

ROADSTONE DUBLIN LIMITED

**INERT WASTE RECOVERY FACILITY
FASSAROE, BRAY, CO. WICKLOW**

WASTE ACCEPTANCE AND HANDLING PLAN

APRIL 2009



Prepared by :
SLR Consulting Ireland
7 Dundrum Business Park
Windy Arbour
Dublin 14

For inspection purposes only.
Consent of copyright owner required for any other use.

CONTENTS

- 1 INTRODUCTION**
- 2 WASTE ACCEPTANCE**
 - 2.1 Prior Approval of Waste Producers / Waste Collectors
 - 2.2 Basic Characterisation
 - 2.3 Compliance Testing
 - 2.4 On-Site Verification
- 3 WASTE HANDLING**
 - 3.1 Soil and Stones
 - 3.2 Construction and Demolition Waste

For inspection purposes only.
Consent of copyright owner required for any other use.

1. INTRODUCTION

Roadstone Dublin Ltd. currently operates an inert waste recovery facility at its site at Fassaroe, Bray, Co. Wicklow at Irish National Grid Reference E323700 N217500. The facility is located on lands previously worked for sand and gravel by Roadstone Dublin Ltd.

Activities at the waste recovery facility include

- (i) Use of imported inert natural materials, principally excess soil, stones and/or broken rock excavated on construction sites, to backfill and restore the existing quarry void
- (ii) Recovery of site-won and/or imported inert construction and demolition (C+D) materials, including stones, granular fill, concrete, blocks and bricks using crushing and screening equipment to generate secondary (recycled) aggregate
- (iii) Separation of any non-inert C+D waste (principally metal, timber, PVC pipes and plastic) unintentionally imported to site prior to removal off-site to appropriately licensed waste disposal or recovery facilities
- (iv) Use of secondary aggregate to construct internal haul roads at the waste recovery facility and at adjacent aggregate processing and concrete production facilities
- (v) Export of secondary aggregate off-site for re-use by others
- (vi) Phased restoration of the backfilled void (including placement of cover soils and seeding) and return to former agricultural use
- (vii) Temporary stockpiling of topsoil and subsoil pending re-use as cover material for phased restoration of the site
- (viii) Environmental monitoring of noise, dust, surface water and groundwater for the duration of the site restoration works.

A C+D waste recovery facility has operated at the site in accordance with a series of waste permits issued and renewed by Wicklow County Council since commencement of operations in 2004 (Refs. No. ESS/15/8/12 and ESS15/8/12 339).

Backfilling and restoration of the worked out quarry requires placement, compaction and capping of approximately 375,000m³ (or 750,000 tonnes) of inert soil and stone and minor quantities of recycled construction materials. Of this approximately 310,000m³ (or 620,000 tonnes) must be sourced from external construction or demolition sites.

Recovered (secondary) aggregate recovered at the site is generally exported off site for re-use on construction sites. A limited amount of secondary aggregate is re-used for construction of internal haul roads with Roadstone Dublin's waste recovery facility and at the adjacent aggregate processing and concrete production facilities.

2. WASTE ACCEPTANCE

The site at Fassaroe operates as a C+D waste recovery facility and is currently regulated by a Waste Permit issued by Wicklow County Council in July 2008 (Ref. No. ESS15/8/12-339). An additional permit providing for limited initial importation of inert soils to backfill the quarry void is to be issued by Wicklow County Council in due course.

Only inert waste is recovered at this facility. Soil and stones are generally recovered directly at the facility without any further processing. Inert C+D waste recovered at the facility may be used in the restoration for occasional engineering works (eg. construction of internal haul roads), with the bulk of it exported off-site. Only concrete, brick and inert mixtures of concrete, bricks and ceramics will be accepted for recycling purposes.

2.1 Prior Approval of Waste Producers / Waste Collectors

Inert waste (either soil or C+D waste) shall only be accepted at this facility from waste producers and/or waste collectors who have been pre-approved by the site operator, Roadstone Dublin Ltd.

Approval to import inert waste to the facility shall only be issued to waste producers and/or waste collectors who can demonstrate that they have a valid waste collection permit and have a proven track record in the construction, waste management and/or haulage sectors.

Once approved, each waste collector will be issued with a unique customer code which must be presented at the weighbridge each time a consignment of inert soil / C+D waste is brought to the facility. Failure to present a valid customer code will mean the consignment will be rejected and not permitted to access the facility.

2.2 Basic Characterisation

Basic characterisation is the first step in the waste acceptance procedure and typically constitutes a full characterisation of the waste by gathering all necessary information to facilitate safe recovery in the long term. Basic characterisation is required for each type of waste.

The inert materials to be accepted at the site for use in backfilling / recovery activities are identified by their European Waste Catalogue reference number below

EWG Code	Waste Description
17 01 01	Concrete
17 01 02	Bricks
17 01 03	Tiles and ceramics
17 01 07	Mixture of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06
17 05 04	Soil and stones other than those mentioned in 17 05 03
17 05 06	Dredging spoil other than those mentioned in 17 05 05
17 09 04	Mixed C+D wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03
20 02 02	Soil and stones

These materials are included on the list of wastes in Clause 2.1.1 in Section 2 of the Annex to Council Decision 2003/33/EC which are assumed to fulfil

- (i) the criteria set out for the definition of **inert waste** in Article 2(e) of the Landfill Directive (1999/31/EC) and
- (ii) the criteria listed in Section 2.1.2 of the Annex to 2003/33/EC.

As such, these wastes are deemed to be **exempt** from the general requirement for characterisation testing. All inert waste conforming to the EWC codes provided above are therefore considered acceptable for recovery at the Fassaroe facility without prior characterisation testing.

Note that the exemption from prior characterisation testing only applies to waste streams imported from a single known source, irrespective of whether they are separated or mixed.

Notwithstanding the above, the following restrictions shall apply

- (i) consignments containing peat shall not be accepted at this facility
- (ii) consignments containing soil from known or suspect contaminated sites or sites having a potentially high risk of contamination (eg. garage forecourts) shall not be accepted at this facility
- (iii) consignments containing asbestos, chemicals or any potentially hazardous materials shall not be accepted at this facility
- (iv) waste from unknown and/or unrecorded sources shall not be accepted at this facility
- (v) all inert C+D waste accepted at the facility must have minimal quantities of other non-inert waste types (like metals, plastic, soil, organics, wood, rubber etc.)

Although there may be an exemption from testing, there is still a requirement to collect and record some basic characterisation information in advance which clearly demonstrates that the imported waste is inert. The waste producer and/or waste collector is therefore required to provide the following basic characterisation information to Roadstone Dublin prior to forwarding waste consignments to this waste facility

- (i) source and origin of the waste
- (ii) information on processes producing the waste (excavation, demolition etc.)
- (iii) composition and consistency of the waste
- (iv) physical appearance of the waste (smell, colour, physical form)
- (v) classification code according to European waste list (CD 2001/118/EC)

The producer of the waste and/or the waste collector will be responsible for ensuring that the basic characterisation information provided is correct.

Once Roadstone Dublin is satisfied on the basis of the basic characterisation information provided that the wastes to be imported to site are inert, it shall issue an approval reference code to the waste producer / collector to be provided on documentation accompanying the waste consignment(s) forwarded for recovery at this facility.

2.3 Compliance Testing

When wastes have been deemed to be acceptable for recovery at this facility on the basis of a basic characterisation, they shall be subject to subsequent compliance testing to demonstrate that they do in fact comply with basic characterisation and acceptance criteria.

As previously indicated, all waste materials to be accepted at this waste facility are included on the list of wastes in Clause 2.1.1 in Section 2 of the Annex to Council Decision 2003/33/EC which are assumed to fulfil

- (i) the criteria set out for the definition of inert waste in Article 2(e) of the Landfill Directive (1999/31/EC) and
- (ii) the criteria listed in Section 2.1.2 of the Annex to 2003/33/EC.

As such, these wastes are also deemed to be **exempt** from the general requirement for compliance testing.

Although there may be an exemption from compliance testing, there is still a requirement to check the imported wastes to ensure compliance with the basic characterisation information provided (excluding testing).

All inert soils imported to the site shall be brought in HGV trucks from the weighbridge at the front of the site directly to the active backfilling face (soil and stones) or the C+D waste recycling area. Prior to unloading (end-tipping) the imported waste, the documentation accompanying the waste consignment shall be presented by the waste producer or waste collector for checking by a site operative employed directly by Roadstone Dublin. The waste will be accepted at the facility provided

- (i) the waste being imported is the same as that described in the accompanying documentation and
- (ii) the accompanying documentation includes a valid approval code issued by Roadstone Dublin.

If any waste consignment forwarded to the waste recovery facility

- (i) fails to comply with the acceptance policy outlined in Section 2.2 above
- (ii) is inconsistent with the basic characterisation information provided
- (iii) is discovered or suspected to have unacceptable waste intermixed with it
- (iv) does not have a valid approval code on the accompanying documentation

it shall be rejected and removed off-site. A record of the rejection of the waste consignment will be made in the Site Rejects Book. If records indicate that consignments from a particular waste producer and/or waste collector are being repeatedly rejected, Roadstone Dublin will review whether or not to withdraw approval for its continued use of the facility.

In order to verify that the waste being accepted and used for restoration purposes at this recovery facility is inert, Roadstone Dublin will undertake some limited compliance testing on soil and stones which have been placed and compacted at the site. A representative sample of waste shall be taken from one in every 500 loads of inert soil accepted at the recovery facility. A leachate sample derived from each soil sample (at 10:1 liquid:solid ratio typically) will be subject to compliance testing focusing on key contaminant indicators, principally

- Arsenic (As)
- Cadmium (Cd)
- Lead (Pb)
- Mercury (Hg)
- Zinc (Zn)
- Total Organic Carbon
- BTEX (Benzene, Toluene, Ethylbenzene and Xylene)
- Diesel Range Organics / Mineral Oil

Limit values for inert soils shall be in accordance with those set by *Council Decision 2003/33 of 19 December 2002 establishing criteria for the acceptance of waste at landfills*. Test data shall be used to confirm that the imported soils are inert and comply with established waste acceptance criteria.

2.3 On-site Verification

As material is being unloaded, end-tipped and/or stockpiled at the active backfilling face (soil and stones) or the C+D waste recycling area, it shall be subject to further visual inspection by site operatives to ensure that it is consistent with the characterisation data provided and that there is no non-hazardous or hazardous waste intermixed with it.

If some contamination of soil and stones is suspected from visual inspection (unusual colour, smell etc.) or if unacceptable quantities of other materials (like metals, plastic, soil, organics, wood, rubber etc.) are included in the C+D waste, it shall be loaded back onto the HGV and transferred off-site.

The waste producer / waste collector who imported the suspect material to site will be advised that no further loads will be accepted from the same source as the suspect material, pending completion of more detailed waste characterisation (potentially including testing) to confirm that all waste generated at the same source is inert. Testing shall be undertaken at the expense of

the waste producer / waste collector. In this instance, characterisation testing shall comprise a minimum of one batch leaching test for parameters listed in Section 2.1.2 of Annex 2 of Council Decision 2003/33/EC.

3 WASTE HANDLING

3.1 Soil and Stones

Following unloading at the active backfilling area, accepted consignments of soil and stones will immediately be spread and compacted in-situ using a bulldozer.

Should minor quantities of non-inert waste occur amongst the soil and stones, it shall be separated out (mechanically or by hand, as appropriate) and temporarily stored in skips prior to removal off-site to appropriately licensed waste disposal or recovery facilities

In the unlikely event that suspected contamination of the soil matrix is identified during the spreading, placement and compaction operations, it will be segregated from the main waste body and transferred to the covered waste inspection and quarantine facility pending closer inspection and testing to establish whether it is inert or not. Suspect waste will be identified on the basis of visual inspection (unusual colour, intermixed wastes etc) or by smell. Detailed records will be kept of all inspections and testing of suspect wastes.

Should inspections and/or testing indicate that the materials transferred to the waste inspection and quarantine facility are non-inert and cannot be accepted and used for restoration purposes at this site, they will be placed in skips and covered pending removal off-site by permitted waste collectors to a suitably licensed / permitted waste disposal or recovery facility.

3.2 Construction and Demolition Waste

Following unloading adjacent to the waste recovery area, accepted consignments of C+D waste will be temporarily stockpiled, pending accumulation of sufficient quantities of recyclable material to organise and run the screening and crushing equipment for an extended period and achieve some economies of scale.

Processed C+D waste will be removed from the screening and crushing plant and stockpiled separately from unprocessed waste. The recycled aggregate will generally be exported off-site via HGV for re-use on construction sites. Minor quantities will be re-used for construction of temporary haul roads across the Fassaroe complex.

Should minor quantities of non-inert material (principally metal, timber, PVC pipes and plastic) occur amongst the C+D waste accepted to site, it shall be separated out (mechanically or by hand, as appropriate) and temporarily stored in skips prior to removal off-site to appropriately licensed waste disposal or recovery facilities

ROADSTONE DUBLIN LIMITED

**INERT WASTE RECOVERY FACILITY
FASSAROE, BRAY, CO. WICKLOW**

OUTLINE ENVIRONMENTAL CONTINGENCY PLAN

*For inspection purposes only.
Consent of copyright owner required for any other use.*

APRIL 2009



Prepared by :
SLR Consulting Ireland
7 Dundrum Business Park
Windy Arbour
Dublin 14

CONTENTS

Page No.

1	ACCIDENTS AND THEIR CONSEQUENCES.....	1
1.1	Introduction	1
1.2	Accident / Hazard Identification	1
2.	FIRE MANAGEMENT PLAN.....	2
2.1	Operational Techniques.....	2
2.2	Monitoring Techniques.....	3
2.3	Fire Action Plan.....	3
3	SPILLAGE AND LEAKAGE MANAGEMENT PLAN	4
3.1	Operational Techniques.....	4
3.2	Spill Containment Equipment.....	4
3.3	Monitoring Techniques.....	4
3.4	Leaks and Spillage Action Plan	5
4	STABILITY MANAGEMENT PLAN	6
4.1	Design Considerations / Stability Assessment	6
4.2	Operational Techniques.....	6
4.3	Monitoring Techniques.....	6
4.4	Action Plan.....	6
5	SECURITY MANAGEMENT PLAN.....	8
5.1	Operational Techniques.....	8
5.2	Monitoring Techniques.....	9
5.3	Action Plan.....	9

For inspection purposes only.
Consent of copyright owner required for any other use.

1 ACCIDENTS AND THEIR CONSEQUENCES

1.1 Introduction

This document is the Contingency Plan for the inert waste recovery facility operated by Roadstone Dublin Ltd. at Fassaroe, Bray, Co. Wicklow. The principal waste activities at the site are

- (i) the placement and compaction of inert soils in an existing quarry void and
- (ii) recovery (processing) of inert construction and demolition (C+D) waste.

All inert soils are imported to site from external construction and development sites. C+D waste is imported to the facility from external construction sites and is also sourced from the adjacent concrete production facility and retail shop operated by Roadstone Dublin Ltd.

The purpose of this document is to identify contingency plans and arrangements that will be implemented during the operation of the inert waste recovery facility.

This document considers those aspects of on-site operations that may pose a risk of accidents with environmental consequences.

The resultant accident management plan describes the various techniques that will be implemented at the site to minimise the risks presented by site operations to the environment. It does not include those accidents, which may solely affect the health and safety of operatives, contractors or visitors to the site.

1.2 Accident / Hazard Identification

The following categories of potential hazard / accident have been identified and risk management measures are detailed in the following sections, which should be implemented at the site to ensure the environmental risks associated with the hazards are tolerable.

Fire

The fire management plan, which describes the procedures and precautions that will be implemented at the site, is presented in Section 2 of this plan.

Spillage and Leakage

Procedures that will be implemented at the site to minimise the risk from spillage and leakage is presented in Section 3 of this plan.

Stability

The measures to be taken during both the design process and during routine operations to ensure the stability of the site and prevent soil slippage are detailed in Section 4 of this plan.

Security and Vandalism

Measures that will be adopted to minimise the potential environmental impact associated with deliberate damage to control mechanisms such as fuel storage facilities are detailed in Section 5 of this plan.

2. FIRE MANAGEMENT PLAN

2.1 Operational Techniques

Waste management sites can represent a potential fire risk for a number of reasons.

- Site buildings contain electrical appliances and other sources of ignition along with materials that would readily burn.
- Litter and waste materials may support combustion.
- Maintenance activities on plant and equipment can represent a potential fire risk if necessary precautions are not taken.

Specific action that will be taken to prevent and minimise the risk of fires from these particular sources, together with general fire prevention precautions are detailed below.

Site Buildings/Electrical Appliances

All electrical appliances in use at the site will be tested in accordance with the Electrical Testing Regulations.

Housekeeping

Site buildings will be maintained in a tidy condition, and will be regularly cleaned to avoid the accumulation of paper and debris that may present an increased fire risk.

Litter and Combustible Waste

No litter or potentially combustible waste will be permitted to accumulate at the site.

Management Responsibility

The Facility Manager will have responsibility for ensuring that potential fire nuisances and hazards arising from site operations are minimised.

Training

All employees will undergo training relevant to their role in fire prevention, use of fire extinguishers, and emergency procedures.

Smoking Policy

Smoking will only be permitted at designated areas and specifically not within site buildings.

Fire Protection Equipment

Where appropriate, plant will be fitted with automated fire protection equipment.

Hot Work Permitting System

A formal permit to work system will be in place to ensure appropriate precautions are taken and approval obtained prior to any hot work being carried out on site plant and equipment.

Fire Fighting Equipment

Fire extinguishers will be provided in the site buildings and will be used if it is appropriate and safe to do so, in the event that fire is discovered in the building.

Smoke and Fire Alarms

Smoke and fire alarms will be fitted in the site offices.

2.2 Monitoring Techniques

All operatives will remain vigilant regarding the breakout of fire at the site, and the emergency procedure and action plan outlined below will be followed if fire is observed.

2.3 Fire Action Plan

Fire within Site Buildings

- The person discovering the fire will raise the alarm.
- If the fire cannot be safely tackled using appropriate fire extinguishers, the emergency services and the facility manager will be informed.
- Where applicable, and if it is safe to do so, all electrical supplies will be isolated and made safe in the area of the fire.
- The facility manager (or his deputy) will check for all visitors, contractors and staff to ensure everyone is accounted for.
- The facility manager (or his deputy) will direct the emergency services to any casualties.
- All used fire extinguishers will be returned to the supplier for refilling or replacement.

Plant and Equipment Fire

- The person discovering the fire will raise the alarm.
- If the fire cannot be safely tackled using appropriate fire extinguishers the emergency services and the facility manager will be informed
- If it is safe to do so, all electrical supplies will be isolated and made safe in the area of the fire.
- The facility manager (or his deputy) will check for all visitors, contractors and staff to ensure everyone is accounted for.
- The facility manager (or his deputy) will direct the emergency services to any casualties.
- All used fire extinguishers will be returned to the supplier for refilling or replacement.

Records

A fire log will be maintained. It will include the following details: -

- records of the maintenance of fire extinguishers;
- a record of all incidents of fire including date, time, nature and cause of the fire; and
- details on the action taken to extinguish the fire, and any subsequent changes to operational and emergency procedures.

The Environment Protection Agency will be advised of any serious fire incidents at the earliest practicable opportunity.

3 SPILLAGE AND LEAKAGE MANAGEMENT PLAN

3.1 Operational Techniques

In order to prevent spillages and leaks of potentially polluting materials and minimise the impact of any spillages that do occur, the following measures will be implemented at the site.

Unloading Procedure / Overfilling of Tanks and Bowsers

All potentially polluting materials delivered to site will be unloaded by suitably qualified employees from the delivery company, and overseen by a designated site operative. This will prevent the overfilling of mobile fuel bowsers in particular.

Storage Vessels/Containers

Potentially polluting liquids (principally fuel) will be stored in mobile, double skinned bowsers constructed to the appropriate Irish, British or International Standard, meeting the requirements of the Local Government (Water Pollution) Acts 1977 to 1990 and associated regulations.

Other potentially polluting liquids such as lubricating oils, waste oils derived from vehicle maintenance, pesticides etc, will be stored in containers located on sealed (ie. concreted) ground within the existing maintenance sheds.

All solid wastes arising on site and other solid potentially polluting materials will be segregated according to category, stored within containers which are designed to ensure the contents do not spill or escape and covered as necessary.

Inspection and Maintenance

All containers and bowsers will be inspected on a daily basis by the facility manager (or his designated deputy) to ensure their continued integrity, and identify the requirement for any remedial action.

In the event that remedial action is required, arrangements will be made to transfer any potentially polluting materials to secure alternative storage pending completion of remedial work. Remedial work will be undertaken as soon as possible. Containers and bowsers found to be faulty will not be used for the storage of polluting materials until appropriate remedial action is completed.

Absorbent Materials

A supply of materials suitable for absorbing and containing any minor spillage will be maintained on site.

3.2 Spill Containment Equipment

Materials suitable for containing spills including sealing devices and substances for damaged containers, drain seals and booms, and overdrums will be maintained at the site.

Plant Maintenance

All plant and equipment will be subject to maintenance in accordance with the suppliers / manufacturer's recommendations to avoid the failure of items of plant and equipment giving rise to potential emissions to the environment.

Drains

Surface water channels and drains will be subject to daily visual inspection by the Facility Manager. Action will be taken to remove any obstructions to flow.

3.3 Monitoring Techniques

All site personnel will be tasked with monitoring for evidence of spillage and leakage, during their day-to-day routine. The condition of bowsers and containers will also be inspected on a daily basis.

A daily and weekly inspection checklist will be used to record inspections of infrastructure, operations, pollution control and amenity management and monitoring. The inspection checklist will be used by the facility manager to identify requirements for remedial action.

Any evidence of spillage or leakage will be reported immediately to the Facility Manager (or his deputy) for appropriate remedial action.

3.4 Leaks and Spillage Action Plan

In the event of spillage of polluting materials, immediate action will be taken to contain the spillage.

The spillage will be reported to the Facility Manager, who will assess the situation and decide on the most appropriate course of action.

The action taken will depend upon the size of the spillage, the location of the spillage in relation to sensitive receptors and the chemical and physical nature of the spilled material.

Action taken may include some or all of the following: -

- if possible the leak will be stopped;
- if it safe to do so, the cause of the spill or leak will be isolated;
- if the spillage is small, spill granules will be used immediately if necessary to prevent the spill spreading. The area will be cleared and all contaminated material will be sent to an appropriately licensed site for disposal;
- if the spill is larger, inert materials such as clay or sand will be used to make a containment bund and specialist help will be sought to assist in clean up;
- in the event of a potentially serious spillage that may give rise to pollution of surface water immediate action will be taken if possible to prevent the spread of the spill into surface water channels and drains using suitable covers and barriers. The Environment Protection Agency will be informed immediately, and remedial action will be agreed;
- if the spillage cannot be contained using approved materials, the Environment Protection Agency and senior management will be contacted immediately and specialist help obtained;
- if a vehicle is found to be leaking, it will be moved to a position where the spillage can be contained i.e. quarantine facility, or other hard surfaced area, if it is safe to do so; and
- all personnel will follow instructions provided by managers or other competent persons. Appropriate precautions will be taken depending upon the nature of the spilled material to prevent any harm to human health, and all personnel involved in clean up will wear protective clothing appropriate for the nature of the spilled material.

All spillage incidents, site inspections, and remedial actions will be recorded in the site diary.

4 STABILITY MANAGEMENT PLAN

To ensure the long-term integrity of the slopes at the restoration site, precautions will be incorporated both at the design stage and during backfilling operations as detailed below.

4.1 Design Considerations / Stability Assessment

Stability of slopes prior to, during and following restoration of the former quarry is a key consideration during the design process.

The following factors have been taken into account during the design process: -

- *nature of substrata*, i.e. the presence of any historical mining and quarrying, presence of superficial deposits, variation in the water table, geotechnical and hydraulic properties of any materials to be utilised at the site;
- *stability of inert waste materials*, i.e. stability of temporary slopes during backfilling and
- *stability of capping and restoration layers*, i.e. final surface gradients and effects of soil settlement.

4.2 Operational Techniques

The following operational techniques to ensure stability of the backfilled materials, will be adopted at the site.

- *Waste compaction* : Inert waste will be levelled and compacted as soon as possible after discharge at the working area. This will minimise any future settlement, increase the density and strength of the backfill materials and enhance stability;
- *Large objects* : All large inert C+D waste (concrete, boulders etc.) will be crushed to ensure that voids do not develop in the backfilled soil mass;
- *Height of tipping face* : The maximum height of the tipping face after compaction will be 2.5 metres. The end-tipping of uncompacted soil over high unstable faces will therefore be avoided.
- *Gradient of temporary slopes* : During restoration of the site, the slope adopted for temporary unrestored faces sloping to the floor will depend upon the nature of the soil, its moisture content, the height of the slope, nature of the foundation soil and the consequences of failure.

4.3 Monitoring Techniques

The following action will be taken to monitor the stability and settlement of the soil slopes: -

Visual Inspections

Visual inspections will be carried out at weekly intervals to identify the following: -

- evidence of tension cracks in temporary slopes caused by movement of the inert waste;
- evidence of instability or movement (back scarps and/or toe bulging)
- evidence of differential settlement causing depressions in the restored landform or damage to the drainage system.

4.4 Action Plan

In the event that stability or settlement problems are discovered, appropriate remedial action will be taken as detailed below: -

Instability of Waste Mass

If there is visual evidence of movement within the inert soil mass, or evidence from the regular topographical surveys, the situation will be reviewed by a competent independent engineer, and appropriate remedial action will be taken in agreement with the Environment Protection Agency.

The action taken will depend upon the severity of the movement, the timescales over which the unstable mass will remain unsupported, and the consequences of failure.

Action taken may include one or more of the following: -

- the situation will continue to be monitored through regular visual inspections and topographical surveys;
- prohibition of operations at the base of the slope, which may place operatives at potential risk;
- adjustment to phasing of restoration operations to provide additional support to the inert soil mass as soon as possible;
- engineering work to reduce the gradient of the slope and reduce the risk of failure; and
- revised design for future phases to reduce slope gradients and/or height of slopes and reduce time period over which temporary slopes remain unprotected.

Records

Records will be maintained as follows: -

- the results of visual inspections and topographical surveys;
- stability problems including date, nature and suspected cause of the problem; and
- details on the corrective action taken, and any subsequent changes to site design or operational procedures.

For inspection purposes only.
Consent of copyright owner required for other use.

5 SECURITY MANAGEMENT PLAN

Many potential problems can arise from inadequate control over access to waste management sites. These problems include: -

- non-permitted waste being imported in contravention of the Waste Licence;
- fly-tipping of wastes at the site entrance; and
- damage to plant and equipment.

Such problems not only disrupt safe operation of the waste facility but can also have significant financial implications for the operator who will be required to replace or repair stolen or damaged equipment. Environmental damage can also result if control systems are compromised.

5.1 Operational Techniques

In order to minimise the risk of problems arising as a result of inadequate security, the following measures will be implemented at the site.

Building Security

The permanent site office, at the front of the site, will have the benefit of a security alarm to discourage intruders. Windows will also be fitted with bars and /or shutters to prevent damage by vandals.

Lighting

The permanent site office and hardstanding area will have security lighting to discourage unauthorised visitors during the hours of darkness.

Fencing

The site will have the benefit of perimeter fencing which will extend around the perimeter of the site.

Security Gates

Security gates, which span the full width of the access road will be provided at the entrance to the site. The gates will be locked outside operational hours to deter unauthorised vehicular and pedestrian access. Access to gate keys will be restricted to a small number of Roadstone employees.

Inspection

Gates and fencing will be inspected weekly by the Facility manager (or his nominated deputy), to identify deterioration and damage, and the need for any repairs.

Maintenance and Repair

The fencing and gates will be maintained and repaired when required to ensure their continued integrity. In the event that damage is sustained, a temporary repair will be made within 24 hours until permanent repairs can be affected.

Warning Notices

Notices warning against unauthorised access (and alerting potential trespassers to on-site hazards) will be erected at the site entrance and will be repeated as necessary at locations around the perimeter of the site.

Authorised Access System

All visitors to the site will be required to register their presence by signing in the visitor's book on entry to the site, and again on exit. This will minimise the risk of unauthorised visitors being present on site.

Reporting Systems

In the event of fly-tipped material being found at the entrance to the site, the fly tipped material will be examined for evidence of ownership. In the event of evidence being found, the Environment Protection Agency and/or Local Authority will be advised so that legal action may be considered.

5.2 Monitoring Techniques

The operational procedures outlined above, including the regular inspections, security and reporting systems will ensure continual monitoring of security provision at the site.

5.3 Action Plan

In the event of a breach of security at the site, the following course of action will be followed;

Unauthorised Access

The route of access will be determined, and consideration given to the following measures as appropriate: -

- repair of gates or fencing;
- replacement of gates or fencing with more secure design;
- erection of warning signs; and
- installation or implementation of additional security measures for example security cameras, more frequent patrols.

Unauthorised Tipping

- the material will be examined for evidence of ownership;
- the Environment Protection Agency and Local Authority will be informed;
- with the agreement of the Environment Protection Agency and/or Local Authority, the material will be removed and disposed of correctly;
- if appropriate, additional warning signs will be erected; and
- additional security measures will be considered.

Records

A record relating to the management and monitoring of security will be maintained. It will include the following details: -

- records of the inspections and maintenance of security fencing and gates;
- a record of all breaches of security and incidents of fly-tipping, and investigations of these breaches of security; and
- details of the action taken to replace or repair security equipment, and investigate fly tipping, including any subsequent changes to operational procedures.