



The Vale of Glamorgan Council/Cyngor Bro Morgannwg

Contaminated Land

Inspection Strategy

February 2005



VALE OF GLAMORGAN COUNCIL

CONTAMINATED LAND INSPECTION STRATEGY

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**First Prepared by Michael Jenkins - April 2001
Contaminated Land Officer**

**Reviewed by George Cowie
Pollution Control Officer**

Executive Summary

This Contaminated Land Inspection Strategy has been prepared by the Vale of Glamorgan Council to fulfil the legal requirement of Part IIA of the Environmental Protection Act 1990. Part IIA came into force on the 1st July 2001 and provided a new regulatory standard for the identification and remediation of historically contaminated land.

This strategy document updates the previous strategy document, which was first published in April 2002, and details the methodology to be employed by the Vale of Glamorgan Council to implement its duties under Part IIA of The Environmental Protection Act (EPA), 1990. The document reveals the inspection process and sets time scales for completion that will be used by the Vale of Glamorgan Council.

The EPA defines contaminated land as any land where there appears to be a significant risk of significant harm to human health and or controlled waters due to substances in, on or under the land.

In determining whether land is contaminated local authorities, including the Vale of Glamorgan, must use the principle of Pollutant Linkage. That is a link must be found between a source of potential contamination and a receptor, such as a watercourse or future or current users of a site. All three parts of the linkage, that is source, pathway and receptor, must be present before any land can be designated as contaminated.

The Vale of Glamorgan has experienced a varied industrial history from lead mining, through quarrying to shipping at its traditional ports of Barry and Penarth. Quarrying is still an important industry within the region alongside cement production, power generation, chemical manufacture and air travel.

The Vale given its geographical features has long been used as an area of human habitation and this is reflected in the areas rich archaeological heritage as well as ecological and geological significance.

It will be the responsibility of the Pollution Control section of the Council's Environmental Health Department to identify, investigate and, where necessary, secure remediation of sites. When the strategy has been fully implemented a review procedure will be carried out to assess the effectiveness of the document in meeting the local authority's statutory obligations.

Crynodeb Gweithredol

Lluniodd Cyngor Bro Morgannwg y Strategaeth hon ar gyfer Archwilio Tir Halogedig, er mwyn ateb gofynion cyfreithiol o dan Ran IIA Deddf Diogelu'r Amgylchedd 1990. Daeth Rhan IIA i rym ar y 1^{af} o Orffennaf 2001 ac y mae wedi gosod safon reoleiddio newydd ar gyfer nodi ac adfer tir sydd â hanes o gael ei halogi.

Mae'r ddogfen strategol hon yn diweddarar un flaenorol a gyhoeddwyd yn Ebrill 2002, ac yn nodi sut yn union y bydd y Cyngor yn cyflawni ei ddyletswyddau archwilio o dan Ran IIA Deddf Diogelu'r Amgylchedd (DDA) 1990. Mae'n egluro proses archwilio'r Cyngor ac yn gosod amserlen ar gyfer ei chwblhau.

Mae DDA yn diffinio tir halogedig fel unrhyw dir lle mae cryn berygl i iechyd pobl a/neu ddyfroedd rheoledig oherwydd sylweddau sydd ym mherfedd, ar wyneb neu o dan y tir hwnnw.

Er mwyn penderfynu a gafodd darn o dir ei halogi ai peidio, bydd disgwyl i awdurdodau lleol, gan gynnwys Cyngor Bro Morgannwg, ddefnyddio egwyddor 'Cadwyn Llygredd'. Hynny yw, bydd yn rhaid iddynt ddangos bod cysylltiad rhwng man cychwyn posibl y llygredd a'r hyn sy'n cael ei lygru megis sianel ddŵr neu bobl sy'n defnyddio safle neu sy'n debyg o'i ddefnyddio yn y dyfodol. Nid oes hawl galw unrhyw ddarn o dir yn dir halogedig onibai fod y tair dolen gyswllt yn y Gadwyn – sef man cychwyn y llygredd, llwybr y llygredd a'r hyn a gafodd ei lygru - i'w gweld yn amlwg.

Mae gan Fro Morgannwg hanes diwydiannol cyfoethog sy'n cynnwys gweithgareddau mor amrywiol â chloddio am blwm, chwarela, ac adeiladu llongau ym mhorthladdoedd traddodiadol y Barri a Phenarth. Mae chwarela'n ddiwydiant pwysig yn yr ardal o hyd ac felly hefyd y diwydiannau sment, ynni a chemegion a threfnu teithiau awyrennau.

Mae nodweddion daearyddol y Fro wedi ei gwneud yn gartref naturiol i bobl ers cyn cof, ac mae cyfoeth ei threftadaeth archeolegol yn ogystal â'i phwysigrwydd ecolegol a daearegol yn brawf o hyn.

Cangen Rheoli Llygredd adran Iechyd Amgylcheddol y Cyngor a fydd yn gyfrifol am nodi ac archwilio safleoedd, a'u hadfer pan fo angen. Pan fydd y strategaeth wedi ei gweithredu'n llawn, awn ati i asesu pa mor effeithiol a fu'r ddogfen o safbwynt cyflawni cyfrifoldebau statudol y Cyngor.

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CHAPTER 1

INTRODUCTION

INTRODUCTION

This Contaminated Land Strategy has been prepared by the Vale of Glamorgan Council to fulfil its legal obligations under Part II A of the Environmental Protection Act 1990. It details the arrangements and procedures that the council will use to inspect land within the Vale of Glamorgan for contamination.

1.1 The Council's Purpose and Vision

The Vale of Glamorgan is comparatively wealthy and many of the residents enjoy a high standard of living. However, there are areas within the Vale which suffer from economic, environmental and social difficulties such as unemployment, sub-standard housing, low educational achievement, poor health and high levels of crime. The Vale of Glamorgan Council aims to target those areas for improvement while seeking to conserve and enhance the best features of the Vale so as to raise the quality of life for all who live in the area or visit it for work or recreation.

1.2 The Council's Culture

Culture is about people's ideas, beliefs, values and ways of working. These factors determine how things are done within the organisation. Culture is fundamental to how we treat our customers, how we work with our external partners and how as individuals and within groups we work together to achieve our shared aims. In terms of its Core values the Council will:



- Place its customers at the centre of service delivery. **(Customer Focus)**.
- Conduct its business with integrity, ensuring that services are delivered in a transparent and accountable manner which is in the public interest. **(Integrity)**.
- Improve the delivery of its services, seeking innovative and effective ways to enhance quality while increasing their cost effectiveness. **(Continuous Improvement)**.
- Work in partnership with a wide variety of agencies and stakeholders, consulting and involving the community in decision-making and service delivery to ensure ownership of local issues. **(Involvement)**.
- Ensure that everyone in the Vale is able to obtain fair and equal access to services and receives equitable and consistent treatment in their dealings with the Council **(Fairness)**.

1.3 The Council's Environmental Policy

The Vale of Glamorgan Council has a significant impact on the local

environment. This impact arises from providing services (direct effects), for example by staff using resources and creating waste; and from influencing the environmental actions of others (indirect effects), for example by regulating, motivating and raising environmental awareness. The Council recognises its impact on the area and is committed to protecting and enhancing the environment for future generations by acting responsibly and considering environmental, social and economic factors in all decision making processes.

The Council is committed to continual environmental improvement and the Corporate Plan 2003-2008 has an aim to implement an environmental management system across the Council by 2008. This system will identify all significant environmental impacts of the Councils operations and will set objectives and targets reviewed on an annual basis to ensure continual environmental improvements.

In all its activities the Council will;

- Ensure environmental legislation is complied with, and fulfil our statutory environmental responsibilities.
- Reduce the use of natural resources including energy in its own buildings, vehicles and in all Council activities.
- Avoid waste and encourage the conservation, reuse and recycling of resources.
- Prevent environmental pollution from all its activities and influence others to do the same.
- Conserve, restore and enhance the Vale's built and natural environment, keeping it safe, diverse and pleasant.
- Reduce the need for the movement of both people and goods. Where movement is necessary, encourage the use of public transport, cycling and walking.
- Procure goods and services in a socially and environmentally responsible manner.
- Promote understanding and participation in environmental issues through education, information and community consultation.
- Provide appropriate resources and the necessary training for staff to ensure that they are able to fulfil the commitment given in this policy.



1.4 Regulatory Control

1.4.1 The Role of the Vale of Glamorgan Council

The prime regulatory role under Part IIA, Environmental Protection Act 1990 rests with local authorities. The Council now has to complement its existing

functions under statutory nuisance powers and as the Planning Authority, with the following responsibilities under the contaminated land regime:

1. To inspect its area to identify any contaminated land sites,
2. To determine whether a site is contaminated,
3. To act as the enforcing authority for all contaminated land that is not designated as a special site.

As the enforcing authority the Vale of Glamorgan Council has four main tasks regarding contaminated land within its boundaries:

- To establish the “appropriate person(s)” who should bear responsibility for the remediation of the land
- To decide, after consultation, what remediation is required and to ensure it is achieved through agreement, or by serving a remediation notice if agreement is not possible, or through carrying out the work themselves
- To determine who should bear what proportion of the liability for meeting the costs of the work
- To maintain a public register of its regulatory action.

1.4.2 The Role of the Environment Agency

The Environment Agency has specific responsibility for contaminated land sites that have been designated as “special sites”. Generally ‘special sites’ are those that have been previously used by the military, by the nuclear industry or for oil refining. However The Contaminated Land (Wales) Regulations 2001 state that land can be designated as a special site if:

“For the purposes of regulation 2(1)(a), this regulation applies to land where -

controlled waters which are, or are intended to be, used for the supply of drinking water for human consumption are being affected by the land and, as a result, require a treatment process or a change in such a process to be applied to those waters before use, so as to be regarded as wholesome within the meaning of Part III of the Water Industry Act 1991 (water supply);

(b) controlled waters are being affected by the land and, as a result, those waters do not meet or are not likely to meet the criterion for classification applying to the relevant description of waters specified in regulations made under section 82 of the Water Resources Act 1991 (classification of quality of waters); or (c) controlled waters are being affected by the land and -

any of the substances by reason of which the pollution of the waters is being or is likely to be caused falls within any of the families or groups of substances listed in paragraph 1 of Schedule 1 to these Regulations; and

the waters, or any part of the waters, are contained within underground strata which comprise wholly or partly any of the formations of rocks listed in paragraph 2 of Schedule 1 to these Regulations.

1. The following families and groups of substances are listed for the purposes of regulation 3(c)(i) -

organohalogen compounds and substances which may form such compounds in the aquatic environment;

organophosphorus compounds;

organotin compounds;

substances which possess carcinogenic, mutagenic or teratogenic properties in or via the aquatic environment;

mercury and its compounds;

cadmium and its compounds;

mineral oil and other hydrocarbons;

cyanides.

2. The following formations of rocks are listed for the purposes of regulation 3(c)(ii) -

Pleistocene Norwich Crag;

Upper Cretaceous Chalk;

Lower Cretaceous Sandstones;

Upper Jurassic Corallian;

Middle Jurassic Limestones;

Lower Jurassic Cotteswold Sands;

Permo-Triassic Sherwood Sandstone Group;

Upper Permian Magnesian Limestone;

Lower Permian Penrith Sandstone;

Lower Permian Collyhurst Sandstone;

Lower Permian Basal Breccias,

Conglomerates and Sandstones;

Lower Carboniferous Limestones.



and groups of substances are listed for the purposes of regulation 3(c)(i):”

Whilst the Environment Agency is the Regulatory Authority with regards to “Special Sites”, it must be noted that it is the Local Authorities responsibility to identify potential Contaminated Land. Once “Special Site” status has been placed upon a site the Environment Agency then becomes the enforcing authority.

The Environment Agency can also play another role within the Contaminated Land Regime by providing information, specific advice (regarding pollution of controlled waters) or carrying out inspections of potential “Special Sites”.

1.5 What is Contaminated Land?

Section 78A(2) of the Environmental Protection Act defines contaminated land as “ any land which appears to the Local Authority in whose area it is situated to be in such a condition, by reason of substances in, on or under the land that:

- a) Significant harm is being caused or there is a significant possibility of such harm being caused, or
- b) Pollution of controlled waters is being, or is likely to be, caused.

1.6 Pollutant Linkage

In determining whether land is contaminated the Vale of Glamorgan must use the principle of pollutant linkage. This is a linkage between a contaminant and a receptor by means of a pathway.

The National Assembly for Wales has issued a draft guidance document upon contaminated land (Nov 2001). Table A within this document lists receptors as:

1. Human Beings,
2. Any ecological system, or living organism forming part of such a system within a location which is:

Site of Special Scientific Interest (SSSI)

National Nature Reserve

Marine Nature Reserve

Area of Special Protection for Birds

Special Areas of Conservation (SAC) or candidate areas

Special Protection Areas (SPA) or candidate areas

Ramsar Sites

Local Nature Reserves

3. Property in the form of:

Crops

Produce grown at home or on allotments for consumption

Livestock

Wild animals which are subject to shooting or fishing rights

4. Property in the form of buildings, this will include Ancient Monuments

5. Controlled Waters, including:



Territorial Waters

Coastal Waters

Freshwaters (such as rivers, lakes and ponds)

Groundwater and Aquifers

For land to be defined as contaminated land all three elements of the pollutant linkage must be identified and that the pollutant linkage:

- Is resulting in significant harm being caused to the receptor, or
- Presents a significant possibility of such harm or,
- Is resulting in the pollution of controlled waters or,
- Likely to result in such pollution.

1.7 **Risk Assessment**

The definition of contaminated land is based upon the identification of a pollutant linkage between a potentially contaminated site and a receptor to this contamination. If the three components are present, then a "Significant Pollution Linkage" will exist (i.e. source, pathway, receptor are all in place). A risk assessment should then be undertaken to determine the likelihood of harm being caused and the likely nature and extent of the harm caused should the predicted event actually occur.

The Department for Environment, Food and Rural Affairs (Defra) and the Environment Agency published a series of reports that provide a scientifically based framework for the assessment of risks to human health from land contamination, the Contaminated Land Exposure Assessment (CLEA) Model.

By providing a consistent approach to risk assessment, the framework is designed to facilitate the rapid identification of sites that pose a significant risk to human health and help avoid blight on other sites. The framework does not consider risks to other receptors such as plants and animals, buildings, and controlled waters. Where applicable The Vale of Glamorgan will use the CLEA model to assess risk.

Risk is defined as:

- The probability and frequency of a hazard occurring;
- The seriousness of the consequences arising from a hazard occurring;

The widely recognised approach to risk assessment is a four-stage process namely:

1. Hazard identification (which



pollutants are important)

2. Exposure assessment (who might be at risk and how)
3. Toxicity assessment (how serious will be the effects of the pollutants)
4. Risk assessment (assigning values for the likelihood and magnitude of the risks occurring).

An area of land can only be determined contaminated land if a significant risk can be identified. Removing the source of contamination, treating the source of contamination, blocking the pathway or protecting the receptor can mitigate the risks posed by an identified pollutant linkage.

1.8 Strategy Development

1.8.1 Pollution Control Unit

The responsibility for the preparation of this Corporate Strategy Document and for the implementation of all subsequent actions, within the Vale of Glamorgan, will lie with the Pollution Control Section of the Environmental Health Department. This will include the identification and inspection of all potentially contaminated sites as well as securing remediation, where necessary, under Part IIA of the Environmental Protection Act, 1990. This team is part of the Regulatory Services Division contained within the Legal and Regulatory Services Directorate of this authority.

Officers within the Pollution Control Unit have been delegated authority from the Council to undertake all necessary investigations, and where necessary, appropriate enforcement procedures.

1.8.2 Contaminated Land Working Group

The strategy is a corporate document prepared by the Vale of Glamorgan Council to fulfil its duties under Part IIA of the Environmental Protection Act 1990. Although the task of developing and implementing the strategy will lie with the Pollution Control Unit, it is recognised that there are other sections of the Council that will have the necessary skills, knowledge and information essential to ensure that the strategy is developed successfully. It is for this reason the Council has set up a Contaminated Land Working Group. Its participants are detailed in Chapter 10. Cooperation is also maintained between local authorities within the region via the South East Wales Contaminated Land Group.

1.9 Strategic Approach to Contaminated Land Strategy

When carrying out its inspection under Section 78B(1), the local authority should take a strategic approach to the identification of land within its boundaries, which may have been contaminated through past industrial or other use. Statutory guidance notes have been issued to the local authority on how to implement Part IIA. Part B of the Guidance Document requires that a “strategic approach” be adopted when inspecting an area. This approach must then be both described and documented in the published written strategy. The

approach should:

1. Be rational, ordered and efficient;
2. Be proportionate to the seriousness of any actual or potential risk;
3. Seek to ensure that the most pressing and serious problems are located first;



4. Ensure that resources are concentrated on investigating areas where the authority is most likely to identify contaminated land, and;
5. Ensure that the Local Authority efficiently identifies requirements for the detailed inspection of particular areas of land.

During the development of this strategic approach the local authority should reflect local circumstances. In particular it should consider:

1. Any available evidence that causes significant harm or pollution of controlled waters is actually being caused;
2. The extent to which any receptor (which is either listed in Table A in Chapter A of the NAW (Nov 2001) guidance document on contaminated land, or is controlled waters) is likely to be found in any of the different parts of the authority's area;
3. The extent to which any of these receptors is likely to be exposed to a contaminant;
4. The extent to which information on land contamination is already available;
5. The history, scale and nature of industrial or other activities which may have contaminated the land;
6. The nature and timing of post redevelopment;
7. The extent to which remedial action has already been taken by the authority or others to deal with land contamination problems or is likely to be taken as part of an impending redevelopment, and;
8. The extent to which other regulatory authorities are likely to be considering the possibility of harm being caused to particular receptors or the likelihood of any pollution of controlled waters being caused.

The Contaminated Land Working Group, which represents all the interested sections within the Vale of Glamorgan Council, plays a vital role in ensuring that this strategic approach is both adopted and maintained in respect of the authority's Contaminated Land Inspection Strategy.

1.10 Consultation in Preparation of this Strategy

In addition to the internal consultation via the Contaminated Land Working Group it will also be important that regular external contact is maintained with interested parties such as the:

- Environment Agency (E.A.)
- Countryside Council for Wales (CCW)
- CADW
- National Assembly for Wales
- Welsh Development Agency (WDA)
- Glamorgan Wildlife Trust (GWT)

The Vale of Glamorgan Council is committed to involving local people in its decision-making processes. Comments and contributions have been and will continue to be sought from individuals, groups and businesses who may be affected by the this regime.

1.11 Objectives of the Strategy

With the production of this document, the Council is fulfilling its statutory duty to prepare a Contaminated Land Inspection Strategy.

The document is a statement, by the Vale of Glamorgan Council in which it lists:

1. The manner in which it intends to carry out its inspection duties;
2. The method by which it meets the criteria listed in Part IIA of the EPA 1990;
3. Its actions in relation to all the stakeholders involved and affected by the production and implementation of this strategy;
4. Its commitment to providing information to the Environment Agency for the preparation of the state of contaminated land report. This information will be provided on standard Environment Agency forms.

1.12 Interaction with Other Legislative Regimes

Additionally to the powers under Part IIA, Environmental Protection Act 1990 there are a number of other statutory regimes that can deal with land contamination. The operation of these regimes can overlap with the operation of Part IIA, but they are dependent upon the source of contamination and the current, proposed or historical use of the land. The Council will endeavour to ensure that any land contamination within its boundaries is dealt with under the most appropriate measure to achieve a satisfactory level of remediation to the land. The other statutory regimes are summarised below:

1.12.1 Town and Country Planning Act 1990



Planning law is essentially focused on future land use, and all decisions regarding planning consent and conditions are taken with that future use in mind. Local Authorities can take contamination into account during determination of a planning application and impose conditions requiring site investigation and the specification of suitable remedial measures.

References to contaminated land are contained in Planning Guidance (Wales) Planning Policy April 1999,

which is supplemented by Technical Advice Notes (Wales) (TAN(W)s). The Vale of Glamorgan Council has a Unitary Development Plan Deposit Draft 1998, which includes the following policies ENV 24 Contaminated Land and Unstable Land and ENV 27 Protection of Environmental Quality.

It will thus be the potential developer who has the task of remediating the contamination as part of the development and who must therefore take such costs into account when attempting to purchase and develop any piece of land.

1.12.2 Building Control Regulations 1991

Under the provisions of the Building Regulations 1991 the Council can require suitable protection to new buildings and their future occupiers from the effects of land contamination. Building control inspectors follow the guidelines laid down in Approved Document Part C that deals with site preparation and resistance to moisture when considering building applications. When any new development is proposed, investigation and remediation will, under normal circumstances, be dealt with through the Development Control and Building Control process and not via the Part IIA regime.

1.12.3 Integrated Pollution Control and Pollution Prevention Control (IPC & PPC)

Integrated Pollution Control (IPC) is regulatory system of licensing for the most heavily polluting industrial processes, which is enforced by the Environment Agency. The IPC system is contained in Part I of the Environmental Protection Act 1990. The Act specifically states that land contamination relating to IPC regulated premises will continue to be dealt with under Part I of the Environmental Protection Act 1990 not the new Part IIA Contaminated land regime.

Integrated Pollution Prevention and Control (IPPC) is a system, introduced by the Pollution Prevention and Control Act 1999 in response to European Directive (96/91/EEC) which supersedes Part I of the Environmental Protection Act 1990. Its essential components are the same as IPC, although the new

system will be more wide ranging in terms of industries covered and of environmental impacts to be taken into account when issuing permits, such as site restoration. In order to meet these requirements, operators will be required to submit site condition reports when applying for a permit under IPPC and when a site closes. Any contamination during the period of operation as a result of industrial activities on site will need to be remedied by the operator under the IPPC system and not Part IIA of the Environmental Protection Act 1990.

1.12.4 Waste Management Licensing – Environmental Protection Act 1990, Part II

The waste management licensing regime contained in Part II of the Environmental Protection Act 1990 deals with the operation of waste related processes. The system is enforced by the Environment Agency and places controls on the handling, treatment and disposal of waste through a licensing regime. Contamination can result from badly managed or unregulated waste management activities. Where a site has a current Waste Management Licence, the new contaminated land regime will not apply. However, when harm or pollution is attributable to a cause other than a breach of the site licence then Part IIA will apply.

1.12.5 Statutory Nuisance – Environmental Protection Act Part III

Statutory notices relevant to contaminated land include “any premises in such a state to be prejudicial to health or a nuisance” or “any accumulation or deposit which is prejudicial to health or a nuisance”. Until the arrival of Part IIA, Part III was the main regulatory mechanism for dealing with the remediation of contaminated land. However, Sch.22, para.89 of the Environment Act 1995 states that no land in a “contaminated state” can now be a statutory nuisance.

1.12.6 Water Resources Act 1991



Contaminated land can result in pollution of surface waters or groundwater and the Water Resources Act 1991 made it a criminal offence to cause, or unknowingly permit water pollution. Under Section 161 of the WRA 1991 the Environment Agency, who regulate the Act, have powers to require action to be taken to prevent water pollution. Serving a works notice, which specifies the work to be undertaken, and a deadline for completion usually achieves this.

There is a potential for overlap between the WRA 1991 and the Part IIA regime and as such the Environment Agency have obtained new powers for works notices under the “Anti-Pollution Works Regulations 1999”; these set out how these powers will be used in relation to contaminated land.

1.12.7 Radioactive Substances Legislation

Radioactive substances and their effects are exempted from Part IIA and are dealt with separately by the Environment Agency.

1.12.8 Health and Safety at Work Act 1974

Health and Safety issues may arise on any site where workers may be at risk of exposure to contaminants. In this case the relevant body under Part IIA of the EPA 1990 should liaise with the Health and Safety Executive or the local authority to prevent duplication and to ensure that the appropriate control system is used to deal with the problem.

1.12.9 Control of Major Accident Hazards Regulations 1999

The above regulations require action plans to be in place in relation to dangerous substances stored on sites, providing for the steps to be taken in the event of an escape. Again liaison is required between the relevant authority under Part IIA the Health and Safety Executive and the Local Authority Emergency Planners.

1.12.10 Food and Environmental Protection Act 1985

Authorities using Part IIA powers are to liaise with the Food Standards Agency and Ministry of Agriculture, Fisheries and Food if an overlap occurs between the two regimes.

1.12.11 Landfill Tax

The Finance Act 1996 introduced a tax on the disposal of wastes, including those arising from the remediation and reclamation of land. However, an exemption from this tax can be obtained if material is being removed from contaminated land to prevent harm or redevelop the land. An exemption certificate has to be received from HM Customs and Excise. The exemption will not apply to anyone cleaning up a site as part of an enforcement action under Part IIA of the EPA 1990. It is intended to be a fiscal incentive to voluntary clean up of contaminated sites (Hellawell 2000).

1.12.12 WDA Land Reclamation Programme

Whilst not strictly a legislative regime the Vale of Glamorgan Council aims to work in partnership with other organisations and their programmes, where there is the potential for overlap with the Authorities responsibilities under Part IIA of the EPA, 1990. Of particular relevance is the WDA Land Reclamation Programme, which is available to both the Public and Private sectors, where the Agency's objective is to secure beneficial reuse of derelict land through reclamation. This task is seen by the Agency as central to the regeneration of the Welsh economy.

For grant purposes, "derelict land" is defined as "land so damaged by past industrial or other activity that it is incapable of beneficial use without treatment". The site must therefore have had some type of developmetn previously which

has ceased and is in need of cleaning or reclamation before any further development or use can take place.

The grant does not extend to sites that have dereliction of natural origin, or works that are covered by enforcement restoration conditions or statutory requirements (including remediation notices). The WDA will, however, consider grant aiding any additional eligible works necessary to achieve complete reclamation of a contaminated site for a defined new use. The WDA evaluates all applications with a view to local needs, value for money, priority of the project and budget availability for such projects in the financial year in which the grant is made.

CHAPTER 2

CHARACTERISTICS OF THE VALE OF GLAMORGAN

CHARACTERISTICS OF THE VALE OF GLAMORGAM

2.1 Geographical Location

Situated in the South-eastern corner of Wales, the Vale of Glamorgan stretches 21 miles (33.8km) along the coast from Penarth to Monkfish at its Southern edge and generally follows the route of the M4 motorway between Cardiff and Bridgend to the north.

2.2 Area Description

The Vale of Glamorgan is an area of rich, fertile agricultural land lying between the coastline in the south with its beaches and limestone cliffs and the hills and woodlands to the north. The principal towns of the Vale are Barry, Penarth, Cowbridge and Llantwit Major. The region is also home to Cardiff International Airport, which is situated at Rhoose, 12 miles from Cardiff.



2.3 Size

The Vale of Glamorgan covers an area of approximately 297.8-km (115 square miles).

2.4 Population

At the 2001 census the population of the Vale of Glamorgan was counted at 119281. This compares to the 1991 census figure of 115,040. The majority of the Vale's population is located within its four principal towns.

2.5 History of the Vale

The earliest evidence of human habitation within the Vale of Glamorgan dates from the Bronze Age where the early settlements were located along the estuaries of the Ely and Ogmore rivers. Gradually the Bronze Age people moved inland seeking better land and more resources. Settlements then began to occur within the Vale probably due to the fertile soils, good drainage and clear running water within the region. With the Celtic invasion of Britain South Wales moved into the Iron Age. By 50 BC Silures the dominant tribe in South Wales had become competent farmers introducing ox-drawn ploughs, iron farm implements and weaponry, the techniques of grazing cattle and sheep and the use of manure for fertilising the land. In response to this development of an agrarian society the diet of the Celts was predominately milk, cheese and fish.

The Romans arrived in Britain in AD 43 reaching South Wales in AD 75. Camps were established at Caerleon, Newport and Cardiff, linked by a road, which bisected the Vale. The 2nd Augustine Legion, who occupied a camp at

Cowbridge, left Wales in the 4th Century AD leaving the Vale open to external influence. For the next 500-600 years the Saxons, Irish and Vikings invaded the region.

In 1093 Robert Fitzhamon a Norman knight from Bristol, launched a sea-borne invasion of the Vale, quickly overrunning the area and dividing it amongst his followers. The area experienced general unrest between the English and the Welsh for the next 400 years. Between 1536-1543 Henry VIII passed the Acts of Union which brought into existence the County of Glamorgan.

The area was to be modelled on an English Shire with a Sheriff and a Justice of the Peace in place to govern and administer justice within the County. The area underwent a period of unrest during the mid 17th Century due to the English Civil War when the area generally favoured the Royalist cause.

With the 18th Century, the rise of the powerful landowner occurred with a small number of individuals (e.g. Marquis of Bute) dominating the Vale. This trend continued into the 19th Century when agriculture was still the driving force behind the area's economy. By the mid 19th Century Victorian society had led to a growth of the middle classes who, with the development of the rail network began to use the Vale as commuter zone. This trend continued into the 20th Century.

2.6 The Vale of Glamorgan's Industrial History

Characteristically the Vale is essentially rural in nature and, as such, agriculture has long been the dominant economic force within the region. Industry has influenced the Vale however, most notably:

2.6.1 Mining

Lying outside the South Wales Coalfield the Vale has no history of coal mining within its boundaries. The mining of iron ore was carried out within the Vale on a relatively small scale. The mine at Wenvoe, is certainly the largest iron ore mine within the Vale. Today the mine has been fully incorporated into the Wenvoe Quarry.

Every County in Wales has a history of lead mining. In the Vale the lead mining industry dominated those areas that are today regarded as being rural. The lead mine at St.Hilary is one such example, today this mine is totally obscured by woodland. Mining was started in the Vale during the Roman occupation and continued until the late 19th Century. The Tewgoed mine near Llangan was the largest lead mine in the Vale and during the early 18th Century supplied most of the lead produced in Wales. Between 1729 and 1743 113 tonnes of lead was produced in Wales with most of it coming from Tewgoed. Aberthaw and Cardiff were the main export points of the lead.

During the 19th Century a succession of companies were formed to work the mine, in 1852 a company under the name Penline Court reopened the mine. The venture was not a success. The Glamorgan Mining Company then reopened the mine between 1877 - 1878 the mine produced 141 tonnes and led

to the Glamorgan Consolidated Lead Mining Company taking over the mine. The mine finally closed in 1880 after around £30,000 of capital had been spent to keep it in operation. Often silver was mined within the Vale alongside lead, the Tewgoed mine is one such example of a combined lead and silver mining operation within the Vale.

2.6.2 Shipping

Barry Port

The town of Barry grew in response to the Iron and Coal industries of the Merthyr, Cynon and Rhondda valleys. The village of Barry consisted of less than 100 inhabitants during the early part of the 19th Century, by 1891 it boasted a population of 13, 278. Barry Docks opened in 1889 and quickly became famous for the exportation of coal. An Act of Parliament in 1865 sanctioned the construction of a railway from Peterston Super Ely to Cadoxton via Barry and Sully. Another Act followed in 1866 which authorised adjustments to the Act. In the same year another Act was created which granted permission for the conversion of the Barry Island estuary into a tidal harbour. Preliminary work was undertaken upon both schemes, however, financial crisis led to both schemes being dropped. An attempt to revive the schemes occurred in 1877, however, a lack of capital led to its collapse.



Barry Docks were built as a result of the congestion, delays and high charges that were features of Cardiff Docks. The Marquis of Bute, owner of the Cardiff Docks promised to expand the site in order to increase capacity, however in 1882 he threatened to increase shipping levies upon the coal owners. In retaliation, the coal owners decided to build their own docks. Barry was decided upon as a suitable venue,

parliamentary approval was given in 1884 and the first dock was opened in 1889. A second dock was opened in 1898 it was constructed, largely due to the efforts of David Davies of Llandinam mine. Today, Barry Docks is owned by Associated British Ports.

Penarth Dock

Until the mid 19th century Penarth was a relatively small village. By 1850 industrialists were looking for alternative port outlets to Cardiff. In 1853 a scheme was proposed to enclose Penarth Bay from Penarth Head to Cardiff Docks. The scheme involved diverting the Taff to join the Ely and constructing a tunnel from Cogan Pill to Sully to take the surplus water. The scheme was abandoned and in 1859 construction began on Penarth Harbour. The site was opened in 1865, 21 acres in size it was extended by 5 acres in 1884.

2.6.3 Quarrying

Given the diverse geology of the Vale it is not surprising that the region has a history of quite intense quarrying. Many of the quarries used in the past two hundred years are now disused. Primarily Jurassic Limestone and Carboniferous Limestone are the two minerals that are being quarried within the Vale. Many of the larger sites are no longer in use, for example, Rhoose Quarry closed in 1980, today the site is occupied by Cardiff Airport Business Park. Other large quarries no longer in use within the Vale include Lliswerry Quarry, St. Andrews Quarry and Pantyfynton Quarry.

Currently the Vale has eight quarries active within its boundaries. These are located at:

- Ruthin
- Longwood
- Aberthaw
- Wenvoe
- Bonvilston
- Ewenny
- Pant
- Litalun



2.6.4 Cement Production

The manufacture of cement has been an important industry within the Vale since the opening of Aberthaw Cement Works in 1916. The Portland Cement and Lime Factory at Cosmeston near Penarth was active until the late 1960's when it closed. The cement works at Rhoose closed in the late 1980's. Today cement production is concentrated at the Blue Circle Industries works near Aberthaw.

2.6.5 Modern Industries

With the decline of the Vale's traditional industries, a number of other sources of employment have developed in their place. At Rhoose is a large international airport. Alternatively at St. Athan there exists an RAF base that opened in 1938. At Aberthaw is located a Power Station that generates approximately 4500 Gwh of electricity. Within Barry is located the chemical complex. This site is home to Zeon Chemicals, AES (Barry Power Station), Dow Chemicals, Dow Corning, European Vinyls, Borden Chemicals, Cabot Carbon and Laporte.

2.7 Current Land Use Characteristics

2.7.1 The Built Environment

The Vale of Glamorgan possesses a varied townscape. The four principal settlements within the Vale are:

2.7.1.1 Barry

Barry is typical of many maritime industrial towns with its oldest section focused on the dock area. New development has largely taken place on the periphery of this original area. The older areas of Barry are characterised by a range of residential terraces, distinctly Victorian and Edwardian in style. Barry's most impressive Victorian building, the Docks Office is somewhat isolated from the town by the railway line that carries both commercial and passenger traffic.

2.7.1.2 Penarth

Penarth differs from Barry in that the docks and its associated housing were not the dominant factor in the development of the town. More important was the suburbanisation of Penarth in the mid 19th Century by the middle classes who regularly commuted into Cardiff. The northern section of Penarth is similar to Barry, in that it is characterised by Victorian terrace housing situated around the docks and the town centre.

The Southern and Western areas of the town are represented by semi-detached Victorian residences, which were built during the period of Penarth's popularity as a holiday resort. It was during this time that the Pier and Esplanade were built.

2.7.1.3 Cowbridge

Cowbridge was established as a settlement prior to the industrial revolution of the mid 18th Century. The town served as the principal market town for the surrounding area from the 17th Century through to the 19th Century. The core of Cowbridge is largely 18th Century in character representing a period of great prosperity within the town. Cowbridge has developed along a medieval pattern, with the High Street as its centre with the focal points being the Town Hall, Church and the market.

2.7.1.4 Llantwit Major

Evidence suggests that a settlement had existed in the vicinity of Llantwit Major since the Iron Age. Llantwit Major has a medieval style street pattern and has numerous buildings of architectural and historic interest. The core of the town is composed of narrow winding roads and buildings of medieval origin.



2.7.1.5 Rural Villages

The rural villages of the Vale display characteristics common to such villages throughout the Country. Many still retain a degree of historic character, but largely due to the pressure of the 20th Century the settlements have had to expand to accommodate new housing.

2.7.2 Listed Buildings and Ancient Monuments

The countryside within the Vale with its nucleated villages, is well known for its historic character. The surrounding agricultural landscape is also rich in hedgerows, trees and small woodlands, many of which are of a considerable age. Historically, the Vale has been an important farming area and it is this element that has led to its occupation by a number of different peoples throughout history. Within the Vale there is archaeological evidence to suggest prehistoric occupation of the region, Celtic and Roman influences and then Norman occupation throughout the medieval period.

During the middle ages, the villages within the Vale developed their style of agricultural vernacular architecture and ecclesiastical buildings which have survived until the present day. The entry roads into the villages are often sunken and hedge-lined, whilst within the settlements stone walls are a prominent feature.



Other elements which are essential to the distinctive vernacular tradition and character of the villages, are rural buildings (based upon white washed walls, small windows and high pitched roofs) distinctive materials of construction, open spaces and mature floral species. The ancient settlement of Llancarfan is a typical example with the village being constructed upon the site of an Iron Age hillfort. The church forms the centre of the village with its surrounding housing. This pattern suggests the strong monastic, Anglo-Norman influence present with the Vale.

There are over 600 listed buildings within the Vale and together with other sites of archaeological importance they record the development of the Vale from prehistoric times through the Victorian era, to the modern day.

A list of Ancient Monuments within the Vale can be found within Appendix 3.

2.7.3 Natural Environment

There are over 500 sites of nature conservation interest within the Vale of Glamorgan. The sites vary from those of International Importance such as possible Special Areas of Conservation (pSACs) to those of local value such as Local Nature Reserves (LNRs) and candidate Sites of Importance for Nature Conservation (cSINCs). The Vale includes a stretch of designated Heritage Coastline, the Glamorgan Heritage Coast, as well as country parks, common land and nature trails. The complete list of all sites of nature conservation within the Vale can be found in Appendix 1.

2.7.3.1 International Statutory Designated Sites

Internationally designated sites in the UK are all required to be notified as SSSIs and therefore receive the highest level of statutory protection against potential damage or harm.

The Severn Estuary

The Severn Estuary comprises a large, classic, funnel-shaped estuary of a type which is unique in Britain and very rare world-wide. It lies at the mouth of four major lowland rivers and innumerable lesser rivers and streams, and has the second largest tidal range in the world. It lies in a diverse geological context exhibiting a wide range of geomorphological features, especially sedimentary deposits. It supports a very wide range of habitats and species, including numerous national and international rarities.

The estuary is internationally important for its wintering wildfowl and waders, and lies on a major bird migration route. The estuary also supports nationally important populations of migratory fish, including the rare and declining allis shad, twaite shad and river and sea lampreys. Otters occupy many parts of the estuary.

The range of habitats represented includes intertidal mud flats, sand banks, rocky platforms and saltmarsh, as well as sea cliffs and coastal grasslands. Large beds of eelgrass (*Zostera* spp) and tubeworm reefs occur offshore and there is a wide range of benthic communities.

The international significance of the Severn Estuary is recognised through its designation as a Ramsar Site and as a SPA under the EC Birds Directive. The estuary is also a Possible SAC under the EC Habitats Directive, which covers the whole marine environment, not just the coastal strip. Only a comparatively small length of the Vale coastline falls within the designated parts of the estuary, comprising the section of coast between the mouth of the River Ely and Lavernock Point. This section falls within the Severn Estuary SSSI, SPA, Ramsar Site and Possible SAC.

Dunraven Bay

Part of the Southerndown Coast SSSI, Dunraven Bay has been recommended as a possible Special Area of Conservation as one of best areas in the UK for *Rumex rupestris*, shore dock, thought to be one of the rarest docks, and one of the rarest plants in Europe. There are only a few other sites in the UK, in Wales or Southwest England.

2.7.3.2 National Statutory Designated Sites

These sites comprise Sites of Special Scientific Interest (SSSIs) and National Nature Reserves (NNRs) designated under the Wildlife & Countryside Act. They are afforded the highest level of statutory protection against potential damage and harm. In addition to the Severn Estuary SSSI mentioned above the Vale contains a further 21 SSSIs, either wholly or in part, although some of these are notified for their geological interest rather than for nature conservation reasons.

2.7.3.3 Local Nature Reserves (LNRs)

LNRs are statutory sites which are designated and protected under the National Parks & Access to the Countryside Acts, 1949 for a combination of nature

conservation, amenity and recreational reasons, especially where they occur in situations which can be readily accessed and enjoyed by the local community. LNRs must lie within the jurisdiction of the local authority, either through ownership, lease or a legal agreement with the landowner.

2.7.3.4 Non-statutory Nature Reserves

Nature reserves and conservation sites may also be designated by a range of statutory agencies, volunteer organisations and private individuals, usually on land which is either owned or leased by the body concerned. Examples in the Vale include Wildlife Trust of South and West Wales Reserves and Woodland Trust Reserves.

2.7.3.5 Sites of Importance for Nature Conservation (SINCs)

SINCs (also known as 'Wildlife Sites') are non-statutory sites, which are designated by local authorities purely on nature conservation grounds and are considered to be significant in the county or regional context either because of the habitats present or the species they support.

Following a project commissioned by VGC in 1998, some 170 sites have been identified as candidate SINCs, mostly on habitat grounds. These include long sections of the coast not identified as biological SSSIs, many areas of semi-improved neutral grassland and marshy grassland, ancient semi-natural woodlands, small areas of heathland, bog, duneland and maritime grasslands, as well as ponds, lakes and river systems. Interim criteria have been prepared for the assessment of these sites. A few sites in the Vale have been identified to date on grounds of species and it is anticipated that others will be identified in the future.

2.7.3.6 Heritage Coast

Heritage Coasts are a non-statutory designation applied by local planning authorities in liaison with CCW, in order to protect and preserve the best remaining stretches of undeveloped coastline in Britain.

The Glamorgan Heritage Coast was designated in 1973. Almost all of it lies within the Vale, comprising about 20km of the western part of the Vale coastline extending approximately from Ogmere to Aberthaw. The designation extends from the MLWM inland for a distance of between 1 and 1.5km, covering a land area of about 30km² in total.



2.7.3.7 Country Parks, Parks and Gardens

Country Parks are primarily designated on amenity, recreation and landscape grounds, rather than for nature conservation, although this may also be a

reason for designation. Two such sites occur in the Vale: Porthkerry Country Park and Cosmeston Lakes Country Park.

Parks and gardens, which may retain remnants of historic landscape features and their ecological characteristics, include Dyffryn Gardens and Dunraven Park and Gardens.

2.7.3.8 Highway Verge Conservation Zones

Highway Verge Conservation Zones are roadside verges, which have been designated for their botanical interest and are managed specifically for biodiversity. More than 40 Highway Verge Conservation Zones are designated in the Vale.

2.7.3.9 Common Land

Common lands represent a historical class of land use dating from previous centuries. They originally comprised areas of land where all villagers could jointly graze their livestock, or use products from the land (e.g. timber, peat, turf etc) 'in common' and irrespective of land-ownership.

The use of common land is acknowledged to have changed greatly from its original purpose and they are now broadly recognised as an important resource for amenity and recreation, nature conservation and landscape issues.

2.7.3.10 Woodland and Tree Preservation Orders

Woodland and Tree Preservation Orders (TPOs) are normally designated primarily for landscape or amenity reasons, but may also secondarily include reasons of nature conservation interest. There are over 200 Tree Preservation Orders in the Vale covering large tracts of woodland as well as individual and groups of trees. Additionally, trees within the Vale's 36 Conservation Areas have statutory protection.

2.8 Geology of the Vale of Glamorgan

The geological history of the Vale is complicated. Rocks within the area demonstrate the presence of a diverse range of climates including deserts, tropical seas, jungles and swamps. Geologically, the Vale of Glamorgan is formed entirely of sedimentary rocks of Palaeozoic and Mesozoic ages, with large areas overlain by drift deposits representing the Southern most extent of glacial activity. The region lies entirely outside the South Wales coalfield.

2.8.1 Geological Strata present in the Area

2.8.1.1 Devonian

The oldest rocks visible within the Vale are from the Devonian period (395-345 million years ago) and consist mainly of Old Red Sandstone to the north-east of Cowbridge, exposed in the core of the Cowbridge - Cardiff anticline near Michaelston le Pit.

2.8.1.2 Carboniferous

Much of the higher ground in the Vale is formed by Limestone from the Carboniferous Age (345-280 million years ago). The northern outcrop represents the southern boundary of the coalfield syncline and the central outcrops form the flanks of the Cowbridge - Cardiff anticline. The limestone contains dolomites in patches (i.e. contains up to 45% Magnesium Carbonate) and in other restricted areas is composed of extremely pure Calcium Carbonate, a valuable resource for cement manufacture.

2.8.1.3 Triassic

Mesozoic rocks within the Vale are represented by Triassic Red and Green Marls and Sandstone's. These are deposits from the Triassic Period (225 - 195 million years ago) which are dominant within the eastern part of the Vale.

2.8.1.4 Jurassic

The Triassic marls and sandstone's gradually grade upwards into thick sequences of Jurassic (Liassic) muddy limestone's with interbedded Calcareous Shale's. These form the majority of the Southern part of the Vale and are exposed in the distinctive cliff areas of the Heritage Coast from Summerhouse Point westwards.

2.8.1.5 Recent

Much of the Northern Vale of Glamorgan is covered to a depth exceeding 15 metres in places by glacial deposits from the last Ice Age, containing erratics of sandstone's, flints and igneous rocks from as far away as Scotland. Little is known of the detailed composition of the drift material, although research has identified potential resources of sand in kames and eskers.

2.8.2 The Geological History of the Vale of Glamorgan

380 million years ago, the area was situated on a large mainly desert landmass with hot and arid environmental conditions. These are characterised by the Red Sandstone's which were deposited during this period.



From around 345 million years ago, a warm, shallow sea covered the Vale. It was during this era that the limestone beds were laid down. Over a period of several million years, the sea gradually receded and the area became covered alternatively by tropical jungle, mangrove swamp and shallow seas.

A period of massive earth movements followed, in which the existing rock strata were uplifted to form mountains, which gradually eroded to form a hilly landscape. The area then became submerged beneath the sea again. It was during this aquatic period that the red and green marls and sandstones were deposited. A period of gentle uplift then followed in which the Jurassic limestones and shales were deposited.

Following the end of the Pleistocene epoch glacial deposits were left along much of the Northern Vale by the retreating glaciers. A great deal of this rock originated from outside the area and much of it can still be seen today.

2.8.3 Radon

Radon is a naturally occurring radioactive gas, with no colour taste or odour found, in soil and rocks. High levels are found in certain areas of the country but locally there can be wide variations even between houses in the same street. In open spaces radon is quickly diluted and dispersed into the air.

Potentially, in a few homes, high concentrations could build up as radon from the underlying soil enters through cracks in floors and walls, and gaps around service pipes. Factors such as the method of construction and the degree of ventilation within the building can greatly influence the concentration of radon gas that accumulates.

After smoking, radon is the second largest cause of lung cancer. Health studies have shown that people exposed to high levels of radon are, at least, 10 times more likely to get lung cancer, even more so if they are smokers. To measure radon in the home, the National Radiological Protection Board (NRPB) has devised a safe, simple and confidential test.

Radon is measured in units of becquerels per cubic metre of air (Bq m^{-3}). The average concentration in UK homes is 20 Bq m^{-3} and the Action Level is 200 Bq m^{-3} , averaged over a year. Above the Action Level householders are advised to take action to reduce radon to as low a level as is practical.

Radon affected areas, where more than 1 per cent of homes are affected above the Action Level, were defined in the UK in 1990. Within the Vale of Glamorgan there are few areas not considered at risk. On average, the Vale is recording values of about 6% above the national action level. In areas where "hot spots" are thought to exist this figure can be as high as 10%.

The NRPB's website, www.nrpb.org, contains information about radon, including radon-affected area maps, testing kits and advice on how levels in the home can be reduced.

The Building Regulations require that in risk areas radon preventative measures are incorporated into new houses as they are built. Public and private initiatives have involved testing nearly half a million existing homes across the UK, with recommendations that remedial measures are carried out if radon levels are found to be above the Action Level.

For information regarding the building of new houses and extensions to existing houses in radon-affected areas you should contact the Council's Building Control Department on 01446 704600.

For information on remedial measures for existing houses in radon-affected areas you should contact the Council's Private Sector Housing Department on 01446 709814.

2.8.4 Hydrogeology

The main geological structure dominating the area is the Cardiff - Cowbridge anticline. The oldest rocks brought to the surface by this structure are Devonian Old Red Sandstone's, which outcrop at Stalling Down on the East of Cowbridge and which the river Ely cuts through below Pontyclun. They are classed as a minor aquifer, having a relatively low permeability but usable for local water abstraction. Inter granular flow is limited through the hard cemented sandstone's, with groundwater movement mainly taking place through fissures. The lower Carboniferous limestone's were deposited over the old red sandstone. Carboniferous limestone forms a major aquifer, with dominant karstic features of well developed fissures and fractures, with swallow holes and the re-emergence of groundwater through large springs which are used for public water supply as at the Schwyll Springs near Ogmore.

Groundwater flow and recharge through such a system is very rapid, with little opportunity for attenuation of contaminants, making the aquifer very vulnerable to pollution events.

The irregular structure and inter connection of the fissures also makes prediction of impacts very difficult. The Carboniferous limestone, outcrops in a generally east-west line across the middle of the district from Dinas Powys, through Cowbridge to Ogmore, also extending north from Cowbridge up through Craig Penllyn to the M4. Smaller outcrops are also evident in Barry and Sully.

Deposited in relatively horizontal beds across the eroded surface of this folded and heavily faulted structure are mudstones, sandstone's and shale's of Triassic and Jurassic age. Within the sequence, the Mercia Mudstone Group comprise Triassic sediments in the form of conglomerates, breccias and sandstone's which pass laterally into siltstones and massive red mudstones. These are mainly evident in the area of Barry, Sully and Dinas Powys. The Blue Anchor formation is typically a green mudstone, often thinly laminated and interbedded with dolomitic limestones, outcropping in Penarth. It in turn is overlain by the Penarth Group of marine shales with subordinate sandstone's and limestones. Although the shale's and mudstones have generally very low permeability with regard to groundwater resources, the conglomerates, sandstone and limestone units can support local supplies and are classified as minor aquifers. At Sully the conglomerates attain major aquifer status where they overlie, and are in hydraulic continuity with the Carboniferous limestone.

The youngest bedrock in the area, of Jurassic age, is the lower lias, comprising a sequence of interbedded limestone's and mudstones, which cover the surface of the Southern half of the district. The lower lias is designated a minor aquifer.

The shale's are of low permeability but the limestone yields sufficient groundwater to support small local supplies.

Superimposed on the "solid geology" are superficial "drift" deposits of quaternary age. There are some glacial hills and head deposits in the north part of the district. However, most of the drift deposits are alluvial, occurring for example along the Cadoxton river (Cog Moors north of Sully), the Ely Valley (Peterston Moor) and the River Thaw (Newton Moor north of Cowbridge and Flemington Moor to the south) with alluvial deposits and storm gravel beach deposits at Aberthaw. The alluvium typically consists of silty clays, sands and gravels with some bands of peat.

2.9 Water Resource Protection

There are five source protection zones within the Vale of Glamorgan. The five zones are centred upon:

- Ogmore
- Dinas Powys
- Llansannor
- Llangan
- North of Treoes

Source Protection Zones (SPZ's) provide an indication of the risk to groundwater supplies from potentially polluting activities. Generally the closer the activity or release is to a groundwater source the greater the risk. Specifically, the pollution threat depends on whether the polluting activity is located within the catchment of that source and the travel time for contaminants within the groundwater to reach the source.

The SPZ related purely to groundwater flow below the water table, however no account is taken of the depth to groundwater, nature of overlying soils and rock which all have an important influence upon groundwater vulnerability.

2.9.1 Groundwater Supplies

The Environment Agency has subdivided groundwater source catchments into four areas:

Zone I - Inner Protection Zone

This zone is defined by a travel time of 50 days or less from any point within the zone at or below the water table. It is based principally upon biological decay and is designed to protect against toxic chemicals and water borne chemicals.

Zone II - Outer Protection Zone

This zone is defined by a 400 day travel time. The travel time is derived from the minimum time required to provide delay, dilution and attenuation of slowly degrading pollutants.

Zone III - Total Catchment

This zone is defined as the total area needed to support the abstraction or discharge from the protected groundwater source.

Zone of Special Interest

For some groundwater sources an additional “zone of interest” may be defined. These zones are located around non-aquifers for example, where local conditions mean that potentially polluting activities could impact upon groundwater sources.

2.9.2 Drinking Water

Within the Vale drinking water is supplied by both Public and Private means. Water companies supply, through public means, water that has been extracted from rivers, streams, reservoirs and groundwater. Properties not on a public mains supply generally obtain water from small private supplies such as springs and boreholes. The Council is aware of 31 private water supplies within the Vale, all of which are monitored, classified and sampled regularly. Of these 31 supplies 14 are category 1 and 17 are category 2.

Almost all the drinking water supplied to the Vale originates from outside the area. Water is imported from the Taf Fechan and Taf Fawr reservoirs in the Brecon Beacons and the Llyn Brienne reservoir via Bridgend. There are a number of small abstractions for domestic private drinking water supplies. Many of these abstractions do not require a Licence since they supply small quantities of water primarily from springs, wells and boreholes which are commonly associated with the carboniferous limestone aquifer. However, the abstractions are still required to be registered with the Local Authority.

2.10 Water Quality

The Environment Agency monitor water quality along the Vale’s rivers and classifies them against their National General Quality Assessment Scheme which is listed below in Table A:

Table A - General Quality Assessment Scheme

Grade	Description	DO₂ (% saturation) 10th percentile	Biochemical O₂ demand (mg/L) 90th percentile	Ammonia (mg/L) 90th percentile
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A	Very good	80	2.5	0.25
B	Good	70	4	0.6
C	Fairly good	60	6	1.3
D	Fair	50	8	2.5
E	Poor	20	15	9.0
F	Bad	<20	>15	>9.0

The scheme requires an assessment against chemical standards expressed as percentiles. These are values that the chemical should not exceed/or fall below in the case of dissolved oxygen. A grade is assigned to each length of river according to the lowest standard achieved by any of the three measurements recorded. Generally, the rivers within the Vale are assigned Grade B.

There are 4 main rivers within the Vale of Glamorgan. These are:

1. River Ely
2. River Ogmore
3. River Thaw
4. River Cadoxton

The River Ely and Ogmore form the eastern and western borders of the Vale, entering the Bristol Channel at Penarth and Ogmore respectively. The River Thaw flows through the centre of the Vale, entering the Bristol Channel at Aberthaw. The River Cadoxton flows through the eastern part of the Vale, entering the Bristol Channel through Barry.

2.11 Recreational Water/ Bathing Water

Given its location, the Vale is well used for recreational water based activities along the Bristol Channel coast, its two lakes at Hensol and Cosmeston and the Rivers Thaw, Ely, Cadoxton and Weycock. Both the Council and the Environment Agency monitor bathing water quality around the Vale's coastline (although the Council also monitor Cosmeston lake). The Agency monitor four sites at:

1. Southerndown
2. Cold Knap
3. Whitmore Bay
4. Jackson Bay

The Council monitor seven sites at:

1. Penarth Yacht Club
2. Watchhouse Bay



3. Fontygary Bay
4. Limpert Bay
5. Llantwit Major Bay
6. Ogmore
7. Cosmeston Lake

Generally the quality of these areas is classed as excellent or very good and thus meets EU bathing water quality standards. The aim of the Bathing Waters Directive is to:

- Protect public health, and
- Improve or maintain water quality

2.12 Waste Disposal and Processing

The Vale does not contain any major strategic landfill sites which accept household, commercial and industrial waste. Prior to 1998 waste arising from the Vale was disposed of at Nant-y-Gwyddon Landfill Site near Tonypany in the Rhondda valley. However, the problems associated with the site have led to the Vale's waste being disposed of at Trehir Landfill Site near Caerphilly. More recently, the Vale has begun to send its waste to Tythegston Landfill Site near Porthcawl or Lamby Way, Cardiff for disposal.

Table B - Waste Collected by the Vale of Glamorgan Council

Authority	Waste Collected (tonnes)	Disposal Site
Vale of Glamorgan	45, 000	Tythegston, Porthcawl; Lamby Way, Cardiff

Located at Penarth Dock is a completed municipal landfill. The site has been subject to extensive remediation work by the former Cardiff Bay Development Corporation in an effort to control the emission of landfill gas. There are a number of inert waste landfills within the area which take inert excavation and demolition wastes. There are three "in-house" landfills at Aberthaw serving Aberthaw Power Station, Blue Circle Cement and Dow Corning. At Barry Waterfront there exists a licensed landfill site associated with the land reclamation scheme-taking place there. The site is designed with fully lined disposal cells to contain the contaminated soil present on site.

CHAPTER 3

**THE OVERALL AIMS OF THE CONTAMINATED LAND
STRATEGY FOR THE VALE OF GLAMORGAN**

THE OVERALL AIMS OF THE CONTAMINATED LAND STRATEGY FOR THE VALE OF GLAMORGAN

The overall aim of the Vale of Glamorgan Council with regard to contaminated land is to protect public health, prevent harm to its environment and to ensure that land contamination within its area is dealt with satisfactorily. This can be achieved by either using the Part IIA EPA 1990 regime or another regime or combination of these, which will be enforced by the Vale, or another agency detailed previously in Chapter 1.

3.1 Strategic Approach

Whilst developing and adopting its Contaminated Land Inspection Strategy, the Council will give full consideration to those points listed in section 1.9 of this document.

3.2 Risk Assessment - Receptors

Table C on page 37 details the type of receptors that the Council must consider, alongside the description of harm that is likely to be classed as significant harm to those receptors. There is no government guidance available as to the priority ranking for the receptors. However, since it is the Councils main objective to protect public health it seems logical that they should be ranked as below:

- Humans
- Controlled Waters
- Livestock, animals (both wild and domestic) and crops
- Ecological Systems
- Ancient Monuments
- Other Buildings

These receptors will be investigated in light of their proximity to land likely to have been contaminated through its current or former land use. The likely significance of the risk to the receptors will be considered in light of there being significant harm or the possibility of significant harm occurring.

This process will form the basis of the Councils risk assessment methodology for dealing with contaminated land.

3.2.1 Humans

The Vale of Glamorgan Council is required to ensure that its strategic approach, with regards to the investigation of contaminated land within its boundaries, is proportionate to the seriousness of any actual or potential risk. The Council considers that the risk to human receptors must be given the highest priority. The human health effects which could result from contaminated sites are listed in Table A of the NAW (Nov 2001) Guidance Document as death, disease, serious injury, genetic mutation, birth defects or the impairment of reproductive

functions. Exposure to contaminant can be via inhalation, ingestion, and direct physical contact or as a result of an event (such as an explosion or a fire).

Exposure to risk can occur anywhere, for example, in the home, at school, at work, in hospital or during recreation. The areas where humans can be affected are:

Residential properties with gardens

Residential properties without gardens

Schools and nurseries

Hospitals, nursing homes and residential care facilities

Allotments and other areas that provide produce for human consumption

Parks, playing fields and open spaces

Commercial and industrial property

3.2.2 Controlled Waters

There are five Source Protection Zones within the Vale of Glamorgan. Controlled waters refer not only to ground water systems but also rivers, streams, lakes and coastal waters. The Environment Agency under the Water Resources Act 1991 regulates controlled waters. It would therefore be practical for the Council to inform the Environment Agency as early as possible if it is believed that a potentially contaminated site is likely to cause pollution of controlled waters.



3.2.3 Livestock, animals (both wild and domestic) and crops

In accordance with Table A, Page 31, for domesticated animals, significant harm will be death, serious disease or serious physical damage. For all other property (such as crops and livestock) significant harm will be a substantial loss in value resulting from death, disease or serious physical damage.

The Vale of Glamorgan Council will regard a substantial loss as occurring when a substantial proportion of animal(s) or crop(s) are no longer fit for the purpose for which they were intended. In many cases, a loss of 20% of the value can be regarded as a benchmark for what constitutes a substantial loss. Food will be regarded as no longer fit for its intended purpose when it fails to comply with the provisions listed in the Food Safety Act 1990.

3.2.4 Ecological Systems

The type of ecological receptor available to this strategy is listed in Table C on page 38. Ecological systems have to be considered for the effects that land

contamination may have upon them. Significant harm to an ecological system as defined as:

“Harm which results in an irreversible adverse change, or in some other substantial adverse change, in the functioning of the ecological system within any substantial part of the location or;

“Harm which effects any species of special interest within that location and which endangers the long-term maintenance of the population of that species at that location”.

Any potential effects of contaminated sites upon ecological systems will involve the Council notifying and liaising fully with CCW and if applicable Glamorgan Wildlife Trust as well as its own Countryside Section.

3.2.5 Ancient Monuments



Ancient monuments are, because of their unique historical value, irreplaceable. They must therefore, be afforded a higher priority than other types of buildings and premises. Significant harm to an ancient monument should be regarded as occurring when the damage significantly impairs the historic, architectural, traditional and artistic or archaeological interest by reason of which the monument was scheduled. Again, any potential effect of a contaminated site upon a listed building

or ancient monument will result in full co-operation and liaison with CADW and the Councils own Conservation Officers.

3.2.6 Other Buildings

Under the Town and Country Planning Act 1990 “building” means “any structure or erection, and any part of a building”. Harm to buildings occurs as a result of structural failure or substantial damage. Substantial damage should be regarded as occurring when “any part of the building ceases to be capable of being used for the purpose of which it is or was intended”. Any potential harm to buildings as a result of a contaminated site will result in liaison with the buildings owners/occupiers as early as possible.

3.3 Risk Assessment - Sources of Contamination

Land within the Vale will be investigated in light of both its current and previous use and the contamination that is likely to occur from these activities. Table E on page 42 contains a list of land use classifications with an attached hazard ranking which is based upon the perceived risk associated with each land use.

It is important to note that not all sites used for the same purpose will suffer from the degree of contamination indicated within Table E.

The rankings will be used within the context of the site under investigation, both in terms of its own environmental sensitivity and of its surrounding area. Land which has a current or previous land use which may have lead to contamination and is located next to a watercourse or a residential area will need to be given greater priority than a site which is not located in close approximately to a receptor.

The location of a receptor close to any site that has been used by one of the classifications listed in Table E will be used by the Council to target its resources to those areas considered to be of the greatest risk.

Additionally those areas of the Vale where there is a concentration of sites following under the land use classifications of Table E will be considered areas which should be given inspection priority.

All information available regarding pollution incidents that may have had a lasting effect will also be reviewed. The location of potential receptors to the area in question will be considered therefore enabling the Council to target its resources to those areas that are considered to pose the greatest risk.

Table C - Categories of Significant Harm

	Type of Receptor	Description of harm to that type of receptor that is to be regarded as significant harm
1	Human beings	<p>Death, disease, serious injury, genetic mutation, birth defects or the impairment of reproductive functions.</p> <p>For those purposes, disease is to be taken to mean an unhealthy condition of the body or a part of it and can include, for example, cancer, liver dysfunction or extensive skin ailments. Mental dysfunction is included only insofar as it is attributable to the effects of a pollutant on the body of the person concerned.</p> <p>In this Chapter, this description of significant harm is referred to as a “human health effect”.</p>
2	<p>Any ecological system, or living organism forming part of such a system, within a location which is:</p> <ul style="list-style-type: none"> • an area notified as an area of Special Scientific Interest under section 28 of the Wildlife and Countryside Act 1981; • any land declared a national nature reserve under Section 35 of that Act; • any area designated as a marine nature reserve under Section 36 of that Act; • an area of special protection for birds, established under Section 3 of that Act; • Any European Site within the meaning of Regulation 10 of the Conservation (Natural Habitats etc.) Regulations 1994 (i.e. Special Areas of Conservation and Special Protection Areas); • any candidate Special Areas of Conservation or potential Special Protection Areas given equivalent protection; • any habitat or site afforded 	<p>For any protected location:</p> <p>harm which results in an irreversible adverse change, or in some other substantial adverse change, in the functioning of the ecological system within any substantial part of that location; or</p> <p>harm which affects any species of special interest within that location and which endangers the long-term maintenance of the population of that species at that location.</p> <p>In addition, in the case of a protected location which is a European site (or a candidate Special Area of Conservation or a potential Special Protection Area), harm which is incompatible with the favourable conservation status of natural habitats at that location or species typically found there.</p> <p>In determining what constitutes such harm, the local authority should have regard to the advice of English Nature and to the requirements of the Conservation (Natural Habitats etc.) Regulations 1994.</p>

	<p>policy protection under paragraph 13 of Planning Policy Guidance Note 9 (PPG9) on nature conservation (i.e. candidate Special Areas of Conservation, potential Special Protection Areas and listed Ramsar sites); or</p> <ul style="list-style-type: none"> Any nature reserve established under section 21 of the National Parks and Access to the Countryside Act 1949. 	<p>In this chapter, this description of significant harm is referred to as an “ecological system effect”</p>
3	<p>Property in the form of:</p> <ul style="list-style-type: none"> Crops, including timber; Produce grown domestically, or on allotments, for consumption; Livestock; Other owned or domesticated animals; Wild animals, which are the subject of shooting, or fishing rights. 	<p>For crops, a substantial diminution in yield or other substantial loss in their value resulting from death, disease or other physical damage. For domestic pets, death, serious disease or serious physical damage. For other property in this category, a substantial loss in its value resulting from death, disease or other serious physical damage.</p> <p>The local authority should regard a substantial loss in value as occurring only when a substantial proportion of the animals or crops are dead or otherwise no longer fit for their intended purpose. Food should be regarded as being no longer fit for purpose when it fails to comply with the provisions of the Food Safety Act 1990. Where a diminution in yield or loss in value is caused by a pollutant linkage, a 20% diminution or loss should be regarded as a benchmark for what constitutes a substantial diminution or loss.</p> <p>In this Chapter, this description of significant harm is referred to as an “animal or crop effect”</p>
4	<p>Property in the form of buildings.</p> <p>For this purpose, “building means any structure or erection, and any part of a building including any part below ground level, but does not include plant or machinery comprised in a building.</p>	<p>Structural failure, substantial damage or substantial interference with any right of occupation.</p> <p>For this purpose, the local authority should regard substantial damage or substantial interference as occurring when any part of the building ceases to be capable of being used for the</p>

	<p>purpose for which it is or was intended.</p> <p>Additionally, in the case of a scheduled Ancient Monument, substantial damage should be regarded as occurring when the damage significantly impairs the historic, architectural, traditional, artistic or archaeological interest by reason of which the monument was scheduled.</p> <p>In this Chapter, this description of significant harm is referred to as a “building effect”.</p>
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Table D - Significant Possibility of Significant Harm

	Descriptions Of Significant Harm (As defined in Table A)	Conditions for There Being A Significant Possibility of Significant Harm
1	<p>Human health effects arising from</p> <ul style="list-style-type: none"> • the intake of a contaminant, or • other direct bodily contact with a contaminant. 	<p>If the amount of the pollutant in the pollutant linkage in question:</p> <ul style="list-style-type: none"> • Which a human receptor in that linkage might take in, or • to which such a human might otherwise be exposed, as a result of the pathway in that linkage, would represent an unacceptable intake or direct bodily contact, assessed on the basis of relevant information on the toxicological properties of that pollutant. <p>Such an assessment should taken into account:</p> <ul style="list-style-type: none"> • the likely total intake of, or exposure to, the substance or substances which form the pollutant, from all sources including that from the pollutant linkage in question; • the relative contribution of the pollutant linkage in question to the likely aggregate intake of, or exposure to, the relevant substance or substances; and • the duration of intake or exposure resulting from the pollutant linkage in question. <p>The question of whether an intake or exposure is unacceptable is independent of the number of people who might experience or be affected by that intake or exposure.</p> <p>Toxicological properties should be taken to include carcinogenic, mutagenic, teratogenic, pathogenic, endocrine-disrupting and other similar properties.</p>
2	<p>All other human health effects (particularly by way of explosion or fire).</p>	<p>If the probability, or frequency, of occurrence of significant harm of that description is unacceptable, assessed on the basis of relevant information concerning:</p> <ul style="list-style-type: none"> • that type of pollutant linkage, or • that type of significant harm arising from other causes. <p>In making such an assessment, the local authority should take into account the levels</p>

		<p>of risk which have been judged unacceptable in other similar contexts and should give particular weight to cases where the pollutant linkage might cause significant harm which:</p> <ul style="list-style-type: none"> • would be irreversible or incapable of being treated; • would affect a substantial number of people; • would result from a single incident such as a fire or an explosion; or • would be likely to result from a short-term (that is, less than 24 hour) exposure to the pollutant.
3	All ecological system effects.	<p>If either:</p> <ul style="list-style-type: none"> • significant harm of that description is more likely than not to result from the pollutant linkage in question; or • there is a reasonable possibility of significant harm of that description being caused, and if that harm were to occur, it would result in such a degree of damage to features of special interest at the location in question that they would be beyond any practicable possibility of restoration. <p>Any assessment made for these purposes should take into account relevant information for that type of pollutant linkage, particularly in relation to the ecotoxicological effects of the pollutant.</p>
4	All animal and crop effects	<p>If significant harm of that description is more likely than not to result from the pollutant linkage in question, taking into account relevant information for that type of pollutant linkage, particularly in relation to the ecotoxicological effects of the pollutant.</p>
5	All building effects	<p>If significant harm of that description is more likely than not to result from the pollutant linkage in question during the expected economic life of the building (or, in the case of a scheduled Ancient Monument, the foreseeable future), taking into account relevant information for that type of pollutant linkage.</p>

Source: DETR Circular 02/2000

Table E - Land use Classifications

<u>Hazard Rank</u>	<u>Land use Classification</u>	<u>Perceived Risk Category</u>
1	Asbestos manufacture, use and disposal	High
2	Organic and inorganic chemical production	High
3	Radioactive materials processing and disposal	High
4	Gas works, core works, coal carbonisation & similar	High
5	Waste Disposal sites, including hazardous wastes, landfills, incinerators, sanitary depots, drum/tank cleaning and solvent recovery	High
6	Oil refining, petrochemical production & storage	High
7	Manufacture of pesticides	High
8	Pharmaceutical industries including cosmetics and toiletries	High
9	Fine chemicals, dyestuffs & pigment manufacture	High
10	Paint, varnishes and ink manufacture	High
11	Animal slaughtering and by-products, including soap, candle & bone works, detergent manufacture	High
12	Tanning and leather works	High
13	Metal smelting and refining, including furnaces and forges, electroplating, galvanising & anodising	High
14	Explosives industry including fireworks manufacture	High
15	Iron and steel works	High
16	Scrap yards	High
17	Engineering (heavy and general)	Medium
18	Rubber products and processing	Medium
19	Tar, bitumen, linoleum, vinyl and asphalt works	Medium
20	Concrete, ceramics, cement and plaster works	Medium
21	Mining and extractive industries	Medium
22	Electricity generating (excluding nuclear power stations)	Medium
23	Film and photographic processing	Medium
24	Manufacture of disinfectants	Medium
25	Paper and printing work, including newsprint (not high street printers)	Medium
26	Glass manufacture	Medium
27	Fertiliser manufacture	Medium
28	Timber treatment works	Medium
29	Sewage treatment	Medium
30	Garages, including sale of automotive fuel, repair of cars and bikes	Medium

31	Transport depots, road haulage, commercial vehicle fuelling, local authority yards and depots	Medium
32	Railway land, including yards and tracks	Medium
33	Electrical and electronics manufacture, including semi-conductor manufacturing plants`	Medium
34	Textiles manufacturing and dyeing	Medium
35	Laundries and dry-cleaning (large scale not usually high street)	Medium
36	Plastic products manufacture, moulding and extrusion, building materials, fibre glass resins and products	Medium
37	Dock yards and wharves	Medium
38	Food processing, including brewing and malting, distilling of spirits	Low
39	Airports and similar	Low

Source: Desk Reference Guide to Potentially Contaminative Land Uses (Paul Syms) .

CHAPTER 4

**OBJECTIVES AND TIMESCALES FOR THE THE VALE
OF GLAMORGAN COUNCIL'S CONTAMINATED LAND
STRATEGY**

OBJECTIVES AND TIMESCALES FOR THE VALE OF GLAMORGAN COUNCIL

Many of the objectives listed within the previously issued Contaminated Land Inspection Strategy have been met but others have not or are ongoing. Those objectives still requiring attention are listed below with timescales:

Table F - Objectives and Timescales

<u>Objective</u>	<u>Date</u>
Maintain links with external organisations for the exchange of information	Ongoing
Review database of potentially Contaminated Sites within the Vale	Ongoing
Identify potential contaminated sites via recently acquired historical maps	Dec 2004
Establish database of all receptors within the Vale	July 2005
Establish GIS system for nature conversation sites	Aug 2005
Establish GIS system for allotment, parks, open spaces, playgrounds, playing fields	Sept 2005
Establish GIS system for potential contaminated sites	Dec 2004
Continue investigation of potential contaminated sites within The Vale of Glamorgan	Ongoing
Continue investigation of potential pollution of controlled waters	Ongoing
Establish GIS system for ancient monuments and listed buildings	Sept 2005
Review inspection priorities and procedures to assess their effectiveness	Ongoing
Review Contaminated Land Inspection Strategy	Jan 2006

The strategy's development and implementation is an ongoing process. It is therefore likely that the Council's objectives and priorities in meeting these objectives will change as the Council's understanding of the scale and nature of contaminated land within its' boundaries changes. It is also therefore likely that new objectives may be identified. In attempting to meet the timescales listed for each objective the programme will depend upon a number of factors such as:

- Financial and human resources available to the Council
- Supply of information from third parties
- Nature and scale of problems associated with individual sites
- Progress with any necessary regulatory action

The Council recognises that action may commence, on urgent sites, which are brought to the Council's attention outside the inspection programme and that are likely to pose significant harm. Time and resources funnelled into the investigation of these sites may delay the inspection programme. Therefore,

periodic reviews of the inspection timetable will need to be carried out to maintain its direction and implementation.

CHAPTER 5

**PROCEDURES FOR THE INSPECTION AND
IDENTIFICATION OF CONTAMINATED LAND**

PROCEDURES FOR THE INSPECTION AND IDENTIFICATION OF CONTAMINATED LAND

5.1 Regulatory Services, Pollution Control Team

Responsibility for the preparation of this strategy document and for its subsequent implementation under Part IIA Environmental Protection Act 1990 lies with the Pollution Control Section of the Vale of Glamorgan's Environmental Health Division within the Legal and Regulatory Services Department. Officers within this section have authority from the Council to undertake all necessary investigations, sampling programmes and if required enforcement action pertaining to contaminated land.

5.2 Planning and Building Control

Planning and Building Control departments within the Council will be responsible for ensuring that developers of Brownfield Sites submit land quality reports upon the land in question. Once received the report will be circulated within the Council to the various relevant departments in order to assess whether any remediation schemes will be required.

5.3 Legal Department

The department will be consulted for advice regarding the determination of a site as contaminated land and in the preparation of remedial notices for contaminated sites.

5.4 Elected Council Members

Elected members will be notified as soon as possible if the Council plans to designate an area as contaminated land, which is owned or managed by the Council.

5.5 Information - Complaints

In addition to its pro-active work with regard to Pt IIA, Environmental Protection Act 1990 the Pollution Control unit will also receive complaints concerning land contamination from members of the public. All complaints received will be dealt with in the following manner:-

In accordance with the Pollution Control sections performance target, complainants can expect a response to their complaints within 5 working days and a written response within 10 working days.

Their complaints will be dealt with confidentially in compliance with the Councils policy. Confidentiality will be protected subject only to a condition of disclosure imposed by a court of law.

All complaints will be recorded upon the Regulatory Services 'FLARE' complaint database.

Complainants will be kept informed of progress relating to their complaint

The complaint details, together with any appropriate responses will be recorded in the usual manner

5.6 Information - Collection

There are many different sources of information that are relevant and useful in investigating potential sources, pathways and receptors. Table G below lists where the Council has located a variety of information pertinent to the development of the Contaminated Land Strategy.

Table G - Sources of Information

<u>Resource</u>	<u>Use</u>
Historic Ordinance Survey Maps	Identify Source
Groundwater Vulnerability Maps	Identify Receptor
Integrated Preventative Pollution Control Register	Identify Source
Waste Management Licences	Identify Source
Environmental Health Department Records	Identify Source
Planning Records	Identify Source
Source Protection Zones	Identify Receptor
Soil Maps	Identify Receptor
Register of Closed Landfill Sites	Identify Source

The Pollution Control Section will receive information upon a variety of sources to assist it with its identification and investigation of potentially contaminated sites. In addition to the sources identified in Table G the Council will receive information from individuals, landowners, land occupiers. This information will be in the form of site surveys and investigations provided as part of a planning application or a pre-planning enquiry.

All information regarding Contaminated Land is held within the Councils "FLARE" System.

5.7 Information - Evaluation

Information received by the Pollution Control Section will be investigated for its reliability before it is entered upon the Councils Contaminated land database.

5.8 Prioritisation

Identified potential contaminated sites shall be prioritised according to features such as current and previous site use and the proximity and susceptibility of surface and groundwater. Each site will be awarded points associated with features of the site with more points awarded to sites where higher contamination is likely to be present or there is greater receptor susceptibility.

Appendix 2 details the points awarded for each of the site features considered.

This relatively simple system has allowed priority sites to be identified however more comprehensive prioritisation systems now exist and are currently being

reviewed. Should the review process illustrate significant failures in the present system and highlight a preferred methodology an alternative system may be implemented. Details of any change in the prioritisation methodology shall be included in the next review of this strategy.

CHAPTER 6

LIAISON AND COMMUNICATION STRATEGIES

LIASON AND COMMUNICATION STRATEGIES

6.1 Internal Liaison and Communication

As previously stated the Vale of Glamorgan Council has set up a Contaminated Land Working Group in order to facilitate liaison and communication within the Council with regards to the continuing development of the Contaminated Land Inspection Strategy. The participants within this working party will hold information within their own departments that will be essential to the successful development and implementation of this strategy.

Communication within the group is maintained via a series of meetings with the resultant minutes from the meetings being conveyed to all interested parties via the Councils e-mail system. The group convenes on a regular basis to steer and monitor the implementation of the strategy. The group will also assist with the identification, investigation and remediation of land in Council ownership.

When necessary, liaison with other sections of the Council will occur outside the working party when their technical advice is required.

6.2 External Organisations

The Statutory Guidance in NAW (Nov 2001) requires the Council to consult with a number of statutory bodies. Listed as relevant bodies are the Environment Agency, Countryside for Wales, CADW, National Assembly for Wales and the Food Standards Agency. Contact has been made with these organisations to identify specific contact persons and to ensure liaison and communication is carried out on a regular basis.

The Environment Agency has a complementary role to the Council in dealing with contaminated land and therefore there is considerable scope for liaison between the two parties. The main contact for all inter-agency work between the Vale and the Environment Agency will be the Area Contaminated Land Officer. The Agency has been specifically consulted with regard to the content of this strategy. The Council is required to refer all "Special Sites" identified within the Vale to the Environment Agency for regulation. The Council will also consult with the Agency with regard to potential pollution of controlled waters and notify them should any sites within the Vale be determined as contaminated land. The preparation and consultation that has led to the development of this strategy has also required communication with other bodies such as the Glamorgan Wildlife Trust, Friends of the Earth and the Welsh Development Agency.

6.3 Other Interested Parties

Other interested parties within the context of this strategy will include the owners and occupiers of land, local community groups, businesses/industry, trade associations, political organisations, Local Councillors, journalists and developers. This list is not an exhaustive one and anyone who may be a stakeholder or affected by the Councils Contaminated Land Strategy will be included in the consultation process.

6.3.1 Owners, Occupiers and Appropriate Persons

Where the Council needs to investigate any land for potential contamination, the owners and occupiers of the land in question will be contacted at the earliest stage. The aim is not only to make them aware of the Council's interest but also to encourage their co-operation by fully explaining the process. Owners/occupiers of a particular site may be able to provide information concerning the names and addresses of persons/organisations who have an interest in the land, any known contamination and the persons who may be responsible for it. They may also be aware of any future proposals that may be made for use of the site.

This approach requires effective communication between the Council and owners/occupiers/interested parties of a site. An officer responsible for contaminated land will be the central contact point within the Authority upon contaminated land issues. Owners and occupiers will also need to be informed of the Council's statutory role with respect to the Contaminated Land Regime and as such will need to be kept informed at each stage of an investigation, regardless of whether a formal designation of contaminated land is made or not.

Where it is deemed necessary for a site inspection to be made, the reasons and need for the inspection will be provided to the owners and occupiers of the land. Owners/occupiers will be kept informed at all stages of the process and be advised of the outcome of any inspection/intrusive investigation and the result of any subsequent decision.

6.4 Determining an Area of Contaminated Land

If the Council decides to determine an area as contaminated land it will:

Write to the owner and/or occupier of the land at least ten working days prior to designation being made.

Write to the owner and/or occupier explaining the land is to be determined as contaminated land with reasons outlined and that the land will require remediation. At this stage remediation must be voluntary.

If requested, a copy of the Council's risk assessment pertaining to the site should be despatched to the owner and/or occupier of the site within five working days of receipt of the request.

Write to the owner/occupier of neighbouring properties within five working days of the sites determination.

In line with the statutory guidance issued in NAW Guidance Document (Nov 2001) the Council will be encouraging voluntary remediation of contaminated land at this stage, before resorting to any statutory action. Voluntary remediation is also encouraged by legislation, as any materials removed from the land as a result that require landfilling, will be exempt from the landfill tax.

6.5 Serving a Remediation Notice

Full details regarding the content of remediation notices can be found in the Contaminated Land Regulations (Wales) 2001. Essentially:

- the notice must detail action needed to be taken by the owner/occupier specifying action required to remediate the site,
- the Council must write to the owner/occupier of neighbouring properties within five days of the notice being served,

Should an urgent course of action be required, these steps will be observed as far as possible, although some deviation from the timescale may occur.

6.6 Risk Communication

The Council will integrate risk communication into its overall strategy for the inspection of contaminated land. There will be certain issues regarding contaminated land, which are certain to generate interest, issues such as:

- health effects of contaminated land
- economic and property effects of contaminated land
- environmental effects of contaminated land and any associated remediation

The aim of the risk communication strategy will be to:

- Raise awareness and understanding of the contaminated land issue without causing undue alarm to the local population and business community;
- Improve the understanding of the inspection and risk assessment process;
- Enable effective participation and/or representation from all interested parties involved in the inspection strategy;
- Inform and protect any community believed to be at risk from a particular site through restricted access, notices, leaflets, press notices, open meetings etc.;
- Provide opportunities for feedback from all interested parties affected by any investigation;
- Support any party to effectively implement any risk management decision.

Any decision regarding land contamination will not be made solely on a technical basis. Other factors such as financial, legal, commercial and social will play a role in the decision making process regarding contaminated land. Contaminated land is not just of relevance to the site owner/occupier. Its condition and use is an important issue for neighbouring landowners. The views, opinions and priorities of each stakeholder in the dialogue process will be taken into consideration before any decision is taken upon contaminated land. The nature of the issue under discussion means that the views and opinions of each stakeholder may be conflicting. Decisions about contaminated land and when and whether to take remedial action are complex issues. Decisions will

only be taken after careful consideration of the nature of the site and the viewpoints of all interested parties.

The Council recognises that public, as well as business acceptance of any decision is important if contaminated sites are to be managed and remediated successfully.

To assist the Council with its risk communication strategy attention will be paid to the guidance notes "Communicating Understanding of Contaminated Land Risks", published by the Scottish and Northern Ireland Forum for Environmental Research (SNIFFER).

With regard to the public and potentially contaminated sites, the Council will, in summary, aim to:-

Establish a stakeholder dialogue as early as possible

Listen to the opinions of the local community and deal sensitively with their concerns

Explain technical terminology to the public, to whom it may not be familiar.

6.7 Press and Media

Representatives from the press and media who may wish to discuss contaminated land issues (including this strategy) may contact the Councils Press Office. The Press Office are based at:

Civic Offices,
Holton Road,
Barry
CF63 4RU
Telephone: 01446 709454.

CHAPTER 7

CONTAMINATED LAND INSPECTION PROGRAMME

CONTAMINATED LAND INSPECTION PROGRAMME

7.1 Methodology for Carrying out Detailed Inspections

The earlier sections within this strategy will assist the Council to identify land within its boundaries where a possible pollutant linkage exists between a potentially contaminated site and a receptor (listed in chapter 3, section 3.2 - 3.3). A detailed inspection of the land will then be required to collect sufficient information to:

- Provide evidence of the presence of a pollutant linkage and to determine, in accordance with the statutory guidance, if the land should be designated as contaminated, and;
- Decide whether the land is to be designated as a special site within the terms of the Contaminated Land (Wales) Regulations 2001;

The nature of carrying out a detailed inspection will vary from site to site. However, Chapter B of the NAW Guidance Document (Nov 2001) paragraphs B9 – B10 states that the approach should:

- Be rational, ordered and efficient;
- Be proportionate to the seriousness of any potential/actual risk;
- Ensure that the most pressing/serious problems are located first;
- Channel resources to the areas where contaminated land is likely to be found;
- Ensure that the Local Authority carries out detailed inspections of particular areas of land.

In developing this strategic approach the Local Authority should reflect local circumstances. In particular, attention should be paid to:

- any evidence that harm or pollution to any receptor (listed in Table C in chapter 3 or controlled waters) is being caused;
- the extent to which any receptor is likely to be found in the authorities area;
- the extent to which any of those receptors is likely to be exposed to a contaminant:
- the extent of current information upon contaminated land within the Vale;
- the history, scale and nature of industrial or other activities within the Vale that may have contaminated the land;
- the nature and timing of past redevelopments in different parts of its area;
- the extent to which remedial action has already been taken by the authority to deal with contaminated land, or is likely to be taken as part of an impending redevelopment;
- the extent to which other regulatory bodies are likely to assess harm/pollution to receptors within the Vale;

When potentially contaminated sites are identified, the authority will carry out a detailed inspection and evaluation of the area with regards to:

- the collection and assessment of information from within the Council and from external bodies;
- a visual inspection of the site and its surrounding environment;
- sampling of the site, for example surface deposits of soil or water from adjacent watercourses;
- intrusive investigation of the site (e.g. by exploratory excavation)

The inspections will be carried out in accordance with the following codes of practice and documents:

- Model procedures for the Management of Contaminated Land (CLR 11);
- BS 10175:2001 Investigation of potentially Contaminated Sites;
- CIRIA special publication 103, Site Investigation & Assessment (1995);
- Documentary Research on Industrial Sites, DETR, 1994 (CLR 3);
- Prioritisation and categorisation procedure for sites which may be contaminated DETR, 1995 (CLR 6);
- Guidance on Preliminary site inspection of Contaminated Land, DETR 1994, (CLR 2);
- Sampling strategies for Contaminated Land, DETR, 1994 (CLR 4);
- A Framework for assessing the impact of Contaminated Land on Groundwater and Surface Water, DETR, 1994 (CLR 1);
- Development of appropriate soil sampling strategies for Land Contamination, Environment Agency R & D Report Hoco 352 (currently in preparation);
- The WDA Manual on The Remediation of Contaminated Land (EcoTec 1994).

7.2 Statutory Powers of Entry

When undertaking inspections of land, the Council will seek at all times, to work with the owners and occupiers of land, “appropriate persons” and other interested parties. If the premises to be inspected are used for residential purposes, or if the inspection involves bringing heavy equipment onto the site the authority will give the occupier of the premises 7 days notice of entry. An authorised person from the Council can then enter the premises only after obtaining the permission of the occupiers.

However, Section 108 of the Environment Act 1995 gives the Council powers to authorise a person to enter a premises. Paragraphs B.22 - B.25 of the NAW Guidance Document (Nov 2001) provide statutory guidance to Local Authorities to follow, when exercising these powers of entry.

Prior to carrying out an inspection using its statutory powers of entry, the Council will have to satisfy itself, on the basis of information already obtained:

in all cases, that there is a reasonable possibility that a pollutant linkage exists on land;

in cases involving an intrusive investigation, the Council must satisfy itself that:

- it is likely that the contaminant is actually present, and
- given the current use of the land, that the receptor is actually present or is likely to be present

The Council should not carry out any intrusive investigation under its statutory powers of entry if:

- it has already been provided with detailed information on the condition of the land which provide an appropriate basis to enable it to determine whether the land is contaminated in accordance with the statutory guidance, or,
- a person offers to provide such information within a reasonable and specified time and then provides the information within that time period.

7.3 Special Consideration with Respect to Intrusive Investigations

The Local Authority shall carry out any intrusive investigation in accordance with the appropriate technical procedures for such investigations. The Council should also ensure that it takes all reasonable precautions to avoid water pollution, harm to natural resources or harm to historical or archaeological sites as a result of any intrusive investigation.

7.3.1 Sites of Nature Conservation

The statutory guidance requires the Council to consult with the Countryside Council for Wales before carrying out any intrusive investigations on any area notified as a Site of Special Scientific Interest (SSSI). The Council will also consult with their own Conservation Officers and the Glamorgan Wildlife Trust with regard to any other site of conservation interest.

7.3.2 Sites of Historical or Archaeological Interest

Before carrying out any intrusive investigation on any area, which encompasses a site of historical or archaeological interest, CADW will be consulted.

7.3.3 Controlled Waters

Prior to carrying out any intrusive investigation, which may effect controlled waters, the Council will consult with the Environment Agency.

7.4 Special Sites

Where land is determined to be contaminated land and it also falls within the description of “Special Sites” contained within the Contaminated Land (Wales) Regulations 2001 then it will be designated as a “Special Site”. The

Environment Agency is the enforcing authority for “Special Sites”. Given the primarily role the Environment Agency will play in the regulation of these sites it is important that the Agency is involved at the inspection stage of the investigation into these sites.

Before authorising or carrying out any inspection of land using its statutory powers of entry, the Local Authority should consider whether, if the land was found to be contaminated, it would require designation as a “special site”. If the Council is currently in possession of any information that would indicate this, then it will make arrangements with the Environment Agency to carry out the inspection on the Council’s behalf.

When the Vale of Glamorgan considers that there is a reasonable possibility of a pollutant linkage occurring, which will necessitate designation as a “Special Site”, then arrangements will be sought for the Environment Agency to carry out the inspection.

If the Environment Agency carries out an inspection on behalf of the Local Authority, the Authority should authorise a person nominated by the Environment Agency to utilise its powers of entry under Section 108 of the Environment Act 1995. Before being provided with this authorisation, the Agency must satisfy the Council that it has met the conditions for use of the statutory powers of entry outlined earlier in this section.

7.5 Appointment of External Contractors

In order to fulfil its duties under Pt IIA the Council may, when necessary, use private sector consultancy services. If such services are required the Council should invite quotes/bids from selected organisations that have sufficient training, experience and resources to provide an adequate service, in accordance within the Councils Financial Regulations/Standing Orders.

7.6 Identification of Potentially Contaminated Sites

When investigating the potential occurrence of contaminated sites within its boundaries the Council shall make use of information from a variety of sources such as:

- Council records
- UK Land Registry
- Historical Ordinance Survey Maps
- Kelly’s Trade Directory
- Environment Agency Records
- Complaints from the Public

The sources highlighted above will provide the basis of the Council’s Contaminated Land investigation process, in that the above points will target areas that could potentially be contaminated through previous or current use.

7.7 Inspection Methodology

The inspection methodology employed by the Council will essentially be comprised of two stages.

7.7.1 Stage 1 - The Preliminary Investigation

The main phases of the preliminary investigation will be:

- Historical study (desk top study);
- Site characterisation;
- Site reconnaissance (walkover survey).

7.7.1.1 Historical Study

This phase involves the collection and analysing of historical data relating to a specific site and an assessment of the potential contamination of the site. The historical study will consider the following points:



- Former and current uses of the site (accounting for the type and quantity of material stored, used, handled or processed on site);
- Waste disposal activities (accounting for storage and disposal of wastes on site);
- Activities, operations or structures (includes above and below ground tanks and structures);
- Construction materials (i.e. asbestos cladding);
- Accidents (on site may have dispersed pollutants);
- Pollution migration (e.g. sub-surface migration of gases, or contaminated ground-water).

Information sources

The two main sources of information at this stage are:

- Historical Maps;
- Contemporary Records

The objective of this stage of the investigation is to provide the Council with a preliminary understanding of the potential risks posed by the site and to determine whether further investigation is required.

7.7.1.2 Site Characterisation

This phase identifies the characteristics of the site and the surrounding areas to assess site hazards in terms of potential pathways and targets. Once the potential for contamination has been identified it is then necessary to characterise the site, both internally and externally.

Factors to be addressed

- Human beings (using/visiting/living in proximity to the site)
- Geology, soil and surface material on site
- Surface and groundwater quality
- Flora and fauna
- Cultural heritage
- Landscape
- Built environment
- Regulatory framework
- Intersection between the above
- Hydrogeology

These factors are used to assess the likely significance of any contamination on site.

7.7.1.3 Site Reconnaissance

Also known as a walkover survey, this stage of the investigation is essential to establish/confirm the current status of the site. A visual assessment of the site may reveal unrecorded activities (i.e. fly tipping) and will allow officers to assess and identify potential hazards present on the site in relation to adjacent receptors.

The objective of this stage of the investigation is to provide the Council with first hand information regarding the site and the likelihood of a pollutant linkage occurring between the site and adjacent receptors. Liaison with the site owners and occupiers will occur prior to the site inspection being carried out.

Table H - Points to consider during a Walk-Over Study

<u>Survey Factors</u>
Obvious hazards to public health or safety and the environment
Condition of fences affecting site security
Presence, location and condition of surface deposits and made ground
Signs of settlement, subsidence or disturbed ground
Make photographic record of general site conditions and layout
Note location/condition of any buildings, structures, tanks etc
Confirm location of buildings, roads, fences etc and deviations from site plans
Confirm location of sewers etc
Location of services that might be required/damaged by site investigations
Areas of discoloured soil, polluted water, odours, distressed vegetation
Determine depth of standing water, direction, flow rate of water in rivers, streams and canals
Note position of outfalls to surface water and nature/condition of discharges
Evidence of seepage through river/canal bank walls
Use portable instruments to determine presence/concentrations of hazardous gases
Sampling of surface deposits, surface waters etc
Note neighbouring land uses
Locate and note condition of any boreholes from previous investigations
Note access points for investigation equipment
Note areas for depots, officers etc during site investigation

Source: Nathanail 1999

Another important factor at this stage is consultation with parties familiar with the site such as:

- Former/current site workers/occupiers/owners
- Former site contractors/suppliers
- Local/national regulators
- Conservation bodies
- Archivists, newspaper officials
- Military officials
- Local/national government officials
- Local community

7.7.1.4 Preliminary Investigation Report

Upon completion of the preliminary investigation, the Council will produce a report for each site that it has considered to be potentially contaminated. The report will enable the authority to:

- assess the likely presence of pollutant linkages and therefore the determination of the site as contaminated land
- design further investigation strategies
- design health and safety plans associated with the site
- develop a “site conceptual model”

Content of a Preliminary Investigation Report

1. Executive summary
2. Introduction
 - site description and use
 - summary of previous investigations
3. Information Sources
 - topographical, geographical, hydrological data
 - aerial photographs, archive records
 - third party data
4. Historical uses
 - nature/location of previous facilities
 - underground mines
 - landfilling activities
 - decommissioning measures
5. Site characterisation
 - grid reference
 - topography/site location
 - hydrological, geological and climate factors
 - built environment
 - regulations applicable to site
6. Hazard identification
 - potential contamination caused by past use

- potential for migration of contaminants
- potential contaminative uses adjacent to the site
- potential for migration of contaminants into site

7. Hazard assessment

- potential hazards posed by the site
- inventory of targets at risk
- further investigation requirements
- remedial requirements

8. Recommendations

- scope of work
- phasing
- precautions
- costs
- health and safety requirements

9. Appendices

- supporting data

7.7.2 Stage 2 - The Main Investigation

The main investigation is the principal phase of any Contaminated Land investigation. Its main objectives are to:

- confirm the presence of pollutants on site;
- evaluate the harm posed by the pollutant;
- identify potential pathways.
- recommend cost effective remedial solutions

7.7.2.1 Inspection and Testing

This phase is used if:

- only limited historical records are available;
- preliminary investigation shows the site to be heavily contaminated with a mixture of substances

7.7.2.2 Ground Investigation

The objective of the ground investigation is to assess the nature of the contamination, its likely behaviour and volumetric extent (WDA 1994). The ground investigation will consist of:-

- a sampling strategy for the site;
- characterisation of surrounding environment
- constraints upon ground investigation identified
- ground investigation (non-intrusive or intrusive investigations)
- supplementary investigation

7.7.2.3 Main Investigation Report

The Council intends to produce a report for all those sites upon which it has carried out a main investigation upon.

Content of Main Investigation Report

1. Executive Summary
2. Introduction
 - summary of previous work carried out on site
 - site description and proposed end use
 - field conditions at time of investigation
 - constraints upon the investigation
3. Strategy and Methodology
 - scope of investigation
 - investigation methods used
 - health and safety
 - environmental protection measures
4. Site Observations
 - ground conditions
 - geology/hydrology
 - flora/fauna
5. Field Work
 - surface testing
 - ground investigation (e.g. trenches, boreholes)

- supplementary investigation (e.g. long-term monitoring)

6. Sampling

- methods used
- COSHH assessment

7. Sampling Record

- sample receipt and storage
- sample analysis
- sample results
- sample disposal

8. Laboratory Reporting

- accuracy of results
- sensitivity of results
- precision of results

9. Results

- results of field investigation
- results of laboratory tests

10. Assessment

- hazard assessment
- risk assessment

11. Conclusions

- extent of contamination
- significance of contamination
- recommendations for action

12. Appendices

- location map
- site plan
- photographs

CHAPTER 8

CONTAMINATED LAND REVIEW MECHANISMS

CONTAMINATED LAND REVIEW MECHANISMS

Part IIA of the Environmental Protection Act 1990 requires that the Local Authority inspect their areas for the purpose of identifying any land within their boundaries that meets the statutory definition of contaminated land. The Authority is also required to include in its strategy arrangements and procedures for:

“reviewing and updating assumptions and information previously used to assess the need for detailed inspection of different areas, and managing new information”.

(NAW Guidance Document Nov 2001 B.15 (d) (x))

8.1 Review of Inspection Priorities

Objectives within Table F (Page 44) reveal the need to review the inspection priorities adopted in Chapter 4 in order to establish their effectiveness. A review of the inspection priorities is being undertaken at present.

8.2 Review of Inspection Frequency

As previously stated the Council is responsible for investigating potentially contaminated sites within its boundaries. Under normal circumstances land will not be re-inspected before investigation of all potentially contaminated sites has been completed. There are a number of factors, which could potentially trigger a re-inspection. The DETR have issued technical advice for Local Authorities regarding the writing of their Contaminated Land Inspection Strategies. The guidance details the following factors to effect the frequency of re-inspection:

- area of land to be covered,
- historical and current land use characteristics,
- the extent to which major contamination problems have already been treated in the area,
- the nature and timing of any planned re-development or land use changes in the area,
- informal changes in land use,
- the extent to which the Local Authority has already identified that land is most likely to be of concern,
- others factors such as the triggers.

The Council will implement procedures for the periodic review of any decisions previously made upon a site, for any information previously used to assess potential problems in different areas and for managing new information.

The Authority will therefore need to consider two main aspects:

- triggers for reviewing inspection decisions,

- review of the inspection strategy.

8.2.1 Triggers for review of inspection decisions.

The following are events or triggers that, if they occur, may present a need to be addressed outside of the normal inspection strategy timetable;

- proposed changes in the use of surrounding land
- unplanned changes in the use of the land (e.g. persistent, unauthorised use of the land by children)
- unplanned events, e.g. localised flooding/landslides, accidents/fires/spillage's where consequences cannot be addressed through other relevant environmental protection legislation
- reports of localised health effects which appear to relate to a particular area of land
- verifiable reports of unusual or abnormal site conditions received from business, members of the public or voluntary organisations
- responding to information from the statutory bodies
- responding to information from owners or occupiers of land, and other relevant interested parties.

The occurrence of any of these events may therefore trigger non-routine inspections.

8.3 Review of the Inspection Strategy

In line with Standard Quality Management Practice, the Council is currently auditing and reviewing this inspection strategy to ensure that it is effective in achieving its aims, is efficient in its use of resources and is meeting the legislative requirements of Part IIA of the Environmental Protection Act 1990.

A further revision of this strategy will be published by December 2005.

CHAPTER 9

INFORMATION MANAGEMENT

INFORMATION MANAGEMENT

9.1 Information and Data Handling

The Council currently holds information about land, potentially contaminated, within its boundaries on a paper filing system. New information is received on a daily basis with regard to land in its area. All information relevant to the contaminated land regime under Pt IIA Environmental Protection Act 1990 will be held and maintained by the Environmental Health's Pollution Control Section of the Council's Environmental Health Department.

9.1.1 Electronic Data

All electronic information regarding contaminated land will be held on an integrated system. The system is currently held on the Council's FLARE system which is linked to a GIS map system. The system is used to store information such as:

- Land which has previously or is current subject to a use which may lead to ground contamination,
- Land where likely receptors are to be found,
- Land where remediation notices have been served/likely to be served,
- Land where remediation has been carried out,
- The Pollution Control Section will maintain the electronic system.

9.1.2 Paper System

Much of the information in the possession of the Council and incoming data concerning potentially contaminated sites is in the form of site investigation reports, planning proposals, waste management licences and historical land use reports. All this information is contained within the paper filing systems (stored alphabetically) and will be maintained by the Pollution Control Unit.

9.2 Access to Information

In 1984, the UK government accepted a recommendation from the Royal Commission on Environmental Pollution that the public should have access to information that Pollution Control authorities obtain "by virtue of their statutory powers". The Contaminated Land Regime falls under this category and subject to any legal or confidentiality constraints all information obtained will be available to the public. Under the following sub-sections, the storage and accessibility of this information is detailed.

9.2.1 Public Register

It is a statutory requirement that the Vale of Glamorgan Council maintain a public register regarding contaminated land within its boundaries. The register contains all documentation relating to regulatory and enforcing activities regarding contaminated land within the Vale of Glamorgan. It includes any action taken by the Environment Agency with regard to "special sites". The

register is maintained by the Pollution Control Section on its “FLARE” System and is available for public inspection.

It is recommended that anyone wishing to review the register contact the Council in advance to arrange an appointment. The Council can be contacted on 01446 709105.

9.2.2 Data Protection Act 1998

The Vale of Glamorgan Council is fully compliant with the Data Protection Act 1998. There are eight data protection principles to the Act, which help understand the legislation. These are:

1 Fairness and legality

The act requires that all data should be processed fairly and lawfully. No person should be deceived or misled about the purpose for which their data is to be processed.

2 Permission

Personal data can only be obtained for specified and lawful purposes with permission from the data subject for each use.

3 Adequacy

The act states that personal data has to be adequate, relevant and not excessive in relation to the purpose for which the data is meant to be processed. Extra irrelevant data cannot be gathered because 'it might be useful', this contravenes the principle of adequate data. The use of free-format database fields must be carefully monitored.

4 Accuracy

The act states that data should be accurate and kept up to date within reason. Of course, it is not possible to have up-to-the-second, accurate data all the time. However, if a data subject notifies a firm of data that needs updating or correction then it is the responsibility of the organisation to update it accordingly.

5 Length of use

The act requires that personal data should not be kept for longer than is necessary for the purpose it is intended for.

6 Access Rights

Data subjects have the right to access their personal data. They also have the right to prevent processing that is likely to cause damage or distress. Additionally, they have the right to prevent processing for the purposes of direct marketing. Moreover, data subjects have rights in relation to automated decision-making, including the right to have logic explained to them.

7 Security

For the first time, the act requires organisations to take appropriate technical

and organisational measures against unauthorised or unlawful processing of personal data and must protect against accidental loss or destruction of, or damage to, personal data. This principle extends to third-party processors of data.

8 Transfer outside the EU

Personal data should not be transferred to a country or territory outside the European Economic Area unless that country or territory ensures that there is an adequate level of protection for the rights and freedoms of data subjects in relation to the processing of personal data.

9.2.3 Freedom of Information Act 2000

On 1st January 2005 the Freedom of Information Act (FOI) comes fully into force. This means that members of the public and organisations will have new rights of access to information held by public bodies including local authorities. If requested, we must tell individuals if we hold information and if so, provide it within 20 working days.

The principle behind the Act is that all information held in any format is accessible, unless certain conditions or exemptions apply.

9.2.4 Environmental Information Regulations 1992

Under these regulations anyone can apply to the Pollution Control Section for information about land. Government guidance states that environmental information should be made available to the public unless there are reasons to withhold it. Reasons could include:

- requests that place an unreasonable burden upon Council resources;
- when an information request is too general;
- where information requested is confidential or contains personal information.

As a rule if the request is specific and is not subject to any restrictions information can be provided. A charge of £40 per hour plus VAT for a detailed response is (although this is currently under review by Council) is made for this information. The information will be supplied as soon as possible and will be accompanied by a disclaimer stating that:

- the information is provided on the basis of what is currently known to the Council;
- the information may be incomplete;
- the information may have been provided by a third party to whom the Council cannot vouch for its accuracy;
- the absence of information does not necessarily mean that contamination, or the potential to cause contamination does not exist;

If a request for information is refused the reasons for refusal will be provided in writing. An applicant dissatisfied with a refusal should contact in the first instance the Principal Environmental Health Officer for the Vale of Glamorgan Council.

New Environmental Information Regulations have been published in draft form and are due to be completed shortly. This authorities policy will be reviewed after publication of the guidance.

9.2.5 Search Questionnaires for Land Charges

Questions with regard to Pt IIA EPA 1990 are now included on the standard search questionnaire. These are received by the Land Charges section of the Council and will be passed to the Pollution Control Section for answer.

9.3 Access to Information by Other Council Departments

Exchange of information within the Council concerning contaminated land will be via the Contaminated Land Working Group. Information will be provided to other Departments of the Council in order for them to fulfil their duties and functions.

9.4 Information Exchange with the Environment Agency

Statutory guidance for the Contaminated Land Regime requires the Council to provide the Environment Agency with all necessary data pertaining to its regulatory activities under Pt IIA of the Environmental Protection Act 1990. By providing this data the Agency will be able to periodically public reports upon contaminated land. The Council will also consult the Environment Agency:

- where contaminated land has been identified and is or is likely to affect controlled waters;
- if a site meets the criteria of a special site;
- if an intrusive investigation may have an impact upon controlled waters.

The exchange of information between the Environment Agency and the Vale of Glamorgan Council will be through the Agencies Area Contaminated Land Officer.

CHAPTER 10

SUPPORTING INFORMATON

SUPPORTING INFORMATION

10.1 Council Contacts

The principal points of contact with regard to this strategy are:

George Cowie
Pollution Control Officer (Contaminated Land)

Rowan Hughes
Principal Environmental Health Officer

Pollution Control
Environmental Health
Legal & Regulatory Services
Civic Offices

Holton Road

Barry

CF63 4RU

Tel: 01446 709105

Fax: 01446 709449

The Contaminated Land Working Group comprises the following members:-

Phil Beaman, Operational Manager, Parks and Grounds Maintenance

Gareth Bisset, Group Engineer Property Section

Alun Bosley, Land Drainage

Lorna Cross, Group Estates Officer, Property Section

Nicola Williams, Environmental Co-ordinator, Visible Services

Christopher Fray, Head of Economic Development

Jocelyn Ham, Solicitor, Legal Services

Rowan Hughes, Principal Environmental Health Officer, Regulatory Services

Charles Hunter, Building Control Officer, Building Control

Robert Ingram, Principal Accountant, Finance Division

George Cowie, Pollution Control, Regulatory Services

Steve Latham, Country Parks & Commons Manager, Countryside & Environmental Projects

Rhodri Davies, Planning Officer, Planning Section

Marcus Goldsworthy, Planning Officer, Planning Section

Brian Mayne, Development Officer, Waste Management

Mark Pierce, Quantity Surveyor, Building Services

Kate Thompson, Operations Manager, Regulatory Services

10.2 External Contracts

Welsh Development Agency
Steve L. Smith
Senior Land Reclamation Manager
South East Wales Division
Welsh Development Agency
QED Centre
Main Avenue
Treforest Estate
Pontypridd
CF37 5YR

CADW
Lawrence Burr
CADW: Welsh Historic Monuments
Cathays Park
Cathays
Cardiff
CF10 3NQ

Food Standards Agency
Dr S J Rowles
C C A F Division
Food Standards Agency
Aviation House
125 Kings Way
London
WC2B 6NH

Nigel Ajax Lewis
Conservation Officer
Glamorgan Wildlife Trust
The Nature Centre
Fountain Road
Tondu
Bridgend
CF32 0EH

Health & Safety Executive
Hazardous Installations, Land Division
Wales & Western England
Government Buildings
Ty Glas
Llanishen
Cardiff CF14 5SH

National Assembly for Wales
Robert Templar
Environment Protection 5
National Assembly for Wales
Cathays Park
Cathays
Cardiff
CF10 3NQ

Countryside Council for Wales
Miss Gill Barter
Senior Conservation Officer
South Wales Area Office
4 Castleton Court
Fortran Road
St Mellons
Cardiff
CF3 OLT

Environment Agency Wales
Holly Noble
Technical Specialist
Contaminated Land
Rivers House
St Mellons Business Park
St Mellons
Cardiff
CF3 OEY

Dr Mark Temple
Consultant in Communicable
Diseases
Temple of Peace and Love
Cathays Park
Cardiff
CF10 3NW

10.3 References

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Appendix 1

Sites of Nature Conservation Interest

Sites Of Nature Conservation Interest

The following is a list of all sites of Nature Conservation Interest of various status within the Vale of Glamorgan area. This list has been compiled from information supplied by the Councils Countryside Officer.

Status – Ramsar Sites

Severn Estuary

Status – Special Protection Area (SPA)

Severn Estuary

Status – Candidate Special Area for Conservation (SAC)

Dunraven

Status – Possible Special Area for Conservation (SAC)

Severn Estuary

Status – Sites of Special Scientific Interest (SSSI)

Barry Island

Clemenstone Meadows, Wick

Cliff Wood/Golden Stairs, Porthkerry

Cnap Twt, St.Brides Major

Coed y Bwl, St Brides Major

Cog Moors, Sully

Cosmeston Lakes, Lower Penarth

Cwm Cydfin, Leckwith

East Aberthaw Coast

Ely Valley (Part)

Eweny and Pant Quarries

Hayes Point to Bendricks Rock, Barry

Monknash

Nant Whitton Woods, Llancarfan

Nash Lighthouse Meadow

Old Castle Down, St Brides

Penarth Coast

Pysgodlyn Mawr Welsh St Donats

Severn Estuary (Part)

Southerndown Coast

Sully Island

Taff – Ely Estuary

Status – Heritage Coast

Glamorgan Heritage Coast

Status – Local Nature Reserves

Porthkerry

Cwm Talwg Woodland

Status – Highway Verge Conservation Zones

Parcau Farm Road Verge

Ton Ty-Du road verge, Llangan

Rectory Road Verge Llandow

Pont – Llywydd Road Verge

Llandough to the Herberts Road Verge

St Athan Road Verge, St Mary Church

Road Verge West of Eigman Bridge

A48 Road Verge, Stalling Down

Cross Barn Road Verge, St Hilary

Tre-Aubrey Road Verge

Treguff Road Verge

Llancadle Road Verge

Middlecross Road Verge, Llancadle

Lower Greenway to Llancarfan Road Verge

Pont-y-ffynnon Road Verges

Tair onen Road Verges, Bonvilston

Welsh St Donats Road Verges

Hensol Park Road Verge

Ty-Fry road verge

Clawdd-Coch, Dyffryn Mawr Road Verge, Pont ?

Warren Mill Farm to Llancarfan Road Verges

Walterston to Dyffryn Road Verge

Penmark Road Verges

Kenson Hill Verge

B4265 Cutting Verge, Fonmon

A4226 Welford Road Verge

Coedarhydyglyn Road Verge

Palmerston Bypass Road Verge

Michaelston Le Pitt Road Verge

Cog Road Verge Sully

Lavernock Road Verge, Swanbridge

Lavernock Cutting Road Verge, Sully

Cogan Cutting Road Verge
Tair Croes Down road Verge, Ewenny
Ewenny Cross Road Verge

Status – Candidate Sites of Importance for Nature Conservation (SINC's)

The name and location of these sites is not public information.

Status – Nature Reserves (owned by Glamorgan Wildlife Trust)

Coed y Bwl
Aberthaw Saltmarsh
Coed Garnllwyd
Cwm Colhuw
Lavernock Point
Coed Llwyn Rhyddid
Gwern Rhyd
Casehill Wood
Cwm George

Status – Woodland and Tree Preservation Orders

There are over 200 Tree Preservation orders (TPO's) in the Vale covering large tracks of Woodland as well as individual and groups of trees.

Status - Parks and Gardens

Cosmeston Lakes Country Park
Porthkerry Country Park
Dyffryn Gardens
Dunraven Park and Gardens

Status – Common Land

Stalling Down
Penllyne Charity Field
Variety of Village Greens/ponds and amenity land

Status – Vale of Glamorgan Land Holdings

Leckwith Woods
Orchid Field, Wenvoe
Friars Point
Various informal recreation areas
School Nature Areas

Status – National Trust Land

Peterston Super Ely (water meadow)

Status – Woodlands

Management plans have been prepared for many sites under the Woodland Grant Scheme. These Sites include neglected Woodland as well as new planting sites. The Councils Woodland Officer works with landowners and managers to prepare and implement these management plans, ensuring that local nature conservation interests are protected, managed and if possible enhanced.

Status – Tir Gofal

Durval Farm, Southerndown is currently implementing an agreed scheme. Other landowners are known to have made applications for Tir Gofal. However, it is not known which schemes will proceed.

Status – Nature Areas/Trails

Amelia Farm Trust
Llanerch Vineyard, Hensol
Warren Mill Farm, Welsh St Donats
Cog Moors Sewage Treatment Works
Wick Beacon

Appendix 2

Risk Assessment Methodology

Table J - Sources of High Risk Contamination

<u>Industry Category</u>	<u>Sub-Category</u>	<u>Risk Score</u>
Animal and animal products Processing works		25
Asbestos, use and disposal		25
Gas works, coke works and other coal carbonisation Plants		25
Waste disposal sites	<ol style="list-style-type: none"> 1. Landfills 2. Incinerators 3. Solvent recovery 4. Recycling plants 5. Drum/tank cleaning 6. Sanitary depots 	25
Oil refining, petrochemical production and storage		25
Iron and Steel works		25
Chemical production	<ol style="list-style-type: none"> 1. Explosives 2. Pesticide manufacture 3. Pharmaceutical production 4. Coating manufacturing (paints, inks & varnishes 5. Inorganic chemical manufacture 6. Fine chemical, dyestuff & pigment manufacture 7. Bitumen, linoleum & vinyl production 8. Organic chemical manufacture 	25
Scrap yards		25
Metal smelting & refining works		25
Tanning and leather works		25
Radioactive material Processing and disposal		25

Table K - Sources of Medium Risk Contamination

<u>Industry Category</u>	<u>Sub-Category</u>	<u>Risk Score</u>
Cement and ceramic Production	Includes asphalt manufacture	20
Textile manufacture and dyeing		20
Sewage treatment works		20
Chemical works	1. Rubber processing 2. Disinfectant manufacture	20
Pulp and paper manufacturing		20
Engineering works		20
Garages	1. Servicing 2. Repair 3. Re-fuelling	20
Mining and other extraction industries	1. Coal 2. Metaliferous 3. Other	20
Power stations		20
Airports		20

Table L - Sources of Low Risk Contamination

<u>Industry Category</u>	<u>Sub-Category</u>	<u>Risk Score</u>
Glass manufacture		15
Fertiliser manufacture		15
Dockyards		15
Food processing		15
Timber treatment works		15
Film and photographic Processing		15
Transport depots		15
Railway land		15
Electrical manufacturing plants		15
Plastic products manufacture		15
Laundries and dry cleaning		15
Printing works		15

Table M - Sources of Minimal Risk Contamination

<u>Industry Category</u>	<u>Sub-Category</u>	<u>Risk Score</u>
Charcoal works		5
Food and drink	1. Storage 2. Distribution	5
Supermarkets and retail outlets		5

Table N - Receptors of Contamination

Current Land Usage: Onsite

<u>Activity</u>	<u>Risk Score</u>
Residential Housing with gardens Allotments	100
Residential housing without gardens Schools/nurseries Agricultural land	90
Protected habitats Protected buildings	90
Recreational land	65
Commercial/Industrial	60

Current Land Usage: Within 100m of the site

<u>Activity</u>	<u>Risk Score</u>
Residential Housing with gardens Allotments	50
Residential housing without gardens Schools/nurseries Agricultural land	45
Protected habitats Protected buildings	35
Recreational land Commercial/Industrial	30

Current Land Usage: 100m - 400m from site

<u>Activity</u>	<u>Risk Score</u>
Residential Housing with gardens Allotments	25
Residential housing without gardens Schools/nurseries Agricultural land	20
Protected habitats Protected buildings	15
Recreational land	10
Commercial/Industrial	5

Surface Water Features

<u>Activity</u>	<u>Risk Score</u>
Surface water on site	25
Surface water within 10m of the site	20
Surface water features within 10 - 100m of the site	15
Surface water features within 100 - 400m of the site	5

Groundwater Features

	<u>Risk Score</u>
Abstractions, Source Protection Zone (High risk major aquifer)	25
Abstractions, Source Protection Zone II Medium risk Major Aquifer: High risk minor Aquifer	20
Abstractions, Source Protection Zone III Low risk major aquifer: Medium risk minor aquifer	15
Low risk minor aquifer	5

Guide to Risk Assessment

The above risk assessment sheets are to be used during the site walkover survey which will form part of any Phase I investigation carried out by the Council. The scores highlighted by the system range from 110-250 where:

- Very High 230-250
- High 190-229
- Medium 150-189
- Low 120-149
- Minimal 110-119

With 250 being the highest score and 110 the lowest score that can be obtained.

Appendix 3

List of Welsh Historic Monuments within The Vale of Glamorgan

(data within this section has been kindly supplied by CADW)