



## **APPENDIX 11**

### **Greenhouse Gas and Energy Calculations**

## Appendix 11 – Greenhouse Gas and Energy Calculations

### Stationary Diesel Use

Activity Data	Energy Use		Emission Factors		
			CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O
kL	GJ/kL	GJ	kg CO <sub>2</sub> -e/GJ	kg CO <sub>2</sub> -e/GJ	kg CO <sub>2</sub> -e/GJ
480	38.6	18,528	69.2	0.1	0.2
			t CO <sub>2</sub> -e	t CO <sub>2</sub> -e	t CO <sub>2</sub> -e
Breakdown of individual GHG emissions (t CO <sub>2</sub> -e)			1,282.14	1.85	3.71
<b>Total GHG Emissions (t CO<sub>2</sub>-e)</b>					<b>1,287.7</b>

### Electricity Use

Activity Data	Energy Use		Emission Factors		
			CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O
GJ	GJ		kg CO <sub>2</sub> -e / GJ	kg CO <sub>2</sub> -e / GJ	kg CO <sub>2</sub> -e / GJ
0	0		241	N/A	N/A
			t CO <sub>2</sub> -e	t CO <sub>2</sub> -e	t CO <sub>2</sub> -e
Breakdown of individual GHG emissions (t CO <sub>2</sub> -e)			0	N/A	N/A
<b>Total GHG Emissions (t CO<sub>2</sub>-e)</b>					<b>0</b>

### Extraction, Production and Distribution of Energy Purchased

Activity Data		Emission Factors		
		CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O
Purchased energy	GJ	kg CO <sub>2</sub> -e/GJ	kg CO <sub>2</sub> -e/GJ	kg CO <sub>2</sub> -e/GJ
Diesel	18,528	5.3	N/A	N/A
Electricity	0	52.0	N/A	N/A
		t CO <sub>2</sub> -e	t CO <sub>2</sub> -e	t CO <sub>2</sub> -e
Breakdown of individual GHG Emissions (t CO <sub>2</sub> -e)		98.2	N/A	N/A
<b>Total GHG Emissions (t CO<sub>2</sub>-e)</b>				<b>98.2</b>

### Product Transport – Outsourced

Activity Data								Emission Factor (Total Fuel Cycle)
Transport mode	Materials (t)	Distance (km)	Payload (t)	Distance (Km)	Consumption (l/Km)	Diesel Use (kL)	Energy Use (GJ)	kg CO <sub>2</sub> -e/GJ
Truck	300,000	200	33	1,818,182	0.546	992.73	38,319	75.2
<b>Total GHG Emissions (t CO<sub>2</sub>-e)</b>								<b>2,881.61</b>

### Materials Transport – Outsourced

Activity Data								Emission Factor (Total Fuel Cycle)
Transport mode	Materials (t)	Distance (km)	Payload (t)	Distance (Km)	Consumption (l/Km)	Diesel Use (kL)	Energy Use (GJ)	kg CO <sub>2</sub> -e/GJ
Truck	480	200	33	2,909	0.546	1.59	61.31	75.2
<b>Total GHG Emissions (t CO<sub>2</sub>-e)</b>								<b>4.61</b>



Newcastle

75 York Street  
Teralba NSW 2284

Ph. 02 4950 5322

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