

State Pollution Control Commission
21st September 1990

ENVIRONMENTALLY HAZARDOUS CHEMICALS ACT, 1985

CHEMICAL CONTROL ORDER IN RELATION TO

"SCHEDULED CHEMICAL WASTES"

NOTICE is hereby given pursuant to Section 21 of the Environmentally Hazardous Chemicals Act, 1985, that the State Pollution Control Commission has made a chemical control order under Sections 11, 22 and 23 of that Act in relation to scheduled chemical wastes.

The terms of the chemical control order are as follows:

1. Citation:

This order may be cited as the "Scheduled Chemical Wastes Chemical Control Order 1990".

2. Commencement:

This order commences on the 21st September, 1990.

3. Definitions:

In this Order -

3.1 "controlled landfill" means waste disposal at a site approved by the Commission, in accordance with an approved plan involving dumping, compacting and covering with soil or other inert material in a way that prevents or minimises any adverse effect on the environment.

3.2 "dioxin equivalent concentration" means the concentration of a compound in Schedule "B" multiplied by the dioxin equivalency factor given in Schedule "B" for that compound.

3.3 "dioxins and furans" means the isomers 2,3,7,8- tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD) and 2,3,7,8 -tetrachlorodibenzofuran (2,3,7,8-TCDF) and other compounds listed in Schedule "B".

"high temperature waste incineration facility" means the facility built or intended to be built pursuant to Section 21B of the Waste Disposal (Amendment) Act 1989, licensed and approved by the Commission.

REFERENCE

NOT FOR LOAN

3.4

ENVIRONMENT PROTECTION
AUTHORITY NSW
LIBRARY

SER/NSWSPCC ENV/90

LOC: CHAT

ACCN: 960598

- 3.5 "licence", except insofar as a contrary intention may appear, means a licence issued by the Commission under the Environmentally Hazardous Chemicals Act.
- 3.6 "scheduled chemical wastes" means those wastes specified in Schedule "A".
- 3.7 "secure landfill" means a waste disposal area licensed and approved by the Commission, where any outward movement of contaminants is prevented by impermeable barriers and the area is provided with -
- . a leachate collection, removal and monitoring system.
 - . a leak detection facility.
 - . a groundwater monitoring system for constituents specified in Schedule "A".
- 3.8 "the Act" means the Environmentally Hazardous Chemicals Act, 1985.
- 3.9 "the Commission" means the State Pollution Control Commission.
- 3.10 "the Hazardous Chemicals Advisory Committee" means the Committee constituted under Section 6 of the Environmentally Hazardous Chemicals Act, 1985.
- 3.11 "the Minister" means the Minister for the Environment.
- 3.12 "total dioxin equivalent concentration" means the sum of all the dioxin equivalent concentrations for each of the compounds listed in Schedule "B".
- 3.13 "wastes" means any wastes which are liquids, sludges, solids or articles, except sludges and solids generated by the treatment of raw sewage.

4. Prohibition of Prescribed Activities:

Unless otherwise permitted by this Chemical Control Order, the act of manufacturing, processing, keeping, distributing, conveying, using, selling or disposing of the chemical wastes in Schedule "A", or any act related to any such act is prohibited.

5. Description of Prescribed Activities Permitted to be Carried On:

5.1 Keeping of scheduled chemical wastes

5.1.1 Keeping and stockpiling of scheduled chemical wastes not destined for treatment in the high temperature incineration facility (or by an alternative method approved by the Minister) is not permitted once the proposed facility is operating.

5.1.2 Where more than 10 kilograms of scheduled chemical wastes in aggregate is kept in or on a premises, the Commission shall be notified in writing of the identity, amount and location of these wastes. Such notification shall be made annually.

- 5.1.3 Keeping of articles (whether in use or not) in or on a premises, which give rise to more than 100 kilograms of scheduled chemical wastes containing any constituent specified in Schedule "A1", shall be notified and registered with the Commission.
- 5.1.4 Where one tonne or less of scheduled chemical wastes in aggregate is kept or proposed to be kept in or on a premises, and where the total concentration of constituents specified in Schedule "A", in these wastes is greater than fifty parts per million or the total dioxin equivalent concentration in the wastes is greater than two parts per million:
- .1 All packages containing scheduled chemical wastes shall be clearly marked with details of the contents.
 - .2 All packages containing scheduled chemical wastes shall be maintained in good order. The contents of corroded or leaking packages shall be immediately repacked into sound packages.
 - .3 A scheduled chemical wastes storage area shall be sited and constructed so as to prevent any discharge of scheduled chemical wastes to the environment.
 - .4 The occupier of any premises where scheduled chemical wastes are kept shall ensure that a supply of adequate personal protective equipment (such as approved respirators, overalls, rubber or PVC gloves, goggles and rubber boots) is available and used by any person handling scheduled chemical wastes.
- 5.1.5 Where more than one tonne of scheduled chemical wastes is kept or proposed to be kept in or on a premises, and where the total concentration of constituents specified in Schedule "A", in these wastes is greater than fifty parts per million or the total dioxin equivalent concentration in the wastes is greater than two parts per million:
- .1 Scheduled chemical wastes shall be kept in accordance with the conditions of a licence issued by the Commission under Section 28 of the Act.
 - .2 All packages containing scheduled chemical wastes shall be clearly marked with details of the contents.
 - .3 A scheduled chemical wastes storage area shall be a roofed and walled enclosure with an impermeable floor such as concrete or steel with no drainage outlets. Where liquids are kept, concrete floors shall be coated with sealant material to prevent the absorption of any leak or spill and the floor shall be bunded so that it will contain 110 percent of the contents of the largest container or package or twenty five percent of the maximum contents of the store, whichever is the greater volume.
 - .4 The walls and roof of a scheduled chemical wastes store shall be so constructed and sealed to adequately protect the contents from weather conditions and unlawful entry.
 - .5 All packages containing scheduled chemical wastes shall be maintained in good order. The contents of corroded or leaking packages shall be immediately repacked into sound packages.

- .6 A scheduled chemical wastes storage area shall be adequately ventilated and secured to prevent unauthorised entry and shall be located no closer than twelve metres from any flammable liquid store. The storage area shall be located at an elevation above the 100 year flood level for the locality and constructed so as to prevent the ingress of stormwater.
- .7 Adequate personal protective equipment (such as approved respirators, overalls, rubber or PVC gloves, goggles and rubber boots), clean-up material (such as hydrated lime, sand and bleach) and equipment (such as shovels, open mouth drums and brooms) shall be kept in a secure area external and adjacent to the entry of the scheduled chemical wastes store.
- .8 The licensee shall ensure that any person handling scheduled chemical wastes is trained in handling hazardous chemicals and wears adequate personal protective equipment.
- .9 Immediately upon receiving or despatching for conveyance any scheduled chemical wastes the licensee of a scheduled chemical wastes store shall notify details of such receipt or despatch in writing. Such notice shall be given to the Commission.
- .10 Conspicuous notices stating a warning that the contents of packages containing scheduled chemical wastes are hazardous, shall be attached to the door or building close to the entrance of a scheduled chemical wastes store.
- .11 The licensee of a scheduled chemical wastes store shall inspect the store at monthly intervals to ensure that no unauthorised entry or leakage has occurred. A log, containing details of the personnel carrying out inspections, and dates of those inspections, shall be maintained at the store.
- .12 Without limiting the generality of 5.1.5.1, licences granted under 5.1.5.1 may attach conditions:
 - (a) requiring remedial action to be taken by the licensee in the event of contamination occurring by reason of the keeping of scheduled chemical wastes;
 - (b) requiring the lodging with the Commission, of a security, in such a form and amount as the Commission considers appropriate under Section 34 of the Act, for the performance of the conditions of the licence.

5.2 Manufacturing of scheduled chemical wastes

The manufacture of scheduled chemical wastes is prohibited after 31st December, 1994, except:

- .1 Where this is caused by the removal from use of articles and substances containing PCBs, CFCs or Halons that inevitably give rise to scheduled chemical wastes, for which there is no environmentally acceptable means of disposal other than by means of the approved high temperature waste incineration facility or other equally environmentally acceptable alternative facility approved by the Minister.
- .2 Where wastes are generated by unforeseen accidents or spills.

- .3 Where wastes are generated by pilot plant developments approved by the Commission or laboratory developments.

5.3 Processing of Scheduled Chemical Wastes

- .1 Where scheduled chemical wastes are processed in any manner to treat, recover, isolate or concentrate the content of constituents specified in Schedule "A", in the wastes, the constituents so treated, recovered, isolated or concentrated and the processed waste shall be kept, conveyed or disposed of in accordance with this order.
- .2 Where scheduled chemical wastes are processed in any manner to reduce the content of constituents specified in Schedule "A", in the wastes, the wastes shall be processed in a manner approved by the Commission.
- .3 The processing of scheduled chemical wastes by dilution with any other substance, to reduce the concentration of constituents specified in Schedule "A", of any scheduled chemical wastes is prohibited.
- .4 The scheduled chemical wastes shall be processed in accordance with the conditions of a licence granted by the Commission.
- .5 Without limiting the generality of 5.3.4, licences granted under 5.3.4 may attach conditions:
 - (a) requiring remedial action to be taken by the licensee in the event of contamination occurring by reason of the processing of scheduled chemical wastes;
 - (b) requiring the lodging with the Commission, of a security, in such form and amount as the Commission considers appropriate under Section 34 of the Act, for the performance of the conditions of the licence.

5.4 Conveying of scheduled chemical wastes

Scheduled chemical wastes, with the exception of CFCs and Halons, where the total concentration of constituents specified in Schedule "A", in the wastes is greater than fifty parts per million or the total dioxin equivalent concentration in the wastes is greater than two parts per million, shall be conveyed in accordance with the following:

- 5.4.1 Where less than one tonne of any scheduled chemical wastes is to be conveyed, the vehicle conveying the wastes shall carry personnel trained in methods of containing spilled Scheduled Chemical Wastes and provided with adequate personal protective equipment, clean-up material and equipment to deal with any spill.
- .1 The Commission shall be notified immediately by the licensee or his agent of any spill of scheduled chemical wastes occurring during the conveyance.

5.4.2 Where more than one tonne of scheduled chemical wastes is to be conveyed by road:

- .1 An escort vehicle shall accompany the vehicle(s) conveying scheduled chemical wastes, and shall be capable of maintaining radio contact with the vehicle(s).
- .2 The escort vehicle shall carry two persons one of whom is trained in methods of containing spilled scheduled chemical wastes.
- .3 The escort vehicle shall carry adequate personal protective equipment, spades, brooms, cleaning fluid, rags and at least 150 kilograms of oil absorbing material.
- .4 The escort vehicle shall carry sufficient sealable containers for holding any clean-up material.
- .5 The Commission shall be notified immediately by the licensee or his agent of any spill of scheduled chemical wastes occurring during the conveyance.
- .6 Scheduled chemical wastes shall be conveyed in accordance with the conditions of a licence.
- .7 Without limiting the generality of 5.4.2.6 licences granted under 5.4.2.6 may attach conditions:
 - (a) requiring remedial action to be taken by the licensee in the event of contamination occurring by reason of the conveying of waste;
 - (b) requiring the lodging with the Commission of a security, in such form and amount as the Commission considers appropriate under Section 34 of the Act, for the performance of the conditions of the licence.
- .8 All scheduled chemical wastes shall be conveyed in accordance with the provisions of the Dangerous Goods Act, 1975.

5.5 Disposing of scheduled chemical wastes

Scheduled chemical wastes shall be disposed of in the high temperature waste incineration facility or other equally environmentally acceptable alternative facility approved by the Minister except:

- 5.5.1. Where the total concentration of constituents specified in Schedule "A", with the exception of the total dioxin equivalent concentration, in scheduled chemical wastes, being a sludge, solid or article.
 - .1 Is greater than one part per million and less than fifty parts per million, and the amount of the constituents is greater than ten grams, these wastes shall be disposed of in a secure landfill in a manner approved by the Commission, or other equally environmentally acceptable alternative facility approved by the Minister.
 - .2 Is greater than one part per million and less than fifty parts per million, and the amount of the constituents is less than ten grams, these wastes may be disposed of in a controlled landfill in a manner approved by the Commission.

- 3 Is greater than 0.1 parts per million and less than one part per million, these wastes may be disposed of in a controlled landfill in a manner approved by the Commission.

Provided that the total dioxin equivalent concentration in the case of subclause 5.5.1.1, is less than two parts per million and subclauses 5.5.1.2 and 5.5.1.3, is less than 0.02 parts per million.

Provided that in each case prior to deposition any sludge is stabilised by a process approved by the Commission.

- 5.5.2 Where the total concentration of constituents specified in Schedule "A", of the scheduled chemical wastes, in a liquid waste is less than one part per million and the total dioxin equivalent concentration in the wastes is less than 0.02 parts per million the substance or waste may be disposed of in a manner, other than by landfilling, approved by the Commission.
- 5.5.3 Where the risk from excavating and collecting any solid waste containing scheduled chemical wastes for treatment in the high temperature waste incineration facility is assessed by the Commission, by means of an open technical examination of options and risks, including full and open community consultation on them, to be higher than the risk of leaving the solid waste undisturbed, the solid waste may be left, or treated in situ, with appropriate monitoring.
- 5.5.4 Packages having contained scheduled constituents in schedule "A1" and which are contaminated with these constituents shall be disposed of in the high temperature waste incineration facility or other equally environmentally acceptable alternative facilities approved by the Minister.

The basis for making this chemical control order are the recommendations of the Phase 2 Report of the Joint Taskforce on Intractable Waste (September 1989), and the agreement by the Commonwealth, New South Wales and Victorian Governments to implement the recommendations of that Report.

The following recommendations from that report are being implemented by this chemical control order:

<u>Phase 2 Report Recommendation Number</u>	<u>Chemical Control Order Reference</u>
Recommendation R4.3	Section 5.2
Recommendation R4.5	Section 5.1.2; 5.1.3
Recommendation R4.7	Section 5.5 (modified)
Recommendation R4.9	Section 5.2.1
Recommendation R4.10	Section 5.1
Recommendation R4.13	Section 5.3.3
Recommendation R4.14	Section 5.1.1

Schedules "A", "A1" and "B" are part of this order.

WARWICK G FORREST
Deputy Director
State Pollution Control Commission

SCHEDULE "A"

Scheduled chemical wastes are wastes containing one or more of the constituents in the following list, where the dioxin equivalent concentration is more than 0.001 parts per million, or the total concentration of the constituents is more than 0.1 parts per million. Any accumulated inventory or concentrated materials with no prospective or approved use are to be regarded as wastes for the purpose of this schedule.

<u>CONSTITUENT</u>	<u>REGULATORY SYNONYMS</u>	<u>CASRN *</u>
Aldrin	1,2,3,4,10-10-Hexachloro- 1,4,4a,5,8,8a-hexahydro- 1,4:5,8-endo,exodimethano- naphthalene	309002
Benzene, hexachloro-	Hexachlorobenzene	118741
Benzene, pentachloro-	Pentachlorobenzene	608935
Benzene, pentachloronitro -	Pentachloronitrobenzene	82688
Benzene, 1,2,4,5- tetrachloro-	1,2,4,5-Tetrachlorobenzene	95943
alpha-BHC		319846
beta-BHC		319857
gamma-BHC	Hexachlorocyclohexane (gamma isomer)	58899
delta-BHC	Lindane	319868
Captan	1,2,3,6-Tetrahydro-N- (trichloromethylthio) phthalimide	133062
CFCs	Chlorofluorocarbons	
Chlordane	4,7-Methanoindene, 1,2,4, 5,6,7,8,8-octachloro-2,3, 3a,4,7,7a-hexahydro	57749
4-Chloro-m-cresol	p-Chloro-m-cresol Phenol, 4-chloro-3-methyl	59507
2,4-D Acid. Salts and Esters	2,4-D. salts and esters 2,4-Dichlorophenoxyacetic acid, salts and esters	94757 94111 94791

* CASRN is the Chemical Abstracts Registry Number

<u>CONSTITUENT</u>	<u>REGULATORY SYNONYMS</u>	<u>CASRN</u> *
		94804 1320189 1928387 1928616 1929733 2971382 25168267 53467111
DDD	4,4-DDD Dichlorodiphenyl dichloroethane TDE	72548
DDE	4,4-DDE	72559
DDT	4,4-DDT Dichlorodiphenyl trichloroethane	50293
Diallate	S-(2,3-Dichloroallyl) diisopropylthiocarbamate	2303164
Dicamba	3,6 - Dichloro-2-methoxy benzoic acid	1918009
Dichlorvos	2,2 - Dichlorovinyl dimethyl phosphate	62737
Dieldrin	1,2,3,4,10,10-Hexachloro- 6,7-epoxy-1,4,4a,5,6,7,8,8a- octahydro-endo, exo-1,4:5,8- dimethanonaphthalene	60571
Diuron	3-(3,4-Dichlorophenyl)-1,1- dimethylurea	330541
Endrin	1,2,3,4,10,10-Hexachloro-6 6,7-epoxy-1,4,4a,5,6,7,8,8a- octahydro-endo,endo-1,4: 5,8-dimethanonaphthalene	60571 72208
Endrin aldehyde		7421934
Halons		
Heptachlor	4,7-Methano-1H-indene,1,4, 5,6,7,8,8-heptachloro-3a, 4,7,7a-tetrahydro -	76448
Heptachlor epoxide		1024573

* CASRN is the Chemical Abstracts Registry Number

<u>CONSTITUENT</u>	<u>REGULATORY SYNONYMS</u>	<u>CASRN *</u>
Hexachlorophene	2,2'-Methylenebis (3,4,6-trichlorophenol)	7304
Isodrin	1,2,3,4,10-10-Hexachloro-1,4,4a,5,8,8a-hexahydro-1,4:5,8-endo,endo-dimethano-naphthalene	465736
Pentachlorophenol	Phenol, pentachloro-	87865
phenol, 2,3,4,6-tetra-chloro-	2,3,4,6-Tetrachlorophenol	58902
Phenol, 2,4,5-trichloro-	2,4,5-Trichlorophenol	95954
Phenol, 2,4,6, trichloro-	2,4,6-Trichlorophenol	88062
Polychlorinated Biphenyls (PCBs)	Aroclor Dykanol Noflamol Chlorentol Inerteen Pyranol Therminol Therminol FR I Chlophen Chlorentol Fenclor Kanachlor Kanechlor Montar Phenochlor Phenoclor Pyralone Santotherm Santotherm FR Sovol Askeral Chlorinated Biphenyl Chlorinated Diphenyl Chlorinol Diachlor DK Fenclor	
Pronamide	3,5-Dichloro-N-(1,1-dimethyl-2-propynyl) benzamide	23950585

* CASRN is the Chemical Abstracts Registry Number

<u>CONSTITUENT</u>	<u>REGULATORY SYNONYMS</u>	<u>CASRN *</u>
Silvex	Propionic acid,2-(2,4,5-trichlorophenoxy). 2,4,5-TP acid	93721
Toxaphene	Camphene, octachloro	8001352
1,2,4-Trichlorobenzene		120821
Trichlorophenol		25167822
2,3,7,8 - Tetrachlorodibenzo-p-dioxin and 2,3,7,8 - Tetrachlorodibenzofuran and other compounds listed in Schedule "B"		

* CASRN is the Chemical Abstracts Registry Number

SCHEDULE "A1"

<u>CONSTITUENT</u>	<u>REGULATORY SYNONYMS</u>	<u>CASRN *</u>
Captan	1,2,3,6-Tetrahydro-N-(trichloromethylthio)phthalimide	133062
DDD	4,4-DDD Dichlorodiphenyl dichloroethane TDE	72548
DDE	4,4-DDE	72559
DDT	4,4-DDT Dichlorodiphenyl trichloroethane	50293
Diallate	S-(2,3-Dichloroallyl) diisopropylthiocarbamate	2303164
Endrin	1,2,3,4,10,10-Hexachloro-6 6,7-epoxy-1,4,4a,5,6,7,8,8a- octahydro-endo,endo-1,4: 5,8-dimethanonaphthalene	60571
Endrin aldehyde		7421934
Polychlorinated Biphenyls (PCBs)	Aroclor Dykanol Noflamol Chlorentol Inerteen Pyranol Therminol Therminol FR I Chlophen Chlorextol Fenclor Kanachlor Kanechlor Montar Phenochlor Phenoclor Pyralene Santotherm Santotherm FR Sovol Askeral Chlorinated Biphenyl	

* CASRN is the Chemical Abstracts Registry Number

<u>CONSTITUENT</u>	<u>REGULATORY SYNONYMS</u>	<u>CASRN *</u>
	Chlorinated Diphenyl Chlorinol Diachlor DK Fenchlor	
CFCs	Chlorofluorocarbons	
Halons		
2,3,7,8 - Tetrachlorodibenzo-p-dioxin and 2,3,7,8 - Tetrachlorodibenzofuran and other compounds listed in Schedule "B"		

* CASRN is the Chemical Abstracts Registry Number

SCHEDULE "B"

DIBENZO-P-DIOXINS AND DIBENZOFURANS

These are the other constituents referred to in the Declaration of Chemical Wastes.

<u>CONSTITUENT</u>	<u>DIOXIN EQUIVALENCY FACTOR</u> ¹
2,3,7,8-tetrachlorodibenzo-p-dioxin	1
1,2,3,7,8-pentachlorodibenzo-p-dioxin	0.5
1,2,3,4,7,8-hexachlorodibenzo-p-dioxin	0.1
1,2,3,7,8,9-hexachlorodibenzo-p-dioxin	
1,2,3,6,7,8-hexachlorodibenzo-p-dioxin	
1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin	0.01
octachlorodibenzo-p-dioxin	0.001
2,3,7,8-tetrachlorodibenzofuran	0.1
2,3,4,7,8-pentachlorodibenzofuran	0.5
1,2,3,7,8-pentachlorodibenzofuran	0.05
1,2,3,4,7,8-hexachlorodibenzofuran	0.1
1,2,3,7,8,9-hexachlorodibenzofuran	
1,2,3,6,7,8-hexachlorodibenzofuran	
2,3,4,6,7,8-hexachlorodibenzofuran	
1,2,3,4,6,7,8-heptachlorodibenzofuran	0.01
1,2,3,4,7,8,9-heptachlorodibenzofuran	
octachlorodibenzofuran	0.001

NOTE

The purpose of this Schedule is to provide a list of those 17 dioxin and furan compounds that contribute the most to the toxicity of the mixtures of these compounds.

The toxicity of 2,3,7,8-tetrachlorodibenzo-p-dioxin is assigned a base toxicity of 1 and the toxicity of each of the other compounds is given as a relative measure to that base.

International Toxicity Equivalency Factors are assigned to individual dioxins and furans on the basis of how toxic they are in comparison with the toxicity of 2,3,7,8-tetrachlorodibenzo-p-dioxin, the most potent dioxin. This contaminant has assigned the value of 1.0 (NATO, 1988a). By comparison, animal and cell tests show that 2,3,7,8-tetrachlorodibenzofuran is approximately one-tenth as toxic as 2,3,7,8-tetrachlorodibenzo-p-dioxin. Consequently, its toxic equivalent value is 0.1. International Toxicity Equivalency Factors have been developed for those dioxins and furans that contribute most to the toxicity of a complex mixture, which are those that have chlorines in at least the 2,3,7 and 8 positions. The toxicity is decreased from that of 2,3,7,8-tetrachlorodibenzo-p-dioxin in a predictable manner for those dioxins or furans which have either fewer or more chlorines than this compound, and/or which have chlorines in positions 1,4,6 or 9.

Of the 210 dioxins and furans, 17 contribute most to the toxicity of a complex mixture and are of the greatest concern. This does not mean that the remaining 193 dioxins and furans are not toxic, but merely that they contribute comparatively little to the toxicity of a complex mixture.

1. NATO, 1988a. The Dioxin Equivalency Factor is the International Toxicity Equivalency Factor (I-TEF) method of risk assessment for complex mixtures of dioxins and related compounds.