

**DACEL HCRW STUDY  
Cost Model: Incineration**

Annexure 6.2

1

Incinerator Designation:		<b>300 kg/hr</b>		Place:	<b>Various</b>
Existing / New / Upgraded		<b>New</b>		Name:	
Location:		Latitude		deg. South	
		Longitude		deg. East	
<b>1 Property Parameters: (all costs exclude VAT)</b>					
Site Area		2 000		square metres	
Estimated Land Cost		R 200		/m2	
				<b>R 400 000</b>	
<b>2 Development Costs:</b>					
		<b>m2</b>		<b>Cost/m2</b>	
		<b>Amount</b>			
Earthworks, roads & drainage		1 000		R 100	
Building		150		R 2 500	
Electrical: Switchgear & Reticulation					
KVA required:		50		200 000	
Diesel storage tanks & equipment		40 000		litres	
Fire-fighting & emergency equipment				75 000	
Environmental Impact Assessment				200 000	
Total development costs				<b>R 950 000</b>	
<b>3 Incinerator:</b>					
Make & Model:		<b>Toxic 300</b>		No. of units:	
				1	
Operating hours per day:				24	
				<b>Per Unit</b>	
				<b>Total</b>	
Capacity:		kgs/hour		300	
		kgs/day		7 200	
Rated Power		kw		6.8	
Daily Power consumption:		kwh		181	
Diesel consumption		lit/hr		30	
Diesel consumption		lit/day		720	
Installed cost:		R 825 000		<b>R 825 000</b>	
Estimated annual maintenance cost:		12.00%		R 99 000	
<b>4 Gas Scrubbers:</b>					
Make & Model:		<i>n/a</i>		No. of units:	
				0	
Operating hours per day:				24	
				<b>Per Unit</b>	
				<b>Total</b>	
Rated Power		kw			
Daily Power consumption:		kwh			
Water consumption		lit/hr			
Water consumption		lit/day			
Installed cost:				<b>R 0</b>	
Estimated annual maintenance cost:				R 0	
<b>5 Sundry Equipment:</b>					
Office & Washroom furniture				25 000	
Computer				15 000	
Store				3 000	
Coldroom				0	
Ash skips				20 000	
Total Sundry Equipment cost:				<b>R 63 000</b>	
Estimated annual maintenance cost:		10.00%		R 6 300	
<b>Total Capital Cost:</b>				<b>R 2 238 000</b>	
Estimated total annual maintenance cost:				R 105 300	
<b>6 Power &amp; Consumables</b>					
Working days per annum:		300			
<b>Annual usage &amp; cost:</b>		<b>Quantity</b>		<b>Unit Cost</b>	
		<b>Unit</b>		<b>Total Cost</b>	
Incinerators:					
Electricity		54 400		kwh	
		R 0.1838		10 000	
Diesel		216 000		lit	
		R 2.95		637 200	
Other				0	
Scrubbers:					
Electricity		0		kwh	
		R 0.1838		0	
Water		0		lit	
		R 0.00		0	
Lime		0		kg	
				0	
Sundry consumables:					
Clothing				2 500	
Other				5 000	
Water				6 000	
Misc. services: ash removal, etc.				25 000	
Annual Eskom connection cost:				1 800	
<b>7 Total Annual Power &amp; Consumables Cost</b>				<b>R 687 500</b>	
Total annual maintenance cost				<b>R 105 300</b>	
Depreciation on capital cost (excl. land) over		20		years	
				<b>R 91 900</b>	
Interest on capital cost @		12.00%		<b>R 268 560</b>	
				<b>R 1 153 260</b>	
<b>8 Personnel costs</b>					
0		R 150 000		R 0	
1		R 80 000		R 80 000	
3		R 50 000		R 150 000	
9		R 24 000		R 216 000	
				<b>R 446 000</b>	
<b>Total annual cost</b>				<b>R 1 599 260</b>	
<b>At full capacity:</b>					
hours/day		days/week		weeks/yr	
24		6		50	
		2 160 000		kgs/yr	
		180 000		kgs/mon	
				<b>R 0.7404</b>	

Est. Fixed Overheads	Est. Variable costs
<b>R 2 000</b>	<b>R 8 000</b>
	<b>R 637 200</b>
	<b>0</b>
	<b>0</b>
	<b>0</b>
<b>R 2 500</b>	
<b>R 5 000</b>	
<b>R 6 000</b>	
<b>R 12 500</b>	<b>R 12 500</b>
<b>R 1 800</b>	
<b>R 52 650</b>	<b>R 52 650</b>
<b>R 91 900</b>	
<b>R 268 560</b>	
<b>R 446 000</b>	
<b>R 888 910</b>	<b>R 710 350</b>
<b>R 74 000</b>	
<b>Annual capacity (kgs):</b>	<b>2 160 000</b>
<b>Variable cost/kg:</b>	<b>R 0.33</b>

R 1 599 260

per year

per year

per kg

Per month