No. 174/93/ml

CONTROL OF POLLUTION ACT 1974
PART I

# WASTE DISPOSAL LICENCE

THE *Alyn and Deeside District Council
HEREBY GRANT a Waste Disposal Licence, pursuant to an application dated 22nd July 1992, in respect of the following:

| | |
|---|---|
| Full name and address of licence holder | A.D. Waste Limited,<br>Backford Hall,<br>Nr. Chester,<br>Cheshire |
| Full name and address of local representative (if any) of licence holder | |
| Location of site to which this licence relates | Standard Landfill Site,<br>Spencers Industrial Estate,<br>Off Liverpool Road,<br>Buckley, Clwyd |
| Form of deposit or disposal to which this licence relates | Landfill Site |
| Types of waste of which deposit or disposal is authorised and any limitation as to quantity | Wastes specified in Appendix One attached to this licence |

This Licence is granted subject to the following conditions:—

(See attached 56 pages)

OUTGOING

PERMIT

Dated 21st June 1993. (*Signed*) N Thompson

(*Designation*) Chief Engineer

THE LICENCE HOLDER SHOULD READ CAREFULLY THE NOTES OVERLEAF.

* Insert name of Waste Disposal Authority.

Cat. No. W.D. 5.
Copyright form.
SHAW & SONS LTD., Shaway House, London, SE26 5AE
S365 (N)

ALYN AND DEESIDE
DISTRICT COUNCIL

CONTROL OF POLLUTION ACT 1974

Notice of Acceptance of Working Plan
Submitted in support of an application for
a Waste Disposal Licence.

Licensee.....AD WASTE LIMITED.....

Licence Number..174/93.....

Site Name....STANDARD LANDFILL SITE.....

Site Address.SPENCERS INDUSTRIAL ESTATE,...

.....OFF LIVERPOOL ROAD,.....

.....BUCKLEY..CLWYD.....

No. of Pages in Operational Statement.139..

Plan Reference Numbers.Stand/L/001-003 Volume I (inclusive)

Stand/L/001-009 Volume II(inclusive)

.....

Dated this 21st day of June 1993.

Signed: N Thompson

Designation: Chief Engineer

Please Note:

The acceptance of the attached Working Plan is in accordance with Condition Number A2. Any such acceptance does not relieve the licencee of his responsibility to ensure that any or all of the following do not occur:

(i) pollution of the environment
(ii) harm to human health and/or
(iii) serious detriment to the amentities.

# WASTE DISPOSAL LICENCE NUMBER LA174/93 FOR AD WASTE LIMITED, STANDARD LANDFILL SITE, SPENCER'S INDUSTRIAL ESTATE, OFF LIVERPOOL ROAD, BUCKLEY, CLWYD.

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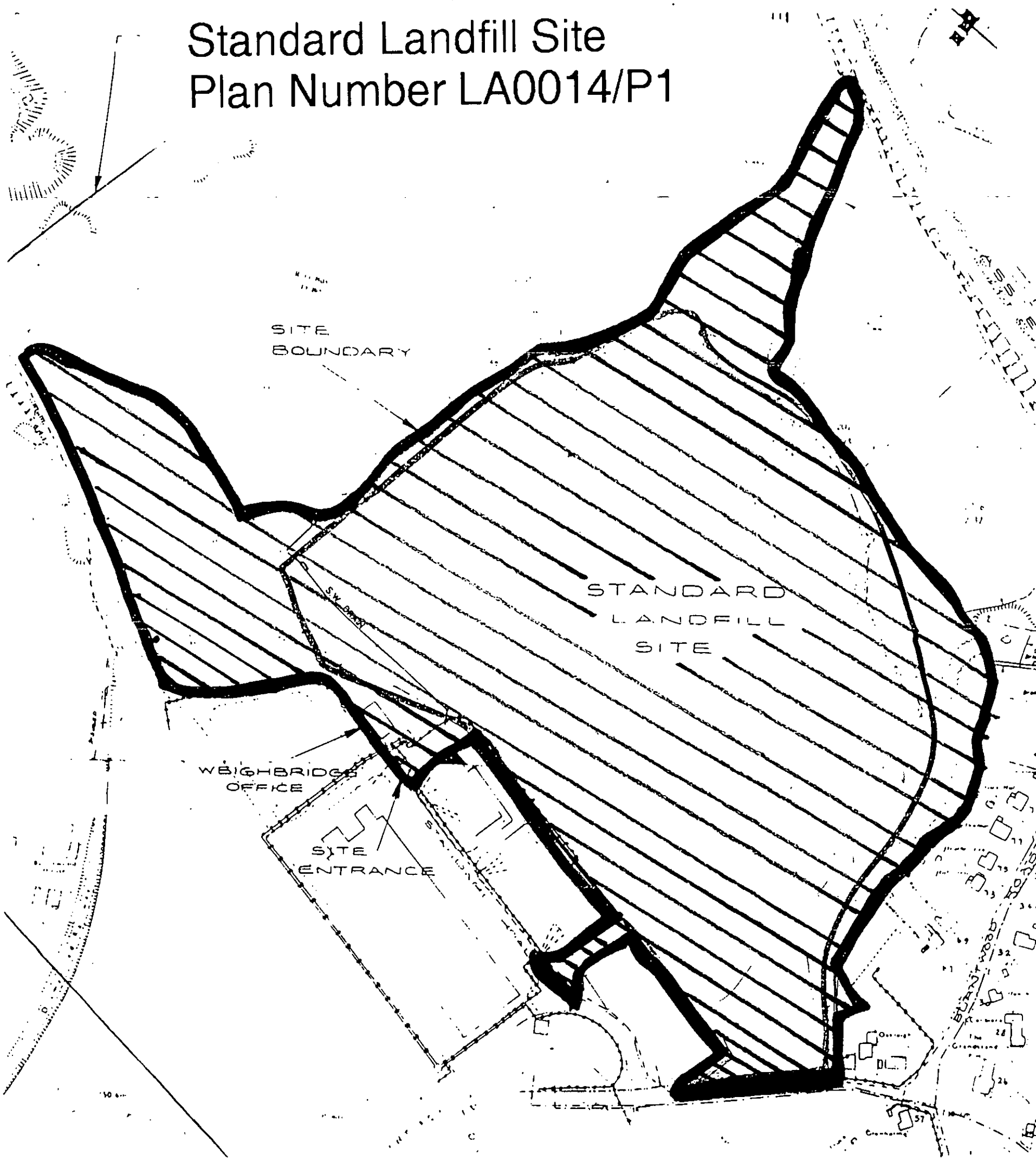
# Standard Landfill Site
# Plan Number LA0014/P1



## A GENERAL - SITE LICENCE, WORKING PLAN AND OPERATIONS

### A1 Site Covered by Licence

These licence conditions shall only apply to the site shown hatched black on the attached plan number LA0014/P1.

### A2 Operation of the Site

The site shall be operated in accordance with the methods of operation described in the accepted Working Plan so as to prevent nuisance or detriment to the amenity, risk of water pollution, danger to public health, nuisance or detriment to the amenity.

The accepted Working Plan shall form part of this licence, however, in the event of any proposals or details in the Working Plan being in conflict with these licence conditions, the licence conditions shall prevail.

### A3 Timescales for Permitted Waste Disposal Operations

This licence shall only be valid for the period specified in Planning Permission No. 4/0/20705 unless an extended time limit has been obtained in the form of a further Planning Permission for the development.

### A4 Display of Site Licence and Working Plan

**(a) Display of Site Licence**

A copy of this licence including the conditions and any modifications thereto shall be displayed at all times in the site control office in a prominent position. All site operatives shall be fully conversant with its contents.

**(b) Inspection of Working Plan**

The current issue of the Working Plan shall be made available for inspection at the site office at any reasonable time by:-

(i) Any site operatives
(ii) Any authorised representative of the Waste Regulation Authority.

### A5 Working Plan

For the purpose of this licence the Working Plan shall consist of the latest issue or modification of the Working Plan which has been accepted in writing by the Waste Regulation Authority.

Acceptance by the Authority of the Working Plan shall not relieve the licence holder of his responsibility to ensure that any or all of the following do not occur:

(i) pollution of the environment
(ii) harm to human health
(iii) serious detriment to the amenities.

A6 Modifications to and Acceptance of the Working Plan

The current issue of the Working Plan shall not be revised, altered or otherwise modified unless:-

(i) A copy of the proposed revision, alteration or other modification has been submitted to the Waste Regulation Authority in writing

(ii) The proposed revision, alteration or other modification has been accepted by the Waste Regulation Authority in writing within two months of the date of its submission for consideration or any greater time limit which is agreed between the licence holder and the Waste Regulation Authority.

A7 Contact Details

Prior to the acceptance of any Working Plan, the licence holder shall provide to the Waste Regulation Authority in writing the name, business address and telephone number of:-

(i) The person or persons having authority to accept or reject waste at the site;

(ii) The person or persons responsible for the day to day control of operations on the site;

(iii) The person or persons responsible for site security;

(iv) The person or persons responsible for ensuring that the conditions of this licence are complied with.

Any change in these details shall be notified in writing to the Waste Regulation Authority within 24 hours of the change occurring.

A8 Emergency Contact Details

Prior to the acceptance of the Working Plan, the licence holder shall inform the Waste Regulation Authority in writing of the name, address and telephone number of a responsible person for contact in the case of an emergency arising in connection with the facility;

(i) During normal operating hours;

(ii) Outside normal operating hours.

Any change in these details shall be notified in writing to the Waste Regulation Authority within 24 hours of the change occurring.

A9 Notifications Under Licence Conditions

Any notification the licence holder is required to make under the conditions shall be made to:

Director of Technical Services,
F.A.O. Waste Regulation Section
Alyn and Deeside District Council
Civic Offices
St David's Park
Ewloe
Deeside
Clwyd
CH5 3PW

Telephone Number (0244) 525000
Facsimile Number (0244) 525323

B PERMITTED AND NON-PERMITTED WASTES

B1 Permitted Types and Quantities of Waste

A (a) Only the types of waste specified in Appendix 1 attached to this licence shall be permitted to be deposited in the site.
These materials shall not be admixed with any other non-listed material. All soils shall be within the permitted contamination levels as specified in Appendix 2, Classes A to D (inclusive) only, attached to this licence.

(b) The total quantity of wastes accepted monthly shall not exceed 20,000 tonnes. For the purpose of this condition, all vehicles discharging wastes for the purposes of construction of cell liners, bunds or caps and for the purposes of the reconstruction of the surface of the site road shall not count towards this total however, all such loads shall be recorded in accordance with the requirements of Condition D1.

(c) Material used for intermediate cover shall only include those permitted waste types specified in Appendix 1 attached to this licence, provided that such wastes are neither flammable, degradable nor putrescible.

B2 Packaged and/or Pre-treated Wastes

Where waste types are not permitted to be deposited under the provisions of this licence then those waste types shall not be deposited whether or not they have been packaged, placed in other containers or waste materials or pre-treated by any form of solidification or encapsulation.

B3 Malodorous Wastes

Wastes which could give rise to an objectionable odour to persons outside of the boundary of the site shall be handled on site in such a manner so as to prevent such a nuisance arising.

Such handling techniques and associated measures shall be agreed with the Environmental Health Department of Alyn and Deeside District Council within 3 months of issue of this licence and once agreed shall be submitted immediately for incorporation into the Working Plan in accordance with Condition A6.

B4 Clinical Wastes

All clinical wastes permitted to be deposited in the site shall be accompanied by notification paperwork in accordance with the Working Plan. Clinical waste, where permitted to be deposited shall be dealt with in accordance with Waste Management Paper Number 25.

C CONTROL OF WASTE DISPOSAL OPERATIONS

C1 Checks on Incoming Wastes

All loads of waste received at the site shall be checked prior to their deposit in the site by the booking-in clerk to ensure that the waste types conform to the requirements of Condition B1. The check shall consist of the following:-

(a) **Visual Checks Prior to Deposit**

A visual check shall be made of the contents of all incoming loads of waste, transported in open topped vehicles only, to ensure their suitability for deposit in the site. This check shall be carried out in accordance with the Working Plan. Any cover shall be removed from the load prior to this check being carried out.

(b) **Analysis Prior to Deposit**

All wastes for which there is reason to suspect that the waste may be contaminated above the levels permitted of contamination as specified in Condition B1(a) and Appendix 1, shall be sampled and the samples subjected to full analysis as specified in Appendix 3 prior to deposit in the site.

All such analyses shall be forwarded to the Waste Regulation Authority for written acceptance by the Authority prior to the acceptance and deposit of the waste in the site.

(c) **Weighing Prior to Deposit**

Each load of incoming waste shall be weighed prior to deposit in the site at the weighbridge in accordance with the Working Plan.

(d) **Visual Checks Following Deposit**

All wastes deposited at the site shall be checked immediately following deposit and prior to being machined or otherwise covered, to ensure their suitability for deposit in the site.

(e) Recording of Wastes

Records of waste inputs shall be kept in accordance with Condition D1.

C2 Non-Conforming Wastes

(a) All wastes not conforming to the requirements of Condition B1 shall be turned away or removed from the site in accordance with the Working Plan. Any waste which is poisonous, noxious or polluting and its presence on land is likely to give rise to an environmental hazard shall be removed immediately from the site to a suitably licensed waste disposal facility.

(b) When other non-conforming wastes cannot be turned away or removed immediately upon deposit, they shall be stored in a designated area in accordance with the working Plan for no more than 5 working days and shall then be removed from the site to a suitably licensed waste disposal facility.

(c) A record shall be kept of all such incidents and the Waste Regulation Authority informed by telephone immediately upon their occurrence.

C3 Sampling

Samples of any waste entering the site or undergoing disposal on the site and samples of any gaseous, liquid or particulate emissions from the site shall be taken under the direction of the Waste Regulation Authority.

The operator shall provide any reasonable assistance in the form of site personnel and/or equipment to the Waste Regulation Officer/s on request to enable such samples to be taken.

Any information required to enable the sampling to be carried out in accordance with the provisions of the Control of Substances Hazardous to Health (COSHH) Regulations 1988 (or any subsequent replacement legislation) shall be provided to the Waste Regulation Authority on request.

C4 Special Wastes

The receipt of, deposit at or removal of special waste at or from the site shall be carried out in accordance with the "Control of Pollution (Special Waste) Regulations 1980".

Where special waste is deposited in the site, the location, type and quantity of each deposit shall be recorded in writing , and the record shall be retained in accordance with Condition D3. The location of each such deposit shall be recorded in accordance with the requirements of the "Control of Pollution (Special Waste) Regulations 1980" by reference to either:-

(a) a plan of the site, divided by a metric grid, which shall show the position of the deposit and its depth with reference to Ordnance Datum; or

(b) a set of metric overlays of the site , showing the position of the deposit within the appropriate layer within the relevant cell.

C5 Asbestos

Asbestos shall be handled in accordance with the recommendations in Waste Management Paper No. 18. All loads of asbestos shall be immediately covered with non-difficult or non-special wastes upon deposit.

C6 Waste in Drums

(a) All waste contained in 200 litre drums shall be handled in accordance with the Code of Practice for the Disposal of Drummed Waste to Landfill attached as Appendix 4 of this licence.

(b) Where the Code makes provisions for the relaxation of its requirement by agreement with the Waste Regulation Authority (Sections 1.1, 1.2, 1.7, 2.6 and 3.1), requests for such relaxations shall be received by the Waste Regulation Authority at least 3 (three) working days before it is intended to implement the relaxed procedures.

Such relaxed operations shall not be implemented until such an agreement is received in writing or by facsimile transmission.

(c) Waste in drums shall not be stored on the site until the storage area which shall meet the requirements of Appendix 4, Section 2.4, required by Section 2.3, has been accepted by the Waste Regulation Authority.

(d) Waste in containers of sizes larger or smaller than 200 litres shall be treated in accordance with the Code of Practice if the total volume of their contents exceeds 200 litres. The Code shall not, however,be applied to the disposal of waste in retail packaging where a written assurance by the licence holder that the waste is of a consistent nature, has been submitted to and received by the Waste Regulation Authority at least 3 (three) working days before such waste is received at the site.

(e) All waste received at the site shall be taken to the designated storage area where the lids or bungs shall be removed from the drums to ensure their suitability for deposit in the site. All waste in drums which does not conform with the requirements of Condition B1 shall be turned away in accordance with Condition C2. All drums from which the lids or bungs cannot be removed to allow inspection shall be turned away as a non-conforming waste in accordance with Condition C2.

D SITE RECORDS

D1 Site Records

The site records shall be kept as specified in (a) to (f) below and as summarised in Appendix 5 to this licence.

**(a) Inputs/Deliveries of Waste to the Site**

(i) A record shall be kept of the types and quantities of waste delivered to the facility including those wastes delivered to the site, to be used for the purposes of construction of cell liners, bunds or caps and for the purposes of the reconstruction of the surface of the site road. The form of the record shall be agreed with the Waste Regulation Authority and shall include details of:-

(1) The person or company delivering the waste
(2) The source of the waste
(3) The time and date of the delivery
(4) The registration mark of the vehicle delivering the waste
(5) The name of the driver
(6) A description of the waste and the quantity of the waste in the load

This record shall be signed by the site operative booking in the load and by the driver of the vehicle delivering the waste.

(ii) The recorded description of the waste shall conform with the requirements of the Duty of Care.

(iii) A daily summary of the above records shall be made within five working days of the original records being made. This summary shall record the following details for each day:-

(1) Waste type (as specified in Condition B1)
(2) Total quantity of waste type (by weight)
(3) The district of origin (where applicable).

**(b) Outputs/Removals of Waste From the Site**

(i) A record shall be kept of the types and quantities of waste removed from the facility. The form of the record shall be agreed with the Waste Regulation Authority and shall include details of:-

(1) The person or company removing the waste
(2) The source of the waste (if known)
(3) The time and date of the removal
(4) The registration mark of the vehicle delivering the waste
(5) The name of the driver
(6) A description of the waste and the quantity of the waste in the load
(7) Details of the final destination of the waste.

This record shall be signed by the site operative checking the load and by the driver of the vehicle removing the waste.

(ii) The recorded description of the waste shall conform with the requirements of the Duty of Care.

(iii) A daily summary of the above records shall be made within five working days of the original records being made. This summary shall record the following details for each day:-

Waste type (as specified in Condition B1)
Total quantity of waste type (by weight)

The district of origin (where applicable).

(iv) All waste being removed from the site shall be consigned to a suitably authorised facility.

**(c) Analyses of Soils and Other Wastes**

A record shall be kept of all analyses of soils and other wastes carried out in accordance with the requirements of Condition C1(b). This record shall include the results of all such analyses. The record of each such analysis shall include a summary interpretation thereof.

**(d) Monitoring of Surface Waters, Groundwater and Leachate**

A record shall be kept of all conductivity measurements and all analyses of samples of

(i) surface waters arising from the site and in watercourses adjacent to the site;

(ii) groundwater and

(iii) leachate

In accordance with the requirements of Conditions I3, I4 and I5 respectively. The record of each such analysis shall include a summary interpretation of the results.

**(e) Measurements of Landfill Gas Concentration**

A record shall be kept of all measurements of concentrations of flammable gas, carbon dioxide and oxygen carried out in accordance with the requirements of Condition I6.

**(f) Measurements of Site Levels and Remaining Volume**

A record shall be kept of the site levels relative to Ordnance Datum and of the remaining volume to be landfilled in all unfinished areas of the site. This record shall be updated at regular intervals and in any case not less frequently than once every year.

D2 Retention and Surrender of Records

All records required to be kept under the Condition D1 shall be securely kept, in the agreed format at the site office or at the licence holders offices at:

AD Waste Ltd
C/O 3C Waste Ltd
Backford Hall
Nr Chester
CH1 6PA.

The licence holder shall keep these records for the duration of this site licence unless otherwise authorised in writing by the Waste Regulation Authority. The licence holder shall surrender these records to the Waste Regulation Authority upon termination of this site licence, whether by surrender or revocation.

D3 Submission of Copies of Records and the Inspection of Records

Copies of the records specified in Condition D1 shall be submitted to the Waste Regulation Authority, in writing as follows (As summarised in Appendix 5 attached to this licence):

**(a) Waste Movements to and from the Site**

A copy of the daily summaries for waste deposited in or removed from the site for each calendar month shall be sent to the Waste Regulation Authority within two weeks of the end of the next calendar month.

**(b) Analysis of Soils and Other Wastes**

A copy of the record of all analyses carried out in accordance with the requirements of Condition D1(c) including any summary interpretations thereof shall be forwarded to the Waste Regulation Authority in writing within 14 (fourteen) days of the analysis results having been received by the licence holder.

**(c) Monitoring of Surface Waters, Groundwater and Leachate**

A copy of the record of all conductivity measurements and analyses of water samples carried out in accordance with the requirements of Condition D1(d) including any summary interpretations thereof shall be forwarded to the Waste Regulation Authority in writing within 14 (fourteen) days of

(i) the conductivity measurements having been taken and/or

(ii) analysis results having been received by the licence holder.

**(d) Measurements of Landfill Gas Concentrations**

Any copy of the record of the measurements of concentrations of gases made in accordance with the requirements of Condition D1(e) shall be submitted in writing to the Waste Regulation Authority within 7 (seven) days of the measurements being taken.

(e) **Measurements of Site Levels and Remaining Volume**

A copy of any measurements taken or calculations made in accordance with the requirements of Condition D1(f) shall be submitted to the Waste Regulation Authority within 1 calendar month of the measurements being taken.

D4 **Inspection of Records**

Any records required to be kept in accordance with the requirements of Condition D1 shall be made available to any authorised representative of the Waste Regulation Authority for inspection at any reasonable time.

## E SITE FACILITIES AND INFRASTRUCTURE

### E1 Site Office

No waste shall be received at the site unless as site office with welfare facilities has been provided as specified in the Working Plan. It shall be adequately equipped and manned to allow the requirements of the conditions of this licence to be routinely carried out.

### E2 Site Identification Board

No waste shall be received at the site unless a site identification board as specified in the Working Plan is prominently displayed at the entrance to the site. The notice board shall be maintained at all times so that it is legible.

### E3 Site Security and Fencing

No waste shall be deposited until a fence has been constructed around the perimeter of the site, and lockable gates have been installed at the site entrance in accordance with the specification in the Working Plan. The fencing and gates shall be inspected each working day and any damage or holes repaired within 2 (two) working days (48 hours) of the damage being detected. A record shall be made in the site diary of the date and time of inspection and the location of any holes found.

Gates shall be locked out of working hours other than in the case of an emergency situation and in any case whenever the site is not manned.

### E4 Site Access

Site access for incoming and outgoing loads of waste shall only be via the Liverpool Road, unless otherwise agreed with the Waste Regulation Authority.

### E5 Prevention of Deposition of Mud on the Highway

The licence holder shall ensure that all vehicles leave the site in such a condition so as to prevent mud being carried onto the public highway in accordance with the Working Plan.

E6 Site Roads

The main site road from the site entrance to the working face shall be renovated and extended as necessary in accordance with the Working Plan. The surface of the site road shall be laid to a fall to encourage surface water run-off.

E7 Inspection Facility for Incoming Waste

No waste shall be received at the site until a suitable facility for the visual inspection of incoming loads of waste has been provided at the weighbridge in accordance with the Working Plan.

The equipment provided to allow this inspection facility shall be maintained in good working order at all times.

E8 Weighbridge

All incoming wastes shall be weighed, in tonnes, prior to deposit in the site.

E9 Fuel Storage Tank

All fuel stored on site shall be contained in a bunded tank provided in accordance with the specification set out by the National Rivers Authority and constructed in accordance with any proposals in the Working Plan. The base and bund walls shall be impervious and shall provide containment for at least 110% of the maximum volume of the tank. All fill and draw pipes shall be retained within the bund.

Any liquid or debris which gathers within the bunded area shall be removed and disposed of in accordance with the Working Plan, as necessary, to ensure that containment for at least 110% of the maximum volume of the tank is provided for continually.

F SITE OPERATIONS

F1 Opening Hours

The site shall be permitted to be open for the receipt, removal, deposit and/or handling of all wastes permitted by Condition B1 during the hours specified below:-

| | |
|---|---|
| Monday to Friday | 07:30 to 20:00 Hours |
| Saturday | 07:30 to 20:00 Hours |

Additionally, wastes produced only on civic amenity sites are permitted to be deposited during the hours below:-

| | |
|---|---|
| Sunday | 07:30 to 20:00 Hours |
| Bank Holidays | 07:30 to 20:00 Hours |

No waste shall be deposited outside of these hours except in the case of an emergency with the prior consent of the Waste Regulation Authority.

No waste shall be deposited during the hours covered by official lighting up times (as published by the Science Research Council) unless adequate lighting is provided and is in use in accordance with the Working Plan. This lighting must be independent of the vehicle lighting.

Any lighting provided shall be screened or directed to ensure that neighbouring properties are not affected by the light during operating hours.

F2 Staffing

Appropriately trained and experienced supervisory and/or operating staff shall be made available as and when required to ensure that the conditions of this licence are fulfilled. The appropriate level of training shall be as specified in the working plan.

A minimum of two operatives, shall be on site whenever waste is being deposited or removed as specified in the working plan.

F3 Machinery Plant and Equipment

An appropriate level of machinery, plant and equipment shall be provided to ensure that all incoming waste, surface water drainage arisings, leachate arisings and landfill gas arisings are dealt with in accordance with the Conditions in this licence. All such machinery, plant and equipment shall be specified in the working plan. Operation instructions for such machinery, plant and equipment shall be kept in the site office.

Silencers shall be fitted, maintained and used on all machinery, plant and equipment in accordance with the manufacturers recommendations.

In the event of any breakdown of such machinery, or equipment which results in either waste or surface water arisings, leachate arisings, or landfill gas arisings not being dealt with in accordance with the conditions of this licence, the site shall be closed until such time as the defective items are repaired or replaced, unless otherwise authorised by the Waste Regulation Authority in writing.

F4 Temporary Cessation of Operations

All temporary cessations of operations which require the transfer or diversion of waste delivered at the facility to facilities elsewhere shall be notified in writing to the Waste Regulation Authority the posting of any such notifications shall be carried out within 48 hours of the diversion occurring.

F5 Recommencement of Landfilling

Not less than 14 days' notice shall be given in writing to the Waste Regulation Authority of the date on which landfilling is to recommence in the event of a temporary cessation for a period in excess of three months.

## G DEPOSITS OF WASTE ON THE SITE

### G1 Site Preparation and Engineering Works

All site preparation and engineering works specified in the Working Plan shall be carried out in accordance with the requirements of Conditions J1 and J7 inclusive.

No waste will be deposited on the site until:

(a) The site preparation and engineering works specified for that area in the Working Plan have been carried out in accordance with the requirements of Conditions J1 to J7 , and these works have been inspected and accepted in writing by the Waste Regulation Authority; and

(b) All these results required in respect of such site preparation and engineering works have been submitted in writing to, and accepted in writing by, the Waste Regulation Authority.

### G2 Filling of Cells

**(a) Phasing of Cells**

The site shall be filled in phases as specified in the Working Plan. Each phase shall constitute an engineered cell constructed in accordance with Condition G1, which shall be filled in the order shown in the Working Plan.

**(b) Completion of Cells**

Any phase which has been filled to final height shall be capped with a temporary cap to limit rainfall ingress within three months of the final deposit of waste in that phase, or in the case of adverse weather Conditions within a period to be agreed in writing with the Waste Regulation Authority. The temporary cap shall be as specified in the Working Plan. The final cap shall be in accordance with the Working Plan and the requirements of Conditions J1 and J8.

### G3 Waste and Other Materials Awaiting Deposit

**(a) Waste in Drums**

Drums being inspected in accordance with Condition C6 shall be stored in the area designated in accordance with Condition C6 until deposit. The

maximum time such waste shall be stored shall be five working days, unless otherwise agreed in writing by the Waste Regulation Authority.

**(b) Cover Material**

Cover material awaiting deposit shall be stored in a designated area as specified in the Working Plan. The maximum height of such waste that shall be in storage shall be three metres. Such cover material shall only include materials in accordance with Appendix 1.

**(c) Hardcore for Site Roads**

Hardcore material intended for use in constructing site roads shall be stored in a designated area as specified in the Working Plan. The maximum height of such hardcore storage shall be 3 metres.

**(d) Solid Wastes Awaiting Deposit**

All other solid wastes awaiting deposit shall be stored only along the top of the working face in an area not exceeding 20.0 metres in length extending no more than 10 metres from the top of the working face and to a maximum height of 2.0 metres. Such stored wastes shall be finally deposited before the end of the working day.

**(e) Leachate**

Leachate which has been removed from the site, leachate drainage and control system in accordance with Condition I5 shall either be:

(i) discharged to the foul sewer in accordance with the Working Plan and the requirements of Conditions I2 and I5; or

(ii) stored and treated on site in designated lagoons engineered to a standard to be agreed in writing with the National River's Authority (Welsh Region) and the Waste Regulation Authority as specified in the Working Plan prior to its discharge to foul sewer; or

(iii) recirculated into the site, in accordance with the Working Plan and the requirements of Condition G7.

G4 Compaction into Layers

Wastes shall be compacted and formed into a layer as soon as possible after deposit and not later than the time specified in the Working Plan unless otherwise agreed in writing with the Waste Regulation Authority.

G5 Depth of Compacted Layers

The depth of a layer of waste shall not after initial compaction exceed 2.0 metres.

G6 Formation of a Layer of Waste

The layer of waste shall be formed in one or other of the wastes described in Condition G7 using suitable compaction equipment with a blade or some other appropriate levelling device.

G7 Methods of Deposit and Compaction

**(a) Solid Wastes**

Except where being stored in accordance with Condition G3, wastes shall only be deposited either:

(i) On the surface of the site behind the working face, where they shall be partially compacted by a tractor or other compacting machine before being pushed over the working face; or

**(b) Sludge Wastes**

Sludge wastes, where permitted, shall only be deposited into designated areas where drying out can occur before compacting. The maximum permitted drying out time is 2 months from the date of deposit.

**(c) Leachate**

Leachate which has been removed from the site, leachate drainage and control system in accordance with Condition I5 and which is not being removed directly from the site via tankers or discharge consent to foul sewer shall be:

(i) stored and or treated in accordance with Condition G3; and/or

(ii) recirculated into the site in accordance with the method specified in the Working Plan.

G8 Deposit of Large Articles

All large articles likely to cause voids shall be crushed, broken up or flattened and covered each day by other wastes in such a position that they are not within 1.0 metres of the surface or 2.0 metres of the flanks of the face.

G9 Gradients of Working Faces and Flanks

Working faces shall be compacted to gradients not greater than 1 in 3. The other edges of the site shall be compacted to gradients in accordance with the Working Plan.

G10 Intermediate Cover

Material used for landfill in the site other than that which consists solely of non putrescible waste types shall, subject to the traction needs of vehicles operating at the working face, be covered progressively with suitable cover material throughout the working period each day, so that by the end of the day all exposed surfaces including the flanks and face have been covered to a depth of not less than 0.15 metres (approximately 6 inches). Such cover material shall comply with the requirements of Condition B1(c).

G11 Temporary Capping of Cells

A temporary cap composing of sub-soil shall be laid on top of the cells not being landfilled in accordance with the Working Plan. The depth of any such cap shall be no less than 0.15 metres (approximately 6 inches).

G12 Final Layer

The final layer deposited on the site shall be subject to the minimum compaction and shall, to a depth of not less than 1.0 metres, be kept free of materials likely to interfere with final restoration or subsequent cultivation.

## H ENVIRONMENTAL CONTROLS

### H1 Fires

No waste shall be burnt within the boundaries of the site, other than the burning of landfill gas by means of a dedicated burner provided in accordance with the Working Plan. Any fire at the site other than such burning of landfill gas shall be regarded as an emergency and immediate action shall be taken to extinguish it. All such outbreaks of fire shall be notified forthwith to the Waste Regulation Authority in accordance with the terms and Condition A9.

### H2 Loose Waste

At least once a week any loose waste which may be lying on the site shall be gathered and disposed of in accordance with the Working Plan.

### H3 Control of Windblown Litter

All reasonable precautions shall be taken in accordance with the Working Plan to ensure that waste which becomes windblown is retained within the curtilage of the site.

### H4 Control of Weeds

Until final restoration, completed areas of landfilling shall be graded and maintained in a tidy condition in accordance with the Working Plan and where necessary action shall be taken to control or destroy weeds.

### H5 Bird Control

Precautions shall be taken as specified in the Working Plan to deal effectively with flocks of birds on the site.

### H6 Vermin and Insects

Precautions shall be taken as specified in the Working Plan to deal effectively with any vermin and insects on the site.

H7 Amenities

Measures as specified in the Working Plan shall be undertaken so as to prevent detriment through noise, vibration, dust, smoke, smell or visual impact to the amenities of the adjoining locality. Detriment shall be defined by the levels specified in the Working Plan, as agreed in writing with Alyn and Deeside District Council's Environmental Health Department.

Once these said levels have been agreed with the Environmental Health Department, they shall be submitted in writing to the Waste Regulation Authority to be incorporated into the Working Plan in accordance with Condition A6.

If no such levels are agreed within 6 months of issue of this licence, the levels shall be as specified by Alyn and Deeside District Council Environmental Health Department.

H8 Suppression of Dust

Whenever necessary the site surface, incoming loads and waste awaiting deposit shall be sprayed with water to suppress the emission of dust and in any event shall be sprayed if requested by officers of the Waste Regulation Authority.

H9 Netting/Sheeting of Loads

All loads of waste transported in open topped vehicles which are being removed from the site shall be adequately netted or sheeted.

## I POLLUTION CONTROLS

### I1 Drainage Onto or From Land

**(a) Surface Water Run-Off**

All surface water run off from the site shall be collected in the site surface water drainage system specified in the Working Plan.

**(b) Surface Water in Unused Phases**

Any water collecting in an unused phase shall be removed before any waste is tipped in that phase. Any such water shall be considered to be contaminated and shall be disposed in accordance with the Working Plan.

**(c) Discharge of Surface Water**

No such water shall be discharged to any watercourse without the written permission of the National Rivers Authority.

### I2 Discharge to Drains, Sewers and Watercourses

No waste, or water contaminated with waste shall be discharged or allowed to enter any drain, sewer or watercourse other than in accordance with a consent issued by the National Rivers Authority (Welsh Region) in the case of watercourses or Welsh Water Plc in the case of drains or sewers. A copy of any such consent shall be provided to the Waste Regulation Authority prior to any such discharge being carried out.

### I3 Monitoring of Surface Water Arisings

**(a) Surface Water Monitoring Programme**

No waste shall be deposited on the site until a surface water monitoring programme has been submitted in writing to and agreed in writing by, the Waste Regulation Authority and until this agreed programme has been incorporated into the Working Plan. This programme shall specify the following:

(i) the frequency at which conductivity measurements of surface water from the site and in watercourses adjacent to the site shall be carried out at specified locations on or adjacent to the site, which shall be in accordance with the minimum frequency specified in Appendix 6 to this licence;

(ii) the frequency at which samples of surface water arising from the site and in watercourses adjacent to the site shall be taken from specified locations on or adjacent to the site, which shall be in accordance with the minimum frequency specified in Appendix 6 to this licence;

(iii) the list of parameters for which such samples of surface water shall be analysed, which shall be in accordance with the list contained in Appendix 6 to this licence;

(iv) the methods of analysis by which such samples shall be analysed, which shall be in accordance with the methods specified in Appendix 6 to this licence;

(v) the form in which the results of such conductivity measurements and analyses shall be recorded.

**(b) Recording of Surface Water Monitoring Results**

All results of conductivity measurements and analyses of samples of surface water carried out in accordance with Condition I3 (a) and I3 (b) shall be recorded in accordance with Conditions D1 (d) and I3 (a).

**(c) Retention of Records**

All records made in accordance with the requirements of Condition I3 (c) shall be kept in accordance with the Condition D2.

**(d) Submission of Copies of Monitoring Results to the Waste Regulation Authority**

A copy of the records made in accordance with the requirements of Condition I3 (c) shall be submitted in writing to the Waste Regulation Authority as follows:

(i) conductivity measurements taken during one calendar month - within two weeks following the end of the calendar month;

(ii) each analysis of a sample - within one calendar month of the sample being taken.

**(e) Discontinuance of Surface Water Monitoring**

The conductivity measurements, sampling and analysis of surface water specified in the surface

water monitoring programme shall be made at the agreed intervals until such time as discontinuance of conductivity measuring, sampling and analysis has been agreed in writing with the Waste Regulation Authority.

**(f) Revisions of the Surface Water Monitoring Programme**

If it becomes apparent that the frequencies of carrying out conductivity measurements, sampling and analysis has become inappropriate they shall only be changed by revision of the Working Plan which has been accepted in writing by the Waste Regulation Authority in accordance with Condition A6.

**I4 Monitoring of Groundwater**

**(a) Groundwater Monitoring Programme**

No waste shall be deposited on the site until a groundwater monitoring programme has been submitted to, and agreed in writing by, the Waste Regulation Authority, and until this agreed programme has been incorporated in the Working Plan. This programme shall specify the following;

(i) the frequency at which conductivity measurements of groundwater in the vicinity of the site shall be carried out at specified locations on or adjacent to the site, which shall be in accordance with the minimum frequency specified in Appendix 5 to this licence;

(ii) the frequency at which samples of groundwater in the vicinity of the site at specified locations on or adjacent to the site, which shall be in accordance with the minimum frequency specified in Appendix 6 to this licence;

(iii) the list of parameters for which such samples of groundwater shall be analysed which shall be in accordance with Appendix 6 of this licence;

(iv) the methods of analysis by which such samples shall be analysed, which shall be in accordance with the methods specified in Appendix 6 to this licence;

(v) the form in which the results of such conductivity measurements and analyses shall be recorded.

(b) Recording of Groundwater Monitoring Results

All results of conductivity measurements and analyses of samples of groundwater carried out in accordance with Condition I4 (a) and I4 (b) shall be recorded in accordance with Conditions D1 and I4 (a).

(c) Retention of Records

All records made in accordance with the requirements of Condition I4 (c) shall be kept in accordance with the requirements of Condition D2.

(d) Submission of Copies of Monitoring Results to the Waste Regulation Authority

A copy of the records made in accordance with the requirements of Condition I4 (c) shall be submitted in writing to the Waste Regulation Authority as follows;

(i) each discrete conductivity measurement - within one week of the conductivity measurement being taken;

(ii) each analysis of a sample - within one calendar month of the sample being taken

(e) Discontinuance of Groundwater Monitoring

The conductivity measurements, sampling and analysis of groundwater specified in the groundwater monitoring programme shall be made at the agreed intervals until such time as discontinuance of conductivity measuring, sampling and analysis has been agreed in writing by the Waste Regulation Authority.

(f) Revisions of the Groundwater Monitoring Programme

If it becomes that the frequencies of carrying out conductivity measurements, sampling and analysis has become inappropriate they shall only be changed by revision of the Working Plan which has been accepted in writing by the Waste Regulation Authority, in accordance with Condition A6.

I5 Control and Monitoring of Leachate

(a) Leachate Monitoring Programme

After the initial monitoring programme specified in (b) below, no waste shall be deposited in the site one year from the date of issue of this licence until a leachate monitoring programme has been submitted in

writing to the Waste Regulation Authority, and until this agreed programme has been incorporated in the Working Plan. This programme shall specify the following:

(i) the frequency at which measurements shall be made of the levels of leachate in the chimneys and leachate level monitoring pipes provided in accordance with Condition J5, which shall be at a minimum frequency of once per week per monitoring point;

(ii) the frequency at which conductivity measurements of leachate in the leachate chimneys shall be carried out, which shall be in accordance with the minimum frequency specified in Appendix 6 to this licence;

(iii) the frequency at which samples of leachate in the vicinity of the site shall be taken from the leachate chimneys provided in accordance with Condition J5, which shall be in accordance with the minimum frequency specified in Appendix 6 to this licence;

(iv) the list of parameters for which such samples of leachate shall be analysed, which shall be in accordance with the list contained in Appendix 6 to this licence;

(v) the form in which the results of such analyses shall be recorded.

(b) **Initial Leachate Monitoring**

For the first year from the date of issue of this licence, the maximum permitted level of leachate shall not be allowed to exceed 5 metres from the base of the site at any point in time or in any leachate chimney.

The average level of leachate permitted over any one year period shall not exceed 2 metres. This annual average shall be calculated in accordance with the Working Plan.

(c) **Recording of Leachate Monitoring Results**

All results of measurements of levels of conductivity and of analyses of leachate shall be carried out in accordance with Condition I5 (a) shall be recorded in accordance with Condition D1 and I5 (a).

(d) Retention of Records

All records made in accordance with the requirements of Condition I5 (d) shall be kept in accordance with the requirements of Condition D2.

(e) **Submission of Copies of Monitoring and Removal Records to the Waste Regulation Authority.**

A copy of each record made in accordance with the requirements of Condition I5 (b) shall be submitted in writing to the Waste Regulation Authority as follows:

(i) measurements of levels of leachate taken during a calendar month - within two weeks following the end of that calendar month;

(ii) each conductivity measurement and each analysis of a sample - within one calendar month of the conductivity measurement or the sample being taken;

(iii) leachate removal during a calendar month - within two weeks following the end of that calendar month.

(f) Discontinuance of Leachate Monitoring

The level measurements, conductivity measurements, sampling and analysis specified in the leachate monitoring programme shall be made at the agreed intervals until such as discontinuance of level measurement, conductivity measurement, sampling and analysis has been agreed in writing with the Waste Regulation Authority.

(g) **Revisions of the Leachate Monitoring Programme**

If it becomes apparent that the frequencies of carrying out level measurements, conductivity measurements, sampling analysis have become inappropriate they shall only be changed by revision of the Working Plan which has been agreed in writing by the Waste Regulation Authority in accordance with Condition A6.

I6 Landfill Gas Monitoring

(a) Landfill Gas Risk Assessment Report

No waste shall be deposited into the site until a landfill gas risk assessment report has been submitted in writing to the Waste Regulation Authority. This assessment report shall take account of the following:

(i) the location of buildings within 250 metres of the site boundary;

(ii) the location of services within 250 metres of the site boundary; and

(iii) geological pathways.

(b) Monitoring of Landfill Gas

The monitoring of landfill gas shall be carried out in accordance with the Working Plan.

(c) Record Keeping

Records shall be kept of all results obtained and a copy submitted in writing to the Waste Regulation Authority once monthly.

These records shall be kept for the duration of the waste disposal licence.

Upon surrendering the waste disposal licence these records shall be forwarded to the Waste Regulation Authority forthwith.

(d) Remedial Works

Should the results obtained give levels greater than the threshold levels specified in Waste Management Paper No. 27 (for methane this is 1% by volume and for carbon dioxide this is 1.5% by volume), then venting of the site shall be carried out in accordance with the Working Plan.

(e) Discontinuance of Landfill Gas Monitoring

The measurements of flammable gas concentrations, carbon dioxide concentrations and oxygen concentrations specified in the landfill gas monitoring programme shall be made at the agreed intervals until such time as discontinuance of measuring has been agreed in writing with the Waste Regulation Authority.

(f) **Revisions of the Landfill Gas Monitoring Programme**

If it becomes apparent that the frequencies of carrying out measurements of landfill gas has become inappropriate they shall only be changed by revision of the Working Plan, which shall be accepted in writing by the Waste Regulation Authority prior to the implementation of any amended frequencies.

## J SITE PREPARATION, MAINTENANCE AND RESTORATION

### J1 Engineering Works Quality Control

(a) No waste shall be deposited until:

All engineering works specified in Conditions J2 to J8 have been constructed , provided or installed in accordance with the appropriate method statement included in the Working Plan. Each such method statement shall specify:

(i) the specifications of materials and equipment;

(ii) the details of construction, emplacement or installation;

(iii) the quality control measures applied.

(b) The method statement specified in (a) shall be submitted to and accepted in writing by the Waste Regulation Authority prior to any validation report.

(c) A suitably qualified and experienced independent engineering geologist, geotechnical, civil or mechanical engineer as appropriate shall supervise the construction, emplacement or installation of all engineering works specified in Conditions J2 to J8, and shall certify that any such construction, emplacement or installation has been carried out in accordance with the appropriate method statement as specified in (a) above.

(d) No waste shall be deposited in a cell until the appropriate engineering works as specified in Conditions J2 to J8 and as specified for the preparation of that cell in the Working Plan, have been provided, tested and accepted in accordance with (a) to (c) above.

### J2 Earthworks, Clay Liners and Bunds

When required by other conditions of this licence, the construction of earthworks, clay liners and clay bunds shall be carried out in accordance with Condition J1 and the Earthworks Specification given in Appendix 7 to this licence. The maximum depth of excavation at any point in the site shall not exceed that specified in the Working Plan.

J3 Surface Water Drainage and Monitoring Systems

The following surface water drainage and monitoring systems shall be provided as specified in the Working Plan and in accordance with Condition G1:

(a) surface water drainage, collection and discharge system;

(b) marked surface water monitoring points in watercourses on or adjacent to the site;

J4 Groundwater, Under Drainage and Monitoring Systems

The following groundwater underdrainage and monitoring systems shall be provided as specified in the Working Plan and in accordance with Condition G1:

(a) groundwater underdrainage system;

(b) groundwater monitoring boreholes;

(c) groundwater monitoring points;

J5 Leachate Management Systems

The following leachate management systems shall be provided as specified in the Working Plan and in accordance with Condition G1:

(a) leachate drainage system, with provision for long-term cleaning and maintenance;

(b) leachate chimneys;

(c) leachate level monitoring pipes (at least one per cell set above the primary leachate drains and remote from the associated leachate chimney);

(d) leachate pumping and ejection systems.

J6 Landfill Gas Monitoring and Control

The following landfill gas monitoring and control systems shall be provided as specified in the Working Plan and in accordance with Conditions G1 and I6:

(a) external landfill gas monitoring points;

(b) external landfill gas monitoring probes;

(c) landfill gas passive vents.

J7 Capping

On completion of filling-in each phase, the complete phase shall be capped with a layer of clay 1.0 metre thick or alternative as specified in the Working Plan and in accordance with Conditions G2 and J1.

J8 Restoration

On completion of the cap in accordance with Condition J7, the site shall be restored as specified in the Working Plan and in accordance with Planning Permission Number 4/0/20705.

J9 Excavated Clay

Excavated clay shall only be stockpiled in a designated area as specified in the Working Plan.

J10 Topsoil, Silt and Vegetation

All existing topsoil, silt, vegetation and other organic material shall be removed from the area to be landfilled prior to engineering works or landfill operations being commenced. Such materials shall be either stored for use in site restoration or removed to a suitably licenced site as specified in the Working Plan.

J11 Maintenance

(a) All engineering works specified in Conditions J2 to J7, and provided in accordance with Condition J1, shall be periodically tested and maintained in accordance with the maintenance schedule in the Working Plan.

(b) A record shall be kept of all such periodic tests and maintenance procedures carried out. The record shall include details of any defects or failures detected, and the actions taken to remedy each such defect or failure.

(c) Any defect or failure detected in such a system shall be notified in writing forthwith to the Waste Regulation Authority, in accordance with Condition A9. Each notification shall include the action taken or proposed to remedy the defect or failure.

Appendix 1

## Permitted Waste Types

No liquid wastes are permitted to be deposited in the site.

The total maximum permitted quantity of waste consisting of the waste types listed below, in Table 1, shall not exceed 20 000 tonnes in any one calendar month.

Table 1

| WASTE TYPE | COMMENTS |
|---|---|
| HOUSEHOLD WASTE | As defined by the Collection and Disposal of Waste Regulations 1988 |
| COMMERCIAL WASTE | As defined by the Collection and Disposal of Waste Regulations 1988 |
| INDUSTRIAL WASTE | As defined by the Collection and Disposal of Waste Regulations 1988 |
| CONSTRUCTION INDUSTRY WASTE | As defined by the Collection and Disposal of Waste Regulations 1988 |

The total maximum permitted quantity of waste consisting of the waste types listed below, in Table 2, shall not exceed 300 tonnes in any one calendar month.

Table 2

| WASTE TYPE | COMMENTS |
|---|---|
| CLINICAL WASTE | As defined by the Collection and Disposal of Waste Regulations 1988 Classes A, D and E |

The total maximum permitted quantity of waste consisting of the waste types listed below, in Table 3, shall not exceed 25%, by weight, of the total tonnage of waste inputs in any one calendar month.

Table 3

| WASTE DESCRIPTION | WASTE CODE | MAXIMUM MONTHLY QUANTITY (expressed as % of total waste input by weight) |
|---|---|---|
| Aliphatic Acids (excluding formic and acetic acids)<br>Aromatic Acids<br>Anhydrides (excluding those which react vigorously with water) | B11<br>B12<br>B13 | 2% individually or in total |
| Sodium/Potassium Hydroxide<br>Calcium Oxide<br>Calcium Hydroxide<br>Sodium, Potassium, Magnesium and/or Calcium Carbonates | C11<br>C12<br>C91<br>C92 | 5% individually or in total |
| Group C11 and C91 shall not exceed 25% w/w and group C12 5% w/w of the waste in which they arise. | | |
| Lead<br>Copper<br>Zinc<br>Barium<br>Thallium<br>Nickel<br>Vanadium<br>Silver<br>Chromium<br>Manganese, Cobalt, Molybdenum | D30<br>D91<br>D92<br>D93<br>D94<br>D95<br>D96<br>D97<br>D98<br>D99 | 5% individually or in total |
| Group D30 and D91 to D99 shall not exceed 10% of the waste in which they arise. | | |
| Iron<br>Others<br>Titanium | E10<br>E90<br>E92 | 25% |
| Asbestos | J10 | 5% |
| Deposited and handled in accordance with Waste Management Paper No.18 | | |

Table 3..

| WASTE DESCRIPTION | WASTE CODE | MAXIMUM MONTHLY QUANTITY (expressed as % of total waste input by weight) |
|---|---|---|
| Slag, including boiler and flue cleanings<br>Mineral Processing Wastes<br>Silt and Dredgings (solid)<br>Ferrous Metal Scrap<br>Non-ferrous Metal Scrap | J20<br>J30<br>J40<br>J61<br>J62 | 10% individually or in total |
| Aliphatic Hydrocarbons<br>Aromatic Hydrocarbons | K11<br>K12 | 2% individually or in total |
| Groups K11 and K12 shall have a flashpoi t (closed Cup) of not less than 30°C and must not burn unsupported below 40°C | | |
| Phthalates | K92 | 1% |
| Epoxy Resins<br>Polyester Resins<br>Phenol Formaldehyde Resins<br>Polyurethane<br>Other Resins and Polymetric Materials<br>Scrap Rubber (Shredded Tyres only)<br>Latex<br>Synthetic Adhesive Waste<br>Ion Exchange Resin Waste | L11<br>L12<br>L13<br>L22<br>L29<br>L30<br>L40<br>L50<br>L60 | 10% individually or in total |
| Groups L11, L12, L13, L22, L29, L30, L40, L50 & L60 shall have a flashpoint (closed cup) of not less than 30°C and must not burn unsupported below 40°C | | |
| Vegetable Oils<br>Fats, Waxes and Greases | M40<br>M60 | 25% individually or in total |
| Pharmaceutical & Cosmetic Products | N10 | 1% |
| Used Filter Materials<br>Contaminated Rubbish (including bags and sacks)<br>Empty Used Containers<br>Industrial Effluent Treatment Sludge | Q10<br>Q20<br>Q30<br>Q40 | 10% individually or in total |

Table 3..

| WASTE DESCRIPTION | WASTE CODE | MAXIMUM MONTHLY QUANTITY (expressed as % of total waste input by weight) |
|---|---|---|
| Tank Cleaning Sludge<br>Interceptor Pit Waste | R10<br>R20 | 10% individually or in total |
| Printing Industry Waste<br>Dyestuff Waste | R30<br>R40 | 2% individually or in total |
| Tar, pitch, bitumen and asphalt<br>Paint Waste | R70<br>R80 | 10% individually or in total |
| Tannery and Fellmongers Waste | S10 | 1% |
| Cellulose Waste<br>Treated Timber<br>Soap and Detergents<br>Paper Pulp<br>Other Industrial Wastes | S20<br>S30<br>S50<br>S60<br>S90 | 5% individually or in total |
| Animal Processing Waste<br>Food processing Waste<br>Glue Waste | T10<br>T20<br>T30 | 10% individually or in total |
| Sewage from Septic Tanks, Pail Closets..<br>Sewage Treatement Sludge in a Non-Pumpable Form with no Associated Free Liquid | Y60<br>Y60 | 1%<br>10% |
| Road Sweepings and Gully Emptying | | 1% |

## SOIL CLASSES A TO E - LIMITS OF RANGES FOR CONTAMINATION LEVELS

RANGES OF PERMITTED CONTAMINATION (mg/kg on air dried soild, except for pH)

| Symbol | PARAMETER/CONTAINMENT Name | SOIL CLASS A Max | SOIL CLASS B Max | SOIL CLASS C Max | SOIL CLASS D Max | SOIL CLASS E Min |
|---|---|---|---|---|---|---|
| | pH (acid) | 7 | 6 | 5 | 4 | 2 |
| | PH (alkali) | 8 | 9 | 10 | 12 | 12 |
| Sb | Antimony | 30 | 50 | 100 | 500 | 500 |
| As | Arsenic | 30 | 50 | 100 | 500 | 500 |
| Cd | Cadmium | 1 | 3 | 10 | 50 | 50 |
| Cr | Chromium | 100 | 200 | 500 | 2,500 | 2,500 |
| Cu | Copper (available) | 100 | 200 | 500 | 2,500 | 2,500 |
| Pb | Lead (total) | 500 | 1,000 | 2,000 | 10,000 | 10,000 |
| | Lead (available) | 200 | 500 | 1,000 | 5,000 | 5,000 |
| Hg | Mercury | 1 | 3 | 10 | 50 | 50 |
| Ni | Nickel (available) | 20 | 50 | 200 | 1,000 | 1,000 |
| Zn | Zinc (available) | 250 | 500 | 1,000 | 5,000 | 5,000 |
| | Zinc equivalent | 250 | 500 | 2,000 | 10,000 | 10,000 |
| B | Boron (available) | 2 | 5 | 50 | 250 | 250 |
| Se | Selenium | 1 | 3 | 10 | 50 | 50 |
| Bd | Barium | 500 | 1,000 | 2,000 | 10,000 | 10,000 |
| Be | Beryllium | 5 | 10 | 20 | 50 | 50 |
| Mn | Manganese | 500 | 1,000 | 2,000 | 10,000 | 10,000 |
| V | Vanadium | 100 | 200 | 500 | 2,500 | 2,500 |
| Mg | Magnesium | 500 | 1,000 | 2,000 | 10,000 | 10,000 |
| SO | Sulphate | 2,000 | 5,000 | 10,000 | 50,000 | 50,000 |
| S | Sulphur (free) | 100 | 500 | 1,000 | 5,000 | 5,000 |
| | Sulphide | 10 | 20 | 100 | 500 | 500 |
| CN | Cyanide (free) | 1 | 5 | 50 | 100 | 100 |
| | Cyanide (total) | 5 | 25 | 250 | 500 | 500 |
| | Ferricyanide | 100 | 500 | 1,000 | 5,000 | 5,000 |
| | Thiocyanate | 10 | 50 | 100 | 500 | 500 |
| | Coal Tar | 500 | 1,000 | 2,000 | 10,000 | 10,000 |
| | Phenols | 1 | 5 | 50 | 250 | 250 |
| | Toluene extract | 5,000 | 10,000 | 50,000 | 250,000 | 250,000 |
| | Cyclohexane extract | 2,000 | 5,000 | 20,000 | 100,000 | 100,000 |
| | PCB | 1 | 3 | 10 | 50 | 50 |
| | Polyaromatic hydrocarbons | 50 | 500 | 1,000 | 5,000 | 5,000 |
| | Chlorinated solvents | 1 | 3 | 10 | 50 | 50 |

## Soil Classes A to E - Limits of Ranges for Contamination Levels

Notes:

(1) Soil Class A: Uncontaminated soil
Soil Class B: Slightly contaminated soil
Soil Class C: Contaminated soil
Soil Class D: Heavily contaminated soil
Soil Class E: Unusually heavily contaminated soil

(2) In the event of a measured contamination level falling exactly on the boundary of two soil classes, the upper (more heavily contaminated) soil class should be assumed.

(3) Only soil Class A can be disposed of at an inert landfill site.
Soil Classes B, C, D and E, must be disposed of at a suitably licensed landfill site.

(4) In the cases of Soil Class D (heavily contaminated soil) and Soil Class E (usually heavily contaminated soil) an analysis must be carried out to determine whether the soil is a Special Waste and, if so, the disposal carried out in accordance with the requirements of the "Control of Pollution (Special Waste) Regulations 1980".

(5) Unless specifically stated otherwise, contamination levels are for total concentration of contaminant, extractable by $HCLO_3/HCLO_4$ (ICRCL Guidance Note 59/83 Second Edition).

(6) Available concentration of contaminant determined by standard ADAS method (soluble in hot water) (ICRCL Guidance Note 59/83, Second Edition).

(7) Zinc equivalent: Combination of copper, nickel and zinc.

(8) For contaminants not listed it must be assumed that the soil is not permitted (unless specifically permitted under Condition B1).

## ANALYSIS OF SAMPLES OF WASTE

### 1. TEST AND METHODS OF ANALYSIS

Unless otherwise specifically agreed in writing with the Waste Regulation authority and specified in detail in the Working Plan, the following tests and methods of analysis shall be used in any analyses of wastes carried out in accordance with the requirements of this licence.

| PARAMETER | FULL ANALYSIS | SOIL ANALYSIS | REFERENCE METHOD |
|---|---|---|---|
| pH | Standard Reference Electrode adjusted to 25°C | Standard Reference Electrode adjusted to 25°C | |
| ACID/ALKALI STRENGTH | Titrimetric Analysis | | |
| FLAMMABILITY | | | |
| FLASHPOINT | Closed cup method (Seta-Flash) | | |
| SPECIFIC GRAVITY | Hydrometer at 15.5°C | | |
| REACTIVITY/ COMPATIBILITY WITH: (a) ACIDS (b) ALKALIS (c) WATER (d) OTHER SUBSTANCES RELEVANT TO WASTE TYPE | Test exothermic reaction leading to temperature rise (°C)<br><br>Test release of noxious gases using Draeger tubes. | | |
| APPEARANCE/ ODOUR | Observe:<br>(a) No of phases (liquids)<br>(b) Homogeneity (solids)<br>(c) Presence of<br>(i) Toxic vapours<br>(ii) Noxious vapours/odour<br>(iii) Slight odours | | |
| COMPONENTS- HEAVY METALS ETC | Atomic Absorption Spectrophotometer (AAS) or Mass Spectrophotometer (MS) or Gas Liquid Chromatography (GLC) | As per Appendix 2 | |

## 2. LEACHATE TEST FOR ANALYSIS OF SOLID WASTES

Where the waste being treated is in solid form and the relevant test is required to be carried out on a liquid, the method to be used will be the proposed "ASTM Leaching of Waste Materials Test" as specified in the National Sanitation Foundation Report on Leachate Testing Hazardous Chemicals from Stabilised Automotive Wastes (January 1979), subject to the following modifications.

### 2.1 Method

A distilled water-shake extraction procedure shall be used.

### 2.2 Procedure

#### 2 2.1 Shake Procedure

(a) A sample of 500g of waste material which shall be representative of the whole contents of the load shall be taken. The sample shall be ground, coned and quartered to obtain a representative sample of 150g of material passing a 1mm sieve. Any material not passing the specified above sieve shall be retained and may be separately examined.

(b) Use approximately 100g of the ground material, and determine and record the weight of the sample used to an accuracy of + 1g.

(c) Add a volume of test water equal in millilitres to four times the weight in grams of the sample used in (b).

### 2.3 Analyses

2.3.1 The aqueous filtrate shall be analysed for specified parameters using the specified analtical methods as defined in the above table (or such recognised similar tests equivalent results as may have been previously agreed in writing with the Waste Regulation Authority and specified in the Working Plan).

2.3.2 Where non-aqueous liquid is present it shall be separately analysed as specified in 1.3.1.

### 2.4 Calculation of Results

2.4.1 All results shall be reported in terms of milligrans per litre of filtrate.

Appendix 4

## CODE OF PRACTICE FOR THE DISPOSAL OF DRUMMED WASTES TO LANDFILL

### 1. INTRODUCTION

1.1 This Code of Practice is intended for the guidance of producers, carriers and disposers of drummed waste materials. The variety of materials which are disposed of in drums, and the range of physical form of the wastes, renders it impractical to try to cover every eventuality and permutation. In specific instances where doubt exists, the advice of the Waste Regulation Authority (hereafter called WRA) should be sought.

In particular, where a landfill site only accepts an occasional drum of waste, which in the opinion of the WRA is essentially innocuous, the WRA may, at its discretion, determine that the full requirements of the Code are inappropriate, and in such instances may agree that the procedures need not be followed into.

1.2 The Code is primarily intended to apply to waste contained in 200 litres (40-45 gallons) drums, of either side or end bung, or removable end variety. Additionally, in appropriate instances, the WRA may apply the Code to substantial arisings of larger or smaller containers of either metal or plastic construction.

1.3 The aim of the Code of Practice is to minimise the two major potential problems associated with the acceptance of drummed waste in quantity. These problems are:-

(a) The need to ensure that the contents of each drum are in accordance with the description and that the material can be safely and satisfactorily deposited in the landfill in accordance with the conditions of the site licence.

(b) Where a landfill site accepts a significant proportion of drummed wastes, to ensure that the deposit of drummed materials does not adversely affect the long-term settlement of the site.

The first of these needs the provision of an inspection procedure for the drums on reception, whilst the second requires the operational methods of deposit to be related to the physical and chemical nature of the wastes.

1.4 The drum reception procedures outlined in paragraphs 2.1 to 2.5 are to be applied at all landfill sites except where the circumstances covered in paragraph 1.8 apply.

1.5 The use of drums for the containment and landfilling of liquid wastes is not considered to be good practice and waste producers should, whenever possible, be encouraged to adopt alternative methods. One such alternative is the bulking of similar or compatible liquids by transfer of contents of the drums into a tank vehicle for transport to the disposal site; this alternative should be considered for accumulation of drums in excess of ten.

1.6 The practice of landfilling uncrushed empty drums is also undesirable. Whilst it is recognised that the nature of the former contents of the drums may in some instances render disposal necessary, waste producers should be encouraged to consider whether a slight process modification would enable the drums to be re-used, recycled or recovered as scrap metal.

1.7 This Code relates essentially to the disposal of wastes in sound drums. Where, due to neglect by the producer, or for other reason, the drums are seriously corroded or otherwise unsound, other considerations are involved. The condition of the drums will increase the potential hazard of inspecting the contents and may also render the handling and disposal on-site more difficult and hazardous. Additionally, the presence of leaking drums may necessitate transport in skip vehicles, rendering on site inspection more difficult. Where such a situation occurs, approval of the WRA must be given for any departure from the normal requirements of the Code.

1.8 The Code recognises that there may be situations in which it is appropriate to permit changes to these procedures to allow off-site inspection to be undertaken; some examples are given below:-

(a) Where the site operator also operates a suitably licensed waste transfer station or similar facility and only receives drummed wastes onto the landfill which have been checked via that facility.

(b) Where the operator is undertaking a drum clearance operation at a producer's site and is able to undertake the drum inspection at the site or origin.

(c) Where a waste producer is operating an in-house site drum checking can be undertaken away from the disposal site.

The common factor in these examples is the direct control which can be exerted by the disposal site operator over the drum inspection procedures.

2. DRUMMED RECEPTION PROCEDURES

2.1 The contents of each drum shall be tested, before release for on-site disposal, to match the contents with the description given and ensure that the contents are capable of safe disposal within the terms of the licence and to confirm the technique of disposal.

2.2 The inspection procedures of paragraph 2.1 will normally be undertaken at the disposal site. Where this is the case, the operator shall ensure that technically competent personnel undertake the inspection and that they are provided with adequate safety and testing equipment to enable them to carry out the inspection in a safe and satisfactory manner.

2.3 In all instances where the inspection procedures are likely to lead to delay and necessitate the temporary storage of other drums awaiting inspection or drums which have been rejected as unsuitable for disposal, a drum reception and storage area shall be provided. The reception area should be sited so as not to impede other site operations.

2.4 Details of the design and construction of the reception and storage area shall be provided as part of the Working Plan for the site and may additionally be conditioned in the site licence. The storage area shall be constructed with an impermeable base, and be bunded to contain spillages and/or contaminated rainwater for approved disposal. Provision may also be required for compartmenting to cater for temporary storage of incompatible materials. Where overnight storage is required, the WRA may require additional security fencing of the reception area to supplement the existing peripheral site fencing.

2.5 To enable the reception and inspection procedures of paragraph 2.1 to 2.3 to be organised in an efficient manner, the operator shall maintain a booking-in system for drummed wastes, in which a waste producer or carrier gives advance notification to the site operator, of their intention to bring a load to the site and also provide a description of the intended waste.

2.6 As noted in paragraph 1.4 where there may be certain circumstances in which the site operator wishes to arrange for the drum inspection to be carried out at some point remote from the deposit site. This shall only be with the approval of the WRA, who will ensure that the standard of inspection of the contents of the drum is at least as good as that which could be achieved by the producers given in paragraphs 2.1 to 2.3. Each drum from the remote inspection point shall be properly marked and accompanied by documentary evidence of inspection.

3. GENERAL PURPOSES

3.1 Vehicles carrying drummed waste should only be accepted into the reception area if they are of a suitable design to facilitate safe off-loading eg flat trailers. In general drums should not be accepted in skips; specific instances where this method of transport is deemed appropriate may be agreed by the WRA.

3.2 Drums which have been inspected and approved for disposal on site should then be deposited as soon as practicable. Where any consignment or part consignment of drums is rejected, the WRA shall be informed immediately, and arrangements agreed for the removal of the offending items to a suitable disposal location, or for their return to the waste producer.

3.3 In the case of drums filled to capacity with soild materials capable of supporting the drum under the normal compaction processes of landfill operation, and of resisting deformation in the event of corrosion of the drum, these may be deposited together with other solid materials subject to site licence conditions and good tipping practices. Where numbers of such drums are being handled, they should be distributed evenly and not deposited in localised concentrations.

3.4 Drums filled with liquids and pumpable sludge shall be emptied and the contents and empty drum disposed on in accordance with the site licence requirements and with due regard to safe working practices.

3.5 Drums which contain non-pumpable sludges and similar deformable materials shall be transferred to the disposal point in accordance with the site licence, and individually crushed by appropriate means, taking due precautions to avoid splashing of waste and ensure that they and the contents are immediately covered and absorbed by dry wastes.

Appendix 5

## SCHEDULE OF SITE RECORDS

| SUBJECT RECORD | TYPE OF RECORD | DETAILS TO BE INCLUDED | PARAMETERS | SUBMISSION TO WRA | |
|---|---|---|---|---|---|
| | | | | FREQUENCY | DEADLINE |
| Waste Inputs | Daily | Type of Waste | | Upon Request | Upon Request |
| | | Quantity of Waste | In Volume | | |
| | | Person/Company | | | |
| | | Source | | | |
| | | Time and Date | | | |
| | | Registration Mark | | | |
| | | Driver Name | | | |
| | Monthly Summary | Types of Waste | | Monthly | Within two weeks of the end the next month |
| | | Total Quantity Type of Waste per District of Origin | In Volume | | |
| Waste Outputs | Daily | Type of Waste | | Upon Request | Upon Request |
| | | Quantity of Waste | In Volume | | |
| | | Person/Company | | | |
| | | Source | | | |
| | | Time and Date | | | |
| | | Registration Mark | | | |
| | | Driver Name | | | |
| | Monthly Summary | Types of Waste | | Monthly | Within two weeks of the end the next month |
| | | Total Quantity Type of Waste per District of Origin | In Volume | | |

Appendix 6

ANALYSIS OF SAMPLES OF SURFACE WATER, GROUNDWATER AND LEACHATE

| PARAMETER | UNITS | FREQUENCY OF SAMPLING AND ANALYSIS PER SAMPLING POINT |
|---|---|---|
| Conductivity | uS/cm | Quarterly |
| pH Value | ----- | Quarterly |
| COD (Chemical Oxygen Demand) | mg/l | Quarterly |
| Ammoniacal Nitrogen | mg/l | Quarterly |
| Nitrite Nitrogen | mg/l | Quarterly |
| Nitrate Nitrogen | mg/l | Quarterly |
| o-Phosphate | mg/l | Quarterly |
| Chloride | mg/l | Quarterly |
| Sulphate | mg/l | Quarterly |
| Sodium | mg/l | Quarterly |
| Potassium | mg/l | Quarterly |
| Magnesium | mg/l | Quarterly |
| Calcium | mg/l | Quarterly |
| Chromium | mg/l | Quarterly |
| Manganese | mg/l | Quarterly |
| Iron | mg/l | Quarterly |
| Nickel | mg/l | Quarterly |
| Copper | mg/l | Quarterly |
| Zinc | mg/l | Quarterly |
| Lead | mg/l | Quarterly |
| Cadmium | mg/l | Quarterly |
| Mercury | mg/l | Quarterly |
| Arsenic | mg/l | Quarterly |
| Total Cyanide | mg/l | Quarterly |
| Monohydric Phenols | mg/l | Quarterly |
| Organochlorines | mg/l | Quarterly |
| ADDITIONALLY:- BOD (Biological Oxygen Demand) | mg/l | Bianually |

Note:

1. Permitted methods for analysis are in accordance with the relevant methods as detailed in appropriate "Blue Books".

## Earthworks Specification

(a) Representative samples of material from each source to be used in any liner, final cap or leachate retaining element of a specified bund (hereafter referred to as the seal) shall be tested by an approved soils laboratory to show it is capable of being compacted (by the equipment to be used for its emplacement) to an extent that will achieve a permeability of $1 \times 10^{-9}$m/sec or less also that the material has a clay content (particle size less than 0.002mm) exceeding 10%, the liquid limit does not exceed 90 and the plasticity index does not exceed 65.

(b) The number of samples and their location shall be agreed in writing with the Waste Regulation Authority before the commencement of the programme of tests and the following shall be determined on each sample taken:

(i) the natural moisture content;
(ii) the liquid and plastic limits;
(iii) the particle size distribution;
(iv) the density, moisture content, compaction relationship;
(v) the relationship between permeability, moisture content and degree of compaction on the recompacted samples;
(vi) the specific gravity of the solid fraction.

(c) Where in-situ material is to be used to form part or the whole of a seal it shall be tested by an approved soils laboratory at locations to be agreed with the Waste Regulation Authority in writing to establish that it has a permeability of $1 \times 10^{-9}$m/sec or less. The thickness of the in-situ material shall be measured to establish:

(i) if sufficient material is present to meet the requirement of (f) below; or
(ii) the additional thickness of material required.

(d) All tests shall be carried out as set out in the National Rivers Authority (North West Region) Specification for Earthworks on Landfill Sites, Sections S1.1, 1.2, 1.3 and 1.5.

(e) A report setting out the results of all tests shall be submitted to the Waste Regulation Authority. Where material is to be emplaced to form a seal, the report shall detail the minimum moisture content to be achieved during its emplacement, the equipment to be used for its emplacement, the maximum thickness of each layer and the minimum number of passes per layer which shall not be greater than or less than the number recommended for the compaction equipment to be used as set out in the table of compaction requirements contained in the National Rivers Authority (North West Region) Specification for Earthworks on Landfill Sites respectively.

If alternative equipment is to be used on-site trials shall be carried out to determine a procedure that will ensure the desired permeability is achieved and the use of the procedure shall be agreed by the Waste Regulation Authority.

(f) The minimum thickness of emplacement and/or in-situ material meeting the requirements of (a) above in any seal shall be 1.0 metre or greater thickness as specified by the Waste Regulation Authority. The thickness shall be measured normal to th surface of the seal at the point of test.

The number of such tests which shall be carried out before the emplacement of any supporting material, shall be agreed with the Waste Regulation Authority. Such tests shall either be supervised by the Waste Regulation Authority or be carried out by a suitably qualified engineer approved by the Waste Regulation Authority.

(g) The material shall be emplaced in accordance with the procedure and at a moisture content not less than that specified in the report required by (e) above.

(h) Any material other than that approved in accordance with (a) above shall be excluded from the seal and any material incorporated shall be free from vegetable or combustible matter, shall not contain any objects with a maximum dimension in excess of 200mm and shall not be frozen.

Material shall not be emplaced if it has a moisture content which renders it unworkable using the method and equipment specified in accordance (e) above.

(j) The crest width of any structure incorporating a seal shall not be less than 2 metres and shall be designated and constructed to provide a batter(s) which remain stable during the life of the structure. The design of each structure (which may incorporate the use of inert non-combustible material other than that approved in accordance with (a) to support the seal) shall be submitted along with the report required by (e) and shall be approved by the Waste Regulation Authority before the commencement of its formation.

(k) Where existing material is to form part of a seal or is to abut onto a seal all soil and other pervious material shall be removed to the satisfaction of the Waste Regulation Authority before the commencement of emplacement of the seal.

(l) The seal shall be free of fissures, cracks, or slip planes and an inspection shall be carried out in the presence of a representative of the Waste Regulation Authority to identify any areas where such discontinuities exist before any supporting material is emplaced.

(m) The emplaced material shall be sampled at depths and locations to be agreed with the Waste Regulation Authority and the following shall be determined on each sample by methods required by (d) above:

(i) in-situ density;
(ii) moisture content;
(iii) liquid and plastic limits;
(iv) particle size distribution.

(n) A report setting out the results of the testing shall be submitted to the Waste Regulation Authority for approval of the seal/structure.

If the tests identify areas where the material differs significantly in terms of its liquid limit, plasticity index, or particle size distribution from those established in accordance with (b) or if the calculated percentage of air voids exceeds 5% or the percentage achieved in the laboratory compaction tests, whichever is the greater; undisturbed samples shall be taken and their permeability measured by the falling head method. In the event of these permeabilities being greater than $1 \times 10^{-9}$ m/sec or if there are any discontinuities apparent on the surface of the seal, then suspect area shall be excavated and reformed so that it meets the required satisfaction.

(o) Completed seals shall be protected to prevent drying out and the formation of cracks in the emplaced material.