucks to Main Road System	2-11
2.8.2	Estimated Peak Hour Movements	2-12
2.9	Fire Control	2-15
2.10	Water Requirements	2-18
2.10.1	Water Volume and Balance	2-18
2.11	Geotechnical	2-20
2.11.1	Integrity of the Landfill and Capping	2-21
2.11.2	Management of Gas Migration in to the Proposed Buildings	2-22
2.11.3	Foundations for Plant and Structures	2-22
2.11.4	Water Table Monitoring	2-23

2.12	Waste	2-23
2.13	Infrastructure Services	2-24
2.14	Approvals Required	2-24

PART 3 STATUTORY PLANNING CONTROLS

3.1	Commonwealth Legislation	3-1
3.2	NSW Protection of the Environment Operations Act 1997	3-1
3.3	State Environmental Planning Legislation	3-3
3.3.1	State Environmental Planning Policy (Major Development) 2005 .	3-3
3.3.2	State Environmental Planning Policy No.33 - Hazardous and Offensive Development	3-3
3.3.3	State Environmental Planning Policy No.55 - Remediation of Land	3-4
3.3.4	State Environmental Planning Policy No.44 - Koala Habitat Protection	3-6
3.3.5	State Environmental Planning Policy (Infrastructure) 2007	3-7
3.3.6	Greater Metropolitan Regional Environmental Plan No.2 - Georges River Catchment	3-10
3.4	Local Environmental Planning Instruments	3-13
3.4.1	Liverpool Local Environmental Plan 2008	3-13
3.4.2	Liverpool Development Control Plan 2008	2-24

PART 4 CONSULTATION

4.1	Local Government, Government and Statutory Authority Consultation ...	4-1
4.2	Community Consultation	4-3

PART 5 ACOUSTIC IMPACT ASSESSMENT

5.1	Introduction	5-1
5.2	Methodology	5-1
5.3	The Existing Environment	5-1
5.4	Operational Noise Criteria	5-4
5.5	Impacts of the Proposed Development	5-5
5.5.1	Operational Noise	5-5
5.5.2	Traffic Noise	5-6
5.5.3	Construction Noise	5-7

PART 6 AIR QUALITY IMPACT ASSESSMENT

6.1	Introduction	6-1
6.2	Methodology	6-1
6.3	The Existing Environment	6-1
6.4.	Impacts of the Proposed Development	6-6
6.4.1	Operational Impacts	6-6
6.4.2	Construction Impacts	6-10

PART 7 FLORA AND FAUNA

7.1	Introduction	7-1
7.2	Methodology	7-1
7.2.1	Literature Review	7-1
7.2.2	Field Survey	7-2

7.2.3	Vegetation	7-2
7.2.4	Fauna	7-2
7.3	The Existing Environment	7-3
7.3.1	Flora	7-3
7.3.2	Fauna	7-5
7.4.	Impacts of the Proposed Development	7-6
7.4.1	Environmental Planning and Assessment Act 1979	7-6
7.4.2	State Environmental Planning Policy No.44 - Koala Habitat Protection	7-10
7.4.3	Environment Protection and Biodiversity Conservation Act	7-10
7.5	Environmental Management Measures and Safeguards	7-13
 PART 8 VISUAL IMPACT ASSESSMENT		
8.1	Introduction	8-1
8.2	Methodology	8-1
8.3	The Existing Environment	8-2
8.4	Impacts of the Proposed Development	8-4
8.5	Residual Impacts	8-6
8.6	Mitigation Measures	8-7
 PART 9 WATER QUALITY IMPACT ASSESSMENT		
9.1	Introduction	9-1
9.2	Methodology	9-1
9.3	The Existing Environment	9-1

9.3.1	Water Quality	9-1
9.3.2	Flooding	9-2
9.3.3	Site Drainage	9-4
9.4	Impacts of the Proposed Development	9-5
9.4.1	Impact on the Georges River	9-5
9.4.2	Erosion and Sediment Control	9-5
9.4.3	Waste Water	9-5

PART 10 TRAFFIC IMPACT ASSESSMENT

10.1	Introduction	10-1
10.2	Methodology	10-1
10.3	The Existing Environment	10-2
10.3.1	Traffic Generation by the Georges Fair Residential Subdivision .	10-3
10.3.2	Future Traffic Volumes in Brickmakers Drive in 2021	10-4
10.4	Impacts of the Proposed Development	10-5
10.4.1	Increase in Heavy Vehicle Movements on Road Network	10-6
10.4.2	Performance of Link Road / Brickmakers Drive Intersection	10-8
10.4.3	Increase in Equivalent Standard Axle Loading (ESA's) on External Road Pavements	10-8

PART 11 BUSHFIRE IMPACT ASSESSMENT

11.1	Introduction	11-1
11.2	Methodology	11-1
11.3	The Existing Environment	11-1

11.4	Assessment	11-3
11.4.1	Vegetation	11-3
11.4.2	Slope	11-4
11.4.3	Fire Danger Index	11-4
11.4.4	Setback	11-5
11.4.5	Asset Protection Zone	11-5
11.4.6	Construction	11-5
11.4.7	Water and Services	11-6
11.4.8	Access	11-7
11.5	Conclusion	11-8

PART 12 HAZARD RISK ASSESSMENT

12.1	Introduction	12-1
12.2	Methodology	12-1
12.3	Assessment	12-1
12.3.1	Hazard Analysis	12-2
12.3.1.1	Dangerous Goods Storage and Handling	12-2
12.3.1.2	Storage of Diesel	12-2
12.3.1.3	Contaminated Runoff	12-3
12.3.1.4	Refuelling of Plant and Equipment	12-4
12.3.1.5	Contaminated Materials Delivery	12-4
12.4	Environmental Safeguards	12-5

PART 13 DRAFT STATEMENT OF COMMITMENTS

13.1	Introduction	13-1
13.2	General Commitments	13-2
13.3	Environmental Management Plan	13-3
13.4	Monitoring and Reporting	13-14

PART 14 DEVELOPMENT JUSTIFICATION AND ALTERNATIVES

14.1	Development Need and Justification	14-1
14.2	The Principles of Ecologically Sustainable Development	14-2
14.2.1	The Precautionary Principle	14-3
14.2.2	Inter-Generational Equity	14-4
14.2.3	Conservation of Biological Diversity and Ecological Integrity ...	14-4
14.2.4	Improved Valuation, Pricing and Incentive Mechanisms	14-4
14.3	Development Alternatives	14-5
14.3.1	Location	14-5
14.3.2	Production Method	14-5
14.3.3	Non Development	14-6

PART 15 CONCLUSIONS

15.1	Introduction	15-1
15.2	Acoustic Impact	15-1
15.3	Air Quality	15-2
15.4	Traffic Impact	15-2

15.5	Visual Impact	15-3
15.6	Flood Impact	15-3
15.7	Impact on Landfill	15-4
15.8	Conclusion	15-5

REFERENCES

FIGURES

Figure 1-1:	Site Location Map	1-1
Figure 1-2:	Aerial photograph indicating the location of the Site	1-2
Figure 2-1	Extract from the LEP 2008 Map.	2-6
Figure 2-2	Extract from the Site Layout Plan for the Project	2-7
Figure 2-3	Estimated Directional Distribution of Trucks.	2-12
Figure 2-4	Truck daily truck movements based on 500,000 tonnes per annum of raw materials	2-14
Figure 2-5	Peak hour truck movements based on 500,000 tonnes per annum of raw materials	2-14
Figure 5-1:	Noise Monitoring Locations	5-2
Figure 5-2:	Predication Locations	5-4
Figure 6-1:	Annual wind roses based on 2005 data	6-2
Figure 6-2:	Annual wind roses based on 2006 data	6-3
Figure 6-3:	Maximum 24-hour average and annual average PM ₁₀ dispersion model predictions for the proposed operations	6-7
Figure 6-4:	Annual average TSP and dust deposition dispersion model predictions for the proposed operations	6-8
Figure 6-5:	Time series of predicted 24-hour average PM ₁₀ concentrations at nearest receptors	6-11
Figure 7-1:	Vegetation of the Site	7-3
Figure 8-1:	Viewing locations assessed	8-2
Figure 9-1:	Georges River Flood Levels at the Site	9-3
Figure 9-2:	Flood Frequency Curve at Milperra Bridge	9-4
Figure 10-1:	Road Network and ADT volumes	10-1
Figure 10-2:	Intersection traffic volumes Monday 5 November 2012 in the 8:00 am to 9:00 am peak hours	10-2
Figure 10-3:	Intersection traffic volumes Monday 5 November 2012 in the 5:00 pm to 6:00 pm peak hours	10-3
Figure 10-4:	Estimated Peak Hour (PCU's) Volumes at Brickmakers Drive/Link Road Intersection	10-5
Figure 11-1	Extract from the Liverpool City Council Bushfire Prone Land Map showing the Site and surrounding areas	11-2

TABLES

Table 1-1:	Summary of Director-General's Requirements	1-9
Table 2-1:	Daily estimated truck movements	2-11
Table 2-2:	Estimated Hourly and Daily Truck Movements	2-13
Table 2-3:	Estimated Peak Hour Truck Volumes	2-13
Table 2-4:	Total Heavy Vehicles Including Those Generated by the Proposed Development	2-15
Table 2-5:	Performance of the Stormwater Capture and Re-use System	2-19
Table 3-1:	Summary of Requirements of DCP 2008	3-25
Table 4-1:	Summary of issues raised by then Department of Environment and Conservation	4-1
Table 4-2:	Issues Raised by Liverpool City Council	4-2
Table 5-1:	Measured RBL and $L_{Aeq, period}$ Values	5-2
Table 5-2:	Estimated Minimum L_{A90} Levels due to Traffic on Brickmakers Drive	5-3
Table 5-3:	Estimated Future Daytime RBL Values	5-2
Table 5-4:	Summary of Intrusive and Amenity Criteria	5-5
Table 6-1:	Summary of PM_{10} monitoring data for Liverpool	6-5
Table 6-2:	Dust model predications at nearest sensitive receptors	6-9
Table 9-1:	Water Quality Data for Georges River at Milperra	9-2
Table 9-2:	100 year ARI Georges River Flood levels	9-3
Table 10-1:	Status of Georges Fair Residential Development, November 2012	10-3
Table 10-2:	Peak Hour Traffic Generation from the Georges Fair Residential Development	10-4
Table 10-3:	Peak Hour Traffic Generation at Full Development of Georges Fair	10-4
Table 10-4:	Brickmakers Drive Bi-Directional Traffic Volumes	10-6
Table 10-5:	Nuwarra Road North of Brickmakers Drive	10-7
Table 11-1:	Vegetation assessment for each aspect	11-3
Table 11-2:	Slope influencing bushfire behaviour on the Site	11-4
Table 12-1:	Results of Leachate Testing	12-3

APPENDICES

Appendix 1:	Clause 6(1) Opinion
Appendix 2:	Director-General's Requirements
Appendix 3:	Landowner's Consent from Liverpool City Council
Appendix 4:	Traffic and Parking Assessment
Appendix 5:	EGIS Consulting - Australian Site Audit Statement
Appendix 6:	Geotechnical Assessment
Appendix 7:	Stormwater, Flooding and Water Balance Assessment
Appendix 8:	Public Consultation Documents
Appendix 9:	Flora and Fauna Assessment
Appendix 10:	Air Quality Assessment
Appendix 11:	Acoustic Impact Assessment

Appendix 12: Visual Impact Assessment

Appendix 13: Bushfire Impact Assessment

Appendix 14: Reduced Copies of Site Layout Plans