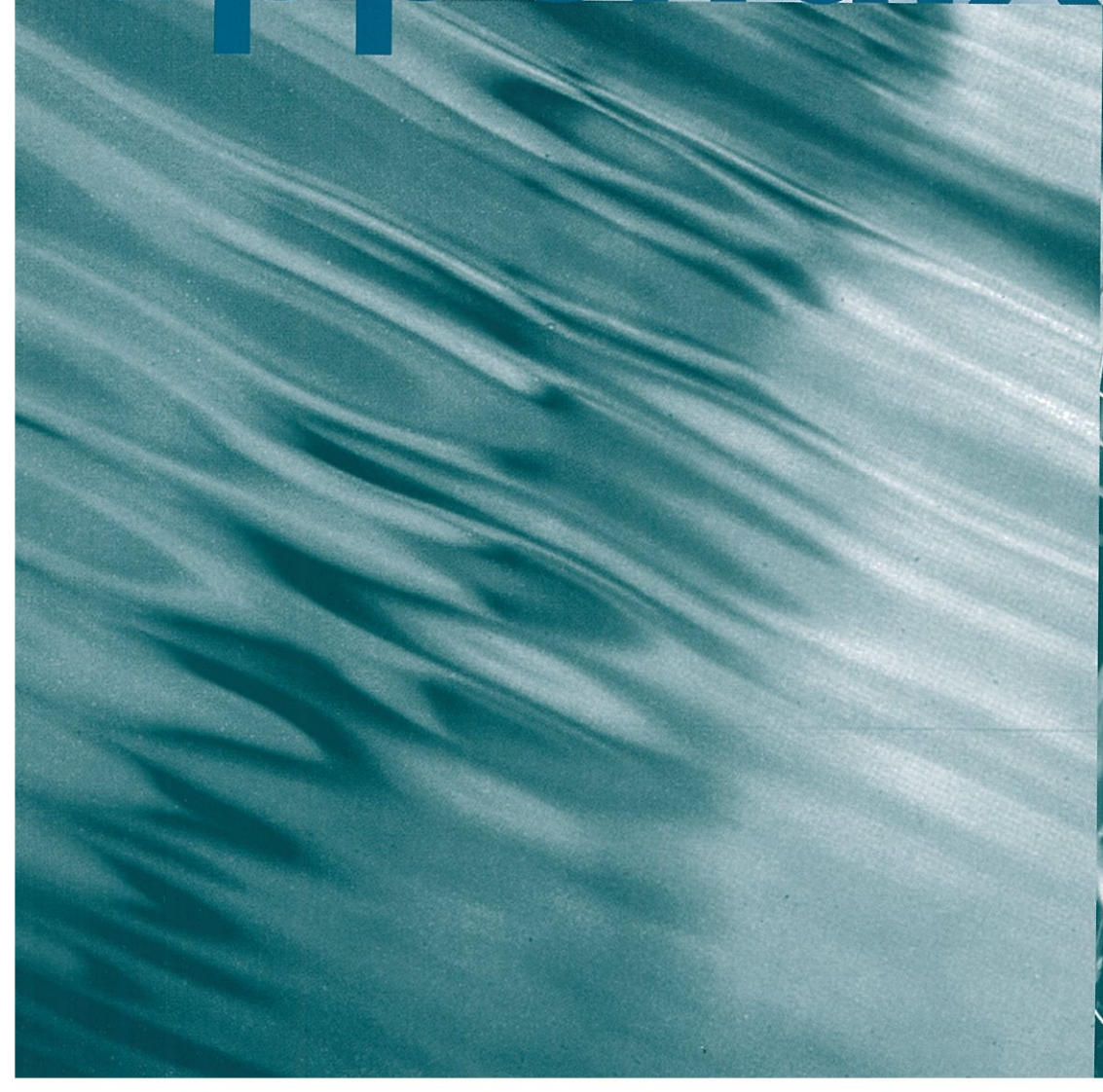




Appendix E

Estimation of Discharges to Atmosphere

appendix



Printed on
recycled paper

40ml
APPENDIX E

Chemisal Pty Ltd
Air Assessment
Estimation of Discharges to Air

TeeMark System

VOC removal efficiency:	96%
Discharge volumetric flow rate:	500 ft ³ /min 0.24 m ³ /s
Discharge temperature:	70.0 °F 21.1 °C
Stack diameter:	0.1 m

VOC

VOC emissions concentration:	251 ppm
VOC molecular weight (assume n-hexane):	86.18 g/gmol
VOC emissions concentration:	886.5 mg/m ³ 0.9 g/m ³
VOC emission rate (assumed as n-hexane):	0.210 g/s

Fluorescent Lamp Processing

Mercury in vapour form:	6%
Condenser mercury removal efficiency:	90%
Activated carbon mercury removal efficiency:	98%
Discharge volumetric flowrate:	350 ft ³ /min 0.17 m ³ /s
Discharge temperature:	20 °C
Stack diameter:	0.2 m

Mercury

In one hour

Number of lamps processed:	300 lamps
Mass of mercury in one tube:	40 mg
Mass of total mercury:	12000 mg
Mercury in vapour phase:	720 mg
Mercury vapour after condensor:	72 mg
Mercury vapour after filter:	1.44 mg

Mercury discharge rate:	0.0000004 g/s
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Volume of air discharged in one hour:	596 m ³
Stationary source emission concentration:	0.002 mg/m ³



Chemsal Pty Ltd
Environmental Assessment
AUSPLUME Input Data

Discharge Point		DP1	DP2
Function		TeeMark System	Fluorescent lamp processing
X - Co-ordinate	m	23.00	74.00
Y - Co-ordinate	m	8.50	13.20
Stack Height	m	11	11
Stack Diameter	m	0.1	0.2
Air Velocity	m/s	26.69	5.27
Discharge Flow Rate	m ³ /s	0.21	0.17
Exit Temperature	C	21	20
Total VOCs	g/s	0.21	-
Mercury	g/s	-	0.0000004

