Newcastle City Council

Public Safety and Regulation

Contaminated Land Inspection Strategy

2025

Table of Contents

1 INTRODUCTION

Newcastle City Council is required to inspect its district for contamination under the provisions contained in Part 2A of the Environmental Protection Act 1990. The objectives of this Strategy Document are:

a) To meet the requirement to produce a Contaminated Land Inspection Strategy;
b) To provide a framework in which the nature and extent of contaminated land within the city can be identified and assessed in a rational, ordered and efficient manner;
c) To ensure that the most serious problems are dealt with first by a process of prioritisation of potentially contaminated land;
d) To inform stakeholders of the action to be taken by Newcastle City Council to address the problems of contaminated land;
e) To lead to the provision of information to the Environment Agency for its report on contaminated land.

1.1 Definition of contaminated land

Contaminated Land is defined at Section 78A(2) of Part IIA of the Environmental Protection Act 1990.

"Contaminated Land is any land which appears to the local authority in which 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."

Section 78(5) requires the regulatory authority to act in accordance with guidance issued by the Secretary of State in determining significance and likelihood.

1.2 Pollutant linkages and risk assessment

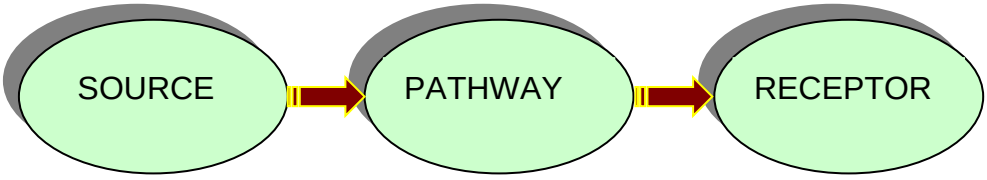
For a site to meet the definition of contaminated land, a pollutant linkage must be established.

A pollutant linkage consists of three parts:

(a) A source (of contamination in, on or under the ground).

(b) A pathway (by which the contaminant is causing significant harm, or which presents a significant possibility of such harm being caused).

(c) A receptor (of type specified in the Circular 02/2000 Chapter A).



The receptors recognised as being potentially sensitive are:

(a) Human beings – disease, death, serious injury, gene mutation, birth defects or the impairment of reproduction function;
(b) Ecological systems, or living organisms forming part of such a system within certain protected locations;
(c) Property in the form of buildings;
(d) Controlled Waters;
(e) Property in the form of; crops; produce grown domestically or on allotments; livestock; wild animals which are the subject of shooting or fishing rights.

A *conceptual site model* attempts to estimate if the components of source pathway receptor exist in such a manner that they form, or appear likely to form, a pollution linkage. A risk assessment would then be undertaken to determine the likelihood of significant harm being caused. Land can only be determined as being contaminated land where there is significant harm, or a significant possibility of harm, being caused to a receptor.

1.3 National and local planning policy context

At a national level the National Planning Policy Framework (NPPF) sets out the requirement for sustainable development.

This Strategy will have regard to the NPPF as a whole and in particular to:

- Promoting an effective use of land in meeting the need for homes and other uses, while safeguarding and improving the environment and ensuring safe and healthy living conditions by giving substantial weight to the value of using suitable brownfield land within settlements for homes and other identified needs, and support appropriate opportunities to remediate despoiled, degraded, derelict, contaminated or unstable land;
- Contributing to conserving and enhancing the natural and local environment by remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.
- After remediation, as a minimum, land should not be capable of being determined as contaminated land under Part 2A of the Environmental Protection Act 1990

The National Planning Policy Framework confirms that responsibility for securing a safe development rests with the developer and/or landowner.

At a local level, development plans include Policy *CS14 Wellbeing and Health*, which provides the local overarching policy for this Strategy, states that the wellbeing and health of communities will be maintained and improved by: *“Preventing negative impacts on residential amenity and wider public safety from noise, ground instability, ground and water contamination, vibration and air quality.”*

1.4 Regulatory context

Contaminated land is legislated through The Environmental Protection Act 1990, as amended by the Environment Act 1995.

1.4.1 The roles of the Council and the Environment Agency

Local Authorities have been given the primary regulatory role under the Part IIA regime. The Environment Agency also has a responsibility to:

(a) provide information to local authorities on land contamination.
(b) ensure the remediation of special sites.
(c) maintain a register of Special Sites remediation.
(d) prepare a report on the state of contaminated land.
(e) provide advice to local authorities on identifying and dealing with pollution of controlled waters.
(f) provide advice to local authorities on the remediation of contaminated land.

If an area of contaminated land has been identified, the approach for dealing with it will be the same regardless of whether the local authority or the Environment Agency is the regulator. There are four main stages to this approach:

(a) To establish who is the "appropriate person" to bear responsibility for the remediation of the land;
(b) To decide what remediation is required and to ensure that this occurs through reaching a voluntary agreement, serving a remediation notice, or carrying out work themselves;
(c) To determine who should bear what proportion of the liability for meeting the cost of the work; and
(d) To record certain information regarding regulatory action on a public register.

1.4.2 Enforcement issues in relation to land contamination

Wherever possible the City Council will try to achieve the remediation of land on a voluntary basis. This may apply in particular where:

(a) The owner of the land has a programme for carrying out the remediation of a number of different areas of land for which he is responsible, and which aims to tackle those cases in order of environmental priority;
(b) The land is already subject to development proposals;
(c) 'The appropriate person' brings forward proposals to develop the land in order to fund the necessary remediation; or
(d) 'The appropriate person' wishes to avoid being served with a 'Remediation Notice'.

However, where these issues do not apply and the City Council identifies 'contaminated land', a remediation notice will be served when appropriate. Where the land is in the ownership of the City Council a 'Remediation Statement' will be produced.

2 CHARACTERISTICS OF NEWCASTLE UPON TYNE

2.1 Geographic location

Newcastle upon Tyne is the regional capital of the North East of England. It is situated on the north bank of the River Tyne estuary, approximately eight miles from the River's confluence with the North Sea. The City Council's administrative area covers some 11,348 hectares with the southern boundary being formed by the River Tyne.

2.2 Population

The population of the city at the 2021 census was approximately 300,200. Much of the City Council's administrative area is covered by mixed land use for industry and housing. There are outlying villages separate from the urban area, principally Throckley, Newburn, Walbottle, Dinnington, Hazlerigg and Brunswick Village.

2.3 Historic environment

Newcastle has an extensive and generally well-preserved historic environment. Hadrian's Wall passes east/west through the city and is uncovered in several locations, the original Norman Keep which gave the city its name, is well preserved, as are some sections of the city's medieval wall.

There are approximately 1,600 Listed Buildings in the City Council area.

There are 53 Scheduled Ancient Monuments. These include:

Gardener's Houses Settlement, Dinnington
Two Rectangular Camps, Hazlerigg
Dewley Hill round barrow
Newcastle Swing Bridge
Newcastle upon Tyne Castle, Roman Fort and Anglo-Saxon Cemetery
Salter's Bridge, Gosforth
Old Tyne Bridge Land Arches
St. Mary's Well, Jesmond
St. Mary's Chapel, Jesmond
Blackfriars, the remains of a Dominican Friary
The 'Camera' of Adam of Jesmond
Chapel south of Low Gosforth House
Town Wall and associated Towers x 9
Hadrian's Wall, Vallum and associated works x 21
Dewley Pits

The City Council is committed to investigate and preserve archaeological remains where these are found during the remediation of determined Part IIA sites.

2.4 Natural environment

In the context of contaminated land, 'Harm' relates only to receptors listed in Table A of Circular 2/2000. In the case of living organisms and Ecosystems, only two categories of limited protections exist with the City Council's area: Sites of Special Scientific Interest and Local Nature Reserves.

Newcastle has five SSSIs:-

- Big Waters.
- Brenkley Meadows
- Gosforth Park
- Hallow Hill
- Prestwick Carr

There are six designated Local Nature Reserves:-

- Sugley Dene
- Denton Dene
- Walbottle Brickworks
- Throckley & Walbottle Dene
- Benwell Nature Park
- Havannah

Gosforth Park SSSI

2.5 Hydrogeology

There are no groundwater abstractions within the area used for drinking water supplies, and therefore no Groundwater Protection Zones have been made by the Environment Agency. There are two ground water abstractions for industrial use in the north of the area at Brunswick Village and North Gosforth.

The groundwater level in the coal measures has not yet recovered to its natural state, following the cessation of the Coal Authority's Minewater Pumping Programme. Groundwater levels are currently rising and it is not known what their eventual level will be. Rising groundwaters can result in the emergence of potentially polluted minewater outlets in the area, or increased flow in the existing outfalls. The City Council manage these emissions as they occur. For example, at Delaval Drift in Scotswood, improvements were made to the mine entrance to ensure

minewater transfers into a culvert that takes it to the River Tyne rather than spilling out onto Scotswood Road.

The Environment Agency's Groundwater Vulnerability map for the Tyne & Tees area classifies the coal measures underlying the city as a "minor aquifer". Minor aquifers have variable permeability, they rarely provide large quantities of water for abstraction but are important for local supplies and supplying base flows of rivers. The Environment Agency's current policy regarding groundwaters, to only comment on development proposals in Groundwater Source Protection Zone 3, means that they will have little input into such works in Newcastle at the current time.

The main watercourses in the area are the River Tyne and the Ouseburn. The River Tyne is tidal throughout the city. The water quality of the tidal estuary is improving and the river supports a large population of migratory salmonoids.

The Ouseburn originates at Callerton Pond, has its confluence with the River Tyne at Byker, and is tidal for several hundred metres. It is culverted for 665m where it passes under the City Stadium former landfill site. Overall quality in the Ouseburn was "moderate" in 2015 (EA Water Body Summary Report w.r.t. the Water Framework Directive) and it is "bad" for fish. Reasons for not achieving "good" status include: urbanisation, drainage, flood protection structures, industry, sewage discharge, land drainage, barriers to fish migration, contaminated land and, possibly, arable fields and landfill leaching.

There are many smaller culverted streams flowing under the city, some of these are combined with sewer systems, others discharge into the River Tyne. Examples of these burns are Pandon Burn, Skinner Burn, and Lort Burn.

The Construction of the Ouseburn Culvert 1907

Pandon Burn Culvert, uncovered during construction works, Broad Chare

2.6 Geology

The landscape of the area was shaped before and during the last glaciation and has been modified only slightly since that time. Approximately ninety percent of the area is covered with drift deposits of glacial or later origin. These deposits are principally boulder clays, mixed clay and sand, laminated clays and silts. The drift geology is shown on figure 1.

The solid geology of the area consists of approximately 800m of coal measures resting conformably on the underlying Millstone grit. The coal measures are classified according to the Westphalian stages. The sequence of rocks through the coal measures is rhythmic, with mudstone succeeded in turn by sandstone and coal. Sandstone rock outcrops occur at Byker and the ridge between Benwell and Elswick. The average depth of this cycle of rocks is above twelve metres in thickness but can be reduced when one of the rocks is either thinner or missing. The solid geology is illustrated on figure 2.

The coal measures have been extensively mined, with the thickest seams almost exploited to exhaustion. For example, the High Main Coal, the thickest and most consistent coal seam in the area is worked to 75-90% extraction rate. The thinner seams are much less worked and there is thought to be potential for further mining, particularly through open cast operations, if favourable economic conditions prevail in the future.

Deep mining ceased over thirty years ago, and its effect now is likely to be minimal. However, consideration always has to be given to potential mine gas emissions and the potential of subsidence from shallow workings.

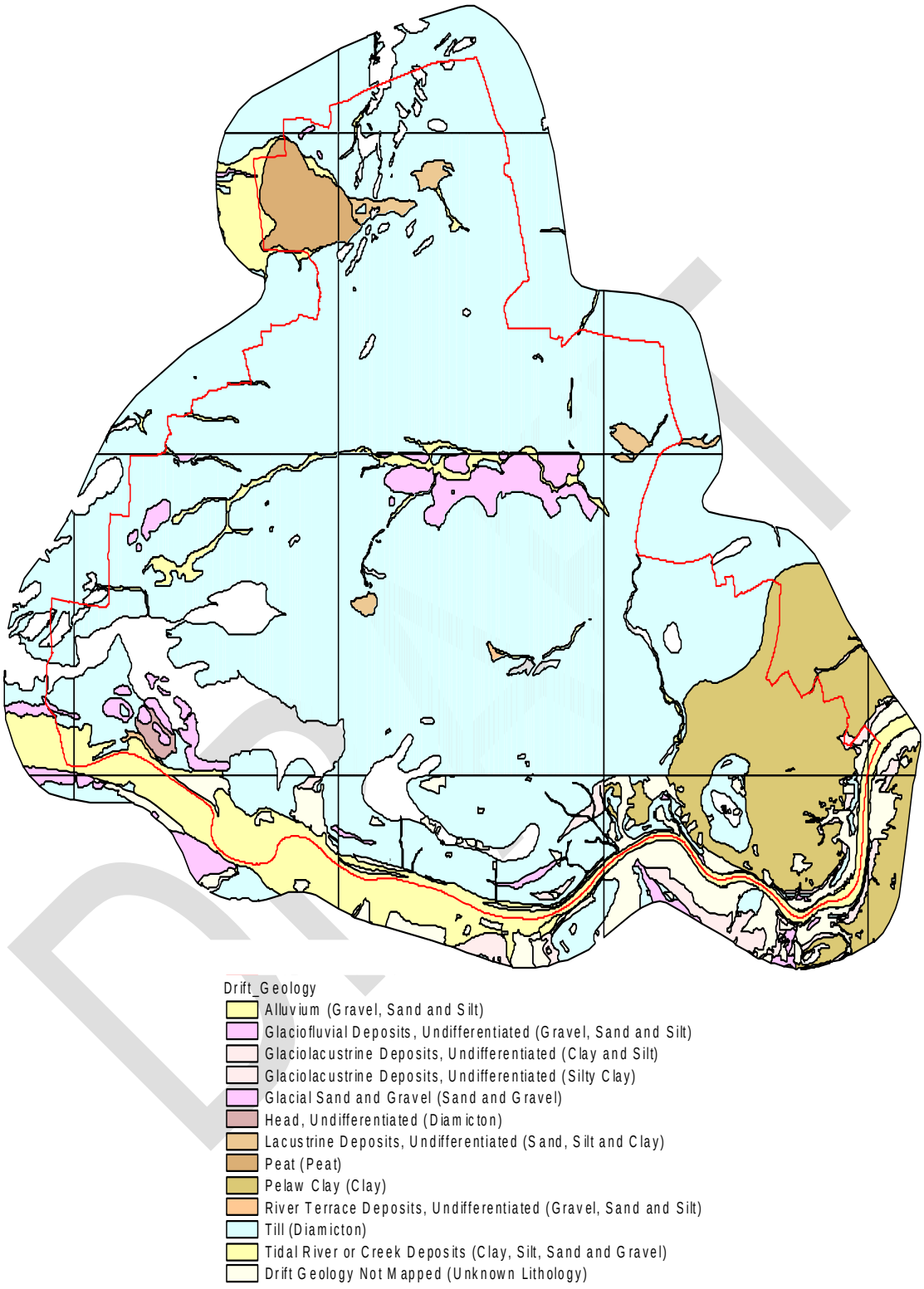


Figure 1. Newcastle upon Tyne. Drift Geology (British Geological Survey)

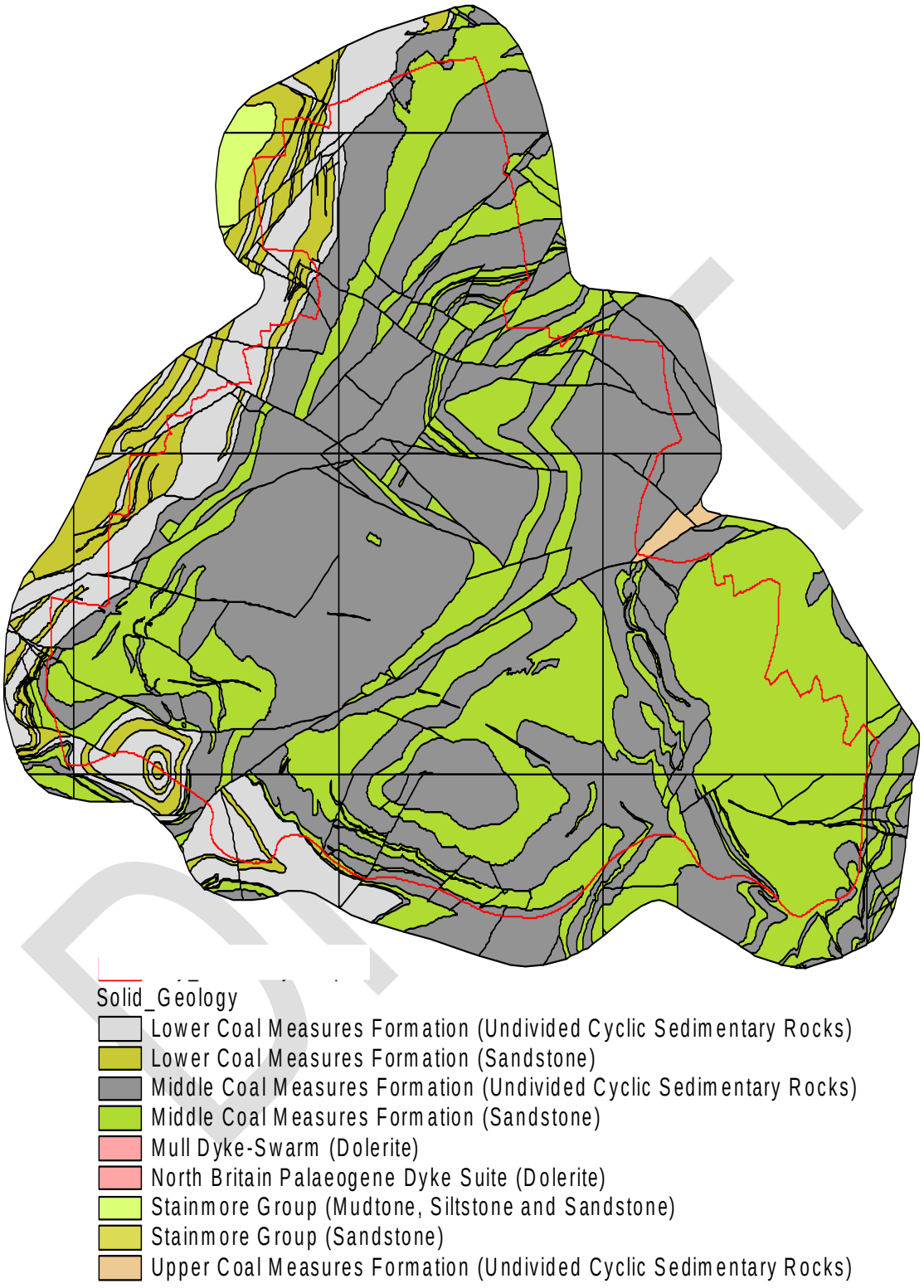


Figure 2. Newcastle upon Tyne. Solid Geology (British Geological Survey)

2.7 Built environment

Much of the City Council's land area is taken up by residential housing. The city centre area is mainly occupied by retail and commercial activities, although the number of residential developments has increased recently, most notably for student accommodation.

Land scheduled for industrial purposes is situated mainly along riverside areas, principally Walker Riverside and the industrially reclaimed area of Newburn Haugh. Considerable areas of agricultural land occupy the western and northern areas of the district. The airport occupies a large area of land in Woolsington. The Northern Development Area comprising of 'Newcastle Great Park', located to the west of the A1, is currently under development and is to consist of housing and commercial use.

The City Council owns considerable areas of land, with details of the holdings kept in the 'Land Terrier', providing a historic record of how the Council has acquired and disposed of land. The holdings consist of housing, highways, recreation and leisure facilities, education and land held for the purpose of regeneration, development and environmental improvement.

These holdings include:

- 101 Schools made up of:
  - 6 Nursery Schools
  - 8 First Schools
  - 66 Primary Schools
  - 3 Middle Schools
  - 13 Secondary Schools
  - 6 Special Schools
- 74 Allotment sites.
- 37 Playing fields (not attached to school premises).
- c.26,000 Houses.

2.8 Specific local features

Information regarding natural geochemistry of soils within the City Council area is limited. The British Geological Survey of Regional Geochemistry North East England records the Tyneside area as 'Absent Data'. However, reference is made to the contribution to regional geochemistry by industrial contamination, stating that levels of copper, zinc, nickel, tin and vanadium are often enhanced.

Within the City Council area in addition to the elements cited above, enhanced levels of lead are also recorded, particularly in the areas around former lead works. During much of nineteenth century, Newcastle was one of the main lead processing centres of the UK. The industry developed primarily due to its proximity to the North Pennine Orefield, a major world producer of lead during the nineteenth century. Some enhanced lead levels may also be due to years of vehicle emissions, previous use of lead paint, lead water pipes, coal fire ash etc.

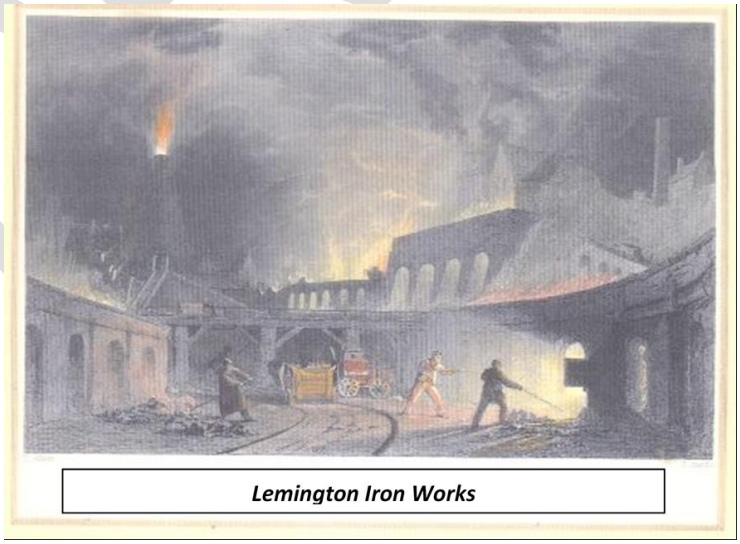
Colliery waste is common within the City Council area, either as original spoil heaps or as landfill where the heaps have been remediated and used as landfill. Raised concentrations of the following elements are often recorded from coal and shales

contained in the deposits: arsenic, beryllium, cobalt, copper, lead, vanadium, zinc, gallium, potassium, rubidium.

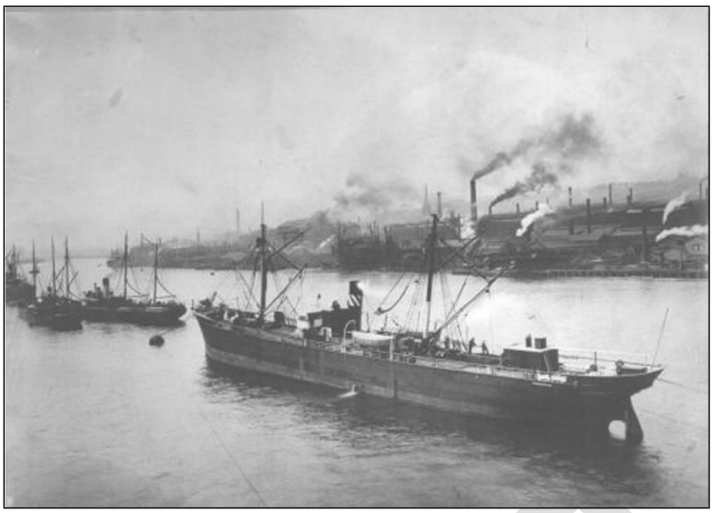
2.9 The industrial history of the city

Coal has been mined on the banks of the Tyne since at least the thirteenth century. By the seventeenth century Newcastle was a nationally important town based on the wealth created by the coal trade. From that time, the development of early railways and the building of timber ships to transport coal became major activities of the area. Colliery wagonways and railways leading to the River Tyne became a principal feature of the landscape. By the nineteenth century, however, much of the major coal extraction of the area was taking place away from Newcastle and the River Tyne as the South East Northumberland Coalfield was exploited.

Much of the early industrial development of Newcastle took place to the west of the city centre. At Lemington there was a concentration of industries which began in the late eighteenth century, including the Northumberland Glass Works and the Tyne Iron Works. At Newburn, industrialisation took place in the mid-nineteenth century fostered by the building of the Newburn, Scotswood and Wylam Railway. To the east of the city centre the industrial development was in the Ouseburn valley where the early glass industry had begun in the seventeenth century and the lower Ouseburn valley became a centre for a variety of steam powered industries. The most significant individual industrial sites within the city were those on the riversides, particularly the mighty Armstrong Works at Elswick and the concentration of shipyards at Walker. Newcastle was one of the most important locations for the manufacture of lead throughout the nineteenth and early twentieth centuries, with at least five lead works located within the city's boundaries. The riverside industries of the late eighteenth century and early nineteenth centuries, particularly the Tyneside Chemical industry, were overlain by shipyards, repair yards and engineering works which themselves have now been superseded by service industries.

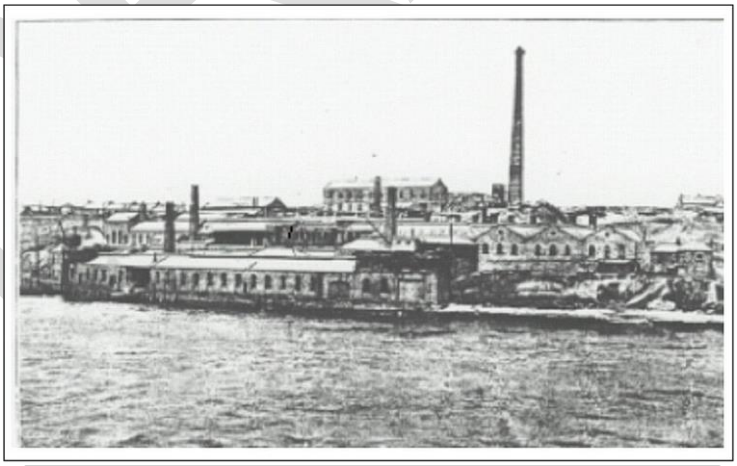


Lemington Iron Works



Armstrong Whitworth's Elswick Works

Elswick Lead Works



St Anthony's Lead Works. Walker Riverside

2.10 Redevelopment history

The city's economy has changed from one of primarily manufacturing to service sector industries; this has had a major impact in those areas formerly used for manufacture. These areas were mainly located along the river frontages.

Redevelopment of the riverside areas has been carried out by both the former Tyne and Wear Development Corporation and the City Council. In particular, the Quayside areas and the Newcastle Business Park form large areas of such redevelopment.

Redevelopment of former industrial sites, including collieries, has been carried out by the City Council, the former Tyne and Wear County Council and other agencies.

Tyne and Wear County Council operated from 1974 -1986 and redeveloped Walker Riverside, Newburn Countryside Park, Coronation Pit and Walbottle Waggonway.

Redevelopment of a number of former Colliery Sites has been carried out by the City Council; these include Percy Pit, Havannah Colliery and Brenkley Colliery. The Ouseburn Partnership, together with the City Council, has been instrumental in the on-going work to the Lower Ouseburn.

Tyne and Wear Development Corporation operated between 1987 and 1999 carrying out a number of redevelopment projects including the Riverside Business Park, the East Quayside and St. Peters Basin. The organisation continued the development of Walker Riverside following the cessation of Tyne & Wear County Council.

One North East, the successor of English Partnership and English Estates, remediated Newburn Haugh, one of the largest regeneration sites in the UK.

3 IDENTIFICATION OF CONTAMINATED LAND

The principal and overriding aim of this strategy is to identify land falling within the Part 2A definition of contaminated land lying within the city's boundaries, i.e. where a pollution linkage between contaminant and receptor is likely to exist. It is recognised, both from the city's industrial heritage and through investigations already carried out by the Council and by developers, that significant areas of land exist which possess elevated levels of contaminants.

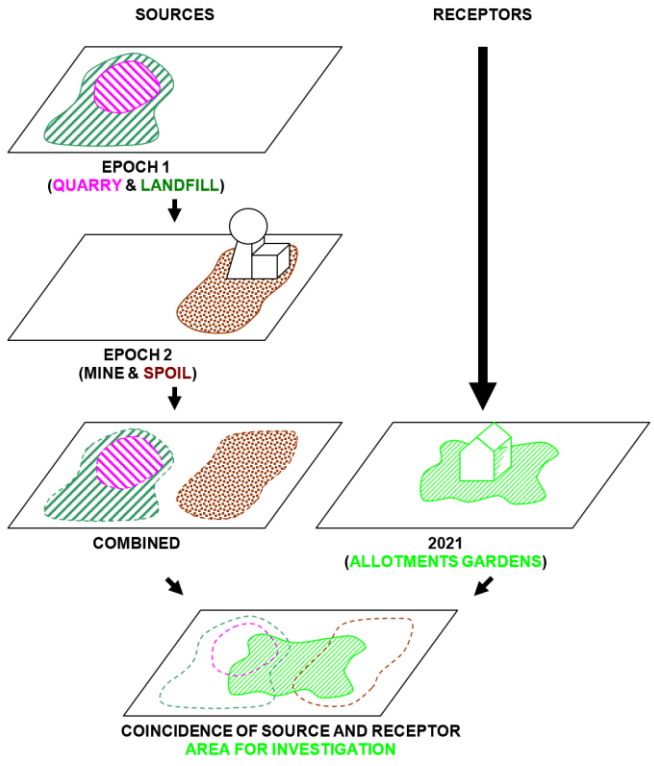
Identification of contaminated land is achieved via two stages of inspection: 'strategic inspection' and 'detailed inspection'.

3.1 STRATEGIC INSPECTION

The aim of strategic inspection is to identify potentially contaminated sites and prioritise them for detailed inspection according to the process set out below. Sites are prioritised according to a Source-Pathway-Receptor approach as required by Circular 2/2000 and subsequent guidance.

3.1.1 Identification of potential pollutant linkages

Layers of historical maps containing potentially contaminated sites were laid over a map identifying potentially sensitive receptors. Sites for further detailed inspection were identified where a former potential contamination source coincided with a receptor.



Further sources of information regarding potential contamination sources and receptors are detailed below.

3.1.2 Identification of potential contamination sources

The Council has sets of historic Ordnance Survey maps in digital format. The historic Ordnance Survey maps are in 1:2500 and 1:10000 scales from six separate time periods between 1856 and the 1980's. These are used with the Council's Geographical Information System (GIS), ArcView, with the Landmark Information Database of historic potentially contaminated sites – former industrial locations, landfill sites etc. We have carried out considerable research to identify further potentially contaminated land source areas and these have been included on this constantly evolving database.

A limited coverage of Town Series maps of a scale 1:500 are held for the city centre and its environs for 1862, 1896 and 1908.

Mapping technology was not as accurate during these times as it is currently, therefore each set of maps has been ''geo-rectified'' to allow them to be overlain onto current maps.

The historic land use database identifies areas of potentially contaminated land from analysis of historic Ordnance Survey maps, following Government data on the identification and classification of potentially contaminated land uses.

The Council has historic aerial view coverage of its area from the post-war era (1947–1950) which forms an invaluable resource and greatly adds to the map resources.

3.1.3 Identification of receptors

Information on the location of receptors and the subsequent mapping of their locations cannot be purchased as an off-the-shelf product. The location of present-day receptors such as schools, play areas, allotments, etc, is held by the Council.

3.2 DETAILED INSPECTION

Detailed inspection is carried out where the potential for a pollutant linkage to exist is identified at a site. Detailed inspection involves an intrusive investigation and quantitative risk assessment.

3.2.1 Site prioritisation

The investigation of potential contaminated land sites has been a considerable task. Resources have been targeted at areas where it is perceived that the greatest risk or harm is likely to exist. The Council prioritises sites in accordance with receptors and land use, with human health being the highest priority. The progression of the work is dependent upon resource availability.

The following prioritisation is followed:

1. Human Health:
   - (a) Allotments
   - (b) Children's play areas, nurseries, first and primary Schools.
   - (c) Recreational fields and secondary schools.
   - (d) Homes with gardens.

(e) Agricultural land.

2. Controlled waters
3. Ecosystems (only SSSIs are relevant in Newcastle)
4. Buildings.

The first phase of the site prioritisation involving allotments, children's play areas, nurseries, and first and primary schools has been completed.

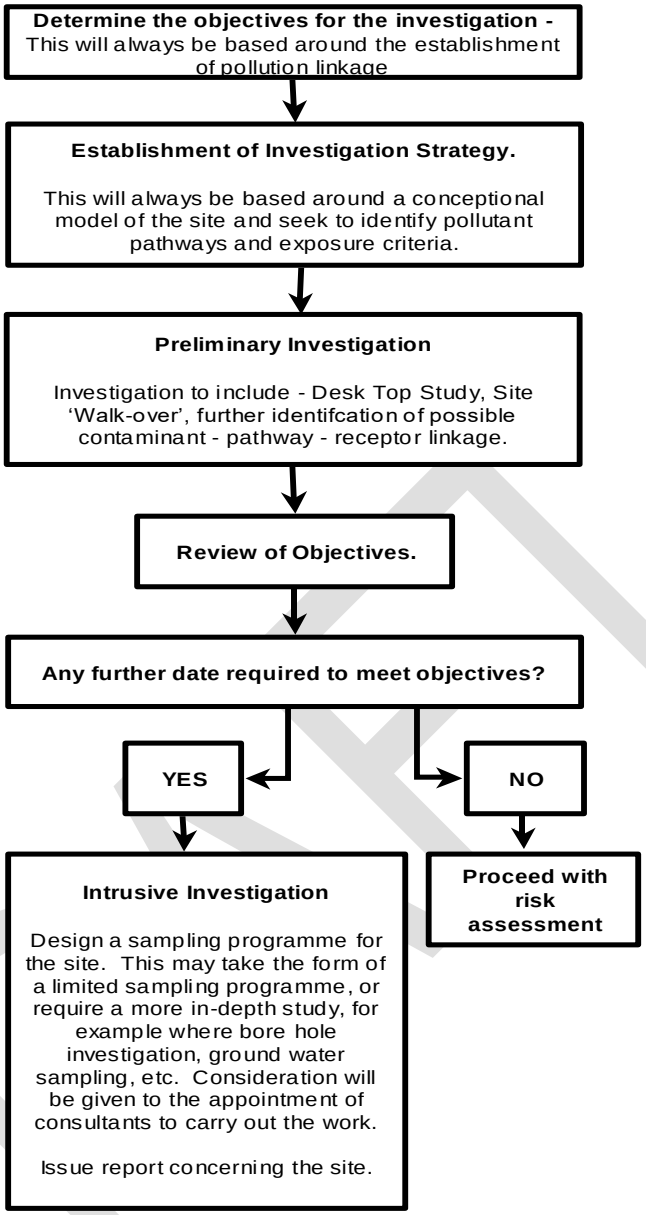
Since the withdrawal of the Department of the Environment, Food and Rural Affairs (DEFRA) Capital Funding for Contaminated Land the City Council currently has no means of funding proposed site investigations and remedial actions for; recreational fields, middle and secondary schools; homes with gardens; agricultural land; controlled waters; ecosystems; buildings.

Site investigations and remediation are therefore undertaken through the Development Control process with the Contaminated Land Officer recommending conditions appropriate to remove risk from contaminated land for the proposed use.

The City Council continues to carry out in-house desk top studies and site investigations as well as Environmental Search Reports to advise property purchases and new land uses. Where a potential source receptor pollutant linkage is identified this is investigated further.

3.2.2 Investigation procedure

The investigation procedure outlined in this section is a broad guideline as to how sites will be investigated. The inspection procedure are not rigid and may vary from site to site, depending upon local conditions, e.g. the degree of suspected 'Harm', the sensitivity of the receptor, and the nature of the contamination. The aim of investigation will be to establish the presence of a pollutant linkage. Only where there is a reasonable possibility of such a linkage will a site be investigated further.



In many cases the site investigation will be carried out internally, except in those situations where groundwater or landfill gas is identified in the conceptual site modelling and where deep boreholes are required to characterise the site.

The City Council will have due regard to the requirements of the Contaminated Land statutory guidance and the Environment Agency's Land Contamination: Risk Management, and to any other statutory or non-statutory guidance, in particular BS 10175:2011+A2:2017 'Investigation of potentially contaminated sites. Code of practice', Sampling design guidance held by CL:AIRE (INFO-SC2) and the Environment Agency's publications 'Technical Aspects of Site Investigation – Volumes I and II'. Each stage of the inspection will be followed by a review to ascertain whether further investigation is appropriate.

3.2.3 Site-specific liaison

Liaison with interested parties will be carried out where necessary at all stages of the investigation. Interested parties will include: appropriate persons, site owners, relevant City Council Directorates, the Environment Agency, Public Health England,

Newcastle Gateshead Clinical Commissioning Group and the Food Standards Agency.

3.2.4 Health and safety procedures

Investigations will be carried out with due regard for personnel and environmental protection. Health and safety implications of each specific site will be considered before investigations commence and will be reviewed during the inspection procedure. Where a site poses special health and safety concerns, liaison with the City Council's health and safety officers will be established. It is not envisaged the inspection of sites directly by the City Council will involve the use of borehole investigations and will not generally take place where highly toxic conditions may exist; such investigations would normally be carried out by external consultants with their own safety procedures.

3.2.5 Potential special sites

Where it is considered that a site may be designated a Special Site, as described in Regulation 2 of the Contaminated Land (England) Regulations 2006, liaison will be established with the Environment Agency at an early stage of the site investigation.

3.2.6 Arrangements for the appointment of external consultants

Where it is considered that site investigation and risk assessment cannot be feasibly carried out by City Council officers, we will consider the appointment of external consultants. The appointment of consultants will be through the Council's competitive tendering process and consultants with proven experience and competence will be appointed. Appointment will be dependent upon competency as well as price.

3.2.7 Risk communication

Where potential sites are identified under the inspection protocols, careful consideration will be given to risk communication. The City Council will take account of advice given in "Communicating Understanding of Contaminated Land Risks" published by the Scotland and Northern Ireland Forum for Environmental Research (SNIFFER).

Advice on risk communication will be taken from the Council's Press Office and Public Health England. The aim of risk communication will be to give objective and realistic information concerning a site and avoid unnecessary concern and potential media "scare stories".

3.2.8 Format of information resulting from inspections

A report covering individual stages of site investigation will be produced for each investigation. The report will follow the investigation procedure as previously detailed.

3.3 Triggers for undertaking further investigations at sites

Examples of events which may occur to activate investigations outside the planned time frame may include:

(a) Unforeseen events – e.g. the inadvertent contamination of potentially sensitive sites.

(b) Introduction of New Receptors – e.g. where the land use changes on a contaminated site, or the development of a play area on a site where potential contamination is suspected.

(c) New information relating to sites – where the on-going search for new information uncovers details of potential contamination at a site previously considered to be satisfactory.

(d) Changes in City Council policy – it may be necessary to work outside the inspection strategy where the city seeks to develop a particular area for a more sensitive use

Changes in land use through the planning system will identify many of the above.

3.4 Complaints and enquiries

In addition to the above prioritisation, complaints received from stakeholders or other sources, or sites which come to light by other means and which have clear evidence of contamination-receptor linkage will be investigated even though they may lie outside the above prioritisations.

Where requests for information regarding sites are received these will be followed up within 14 days of receipt. A charge is normally made for such requests, and a written report produced. Charges are reviewed each April and are published online.

4 PREVIOUS INVESTIGATIONS AND REMEDIAL ACTIONS

4.1 PREVIOUS INVESTIGATIONS

The City Council owns various sites which have had former industrial or otherwise potentially contaminating uses. There has been an on-going programme to investigate these sites by way of desk top studies and, where necessary, intrusive investigation.

Some of the investigatory works were funded within the Council's existing budget, while others have been funded through DEFRAs Supplementary Credit Approvals and Contaminated Land Capital Projects Programme. Other sites are investigated by developers. Examples of sites investigated by means of DEFRA (and its predecessors) funding since 1997 are detailed below.

4.1.1 City Stadium site

This site is located in Shieldfield area and was intended for use as an athletics track. The site was a former landfill operating from 1907 until 1951, built over the culverted Ouseburn. The land was partially occupied by the Ouseburn Leadworks prior to its infill.

4.1.2 Former IRD site

This site is located on the Fossway in the Byker area of the city. It was used as a research and development site for Parsons Engineering. Prior to its industrial use the land formed part of a larger quarry site, mining outcrops of sandstones at Byker Hill. The quarries were landfilled by Newcastle City Council during the early to middle twentieth century, with the waste being incinerated on site prior to disposal.

4.1.3 St. Anthony's Tar Works

The site is situated on the Walker Riverside Park and was used for the manufacture and distillation of coal tars. Following demolition and partial clearance of the tar works facilities, evidence of visible tars and oils together with dissolved hydrocarbons became noticeable in the River Tyne. The underlying sands and gravels beneath the site have been found to be heavily contaminated with tars and oils.

4.1.4 Millers Dene

This is the site of a former wartime and post-war landfill site, currently used as a recreational field.

4.1.5 Lower Ouseburn

The Ouseburn has a long industrial history which has included glassworks, lime burning, lead processing, engine manufacture and scrap yards. The investigation concentrated on the Byker Farm area which is situated on the site of the former Northumbrian Leadworks.

4.1.6 Denton Dene

The area has been subject to a long mining history and was landfilled during the 1950s and early 1960s. The site is now used for public open space, recreational fields, sports centre, youth club and social club.

4.1.7 Allotments

A number of allotment sites received ash from the Byker District Combined Heat and Power (CHP) which burned refuse-derived fuel. The ash was used to form paths within the gardens.

Analysis of the ash identified raised concentrations of dioxins and heavy metals. Newcastle University carried out a preliminary investigation of sites which required further investigation. These were inspected by the Contaminated Land Team and Newcastle University staff seconded to the team.

The investigations greatly helped the City Council to develop advanced risk assessment methods which lead to it becoming a leader in the field of such techniques.

Where 'significant harm' or 'significant possibility of significant harm' was identified at allotments appropriate action was taken. Walker Road Allotments and Branxton Allotments were identified for remediation through this process.

These allotment investigations also identified raised concentrations of lead in older allotment sites which had not received Byker CHP ash but where coal ash and bonfire ash had been used to break up heavy clay soils over many years. With funding from the Newcastle University Institutes for Sustainability and Social Renewal, and the Society of Brownfield Risk Assessment and in partnership with Newcastle University, Northumbria University, Northumbrian Water Ltd, the Health and Safety Laboratory, ALS laboratories and DETS laboratories, the Council investigated whether gardening and eating produce from allotments with raised lead concentrations was resulting in raised blood lead concentrations of concern to health. We found the gardeners did not have significantly higher blood lead levels than their non-gardening friends and neighbours, and concentrations were not considered a risk to health. The findings of these studies have been published in scientific journals.

4.1.8 Walker Colliery and Gasworks

Industrial history of this site began circa 1765 with coal mining with associated infrastructure (railway lines) recorded from 1856. There is evidence of coke ovens c.1885 – 1898. Associated with the colliery were at least two shafts, various spoil heaps and at least three former clay pits infilled with material of unknown origin.
To the southeast of the site a town gas works was present c. 1898 - 1920 with at least two gasometers and retorts. The former gas works was then used as a galvanising works. Local authority social housing was recorded in the north and east of the site c. 1921 – 1936, with prefabricated housing on the remainder. This prefabricated housing was removed in the late 1960s and along with the galvanising works, was replaced with the current homes and gardens.

4.1.9 Former landfill sites

The Council also operated a landfill gas monitoring programme at former landfill sites throughout the Council's area. The following sites were monitored on a monthly basis. Monitoring ceased c.2010 as gas flows were not detected:

Daisy Hill, Walker
City Stadium, Shieldfield
Denton Dene, Denton
Iris Brickfields, Rothbury Terrace, Heaton
Throckley Park

4.2 PREVIOUS REMEDIAL ACTIONS

A number of investigations have lead to remedial actions being undertaken. These actions were funded through DEFRA's Contaminated Land Capital Projects Scheme and the North East Local Enterprise Partnership (LEP) and are outlined below.

4.2.1 St. Anthony's Tar Works

St. Anthony's Tar Works operated between 1920 and 1981. There have been several investigations of the site and two previous failed remedial schemes, the last being a pumped treatment system developed in 2000. The site was investigated again with an in-depth study of groundwater movements, tidal variations and contaminant concentrations, quantities and location being carried out as a joint project between Ove Arup and Partners, the Council and Queens University Belfast.

The operation of the tar works had resulted in leaks and spills of coal tar hydrocarbons that accumulated in large quantities in the permeable ballast layer beneath the site. At high tide the water pressure kept the hydrocarbons within the ballast but at low tide the hydraulic gradient allowed these substances to flow into the River Tyne, seriously polluting it.

Following the detailed characterisation, further funding was secured from DEFRA for the remediation options appraisal which was undertaken by Sirius. Funding for the remedial works came from the LEP in 2016. The remediation scheme relies on an impermeable barrier which serves as an underground dam that prevents hydrocarbons flowing into the river. A groundwater relief drain has been constructed behind this wall to relieve the groundwater pressure from the dam. Water collected in this drain passes through an interceptor to remove the coal tars before discharging into the river.

Coal tars entering the River Tyne at the former St. Anthony's Tar Works

Installation of the soil mix barrier wall at St. Anthony's Tar Works

4.2.2 St. Anthony's Lead Works

The former St. Anthony's Lead Works at Walker Riverside Park was determined as contaminated land in 2010 following the identification of raised levels of lead and arsenic in the surface soils. The site was remediated in 2012 and is now considered suitable for use as a public open space.

4.2.3 Millers Dene and Walkergate Nursery School

The site investigation at Millers Dene identified raised arsenic concentrations and potentially dangerous exposed landfill materials (glass, sharp items of metal, etc.) in the grounds and play area of Walkergate Nursery School. Remedial action took place 2001 and the site was subsequently validated and is now considered suitable for use.

4.2.4 Byker City Farm

A site investigation at the former Byker City Farm carried out in 2000 identified heavy metal contamination in the soils of the former lead works, warranting further investigation. In-house investigation of the surface soils revealed unacceptably high concentrations of lead and the site was subsequently determined as contaminated land and was remediated between 2002 and 2004. The site remediation took the form of off-site disposal of contaminated soils, then capping with a gravel capillary break layer, a clay cap and clean top soil. Extensive archaeological investigations were carried out during the work in an attempt to locate Hadrian's Wall and study the industrial archaeology of the site. The site has recently been developed as The Ouseburn Farm and has now re-opened for public use.

Former Byker City Farm. Placement of capillary break layer and clay cap.

4.2.5 Walker Road Allotments

Investigations at Walker Road Allotments were carried out by Newcastle University to ascertain if the site had received ash from the adjacent Byker Combined Heat and Power Plant.

Walker Road Allotments prior to remediation.

The investigations revealed raised concentrations of heavy metals and some organic compounds. Desk top investigations of the site showed that it had previously been the site of a sandstone quarry, which had subsequently been landfilled, and several small historic collieries. One on-site colliery spoil heap had combusted and burnt for several years prior to the investigations.

Walker Road Allotments remediation works in progress.

The site was determined as contaminated land and remediated between 2003 and 2006. Remediation was carried out by importing clean soils, with some mixing with on-site soils carried out. The former landfill was capped with compacted clays. The remediated site is now a flourishing fully occupied allotment site.

Walker Road Allotments following completion of the site remediation.

4.2.6 Branxton A and B Allotments

The Council carried out an in-house investigation of these two allotment sites and determined them as contaminated land. A successful application under DEFRA's Contaminated Land Capital Projects Fund was made and remediation of the sites was undertaken over the Winter/Spring 2006/7 period. Remnant Byker ash and topsoil was removed and replaced with chemically clean soils.

5 PROCEDURES

5.1 Review of the strategy document

The strategy will be reviewed every five years. Events occurring within this period may require a re-examination of the strategy's priorities or the re-examination of previously unidentified or inspected sites.

The representative of the Director of Resources has confirmed there are no direct resource implications arising from this strategy.

The representative of the Assistant Director Legal Services has confirmed there are no direct legal implications arising from this strategy.

5.2 Internal management arrangements for inspection and identification.

The Operations and Regulatory Services Directorate has the overall responsibility for the implementation of Part 2A of the Environmental Protection Act 1990.

The responsibility for the day-to-day work is the responsibility of the Team Manager for the Environmental Protection section who reports to the Head of Public Safety and Regulation.

5.3 Consideration of Council-owned land

Land owned by the Council is not specifically targeted for inspection. Section 3 of this strategy sets out how sites will be identified and prioritised; the process ignores land ownership and focuses on potential risk. However, the nature of the land uses prioritised as high risk has significant local authority/public ownership.

5.4 Ground investigations on privately-owned land

Ground investigations are carried out on privately-owned land across the city. These may either have been prompted by the owner wishing to know the condition of the land and any liabilities attached to it, or they may be as part of a risk assessment of the land prior to its development.

In the latter case, where the investigation is prompted by a planning condition, the Council is provided with a copy of the land report. These reports are also entered onto the Geographical Information System (GIS) data base. Reports may also be provided where the owner of the land seeks the advice of the Council.

5.5 Information evaluation

5.5.1 Evaluation of information on actual harm or water pollution

Where intrusive investigations are carried out, the results will be evaluated in terms of risk criteria and models. Risk assessment is made initially by use of generic assessment criteria (GAC), or site-specific criteria using the Contaminated Land Exposure Assessment (CLEA) model, with consideration to relevant guidance.

At the present time our policy towards redevelopment sites will normally be that published GAC values or proven equivalent will be used as remediation targets.

5.5.2 Effectiveness of previous regimes in dealing with contamination

Considerable tracts of former industrial land have been redeveloped throughout the city during the last thirty years. A number of agencies have been involved in this regeneration process, including the Council, and the former Tyne & Wear County Council, English Partnerships, and Tyne and Wear Development Corporation. The standards of remediation of some of these sites may not have been to levels that would currently be expected. There is a lack of information on the remediation methods used on many of the sites. The fact that a site has received previous treatment will not preclude its further investigation.

5.5.3 Identification of key geographic areas and individual sites

Known former industrial areas, particularly the river frontages, will form key geographical areas of potential land contamination. Many of these sites have now been redeveloped. The Council encourages the redevelopment of brownfield land, and there is close liaison between Planning and Public Safety and Regulation to ensure that sites are properly investigated and remediated where necessary.

This strategy will identify individual sites on the basis of the methodology previously outlined. The method is centred around concentration of resources on the location of the most sensitive receptors and their coincidence with former industrial land. It is not considered efficient use of the Council's resources to investigate former industrial sites where there may not be any receptor present.

6 LIAISON AND COMMUNICATION STRATEGIES

The development and implementation of the contaminated land strategy has and will require partnership and co-operation within the City Council, and also with other regulatory and strategic authorities, business and voluntary bodies.

6.1 Communication with owners, occupiers and other interested parties

The Council will work in partnership with all interested stakeholders in the development and implementation of this Strategy, and interested parties will be consulted regarding its contents.

Where individual sites are identified for site investigations all interested parties will be consulted. The Council has considerable experience drawing together stakeholder groups so that a common way forward for investigation/remediation can be agreed.

6.2 Communication following site-specific investigations

The Council will seek to work in close liaison with interested parties where a site is identified for investigation.

The statutory guidance encourages voluntary action to be taken concerning necessary remediation. In such cases where voluntary agreement is reached, a Remediation Notice will not be served. However, where voluntary agreement is reached and progress is unsatisfactory, the Council will consider serving a Remediation Notice to ensure that satisfactory remedial measures are progressed.

The Council will ensure that full consultation is carried out with relevant stakeholders and interested parties before any remedial measures are adopted on sites determined as contaminated land.

6.3 Liaison and information exchange

Internal information exchange within the Council will be made, including Public Health, Planning, Ecology, Historic Environment, Education, Local Services & Waste Management and Property teams. Representatives from other disciplines will be invited to participate as and when appropriate. Liaison with the County Archaeologist and reference to the County Sites and Monuments Record will occur where a site is of historic importance.

The Council has good links and working partnerships with the Environment Agency, Public Health England, Food Standards Agency, Newcastle University and Northumbria University. These and other relevant bodies and agencies will be consulted when appropriate.

7 INFORMATION MANAGEMENT

7.1 General principles

The Council will hold information relating to land contamination on a computerised database linked to an ArcView geographical information system. Information concerning sites already investigated, and consultancy reports relating to planning applications are stored within the Public Safety and Regulation division.

7.2 The Public Register

The City Council is required to maintain a Register of Contaminated Land. The Register will be paper based and available for inspection on request during office hours, Monday to Friday. An electronic summary is also available on request and is published on the Council's web pages.

The Register will contain details of land which has been determined as contaminated land. The Contaminated Land (England) Regulations 2006 state the information to be provided on the Register.

The Register does not contain details of historic sites where contamination may exist, but through either lack of a pathway or a receptor has not been determined as contaminated land.

7.3 Use of information by other Council divisions and directorates

The information held by Public Safety and Regulation will be available for the use of other Council directorates, however, charges may be made for use depending upon circumstances.

7.4 Confidentiality of Information

The Council is aware of its duties under The Environmental Information Regulations 2004, The Freedom of Information Act 2000 and The Data Protection Act 2018. Particular care will be taken to ensure that information provided is accurate and correct.

7.5 Dealing with requests for information

The Council receives many requests for information concerning land. In most cases, information can be provided giving basic details regarding the land's history, geology, complaint history, local knowledge that might be held, etc. A charge will be made for the provision of information which is not required to be published on the Register.

7.6 Provisions of information to the Environment Agency

The Secretary of State for DEFRA requires that from time to time, or when requested, the Environment Agency must prepare a report on the state of contaminated land. In addition to the formal return of information, the Council will maintain close contact and liaison with Agency staff during site investigations.

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