CONWY
CYNGOR BWRDEISTREF SIROL
COUNTY BOROUGH COUNCIL

Cyngor Bwrdeistref Sirol Conwy
Conwy County Borough Council

Strategaeth Arolygu Tir Halogedig
Contaminated Land Inspection Strategy

Adran Gwarchod y Cyhoedd
Public Protection Department

March 2016 Review

Executive summary

Land can be contaminated from various historical land uses which can result in unacceptable risks to human health and the wider environment. Conwy County Borough Council has produced an inspection strategy to outline how potentially contaminated land will be identified and inspected. It explains the Statutory definition of Contaminated Land where pollutants are able to cause significant harm or have the potential to do so. This 2016 Inspection Strategy updates the previous version and outlines examples of action that has been taken to date to successfully remediate land which was found to present an unacceptable risk.

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Introduction

This Strategy has been produced by Conwy CBC Department of Regulatory and Housing Services under the requirements of Part IIA of the Environmental Protection Act 1990.

It specifies the approach set down by Conwy County Borough Council as the main enforcing Authority for Contaminated Land. It is aimed at identifying and dealing with the unacceptable risks from contamination caused by the historical use of land.

It updates the previous Inspection Strategy produced by the Authority.

The Inspection Strategy has been structured in Four Sections building upon the information that has been obtained under the earlier process and the experience that that has been gained from the earlier implementation of the legislation. The document is structured in the following Sections:

Part A – Background

Part B – The Inspection Strategy

Part C – Data Sources and Information Management

Part D – Outline of Procedures

Part A - Background

Regulatory Context

The original legislation relating to contaminated land was brought into force by the Contaminated Land (Wales) Regulations 2001. It was subsequently amended by the Contaminated Land (Wales) Regulations 2006 and the Contaminated Land (Wales) (Amendment) Regulations 2012.

Welsh Government Policy Objectives Concerning Contaminated Land

Welsh Government policy objectives under the current Statutory Guidance are:

a) To identify and remove unacceptable risks to human health and the environment
b) To seek to ensure that contaminated land is made suitable for its current use
c) To ensure that the burdens faced by individuals, companies and society as a whole are proportionate, manageable and compatible with the principles of sustainable development

The Definition of Contaminated land under Part IIA of the Environmental Protection Act 1990

Section 78A(2) defines Contaminated land for the purposes of Part IIA 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 significant possibility of such harm being caused ; or
(b) Pollution of controlled waters is being or is likely to be caused"

Not all land which is polluted from historical activity has the potential to be Statutory Contaminated land as there must be a plausible route by which contaminants within the ground can cause harm or have the significant potential to do so. This must be combined in what is termed a Contaminant Linkage.

The Principle of the Contaminant Linkage

In order for land to meet the Statutory definition a "Contaminant Linkage" must be established, connecting the following three essential elements:

CONTAMINANT - PATHWAY - RECEPTOR

A Contaminant is a substance which is on, or under the land which has the potential to cause harm to a relevant Receptor, or to cause significant pollution of controlled waters. A Receptor is something that

could be adversely affected by a contaminant, for example, a person, an organism, an ecosystem, property or controlled waters. A Pathway is a route by which a Receptor is, or might be affected by a Contaminant. All three elements must be present in order for there to be a Contaminant Linkage, and for a site to be identified as Statutory Contaminated Land.

Regulatory Role of the Local Authority

Part IIA of the Environmental Protection Act 1990 requires Conwy CBC to identify areas of land which have been potentially contaminated by former land use. Although a large proportion of this workload undertaken by the Authority involves potential land scheduled for redevelopment or during land conveyance, the legislation requires an Inspection Strategy to be produced. The Inspection Strategy outlines how land will be investigated on a strategic basis. This enables sites which are likely to be causing the most significant impact from contamination, to be considered first, subject to available resources.

The Inspection Strategy also explains the interaction with other regulatory regimes including the Development Control (Planning) process, under which, areas of potentially contaminated land within the Conwy County Borough Council area are remediated, during a change of use, when new sensitive receptors are introduced.

There is a strict definition of Statutory Contaminated Land under the legislation and associated Statutory Guidance and only a small proportion of all land which has been subject to a former polluting land use will meet this. When Statutory Contaminated Land has been identified remedial action has been taken, commensurate with the risk posed to the existing land use. Other land, not meeting the statutory definition of Contaminated Land, may still be considered to be affected to a lesser degree by its former use, but the pollutants may not be present in a form that can significantly affect sensitive receptors. There may also be existing barriers within the ground, which, for example, are preventing significant exposure from taking place.

Sites which are identified as Contaminated Land, under the Statutory definition, are required to undergo remediation to a standard rendering the land suitable for the current use of the site. Therefore sites which have an industrial or commercial use are unlikely to require the same degree of remedial action as sites used for a more sensitive use, such as housing, where a higher exposure risk would otherwise exist. Thus, remedial action, when required, aims to prevent the contamination from causing unacceptable risks to human health or the wider environment.

Where land is identified as being Statutory Contaminated Land, a series of tests are applied to apportion responsibility for dealing with the actual or potential environmental harm. This can include persons who have caused or knowingly permitted significant pollution to occur, described as the “Appropriate Person or Persons”. The definition can include a wide range of previous site users, owners or occupiers of the site if they can be identified and are considered responsible for contributing to the pollution. This responsibility can also include current owners or occupiers if there are no other potential persons that can be identified.

Conwy County Borough Council will where possible, ensure that the remediation of Contaminated Land is carried out by reaching a voluntary agreement with the relevant person or persons. Where this is not possible a Statutory Notice may be required to be served.

Since the legislation came into force, Conwy CBC has achieved voluntary agreements in the remediation of all sites which have been determined as Statutory Contaminated Land except in circumstances where no Appropriate Persons could be found. Appropriate Persons are defined in the legislation, but after reasonable enquiry it is not always possible to identify persons responsible for the costs of remediation.

There may also be cases where the costs of remediation may be disproportionate, and where hardship would be caused, grant assistance was previously available, although such funding mechanisms are no longer available. In the absence of an Appropriate person(s) and where a Significant Contaminant Linkage has been identified, an Orphan Linkage can occur, with the cost of remediation falling on no other parties except the Local Authority.

The Regulatory Role of Natural Resources Wales

Special Sites

Although Conwy County Borough Council is the principal authority for regulating contaminated land within the County Borough area, situations require the involvement and specialist expertise of Natural Resources Wales. There are categories of sites which are also defined in the legislation as "Special Sites" for which Natural Resources Wales become the main enforcing authority with the responsibility for remediation. This includes the following potential categories of contaminated land:

- Ministry of Defence land and land used for naval, military or air force purposes;
- Land used for manufacture or disposal of chemical or biological weapons;
- Petroleum refineries;
- Land within nuclear sites;
- Sited used for the disposal of waste acid tars;
- Explosives manufacture or processing sites;
- Atomic weapons establishments.

No Special sites have been identified within Conwy CBC area since the legislation was introduced and following previous inspection work of the Authority.

Action Already Taken to Deal with Land Contamination in Conwy CBC

The Snowdonia National Park Authority coordinated a programme of works financed under the Derelict Land Act 1982 to reclaim a number of old lead/zinc mines within the Gwydyr Forest area. The sites which were considered to pose the greatest threat to public health and safety were identified and prioritised for reclamation, resulting in works being carried out at Parc, Hafna, Vale of Conwy and Aberllyn. Information obtained also gave an indication of the ecological and industrial archaeological status of the mine sites.

Although it is unlikely that sites previously remediated under earlier initiatives would still be in a condition that could be defined as Statutory Contaminated Land, Part II A of the Environmental Protection Act 1990 provides further legislative control to enable such sites to be investigated.

Remediation carried out under the Development Control (Planning) process at the time of a proposed change of land use has addressed historical contamination at the majority of sites. This was primarily because the redevelopment was likely to create new pathways for contamination to affect site end users.

Closed landfill sites with a known history of local authority operation have been monitored for landfill gas both on site and at perimeter boreholes where these have been installed. The site specific risk assessment required under the Inspection Strategy may require more detailed investigation of these sites, particularly, during a change of use.

Since the introduction of the Contaminated Land regime the Authority has made successful applications to Welsh Government to obtain funding for site investigation and remedial action which has amounted to £250,000. Further remedial has also been carried out by the Authority where contaminated land was found to have affected local authority land. The land has been remediated to a standard which makes it suitable for its current use by protecting sensitive receptors from potential harm by using local authority funding of £280,000

Examples of Remediation Following the Introduction of the Authority's Contaminated land Inspection Programme.

Site Reference PCLA 10

A garage site had had an historical leak of petrol product from an underground storage tank, (UST). The duration of the escape had polluted the underlying ground between the premises and adjacent domestic and commercial premises. A history of complaints relating to petroleum odours had occurred from within adjacent premises.

An independent environmental consultant was commissioned in March 2003 to undertake a phased risk assessment of the site. Phase 1a of the assessment involving a file review, site visit and additional desk based research, was completed in May 2003. It confirmed that there was a land contamination and a public health issue to be investigated under Part IIA of the Environmental Protection Act 1990. Phase 1b, completed in July 2003, established by means of a screening assessment that the long term heath effects of vapour ingress were unlikely to be acceptable. An initial conceptual model of the mechanism for vapour entry was produced and the scope of the field work for gathering evidence to confirm or dismiss the details of the model was defined. Phase 2a of the assessment which involved a vapour survey and a non-intrusive geophysical survey completed in October 2003, assisted the design of Phase 2b of the assessment, which was the intrusive ground investigation and laboratory analysis, completed in January 2004. The Phase 2c report completed in April 2004, carried out a detailed quantitative risk assessment (DQRA), using laboratory and field data which confirmed that the Part IIA tests had been met.

The site was determined as Contaminated Land in August 2004, following which an agreement was reached for Voluntary remediation to be carried out by the garage owner to the land within the curtillage of the garage site and including the significant source of the contamination. As the existing garage owner did not operate the filling station and had not caused or knowingly permitted the escape of petroleum spirit, he was not liable, under the scope of the legislation for the additional clean up of the escaped petroleum product, which had occurred beyond the site boundary. As this became the responsibility of the surrounding property owners there was the potential for significant hardship. The Authority was successful in obtaining funding from Welsh Government, under a dedicated funding stream which was available for this purpose during the early years of the new contaminated land regime.

Following a competitive tendering process a specialist remediation contractor was appointed to carry out an approved remediation scheme, funded jointly by the site operator and the Authority via grant assistance. The scheme involved the removal of the remaining pollutant source and treatment of the ground off site by soil vapour extraction, air sparging and chemical treatment in

situ. The remediation was successful for 3 of the premises included in the Determination, enabling a Remediation Statement to be issued by March 2007.

Additional remedial action was required for the fourth premises included in the Determination as the escaped substances still remained beneath the building foundations, presenting a residual exposure risk. A second remediation scheme was designed and implemented resulting in the remedial target being achieved and all properties being successfully remediated. A final remediation Statement was produced on in June 2008.

Site Reference PCLA 75

A former lead mine was identified as having a Significant Pollutant Linkage between residual lead contamination at the surface of a former tailings tip and site users of an informal recreation site. The Site was the subject of sampling and analysis of surface material and the site Risk Assessment concluded that there was the potential for significant exposure to site users. The site was Determined in May 2007. As an Orphan Site, the necessary remedial action was funded by the Authority. The remedial action included works to re-profile the site and improve site security and signage to prevent significant exposure from taking place.

A Remediation Statement was produced for the site in June 2007.

Site Reference PCLA 169

Voluntary remedial action was taken by Conwy CBC to remediate a former brickworks tip which was identified under the Authority's previous Contaminated Land Inspection Strategy to have been infilled with ash and clinker. Land use records identified that the site was subsequently used for the construction of a housing development. Sensitive receptors were present on site

The site was investigated by a specialist Environmental Consultancy, with the report recommendations advising the removal of potential routes of exposure by site users to pollutants present within the site. The remedial requirements for the site were determined during the period prior to Local Authority Housing Stock transfer, and the agreement was reached to carry out remedial action prior to stock transfer. The remedial action, funded by the Authority, resulted in remedial action comprising the removal and replacement of contaminated soil within 55 separate dwellings and reinstatement of garden areas to remove the potential for significant exposure to take place to site occupiers. The site works and validation were managed by the Authority.

Characteristics of the Conwy CBC Area

The County Borough Council serves a total resident population of 112,700 , 82% of whom are settled along the coastal strip in the larger towns of Abergele, Colwyn Bay and Llandudno, with much of the development on the hillsides which rise steeply inland.

Approximately 35% of Conwy lies within the Snowdonia National Park making tourism as important in land as in the coastal seaside resorts. During the Summer months the number of people staying within the County Borough, whether as residents or visitors increases dramatically due to high levels of tourism (11.6 % of all tourist accommodation in Wales is within Conwy).

Geography

The northern coastal boundary of the County Borough of Conwy stretches for 37 miles along the Irish Sea between Llanfairfechan in the West to the River Clwyd in the east. It extends across a variety of landscapes down to Dolwyddelan and across to Cerrigydrudion in the south west covering a total area of 113,000 hectares.

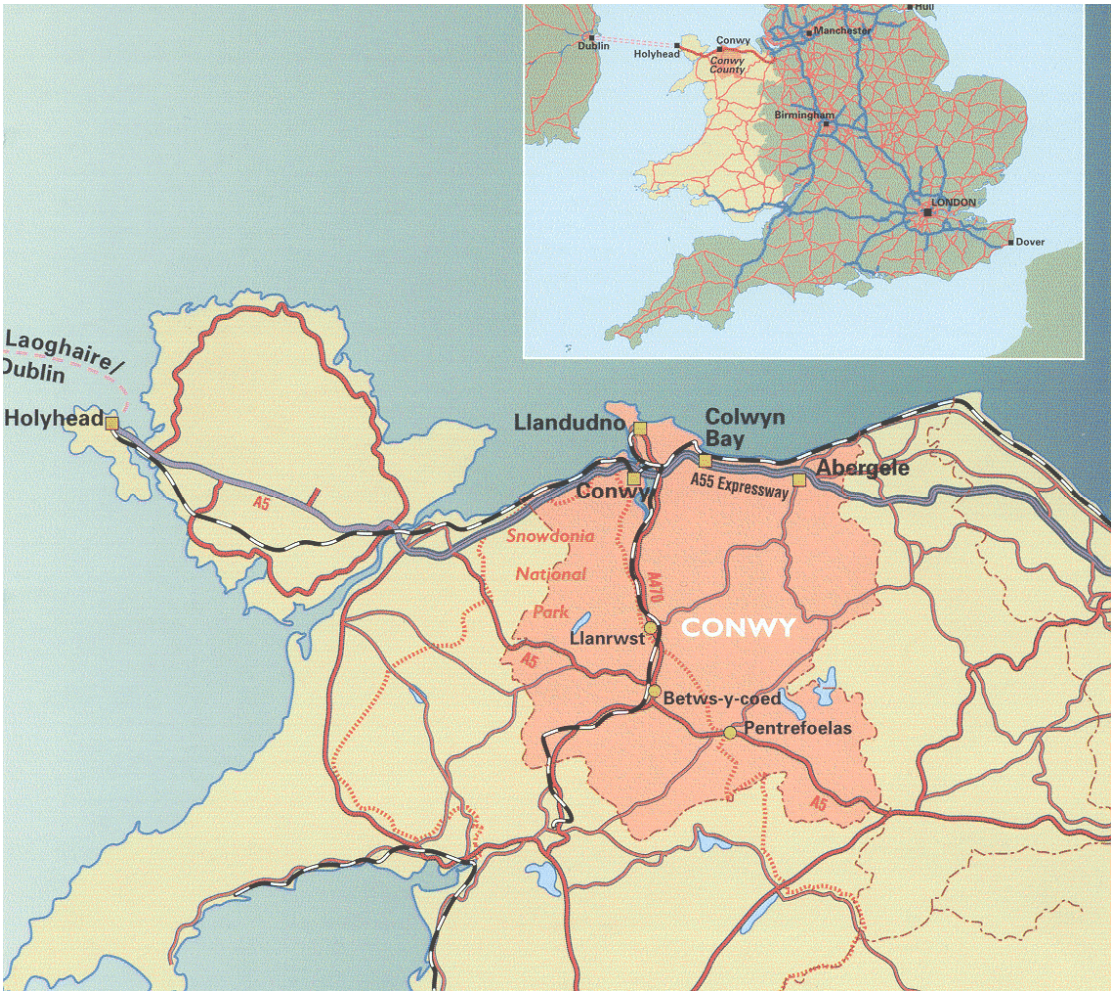


Figure 1 – Geographical Location and Extent of the Conwy CBC area.

National Perspective

In a national perspective Conwy CBC is situated in an area where the public have high expectations of environmental quality and the importance of tourism to the local economy accords with this. This is reflected in the natural beauty of the area and sites of special scientific interest (SSSIs) within Conwy. A significant proportion of Conwy is contained within the Snowdonia National Park.

The area witnessed significant growth during the Victorian Era where developments in transport infrastructure improved accessibility from industrial towns in the North West of England and the Midlands. Development associated with this resulted in the rapid urban growth of areas including Llandudno and Colwyn Bay.

Industrial Heritage

By the mid Nineteenth Century areas within the Conwy valley and Great Orme areas of Llandudno were already established as mineral extraction sites for lead and zinc and copper, and the expansion of this occurred during the Victorian era.

The extraction of mineral ores and the localised processing and refinement has resulted in the historical potential for contamination. This has affected the land and river catchment areas particularly due to the geographical extent of the land-use and the timescale over which it was carried out. It can invariably result in a different appearance to the physical landscape, than would otherwise have occurred. Coupled with this the creation of settlements and towns introduced more significant implications for the areas in terms of waste disposal and the need to centralise areas designated for waste disposal with ever increasing scale as most towns and villages expanded.

The changing nature of fuel use over the late Nineteenth Century resulted in the creation of gasworks to produce and refine coal gas near to where the product was required to be used. Most main population centres were served by such a facility, operated for several decades and redeveloped and expanded as demand for “town gas” increased. The production of by-products from the process which were stored on site pending disposal resulted in the pollution of the ground at the works.

The construction of the railway along the North Wales coast enabled many of the developments already mentioned to take place. It was vital for the export of primary ores and minerals as well as the import of coal for town gas production. It served later industry emerging at the turn of the Twentieth Century and including industrial production areas including Llandudno Junction.

The strategic location of the area during WWII resulted in the development of industry to support the war effort. Examples including the manufacture of aircraft components in Llandudno Junction (later becoming the main manufacturing plant for Hotpoint in North Wales) and the construction of the Mulberry Harbours at Deganwy used in the D-Day landings.

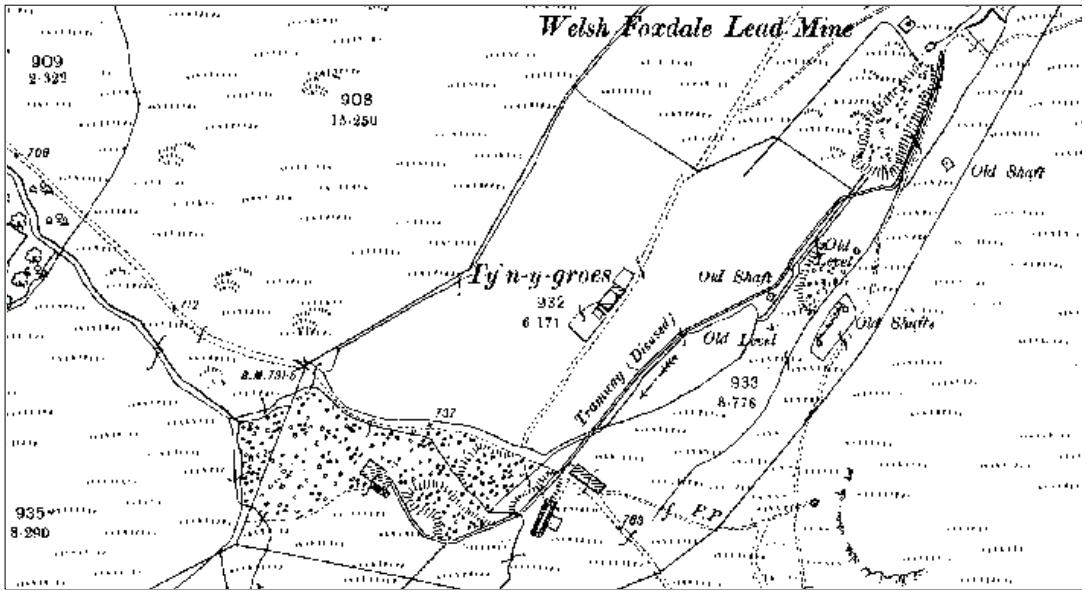
Geology

There is a direct link with the mineralisation of the Conwy area and previous industrial activity that has taken place. Galena (Lead ore) mineral veins are widespread across the North Wales region, becoming an important historical area for metal mining. Within the Conwy Valley where the mineralisation occurs as a consequence of igneous intrusions areas such as Llanrwst and Betws y Coed have extensive mineralisation. Ore extraction would normally be carried out in close proximity to primary and secondary processing activities to improve the economics, but could invariably result in varying standards of control of the resulting waste products. Spoil heaps would commonly be created at the point of production and abandoned as production ceased.

Various potentially toxic elements which commonly occur together within the mineral veins include lead, zinc and cadmium. Although this can impact the land use of the site directly, when leaching occurs from waste deposits this can also result in the potential for environmental damage off site. Watercourses downstream from spoil heaps can then become vulnerable to impacts.

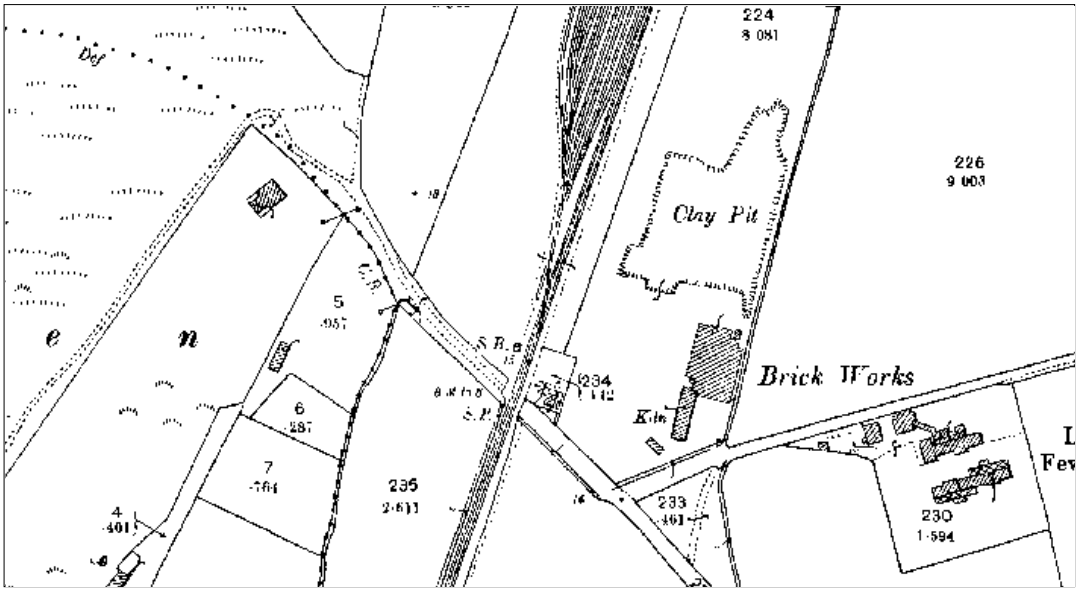
Lead and zinc mines were already extensively worked as the first OS map records, in Epoch 1, during the mid Nineteenth Century. Figure 1 below shows a typical lead mine, recording the position of shafts and levels and the extent of spoil heaps where surplus waste materials were deposited.

Figure 2 – A Typical Lead and Zinc Mine within the Conwy Valley



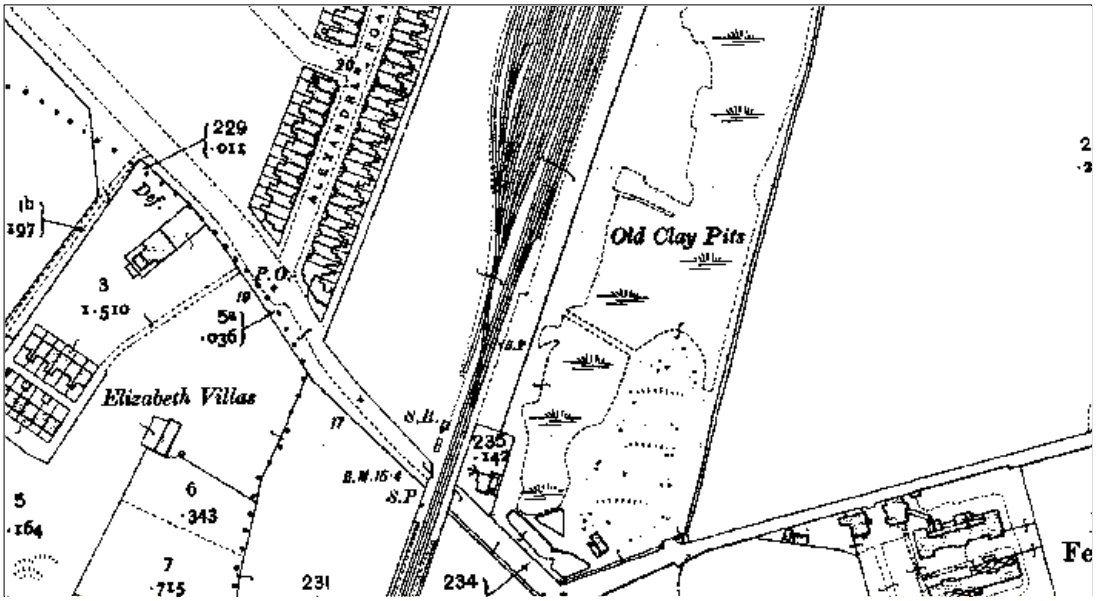
The distribution of clay deposits near to early town settlements were commonly exploited for brick manufacture within the late Nineteenth Century. This resulted in the extraction of clay to produce bricks to supply building materials for town expansion and brickworks were invariably located at the source of the raw material, due to the inherent cost of transportation. Following their demise, worked out clay pits were left abandoned, but the impermeable underlying clay strata would then result in the creation of flooded ponds preventing further development. An example of which is shown in Figure 2. It was commonplace for later reclamation by infilling, following the spread of urban areas, sometimes with ash and clinker from other brick kilns or industrial activity nearby.

Figure 3 – The Typical Extraction of a Clay Pit Associated With a Town Brickworks



Periods between mapping Epochs can show extensive changes in the original development boundary with partial infill as buildings are demolished. Sources of contamination within the infill can include surplus excavation materials from nearby developments, incinerator ash and domestic waste disposal from nearby urban areas.

Figure 4 – Partial Infill of Brickworks Pit After Demolition of Brickworks Buildings



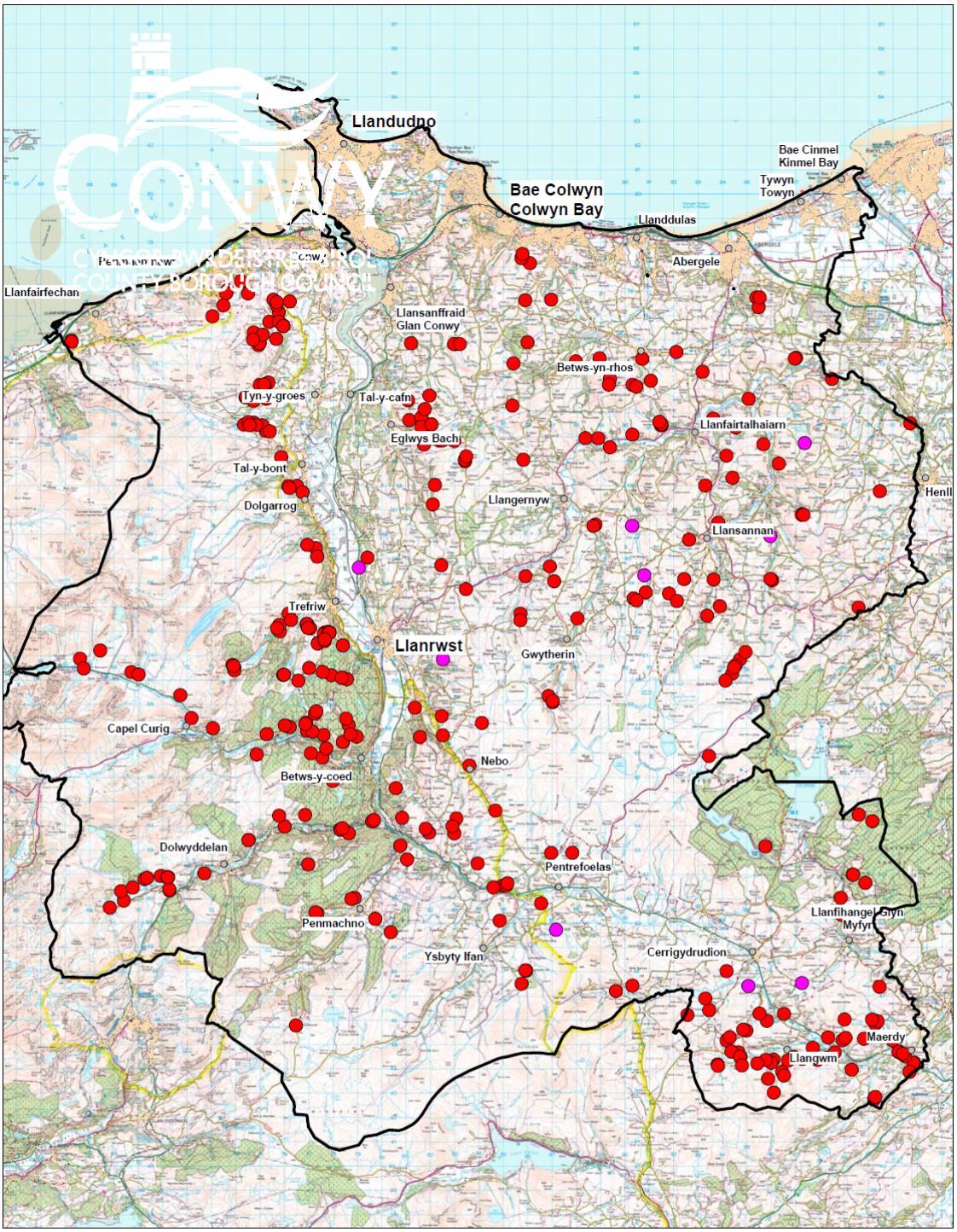
Hydrology and Hydrogeology

Outcrops of carboniferous limestone prevalent at the Great Orme, Little Orme and Llysfaen are categorised as Major Aquifers**,** although Public drinking water supplies are not commonly abstracted from any groundwater sources within the Conwy area. The public supply network is operated by Dwr Cymru -Welsh Water being largely fed by surface water impoundment reservoirs. Generally located across the geographical upland areas of the Conwyregion , the most significant reservoirs by volume include Llyn Brenig, Llyn Alwen and Llyn Cowlyd.

More than 500 private water supplies situated within the County Borough are regulated under the Private Water Supply Regulations 2010. Private water supplies are generally subject to bacteriological and chemical treatment to ensure wholesome quality which is maintained independently of Dwr Cymru, normally by the individual property served by the supply source. The type of supply ranges from surface or shallow groundwater to deep ground water boreholes so they have the potential to be impacted by contaminated land. Currently, a total of 75 Supplies are used for a commercial activity including food preparation or production (termed Reg 9 Supplies) and a further 25 water sources are used as domestic shared supplies serving more than one property (termed Reg 10 Supplies). The remaining supplies serving single properties are not routinely tested under the Regulations, but would be considered where the source water may be affected by historical contamination.

All private water supplies are recorded on the Regulatory and Housing Services GIS system. This enables the proximity of sensitive supplies to areas of potential contaminated land to be identified and also informs a Risk Assessment when carried out under the Private Water Supply Regulations 2010. The Private Water Supply is a potential receptor under the Contaminated Land Inspection Strategy.

Figure 5 - The Distribution of Properties Served by a Private Water Supply in Conwy CBC, as Recorded on the Regulatory and Housing GIS System including Regulation 9, Regulation 10 and Single Supplies)



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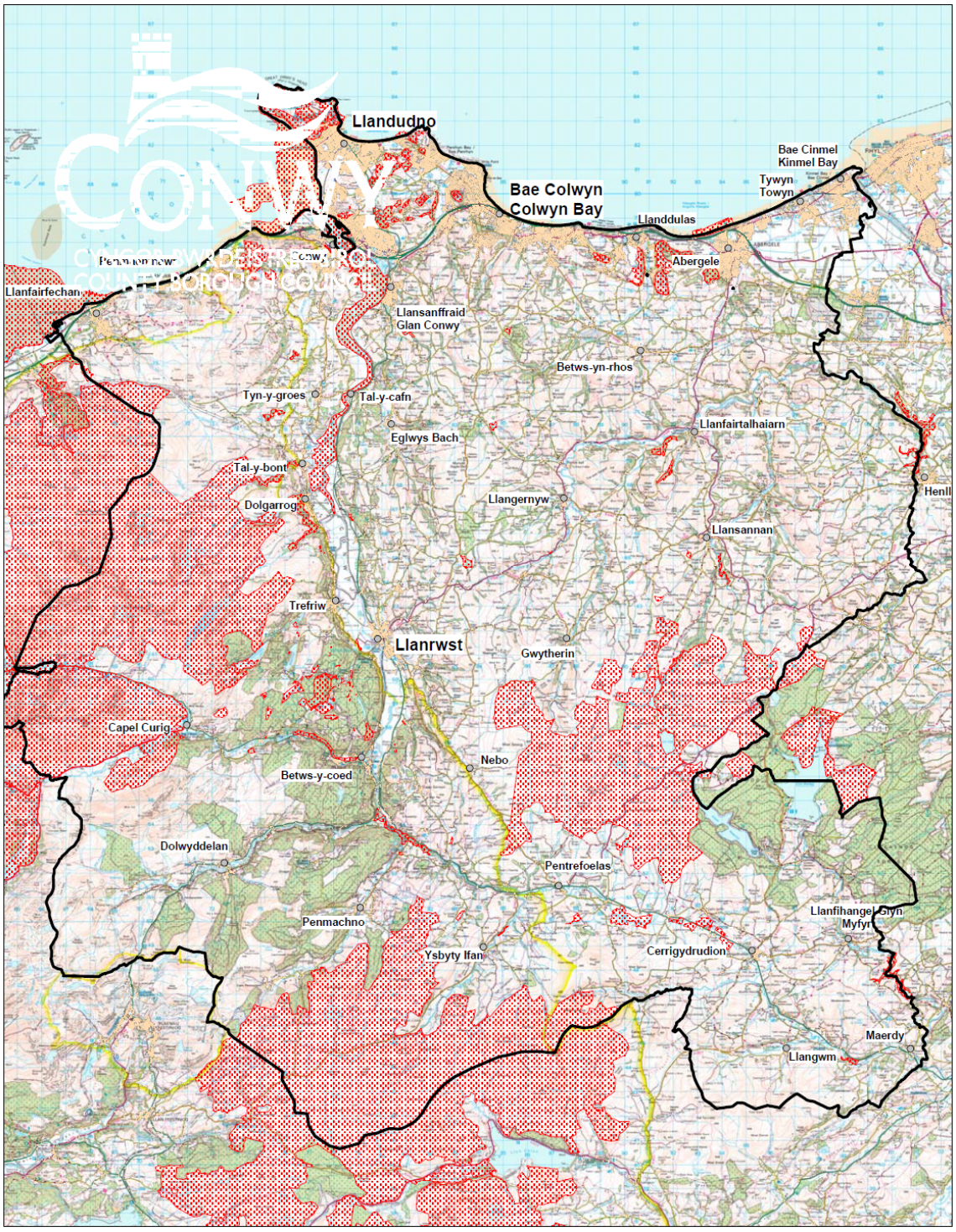
Protected Natural Habitats and Landscapes

Sites of Special Scientific Interest (SSSIs) are notified under the provisions of Section 28 of the Wildlife and Countryside Act 1981 (as amended), "…any area of land is of special interest by reason of any of its flora, fauna, or geological or physiographical features…" The areas within Conwy are shaded on Figure 6.

During the previous inspection of potentially contaminated sites, the Authority has already encountered areas of protected natural habitats associated with former metal mines. Levels of certain metals have been found to result in the growth of metal tolerant species of ecological interest. Statutory Contaminated Land has been identified with Significant Contaminant Linkages established between the soil lead level at the site surface and recreational site users. Although remedial action has been carried out primarily for the protection of human health, extensive consultation was carried out with the Countryside Council for Wales as a previous Statutory body to Natural Resources Wales (NRW). During the resulting remedial action measures were required to be put in place to protect sensitive metallophyte species growing on the historical mine spoil.

Previous inspections that have been carried out in proximity to sensitive natural habitats under the existing Contaminated Land Inspection Strategy have been carried out only after consultation with specialist officers at Natural Resources Wales. Any further site inspections that may be required at protected sites will continue to be carried out following consultation with Natural Resources Wales.

Figure 6 - Location of Protected Natural Habitats within Conwy CBC (red hatched areas)



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Part B - The Inspection Strategy

Purpose of a Contaminated Land Inspection Strategy

This Contaminated Land Inspection Strategy provides a structure through which potentially contaminated land will be prioritised and the process by which suitable action will be taken to manage the risk posed to sensitive receptors. As mentioned earlier, potentially contaminated land can be managed by the Authority under a range of situations, not just by programmed inspection. It is therefore considered that potential Contaminated Land will be managed under various interrelated processes.

Other Mechanisms by Which Contaminated Land Will Also Be Managed

Potentially polluted sites are also considered under the Planning (Development Control) process. Although sites may be scheduled for routine inspection, land may come forward sooner for redevelopment and which may also have the potential to introduce new potentially sensitive receptors. Details of sites which has been used for previous activities which may then result in the land becoming polluted are shared between Environmental Health and Development Control (Planning) case officers so that potential risks to future site users can be considered. In such circumstances, site investigation and site remediation proposals are required to be submitted through the Planning process. The formal consultation process has extensive input from a contaminated land specialist within Environmental Health. This ensures that the potential risks from contamination are suitably addressed prior to a change of use to a more sensitive land use. Information relating to potential sites for consideration are provided to Planning Officers, to be considered as potential development constraints. This information is reviewed when any new potential development sites are proposed.

Aims and Objectives of the Inspection Strategy

Under the Strategy the Authority will:

- Carry out a Risk Assessment of potentially contaminated land on a priority basis in accordance with risk scoring of priority sensitive receptors.
- Reduce unacceptable risks to Human Health where these are identified.
- Use the Development Control (Planning) process continue to remediate potentially contaminated land before new Sensitive Receptors are introduced, thereby reducing the financial burden on remedial action on the Authority and taxpayers
- Develop an efficient and modern record of areas of potentially contaminated land
- Review and suitably document all remedial action that has been carried out to demonstrate that the land is suitable for use

The Authority considers that these Aims are consistent with the national Welsh Government Policy Objectives. However, the Authority's ability to carry out detailed site investigation work involving intrusive sampling and chemical analysis is subject to the level of available resources. This is currently uncertain at the time of revision of this Inspection Strategy. Under the implementation of the previous Inspection Strategy, the Authority was successful in obtaining Welsh Government funding for remedial action after initially using internal Local Authority funding for site investigation. Due to austerity measures within local government and the closure of the grant funding streams available from Welsh Government, the ability of the Authority to carry out detailed site inspection, and any subsequent remedial action that may be required to priority sites, may be significantly restricted.

1 . Carry out a Risk Assessment of potentially contaminated land on a priority basis in accordance with risk scoring of priority sensitive receptors.

The interpretation of Part IIA of the Environmental Protection Act 1990 is guided by Welsh Government following the issue of revised Statutory Guidance[1]. A key element is the adoption of a risk based approach in prioritising land for future inspection.

In the context of the Guidance, Risk is defined as the combination of:

(a) the likelihood that harm, or pollution of water will occur as a result of contaminants in, on or under the land; and

(b) the scale and seriousness of such harm or pollution if it did occur

What Will a Risk Assessment Involve?

[1] Welsh Government Guidance Document No. WG15450 – Contaminated Land Statutory Guidance 2012

The Authority will undertake a Risk Assessment of the land in a manner that will follow relevant and accepted good practice. The Risk Assessment will consider the existing use of the land and surrounding areas, to consider the potential for a Contaminant Linkage to exist. The Risk Assessment will take into account the updated Statutory Guidance which has been issued by Welsh Government. It will initially involve, as a minimum requirement a review of historical record information which will inform a desk based study followed by a site visit and walkover. Further risk assessment will be carried out subject to the availability of site monitoring data or other data where this can be obtained from intrusive site surveys.

2. Reduce unacceptable risks to Human Health where these are identified

Since the introduction of the current Contaminated Land regime the Authority has identified sites where Significant Contaminant Linkages (formerly described as Significant Pollutant Linkages) were found to be present. Suitable Action has been taken to ensure that the land in question was remediated to a standard making it suitable for use and no longer meeting the Statutory definition of Contaminated Land. The Authority will continue to ensure that appropriate action is taken to remove any unacceptable risks where these are identified in the future and subject to available resources.

3. Use the Development Control (Planning) process to remediate potentially contaminated land before new Sensitive Receptors are introduced, thereby reducing the financial burden on remedial action on the Authority and taxpayers

Within Conwy CBC the Development Control (Planning) process has played and will continue to play an important role in ensuring the safe remediation of potentially contaminated land. Areas of land which have been potentially impacted by former land uses including land-filling, fuel storage petrol stations and production of town gas are well documented. Procedures are in place to ensure that any redevelopment considers the potential implications for exposure to new site users. Although contaminants may not be significantly impacting existing lower risk uses, new pathways to contamination may be created during development. This could occur, for example, by the removal of site hard standing or surfacing materials serving as a practical barrier to exposure and new buildings have the potential to be constructed within areas of polluted ground. Depending on the nature of the historical site-use gaseous or vapour phase contaminants may now have the potential to affect confined spaces where previously able to vent harmlessly to air. The creation of domestic garden areas could allow physical contact with soil where previously covered by substantial hard-standing.

Where potentially contaminated land is located within proximity to a proposed development site, planning conditions require an appropriate site investigation and necessary remedial action to be carried out. As the development control process must ensure that land which is developed could not be subsequently determined as Statutory contaminated land a higher level of remedial action may be required. The Authority, will by carrying out the appropriate level of scrutiny by Contaminated Land professionals will ensure that developed land is suitably remediated.

Land which has been potentially contaminated by a former land use may be allocated for redevelopment under the Local Development Plan. Where such land is under the ownership of the Authority, appropriate site investigation will be carried out to determine the potential site constraints, both to inform the planning process of suitable types of development and guide potential developers of the scope of further investigation and likely remedial action that may be required.

4. Develop an efficient and modern record of areas of potentially contaminated land

A substantial information record is held by the Authority for many sites which have been subject to former potentially contaminative uses. There is currently a transformation of local government records from a traditional paper based record system to a modern electronic system. It is important that historical records which contain valuable historical information relating to potential contamination are suitably documented to enable efficient access when required for future assessments This process is ongoing and being driven by the modernisation of local government which is relocating older office accommodation to more central, fit for purpose accommodation.

5. To review and suitably document all remedial action that has been carried out to demonstrate that the land is suitable for use

Land which has been subject to remedial action as a result of Part IIA of the EPA 1990 is recorded on the relevant Statutory Public Register. Other land not included on the public register includes land which has been remediated voluntarily without being determined as Statutory Contaminated Land or land which was previously polluted but subject to remedial action under the planning process, rendering it suitable for use and without the potential for it being determined as contaminated land in the future. The Authority considers the importance of ensuring that all action taken to investigate and remediate potentially contaminated land is suitably documented. This will ensure that land is not subject to unnecessary additional investigation or duplication of regulatory effort.

Strategy Outline and Ongoing Work Programme

The previous section has outlined the Aims and Objectives of the Contaminated Land Inspection Strategy which will be achieved by implementing the following actions:

Creation of a GIS Database

Since the introduction of Part IIA EPA 1990, the Authority has developed a database of potentially contaminated land which is managed by a Mapinfo GIS system. This has enabled the various potential sites to be recorded and mapped. The potential risk that the site poses to the environment based on the proximity to sensitive receptors and controlled waters can then be categorised. This is calculated using the Mapinfo GIS system which is then able to calculate the proximity of the potentially contaminated source to the sensitive receptors near to or underlying the site. A risk score can then be calculated which is based on the potential for environmental harm.

Review of Historical Land Use Mapping

The location of potential contaminated land can be obtained from historical land use mapping. This data is being supplemented as new potential sites are identified from various mapping Epochs or other reliable sources of information that are reviewed.

Land which has the potential to be contaminated may have been subject to a range of former activities. This is likely to have involved a substantial industrial use, including for example gas works, chemical processing or waste disposal and may have carried out over many decades. More widely, the type of activities that are regarded as having a significant contaminative potential include the former land use types included within DoE Industry Profiles. . These land use types are shown in full in Appendix 1. In order to establish the potential locations where contaminating activities have been carried out various land use records have been reviewed in conjunction with historical OS Map records. Other relevant data sources referred to include former petroleum licensing records and local authority records of closed landfill sites.

Review of Historical Record Information

Historical records, where available, may include site monitoring information including gas or vapour testing, or soil chemical test results taken from the site surface or at depth. Available data sources are under regular review to supplement or update the information Sites may also have been subject to previous investigations and reporting at the time of earlier development or under due diligence surveys.

Where no soil testing records are available a site walkover will be carried out to identify whether there is any evidence that significant contaminants may be present within the ground. This would be carried out in accordance with good practice and relevant authoritative guidance. Information that would be relevant would include the appearance of physical contaminants or vegetation dye back.

Site Prioritisation and Risk Scoring

By using risk scores for relevant sensitive receptor types, and subject to available resources, the Authority will identify the sites which pose a higher risk to Human Health. The risk scoring is carried out using a scoring matrix. The scoring matrix uses the priority sensitive receptors identified below and applies a proportionate score, the closer the receptor is located to the potential contaminated source. The priority receptor categories specifically include land uses which the sensitive human health receptors (most sensitive child receptor) could be exposed to potential contamination sources. The land use types include housing and all school premises where exposure could potentially take place within play areas. General play grounds are included as potential sources of exposure. Controlled waters (surface waters) are included due to the potential mobility and exposure to contaminants within water courses.

Priority Sensitive Receptors

The Authority will prioritise the Risk Assessment of land where there is a potential for a significant impact upon human health. This will be achieved by focusing on potential contaminated sites which are located in proximity to:

Housing and other Residential Accommodation
Allotments
Primary and Secondary Schools
Recreational Areas including Playgrounds and Parks
Controlled Water Resources
Private Water Supplies

The Authority has developed a risk assessment scoring system which considers the geographical proximity of potentially contaminated sites to priority sensitive receptors outlined above. The risk scoring system applies a higher score to the sensitive receptor situated on the potentially polluted source land compared with off-site. With a progression away from a potentially polluted site, the higher the distance the lower the risk score. The overall score obtained for the site is used to determine the inspection priority.

Risk Assessment Stages

Review of available information

Information already held by the Authority includes historical waste disposal licences, ground investigations and site monitoring reports. Although the information may have been third party information originally procured under a regulatory function, relevant information is also held during site investigations that have been carried out directly be the Authority. Information relating to ground condition may also have been obtained during previous planning applications. A review of historical records is currently in progress to transfer paper based records to an electronic archive, where practical.

This will be carried out with reference to Key Data Sets, as shown in Part C, including geological and hydrological information through the following stages:

1 Desktop Survey
2 Site Walkover/ Visual Inspection
3 Preliminary Risk Assessment and Development of Conceptual Site Model
4 Generic Quantitative Risk Assessment

Where suitable soil testing data is available a Generic Quantitative Risk Assessment will be carried using relevant standards. The applicability of Soil Guideline Values (SGVs) are described in "The Environment Agency Better Regulation Science Programme" [2] for the purpose of assessing the chronic risk to human health from the long-term exposure to chemicals in soil. The SGVs are consistent with the Updated technical background to the CLEA model (Environment Agency, 2009) and Human health toxicological assessment of contaminants in soil (Environment Agency, 2009). The exceedance of a specified SGV does not necessarily represent the threshold at which there is a Significant Possibility of Significant Harm (SPOSH) from the exposure to the contaminant, but will be used a basis for the assessment. There are also a limited series of SGVs available, which at the time of this document review includes the following parameters:

[2] Using Soil Guideline Values – Environment Agency Better Regulation Science Programme – Science report: SC050021/SGV introduction

Arsenic
Benzene
Cadmium
Dioxins, Furans and dioxin-like PCBs in soil
Ethylbenzene
Mercury
Phenol
Selenium
Toluene
Xylene

The revised Contaminated Land Statutory Guidance introduced four categories under which contaminated land could be classified. Category 1 Human Health is the highest risk category where there is a high probability that there is a Significant Possibility of Significant Harm (SPOSH) being caused to human health receptors. Category 4 Human health is the lowest category where the level is risk posed is low and the land does not pose a significant possibility of significant harm. To assist in screening out sites which have a low level of risk and which should not be considered further for more detailed risk assessment, a series of Category 4 Screening Levels have been published by Welsh Government for contaminants commonly identified within risk assessments. The parameters included are:

Cadmium
Benzo(a)pyrene
Benzene
Arsenic
Lead
Chromium VI

The Authority will refer to Category 4 Screening Levels for the available contaminants listed above to screen-out potential sites that do not require further inspection and assessment.

The Authority in following the Statutory Guidance will not consider land has the potential to be identified as Contaminated Land where normal levels of contamination are present within the soil due to the nature of the soil produced from the underlying geology.

Where other potential contaminants are identified within the risk assessment but which are not listed above the Authority will consider the use of other relevant and authoritative sources of information.

The Authority will carry out the risk assessment of potentially contaminated land on a priority basis, based on the methodology outlined in this Inspection Strategy and subject to resource constraints. Due to the uncertain financial situation and the absence of central government funding for either site investigation or remedial action, the Authority has limited budgetary provision. Furthermore, it cannot specify the number of inspections that will be carried out and therefore considers that the Development Control process will continue to be a significant focus of remedial action to potentially contaminated sites in the future.

Internal Liaison

The Conwy CBC Contaminated land Strategy has been drafted by the Regulatory and Housing Services Department with relevance to other Departments within the Authority. Potential site information is coordinated with relevant departments including Environment Roads and Facilities, Property Services and Development Control. This ensures a coordinated approach within the process of identifying and assessing contaminated land.

Land which is under council ownership will be considered by an equivalent assessment process as compared with land under private ownership. An organised and structured approach enables potentially contaminated land that is under the Authority's ownership to be investigated prior to redevelopment to ensure that potential Contaminant Linkages are closed out.

Part C – Sources of Information

Data Sources and Information Management

The Department has developed a Mapinfo GIS system which is used to manage the information and land use data obtained. This includes:

Historical OS Maps

Scanned digital mapping of available mapping Epochs includes the 1:500 Town Centre Plans and mapping at the Scales of 1:1250,1:2500, 1:10560 and 1: 10,000 covering the following Epochs:

Epoch 1 (1877-1833)
Epoch 2 (1897 – 1900)
Epoch 3 (1916 -1926)
Epoch 4 (1934 – 1939)
Epoch 5 (1961-1961)
Epoch 6 (1978 – 1996)

Solid and Drift Geology Maps

Digital Geological mapping is obtained from the British Geological Survey

Groundwater Vulneralbility

Geoset data is obtained electronically from the Environment Agency.

Former Environment Agency Wales and Natural Resources Wales Data

Relevant Environmental information has been provided in digital map format by the Environment Agency for overlay onto the Authority's GIS maps.

The data is subdivided into the following categories:

Local Environment Action Plan Boundaries (LEAP) at 1:50,000 GIS Digital Polygons Data.

Active Landfill Sites at 1:10,000 GIS Digital Polygon Data

Other Landfill Sites at 1:50,000 GIS Digital Polygon Data.

Bathing Water Sampling Points GIS Digital Point Data

Licenced Water Abstractions GIS Digital Point Data

Discharge Consents GIS Digital Point Data -Active
-Revoked

River Quality Objective Locations - GQA Biological
- GQA Chemical

Source Protection Zones GIS Digital Polygon Data

Development Control Archive and Land-Use Records

Information is used to supplement the map-based information to identify potential sources of contamination.

Local Development Plan (LDP)

The Conwy LDP which was adopted in October 2013 provides a single framework for the control of development and land use within Conwy

Historical Monuments and Archaeological Information

This is held as a GIS table data.

Department of the Environment Industry Profiles

A comprehensive list of potentially polluting industry types have been drawn up by the former Department of Environment. The Industry profiles are still regarded as an appropriate source of information to assess the potential significance of former land use activities .The list is included in APPENDIX 1

Part D – Outline of Procedures

Dealing with information Provided to the Authority from the Public and outside Organisations Regarding Potentially Contaminated Land

Information relating to potential contaminated land will initially be received in writing by the Regulatory and Housing Services.

The provider of the information will be notified in writing that the information has been received explaining the procedure by which the information will be held and how it will be dealt with by the Authority.

The information will be considered in conjunction with the Inspection Strategy, and will be prioritised for risk assessment and inspection.

Where the land is owned by Conwy CBC the information will be subject to review by the Legal Services Department and the relevant Department occupying and/or maintaining the land. If not occupied by Conwy CBC the occupier will be advised of the course of action proposed by the Authority.

If information has already been assessed for the site, with a risk assessment already carried out, the risk assessment will be reviewed to consider whether any new potential pathways to contaminant exposure now exist.

Dealing With Service Requests Concerning Contaminated Land

The Regulatory Services and Housing Department "Service Request" procedure that will be followed is shown in APPENDIX 2.

Provision of Public Register Information

Information which will be collated in the process of carrying out the Statutory requirements of Part IIA may be subject to enquiry from members of the public or from companies specialising in the provision of relevant environmental information for legal searches. Certain information will be placed on the Register of Contaminated Land that is required to be maintained under Section 78R(1).

The relevant Sections that this will be held under are outlined as follows:

- Remediation Notices
- Appeals Against Remediation Notices
- Remediation Declarations
- Remediation Statements
- Appeals Against Charging Notices
- Designation of Special Sites

- Notification of Claimed Remediation
- Convictions For Premises Under Section 78 M
- Guidance Issued Under Section 78V(1)
- Other Environmental Controls.

An electronic Public Register is maintained under Section 78R(1) of the Act. A copy of the register can be obtained free of charge by contacting regulatory.services@conwy.gov.uk

Information Provided under the Local Authority Land Charges System

Information relating to Contaminated Land is provided under the revised Con 29 procedure as documented in APPENDIX 3

Further Contact

Contact can be made with Conwy CBC concerning the Contaminated Land Inspection Strategy to :

Mr.S. Cottrill
Principal Environment Officer,
Regulatory and Housing Services,
Conwy County Borough Council,
Civic Offices,
Colwyn Bay,
CONWY
LL29 8AR

Tel. 01492 575266.

Or by e mail to regulatory.services@conwy.gov.uk

APPENDIX 1

Department Of The Environment Industry Profiles

The list of industry profiles listed below will be used to identify potentially significant land-use types:

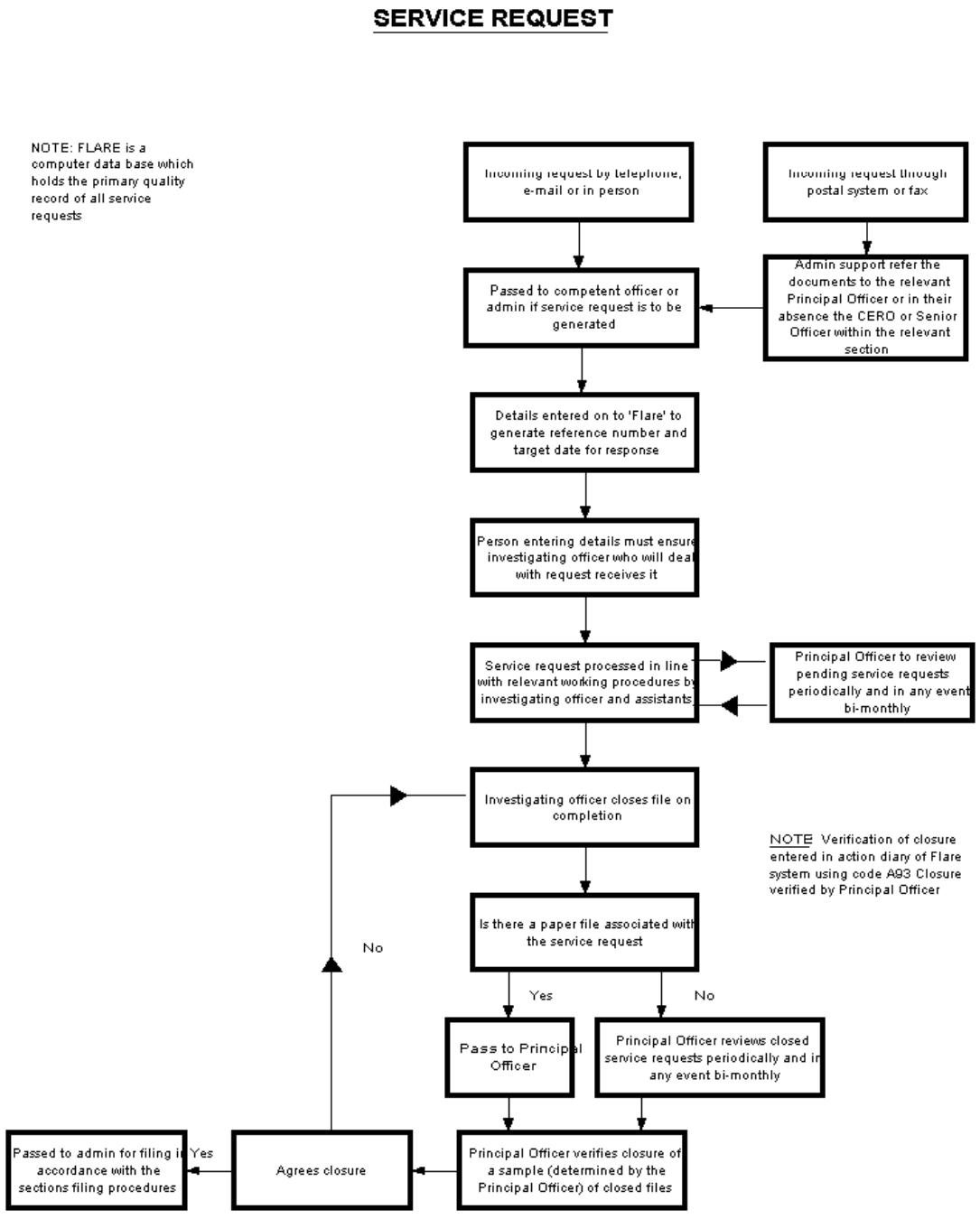
Airports
Animal and animal products processing works
Asbestos manufacturing works
Ceramics, cement and asphalt manufacturing works
Chemical works; coatings (paints and printing inks) manufacturing works
Chemical works; disinfectants manufacturing works
Chemical works; explosives, propellants and pyrotechnics manufacturing works
Chemical works; fertiliser manufacturing works
Chemical works; fine chemicals manufacturing works
Chemical works; inorganic chemicals manufacturing works
Chemical works; linoleum, vinyl and bitumen-based floor covering manufacturing works
Chemical works; mastics, sealants, adhesives and roofing felt manufacturing works
Chemical works; organic chemicals manufacturing works
Chemical works; pesticides manufacturing works
Chemical works; pharmaceuticals manufacturing works
Chemical works; rubber processing works (including works manufacturing tyres and other rubber products
Chemical works; soap and detergent manufacturing works
Dockyards and dockland
Engineering works; aircraft manufacturing works
Engineering works; electrical and electronic equipment manufacturing works (including works manufacturing equipment containing PCBs)
Engineering works; mechanical engineering and ordnance works
Engineering works; railway engineering works
Engineering works; shipbuilding, repair and shipbreaking (including naval shipyards)
Engineering works; vehicle manufacturing works
Gas works, coke works and other carbonisation plants
Metal manufacturing, refining and finishing works; electroplating and other metal finishing works
Metal manufacturing, refining and finishing works; iron and steel works
Metal manufacturing, refining and finishing works; lead works
Metal manufacturing, refining and finishing works; non-ferrous metal works excluding lead works)
Metal manufacturing, refining and finishing works; precious metal recovery works
Oil refineries and bulk storage of crude oil and petroleum products
Power stations (excluding nuclear power stations)
Pulp and paper manufacturing works
Railway land
Road vehicle fuelling, service and repair; garages and filling stations
Road vehicle fuelling, service and repair; transport and haulage centres
Sewage works and sewage farms
Textile works and dye works
Timber products manufacturing works
Timber treatment works
Waste recycling, treatment and disposal sites: drum and tank cleaning and recycling plants
Waste recycling, treatment and disposal sites: hazardous and waste treatment plants
Waste recycling, treatment and disposal sites: landfills and other waste treatment or waste disposal sites
Waste recycling, treatment and disposal sites: landfills and other waste disposal sites
Waste recycling, treatment and disposal sites: metal recycling sites
Waste recycling, treatment and disposal sites: solvent recovery works

Profile of miscellaneous industries incorporating :

Charcoal works
Dry-cleaners
Fibreglass and fibreglass resins manufacturing works
Glass manufacturing works
Photographic processing industry
Printingandbookbindingworks

APPENDIX 2

Regulatory and Housing Services – Procedure to Deal with Service Requests



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APPENDIX 3

Information provided under local authority search enquiries

Revised Form CON29 (April 2000)

Additional Question 16A (*see footnote 12a below)
Register Entries

16.A.1. Please list any entries in the register maintained under s.78R(1) of the Environmental Protection Act 1990 in relation to the property.

Notice of identification of contamination land

16.A.2. Has the Council served or resolved to serve any notice under s.78B(3) in relation to the property?

Consultation as to adjoining or adjacent contaminated land

16.A.3. Has the Council consulted, or resolved to consult, with the owner or occupier of the property under s.78G(3) in relation to anything to be done on the property as a result of adjoining or adjacent land being contaminated land?

Identification of risk from adjoining or adjacent land

16.A.4. Has any entry been made in the register, or has any notice been served or resolved to be served under s.78B(3), in relation to any adjoining or adjacent land which has been identified as contaminated land because it is in such a condition that harm or pollution of controlled waters might be caused on the property?

ADDITIONAL FOOTNOTE

(12a) Negative answers do not imply that the property or any adjoining or adjacent land is free from contamination or from the risk of it. Enquiries 16A.3 and 16A.4 may not disclose steps taken by another Council in whose area adjoining or adjacent land is situated.

AMENDMENT TO QUESTION 34

Amend words in brackets to read: (This enquiry does not cover notices served under part IIA or Part III of the EPA, to which Enquiries 16A and 5 apply)