

Revised Jan 2008

Developing Contaminated Land Sites Within the Western Isles

A guide to redeveloping potentially contaminated land sites

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Review Date January 2009

1.0 INTRODUCTION

While land is an essential part of our environment it is also a vital social and economic resource. The most beneficial and suitable use of our limited land resources, especially the reuse of land that has previously been developed, is central to the Local Authority's main endeavour of ensuring sustainable development throughout the Western Isles.

Previously used land sites are commonly referred to as 'brownfield sites'. These sites are often affected by contamination from historic industrial processes. This guide aims to raise awareness amongst developers, their responsibilities and the information required by the Local Authority to assess planning applications for potentially contaminated land sites.

2.0 APPROACH TAKEN BY COMHAIRLE NAN EILEAN SIAR

The planning system controls the development and use of land in the wider public interest. The potential end use of a site can therefore be restricted by the presence of contamination. Contamination can threaten the health and safety of the public, the environment, the built environment and economic activities through its impact on those using the land and neighbouring users. Contamination or the possibility of it is therefore a material consideration in determining planning applications.

Planning guidance and legislation places a responsibility on both owners and developers to establish the extent of any potentially harmful materials on their sites. Government guidance has recognised that potential contamination is a material planning consideration and that establishing whether a site is contaminated or not is a key factor in the development phase as it is the most cost-effective time at which to deal with the issue of contaminated land.

CnES has developed a strategy in accordance with Part IIA of the Environmental Protection Act 1990, this piece of legislation deals specifically with Contaminated Land. The strategy aims to identify all the potentially contaminated land sites throughout the Western Isles even if they are not subject to development proposals. Where contamination is found to be significant the Local Authority must take active steps to remove or reduce the risk to people and the environment.

Copies of the strategy can be obtained online at: www.cne-siar.gov.uk

3.0 RESPONSIBILITIES OF THE PARTIES IN THE DEVELOPMENT PROCESS

3.1 ROLE OF THE LOCAL AUTHORITY

Where a developer is proposing to develop land that may be contaminated it is advisable to contact the local Environmental Health Section of the Local Authority to discuss any issues regarding the contaminated land site before submitting a planning application. The Environmental Health Section will advise on what must be submitted with a planning application. This contact in the early stages reduces the time of processing an application and any misunderstandings that may arise further on in the planning process.

Local planning authorities are responsible for controlling development and enforcing conditions to ensure that development is suitable in relation to all the circumstances specific to each individual site, any contamination, that land is remediated to an appropriate standard for its intended use during development and that it is properly maintained thereafter. The building control section grants approval to developments, this approval includes conditions that aim to protect buildings from the effects of contamination.

At Comhairle nan Eilean Siar the Environmental Health Section provides advice on these issues to the Planning Service while also being the enforcing authority within the Local Authority for the new contaminated land regime.

3.2 ROLE OF THE DEVELOPER

When development is proposed the primary responsibility for safeguarding land and other property, including neighbouring land, against any risk from contamination remains with the owner. It is the responsibility of the developer to ensure that the development is safe and 'suitable for use' for the intended purpose. The responsibility for determining whether land is suitable for a particular development rests with the developer. In particular, the developer is responsible for:

- Determining whether the proposed development will be affected by contamination and whether it will increase the potential for contamination on that site or elsewhere.
- Satisfying the Local Planning Authority, that any contamination can be remediated successfully with the minimum adverse environmental effect and to ensure that there is safe development and occupancy of each individual site.

For each proposed development, it is the responsibility of the developer to ensure that any issues relating to contaminated land are addressed, that suitable remediation is carried out if required and the

land is safe and 'suitable for use'. For example when a site is to be used for an industrial purpose, with mainly hard standing cover, it will probably not be required to be cleaned up to the same standard as if the site was going to hold a domestic house and garden.

Where a site is regarded as potentially contaminated the Local Planning Authority will expect the appropriate site investigation procedure to be carried out.

3.3 ROLE OF SCOTTISH ENVIRONMENTAL PROTECTION AGENCY (SEPA)

SEPA have particular responsibilities under the new contaminated land regime. Specifically, their duties are:

- To ensure the remediation of land that has been designated as a special site
- Maintain a public register for special sites
- Prepare a national report on the state of contaminated land

They also have the power to provide site-specific guidance to Local Authorities on contaminated land and recover the cost for remediation undertaken by the organisation.

4.0 OVERVIEW OF CONTAMINATED LAND LEGISLATION

On the 1st of April 2000 the Government enacted section 57 of the Environment Act 1995 by implementing Part IIA of the Environmental Protection Act 1990. Part IIA is a joint initiative to be enforced by Local Authorities who will act as the lead regulator; other bodies such as SEPA will assist them.

The objectives of Part IIA are:

- To deal with the legacy of contaminated land.
- To provide an improved system for identification and remediation of land where contamination is causing unacceptable risks to human health or the wider environment.
- To increase the consistency of the approach taken by different authorities.
- To be consistent with the 'polluter pays' principle.
- To encourage voluntary action by polluters and/or landowners.

The underlying concept of this legislation is the 'suitable for use' approach. This approach focuses on the risks associated with land contamination. The approach recognises that the risks presented by any given level of contamination will vary greatly according to the use of the land and a wide range of other factors such as the underlying geology of the site. Risks therefore need to be assessed on a site-by-site basis (Appendix A).

5.0 MAKING A PLANNING APPLICATION

It is advisable to submit a desk study (see 7.1) with your planning application if the site has known or potential contamination on it or if the proposed development is sensitive to contamination. An Environmental Impact Assessment may be required in some cases and developers should seek advice early on in the planning process from the Local Planning Authority.

It will be advantageous to determine whether there are likely to be any contamination issues prior to submitting an application for planning permission. On any site where there is the potential for contamination that could influence the development, the planning officer will consult with the Environmental Health Section. The application will then be assessed and certain conditions may be imposed upon the development to ensure that the site is made suitable for the proposed use and that the safety of future site users and the environment is taken into account.

It is imperative that the site agents and developers provide the Local Planning Authority with as much information as possible at every stage of the planning process. Withholding any information can result in delays with the planning application.

APPENDIX B SHOWS A PLANNING PROCEDURES FLOWCHART

6.0 ENVIRONMENTAL RISK ASSESSMENT

Potential Hazard Sources

Ground contamination can occur through several causes, particularly from historical use of the site and is often linked to the processes of waste disposal e.g., community dumps; underground storage e.g., disused petroleum tanks; leaks and spillages etc. The contamination can either be from on-site sources or result from migration from other sources off site.

Potential Migratory Pathways

The primary pathways are considered to be either lateral or vertical through underlying strata or upward to the ground surface. Such pathways also provide the potential for contaminants to migrate towards local watercourses and groundwater.

Potential Targets at Risk

These include humans, ecosystems, property and controlled waters. There are potential environmental liabilities associated with contaminated land with regard to existing ownership and redevelopment. Therefore the probability of a hazard, linked with its consequences can be used to assess risk.

7.0 SITE INVESTIGATION PROCEDURE

APPENDIX C HAS A CHECKLIST FOR EACH STAGE OF THE PROCEDURE.

A code of practice for undertaking site investigations is laid out in British Standard (BS): 10175 Investigation of Potentially Contaminated Sites – Code of Practice.

The site investigation procedure will identify the type and extent of any contamination and identify possible areas that may require remedial works to be carried out in order to make a site suitable for use. The investigation can be split into 3 stages, although not every site will require all 3 stages to be carried out. This approach allows resources to be targeted towards the areas that are most likely to be contaminated.

7.1 STAGE 1 (DESKTOP STUDY)

- Information gathering, site history.
- Conceptual site model which considers all the potential sources of contamination, receptors and the pathways between them:



If all three exist it is called a pollutant linkage. Conclusion of Stage 1 should indicate whether progression to Stage 2 is required.

7.2 STAGE 2 (DETAILED INVESTIGATION)

- This stage is the on-site validation of the conceptual site model. By undertaking an intrusive investigation, chemical testing and quantitative risk assessment. Stage 2 can confirm possible pollutant linkages and should include appropriate remediation options if required.

It is important that when monitoring data and the analysis of samples to be valid, accurate, reliable and appropriate. Good quality monitoring and sample analysis depends on using:

- The correct methods
- Approved standards
- Trained and competent personnel
- Accredited organisation
- Effective planning
- Clear and accurate reporting
- Equipment which is suitable and calibrated

Please ensure that any monitoring or sample analysis is conducted using best practice. Failure to do so may end in further monitoring and sampling having to be carried out which could result in delays in the planning process and discharging conditions.

RISK ASSESSMENT AND GUIDELINE VALUES

In March 2002 the Contaminated Land Exposure Assessment (CLEA) model and additional Contaminated Land Reports (CLR) were introduced. This contained the first UK approved, toxicologically based, soil guideline values (SGV's) and a new UK policy for the risk assessment of human health. Technically out of date 'trigger values' prepared by the former Inter-Departmental Committee on the Redevelopment of Contaminated Land (ICRCL) have been formerly withdrawn by the Scottish Executive. Comhairle nan Eilean Siar can no longer accept assessments based on the ICRCL values and encourage the use of CLEA and the SGV's wherever possible.

7.3 STAGE 3 (REMEDIATION STRATEGY)

- Remediation Statement
Details objectives, methodology and procedures of the proposed remediation works. **The developer must submit this for approval before any work begins.**

7.4 STAGE 4 (VALIDATION)

- Validation Report
Must be submitted after the work is completed and must show that the work has been carried out satisfactorily and remediation targets have been achieved.

SUBMITTED CONTAMINATED LAND REPORTS AND REMEDIATION STRATEGIES

When commenting on submitted contaminated land reports and proposed remediation strategies the Local Authority cannot accept responsibility for the thoroughness of such reports nor investigations nor the design or completion of remediation measures. The Environmental Health Section will audit reports on behalf of the Local Planning Authority. It is important that the developers and their consultants consult all the relevant, up to date guidance and that best practice is employed at all times.

APPENDIX D outlines the Stage 4 approach in dealing with potentially contaminated land. The checklist addresses any issues that arise, depending on previous site use and the extent of potential or actual contamination. The scope of submitted reports must reflect the complexity and size of the site, the necessary level of investigation as well as the likely risks.

The listed requirements will enable the relevant officer to make informed decisions on the suitability of the proposed development and remediation options. If your investigations prove to be satisfactory to the Local Authority that there is no contamination problem then no further action will be necessary. Once this has been confirmed by the Local Authority in writing you will then be able to proceed with your development.

Contaminated land is a serious planning issue and it is an infringement of planning control not to comply with any conditions that have been imposed on your development.

Actions which can be taken by the Local Authority include the:

- Power to enter and investigate
- Power to stop the development if it is already in progress
- Ability to demand the information requested by condition
- Requirement for post development remediation works prior to the site being put into use

In cases of a serious breach of conditions the developer can be prosecuted.

Omitting any part of the process is likely to result in delaying the planning process. If you need any further assistance or advice please contact:

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Department for Sustainable Communities
Planning Department
Stornoway
Uists and Barra**

(01851 709545)

(01870 602425)

**Comhairle nan Eilean Siar
Department for Sustainable Communities
Environmental Health Section
Stornoway
Uists and Barra**

(01851 709396)

(01870 602425)

IMPORTANT REFERENCE DOCUMENTS

Department of the Environment (1994) **Guidance on the Preliminary Site Inspection of Contaminated Land** CLR Report 2.

Department of the Environment (1994) **Documentary Research on Industrial Sites** CLR Report 3

Department of the Environment (1994) **Sampling Strategies for Contaminated Land** CLR Report 2.

Department of Environment, Transport and Regions (2000) **Circular 02/2000 Environmental Protection Act 1990: Part IIA Contaminated Land**

Department of the Environment, Industry Profiles

Department for Environment, Food & Rural Affairs (2002) **Assessment of Risks to Human Health from Land Contamination** CLR Report 7.

Department for Environment, Food & Rural Affairs (2002) **Potential Contaminants for the Assessment of Land** CLR Report 8.

Department for Environment, Food & Rural Affairs (2002) **Contaminants in Soil and Collation of Toxicological Data and Intake Values for Humans** CLR Report 9.

Department for Environment, Food & Rural Affairs (2002) **The Contaminated Land Exposure Assessment Model (CLEA): Technical basis and algorithms** CLR Report 10.

Department for Environment, Food & Rural Affairs (2002) **Soil Guideline Values (SGV's) 1, 3, 4, 7, 9, 10**

Department for Environment, Food & Rural Affairs (2002) **Contaminants in Soil: Collation of Toxicological Data and Intake Values for Humans (TOX Reports) 1, 3, 4, 5, 6, 7, 8, 10**

The above documents can be either downloaded for free or purchased via the DEFRA website: www.defra.gov.uk/environment/land/contaminated/pubs.htm

British Standards Institute (2001) **BS10175: Investigation of Contaminated Sites – Code of Practice**

Environment Agency (2000) **Guidance for the Safe Development of Housing on Land Affected by Contamination** R&D 66.

Health and Safety Executive (1991) **Protection of Workers and the General Public During the Development of Contaminated Land**

Planning Advice Note 33 **Development of Contaminated Land** Scottish Executive
(Can be downloaded for free from www.scotland.gov.uk)

ACKNOWLEDGEMENTS
Caradon County Council
www.caradon.gov.uk

City of York Council
www.york.gov.uk

Fife Council
www.fife.gov.uk

Powys County Council, Wales
www.powys.gov.uk

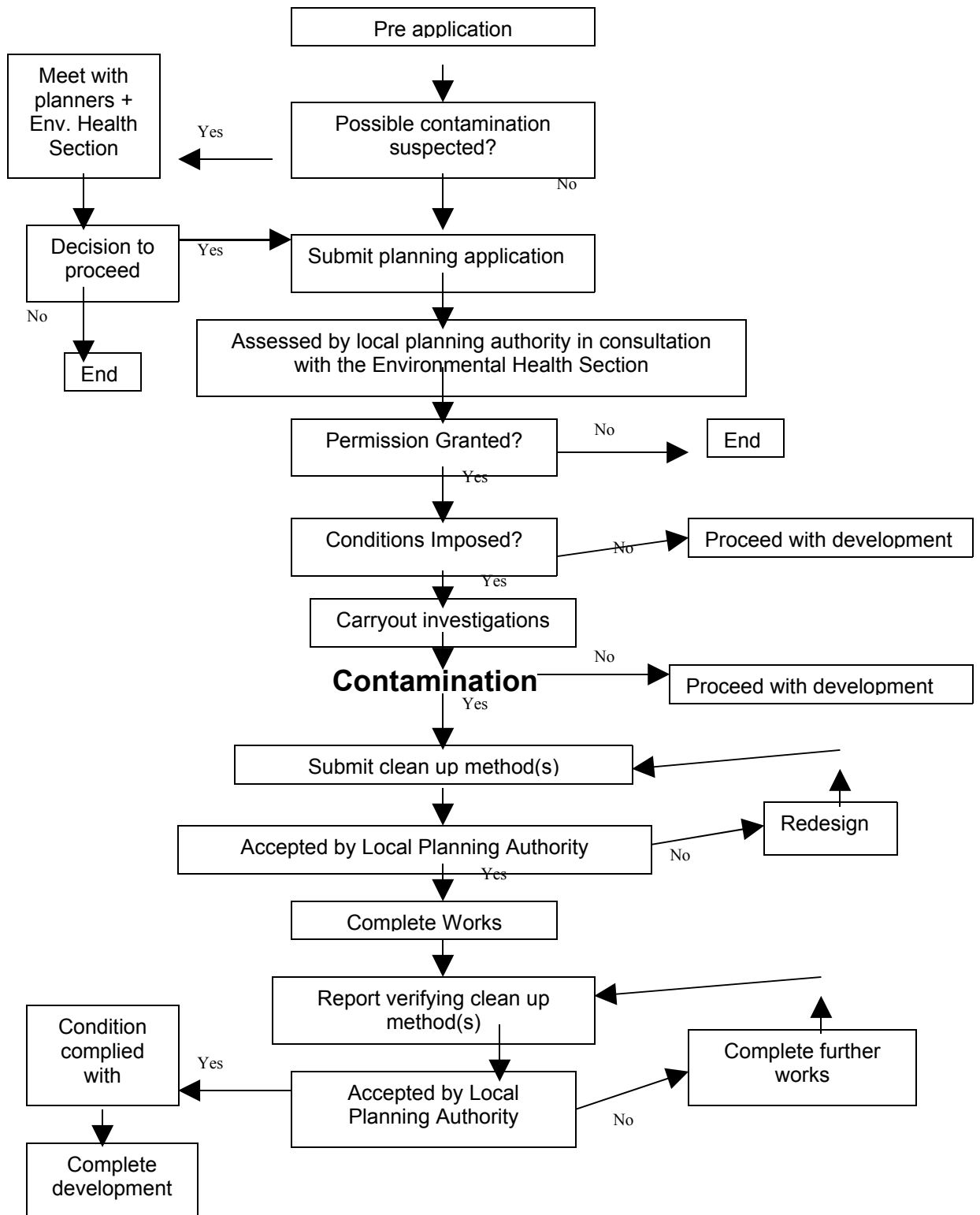
**APPENDIX A.
EXAMPLES OF WHERE A CONTAMINATED LAND SITE INVESTIGATION
WILL BE REQUIRED.**

Where sites have been used for the following:

- Agricultural Buildings
- Airports
- Animal and animal products processing
- Animal burials
- Animal dips
- Asbestos Manufacturing and Use
- Builders Merchants
- Ceramics, cement and asphalt manufacturing
- Charcoal Works
- Chemical Works: coatings, paints and printing inks
- Chemical Works: organic chemicals
- Chemical Works: pharmaceuticals
- Dockyards and Dockland
- Dry Cleaning
- Electrical and electronic equipment manufacture and repair
- Electroplating and other metal finishing
- Engineering Works
- Foundries and Smithies
- Gasworks, coke works and coal carbonisation sites
- Gun clubs and rifle ranges
- Infilled and Made Ground
- Laboratories
- Ministry of Defence Sites
- Munitions, explosives, fuses, pyrotechnic production, testing and storage sites
- Oil refineries and bulk storage of crude oil and petroleum products
- Power Stations and Power Supply
- Photographic Processing
- Printing and Bookbinding
- Road vehicle service and repair, garages and filling stations
- Scrap yards
- Sewage works and farms
- Textile works and Dye works
- Transport and Haulage depots
- Waste recycling, treatment and disposal sites

And in any case where land was previously developed

**APPENDIX B
PLANNING PROCEDURES FLOWCHART**



**APPENDIX C
CHECKLIST FOR CONTAMINATED LAND SITE INVESTIGATIONS**

STAGE 1 (DESKTOP STUDY)

Site Description

Location plan of site and grid reference
Current land use (most recent use if vacant)
Details of land surrounding the site
Details of any existing site investigations/reports

Site History

Pre 20th Century historical maps
Post War to present day maps
Relevant trade directories
Aerial photography

Environmental Setting

Hydrogeology (aquifer classification, source protection zones)
Surface water bodies
Geology (significant in regards to source, pathway, receptor)
Protected areas (SSSI's, NR's etc)

SEPA – Water

River quality within 250m of the site
Discharge to controlled water within 250m of the site
Any prosecutions under the Water
Records of any pollution incidents on or near the site
Abstraction points within 3km including the source of water the quantity and its purpose
Applications, enforcement and authorisations under Part 1 of the Environmental Protection Act 1990

SEPA – Waste

Landfill sites/waste disposal sites within 500m of the site
Waste transfer station within 250m of the site
Scrap metal dealers register
Closed landfill sites within 500m
Hazardous substances register within 500m
The type of waste accepted by these sites

Local Authority – Planning

Planning history on the site
Vacant and derelict land surveys
Environmental reports
Building control reports

Local Authority – Environmental Health

Record of pollution problems
Private water supplies

Health and Safety Executive

Record of accidents and incidents
Emergency response records

WALKOVER SURVEY

Site layout
Inclusion of surrounding area
Methodology used
Photographs
Identification of potentially contaminated land sites

CONCEPTUAL MODEL

Identification of all sources, pathways and receptors
Identify all the pollutant linkages

RECOMMENDATIONS FOR INTRUSIVE INVESTIGATION IF NECESSARY

STAGE 2 (DETAILED INVESTIGATION)

Sampling Strategy

Methodology used
Justification for number and location of samples
Sampling patterns and depths
Sample locations noted on site plan
The procedure for handling, sampling, collection, storage and transport
Competency of staff taking samples

Laboratory

Accreditation
Copies of original laboratory reports
Details of sample preparation and analytical method used

Conceptual Site Model

Risk Estimation

Site specific risk assessment – model used, toxicology data, assumptions
Comparison with published generic guideline values

RECOMMENDATIONS FOR REMEDIATION AND/OR FURTHER INVESTIGATION

STAGE 3 (REMEDICATION STRATEGIES – must take into account the intended end use of the site).

Justification for remedial option chosen

Scope of work

Remedial objectives

- **Technical specifications**
Depths of imported soil, geotextile etc.

Site preparation and operational requirements
Precautions to prevent mixing 'clean' soil with contaminated material
Storage and fitting of geotextile.

- **Site plans/drawings**
- **Phasing of works and appropriate timescales**
- **Consents and licences (e.g., asbestos removal licence)**
- **Site supervision**

Site management

Measures to protect the environment, services those working on site and neighbours by following Health and Safety procedures, odour, noise and dust controls and controlling surface runoff.

- **Resources, roles and responsibilities including lines of communication**
- **Monitoring requirements**

Both during and after remediation work

Verification requirements

Chemical testing
Source of imported soil
Number of samples
Sampling strategy
Appropriate person taking samples
Lab to be used and accreditation
Proposed clean-up standards

Details of monitoring required (if necessary) once remediation has been completed.

Details on the lifespan of the remediation works that have been recommended.

CONFIRMATION THAT ALL THE REMEDIAL OBJECTIVES HAVE BEEN MET

STAGE 4 (Validation Report)

To be submitted for approval after the remediation work has been undertaken and should include:

Information requested by remediation strategy

Details and justification of any changes from the original remediation strategy

- Details of who carried out the work
- Substantiating data

Laboratory and in-situ test results

Monitoring of groundwater and gases during remediation and details of monitoring programme (if required) post completion of works

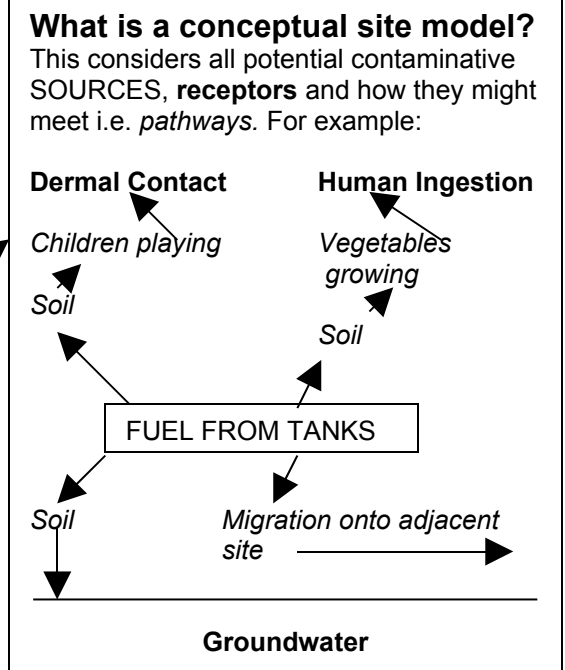
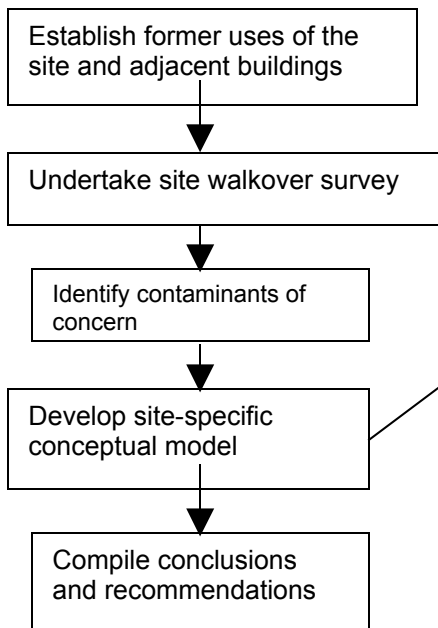
Summary data plots and tables relating to clean-up criteria

Plans showing treatment areas and details of any differences from the original remediation strategy
Waste management documentation

Confirmation that remediation objectives have been met e.g., a certificate of completion.

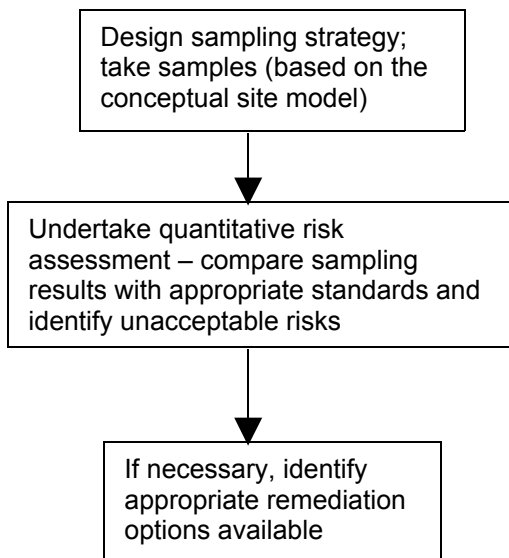
APPENDIX D – Procedure for dealing with land potentially affected by contamination (Adapted from Fig 2.1, Guidance for the Safe Development of Housing on Land Affected by Contamination, Environment Agency & NHBC, R & D Publication 66, 2000).

Stage 1 – the desktop study



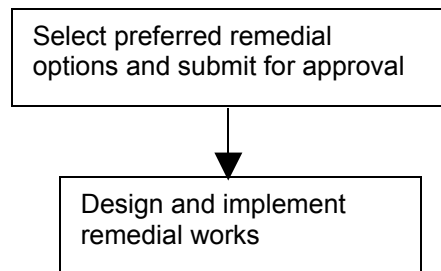
Stage 2 – Detailed Site Investigation

When necessary



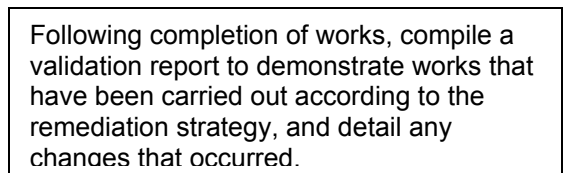
Stage 3 – Remediation Strategy

When necessary



Stage 4 – Validation Report

When necessary



OTHER USEFUL INFORMATION

Consultants

Some of the processes involved in the development of the land may require using specialist consultants depending on the type or degree of contamination. Care should be taken when appointing consultants and the developer should look for experience in the areas required and that the company or person carrying out the inspection carries professional indemnity insurance if appropriate. **The Local Authority will not recommend individual companies or consultants.**

Council Contacts

Ruth Macaskill
Contaminated Land Officer

Christine Schofield
Senior Environmental Health Officer

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Other Useful Contacts

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James Street
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SNH (area office)

32 Francis Street
Stornoway
HS1 2ND

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Scottish Water (area office)

Glensheilach Business Park
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01851 701 328

Crofters Commission

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IV2 3EQ

01463 663 450

Health and Safety Executive

Belford House
59 Belford Road
Edinburgh
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0131 247 2000

Food Standards Agency

St Magnus House
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01224 285 100

