THE COAL AUTHORITY

CODE OF PRACTICE FOR THE MANAGEMENT OF DISUSED TIPS

Foreword

With effect from April 2005 the Coal Authority reduced its reliance on external consultants for management of disused colliery tips in which the Authority has a property interest. Regular inspections and the specification and supervision of maintenance and remedial works on tips are now be undertaken by Coal Authority staff. This document sets out the Authority's policy for management of disused tips in the form of a Code of Practice.

Readers should note that design, operation and management of tips associated with operational collieries are all specifically excluded from the Code.

It is worth noting that there are over five thousand colliery tips in the UK and that the Coal Authority has responsibility for less than one percent of that total number. Although this Code of Practice makes frequent reference to Coal Authority corporate procedures, the general principles of management and in particular the policy of regular inspection by experienced engineers are valid for all disused colliery tips.

CONTENTS

1 Introduction

The purpose of this Code of Practice is to set out the Coal Authority's philosophy for the management of disused tips in which the Authority has a property interest, either freehold or leasehold. A key element of the philosophy is that the tips will be inspected and managed by suitably qualified and experienced engineers. This Code of Practice is not a textbook nor is it a set of codes and rules, it is a framework of guidance and great emphasis is placed on the value of sound engineering judgement.

The principal statute relating to stability and safety of mineral waste in the UK is the Mines & Quarries (Tips) Act 1969; Part I of the Act covers active and closed tips which are tips associated with mines or quarries that are operational, Part II covers disused tips associated with a mine or quarry that has been abandoned. The Act is supported by the Mines & Quarries (Tips) Regulations 1971 which set out detailed requirements for active and closed tips to ensure that those tips are built and maintained to be secure against failure; the Regulations include requirements for systematic and regular inspection and reporting. Neither the Act nor the Regulations impose a statutory requirement for inspection of disused tips. A legal advice note is included as Appendix A to the Code of Practice.

The Coal Authority has decided that its own tips shall be inspected and managed to a standard not less than that required under legislation for closed tips by Regulations 17(1) and (2) and Regulation 18 of the Mines & Quarries (Tips) Regulations 1971. In practice this is very much a minimum standard and a significant proportion of the Authority's tips are subject to a more rigorous management regime including use of modern technology where appropriate.

Some sites other than disused tips are also included in the Authority's tip management programme. These are sites where it is essential to have regular inspection by suitably qualified engineers. Examples are significant containment embankments on mine water treatment sites and culverts where there is no other property interest.

2 Inspections

2.1 Routine inspection

Coal Authority policy requires routine inspection of tips focussed on stability issues and of sites in general for the purpose of assessing potential hazards to the general public. For tip sites the two inspections will normally be undertaken during one site visit. A computer database is used to record all inspections and as an aid to ensure that they are undertaken as required.

2.1.1 Tip inspection

The fundamental aspect of the management system is inspection by competent persons at a maximum interval of six months. Inspections are reported using the standard form attached as Appendix B. Particular attention is paid to any change of situation and condition or indication of movement and to surface and subsurface drainage. The inspection interval is a matter for engineering judgement and should be reduced where there are concerns for matters that might affect stability or have consequences for environmental damage.

The only current exception to the above standard method of inspection reporting is that for Blaencwm Landslide and associated tips. The site is inspected on three occasions annually (before, during and after winter) with reports prepared on a site specific basis.

It is essential that persons undertaking inspections have knowledge of the history of construction and behaviour of the tip and of site conditions. Persons inspecting a site for the first time should first study previous reports and ideally they should be accompanied by an engineer familiar with the site. Surface conditions on disused tips can be difficult and the remoteness of many sites makes it particularly important that the Authority's lone working procedures are followed and that appropriate risk assessments are undertaken for all activities.

2.1.2 Hazard Assessment

All Coal Authority property is subject to regular hazard assessment. Hazard assessments for tips will normally be undertaken at the same time as a routine tip inspection. Hazard assessment is for the purpose of identifying and mitigating safety risks to the general public using legitimate rights of way on a site or as trespassers. Hazards that might be initiated on Coal Authority property but impact on persons on neighbouring land should also be considered.

Hazards identified during a tip inspection should be reported using the standard form attached as Appendix B, together with a note of any action taken or work recommended to mitigate a hazard. The procedure to be followed for instruction of emergency works is set out in Section 4 below.

2.2 Comprehensive Review

2.2.1 Purpose and interval

It is Coal Authority policy to undertake a comprehensive review of each disused tip at a maximum interval of ten years. Following at least one detailed inspection a comprehensive report is prepared commenting on all matters relevant to management and security of the tip. Reports are of the same technical standard and content as those required under Regulation 18 of the Mines & Quarries (Tips) Regulations 1971. A supplementary report to the same standard would be prepared in the event of a dangerous occurrence on a tip. A dangerous occurrence is defined as movement of tip material or a fire or other event which indicates that the tip is or is likely to become insecure. This definition is open to interpretation but it may be appropriate to think in terms of a significant failure that involves movement of the tip beyond its original footprint; localised movement or minor heating would not be considered to be a dangerous occurrence.

Currently the one exception to the comprehensive review programme is the case of Blaencwm Landslide for which a five yearly review of landslide behaviour and management is undertaken.

2.2.2 Subject matter

Disused tips will usually have had previous reports made under the 1971 Regulations and dated from a time when the tip was subject to Part I of the 1969 Act. A comprehensive review should examine the content of previous reports and test the various comments and judgements made. If it is concluded that there has been no change in a particular circumstance relating to the tip then it is acceptable to confirm that the status described remains valid. All site conditions and the situation of the tip should be examined and the report must contain an updated opinion on security.

A site inspection made for the purposes of a comprehensive review can replace a routine inspection (subject to timing) but the nature of the review is such that at least one inspection should be made in dry weather conditions so that seepages or wet areas can be observed and assessed for significance.

A check list of essential contents for a report on a comprehensive review is attached as Appendix C to this document. The check list is valid for all disused tips whether or not a previous report is available.

2.2.3 Qualifications of author

The author of a report on a comprehensive review will be a Chartered Engineer with relevant experience of the subject matter (see Appendix C). It is essential that these reports are compiled by suitably qualified persons so that the Authority could adequately defend opinions contained therein, should it ever be necessary to do so. Again there is an exception in the case of Blaencwm Landslide, the author of the five yearly review of landslide behaviour and management will be professionally qualified Engineering Geologist or other suitably qualified person approved by the Coal Authority.

2.3 Additional inspections

Conditions at individual sites may necessitate inspections additional to those routinely undertaken. Reasons for these additional inspections may include the presence of culvert screens or significant structures that require special inspection, a need to monitor restoration projects or to check site conditions after heavy rainfall.

2.3.1 Culvert screens

Culvert screens that are prone to blockage by reason of location and surrounding environment and where the consequences of blockage are significant, should be subject to inspection immediately after heavy rainfall in their location. In the event of prolonged heavy rainfall, inspections will be required during the period of rainfall. This requires local knowledge and in areas where the Authority does not have locally based members of staff then local term contractors should be authorised to act and report.

2.3.2 Significant structures

Significant structures are defined as structures whose failure could have a negative impact on tip stability and which cannot be properly inspected during a routine inspection; the most obvious examples being culverts and drainage tunnels. Significant structures are inspected on a regular basis either by walk-through or camera survey. Frequency of inspection is determined by risk assessment and the nature and condition of the structure. For example, in some cases it may be appropriate to reduce risk in large culverts by using cameras annually but supplemented by a walk-through inspection at three-yearly intervals. The means of inspection and interpretation of results is a matter for engineering judgement. Confined space hazards will need to be considered and safe working practices determined.

If inspection of a significant structure involves entering a former mine then notice should be given to HSE Mines Inspectorate and appropriately qualified staff employed to supervise the operation.

2.3.3 Landscape inspection

The Coal Authority has invested significantly in restoration of disused tips and is committed to a policy of environmental improvement. Where site restoration contracts are in place, landscape inspections will be made during the aftercare period by the consultant responsible for the works. Following completion of aftercare and on other sites where restoration or landscaping has been undertaken, seasonal inspections should be made by a landscape architect or similarly qualified person. These inspections will normally be made in the spring and/or autumn but site-specific advice should be sought from the landscape professional.

2.3.4 Weather conditions

Disused tips in areas affected by severe rainfall should be inspected as soon as possible after the rainfall in addition to the routine inspection regime. This is a matter for judgement preferably by locally based staff with knowledge of the area affected by the rainfall. Local site conditions and history of behaviour should always be taken into account when assessing need for weather related inspection.

3 Site Investigation and Monitoring

3.1 Site Investigation

When site investigation is necessary on a Coal Authority site, such works should be closely supervised to ensure that no hazards are created and that the works do not impact on stability or the environment. In particular, all trial pits should be fully reinstated and boreholes sealed to prevent ingress of oxygen.

On occasion, Coal Authority sites are subject to ground investigation works by third parties. Any investigation not carried out under contract to the Authority should be authorised by completion of the Authority’s standard form of indemnity which must be signed on behalf of both parties before entry onto site is allowed. If there is any uncertainty with regard to terms then advice should be sought from the Authority’s Estates & Environment Department. It should always be a condition of any permission for ground investigation that factual results are shared with the Authority.

3.2 Topographical survey

Conventional surveying techniques can be a useful tool to supplement site inspections for tips where movement is known or suspected. Survey frequency is a matter for judgement based on site conditions and the nature and consequences of movement. If large scale movement is involved use of laser scanning may be appropriate, this technique is relatively expensive and specialist advice will be required. At the time of writing use of laser scanning by the Authority is limited to Blaencwm Landslide and the associated tips.

3.3 Piezometers

Widespread use is made of piezometers to monitor water levels or pressures in tips and underlying strata. Piezometers are installed at appropriate locations in all tips where security is sensitive to changes in ground water levels or pressures. The extent of piezometer monitoring should be kept under constant review in response to observations of movement or seepage or changes in site conditions. Piezometers are normally monitored at monthly intervals by contractors but more frequent monitoring may be needed if there are concerns for stability. Tabular and graphical records of piezometer readings will be kept and regularly updated. Contractors should be instructed to report immediately by telephone any large change in water level in an individual piezometer.

3.4 Remote monitoring

Use of modern technology has made it possible to monitor remotely and reliably key data from sites with data transmitted by telemetry to office based computers. Robust installations with power generated by protected solar panels are required. Installations are expensive and remote monitoring is confined to sites where the data collected is significant with regard to security and the consequences of failure are high. Remote monitoring is used to provide data from movement detectors, water level and flow measurement devices and rainfall gauges. In limited circumstances piezometers can be remotely monitored but power losses in long cable runs generally preclude large scale electronic monitoring of piezometers and manual monitoring is more cost effective. Remote monitoring is a supplement to and not a replacement for regular inspection by competent persons.

3.5 Movement detectors

Use of movement detectors can be appropriate to monitor long term ground movements on sites affected by landsliding. Extensometers, inclinometers and tiltmeters have all been used with information collected on data loggers. Specialist advice is required for the installation and monitoring of these

instruments and on interpretation of results. At the time of writing, use of movement detectors by the Authority is confined to Blaencwm Landslide and the associated tips. The main function of movement detectors is to give early warning of potential changes in landslide behaviour.

3.6 Water level or flow measurement

Knowledge of the rate of water flow in drainage tunnels and flow rates or water levels at other critical locations is a useful supplement to information gained by inspection and piezometer monitoring. Ultrasound devices set over flumes or pressure switches can be used to relay information to a datalogger. Unexpected changes should always be investigated.

3.7 Rainfall

Rainfall data can be obtained retrospectively from the Environment Agency or other sources but the Authority has three rain gauges of its own at strategic locations in South Wales to provide real-time data without dependence on others. Information gained is useful for example, to assess the significance of changes in flow rates in drainage tunnels or changes in rates of ground movement.

4 Remedial works

4.1 Annual budget

An annual budget will be agreed in advance with Finance Department. The budget should make provision for planned works and routine maintenance but should also include a degree of flexibility to allow for unplanned events primarily weather related. Ongoing contractual commitments should be allowed for such as releases of retention monies and landscape aftercare payments. If events indicate that a budget overspend is likely then consultation with line management and Finance department is required at the earliest opportunity.

4.2 Procurement

Works required on disused tips will be procured in accordance with the Authority’s Procurement Manual and procedures. The Authority seeks to achieve best value in its procurement activities and the most appropriate procurement process will be undertaken for the nature and value of work. Most individual instances of remedial and maintenance works will be of relatively small value and will be instructed using a competitively tendered term contract. Higher cost works and individual restoration projects will be the subject of competitive tendering

procedures. Any queries on procurement should be discussed and agreed with the Procurement Manager.

4.3 Emergency works

Emergency works are defined as those essential to prevent a risk of immediate danger to persons on site or the general public or to prevent an immediate risk of environmental damage. If such works are identified as required then immediate action should be undertaken by the member of staff making the identification. An appropriate term contractor should be instructed initially by telephone; if emergency works are identified during the course of a site inspection then verbal instruction for the works should be given before leaving site. Detailed records should be made to enable a retrospective written order to be placed. Line management should be informed of action taken at the earliest opportunity. In the event of large scale instability with consequences for public safety then the Authority's procedures for contact with emergency services and local authorities should be followed.

4.4 Environmental protection

All works on tips will be undertaken in accordance with the Authority's Environmental Code of Practice. When planning works on watercourses or drainage infrastructure consultation with the Environment Agency will be required.
When planning landscape improvement or maintenance works use of waste or recycled materials should be considered, again consultation with the Environment Agency will be required.

4.5 Health and safety

Persons responsible for management of works on disused tips will ensure that the Authority's health and safety policy is complied with in all respects. Larger projects should be notified to the Authority's Safety Health & Environment Advisor so that there is an opportunity for audit procedures to be instigated. A protocol has been agreed between the Coal Authority and HSE Mines Inspectorate relating to management of works in and around former mine entrances and a decision should be made at the outset of a project whether works fall under CDM or MASHAM.

5 Impact on communities

5.1 General

Disused tips can have impacts on local communities not directly related to technical or landscape issues. The starkest example is of course the tip above the village of Aberfan (Merthyr Vale Tip No 141). Failure of the tips at Aberfan caused huge loss of life at the village school in 1966 and led to introduction of the current legislation relating to tips. Prior to that time there had been many instances of less traumatic but still significant failures. Persons responsible for management of disused tips should be aware of these issues and respond with sensitivity to local concerns, particularly those relating to stability and visual impact.

5.2 Restoration

The Coal Authority is committed to reducing the environmental impact of disused tips and has invested significantly in restoration, landscaping and environmental protection works. This investment must be protected by the management regime. Further improvements will be subject to availability of funding.

Restoration or landscape improvement of disused tips may not require planning consent but local authorities and community groups should always be consulted at the inception of a project. Consideration should be given at design stage to public display of information or presentations to meetings of interested parties. Proceeding without consultation can lead to distrust and dissent whereas involvement of local communities can invest a sense of local ownership of projects. If people understand and support the Authority's objectives, then they are more likely to co-operate by for example, reporting unauthorised use of the site or damage.

5.3 Public access

Public access onto disused tips should in general be discouraged but in practice is impossible to prevent. Recognition of this fact is a principal driver for the hazard assessment programme described previously. A large number of disused tips are crossed by public rights of way and some fall within the remit of the Countryside & Rights of Way Act 2000.

The public should be made aware of the risks of trespassing on disused tips by erection of warning notices specific to the risks involved. Where there is evidence of regular trespass on a defined route then signs should be erected pointing out that it is not a right of way. Every effort should be made to deter unauthorised access by vehicles and motorbikes, the latter are particularly difficult to interdict and are the cause of significant damage and public nuisance.

5.4 Tenants

Many of the Authority's disused tips are subject to tenancies or licensed grazing under the management of the Authority's land agents. Responsible occupation of the whole or part of a tip is to be welcomed as unauthorised access is deterred with a consequent reduction in vandalism damage.

Any evidence of irresponsible activity by tenants should be reported to the land agent as should any suspicion of unauthorised occupation of property. Works on occupied sites, other than routine and minor maintenance, should be notified to the land agent at the earliest possible date so that tenants can be informed in advance, this is particularly important for any works requiring removal of livestock. It therefore follows that persons inspecting sites should be familiar with tenancy arrangements made by the Authority's land agents/Estates team.

Appendix A

ADVICE TO THE COAL AUTHORITY

ON

THE LIABILITIES ATTACHING TO

THE OWNERSHIP OF COLLIERY

REFUSE TIPS

ABX

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ADVICE ON TIP LIABILITY

COAL AUTHORITY

Introduction

This advice deals with the liability of the Coal Authority ("CA") for colliery waste tips acquired under CARS 7. It is assumed that they are all disused tips (see definition below). Any transfer of any of the tips will no doubt contain an indemnity, but, for the purposes of this note, that will be left out of account.

Summary

(1) There are no statutory provisions dealing with regular inspections of disused tips but CA have continued the former British Coal practice of carrying out such inspections.

(2) There is a potential liability for CA arising out of the provisions of the Mines & Quarries (Tips) Act 1969. It will occur where remedial works are required in order to prevent danger to members of the public because of the instability of a tip. It would be initiated by the local authority.

(3) There may be a requirement to comply with restoration provisions under planning permissions, approvals under the Town & Country Planning (General Permitted Development) Order 1995 ("GPDO") or statutory reviews.

(4) There may be liability under environmental legislation such as for contaminated discharges under the Water Resources Act 1991or combustion/smoke under the Clean Air Act 1993.

MINES & QUARRIES LEGISLATION

A tip is a "disused tip" as defined by the 1969 Act if it is no longer active and the colliery with which it was associated has been abandoned. It may be described as a "Part II tip". Part II is concerned with the prevention of danger to the public. The scheme of the provisions is to invest the local authority with powers to require tip owners to carry out remedial works, or, alternatively, to carry out the work itself and recover the costs. The provisions bite against all owners for the previous twelve years, not just the present owner. The Act provides that the local authority may recover a contribution to the cost of the works from those persons served with a notice.

Before outlining the procedure available to the local authority in cases of instability, it should be pointed out that the inspection regime set up by the 1969 legislation does not apply to disused tips. Nevertheless, British Coal's procedure was to carry out inspections every 12 months (6 months in the case of lagoons) under the provisions of Rule 32 of the NCB (Production) Codes and Rules 1971. The Rules do not apply directly to CA, but if British Coal considered that they embodied an essential safety check, it is difficult to see how CA could take a different view in the light of its safety duties under section 4 of the Coal Industry Act 1994.

Procedure available to local authorities

If the local authority is satisfied that a danger exists, it may serve a notice in the prescribed form on the owner of the tip requiring him to carry out the remedial operations - *section 14*. Within seven days the local authority *must* also serve a copy of the notice on:

- any occupier or other person with an interest in the land
- any person who had an interest in the land in the last twelve years
- any person who has an interest in the tip material
- any person who has tipped colliery refuse on the tip in the last twelve years
- any person who has caused instability of the tip, or failed to take steps to prevent it, in the last twelve years

-section14(4)

The owner then has the option of serving a counter-notice on the local authority requiring them to carry out the works - *section 14 (5).* In that event, the local authority or the owner (whichever carries out the works) may apply to the High Court for an order that contributions be made to the cost of the works by persons served with the notice - *section 19.*

There is an appeals procedure in section 15 which is available to persons served with a section 14 notice. A person served may within twenty-one days of service of the notice on the *owner* apply to the High Court for discharge or variation of the notice on specified grounds. Since the copy notice under section 14 (5) must be served within seven days of the service of the original owner's notice, it may be the case that persons in receipt of a copy notice have only fourteen days available in which to appeal. The grounds of appeal are:

- the tip is not unstable or not a danger
- the specified remedial operations are excessive

- the owner is willing to carry out different operations which will secure the tip
- different operations have already begun or have been contracted for
- the time allowed for the operations is unreasonable
- there is a defect in the notice

In such a case the time in which the works are to be carried out is suspended until determination of the appeal.

Under section 17 a local authority may instead of serving a notice under section 14(1) itself carry out remedial operations and any works of reinstatement it considers reasonably necessary. If that procedure is invoked, the local authority must serve not less than 21 days notice on the owner of the tip of its intention to carry out the works and must specify the nature and extent of the operations.

In cases where the local authority believes that the possible danger to members of the public is such that remedial operations are required immediately, it may begin the operations under section 17 without serving the 21 day notice, or if such a notice has been served, within the 21 day notice period. The local authority may sell any material removed from a disused tip in the course of carrying out the operations but must account to the owner for the proceeds, subject to a set off in respect of the costs of carrying out the work.

Implications for CA

Liability for remedial operations would arise only if the local authority were to serve a notice under section 14 or to proceed under 17. An appeal would be available only on the facts of the case, and not on the principle that CA has not contributed to the instability. Any liability of CA would manifest itself, if at all, in the form of a contribution order which would need to be obtained under section 19 from the High Court. The matters which the court would take into account are:

- the extent to which CA has, by act or omission, contributed to the instability of the tip
- the extent to which CA has used it for tipping
- the nature of CA's interest in the land at the date of service of the notice
- whether CA had sold the land in order to avoid *any* liability (under the Act or otherwise)
- the terms of any agreement or statutory provision affecting the rights and obligations of CA and the owner relating to the tip

-section 19(3).

The Restructuring Scheme

CARS 7 transfers the land described to CA together with rights and liabilities attaching to it - *clause 3.* This includes liabilities not otherwise capable of being transferred - *clause 10.1(a).* It would follow that, although a notice under section 14 could be served validly on the previous owners, the liability which might arise under a contribution order made against them would fall upon CA.

PLANNING LEGISLATION

Planning Permission Conditions

It is likely that planning permissions for the tipping of colliery discard will contain a condition requiring the restoration of the tipping site at the conclusion of operations. This will usually be in the form of a requirement to agree a restoration scheme with the mineral planning authority within a stated time. Where operations cease prematurely it may be necessary to agree a revised scheme.

General Permitted Development Order

A restoration scheme may be in existence by virtue of the conditions attached to Part 20 or Part 21 of the GPDO.

Statutory Reviews

Restoration provisions may have been imposed by schemes applied through the Planning and Compensation Act 1991 (Interim Development Orders) or the Environment Act 1995 review system.

Enforcement

In the case of a breach of a condition or failure to implement an agreed scheme, the mineral planning authority may take enforcement action. This is likely to be by way of either a breach of condition notice, from which there is no appeal, or an enforcement notice to which an appeal may lie on any of the grounds specified in section 174 of the Town & Country Planning Act 1990.

ENVIRONMENTAL LEGISLATION

Water Resources Act 1991

CA could be liable to prosecution under section 85 if it were aware that polluting matter were running off a tip into a watercourse and took no action to prevent it.

Clean Air Act 1993

This Act requires that “all practicable means” shall be employed to prevent the combustion of refuse from a mine or quarry and for preventing or minimising the emission of smoke or fumes from burning refuse deposits.

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Appendix B

THE COAL AUTHORITY

TECHNICAL MANAGEMENT OF TIPS--ENGINEERS INSPECTION REPORT

LOCATION COLLIERY	SPOIL HEAP/LAGOON REF	Classified Disused Tip	File
Weather during inspection	Date of last report	Date of this inspection	

Any parts of the tip excluded from this inspection?

	No	Yes	New / worse		No	Yes
1 Are piezometer readings satisfactory				8 Are surface water drains, ditches & culverts satisfactory.		
2 Any excavation since the last inspection			-	9 Are pond overflows adequate & satisfactory		
3 Any slumping, bulging, cracks or fissures indicating movement of tip				10 Are sub-surface drains in tip adequate & satisfactory		
4 Any movement of the foundation				11 Is the quality of effluent satisfactory before discharge		
5 Any erosion or undercutting of slopes.				12 Are MH covers & culvert screens adequate & secure		
6 Any signs of burning.				13 Are fences & notices adequate and satisfactory		
7 Any seepage from the tip.				14 Are drainage tunnel or adit entrances secure.		

15 Work in progress? Yes/No	16 Monitoring equipment secure? Yes/No

17 Comments on all entries in shaded boxes, with grid reference & sketch plan if necessary.

18 Details of any features giving cause for concern.

19 Maintenance or remedial works required (include work necessary to improve effluent quality)

20 Any other remarks

Signature	Countersignature
Date	Date

Appendix C

Comprehensive review check list

The report should have a fly sheet or cover that includes the name; qualifications and signature of the person making the report (see 2.2.3 above).

1. Summary
Conclusions reached regarding security against failure should be summarised.
2. Introduction
Date of inspection(s) and weather conditions, persons present.
3. Site conditions
Describe (a) topography (b) geology and hydrogeology (c) hydrology or refer to these items in previous reports. Confirm that status described previously remains valid or describe changes. If new specialist reports are required then attach as appendices.
4. History
Describe the history of construction and behaviour with reference to changes or events since the time of the previous report. List all previous comprehensive or Regulation 9/12/18 reports available.
5. Mining Subsidence
Attach any revision of the previous subsidence report as an appendix or confirm that there has been no change in circumstances. Comment on the likely effects of mining subsidence.
6. Observations
Describe observations made during the course of the site inspection(s).
7. Site investigations
Describe investigations made since the time of the previous report and comment upon significance. Attach any new reports as appendices.
8. Consequences of failure
Comment on the consequences of failure paying attention to any development near the tip since the previous review. Note that changes could have a bearing on the required minimum factor of safety against failure.
9. Dangerous occurrences
This section need only be included if there have been any dangerous occurrences during the life of the tip. Reference can be made to previous reports and comment is only required on events since the previous review.
10. Opinion on security
Reports must include an opinion on security against failure. If as a result of matters previously assessed in the report, it has been necessary to undertake new stability analyses then these should be attached as an appendix. If not, confirm that previously calculated factors of safety are adequate for the current circumstances.
11. Future action
Describe any maintenance, remedial or improvement works found to be necessary. If appropriate, describe any emergency works undertaken during the

course of the review. Recommend future action for management of the site including frequency of inspection and monitoring requirements.

In addition to potential appendices described above, the report should always include a copy of the latest available site plan (and sections if necessary) annotated to indicate location of features referred to in the text.

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