

**Assessment to ascertain the financial,
environmental and health risks
associated with not having a specific
Contaminated Land regulatory regime
in Northern Ireland.**

PROJECT REPORT 29 March 2019

Contents

Acknowledgements.....	3
Acronyms.....	4
Executive summary.....	6
1 Introduction.....	8
2 Part III and its interface with other regulatory regimes.....	21
3. Risk assessment methodology.....	33
4. The qualitative risk assessment.....	39
5. Project workshop.....	49
6. Options for implementing a contaminated land regime.....	52
7. Project conclusions and recommendation.....	62
8. References and glossary of terms.....	69
Annex 1 Project workshop report	
Annex 2 Site-specific qualitative risk assessments	
Annex 3 Consultation on final draft report and feedback questionnaire	

Acknowledgements

This risk assessment was carried out by the Northern Ireland Environment Agency (NIEA) with the support of its Project Steering Group (PSG). This PSG comprised of:

Mark Livingstone, NIEA

Dr Theresa Kearney, NIEA

Dr Edward Lewis, NIEA

Brendan Forde, Environmental Policy Division (EPD), Department of Agriculture, Environment & Rural Affairs (DAERA),

Mairéad Adams, EPD, DAERA

Siobhán Greenan, EPD, DAERA

Nigel McMahon, Department of Health

Garey Vance, Department for Infrastructure

Paul McCullough, Armagh, Banbridge Craigavon District Council

Alastair Curran, Belfast City Council

Brona McLaverty, Causeway Coast and Glens Borough Council

Chris Jordan, Mid and East Antrim Borough Council

Clifford Todd, Antrim and Newtownabbey Borough Council

Acronyms

ANDBC	Ards and North Down Borough Council
CEHOG	Chief Environmental Health Officer Group (now EHNI)
CIRIA	Construction Industry Research and Information Association
CL:AIRE	Contaminated Land: Application in Real Environments
CLCG	Contaminated Land Capital Grants
DAERA	Department of Agriculture, Environment and Rural Affairs
DoE	Department of the Environment
Defra	Department for Environment, Food and Rural Affairs
Dfi	Department for Infrastructure
DWPA	Drinking Water Protected Areas
EHD	Environmental Health Department
EHNI	Environmental Health Northern Ireland (formerly CEHOG)
EPA 1990	Environmental Protection Act 1990
EPD	Environmental Policy Division
EU	European Union
GIS	Geographical Information Systems
IED	Industrial Emissions Directive
IPC	Integrated Pollution Control
LAs	Local Authorities
LDP	Local Development Plans
MUDC	Mid Ulster District Council
NIAO	Northern Ireland Audit Office
NIEA	Northern Ireland Environment Agency

NRW	Natural Resources Wales
PAC	Public Accounts Committee
Part II	Part II of the Waste and Contaminated Land (Northern Ireland) Order 1997
Part IIA	Part IIA of the Environmental Protection Act 1990
Part III	Part III of the Waste and Contaminated Land (Northern Ireland) Order 1997
PHA	Public Health Agency
PPC	Pollution Prevention Control
PSG	Project Steering Group
RRI	Reinvestment and Reform Initiative
SEPA	Scottish Environmental Protection Agency
SOLACE NI	Society of Local Authority Chief Executives Northern Ireland
UK	United Kingdom
WCLO 1997	Waste and Contaminated Land (Northern Ireland) Order 1997

Executive summary

Part III of the Waste and Contaminated Land (Northern Ireland) Order 1997 (WCLO 1997) sets out the legal provisions for the introduction of a contaminated land regime in Northern Ireland. The Order was introduced in 1997 but Part III has not yet been commenced.

In 2011, the Northern Ireland Audit Office (NIAO) identified the non-commencement of Part III as a gap in legislation that means that Councils and the Northern Ireland Environment Agency (NIEA) are unable to fully regulate the remediation of contamination of land and enforce the polluter pays principle in Northern Ireland. In 2012, the Public Accounts Committee (PAC) subsequently endorsed this and recommended:

The Department of the Environment, in consultation with Councils, fully assesses the financial, environmental and health risks associated with having a regulatory regime that falls short of that in place in other regions.

The outcome of this project is to deliver this recommendation. The objective of this project is to provide as full an assessment as can be achieved, short of assessing all potential contaminated land sites across Northern Ireland.

The methodology adopted for this assessment uses documented contaminated sites within Northern Ireland as case studies for the assessment of the financial, environmental and health risks on the basis of the existing regulatory regime(s) and what Part III would add should it be implemented. A total of 30 sites have been selected to represent 6 site scenarios which occur in Northern Ireland and elsewhere in the UK. The qualitative assessment methodology (CIRIA C552, 2001) used in this assessment takes account of the likelihood and impact of risks under each of the three criteria: financial, environmental and human health.

In line with the PAC recommendation, the local Councils were engaged as part of this assessment. This engagement occurred through (i) representation by Environmental Health officers from 5 Councils on the Project Steering Group (PSG); (ii) all 11 Councils were invited to attend the project workshop (chapter 5 of the report), (iii) consultation on the final draft report in May 2018 and (iv) presentation to the Society of Local Authority Chief Executives Northern Ireland (SOLACE NI) on 02nd November 2018.

This assessment has identified high risks relating to human health, environmental and / or financial risks of not having Part III in operation in

Northern Ireland primarily through the uncertainty of the number and severity of outstanding land contamination sites present in Northern Ireland. However, in the absence of a Part III inspection strategy, it is not possible to quantify these sites and therefore the full financial, environmental or human health risks at this time.

This assessment has identified that the polluter pays principle, which is integral to Part III, is poorly covered by other legislative and regulatory regimes in Northern Ireland. The European Union (EU) Mercury Regulations, which came into operation on 1st January 2018, include requirements for the inspection of potential mercury-contaminated sites. In the absence of Part III and without an inspection strategy in Northern Ireland, there is currently no mechanism to address these requirements.

Four options have been considered in this report to assess how elements of Part III could be brought into operation in Northern Ireland, and how they would address the requirements of providing an inspection strategy and strengthening the polluter pays principle.

- Option 1: – Do nothing.
- Option 2: – Councils to develop inspection strategies for their areas outside the Part III regime.
- Option 3 – Implementation of Part III with no capital funding
- Option 4 – Implementation of Part III with a capital funding cap.

Following consultation with the Councils Environmental Health Departments, in May 2018 a preference was indicated for Option 4; however the SOLACE NI does not support any of the Options outlined in this report.

This report should be provided to the Department of Finance to close off the Public Accounts Committee recommendation on its accountability grid report. It should be noted that in order to commence Part III a decision would need to be taken/approved by the Northern Ireland Executive.

In order to fully assess the recommendation of Option 4 it is envisaged that a Programme Board should be set up by Policy Regulation Unit supported by Regulation Unit's Land and Groundwater Team to take forward a Strategic Outline Case to identify the resources required to inform the potential implementation of Part III. The Programme Board would also produce a business case to provide a Mercury Inspection Strategy and a register of potential mercury contaminated sites in Northern Ireland. It is recommended that the Strategic Outline Case and the Mercury Regulations business case be produced with representation from and in consultation with the Councils Environmental Health Departments and SOLACE NI.

1. Introduction

1.1 Background

The Waste and Contaminated Land (Northern Ireland) Order 1997 (WCLO 1997) mostly transposed the requirements of the Waste Framework Directive, (originally 75/442/EEC, which was repealed and replaced by 2008/98/EC) and the Hazardous Waste Directive (91/689/EEC – repealed and replaced by 2008/98/EC), which established controls in relation to the keeping, carrying, treating or disposing of waste. The Landfill Directive (1999/31/EC) requirements are mostly transposed by way of the Pollution Prevention and Control (PPC) regime. WCLO was introduced in 1997, although Part III has not yet been commenced.

Part III of the WCLO 1997 contains the legal provisions for the introduction of a Contaminated Land regime in Northern Ireland, equivalent to those operating under Part IIA of the Environmental Protection Act 1990 (EPA 1990) in England and Scotland since 2000 and in Wales since 2001. It provides a definition of contaminated land and an improved system for the identification and remediation of land where contamination is causing unacceptable risks to human health, the natural environment and/or property.

The remediation of Contaminated Land through the planning process in Northern Ireland provides the principal mechanism and opportunity to remediate land affected by contamination through its redevelopment and regeneration, hence bringing land back into beneficial use. The NIEA is a statutory consultee to the local planning authorities. Further information on this arrangement is contained in Section 2.

It is a matter for the Stormont Executive to decide that the problems arising from historically contaminated sites require legislative action and, if so, to legislate for the commencement of Part III.

Implementation of Part III requires:

- a commencement order;
- publication of statutory guidance; and
- provision of appropriate resources for the 11 Councils and NIEA to support their respective regulatory duties.

This legislative gap due to the non-commencement of Part III was highlighted in a NIAO report (2011)¹ on the transfer of former military and security sites to the Northern Ireland Executive. As part of the Reinvestment and Reform Initiative (RRI), the UK Government transferred a number of former military bases and security sites to the Executive free of charge for economic and social regeneration of local areas. One condition of this transfer was that the Executive must bear the cost of making the sites ready for use, as and when they were released.

The findings of the NIAO report recommended that the current gap in legislation be closed by commencing Part III of the WCLO 1997, so that effective inspection and regulatory powers are in place to ensure that the appropriate person(s) are held responsible for remediation, i.e. *polluter pays*. This recommendation was subsequently endorsed by the PAC.

The PAC identified the non-commencement of Part III as a gap in legislation that means that Councils and NIEA are unable to fully regulate the remediation of Contaminated Land and enforce the *polluter pays* principle in Northern Ireland. In 2012, the PAC recommended:

that the Department of the Environment, in consultation with Councils, fully assesses the financial, environmental and health risks associated with having a regulatory regime that falls short of that in place in other regions.

This report presents a qualitative risk assessment, options and recommendations to address this PAC recommendation. The local Councils, which are the primary regulators under Part III (should it be commenced), were consulted throughout this project. The PSG included 5 nominees from the Chief Environmental Health Officers Group (CEHOG), now known as Environmental Health Northern Ireland (EHNI).

1.2 Objectives of this assessment & report

The purpose of this report is to address the PAC recommendation with Councils in assessing the financial, environmental and health risks associated with having a Contaminated Land regime that falls short of that in place in other parts of the UK.

The objectives of this report are to:

¹ Northern Ireland Audit Office (NIAO) report: The Transfer of Former Military and Security Sites to the Northern Ireland Executive. 22 November 2011.

- a. present the objectives and main features of the Contaminated Land regime as provided for by Part III of the WCLO 1997;
- b. consider the contaminated land regimes and lessons learnt from other parts of the UK;
- c. compare the provisions in Part III for protecting health and the environment with other extant NI regulatory regimes;
- d. complete a qualitative risk assessment for managing health, environmental and financial risks based on 6 scenarios representative of local extant legislative / regulatory measures for managing land affected by contamination;
- e. following consultation, present feedback from Councils and other relevant bodies on this risk assessment and its findings;
- f. determine the adequacy of the existing regulations in the absence of commencing Part III;
- g. present options for implementing a contaminated land regime; and
- h. present recommendations and outline next steps.

The objective of this report is to provide a qualitative risk assessment for a number of representative local site scenarios given that there are no Council inspection strategies in place to inform the extent of potentially contaminated land in Northern Ireland.

1.3 Objectives of a contaminated land regime

The Contaminated Land regime under Part III, and as set out in the draft Department of Environment (DoE) Statutory Guidance (2006)², provides a legal framework for dealing with historical contamination. It aims to provide a system for the identification and remediation of land where contamination is causing unacceptable risks to human health, the natural environment and/or property.

The main objectives of the Part III regime are similar to those provided by Part IIA of the EPA 1990, which is in force in England, Scotland and Wales. The objectives are to:

- a) identify and remove unacceptable risks to human health and the environment;
- b) seek to ensure that contaminated land is made suitable for its current use;

²Department of the Environment (2006). Remediation of Contaminated Land Statutory Guidance (draft) – Department of the Environment Guidance to District Councils under Part III of the Waste and Contaminated Land (Northern Ireland) 1997

- c) pursue the polluter pays principle;
- d) ensure that the burdens faced by individuals, companies and society as a whole are proportionate, manageable and compatible with the principles of sustainable development.

These objectives provide the basis for the “suitable for use” approach to the remediation of land, hence contributing to the objectives of sustainable development. The “suitable for use” approach promotes a risk-based approach in managing land affected by contamination by:

- (a) recognising that the risks presented by any given level of contamination will vary according to land use and a range of site-specific factors such as the underlying geology and hydrogeology. Risks, therefore, need to be assessed on a site-specific basis;
- (b) ensuring that land is suitable for its current use;
- (c) ensuring that land is made suitable for any new use with planning consent in place; and
- (d) limiting the requirements of remediation to the work necessary to prevent unacceptable risk to human health and the environment based on current land use, or future use if planning consent is being sought or is in place.

1.4 Main features of the Northern Ireland contaminated land regime

Part III provides a legal definition of *Contaminated Land* for which certain criteria must be met in order to define land as Contaminated Land. It states that Contaminated Land is:

“any land which appears to the District Council 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 waterways or underground strata is being, or is likely to be caused...”*

Critically, Part III provides a mechanism for dealing with land which presents unacceptable health and environmental risks where planning or other

regulatory regimes are not applicable. The main features of a Contaminated Land regime under Part III are as follows:

- a) The primary regulatory role rests with the 11 local Councils, taking into account their existing regulatory roles in environmental health, public safety and planning.
- b) Councils are responsible for developing a strategic approach to inspection which is designed to target and identify individual areas of land as contaminated land.
- c) In situations where contaminated land meets the definition of a Special Site (as defined in Article 51 of the WCLO 1997)³, NIEA is the enforcing authority. Councils remain the enforcing authority for all other contaminated sites.
- d) Using a risk-based approach, remediation will be necessary where contamination poses unacceptable risks to human health and/or the environment, and where such remediation would be considered to be reasonable.
- e) Enforcing authorities must establish who is liable for the costs of remediation.
- f) Enforcing authorities must decide, after consultation, what remediation is required for any individual site and ensure that such remediation is undertaken, either through agreement with the appropriate person or through an enforcement notice.
- g) Where a remediation notice is served, or the enforcing authority undertakes to do the works, the enforcing authority must apportion liability and costs for the remediation.
- h) Enforcing authorities must record and maintain a public register of regulatory action.
- i) NIEA to publish periodic reports on the state of contaminated land in Northern Ireland.

³ The Definition for defining a Special Site according to Article 51 of the WCLO 1997 is a site where land is likely to be in such a condition by reasons of substances in, on or under the land that-

- i. serious harm would or might be caused, or
- ii. serious pollution of waterways or underground strata would be, or would be likely to be, caused.

Another important feature of the Part III regime is its interaction/interfaces with other relevant environmental legislation (e.g. waste management). These interactions/interfaces with a Contaminated Land regime are considered further in Section 2.

1.5 Experience of the Contaminated Land Regime in England

In England, various estimates of the extent of land affected by contamination have been published. In 2009, the Environment Agency estimated that there may be some 300,000 hectares (ha) of land affected to some extent by industrial contamination in England and Wales.

The Contaminated Land regime under Part IIA of the EPA 1990 came into force in England in April 2000, and in Wales in 2001. This regime is one of the main policy measures dealing with the legacy of industrial land usage and returning it back to beneficial use. It provides a means of identifying and remediating land that poses a significant risk to human health and the water environment. The regime consists of:

- Defra Contaminated Land Statutory Guidance April 2012 for the regulators i.e. Local Authorities and the Environment Agency;
- Part IIA of the EPA 1990 – provides a definition of contaminated land and how it is to be identified and dealt with;
- The Contaminated Land (England) Regulations 2000 (CL(E)R2000) – provides procedural details including the description of special sites, public registers, remediation notices and appeals.

Note the regime consists of the same components in Scotland and Wales. **Figure 1 (page 18) sets out the Part IIA regulatory process in England, Scotland and Wales, which is indicative of how the equivalent provisions in the WCLO 1997 are likely to operate in Northern Ireland.**

In 2014, Cranfield University and Contaminated Land: Application in Real Environments (CL:AIRE) (Ref 4) undertook a survey on behalf of Defra to assess the progress by local authorities in England in implementing Part IIA. The findings of this survey are based on information submitted by 197 of 326 local authorities (60%) and include:

- a. Land contamination in England is mainly dealt with through the planning system (92% of sites). Approximately 4% of sites are progressed under Part IIA and a similar proportion by voluntary action.

- b. Local Authorities (LAs) published their inspection strategies in 2001 in response to the Statutory Guidance being published. The main priority for LAs inspection strategies is to assess the risk posed to human health.
- c. Majority of LAs (91%) established their priority listing of potentially contaminated sites by 2007.
- d. LAs have spent at least £32 million on inspecting more than 11,000 potentially contaminated sites (represents 5% of potentially contaminated sites). These inspections were funded mainly by LAs funding (64%) and central funding (33%). Third party funding only contributed 1%.
- e. This led to the determination of more than 511 contaminated sites under Part IIA where remediation was required including 50 designated Special Sites. The majority of these sites were posing unacceptable risks to human health with arsenic, lead and benzo(a)pyrene being the most common substances causing contamination.
- f. Of the 461 contaminated land (non-Special) sites, LAs reported that 433 have been fully remediated, with a further 31 Special Sites were reported by the Environment Agency as having been remediated.
- g. More than £52 million has been granted for remediation by the regulators (LAs and Environment Agency) using public monies provided through the Contaminated Land Capital Grants (CLCG) Programme. Most of this was spent on making land and water safe for people to use, and on cleaning the environment for communities and to support growth.
- h. The Environment Agency reported in 2016 that, at the majority of remediated sites, the responsibility for remediation fell to either the local Council or the Environment Agency. Regulators pursued Class A polluters to meet the costs of remediation, but they could not be found or made to pay in the majority of cases (e.g. company no longer exists, hardship exemptions apply).
- i. Remediation has been funded largely by the CLCG Programme (85%). Furthermore, remediation of Special Sites has also been funded by the CLCG programme (445), followed by Class A appropriate persons (the polluter, 29%), and Class B appropriate persons (the owner or occupier of the land, 27%).
- j. Defra announced in December 2013 that there would be no more central government funding through the CLCG programme for the designation or remediation of contaminated land in England. Defra stated that the capital funding stream had been a supplement and that funds should now be taken from the mainstream revenue support grant to carry out the work. The final capital grant scheme

for 2016/17, which had a budget of £400,000, has now closed (previously Defra allocated much larger budgets – for example, £17.5 million in 2009/10). This funding cut has already contributed to a dramatic fall in contaminated land determinations across England.

1.6 Existing provisions of the Contaminated Land Regime in Wales

The contaminated land regime under Part IIA of the Environmental Protection Act 1990 came into force in Wales in 2001. As in England, land contamination is mainly dealt with through the planning process (93% of sites), with a further 3% of contaminated sites managed through Part IIA and a similar amount under voluntary action. In 2016, Natural Resources Wales (NRW) published its report, *State of Contaminated Land in Wales*, in which it reported that:

- a. All Councils (19) in Wales have published their inspection strategies and in total 10,130 potentially contaminated sites have been identified for consideration;
- b. In the period 2001 to 2013, detailed inspections of 800 potentially contaminated sites have been completed under Part IIA. This represents approximately 8% of the 10,130 potentially contaminated sites. The detailed inspections of these sites have been funded by central Government funding (90%) and Council funding (10%) at a total cost of £3.87 million;
- c. 95 sites have been fully remediated by the Councils at an estimated cost of £3.7 million. Two further Special Sites have been remediated by NRW at an estimated cost of £1.2 million.
- d. Site remediation has been funded by the Welsh Government's Contaminated Land Capital Fund scheme (71%) prior to its withdrawal in 2010/11 and also by Class A appropriate persons (22%).
- e. More recently, the Welsh Government has announced that it had secured £1 million in the year 2017/18) to support Part IIA projects and for other projects where it is evident that wider environmental benefits can be gained. The Welsh Government intends to extend this funding for a further 3 years after this. It is envisaged that Part IIA sites will remain a funding priority within this programme.

1.7 Existing provisions of Contaminated Land regime in Scotland

The contaminated land regime under Part IIA of the Environmental Protection Act 1990 came into force in Scotland in 2000. Similar to England and Wales, land contamination is mainly dealt with through the planning process. In 2009, the Scottish Environmental Protection Agency (SEPA) published its

contaminated land report, *Dealing with land contamination in Scotland*, in which it reported that:

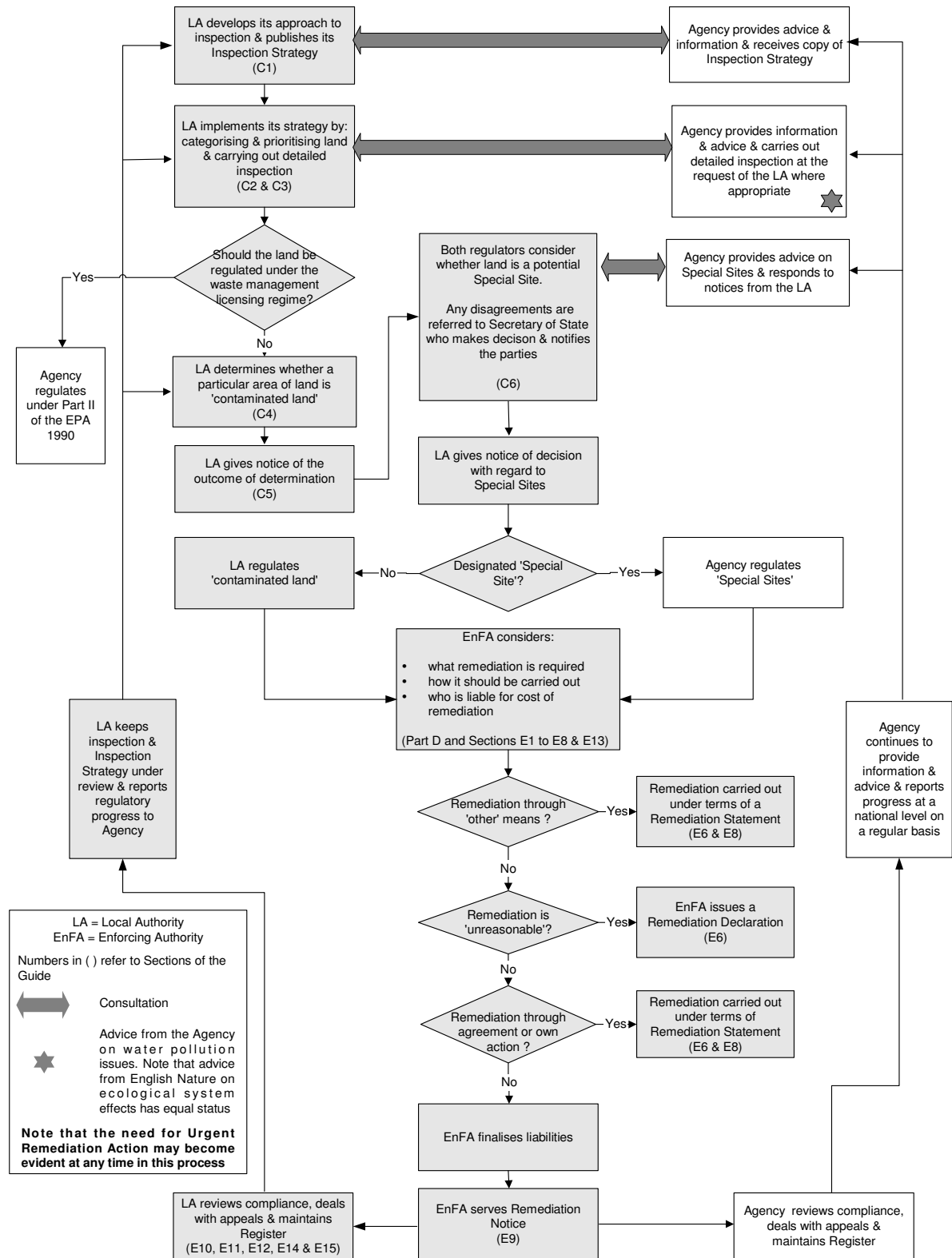
- a. It is difficult to estimate the total number of sites affected by contamination since Councils have used a variety of assessment methods; however, it is estimated that approximately 67,000 sites (82,034 ha) could be affected by land contamination. These sites may be dealt with under the planning process or alternatively be inspected under Part IIA;
- b. An estimated 27,000 inspections (40% of sites) have been completed or are being undertaken;
- c. 807 sites (equivalent to 1864 ha) have been remediated through the planning process or on a voluntary basis;
- d. On the basis of the inspections completed, (i) some inspected sites have no contamination; (ii) many had contamination present but there is no significant pollutant linkage present, hence no remediation required; and (iii) progress from inspection to remediation can take several years;
- e. 13 sites (53 ha) have been determined by Councils under Part IIA, and Remediation Notices have been served on 5 of these sites;
- f. The success of the Contaminated Land regime is providing an incentive by encouraging voluntary remediation and remediation through the planning process. In circumstances where sites are not going through planning, Part IIA offers a solution for those that pose unacceptable risks based on their current use.

SEPA reported in 2013 that the Part IIA regime has provided:

- a means of inspecting sites that have subsequently encouraged remediation through planning or voluntarily – an estimated 27,000 inspections of land have been done, or are in the process of being done (equates to 40% of sites);
- an incentive in encouraging voluntary remediation;
- an incentive in encouraging remediation through the planning system. In 2013, a total of 807 sites (equivalent to 1864 ha) affected by contamination had been remediated via planning or voluntary action; and
- a mechanism for dealing with sites that are causing unacceptable risks in their current use.

Figure 1. The Part IIA Process in England, Scotland and Wales⁴

Figure B1 : Key Regulatory Responsibilities for Application of Part IIA



⁴ Figure B1 from the Local Authority Guide to the Application of Part IIA of the EPA 1990, Local Government Association, Defra, Environment Agency & Chartered Institute of Environmental Health, July 2001, Issue 01 rev 0.

1.8 Extent of contaminated sites in Northern Ireland

The full extent of potentially contaminated sites in Northern Ireland is not fully known. In 1993, the Parliamentary Office of Science and Technology referred to expert estimates of between 50,000 and 100,000 potentially contaminated sites across the UK with estimates of the area ranging between 100,000 and 200,000 ha. In 2009, the Environment Agency estimated that there may be some 300,000 ha affected by industrial activity in England and Wales, which equates to approximately 2% of land area.

Information available on the extent of land affected by previous industrial use in Northern Ireland is provided largely by the Historical Land Use Database held by NIEA. This database was developed in 1997 with the support of the local Councils, and is based on historical land use records and maps for the period 1834 to 1960. The Historical Land Use Database includes approximately 14,000 sites that have had previous industrial land use(s) and, as such, may have contamination present in, on or under the land, including groundwater. Records in the Historical Land Use Database have not been validated and are, therefore, provided on a “without prejudice” basis. It is important to note the limitations associated with the available data, including:

- the absence of metadata (information on the content and provenance of data); and
- an absence of site polygon geometry layer; therefore, the extent (size) of sites cannot be determined.

However, in the absence of any detailed inspection of sites it is not known how many of these sites have already been redeveloped through the planning process and how many may be presenting risks due to the presence of contamination. The database can be accessed using the DAERA website at <https://www.daera-ni.gov.uk/publications/historical-landuse>.

In 2006, Casella Stanger (Ref. 6) reported an estimate of 11,606 potential contaminated sites in Northern Ireland comprising an estimated area of 22,427 ha. The Casella Stanger report assessed the costs of implementing Part III at the time as £53 million for inspection by Councils and £276 million for remediation. However, these figures should be considered against the experience of applying Part IIA in the rest of the UK (see Sections 1.5 to 1.7).

More recently, this database was further updated using NIEA datasets such as the Industrial Heritage Database, Waste Management Licence Database, Scrapyards Database and Pollution Incidents Database. The Historical Land Use Database does not include land use developments post 1960 and may

include some sites that are excluded from the provisions of Part III, such as illegal waste sites, which are addressed by Article 70 of the WCLO 1997.

1.9 What are the potential risks of having no Contaminated Land regime in Northern Ireland?

Part III was designed to sit within a wide framework of health protection, environmental protection and legislative measures, as does Part IIA in the rest of the UK. These include the following regimes:

- The Control of Mercury (Enforcement) Regulations 2017⁵ (Ref. 15)
- The Pollution Prevention & Control (Industrial Emissions) Regulations (Northern Ireland) 2013 (Ref. 21)
- The Building Regulations (Northern Ireland) 2012 (Ref. 24)
- The Planning Act (Northern Ireland) 2011 (Ref. 14)
- The Clean Neighbourhoods and Environment Act (Northern Ireland) 2011 (Ref. 23)
- The Control of Pollution (Oil Storage) Regulations (Northern Ireland) 2010. (Ref. 26)
- The Groundwater Regulations (Northern Ireland) 2009 (Ref. 17)
- The Environmental Liability (Prevention and Remediation) Regulations (Northern Ireland) 2009⁶ (Ref. 22)
- The Hazardous Waste Regulations (Northern Ireland) 2005⁷ (Ref. 19)
- The Waste Management Licensing Regulations (Northern Ireland) 2003⁸ (Ref. 18)
- The Dangerous Substances and Explosive Atmosphere Regulations (Northern Ireland) 2003 (Ref. 25)
- The Water (Northern Ireland) Order 1999 (Ref. 16)
- The Waste & Contaminated Land (Northern Ireland) Order 1997⁹ (Ref. 1)

The primary risk in Northern Ireland is that, in the absence of Part III, other regulatory and legislative frameworks do not address the risks due to contamination on land and surface water, groundwater etc.

The financial risks to Northern Ireland of non-commencement of Part III include:

- greater remedial costs by risks not being identified at an early stage;
and

⁵ S.I. 2017 No. 1200

⁶ S.R. 2009 No. 252

⁷ S.R. 2005 No. 300

⁸ S.R. 2003 No. 493

⁹ No. 2778 (N.I. 19)

- land not being brought into beneficial use due to uncertainty regarding the presence or severity of contamination.

1.10 Structure of report

This report is structured as follows:

- **Section 2** provides an overview of the interfaces of Part III with other relevant NI Regulatory regimes.
- **Section 3** presents the risk assessment methodology.
- **Section 4** presents the qualitative risk assessment for 6 site scenarios, taking into account the existing legislative frameworks to protect health and the environment. Legislative gaps relevant to the Part III regime are identified.
- **Section 5** presents the outcome of the project workshop.
- **Section 6** considers options for implementing a contaminated land regime.
- **Section 7** presents the project's conclusions, recommendations and next steps.
- **Section 8** presents the references and glossary of terms.

1.11 Project Steering Group (PSG)

The PAC question specifically required this assessment to be undertaken in consultation with local Councils. NIEA established a PSG with representation from the Councils' Environmental Health Departments through the CEHOG, now known as EHNI.

In addition, representation to the PSG were kindly made from the Department of Health, Environmental Policy Division (EPD) and an economist from the Department for Infrastructure. The PSG was involved at key stages of the project from outset until completion to guide the project assessment, agree scenarios, agree the sites to be assessed, workshop participation and review draft assessment and report.

2. Part III and interfaces with other NI regulatory regimes

2.1 Introduction

In the absence of Part III several other legislative and regulatory frameworks operate to prevent the creation of new contamination through regulation and environment protection, and in dealing with historic contamination where there is a change in land use through the planning system. If Part III was to be commenced, authorities should only seek to use it in the absence of a suitable alternative regulatory and / or enforcement solution.

The interactions between Part III and the following extant regulatory regimes are summarised in Table 2.1:

- The Control of Mercury (Enforcement) Regulations 2017¹⁰ (Ref. 15)
- The Pollution Prevention & Control (Industrial Emissions) Regulations (Northern Ireland) 2013 (Ref. 21)
- The Building Regulations (Northern Ireland) 2012 (Ref. 24)
- The Planning Act (Northern Ireland) 2011 (Ref. 14)
- The Clean Neighbourhoods and Environment Act (Northern Ireland) 2011 (Ref. 23)
- The Control of Pollution (Oil Storage) Regulations (Northern Ireland) 2010. (Ref. 26)
- The Groundwater Regulations (Northern Ireland) 2009 (Ref. 17)
- The Environmental Liability (Prevention and Remediation) Regulations (Northern Ireland) 2009¹¹ (Ref. 22)
- The Hazardous Waste Regulations (Northern Ireland) 2005¹² (Ref. 19)
- The Waste Management Licensing Regulations (Northern Ireland) 2003¹³ (Ref. 18)
- –The Dangerous Substances and Explosive Atmosphere Regulations (Northern Ireland) 2003 (Ref. 25)
- The Water (Northern Ireland) Order 1999 (Ref. 16)
- The Waste & Contaminated Land (Northern Ireland) Order 1997¹⁴ (Ref. 1)

Note that Part III does not apply to radioactive contamination of land. This is covered by the Radioactive Contaminated Land (Northern Ireland) Regulations 2006 (RCL 2006) (Ref. 27). In the event that land is affected by

¹⁰ S.I. 2017 No. 1200

¹¹ S.R. 2009 No. 252

¹² S.R. 2005 No. 300

¹³ S.R. 2003 No. 493

¹⁴ No. 2778 (N.I. 19)

both radioactive and non-radioactive contamination, then RCL 2006 would normally apply.

The following sections consider the interactions with Part III.

2.2 The Planning Act (Northern Ireland) 2011 (Ref. 14)

The planning process has an important role to play in managing land affected by contamination to ensure that the development is *suitable for use*. Across the UK the planning process provides the main mechanism for remediating land affected by contamination to a standard that is suitable for its new use, hence bringing land back into beneficial use.

Redevelopment introduces a new or material change to land use. Therefore, contaminated sites being redeveloped through planning should be supported by suitable risk assessments and remediation strategies demonstrating that the risks have been understood and can be managed supporting the new site use. **Part III is only relevant if the land that requires remediation is not redeveloped through the planning process.**

NIEA is a statutory consultee to the local planning authorities. The environmental health departments within the Councils provide technical advice to their respective planning colleagues. At the application stage, the regulators (NIEA and Environmental Health) provide advice to ensure that redevelopment of potentially contaminated sites is supported by adequate site investigation and risk assessment to identify all potential unacceptable risks; and a remediation strategy to ensure that the new development is suitable for use, be it residential, commercial or recreational. The implementation and verification of the remediation strategy is provided by way of negative conditions on any Planning Decision Notice for the Developer to comply.

It is important that developers demonstrate effective remediation and compliance with planning conditions as part of the planning process to ensure that redeveloped sites would not be determined as Contaminated Land under Part III once it comes into force. Part III is retrospective. So, sites remediated appropriately under the planning regime would not require any further consideration by Councils in their inspection strategies.

Currently, there is no planning policy for dealing with land affected by contamination in Northern Ireland. Not all development will, necessarily, require planning permission (e.g. permitted development rights); therefore, there are gaps where the planning system will not be applicable to safeguard risks due to contamination.

2.2.1 Councils' Local Development Plans (LDPs)

Councils across Northern Ireland are currently preparing their LDPs for the period 2020-2035. NIEA Regulation Unit's are participating, where requested by the Councils, in the development of their Options papers and LDPs. The absence of Part III and, specifically, an inspection strategy for land contamination is a constraint to identifying priorities the remediation of land within the LDP process.

Belfast City Council's Preferred Options Paper for their LDP, dated January 2017 makes the following statement on environmental quality:

The Preferred Option is to enhance Environmental Quality where possible, and protect communities from materially harmful development. The LDP will consider the issues of environmental quality related to ground contamination, air, noise and light pollution to ensure the amenity for the end users is protected. To provide supplementary guidance for Developers outlining the information required as part of their development proposal for remediating contaminated sites.

The LDP will seek to encourage improvement in environmental quality as a result of new development. This should include the remediation of contaminated land as part of redevelopment and replacing existing obtrusive lighting with a low-level scheme.

A similar statement in the remaining 10 Council LDPs would be extremely beneficial in securing remediation of sites as part of the development process.

2.3 The Control of Mercury (Enforcement) Regulations 2017 (Ref. 15)

In May 2017, the EU brought into force new Regulations (Regulation 2017/852 of the European Parliament) on the management of mercury and mercury compounds in response to the Minamata Convention on Mercury of 2013, which the UK ratified on 23rd March 2018.

Article 15 of the EU Mercury Regulations concerns contaminated sites by:

1. *The Commission shall organise an exchange of information with the Member States regarding the measures taken at national level to identify and assess sites contaminated by mercury and mercury compounds and to address the significant risks such contamination may pose to human health and the environment.*

2. *By 1 January 2021, the Commission shall make the information gathered pursuant to paragraph 1, including an inventory of sites*

contaminated by mercury and mercury compounds, publicly available on the internet.

The Control of Mercury (Enforcement) Regulations 2017, which came into force across the UK on 1st January 2018, supplement the EU Mercury Regulations by establishing offences, penalties and enforcement powers as well as designates the responsible authorities. The 2017 Regulations also include provision for the Department to create charging schemes to allow for cost recovery associated with compliance with the Regulations.

In the absence of Part III, Northern Ireland has no regulatory mechanism that facilitates compliance with Article 15 of the EU Mercury Regulations. The rest of the UK has addressed the requirements for assessing sites contaminated by mercury through Part IIA of the EPA 1990. Should similar measures not be introduced in Northern Ireland, the UK could be vulnerable to infraction proceedings from the EU, if it is still required to comply with EU rules at the implementation deadline. This could represent a significant financial risk – infraction fines can run into millions, and the Treasury has indicated that Northern Ireland would be liable for infraction penalties for which it is solely responsible.

The Environment Agency has produced a policy paper on the Control of Mercury (Enforcement) Regulations 2017, which was published on 11 April 2018. This sets out the Environment Agency's position on the enforcement of the Regulations.

2.4 Voluntary remediation

NIEA and the Councils fully support voluntary remediation by land owners aligned with good practice in support of both current and future land use. As with planning consultations, NIEA advises that all relevant land contamination risks are investigated using the UK technical framework as described in the CLR11 Model Procedures for the Management of Land Contamination (Ref. 8).

In its advice to landowners, NIEA recommends that land should be suitable for its current use or new use and that, as a minimum, unacceptable risks should be dealt with such that the land would not be determined as Contaminated Land under Part III. Several former industrial sites that may have fallen within the definition of Contaminated Land under Part III, have been investigated, risk assessed and, where necessary, remediated to standards appropriate to their use.

2.5 Radioactive Contaminated Land (Ref. 27)

Remediation of radioactive contaminated land is provided by the Radioactive Contaminated Land (Northern Ireland) Regulations 2006. These Regulations differ from the rest of the UK in that radioactive contaminated land is regulated by the NIEA with no involvement from the local Councils.

Redevelopment of such land through planning would be similar to that for non-radioactive contaminated land as presented above in Section 2.2.

2.6 The Water (Northern Ireland) Order 1999 (Ref. 16)

The Water (Northern Ireland) Order 1999 provides for the regulation of discharges to waterways (surface water and groundwater) and pollution incidents to waterways. Where discharges are known to have occurred to ground or groundwater, the Water Order (1999) provides an effective means of enforcing the polluter pays principle.

NIEA will investigate unauthorised discharges and, if necessary, undertake works to stop the pollution and recover costs from the polluter.

The EU Water Framework Directive, transposed by the Water Environment Regulations (Northern Ireland) 2017, requires Member States to identify areas used for the abstraction of water for human consumption as Drinking Water Protected Areas (DWPAs). Potentially contaminated sites may be located in a surface water and groundwater Drinking Water Protected Area. Member States are, therefore, required to ensure no deterioration in water quality in these areas in order to reduce the level of purification treatment required in the production of drinking water.

The Water Framework Directive also requires Member States to implement programmes of measures to improve and maintain the status of water bodies to *good* or *high* - that means improving and maintaining the good status of river catchments.

The Water Framework Directive Regulations (2003) provide for programmes to measure and prevent:-

- i. point source discharges liable to cause pollution, a requirement for prior regulation or prior authorisation which sets emission controls for the pollutants concerned;*
- ii. for diffuse sources liable to cause pollution, measures to prevent or control the input of pollutants;*
- iii. measures to address any other significant adverse impacts on the status of water, including in particular measures to ensure*

that the hydromorphological conditions of each body of surface water are consistent with the achievement of the required ecological status or good ecological potential for any artificial or heavily modified body of surface water;

iv. a prohibition of direct discharges of pollutants into groundwater.

The Water Framework Directive Programmes of Measures 2016 for Northern Ireland include provisions under Key Target Measure 4 (KTM4) to address remediation of contaminated sites (historical pollution including sediments, groundwater, soil).

2.7 Groundwater Regulations (Northern Ireland) 2009 (Ref. 17)

The Groundwater Regulations (Northern Ireland) 2009 include provisions to comply with the European Council Directive on the protection of groundwater against pollution and deterioration (2006/118/EC), to prevent or limit unacceptable inputs of pollutants into a groundwater body, this includes the pollution from point sources (i.e. land contamination) in addition to diffuse pollution over large areas. The Groundwater Regulations (Northern Ireland) 2009 provide the powers (through a notice) to prevent or control the input of hazardous or non-hazardous pollutants where:

- a) any person is carrying on, or proposing to carry on, any activity on or in the ground; and*
- b) that activity might lead to the input into groundwater of any hazardous substance or non-hazardous pollutant.*

These powers under the Groundwater Regulations (Northern Ireland) 2009 are applied through various regulatory permits including the control of discharges at industrial and waste installations. The powers to enforce a notice may also apply to land contamination in certain circumstances. However, in the case of historical contamination and/or the absence of a responsible individual, the enforcement of such a notice under the Groundwater Regulations (Northern Ireland) 2009 is challenging.

2.8 Part II of the Waste and Contaminated Land (Northern Ireland) Order 1997 (Ref. 1)

Articles 70(2) and 70(3) of the WCLO 1997 provide the same interface between the contaminated land regime as those controlling waste disposal on land in Great Britain (including PPC regulation of landfills).

In brief, the **Part III regime does not apply** where the harm or pollution forming the basis of the determination as Contaminated Land results from a breach of a waste management licence, or from circumstances where a waste management licence should have been in force i.e. **illegal disposal of controlled waste**.

The main relevance of the Waste Framework Directive to land contamination is that it requires Member States to take specified steps to control “waste” as defined in the Directive. This is because the definition of waste may also include some contaminated land. In a judgment by the European Court of Justice in the Van de Walle case (Case No. C-1/03, European Court of Justice), material in the ground which was contaminated by waste was considered also to be waste under the definition in the Directive.

In England, the specific interface between the waste management regime under Part II of EPA 1990 (implemented in 1994) and Part IIA of EPA 1990 (implemented in 2000) is of particular relevance. One of the main implications of the Van de Walle judgment is that action should be taken under the Part II regime rather than under the Part IIA regime. Northern Ireland has an equivalent to Part II of EPA 1990 regime for controlling waste in England and Wales in Part II of the Waste and Contaminated Land (Northern Ireland) Order 1997, and the implication would therefore be deemed the same.

Removal of waste unlawfully deposited is covered in Part II (Articles 27 and 28) of the WCLO 1997 (as in Section 59 of the EPA 1990). Article 28 also makes provision for “eliminating or reducing the consequences of the deposit of the waste”. However, it should be noted that Article 28 is discretionary and rarely implemented given the legal barriers to its use, which primarily concerns land ownership, land occupation and attributing responsibility for illegal waste.

2.9 The Waste Management Licensing Regulations (Northern Ireland) 2003 (Ref. 18)

The Waste Management Licensing Regulations (Northern Ireland) 2003 regulate the management of waste in Northern Ireland through a system of licences and registered waste exemptions, depending on the type of activity being carried out. These Regulations are made under Article 4 of the WCLO 1997 which requires those carrying out waste operations to hold, and act in accordance with, a waste management licence.

2.10 The Hazardous Waste Regulations (Northern Ireland) 2005 (Ref. 19)

The Hazardous Waste Regulations (Northern Ireland) 2005 came into operation on 16 July 2015 and were introduced to implement the provisions of European Commission (EC) Directive 91/689/EEC, now repealed and replaced by Directive 2008/98/EC, and Commission Decision 2000/532/EC – known as the List of Wastes.

These Regulations define hazardous waste and set out the requirements for the transfer (consignment) of hazardous waste, including necessary documentation. Their purpose is to provide a more effective system of control of hazardous waste from the time of its production to the time of its final destination for disposal or recovery, and to enable waste holders to comply with the statutory “Duty of Care” in relation to hazardous waste. The Regulations also deal with the assignment of List of Wastes codes to hazardous waste, the relevant fees charged for doing so, the completion of consignment notes, the pre-notification of a consignment and also the keeping of registers and site records. Details of offences and penalties are also provided.

2.11 The Controlled Waste (Duty of Care) Regulations (Northern Ireland) 2002 (Ref. 20)

Article 5 of the WCLO 1997 imposes a duty of care on anyone who handles controlled waste. When waste transfers from one person to another, a waste transfer note and/or hazardous waste consignment note must be completed, signed and kept by the parties involved. The Controlled Waste (Duty of Care) Regulations (Northern Ireland) 2002 set out the requirement to complete waste transfer notes for waste movements. They were extensively amended in 2013. The Hazardous Waste Regulations (Northern Ireland) 2005, as amended by the Waste Regulations (Northern Ireland) 2011 and the Hazardous Waste (Amendment) Regulations 2015, set out the requirements to complete hazardous waste consignment notes for the transfer of hazardous waste.

In accordance with Article 5 of the WCLO 1997, the Department published statutory guidance entitled *Waste Management, The Duty of Care – A Code of Practice* in June 2012. This code of practice provides practical guidance to everyone subject to the Waste Duty of Care. In most cases, the primary responsibility for duty of care rests with the waste producer.

2.12 The Pollution Prevention & Control (Industrial Emissions) Regulations (Northern Ireland) 2013¹⁵ (Ref. 21)

Permitted sites are required to manage their operations to prevent pollution through an Industrial Pollution Prevention Control (IPPC) permit. The IPPC permitting regime, applicable to Part A installations, requires that the operator establish the baseline ground conditions through a site condition plan, prior to the permit being issued. In surrendering the permit the operator must show that they have not impacted the site beyond the baseline ground conditions through the actions of the permit.

Article 70(1) of the Industrial Pollution Control (Northern Ireland) Order 1997 provides the same interface between the contaminated land regime and the industrial pollution control regime as does the similar section in the Environmental Permitting Regulations (2010) in Great Britain. In summary, to avoid dual regulation, the Part III regime does not apply where the powers of the Chief Inspector under Article 27 of the Industrial Pollution Control (Northern Ireland) Order 1997 may be exercised in relation to the harm or pollution that forms the basis of the determination of Contaminated Land.

2.13 The Environmental Liability Regulations (Northern Ireland) 2009 (Ref. 22)

The Environmental Liability (Prevention and Remediation) Regulations (Northern Ireland) 2009 transpose the provisions of the EC Environmental Liability Directive (2004/35/EC). Within the Regulations, “damage” is defined as “*a measurable adverse change in a natural resource or measurable impairment of a natural resource service which may occur directly or indirectly*”. The regulations apply to:

- (a) Protected species or natural habitats, or an area of special scientific interest;*
- (b) Surface water or groundwater;*
- (c) Marine waters; or*
- (d) Land.*

The Regulations specifically provide that, for certain economic activities, where there is an imminent risk of environmental damage, the operator must take steps to prevent it and, if it has occurred, must prevent further damage. Where damage has occurred, the enforcing authority must assess the damage, identify remedial measures and then serve a remediation notice on

¹⁵ S.R. 2013 No. 160 - <http://www.legislation.gov.uk/nisr/2013/160/schedule/17/made>

the operator, specifying what remediation is required. The Regulations also create criminal offences for breaches of specified provisions and they include the application of the polluter pays principle.

The Regulations only apply to environmental damage caused after July 2009, which limits their applicability in dealing with historical land contamination.

2.14 The Clean Neighbourhoods and Environment Act (Northern Ireland) 2011 (Ref. 23)

The objective of the Clean Neighbourhoods and Environment Act (Northern Ireland) 2011 is to improve the quality of the local environment by giving Councils powers to deal with litter, nuisance alleys, graffiti, fly-posting, abandoned and nuisance vehicles, dogs, noise and statutory nuisance.

The Act includes provisions under Section 63 for statutory nuisances, including any accumulation or deposit which is prejudicial to health or a nuisance, such as land contamination. Section 64 requires inspection of Council districts for statutory nuisances from time to time and where a nuisance complaint is made, Councils need to investigate the complaint. These inspection provisions for statutory nuisances fall significantly short of the strategic approach provided by Part III.

The Act requires local councils to issue abatement notices where statutory nuisances have occurred and includes provisions for the recovery of expenses incurred by the council in doing so.

However, an abatement notice under the Act does not permit access to third party lands; therefore, the landowner rather than the polluter may be liable for the clean-up costs.

Also should be noted that an abatement notice cannot require remediation on others land (e.g. where there is migration of contamination), as such remediation would require trespass and this cannot be mandated under an abatement notice.

Finally the resources required for inspection of "contaminated land" are likely to be significant. The Act brings no such resource to inspection of land whereas, should Part III be commenced, there would be a need for significant resources to enable the regulatory bodies (Councils and NIEA) to undertake their duties effectively.

2.15 The Building Regulations (Northern Ireland) 2012 (Ref. 24)

The Building Regulations (Northern Ireland) 2012 apply to works to a building or any part of a building, including extensions. The Regulations do not extend to parts of a site out with the building footprint, such as garden areas.

The requirements of the Regulations cover the health and safety of construction workers and inhabitants of the built structure and ensure that buildings are suitable for use. Technical Booklet C of the Regulations relates to site preparation and resistance to contaminants and moisture. Radon is specifically mentioned in radon-affected areas.

If no conditions related to contamination are provided through planning, then the Regulations could ensure mitigation of the human health risks to the built structure.

2.16 The Dangerous Substances and Explosive Atmosphere Regulations (Northern Ireland) 2003 (Ref. 25)

Petroleum licensing in Northern Ireland is predominately regulated through Building Control within local Councils. Petroleum Licences utilise the Dangerous Substances and Explosive Atmosphere Regulations (Northern Ireland) 2003 for their provisions which primarily related to Health and Safety requirements.

The Regulations should ensure, through risk assessment and management practices, that the workplace and work processes are designed, operated and maintained with due regard for safety. The Regulations are preventative in this context and do not seek to identify and remediate contamination. The Regulations do require arrangements to deal with accidents, incidents and emergencies; however, they do not specify what these provisions need to include beyond the health and safety remit.

2.17 The Control of Pollution (Oil Storage) Regulations (Northern Ireland) 2010 (Ref. 26)

These Regulations require a person having custody or control of oil to carry out works to detailed specifications for the protection measures required to be in place for fixed oil tanks (>200 litres) and mobile bowsers. The Regulations are preventative in this context and do not seek to identify and remediate land affected by contamination.

2.18 Summary

1. This assessment considered existing regulatory and legislative provisions relevant to the issue of Contaminated Land in Northern Ireland. The assessment has identified a number of gaps (summarised for further consideration in Section 3), which have the potential to lead to inadequate regulation of contaminated land risks. Commencement of Part III of the WCLO 1997 would address these gaps.
2. Table 2.1 above compares the principal provisions of Part III and then considers which other regulatory or legislative mechanisms include these provisions in whole or in part. The table summarises many of the observations highlighted above in Sections 2.2 to 2.13. It should be noted that no single regulatory framework acts in place of Part III, but that many do incorporate several elements of Part III in their application. In many cases their application is, however limited to specific site situations or issues – for example, waste (WCLO 1997) or post-2009 contamination (the Environmental Liability (Prevention and Remediation) Regulations (Northern Ireland) 2009).
3. A significant omission to note is the lack of provision for Councils to develop and publish their respective inspection strategy and to maintain a public register for contaminated land sites. In the absence of their inspection strategies, LDPs are unlikely to take full account of the potential land contamination issues in each Council area.
4. In the absence of Part III, there is currently no regulatory mechanism in Northern Ireland that would facilitate compliance with regulation 15 of the EU Mercury Regulations. This could leave the UK vulnerable to infraction proceedings from the EU. The rest of the UK has addressed the requirements for assessing sites contaminated by mercury through Part IIA. Should Northern Ireland be solely responsible for the UK Member State incurring infraction fines, the full costs would have to be found from the Northern Ireland budget.
5. Voluntary remediation takes place where responsible individuals or organisations are aiming to manage corporate liabilities. In the continued absence of a regulatory regime, there may be fewer voluntary remediation schemes undertaken.
6. The regulation of discharges of hazardous and non-hazardous substances to the ground and environment has direct scope to prevent and enforce the prevention of pollution to the environment. Its

applicability to land contamination, especially historical contamination, is limited and untested.

7. Part II of the WCLO 1997 specifically excludes illegally deposited waste from consideration under Part III as the illegal keeping, treating or disposing of waste (including to land) is already covered by Part II of the WCLO 1997. Any illegal deposits of waste are offences under Article 4. Anyone committing an Article 4 offence is liable, on summary conviction, to imprisonment for a term not exceeding 6 months or to a fine not exceeding £50,000 or to both; or, on conviction on indictment, to imprisonment for a term not exceeding 5 years or to a fine or to both. In addition, Articles 5C, 28 and 28(B) of the WCLO 1997 provide for the remediation of illegal sites, including the recoupment of clean-up or remediation costs if the Department or councils carry out such works.
8. Industrial and waste permits include provisions for the protection of receptors from the activities covered by the period of the permit. They do not apply to contamination that predates the award of a permit.
9. The polluter pays principle is poorly addressed through the current legislation and regulatory regimes in Northern Ireland. The majority of land contamination issues are addressed through the planning regime and, in most instances, the cost is incurred by the developer, although there may be a cost to the polluter in terms of land value. The protection of human health receptors from land and water affected by contamination is difficult to apply directly using available legislation with the exception of where a drinking water resource is at risk.

3. Risk assessment methodology

The risk assessment methodology adopted for this assessment utilises documented contaminated sites within Northern Ireland as case studies for the assessment of financial, environmental and health risks on the basis of the existing regulatory regime(s) and what Part III would add should it be implemented. The sites have been selected based on **6 regulatory scenario types**. These scenario types are considered representative of the range of local sites where historical land contamination may exist.

A total of 30 sites have been selected to represent the 6 regulatory site scenarios which occur in Northern Ireland and are representative of elsewhere in the UK. Each site is considered for its individual risks in relation to Part III; however, the scenarios allow broader conclusions to be drawn from the assessment.

3.1 Qualitative risk assessment

The qualitative assessment methodology has been devised using the Construction Industry Research and Information Association (CIRIA) guidance (CIRIA C552, 2001). The methodology used in this assessment takes account of the likelihood and impact of risks under each of the three criteria:

- Financial
- Environmental
- Human health

A risk matrix (Table 3.1) was developed to provide a risk score for each criterion against the potential risks of not having Part III in place for each site.

$$\text{Risk Score} = \text{Likelihood} \times \text{Impact or Consequence}$$

Table 3.1 Risk matrix – comparison of consequences and likelihood (CIRIA, 2001)

Very high impact	4	4	8	12	16
High impact	3	3	6	9	12
Moderate impact	2	2	4	6	8
Low impact	1	1	2	3	4
		1	2	3	4
		Unlikely to occur	Potential to occur	Likely to occur	Occurring

In broad terms the following has been used to assess the impacts:

- **Financial** impacts have been assessed against the likelihood of implementing the polluter pays principle in the absence of Part III, such that the cost of remediation or other costs could impact the public purse.
- **Environmental** impacts are based on the significance of a discharge to groundwater or surface of contamination, which considers both the types of contaminants at a site, the exposure pathways and the sensitivity of the environmental receptors.
- **Human health** impacts are assessed on the sensitivity of the receptor, but also with a view to the contaminant types and exposure pathways.

Table 3.2 Classification of risks in the absence of Part III

Risk Classification	Definition
Very high risk (12-16)	There is a high probability that severe harm could arise, or if there is evidence that severe harm is currently happening. This risk, if realised, could result in a substantial liability.
High risk (8-9)	There is a high probability that severe harm is likely to arise. This risk, if realised, could result in a substantial liability.
Moderate risk (3-6)	It is possible that harm could arise, although it is unlikely that such harm would be severe.
Low risk (1-2)	It is possible that harm could arise but there is a low risk in terms of both probability and impact.

3.2 The regulatory site scenarios

Sites have been grouped into broad regulatory scenario types:

- A. sites identified and remediated through the planning regime;
- B. sites identified through the planning regime but not remediated;
- C. sites that have been or, are being, remediated on a voluntary basis;
- D. sites suspected of having contamination sources through investigation of adjacent sites through planning;
- E. former waste sites (e.g. closed landfills); and
- F. regulated industrial sites with possible historical contamination.

A minimum of 4 sites and a maximum of 6 sites were considered for each scenario, based on the number of such sites available with sufficient data to support this assessment.

3.3 Workshop and Project Steering Group consultation

The PAC recommendation required this assessment to be undertaken in consultation with local Councils. To ensure wide consultation with the local Councils and other stakeholders, a workshop was held on 28th July 2016 at the Lough Neagh Discovery Centre. The feedback from the workshop is summarised and presented in Section 5 of this report, and the full workshop report is provided at Annex 2. The input of the PSG and workshop has been incorporated where possible in the site scenarios, sites assessed and methodology.

3.4 Qualitative site assessment

The sites identified were qualitatively assessed by NIEA, using publicly available information. The assessment was undertaken on the basis of the following information:

- I. site details;
- II. nature and extent of contamination known to be present;
- III. pollutant linkages detailing the source, pathway and receptor relationships to either human health or environmental receptors;
- IV. current state of investigation, risk assessment and remediation;
- V. consideration on the whether the existing regulatory powers have adequately addressed, or are expected to address the risks to environmental and health receptors; and
- VI. qualitative assessments of the financial, environmental and health risks from the site of not having Part III in operation.

The risk matrix illustrated above (Table 3.1) was applied qualitatively for each site to assess each of the potential risks. The potential risks are rated on a scale ranging from low risk to very high risk (Table 3.2).

The specific risk rating for each site in the matrix will require specific justification in relation to the particulars of the site and, in some cases, extrapolation of wider effects. It should be noted that the individual sensitivities of sites can vary enormously depending on the level of contamination, the sensitivity of receptors (environmental or health) and the value of the land in question. Where possible, available quantitative information on the financial risks has been included as part of this assessment.

4. The Qualitative Risk Assessment

A total of 30 sites were identified in consultation with the PSG for the 6 scenarios identified in the risk assessment methodology. The site scenarios are:

- A** Planning regime – sites remediated (6 sites)
- B** Planning regime – sites not remediated (5 sites)
- C** Voluntary remediation (5 sites)
- D** Contamination sources adjacent to planning areas (5 sites)
- E** Former waste sites (5 sites)
- F** Regulated industrial sites (4 sites)

For the purposes of this project each site has been allocated a dedicated site number taking into account the scenario that it falls under (e.g. A1, B1 etc.).

4.1 Scenario A: Planning Regime - sites remediated

The 6 sites considered under this scenario show that, where contamination is identified as a potential issue and site redevelopment is completed, the risks associated with not having Part III are low for financial, environmental and human health. This is due to the requirements of Part III having been discharged through the planning process. The exception to this risk scoring was for Site A6 in respect of high risk to environmental receptors. This site has been conditioned for remediation, but the remediation has yet to be verified to demonstrate that all risks have been fully managed.

Table 4.1 Risk Scores Planning Regime with sites remediated

Site	Financial	Environmental	Human Health
A1	1	1	1
A2	1	1	1
A3	1	1	1
A4	1	1	1
A5	1	1	1
A6	1	3	1
Risks in absence of Part III	Low	Low	Low

In this scenario, remediation of sites through the planning process is proving effective at managing the risks to health and environmental receptors, and thereby achieving the objectives of Part III.

The financial risk is classed as low for all sites in this scenario as remediation would be funded by the developer and not by the public purse; however, this

does not enforce the polluter pays principle. The polluter may pay through the devaluation of land suspected of contamination, but this assumes that appropriate due diligence has been undertaken at the land acquisition stage.

4.2 Scenario B: Planning regime – sites with planning but not remediated

5 sites were assessed in this scenario, which all have approved planning permissions but have yet to be remediated or brought into productive use through the planning regime. These sites are considered to reflect, in microcosm, the range of development sites in Northern Ireland with potential contamination issues.

Table 4.2 Risk Scores: Planning regime – sites not remediated

Site	Financial	Environmental	Human Health
B1	6	4	6
B2	6	6	8
B3	9	6	6
B4	6	9	6
B5	2	6	4
Risks in absence of Part III	Moderate to high	Low to moderate	Moderate

Financial Risk

The financial risks were between 2 and 9 for these sites due to two factors; namely:

- the lack of public revenue generated had they been redeveloped, which differs to their potential reuse value;
- if Part III had existed it is likely that remedial works could have been implemented and the cost recouped through the polluter pays principle.

The highest-risk site (B3) in this scenario was publicly owned; therefore, remediation would be paid for by the public purse. It is likely that some or all of the sites are likely to be developed in future; therefore, remediation is most likely to be achieved through redevelopment under the planning regime.

Environmental risk

The environmental risks in this scenario were between 4 and 9 on a site-specific basis, given the level of risk posed to receptors from potential contamination on site. The sites in question had been investigated through the planning regime and, therefore, the risks to receptors were generally

understood and have been quantified. Part III would be an effective regulatory tool to enforce remedial works in the absence of planning conditions.

The environmental risks associated with these sites have not been addressed through any other regulatory regime. Should water pollution be evident, the Water Order (1999) or Groundwater Regulations (2009) may apply.

Human health risk

The human health risks in this scenario were assessed between 4 and 8 on a site-specific basis, given the level of risk posed to receptors from potential contamination on site. The sites in question had been investigated through the planning regime; and therefore, the risks to receptors were generally understood and quantified. Part III would be an effective regulatory tool to enforce remedial works in support of current land uses.

The human health risks associated with these sites are unlikely to be considered statutory nuisances. The sites may be remediated through new planning applications in the future.

4.3 Scenario C: Voluntary remediation

5 sites were assessed in this scenario whereby site owners and operators have carried out, or are carrying out, remediation in line with the technical framework presented in the CLR11 Model Procedures for the Management of Land Contamination (Ref. 8).

Table 4.3 Risk Scores Voluntary remediation

Site	Financial	Environmental	Human Health
C1	4	9	9
C2	6	9	9
C3	3	9	3
C4	6	9	9
C5	9	2	9
Risks in absence of Part III	Low to moderate	High	Low to high

Financial Risk

The financial risks were classed as between 3 and 9 for these sites due to the remedial works being carried out by a responsible site owner/operator. The highest-risk site (C5) involved some public expenditure at the site investigation / risk assessment stage.

It should be noted that, in many cases, voluntary schemes are carried out on the basis that Part III could come into operation in Northern Ireland sometime in the future. If the implementation of Part III were to be ruled out, and in the absence of any other regulatory means to enforce the polluter pays principle, voluntary remediation schemes may not be undertaken. In some instances, voluntary remediation schemes are entered into as a means to consult with Planning, Environmental Health and NIEA prior to submitting a planning application. None of the sites considered in this assessment were pre-planning voluntary remediation sites. In most of these cases, the parties undertaking the voluntary remediation are either directly liable (the polluter) or have inherited liability (via land acquisition) for the contamination. The polluter pays principle has adopted by the landowners in these specific cases.

Environmental risk

The environmental risks in this scenario were assessed as 9 for four sites and 2 for the fifth. The four high-risk sites all had significant but differing contamination sources likely to impact environmental receptors. In the absence of Part III, voluntary schemes may be less likely to be undertaken on such sites, and so the potential for environmental impacts could increase.

The environmental risks associated with these sites have only been addressed through the actions of responsible site owner/operators. Should impacts to water bodies or other receptors be evident the Water Order (1999), Groundwater Regulations (2009) or the Environmental Liability Regulations (2009) may apply.

Human health risk

The human health risks in this scenario were assessed as 9 for four of the sites and 3 for the remaining site due to the differing site uses, and hence differing exposure pathways at each. The lowest-risk site was unlikely to pose risks to human health receptors. Without the implementation of Part III, voluntary schemes may not be carried out on such sites, and the potential for harm to human health may increase.

The human health risks associated with these sites have only been addressed through the actions of responsible site owners/operators. The human health risks identified were unlikely to be considered a statutory nuisance with the possible exception of site C5. Hence they are unlikely to be dealt with through other regulatory frameworks.

4.4 Scenario D: Off-site contaminant sources

This scenario addresses rare but not unprecedented situations where a site investigation, invariably through the planning regime, has discovered

contamination impacts from an off-site source; or contamination which straddles the site/planning boundary and, therefore, cannot be completely investigated or remediated through the planning regime. The 5 sites assessed in this scenario are considered to reflect in some degree the range of potential contamination sites in Northern Ireland which have not been assessed at present. 5 sites have been used to assess this scenario.

Table 4.4 Risk scores: off-site sources of contamination

Site	Financial	Environmental	Human Health
D1	3	9	9
D2	12	12	12
D3	1	2	2
D4	6	2	6
D5	4	4	6
Risks in absence of Part III	Low to very high	Low to very high	Low to very high

Financial Risk

The financial risks for sites in this scenario were classed between 1 and 12, reflecting the diverse and uncertain risks posed by sites in such circumstances. The low risk site had a potential contamination source of relatively low significance that was adjacent to the planning area. The financial risks in this case were low in that remediation is unlikely to be required, and the planning boundary was redrawn to exclude the risk of on-site contamination.

The risk score of 12 for site D2 concerned a highly contaminated publicly-owned site (which straddled the boundary of two areas), half of which was going through the planning regime. Without the implementation of Part III to enforce the polluter pays principle, there was a high risk of remediation being required, potentially at a cost to the public purse.

The sites with low to moderate risk scores of 3 to 6 reflect the site-specific circumstances regarding the likelihood for the public purse bearing the cost of remediation. At present, remediation or mitigation is carried out on a site by site basis and funded by individual developers. There is a risk that remediation costs may fall to the public purse in the absence of a regulatory regime to investigate off-site contaminant sources, and enforce the polluter pays principle.

Environmental risk

The environmental risks in this scenario were assessed as between 2 and 12 due to the varying levels of suspected or confirmed contamination, as outlined in the financial risks section above. Without the implementation of Part III, water pollution risks could only be managed by voluntary remediation or under the Water Order (1999).

Human health risk

The human health risks in this scenario were assessed as 2 to 12 due to the varying levels of the suspected or confirmed contamination as outlined above. Without the implementation of Part III or submission of planning applications for the areas affected by off-site contamination, the human health risks associated with these sites are unlikely to be dealt with through any other regulatory frameworks.

4.5 Scenario E: Former waste sites

This scenario covers a variety of sites such as closed landfills, unlined waste deposits and previously licenced waste sites to which Part III may apply, either wholly or in part. Illegal disposal of controlled waste is covered by Article 28 of the Waste & Contaminated Land (NI) Order 1997. Article 70 of the Waste & Contaminated Land (NI) Order 1997 excludes illegal waste from being determined as Contaminated Land; therefore, sites which are exclusively illegal waste sites have been excluded from this assessment.

Table 4.5 Risk Scores Waste sites

Site	Financial	Environmental	Human Health
E1	9	9	12
E2	4	6	6
E3	4	6	4
E4	6	4	6
E5	6	4	9
Risks in absence of Part III	Low to high	Low to very high	Low to very high

Financial risk

The financial risks are assessed as between 4 and 9 for the five sites assessed under this scenario. In the absence of Part III, the polluter pays principle may be enforced through planning permission, or through remediation notices served under the Environmental Liability Regulations depending on the severity of impacts.

The risk scoring reflects the diverse nature of these sites, from small-scale historical deposits to large landfill operations currently under investigation at a

direct cost to the public purse. Many closed landfill sites are former council-run sites Enforcement of the polluter pays principle can be very difficult in these cases.

Environmental risk

The environmental risks in this scenario were assessed as 4 for two sites, 6 for two sites and 9 for one site. The moderate risk scores generally relate to the age of the wastes in question as they are unlikely to require remediation unless the waste is disturbed, or receptors are otherwise placed at greater risk than presently exists.

Where waste sites are more recent (post-2003) and there are significant risks of adverse environmental impact, given the absence of Part III, only the Water Order (1999) or Environmental Liability Regulations (2009) would apply,

Human health risk

The human health risks in this scenario were assessed as 4 for one site, 6 for three sites, and 9 and 12 for two sites. The moderate risk scores generally relate to the age of the wastes and the fact that they are buried where they pose little risk to human health receptors in the absence of a landfill gas risk. The higher-risk sites have site-specific issues which relate to asbestos in one case and potential impacts to a public water supply in another case. The human health risks associated with these sites are unlikely to be considered statutory nuisances, in most cases due to their isolation from immediate neighbours. E1 is the exception, which explains its higher score for health risks.

4.6 Scenario F: Regulated industrial sites

This scenario considered a number of operational or post-operational industrial sites that have, or had, land contamination issues to address through the decommissioning and closure of the site. The PPC regulations and permits set certain requirements on operators to prevent pollution; however, the regime does not include provisions for contamination that occurred before the issue of a permit. A total of 4 sites were assessed within this scenario and all present similar risk scores in each category.

Table 4.6 Risk Scores Regulated industrial sites

Site	Financial	Environmental	Human Health
F1	1	2	2
F2	1	2	2
F3	1	4	4
F4	2	4	4
Risks in	Low	Low	Low

Site	Financial	Environmental	Human Health
absence of Part III (old contamination)			

Financial risk

The financial risks are assessed as 1 for four sites and 2 for one site. The presence of an owner / operator with a licence to discharge makes it unlikely that a financial risk could occur to the public purse in the absence of Part III. Where operations have been continuous from before and after the issue of a permit, dating contamination impacts can be problematic. In the absence of a pre-permit site condition plan, investigations and remediation would need to consider all relevant ground and/or groundwater contamination.

The one site with a risk of 2 (F4) includes wider land holdings including some areas of historical infilling which occurred before regulation of the site, which would not require remediation to discharge the permit.

Environmental risk

The environmental risks in this scenario were assessed as 2 for three sites due to low risks to the environment. The 2 sites with a risk score of 4 have the potential for moderate risks due to the potential for contamination which may not require investigation to discharge the PPC permit.

The risks of not having Part III are low for regulated sites, as operators are generally aware of their potential liabilities through the permitting regime. Where impacts to the environment are occurring, the Water Order (1999) and Groundwater Regulation (2009) may apply. The Environmental Liability Regulations (2009) provides similar provisions to the Industrial Emissions Directive (IED).

Human health risk

The human health risks in this scenario were assessed as 2 for 2 sites due to low risks with the potential to impact the environment. 2 sites have a risk score of 4, due to moderate risks associated with ground contamination that occurred before the issue of a permit or has not been investigated in discharging the permit.

The risks of not having Part III are generally low for regulated sites as operators are generally aware of their potential liabilities through the permitting regime, and remediation can be required as part of permit discharge in most cases.

4.7 Summary of findings and risks

In summary, the assessment of these site scenarios show:

Scenario A

The planning regime is effective in managing risks where the risks have been assessed as part of the application process and planning conditions for remediation are complied with.

Scenarios B and D

Planning is not effective where development is not progressed and conditions for remediation are not satisfied. In this vacuum, such sites may continue to impact human health and environmental receptors.

The risks of not having Part III commenced are higher on a site-specific basis where, for whatever reason, a site is failed by the planning regime due to lack of development, non-compliance with conditions and/or the presence of off-site sources.

The highest-risk sites are those where the risks posed are site-specific, affected to a large extent by the potential severity of any contamination and the sensitivity of receptors. The number and types of these sites are largely unknown at present. In the absence of a comprehensive inspection strategy for potentially Contaminated Land sites in Northern Ireland, this will remain the case.

Scenarios B and D highlight the potential for currently uninvestigated contaminated sites in Northern Ireland that may be posing risks to health and environmental receptors at present, some of these sites may be public sector and therefore the financial risks of impacts could rebound to the public purse directly. Scenario B specifically highlights that there are sites which have not been developed potentially due to land contamination issues which Part III may have prevented. In the absence of development there are costs to the public purse from a loss of tax revenue.

Scenario C

Voluntary remediation is being effectively used by corporate and government bodies on the basis that Part III is in statute and that it applies to contaminated sites retrospectively. There is no evidence to suggest that smaller landowners are proactively undertaking remediation. Some large organisations are engaging with the NIEA to proactively manage and reduce their potential environmental liabilities through investigating and remediating sites however in the continued absence of Part III there is less incentive for these organisations to undertake these works.

Scenario E

Where landfill sites are licensed (PPC) the risks should be managed through the permit. Closed landfills present potential risks if their licences were discharged prior to the requirements of the Groundwater Regulations coming into force, or if they lapsed in absence of an owner/operator.

Scenario F

Licensed industrial sites generally present low risks but in some cases there is a lack of site condition plans prior to permitting. Provisions of the PPC Regulations prevent new contamination arising on permitted sites.

Table 4.7 Summary of risks identified

Site scenario		Financial risk	Environmental risks	Health risks
A	Planning with sites remediated	Low	Low	Low
B	Planning with sites not remediated	Moderate to high	Low to moderate	Moderate
C	Voluntary remediation of sites	Low to moderate	High	Low to high
D	Off-site sources	Low to very high	Low to very high	Low to very high
E	Former Waste sites	Low to high	Low to high	Low to very high
F	Regulated industrial sites	Low	Low	Low

Independent of the scenarios summarised the risk scores in Table 4.7 show a high degree of variability due to the variation in the uncertainty regarding the risks for each site. These risks can be related to a number of variables such as the severity of contamination, the sensitivity of receptors (human health or environmental) and the degree of investigation each site has been subjected to. The highest risk scenarios are considered to be those which highlight the uncertainties over the land contamination problem that Northern Ireland faces these are the historical contaminated sites identified through the planning regime and assessed in Scenarios B and D. Former licensed or pre-licensing waste deposits (Scenario E) also present risks which are otherwise poorly addressed by other legislation in Northern Ireland.

5. Project workshop

To engage wide consultation from Councils and other stakeholders, a workshop was organised on 28th July 2016 at the Lough Neagh Discovery Centre.

Attendees were split into three groupings and asked each of the following three questions:

Question 1: Do you agree that the existing legislative frameworks are working?

Question 2: Do you agree with the risk assessment presented and its conclusions?

Question 3: Are there risks for Northern Ireland in not having a specific contaminated land regime?

The workshop feedback from each group is provided in Annex 1 to this report but the main points captured included:

- there are gaps in the existing legislation in not having Part III enacted in Northern Ireland, although through the Planning regime and voluntary schemes land remediation can be effective. The absence of Part III presents financial risks to both public and private parties.
- the main gap identified relates to the lack of a contaminated land inspection strategy and the uncertainty that this presents for Northern Ireland. This gap also means that there is little application of the *polluters pays* principle at present in Northern Ireland.
- The UK experience of Part IIA, in broad terms, mirrors the findings of this assessment of Part III. It was noted that the qualitative nature of this assessment is a limiting factor, but it was acknowledged that the high-risk land contamination scenarios for Northern Ireland had been identified.

5.1 Assessment and Report Findings

The objectives of this assessment and report were to address the PAC recommendation, with the councils, for the health, environmental and financial risks of not having commenced Part III of the WCLO 1997 in Northern Ireland.

This report has set out the alternative regulatory and legislative frameworks that do operate in Northern Ireland and described how they apply to lands contamination issues. In the absence of Part III the main gaps identified are:

- Limitations of the Environmental Liability Regulations (Northern Ireland) 2009, i.e. not applicable prior to July 2009.
- Northern Ireland Northern Ireland has no regulatory mechanism that facilitates compliance with Article 15 of the Control of Mercury (Enforcement) Regulations 2017.
- The Water Order (1999) and Groundwater Regulations (Northern Ireland) 2009 could be applied retrospectively after impacts to water resources have occurred. No risk based approach to prevent impacts is included outside of regulated sites (PPC/IPPC) i.e. discharge consents.
- In general there is poor applicability of the polluter pays principle across the range of alternative regulatory and legislative frameworks.

The assessment of the legislative and regulatory frameworks also identified that some of the existing regimes do act to prevent impacts or remediate land contamination, or take precedence over Part III. These include:

- The requirements of Part III in terms of investigation, risk assessment and remediation are applied through the Planning Regime (Planning Act (Northern Ireland) 2011) for both human health risks and environmental risks. However the polluter pays principle is not directly applied.
- Part II of the WCLO 1997 specifically excludes unlawfully deposited wastes from being considered under Part III of the WCLO 1997.
- Voluntary remediation in some cases has permitted some owner operators to assess and reduce their potential liabilities from historical contamination.

The risk assessment summarised in Section 4 illustrates the points raised above with application to 30 real world sites in Northern Ireland to show the risks to Northern Ireland of not commencing Part III. The financial risks, environmental risks and human health risks have been assessed in each case, with sites grouped into 6 scenarios to exemplify the various pre-existing legislative or regulatory situations the sites were identified through and in some cases remediated under.

Section 4.7 lists the main conclusions from the risk assessment but there is clear evidence from the assessment that there are potential risks from contaminated sites in Northern Ireland which could impact on;

- human health receptors to cause harm to individuals or groups without their knowledge,

- environmental impacts such as to surface water and groundwater resources in future if remedial works are not undertaken, and
- there are economic impacts caused by sites in Northern Ireland which have not been developed due to land contamination issues.

Moreover it will not be possible to assess these risks further in the absence of a Part III type inspection strategy for potential contaminated land sites across the province of Northern Ireland.

6. Implementation of a Contaminated Land regime

6.1 Support for a Contaminated Land regime

There is no requirement under EU law to bring into operation legislation dealing with Contaminated Land. It is for the Department to decide whether the problems arising from historically contaminated sites require legislative action, bearing in mind that such legislation is now in force in England, Scotland and Wales since 2000/01. That said, consideration of implementation is required based on the following:

- The evidence presented in sections 4 and 5 of this report demonstrates clear risks of not having Part III of the Waste & Contaminated Land (Northern Ireland) Order 1997 in operation for dealing with historic contamination.
- The Mercury Regulations place responsibilities on EU member states to inspect for mercury contamination. There is no NI regime to provide a means of inspection of potential mercury contaminated sites. Commencement of Part III would provide a mechanism for doing so and, therefore, facilitate compliance.
- Technical guidance and standards under the contaminated land regime also supports the redevelopment of contaminated sites through the Planning process.
- Council's LDPs are currently under development which would be helpfully informed by an inspection strategy of potentially contaminated sites in their respective areas.
- In the absence of a Part III regime, there are limited legal powers available to protect health and prevent / manage environmental harms emanating from lands affected by contamination where no existing planning permission is in place.
- The *polluter pays* principle is not enforced through the planning regime and is weakly applied through other legal regimes.

However, the benefits of commencing Part III needs to be weighed against the resource implications of doing so. Bringing the Part III Contaminated Land regime into operation entails the need for:

- a commencement order;
- publication of statutory guidance; and

provision of appropriate resources for the eleven Councils and NIEA to support their respective regulatory duties. This includes Council's developing an inspection strategy to prioritise the inspection of potentially contaminated sites within their respective areas.

In this report four potential options are considered with respect to implementing Part III with potential pros and cons of each option, and an indication of the actions required in each.

- Option 1: – Do nothing.
- Option 2: – Councils develop inspection strategies for their areas but outside the Part III regime.
- Option 3 – Implementation of Part III with no capital funding
- Option 4 – Implementation of Part III with a capital funding cap.

6.2 Options for implementation

Option 1: Do nothing

The assessment has shown that the planning regime, environmental regulatory regimes and/or voluntary remediation schemes are facilitating site assessments and, where necessary, remediation of a large number of potential contaminated sites in Northern Ireland. The environmental regimes include Part II of the Waste and Contaminated Land (Northern Ireland) Order 1997 and the Pollution Prevention & Control (Industrial Emissions) Regulations (Northern Ireland) 2012.

This risk assessment has highlighted that some sites not covered by existing regimes that may pose financial, environmental and/or health risks but that these are difficult to quantify. The sites assessed in this report are known; however, the significant risks lie within the number of as yet unknown contaminated sites. In the absence of a comprehensive survey of potentially contaminated land in Northern Ireland, it is not possible to determine with any certainty the severity of the risks to public finances, the environment and human health.

Pros:

- No new resources required

Cons:

- No legislative means of dealing with sites when existing regulatory mechanisms fail, such as non-enforcement of planning conditions for remediation.

- Risks (health, environmental & financial) remaining at sites with no regulatory driver for remediation.
- New land owners (including homeowners) may become liable for health and environmental risks rather than the polluter.
- Failure to comply with the requirements of Article 15 of the EU Mercury Regulations, resulting in potential infraction fines.

Actions:

- NIEA is to develop a Geographical Information System (GIS) to inform third parties of potential sites affected by land contamination using NIEA's existing historical land use database. This in itself will not address the requirements of the EU Mercury Regulations.

Option 2: Councils to develop inspection strategies for their areas outside the Part III regime

This option assumes that Councils will voluntarily adopt a scheme for the inspection of potential contaminated land sites and produce a list of sites on a risk prioritised basis for inspection. It assumes that some ring-fenced funding will be provided to Councils to devise and undertake the inspection strategy.

Pros:

- Provides a realistic estimate of the extent of potential contaminated sites in Northern Ireland.
- An inspection strategy would inform Councils' LDPs.
- Increased awareness of potential impact of land affected by contamination with land owners, developers, and home owners
- May address the requirements of the EU Mercury Regulations, through partnership and collaboration between Councils and NIEA.

Cons:

- No polluter pays mechanism in place to remediate sites affected by contamination.
- New resources would be required to support the Councils in delivering their inspection strategies.
- Without the commencement of Part III, there would be no legal requirement for the work to be undertaken.
- Risks (health, environmental & financial) remaining at sites with no regulatory driver for remediation.

Actions

- LDPs would need to include requirements for an inspection strategy for potential land contamination.
- LDPs need to be in place by 2021 and compliance with the Mercury Regulations is required by January 2021.
- DAERA would need to assess the potential for additional ring-fenced funding for councils in support of developing Inspection Strategies.

Option 3: Implementation of Part III with no Capital funding

Implementation of Part III would alleviate the gaps in the existing regulatory regimes identified in Northern Ireland. This option mirrors the current funding situation in England (Part IIA of The Environmental Protection Act 1990).

Pros

- Introduces legislative duties on Councils to publish inspection strategies for their respective areas and to inspect potential contaminated sites.
- Aligns NI regulators with the same legislative duties as those of their counterparts in other parts of the UK for the inspection and remediation of potentially contaminated sites.
- Introduces the *polluter pays* principle for remediation of contaminated sites;
- Potentially addresses the requirements for inspections under the Mercury Regulations.
- Provides an incentive for voluntary remediation of land contamination.

Cons

- Places a duty on regulators to deliver their Part III responsibilities but in the absence of capital funding to support investigation and remediation of sites, there would be no means for regulators to deliver on their duties.
- Alternative means of funding would need to be identified for Councils to support their inspection strategies and fulfil the legal requirements of Part III.
- Based on other UK experiences, pursuing polluters can be a complex and lengthy process.

Actions

- The Minister and Executive would need to agree the commencement of Part III in Northern Ireland.
- Councils' LDPs would need to include requirements for an inspection strategy for potential land contamination.

- Time constraints would include preparation of LDPs by 2021 and compliance with the Mercury Regulations by January 2021.
- Councils would need to coordinate and, where necessary, collaborate to develop and undertake their respective inspection strategies.

Option 4: Implementation of Part III with a Capital funding cap

This option mirrors the funding situation in England for Part IIA, prior to the end of capital funding on 28th March 2017, and the current situation in Wales. The capital funding would be capped at a level to be determined by the Executive, with individual Councils bidding for funding for individual investigation and remediation projects. Project funding would be prioritised on the basis of risks to health on a cost-benefit basis.

Pros

- Introduces duties on Councils to publish inspection strategies for their respective areas within 18 months and to inspect potential contaminated sites.
- Aligns NI regulators with the same legislative duties as those of their counterparts in other parts of the UK for the inspection and remediation of potentially contaminated sites.
- Introduces the *polluter pays* principle for remediation of contaminated sites.
- Potentially addresses the requirements for inspections and reporting under the Mercury Regulations.
- Facilitates the identification and determination, where applicable, of Contaminated Land sites on a priority risk basis.

Cons

- Need to secure monies to support new resources in the Councils and NIEA to fulfil the duties placed on them; and to support an annual capital funding programme over a defined period. The value of such a capital programme is outside the scope this assessment.

Actions

- The Executive would need to agree to commencing Part III and to providing the necessary funds to support Councils and NIEA in their regulatory duty with provision of capital funding.
- Councils' LDPs would be informed by the outcome of an inspection strategy for potential contaminated sites.
- Time constraints are provided by the LDPs to be prepared for 2021 and the compliance with the Mercury Regulations by January 2021.

- Councils would need to coordinate and, where necessary, collaborate to develop and undertake their respective inspection strategies.

The costs of funding Part III through Options 3 or 4 would require additional assessment outside the scope of this report.

6.3 Consultation on Options

The Part III legislation, should it be commenced, would be implemented primarily by the 11 Councils in Northern Ireland. In May 2018, Councils, and PSG members were consulted on the four options outlined above with feedback sought through a questionnaire. Details of this questionnaire are presented in Annex 3.

6.4 Consultation responses

Details of the consultation responses are provided below in Annex 3. Responses were received from 5 of the 11 local Council's, the Department of Infrastructure, the Department for Health and from the Public Health Agency. In addition SOLACENI provided a written response to NIEA dated 11th January 2019.

The consultation responses received from the Council's Environmental Health representatives show a preference for general Option 4, while observing the need for financial resources to be provided for its implementation, and a cost-benefit analysis of the options identified, both of which are outside the scope of this project.

Ards and North Down Borough Council (ANDBC)

- Option 4 will ensure that Councils in Northern Ireland will have the same legislative duties as that of their counterparts in the rest of the UK.
- The implementation of Part III will close the legislative gap due to the non-commencement and, avoid the potential of infraction by the EU for non-compliance with Article 15 of the Mercury Regulations.
- Options 1 & 2 will still result in NI not being aligned with the rest of the UK.
- Option 3 is not financially feasible.
- The planning regime works well and is still the mechanism that deals with the majority of the contaminated sites in the rest of the UK.
- To deliver Option 4, it is vital that sufficient and ongoing funding is made available to each Local Authority.
- A need for an integrated GIS/ IT system is noted to record and track contaminated land and a need for information sharing between Councils.

- Additional staffing resources would also be required with appropriate training in a specialist field.
- ANDBC would find it difficult to make judgement on how affordable Option 4 would be.
- It is difficult at this stage to predict the financial outlay required. The need for a capital funding cap and limited period of capital funding is noted.
- It is recommended that initial resource would be required to allow Councils to produce a verified system for identifying potential sites before bidding for specific funding would commence.
- Councils would want to avoid the scenario that funding streams were reduced / withdrawn leaving a shortfall of money and several sites determined.
- In the absence of Option 4 there will consequently been no proactive approach to identify and record sites which are or have been affected by contamination.
- Anecdotal evidence would indicate that in ANDBC area there are several closed landfill sites.
- Without a detailed knowledge of the potential number and distribution of contaminated land sites the Local Development Plan, currently under development will be disadvantaged.

Armagh City, Banbridge and Craigavon Borough Council

- The preferred option (Option 4: Implementation of Part III with a Capital funding cap) will introduce the Part III regime and therefore will result in no regulatory deficit compared to the rest of the UK.
- Subject to appropriate levels of funding as indicated in previous reports, we would be confident that the requirements of Part III could be met by the Council. Whilst some skill sets have been developed by Council officers further training and development would be critical to ensure delivery of the statutory requirements.
- The preferred option would be affordable as it would be expected that adequate funding would be provided to deliver the statutory requirements. With reference to capital schemes, it would be a matter for prioritization of sites and a competitive bidding process would seem appropriate for such a purpose.
- As the preferred option is the introduction of Part III this would generate the need for a commencement order.
- There are no risks to the Council in that no statutory duties presently exist. There are unquantified risks to public health and the environment associated with land contamination sites that have not been risk assessed. There are also risks to purchasers and owners of land contamination sites from the absence of Part III.

Derry City and Strabane District Council

- The preferred option is option 4. Option 4 appears to be the only one that would deliver the PAC recommendation.

- Capital funding is essential in delivering the objectives of Part III of the Waste and Contaminated Land (NI) Order 1997.
- In the absence of sustained Capital funding package over a period of 10 years as suggested in the report there is potential for sites to remain unidentified and for those already identified a mechanism outside the planning regime to ensure that such sites are risk assessed and remediated.
- The deliverability of option 4 is dependent on Capital funding.
- It is understood that the amount of capital funding is to have a cap.
- It is understood that the funding would be prioritised on the risk to health on a cost benefit basis.
- It is noted that the value of the Capital funding was outside the scope of the report.
- To deliver Option 4 Councils would require competent staff with the relevant expertise in contaminated land assessment.
- Capital funding must ensure that costs of such remediation are fully funded particularly where contaminated sites have an impact on human health.
- In the absence of adequate Capital funding then it is difficult to see how the objectives of the Part III regime can be achieved.
- With a fully funded Part III regime in place contaminated land sites can be identified, risk assessed and remediated on the basis of polluter pays principle.
- The full implementation of a Part III regime would ensure that contaminated land sites are remediated and the risks to human health and the environment are minimised.
- Council is acutely aware of the impacts of contaminated land associated with illegal waste sites and land with previously industrial uses has on human health and the wider environment.
- Such contaminated sites have very significant financial impacts in terms of site assessment and remediation.
- The Council is currently in the process of developing its Local Development Plan. In the absence of the identification of all contaminated land sites within its district there are risks associated with the designation of certain lands which may not have been identified as being contaminated.

Mid Ulster District Council (MUDC)

- The MUDC Environmental Health Department (EHD), support the review of the current scheme. However, given the potential for major resource investment from Councils, in the introduction of options 2, 3 and 4 MUDC EHD would welcome extended consideration.
- Option 1: Do nothing. MUDC EHD will continue to deal with potentially contaminated land sites through the current planning regime.
- No change to the existing regulatory position. Sites which fall outside the exiting regulatory system may not be easily dealt with through current legislation.

Belfast City Council

- The commencement of Part III, where there are clear staffing and wider council resource issues, is something that would have to be considered in detail by Committee.
- One of the challenges in understanding the likely implications of the commencement of Part III for the council is that with the exception of your former / historical land use database, local knowledge and referral to the planning database, the number and type of contaminated land sites across Belfast (and indeed Northern Ireland) are largely unknown.
- This uncertainty has been identified as a risk within the project report.
- The number and location of potential high-risk sites are also largely unknown, as are the anticipated costs of site investigation and site remediation for such sites.
- It is noted though that the UK Environment Agency previously reported the average cost of an approved site investigation bid to be £14,500 and the average cost of site remediation to be £105,800. It is considered therefore that some form of Regulatory Impact Assessment would have to be undertaken in order to help inform the Public Accounts Committee and to enable councils to come to an informed decision concerning the possible implementation of Part III.
- It is considered that a form of cost / benefit analysis would have to be undertaken for each option leading to a preferred government delivery option that could subsequently be considered by councils.
- A full economic appraisal of each option is something that Councils would expect and this type of due diligence exercise would be considered essential to inform any possible future regulatory regime and any recommendation Councils might want to make in respect of it.
- It is noted however that the '*option iv*' recommendation for commencement of Part III of the Waste and Contaminated Land (Northern Ireland) Order 1997, with the imposition of a Capital funding cap, is consistent with Recommendation 5 of the Northern Ireland Audit Office report, '*We recommend that the current gap in the legislation is closed and effective inspection and regulatory powers enabled. This should ensure that the appropriate person(s) are held responsible for remediation*', albeit the NIAO comment related to '*The Transfer of Former Military and Security Sites to the Northern Ireland Executive*'.

SOLACE NI Response

At the request of the SOLACE NI, NIEA presented its assessment to SOLACE NI (2nd November 2018) along with the options considered, conclusions and recommendations of this report.

SOLACE NI followed this up with a written response to NIEA dated 11th January 2019 in which they stated that:

“SOLACE does not support any of the options outlined in the consultation document.As it is estimated that there are 14,000 contaminated land sites which need investigation and/or remediation measures this will have a significant financial impact on Councils. None of the options have been accompanied by any due diligence and there are no commitments of detail in terms of what this funding might be. There is a clear need for a transferring functions grant to cover this significant liability. SOLACE also noted that due to the financial implications of this legislation it would require ministerial approval.”

7. Conclusions and Recommendation

7.1 Conclusions of the Assessment

The objective of this project has been to deliver the PAC recommendation, by providing as full an assessment based on available site information for site regulatory scenarios encountered in Northern Ireland short of assessing all potential contaminated land sites across Northern Ireland.

This assessment has identified potential health, environmental and financial risk of not having Part III in operation in Northern Ireland. Based on the 6 scenarios considered, there are risks (health, environmental and financial) to Northern Ireland of not having commenced Part III of the WCLO 1997.

This assessment has identified that the polluter pays principle, which is an integral element of Part III, is poorly covered by other legislative and regulatory regimes in relation to contaminated land in Northern Ireland.

Illegal waste sites are specifically excluded from Part III of the Waste and Contaminated Land (NI) Order 1997, as they are covered by Article 4 of Part II of the WCLO 1997. Any illegal deposits of waste are Article 4 offences.

The EU Mercury Regulations includes requirements for the inspection of and reporting on potential mercury-contaminated sites. Without an inspection strategy in Northern Ireland, this requirement is not currently being met. The introduction of an inspection regime as provided by Part III would address this issue, as well as the wider issues contained in this report.

Northern Ireland primarily through the uncertainty of the number and severity of outstanding land contamination sites present in Northern Ireland. However, in the absence of a Part III inspection strategy, it is not possible to quantify these sites and therefore the full financial, environmental or human health risks at this time.

7.2 Delivery of the PAC recommendation

In the absence of Part III the report identifies the main gaps in the existing regulatory and legislative frameworks that operate in Northern Ireland. In summary the identified gaps are:

- Limitations of the Environmental Liability Regulations (Northern Ireland) 2009, i.e. not applicable prior to July 2009.

- Northern Ireland Northern Ireland has no regulatory mechanism that facilitates compliance with Article 15 of the Control of Mercury (Enforcement) Regulations 2017.
- The Water Order (1999) and Groundwater Regulations (Northern Ireland) 2009 could be applied retrospectively after impacts to water resources have occurred. No risk based approach to prevent impacts is included outside of regulated sites (PPC/IPPC) i.e. discharge consents.
- In general there is poor applicability of the polluter pays principle across the range of alternative regulatory and legislative frameworks.

The assessment of the legislative and regulatory frameworks also identified that some of the existing regimes do not act to prevent impacts or remediate land contamination, or take precedence over Part III. These include:

- The requirements of Part III in terms of investigation, risk assessment and remediation are applied through the Planning Regime (Planning Act (Northern Ireland) 2011) for both human health risks and environmental risks. However the polluter pays principle is not directly applied.
- Part II of the WCLO 1997 specifically excludes unlawfully deposited wastes from being considered under Part III of the WCLO 1997.
- Voluntary remediation in some cases has permitted some owner operators to assess and reduce their potential liabilities from historical contamination.

The financial, environmental and human health risks of these gaps have been assessed with application to 30 real world sites in Northern Ireland to show the risks to Northern Ireland of not commencing Part III. The sites have grouped into 6 scenarios to exemplify the various pre-existing legislative or regulatory situations the sites were identified through and in some cases remediated under.

- sites identified and remediated through the planning regime;
- sites identified through the planning regime but not remediated;
- sites that have been or, are being, remediated on a voluntary basis;
- sites suspected of having contamination sources through investigation of adjacent sites through planning;
- former waste sites (e.g. closed landfills); and
- regulated industrial sites with possible historical contamination.

Table 7.1 Table of Risks Identified and Impact of Part III

Site scenario	Risks identified	RAG before	How would Part III address the risk	RAG after
---------------	------------------	------------	-------------------------------------	-----------

Site scenario	Risks identified	RAG before	How would Part III address the risk	RAG after
A	Planning assesses risk of sites to same standards as Part III.	Risk is low	Part III could improve the polluter pays principle.	Risk is low
B	Legislative frameworks are retrospective and poorly apply the polluter pays principle	Risk is moderate to high	Part III would identify sites proactively through inspection strategy, and prioritise investigation and remediation on the basis of risk.	Risk Moderate to low through identification and prioritisation of sites
C	Remediation is undertaken by private parties to reduce potential liabilities and impacts.	Risk is low to high.	If threat of Part III is removed voluntary remediation is less likely to be undertaken.	Risk is Low through increased incentive for voluntary remediation
D	Legislative frameworks are retrospective and poorly apply the polluter pays principle	Risk is low to high	Part III would identify sites proactively through inspection strategy, and prioritise investigation and remediation on the basis of risk.	Risk Moderate to low through identification and prioritisation of sites
E	Uncertainties over risks from historical waste sites in Northern Ireland	Risk is low to high.	Part III would identify sites proactively through inspection strategy, and prioritise investigation and remediation on the basis of risk.	Risk Moderate to low through identification and prioritisation of sites
F	Licensed industrial sites without land condition reports will need to investigate and remediate to surrender licences. Regulation should prevent new impacts.	Risk is low	Part III could improve the polluter pays principle.	Risk is low

The highest risk scenarios are considered to be those which highlight the uncertainties over the land contamination problem that Northern Ireland faces these are the historical contaminated sites identified through the planning regime and assessed in Scenarios B and D. Former licensed or pre-licensing waste deposits (Scenario E) also present risks which are otherwise poorly addressed by other legislation in Northern Ireland. If Part III were commenced with capital funding for investigations and remediation there is the potential to reduce the risks from land contamination in Northern Ireland through the greater knowledge an inspection regime would provide and prioritisation of investigations and remedial works on the highest risk sites identified. There would be greater incentive for voluntary remedial works in addition. It is not anticipated there would be a significant change to the risks for scenarios A and F, however a strengthening of the polluter pays principle could aid in

planning through a fairer division of costs of remedial works between developers and previous landowners.

This assessment and report delivers the PAC recommendation that the:

Department of the Environment, in consultation with Councils, to fully assesses the financial, environmental and health risks associated with having a regulatory regime that falls short of that in place in other regions.

7.3 Council Engagement

The PAC recommendation includes a specific need for consultation with the local Councils, which would bear the primary statutory obligations under Part III, should it be commenced. The Councils were consulted throughout the project through the PSG which included up to 5 nominees from the CEHOG.

To ensure wide consultation from Councils and other concerned bodies a workshop was organised on 28th July 2016 at the Lough Neagh Discovery Centre. The workshop conclusions have been included in this report and the feedback from each group is provided in Annex 1 to this report.

A final consultation exercise to all the Councils was undertaken in May 2018 to obtain specific feedback on the options listed in section 7.4 below.

Following consultation with the Councils, a preference was indicated for Option 4 (the commencement of Part III), with ring-fenced capital funding for the investigation, assessment of potential sites on a risk basis and remediation of identified contaminated land sites, also on a risk basis.

SOLACE NI have recorded that none of the options in this report have been formally supported by SOLACE.

7.4 Assessment and Report Findings

The objectives of this assessment and report were to address the PAC recommendation, with the councils, for the health, environmental and financial risks of not having commenced Part III of the WCLO 1997 in Northern Ireland.

This report has set out the alternative regulatory and legislative frameworks that do operate in Northern Ireland and described how they apply to lands contamination issues. Gaps have been identified and poor application of the

polluter pays principle has been documented across the range of alternative regulatory and legislative frameworks in Northern Ireland.

There is clear evidence from the assessment that there are potential risks from contaminated sites in Northern Ireland which could impact on;

- human health receptors to cause harm to individuals or groups without their knowledge,
- environmental impacts such as to surface water and groundwater resources in future if remedial works are not undertaken, and
- there are economic impacts caused by sites in Northern Ireland which have not been developed due to land contamination issues.

Moreover it will not be possible to assess these risks further in the absence of a Part III type inspection strategy for potential contaminated land sites across the province of Northern Ireland.

7.4 Future options

4 options have been considered in this report to assess how Part III could be brought into operation, in whole or in part, to address the deficiencies identified above.

Option 1 identifies the risks of not commencing Part III through a ‘Do Nothing’ scenario.

Option 2 considers the costs of implementing a ‘Part III-style’ inspection strategy without commencing Part III. This scenario assumes ring-fenced capital provision for the Councils to implement an inspection strategy for land contamination. This would not enforce the polluter pays principle in Northern Ireland but may address the requirement of the EU Mercury Regulations and would potentially aid in the development of local development plans.

Option 3 considers commencing Part III as it currently operates in England and Wales i.e. without a capital fund for investigation, risk assessment and remediation of Contaminated Land. There are benefits to having Part III in operation in that it enforces the polluter pays principle; it is likely to enhance the potential for voluntary remediation; and there would be a legal basis for the Councils to produce an inspection strategy.

Option 4 assesses the benefits of commencing Part III with additional ring-fenced funding for investigation and classification of Contaminated Land sites. The benefits of this scheme would provide some assurance that the highest-risk land contamination issues in Northern Ireland would be addressed.

The Environmental Health departments considered that Option 4 would ensure that they have the same legislative duties as those of their counterparts in the rest of the UK for the inspection and remediation of contaminated sites.

If appropriately managed and resourced, Option 4 could identify and remove unacceptable risks to human health and the environment, and ensure that land affected by contamination is identified, assessed, remediated and consequently made suitable for use, in line with the polluter pays principle.

The implementation of Part III would close the legislative gap due to non-commencement and avoid the potential of infraction by the EU for non-compliance with Article 15 of the EU Mercury Regulations.

7.5 Recommendation and Next Steps

In order for Part III to be commenced, there would need to be Northern Ireland Executive approval to introduce this cross-cutting measure and to allocate the funding necessary to implement a contaminated land regime.

This assessment and report delivers the PAC recommendation that the:

Department of the Environment, in consultation with Councils, to fully assesses the financial, environmental and health risks associated with having a regulatory regime that falls short of that in place in other regions.

This report should be provided to the Department of Finance to close off the Public Accounts Committee recommendation on its accountability grid report, recommendation No. 7 through DAERA Corporate Services (The Transfer of former Military and Security Sites to the NI Executive and Ilex Accounts 2010-2011).

Option 4 to be taken forward by Environmental Policy Division to prioritise the implementation of Part III, to initiate and bid for resources for a new project to update the Part III legislation and to undertake a regulatory impact assessment. This project would be supported by a Project Board led by EMFG EPD with representation from NIEA RU, the Local Councils, Department of Health, and Public Health Authority.

This new project would also deliver the resources to meet the requirements of Article 15 of the European Union Mercury Regulations 2017 and to avoid

Northern Ireland being solely responsible for the UK incurring infraction fines from the European Union.

It should be noted that in order to commence Part III a decision would need to be taken/approved by the Northern Ireland Executive.

8. References & Glossary of Legislation

1. The Waste and Contaminated Land (Northern Ireland) Order 1997
<http://www.legislation.gov.uk/nisi/1997/2778/part/III/made>
2. Cardiff University (2001). Introducing the contaminated land regime in Northern Ireland – an exploratory paper produced for the Department of the Environment, Northern Ireland by Professor Robert Lee, BRASS, Cardiff University.
3. CIRIA C552 (2001). Contaminated Land Risk Assessment – a guide to good practice. Construction Industry Research Association. ISBN 0860175529
4. Cranfield University and CL:AIRE (2014). Examination of contaminated land sector activity in England. Defra Science Project 1011. SP1011 Final Project report.
5. Department of the Environment (2006). Remediation of Contaminated Land Statutory Guidance (draft) – Department of the Environment Guidance to District Councils under Part III of the *Waste and Contaminated Land (Northern Ireland)*
6. Department of the Environment (2006). The Northern Ireland Contaminated Land Regime – assessment of the resources for implementation. Prepared by Casella Stanger Report No. CO3698.
7. DEFRA (2012). Environmental Protection Act 1990 – Contaminated Land Statutory Guidance. PB13735
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/223705/pb13735cont-land-guidance.pdf
8. Environment Agency (2004) Model Procedures for the management of land contamination (CLR 11). <https://www.gov.uk/guidance/land-contamination-risk-management>
9. Environment Agency (2005) Indicators for land contamination. Science report SCO30039/SR. ISBN 184432480X
10. Environment Agency (2016). Dealing with Contaminated Land in England:
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/513158/State_of_contaminated_land_report.pdf

11. Local Government Association (2001). Local Authority Guide to the Application of Part IIA of the Environmental Protection Act 1990, Local Government Association, Defra, Environment Agency & Chartered Institute of Environmental Health (Issue 01).
12. Natural Resources Wales (2016). The State of Contaminated Land in Wales. http://naturalresources.wales/media/677708/nrw26759-contaminated-land-in-wales-pdf_english-1.pdf
13. Scottish Environmental Protection Agency (2013). Dealing with land contamination in Scotland – a review of progress from 2000 to 2008. https://www.sepa.org.uk/media/138572/dealing_contaminated_land.pdf
14. Planning Act (Northern Ireland) 2011. <https://www.legislation.gov.uk/nia/2011/25/contents>
15. The Control of Mercury (Enforcement) Regulations 2017. <https://www.legislation.gov.uk/uksi/2017/1200/contents/made>
16. The Water (Northern Ireland) Order 1999. <http://www.legislation.gov.uk/nisi/1999/662/contents/made>
17. Groundwater Regulations (Northern Ireland) 2009. <https://www.legislation.gov.uk/nisr/2009/254/contents/made>
18. The Waste Management Licensing Regulations (Northern Ireland) 2003. <https://www.legislation.gov.uk/nisr/2003/493/contents/made>
19. The Hazardous Waste Regulations (Northern Ireland) 2005. <http://www.legislation.gov.uk/nisr/2005/300/contents/made>
20. The Controlled Waste (Duty of Care) Regulations (Northern Ireland) 2002. <http://www.legislation.gov.uk/nisr/2002/271/contents/made>
21. The Pollution Prevention and Control (Industrial Emissions) Regulations (Northern Ireland) 2013. <http://www.legislation.gov.uk/nisr/2013/160/contents/made>
22. The Environmental Liability (Prevention and Remediation) Regulations (Northern Ireland) 2009. <http://www.legislation.gov.uk/nisr/2009/252/contents/made>
23. Clean Neighbourhoods and Environment Act (Northern Ireland) 2011. <https://www.legislation.gov.uk/nia/2011/23/contents>

24. The Building Regulations (Northern Ireland) 2012.
<http://www.legislation.gov.uk/nisr/2012/192/contents/made>
25. Petroleum Licensing - Dangerous Substances and Explosive Atmospheres Regulations (Northern Ireland) 2003.
<http://www.legislation.gov.uk/nisr/2003/152/contents/made>
26. Control of Pollution (Oil Storage) Regulations (Northern Ireland) 2010.
<http://www.legislation.gov.uk/nisr/2010/412/contents/made>
27. The Radioactive Contaminated Land Regulations (Northern Ireland) 2006
<http://www.legislation.gov.uk/nisr/2006/345/contents/made>

Annex 1
Project Workshop Report

Risk assessment of not having commenced the contaminated land regime under Part 3 of the Waste & Contaminated Land (Northern Ireland) Order 1997

Project Workshop at Lough Neagh Discovery Centre on 28 July 2016

WORKSHOP REPORT v1.0 September 2016 & updated 15 June 2017



Contents

1.0 Introduction

1.1 Background

1.2 Project objectives

1.3 Workshop objectives

2.0 Record of Group Discussions

3.0 Workshop summary & next steps

Appendix A Workshop agenda & presentation

Appendix B Workshop attendees

1.0 Introduction

1.1 Background to a contaminated land regime in Northern Ireland

Part 3 of the Waste and Contaminated Land (Northern Ireland) Order 1997 (WCLO, referred to as the 1997 Order) sets out the legal provisions for the introduction of a Contaminated Land regime in Northern Ireland (NI) equivalent to that operating under Part 2A of the Environmental Protection Act 1990 (EPA 1990) in England and Scotland since 2000, and in Wales since 2001. The Order was enacted in 1997 but Part 3 has not yet commenced. It awaits a Commencement Order, publication of statutory guidance for regulators and provision of appropriate resources for implementation and enforcement.

In 2011 the Public Accounts Committee (PAC) identified the absence of Part 3 as a gap in legislation that means that Councils and the Northern Ireland Environment Agency (NIEA) are unable to fully regulate the remediation of contamination of land and enforce the “polluter pays” principle. Full details of this PAC report can be viewed at http://www.niassembly.gov.uk/globalassets/Documents/Reports/Public-Accounts/Military_sites.pdf

The findings of this PAC report recommended that the current gap in legislation be closed by commencing Part 3 of the 1997 Order, to ensure that effective inspection and regulatory powers are in place, thus ensuring that the appropriate person(s) are held responsible for remediation, i.e. *polluter pays*.

In 2012 the Public Accounts Committee (PAC) recommended (No. 7) that the: *Department of the Environment, in consultation with Councils, fully assesses the financial, environmental and health risks associated with having a regulatory regime that falls short of that in place in other regions.*

1.2 Project objectives

The outcome of this project is to deliver the PAC recommendation No. 7 to fully assess the financial, environmental and health risks associated with having a contaminated land regulatory regime that falls short of that in place in other parts of the UK. This outcome has been undertaken in consultation with the Councils through representation on the Project Steering Group and through this project workshop.

The aims and objectives of this assessment are to:

- i. present the main features of the Contaminated Land regime as provided by Part 3 of the 1997 Order;
- ii. consider the successes and challenges of the equivalent regime (Part 2a of the Environmental Protection Act 1990) operating in England, Scotland and Wales;

- iii. assess the provisions in Part 3 for protecting health and the environment with those provided by other extant NI regulatory regimes and identify the gaps;
- iv. complete a qualitative assessment of managing health, environmental and financial risks for six site scenarios (representative of the interventions for managing land contamination under different regulatory regimes);
- v. consult with Councils and other relevant bodies on this qualitative assessment and determine the adequacy of the existing arrangements in the absence of Part 3.

At the outset of this project, NIEA set up a Project Steering Group (PSG) to include representatives from Environmental Health Departments within Councils (as nominated by the Chief Environmental Health Officer Group (CEHOG)) in addition to representatives from the Department of Health, Environment Policy and an economist from the Department for Infrastructure.

To further ensure full consultation with the NI Councils and other relevant bodies, a workshop was organised on the 28th July 2016 at the Lough Neagh Discovery Centre to obtain wider comment and input to this assessment.

1.3 Workshop objectives

This note summarises the consultation workshop which took place on the 28 July 2016. The aims of this workshop were to:

- Consult on the methodology and draft outcomes of the qualitative assessment;
- Consult on the report's findings and recommendations;
- To feedback delegate feedback on the following questions:
 - (i) Do you agree that the existing legislative frameworks are adequate?
 - (ii) Do you agree with the risk assessment presented and its conclusions?
 - (iii) Are there risks for Northern Ireland in not having a contaminated land regime as provided by Part 3 of the Waste and Contaminated Land (Northern Ireland) Order 1997?

The workshop brought together environmental health and planning representatives from the local councils, DAERA environmental policy, Public Health Agency, the University of Ulster and the Queens University Belfast and interested parties from industry. A full attendee list is provided as Appendix A. These delegates were grouped into three groups to discuss the questions above.

The workshop agenda and presentations are presented in Appendix A.

2.0 Group Discussions

Workshop delegates were assigned to one of three groups - membership of Groups A to C is presented in Appendix B. Each group provided feedback on the day to each of the questions as summarised below.

Question 1: Do you agree that the existing legislative frameworks are adequate?

Group A

- a) Yes, generally good with Planning and Voluntary action being the main mechanisms for undertaking remediation;
- b) Coherent context missing to tie together legislation and the roles & responsibilities of regulatory agencies.
- c) Council's Inspection Strategies of potentially contaminated sites would help
- d) Additional legislation may be required but this may not necessarily be Part 3, amend Environmental Liability Regulations, etc.
- e) Guidance document to tie together all pieces of legislation would be useful. Needs teeth – statutory guidance?

Group B

- a) Planning effective to a degree for lands within the red line boundary.
- b) Lack of a database of contaminated land sites is a limiting factor.
- c) Where planning is granted there is no mechanism to enforce conditions should the site not be developed.
- d) Ineffective for land outside the boundary of planning red line.
- e) Strategic planning policy statement (SPPS) lacks detail regarding contaminated land issue.

Group C

- a) Existing legislation framework not adequate - Gaps identified as per project report and NIEA presentation

- b) Planning works but not outside the red line boundary – 3rd party liability not addressed / Environmental Liability Directive not widely applicable in dealing effectively with historical contamination pre-July 2009.
- c) Are all planning applications seen and contamination issue addressed at the planning application stage?
- d) Inspection strategies for potentially contaminated sites are lacking. Local development plans could play a role and be linked with inspection strategies.
- e) Financial resources are presently lacking and would need to be further considered.
- f) In England, negative Planning conditions are used with Part 2a (Environmental Protection Act 1990) as a fall back where planning conditions are not enforced and risks remain post-development. Also experience has demonstrated that Part 2A has provided an incentive for voluntary site assessment and remediation.
- g) NI SPSS lacks detail on dealing with contaminated sites through the development process. There is a need therefore for new guidance for planners when dealing with applications for potentially contaminated sites.

Question 2: Do you agree with the risk assessment presented and its conclusions?

Group A

- a) Do we agree with the Risk Assessment?
- b) Scenarios are good but there is a need to further consider within the project scenarios older planning permissions where the land is now developed remediation and where legacy issues remain.
- c) Confidence in the limitation of the assessment tie in with the wider UK experience of Part 2A. Note this is addressed within the report.
- d) Local development plans should assist in identifying priority sites for investigation under Part 3.

Group B

- a) Supportive of the risk assessment presented but it would be beneficial to explain it in more detail.
- b) Need to be thinking of other factors within the risk assessment, for example contaminant types, extent and volume of contamination present, etc
- c) Receptor – pathway linkages assessed for individual sites.
- d) Ownership is a big issue - generally the risks presented by sites are greater for land owners with small land portfolios rather than the large corporate bodies.

Group C

- a) Potential exposure to public purse re liabilities in the absence of Part 3.
- b) Risk Assessment – Qualitative assessment a good start – Ensures identification of high risk scenarios
- c) Concerns expressed whether all possible site scenarios have been addressed. For example, the scenario of exemptions from Waste Management Licensing and their suitability of use for agricultural activity and crop growing, ground improvement schemes, etc.

Question 3: Are there risks for Northern Ireland in not having a contaminated land regime as provided by Part 3 of the Waste & Contaminated Land (N.I.) Order 1997?

Group A

- a) There are risks of not having a contaminated land regime via Part 3 in force.
- b) High risk scenarios identified in the risk assessment such as Planning without remediation, contamination sources adjacent to planning sites and unlicensed/closed waste sites
- c) Regulatory gaps identified – need for an inspection strategy(ies) for potentially contaminated sites.

Group B

- a) There are financial risks of not having a contaminated land regime in force in addition to health and environmental risks. Helpful to further consider the risks of those sites where Part 3 provides the only viable solution i.e. remediation where a site is outside planning and no voluntary action is being proposed.
- b) Costs of implementing Part 3 and developing inspection strategies needs to be further considered.
- c) NI context, a more rural population - greater risk?

Group C

- a) In the absence of Part 3 and any inspection strategies, it is hard to know the extent of potential contaminated sites in Northern Ireland.
- b) Part 3 will provide an incentive to *get it right*.
- c) Financial – both public and private risks.
- d) Support effective development. I.e. Part 3 could aid bringing land into positive and beneficial use.
- e) Gaps in accountability - do polluters pay at present - unknown?
- f) Blight on property development – Communication of inspection strategy and risk assessment
- g) Balancing health/wellbeing against finance i.e. cost of Part 3.

- h) Part 3 provides an additional regulatory tool – opportunity for Part 3 inspection strategies with development of the Council's Local Development Plans.

3.0 Workshop summary & next steps

Question 1: Do you agree that the existing legislative frameworks are working?

- There are gaps in the existing legislation in Northern Ireland in not having Part 3;
- Planning is effective in remediating land within its red line;
- Voluntary remediation works where there are responsible owner/operators;
- Environmental Liability Regulations are only applicable post July 2009 and are of limited application to historical contamination;
- A significant gap identified is the lack of a contaminated land inspection strategy and the uncertainty this presents;
- NI Strategic Planning Policy Statement lacks detail regarding redeveloping contaminated land;
- Local Development Plans could assist in identifying priority sites for investigation without Part 3 however in the absence of Part 3 there is no mechanism for inspection.

Question 2: Do you agree with the risk assessment presented and its conclusions?

- Supportive of the risk assessment and site scenarios but beneficial to explain it in more detail;
- Risk assessment should consider a scenario post planning where the remediation was to historical standards which are less than would apply currently. Do the scenarios consider agricultural activity and crops, ground improvement schemes and waste deposits?
- UK experience of Part 2a mirrors findings of this risk assessment;
- This qualitative assessment identifies high risk site scenarios. Helpful to further consider sites where Part 3 provides the only viable solution.

Question 3: Are there risks for Northern Ireland in not having a specific contaminated land regime?

- Financial risks identified to both public and private parties;
- Part 3 can support redevelopment by bringing land into positive use;
- Gaps in accountability presently in making *polluters pay*;
- Balance of risks to health/wellbeing against Part 3 costs of implementation;
- Unknown sites provide largest risk and this uncertainty will continue in the absence of any inspection strategy.
- Northern Ireland has a more rural population than in other parts of the UK; does this provide a greater risk?
- Project scenarios have identified high risk types of sites i.e. where planning permission has not been progressed and land remains

undeveloped, unlicensed/closed waste sites, and contamination adjacent to planning sites.

- Part 3 will provide an incentive to Planning, voluntary remediation etc to *get it right*.

Appendix A

Workshop agenda

- 10.00 Chairperson's Introduction
Alastair Curran, Belfast City Council
- 10.05 Introduction to the Project and the Public Accounts Committee recommendation, Dr Theresa Kearney NIEA
- 10:20 Overview of the risk assessment and its outcome, Dr Edward Lewis NIEA
- 10:50 Q&A
- 11.00 *Group Discussions*
1. Do you agree that the existing legislative frameworks are adequate?
 2. Do you agree with the risk assessment presented and its conclusions?
 3. Are there risks for Northern Ireland in not having a contaminated land regime as provided by Part 3 of the Waste & Contaminated Land (N.I.) Order 1997?
- 11.50 Feedback from Group discussion
- 12:20 Next steps
- 12.30 Close

15/06/2017


Contaminated Land Risk Assessment Workshop agenda

10:00	Introduction to the Workshop
10:05	Introduction to the Project & the PAC recommendation Dr Thomas Donohy NEA
10:20	Overview of the risk assessment and its evidence Dr Edward Jones, NEA
10:30	NEA
11:00	Group Discussions Do you agree that the existing legislative frameworks are adequate? Do you agree with the risk assessment (presenting) and its conclusions? Are there risks for Northern Ireland in not having a contaminated land regime as provided by Part 2 of the Waste & Contaminated Land (WCL) Order 1997?
11:30	Feedback from groups
12:30	Next steps
12:30	Close

NEA

Project Outcome

- An assessment that delivers the Public Accounts Committee (PAC) recommendation:
 - “to fully assess in consultation with the Councils, the financial, environmental and health risks associated with having a regulatory regime that falls short of that in place in other regions of the UK”



NEA

PAC recommendation

- NIAQ report (2011) on transfer of military & security sites highlighted legislative gap
 - Transfer of sites was conditioned for the Executive to bear the costs of making the sites suitable for use
- NIAQ report recommended that the current gap be closed by commencing Part 3 to ensure effective inspection and regulatory powers are in place
- On the basis of the NIAQ report, PAC made its recommendation in 2012:
 - “to fully assess in consultation with the Councils the financial, environmental and health risks associated with having a regulatory regime that falls short of that in place in other regions of the UK”

NEA

15/06/2017

Workshop objectives & outcomes

- To consult on the draft methodology & outcomes of this assessment
- To seek your feedback: -
 - Do you agree that the existing legislative frameworks are adequate?
 - Do you agree with the risk assessment presented and its conclusions & recommendations?

Are there risks for Northern Ireland in not having a contaminated land regime as provided by Part 3 of the Waste & Contaminated Land (NI) Order 1997?

NIEA

Project objectives

- To fully assess the risks of having a contaminated land regime in Northern Ireland that falls short of that in other parts of the UK
- To consider the interfaces between Part 3 and existing NI regulatory regimes for protecting health and the environment
- Assess the adequacy of the current regulatory regimes through six site scenarios

NIEA

Objectives of the contaminated land regime

- to identify and remove unacceptable risks to human health and the environment
- to seek in ensuring that contaminated land is made suitable for its current use
- 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

Supports suitable for use approach

NIEA

15/06/2017

Statutory definition of contaminated land
"any land which appears to the District Council in whose area it is situated to be in such a condition, by reason of substances in, on or under the land, that:
significant harm is being caused or there is significant possibility of such harm being caused;
or
pollution of waterways or underground strata is being, or is likely to be caused"

NIEA

Features of the contaminated land regime

- Councils are required to inspect their areas following a strategic approach
- Protection of human health and the environment
- Polluter Pays principle for remediation
- Encourages remediation ahead of regulatory intervention
- Where action has not been taken or was insufficient to address the risks, then action can be taken
- Proportionate action to ensure land is suitable for use
- Periodic publication of NI reports on contaminated land

NIEA

Land affected by contamination in N.I.

- No published NI inspection strategy
- Existing records
 - NIEA industrial heritage database
 - NIEA pollution incidents database
 - NIEA waste management licences and exemptions databases
 - NIEA scrapyards database
- Ca 14,000 records on the NIEA Landuse database
- Available to view on Spatial NI at:-
<https://www.spatialni.gov.uk/geospatial/catalog/main/home.page>

NIEA

NI Regulatory regimes & Part 3

- > The Planning Act (Northern Ireland) 2011
- > Voluntary remediation in the absence of Part 3
- > Groundwater Regulations
- > Water (Northern Ireland) Order 1999
- > Waste and Contaminated Land (Northern Ireland) Order '97
- > Landfill Regulations (Northern Ireland) 2003
- > Industrial Emissions Directive
- > Environmental Liability Regulations (Northern Ireland) 2009
- > Clean Neighbourhoods and Environment Act (N.I.) 2011
- > Building Regulations & Control
- > Any others?

NIEA

Regime	Authority	Enforced by	Liability for contamination	Remediation	Remediation cost	Liability for contamination in public areas	Produce environmental assessments	Produce health assessments	Must be Public Access & Land Assessment	Public register
Part 1	PA	PA	-	-	-	-	-	-	-	-
Planning	PA	PA	-	-	-	-	-	-	-	-
Groundwater	PA	PA	-	-	-	-	-	-	-	-
Water	PA	PA	-	-	-	-	-	-	-	-
Waste and Contaminated Land	PA	PA	-	-	-	-	-	-	-	-
Landfill	PA	PA	-	-	-	-	-	-	-	-
Industrial Emissions	PA	PA	-	-	-	-	-	-	-	-
Environmental Liability	PA	PA	-	-	-	-	-	-	-	-
Clean Neighbourhoods and Environment Act	PA	PA	-	-	-	-	-	-	-	-
Building Regulations & Control	PA	PA	-	-	-	-	-	-	-	-
Any others?	PA	PA	-	-	-	-	-	-	-	-

NIEA

Remediation of Contaminated Land

Planning Development & Control
Advice to Planning to identify and manage risks to ensure sites "suitable for use"

Part 3 of WCLD '97 (proving)
Identify and remove risks & return damaged land to beneficial use (where there is no change in function)

Land affected by Contamination
6-14,000 potentially contaminated sites in NIEA database

Voluntary remediation
Advice to managing risks and remediation of environmentally important sites

Environmental Liability Directive
Regulate where land damage results in significant risk of adverse effects on health

As a minimum, developed land should not be capable of being determined as contaminated land under Part 3 of the Waste and Contaminated Land (WCLD) Order 1997

NIEA

15/06/2017

NI Regulatory Regimes – Planning

- Potential impacts on land and water quality arising from development is a *material consideration*
- Statutory consultee role of NIEA
- Advisory role of Environmental Health
- Land needs to be suitable for its proposed new use
 - Unacceptable risks identified at application
 - Remediation provided by negative conditions

As a minimum, developed land should not be capable of being determined as contaminated land under part 2 of the Waste and Contaminated Land (NI) Order 1997

NIEA

Contaminated Land Regime - England

- Part 2a of EPA 1990 introduced in 2000
- Council inspection strategies prioritise to assess risks to health
- Local Councils have inspected >11,000 sites at a cost of £32Million
- 511 determinations made to protect health
- £52 Million of public monies spent on remediation

NIEA

Contaminated Land Regime - Wales

- Part 2a of EPA 1990 introduced in 2000
- 800 priority sites inspected at a cost of £3.87 Million
- 95 sites remediated at est. costs of £3.7Million
- Remediation paid by the Welsh Gov's contaminated land capital fund (71%) & by *polluters pay* (22%)
- Land contamination is being dealt mainly (93% of sites) through the planning process

NIEA

15/06/2017

Contaminated Land Regime – Scotland

- Part 2a of EPA 1990 introduced in 2001
- Est 27,000 inspections
- Provides an incentive for remediation through Planning & voluntary action – 807 sites (1864ha) remediated in 2013
- Provides a means of dealing with sites that are causing or have potential to cause unacceptable risks

NIEA

Influence of Part 2a on remediation

- Understanding of objectives and standards
- Encourages contamination to be dealt with through opportunities such as redevelopment or proactive voluntary action
- Corporate responsibilities considered and addressed
- An incentive to ensure adequate pollution prevention is in place
- Costs can be addressed as part of project plans
- Development of a wide range of skills for Part 2a that are complimentary to those supporting risks at development sites

NIEA

Assessment Objectives

To fully assess the risks of not having a contaminated regime in force in Northern Ireland:

- assess adequacy of the current regulatory regimes for sites in Northern Ireland
- consider the interfaces between Part 3 and existing regimes for protecting health and the environment
- consider the adequacy of current regulatory regimes to enforce the "polluter pays principle"

NIEA

15/06/2017

How to assess uncertainty?

Qualitative approach adopted (CIRIA C552, 2001)

- No systematic inspection strategy for land contamination in Northern Ireland
- Approximately 14,000 records available on spatial NI
- Health and environmental assessment uses site information from selected sites previously investigated through existing regulatory schemes
- Assessment of provisions through existing regulatory frameworks and the risks of not having Part 3.

NIEA

Qualitative Assessment Methodology

- Qualitatively assess known sites applying risk scores on a site by site basis of not having Part 3
 - note this is not an assessment of any individual site's Part 3 status.
- Sites vary dramatically in their sensitivity hence risk score
 - contaminants types & mobility
 - receptors
 - exposure pathways
 - ownership, redevelopment potential, etc.
- Group sites by a range of scenarios to illustrate common deficiencies/strengths in existing regulatory legislation.
- Use scenarios to highlight gaps in the existing regulations and assess their significance in relation to what Part 3 would provide.

NIEA

Risk assessment methodology – scenario types

- > Planning approval with sites remediated (6)
- > Planning approval with sites not remediated (3)
- > Voluntary remediation (4)
- > Contaminant sources adjacent to planning sites (3)
- > Unlicensed waste sites (5)
- > Regulated industrial sites (4)

NIEA

15/06/2017

Risk Matrix (CIRIA C552)

Very high impact of an Part 1	4	4	16	16	16
High impact of an Part 1	3	3	9	9	9
Moderate impact of an Part 1	2	2	4	4	4
Low impact of an Part 1	1	1	1	1	1
		1	2	3	4
		Unlikely to occur	Normal to occur	Likely to occur	Common

NIEA

Example (Site X, Scenario B)

- Site Details: Former industrial site, mixed use investigated for a planning application 10-15 years ago to site/land of site. Development not progressed due to financial difficulties.
- Contamination: elevated heavy metals, hydrocarbons and some SVOCs in soils and shallow groundwater. Ground gas - characteristic situation 3.
- Environmental receptors: Site located 50m from a salmon river. Abundant fish provides pathways to groundwater studies and river. River not impacted, groundwater showing hydrocarbon plume.
- Human Health receptors: Site cleared of above ground structures and secure at present. Walk-in built up area. Residential properties with 50m of site.
- Remedial strategy: pathways mitigation and hydrocarbon source removal (underground tanks)

NIEA

Qualitative Assessment (Site X)

- Financial Risk: Impact rated as high (3) due to potential high cost of remediation. Likelihood of impact to public/guests considered moderate (2). If farming and redevelopment the likely mechanism in absence of Part 3. Risk Score of 6.
- Environmental Risk: Impact rated as high (3) due to groundwater plume which could impact river in future. Other environmental regulations will only apply when impact occurs. Likelihood (3) as impact is likely in future. Risk Score of 9.
- Human Health Risk: Impact rated as moderate (2) due to undeveloped nature of site. Not low due to C5-9 and residential properties. Likelihood (3) as there is the potential for future impact, but other regulations will not act prior to impact. Risk Score of 6.

NIEA

15/06/2017

Risk Classification

Risk Classification	Definition
Very high risk (12-16)	There is a high probability that severe harm could arise in the absence of Part 3 or there is evidence that severe harm is currently happening. The risk if realised could result in a substantial liability.
High risk (8-9)	There is a high probability that severe harm is likely to arise in the absence of Part 3. This risk if realised could result in a substantial liability.
Moderate risk (3-6)	It is possible that harm could arise in the absence of Part 3, although it is relatively unlikely that such harm would be severe.
Low risk (1-2)	It is possible that harm could arise but there is a low risk associated.

NIEA

Assessment Results - Planning sites

- Planning conditions verified to demonstrate that risks have been effectively managed
- Planning sites remediated to a level that ensures the new land use is suitable use
- Remediation through planning is proving to be effective
- Risks in the absence of Part 3 are low

Site	Remedial	Environmental	Human Health
A1	1	1	1
A2	1	1	1
A3	1	1	1
A4	1	1	1
A5	1	1	1
A6	1	1	1
A7	1	1	1
A8	1	1	1
A9	1	1	1
A10	1	1	1
A11	1	1	1
A12	1	1	1
A13	1	1	1
A14	1	1	1
A15	1	1	1
A16	1	1	1
A17	1	1	1
A18	1	1	1
A19	1	1	1
A20	1	1	1
A21	1	1	1
A22	1	1	1
A23	1	1	1
A24	1	1	1
A25	1	1	1
A26	1	1	1
A27	1	1	1
A28	1	1	1
A29	1	1	1
A30	1	1	1
A31	1	1	1
A32	1	1	1
A33	1	1	1
A34	1	1	1
A35	1	1	1
A36	1	1	1
A37	1	1	1
A38	1	1	1
A39	1	1	1
A40	1	1	1
A41	1	1	1
A42	1	1	1
A43	1	1	1
A44	1	1	1
A45	1	1	1
A46	1	1	1
A47	1	1	1
A48	1	1	1
A49	1	1	1
A50	1	1	1
A51	1	1	1
A52	1	1	1
A53	1	1	1
A54	1	1	1
A55	1	1	1
A56	1	1	1
A57	1	1	1
A58	1	1	1
A59	1	1	1
A60	1	1	1
A61	1	1	1
A62	1	1	1
A63	1	1	1
A64	1	1	1
A65	1	1	1
A66	1	1	1
A67	1	1	1
A68	1	1	1
A69	1	1	1
A70	1	1	1
A71	1	1	1
A72	1	1	1
A73	1	1	1
A74	1	1	1
A75	1	1	1
A76	1	1	1
A77	1	1	1
A78	1	1	1
A79	1	1	1
A80	1	1	1
A81	1	1	1
A82	1	1	1
A83	1	1	1
A84	1	1	1
A85	1	1	1
A86	1	1	1
A87	1	1	1
A88	1	1	1
A89	1	1	1
A90	1	1	1
A91	1	1	1
A92	1	1	1
A93	1	1	1
A94	1	1	1
A95	1	1	1
A96	1	1	1
A97	1	1	1
A98	1	1	1
A99	1	1	1
A100	1	1	1

NIEA

Assessment Results - Planning sites not remediated

- Risks moderate to high
- Site specific risks understood due to investigation provided through planning
- In many instances, these sites are likely to be the subject of new planning applications.

Site	Remedial	Environmental	Human Health
B1	2	2	2
B2	2	2	2
B3	2	2	2
B4	2	2	2
B5	2	2	2
B6	2	2	2
B7	2	2	2
B8	2	2	2
B9	2	2	2
B10	2	2	2
B11	2	2	2
B12	2	2	2
B13	2	2	2
B14	2	2	2
B15	2	2	2
B16	2	2	2
B17	2	2	2
B18	2	2	2
B19	2	2	2
B20	2	2	2
B21	2	2	2
B22	2	2	2
B23	2	2	2
B24	2	2	2
B25	2	2	2
B26	2	2	2
B27	2	2	2
B28	2	2	2
B29	2	2	2
B30	2	2	2
B31	2	2	2
B32	2	2	2
B33	2	2	2
B34	2	2	2
B35	2	2	2
B36	2	2	2
B37	2	2	2
B38	2	2	2
B39	2	2	2
B40	2	2	2
B41	2	2	2
B42	2	2	2
B43	2	2	2
B44	2	2	2
B45	2	2	2
B46	2	2	2
B47	2	2	2
B48	2	2	2
B49	2	2	2
B50	2	2	2
B51	2	2	2
B52	2	2	2
B53	2	2	2
B54	2	2	2
B55	2	2	2
B56	2	2	2
B57	2	2	2
B58	2	2	2
B59	2	2	2
B60	2	2	2
B61	2	2	2
B62	2	2	2
B63	2	2	2
B64	2	2	2
B65	2	2	2
B66	2	2	2
B67	2	2	2
B68	2	2	2
B69	2	2	2
B70	2	2	2
B71	2	2	2
B72	2	2	2
B73	2	2	2
B74	2	2	2
B75	2	2	2
B76	2	2	2
B77	2	2	2
B78	2	2	2
B79	2	2	2
B80	2	2	2
B81	2	2	2
B82	2	2	2
B83	2	2	2
B84	2	2	2
B85	2	2	2
B86	2	2	2
B87	2	2	2
B88	2	2	2
B89	2	2	2
B90	2	2	2
B91	2	2	2
B92	2	2	2
B93	2	2	2
B94	2	2	2
B95	2	2	2
B96	2	2	2
B97	2	2	2
B98	2	2	2
B99	2	2	2
B100	2	2	2

NIEA

Assessment Results - Voluntary remediation

- Risks to health and environment judged to be high due to lack of a regulatory stick.
- Financial risks to the public purse are moderate should impacts occur to receptors.
- Inherent weakness in relying on voluntary schemes in the absence of Part 3.

Site	Present	Uncontaminated	Receptor
D1	1	2	3
D2	1	2	3
D3	1	2	3
D4	1	2	3

NIEA

Assessment Results - Offsite sources

- Risks vary due to the nature and extent of land affected by contamination on in each case.
- Issue difficult to address through planning in the absence of Part 3 and other regulatory means.

Site	Present	Uncontaminated	Receptor
D1	1	2	3
D2	1	2	3
D3	1	2	3
D4	1	2	3

NIEA

Assessment Results - unlicensed waste sites

- Relevant to old closed landfills.
- Risks vary due to the nature and extent of contamination and the receptors in each case.
- Legal waste sites regulated under Part 2 of the WGL 97.

Site	Present	Uncontaminated	Receptor
D1	1	2	3
D2	1	2	3
D3	1	2	3
D4	1	2	3

NIEA

15/06/2017

Assessment Results - Permitted Sites

Risks are low in general due to:

- *sites being compliant with regulatory permits
- *potential issues remain with historical land contamination
- * may be addressed by voluntary remediation at permit discharge, although not always.

Site	Regulatory	Environmental	Historical
F1	Low	Low	Low
F2	Low	Low	Low
F3	Low	Low	Low
F4	Low	Low	Low
F5	Low	Low	Low
Site 6	Low	Low	Low
Site 7	Low	Low	Low
Site 8	Low	Low	Low

NIEA

Key Findings – Qualitative Assessment

Low Risk Scenarios

- Planning is effective where redevelopment is viable
- Voluntary remediation and industrially permitted sites usually benefit where responsible owner/operators take action

Higher Risk Scenarios

- Planning not effective where redevelopment does not progress
- Planning is unable to address off-site sources of contamination impacting development sites
- Historical waste sites present potential risks

- Scenarios are not exhaustive
- Significant uncertainty around potential liabilities to the public purse in the absence of an inspection strategy.

NIEA

Key Findings – Regulatory gaps

1. No provision for a contaminated land statutory definition
2. No provision for developing inspection strategies
3. Part 3 would ensure that risks are considered and assessed
4. Opportunities to address contamination are most cost effective ahead of regulatory intervention
5. Lack of polluter pays in dealing with historic contamination
6. Provides a means of taking action where remediation has been ineffective or where no action has been taken
7. Potential synergies with Environmental Liability Regulations
8. Clean Neighbourhoods and Environment Act (2011), Building Reg's (2012) require nuisance issues to be identified before action can be taken
9. Preventative measures provided through the Petroleum Licensing & Control of Pollution (Oil Storage) Regulations.

NIEA

15/06/2017

Conclusions

- Site scenarios are not exhaustive but do represent the most common routes for the remediation of sites
- In the absence of any NI inspection strategy, the full extent of potentially contaminated sites is unknown
- Planning is proving an effective means of remediation to protect health and environmental receptors and in managing financial risks
- Regulatory permits are effective in dealing with managing new contamination resulting from permitted activities
- Gaps have been identified in the interfaces between Part 3 and the existing regulatory tools for dealing with historic contamination
- Assessment provides a snapshot of the future picture
- Remediation is directly linked to realising the maximum asset potential

NIEA

Proposed recommendations

- The assessment identifies clear risks to the Northern Ireland public purse and to environment and human health receptors in not having Part 3 in force.
- The only means to reduce these risks and ensure the polluter pays in supporting the suitable for use approach in managing land affected by contamination would be to enact Part 3.

NIEA

Questions?

NIEA

Appendix B

Workshop attendees and groups were:

Group	NAME	ORGANISATION
A	Pat Corker	NIEA
A	Brendan Forde	DAERA
A	Edward Lewis	NIEA
A	Alastair Curran	Belfast City Council
A	David Gillis	Fermanagh & Omagh District Council
A	Conor Breslin	Mid Ulster Council
A	Sinead Trainor	Newry, Mourne & Down District Council
A	Gerald O'Reilly	Armagh Banbridge Craigavon Council
A	Siobhan Cox	Queens University Belfast
A	Colin McBride	DuPont
B	Siobhan Greenan	DAERA
B	Dr Gerry Waldron	Public Health Agency
B	Brendan McLean	Belfast City Council
B	Raymond Smyth	Fermanagh & Omagh District Council
B	Chris Jordan	Mid & East Antrim Borough Council
B	XXXXXX - tbc	Derry City & Strabane District Council
B	Sinead McAvoy	Armagh Banbridge Craigavon Council
B	Alastair Ruffell	Queen's University Belfast
C	Joanne Agnew	NIEA
C	Jim Armstrong	DAERA
C	Stephen Leonard	Belfast City Council
C	Richard Henry	Lisburn & Castlereagh City Council
C	Michael McGibbon	Mid Ulster Council
C	Graeme Evens	Mid & East Antrim Borough Council
C	Gareth Fenning	Antrim & Newtownabbey Borough Council
C	Paul McSwiggan	Derry City & Strabane District Council
C	Miriam Clarke	Armagh Banbridge Craigavon Council
C	Rory Doherty	Queen's University Belfast

Annex 2
Site Specific Qualitative Risk Assessments

Site Code	A1			
Scenario A	Planning Regime - sites remediated			
Proposed end use	Sports facility			
Site History (Regulatory/Planning/Voluntary)	The site is a former brickfield with substantial thicknesses of made ground in places (8m). The area surrounding the site includes a number of historical land uses such as railway land, garages and a laundrette which were potentially contaminating. Oil fuel storage tanks and an electrical substation are potential on-site sources of contamination.			
Investigation / Risk Assessment	The site was investigated in 2012 including intrusive site works. No unacceptable risks to environmental receptors were identified and human health risks were mitigated by physical barriers. The site investigations did find low quality groundwater at depth beneath the site, but no on-site sources were identified that could have caused this contamination. An off-site source is suspected.			
Part III relevance	In the absence of Planning, this could be a potential Part III site.			
Relevant N.I. Regulatory regimes	The Planning Act (Northern Ireland) 2011: ✓ Voluntary remediation in the absence of Part III: Groundwater Regulations : Water (Northern Ireland) Order 1999: x Waste and Contaminated Land (Northern Ireland) Order 1997: ✓ Landfill Regulations (Northern Ireland) 2003: x Industrial Emissions Directive: x Environmental Liability Regulations (Northern Ireland) 2009: Clean Neighbourhoods and Environment Act (N.I.) 2011: Building Regulations and Control: ✓	Likelihood of occurrence	Potential impact of not having Part III	Risk Score
Financial Risks	The site has been investigated and risk assessed through the planning regime. The financial risks to the public purse have been managed by the development	Unlikely = 1	Low = 1	Risk Score = 1
Environmental Risks	The site has been investigated and risk assessed through the planning regime. The environmental risks have been shown to be low from any on-site contamination sources. No remedial measures required.	Unlikely = 1	Low = 1	Risk Score = 1
Health Risks	The site has been investigated and risk assessed through the planning regime. The human health risks have been shown to be low. Mitigation measures conditioned through the planning permit.	Unlikely = 1	Low = 1	Risk Score = 1

Site Code	A2			
Scenario A	Planning Regime - sites remediated			
Proposed end use	Mixed use development			
Site History (Regulatory/Planning/Voluntary)	A Preapplication Discussion (PAD) application process was undertaken prior to the outline application and a subsequent full application was made.			
Investigation / Risk Assessment	The site was investigated for potential contamination risks prior to the PAD process, therefore was known to present risks to the adjacent river (protected by sensitive ecological designations) and human health receptors from contamination associated with its history. Subsequent investigations and risk assessments were undertaken in support of the planning application to refine the risks identified and delineate contamination in soils and groundwater. A detailed quantitative risk assessment was undertaken in support of the planning application, low risks were identified to the adjacent river. Groundwater monitoring and remedial works were conditioned as part of the planning decision notice to verify the risks established by risk assessment.			
Part III relevance	The site has been adequately assessed through the planning regime. In the absence of Planning, this would be a potential Part III site.			
Relevant N.I. Regulatory regimes	The Planning Act (Northern Ireland) 2011: ✓ Voluntary remediation in the absence of Part III: Groundwater Regulations: Water (Northern Ireland) Order 1999: ✓ Waste and Contaminated Land (Northern Ireland) Order 1997: ✓ Landfill Regulations (Northern Ireland) 2003: ✗ Industrial Emissions Directive: ✗ Environmental Liability Regulations (Northern Ireland) 2009: Clean Neighbourhoods and Environment Act (N.I.) 2011: Building Regulations and Control: ✓	Likelihood of occurrence	Potential impact of not having Part III	Risk Score
Financial Risks	The site has been investigated and risk assessed through the planning regime. The financial risks to the public purse have been met through the planning regime at the cost of the developer.	Unlikely = 1	Low = 1	Risk Score = 1
Environmental Risks	The site has been investigated and risk assessed through the planning regime. The environmental risks have been shown to be low from any on site contamination sources. Remediation and groundwater monitoring to mitigate risks to adjacent river.	Unlikely = 1	Low = 1	Risk Score = 1
Health Risks	The site has been investigated and risk assessed through the planning regime. The human health risks have been shown to be low. Mitigations measures conditioned as part of the planning permission.	Unlikely = 1	Low = 1	Risk Score = 1

Site Code	A3			
Scenario A	Planning Regime - sites remediated			
Proposed end use	Mixed use development			
Site History (Regulatory/Planning/Voluntary)	Outline planning application for the redevelopment of existing brownfield site to include community, education, business, health, recreational and residential use. The site was potentially contaminated by its former use. The site was also subject to reprofiling works which may have imported contaminated fill materials onto the site. Former land uses adjacent to the site included a gasometer, a cotton factory and a garage/petrol filling station.			
Investigation / Risk Assessment	Preliminary and generic risk assessments of the site completed to inform planning application were informed by intrusive site investigations. Potential unacceptable risks were identified to human health receptors from contaminants in the made ground, ground gases and asbestos. Mitigation measures as part of the development were conditioned as a remedial strategy in the resulting decision notice, and were complied with in the development.			
Part III relevance	In the absence of Planning , this would be a potential Part III site.			
Relevant N.I. Regulatory regimes	The Planning Act (Northern Ireland) 2011: ✓ Voluntary remediation in the absence of Part III: Groundwater Regulations: Water (Northern Ireland) Order 1999: ✗ Waste and Contaminated Land (Northern Ireland) Order 1997: ✓ Landfill Regulations (Northern Ireland) 2003: ✗ Industrial Emissions Directive: ✗ Environmental Liability Regulations (Northern Ireland) 2009: Clean Neighbourhoods and Environment Act (N.I.) 2011: Building Regulations and Control: ✓	Likelihood of occurrence	Potential impact of not having Part III	Risk Score
Financial Risks	The site has been investigated and risk assessed through the planning regime. The financial risks to the public purse have been met through the planning regime as if Part III were applied.	Unlikely = 1	Low = 1	Risk Score = 1
Environmental Risks	The site has been investigated and risk assessed through the planning regime. The environmental risks have been shown to be low from any on-site contamination sources.	Unlikely = 1	Low = 1	Risk Score = 1
Health Risks	The site has been investigated and risk assessed through the planning regime. The human health risks have been mitigated through the planning conditions.	Unlikely = 1	Low = 1	Risk Score = 1

Site Code	A4			
Scenario A	Planning Regime - sites remediated			
Proposed end use	School development			
Site History (Regulatory/Planning/Voluntary)	An extensive site on the banks of a major river protected by sensitive ecological designations. The site was used for various potentially contaminating activities including workshops, vehicle maintenance, refuelling, domestic heating oil tanks and contractors yard. Preapplication discussion (PAD) applications were lodged prior to outline and full planning applications for the site.			
Investigation / Risk Assessment	The site was extensively investigated in support of the full planning application including an area which was known to be the site of a large historical fuel spillage. Generic risk assessment was applied to the majority of the site and detailed quantitative risk assessment was undertaken for the hydrocarbon impacted ground and groundwater due to the fuel spillage. A detailed remedial strategy has been developed for the site. Works are progressing to satisfy conditions of the planning decision notice for the remediation of the site.			
Part III relevance	In the absence of Planning, this would be a potential Part III site.			
Relevant N.I. Regulatory regimes	The Planning Act (Northern Ireland) 2011: ✓ Voluntary remediation in the absence of Part III: Groundwater Regulations: Water (Northern Ireland) Order 1999: ✓ Waste and Contaminated Land (Northern Ireland) Order 1997: ✓ Landfill Regulations (Northern Ireland) 2003: ✗ Industrial Emissions Directive: ✗ Environmental Liability Regulations (Northern Ireland) 2009: Clean Neighbourhoods and Environment Act (N.I.) 2011: Building Regulations and Control: ✓	Likelihood of occurrence	Potential impact of not having Part III	Risk score
Financial Risks	The site has been investigated and risk assessed through the planning regime. The financial risks to the public purse have been managed at the cost of the developer.	Unlikely = 1	Low = 1	Risk score = 1
Environmental Risks	The site has been investigated and risk assessed through the planning regime. The environmental risks from on site contamination sources has been mitigated by remediation and has been the subject of long term groundwater monitoring to verify the remedial works.	Unlikely = 1	Low = 1	Risk score = 1
Health Risks	The site has been investigated and risk assessed through the planning regime. The human health risks will be mitigated through the conditions of the planning decision notice.	Unlikely = 1	Low = 1	Risk score = 1

Site Code	A5			
Scenario A	Planning Regime - sites remediated			
Proposed end use	Various			
Site History (Regulatory/Planning/Voluntary)	A number of planning applications and preapplication discussion (PAD) applications have been lodged for this site and discussions prior to PADs were undertaken with the NIEA regarding the environmental investigation of the site.			
Investigation / Risk Assessment	The site has been investigated and demolished. No environmental risks were identified for the site, human health risks are identified and mitigation measures conditioned through the planning conditions recommended.			
Part III relevance	In the absence of Planning, this would be a potential Part III site.			
Relevant N.I. Regulatory regimes	The Planning Act (Northern Ireland) 2011: ✓ Voluntary remediation in the absence of Part III: Groundwater Regulations: Water (Northern Ireland) Order 1999: ✗ Waste and Contaminated Land (Northern Ireland) Order 1997: ✓ Landfill Regulations (Northern Ireland) 2003: ✗ Industrial Emissions Directive: ✗ Environmental Liability Regulations (Northern Ireland) 2009: Clean Neighbourhoods and Environment Act (N.I.) 2011: Building Regulations and Control ✓	Likelihood of occurrence	Potential impact of not having Part III	Risk score
Financial Risks	The site has been investigated and risk assessed through the planning regime. The financial risks to the public purse have been managed at a cost to the developer.	Unlikely = 1	Low = 1	Risk score = 1
Environmental Risks	The site has been investigated and risk assessed through the planning regime. The environmental risks have been shown to be low from any on site contamination sources.	Unlikely = 1	Low = 1	Risk score = 1
Health Risks	The site has been investigated and risk assessed through the planning regime. The human health risks have been shown to be low, and will be mitigated through the conditions of the planning permission.	Unlikely = 1	Low = 1	Risk score = 1

Site code	A6			
Scenario A	Planning Regime - sites remediated			
Proposed end use	Shed - Agricultural use. Planning applied for retrospectively			
Site History (Regulatory/Planning/Voluntary)	The site was a former chemical works of unspecified type. Investigations of the site showed a plume of chloromethane in groundwater likely to be related to the former use of the site which posed unacceptable risks to a local water course adjacent to the site, as well as on-site health receptors.			
Investigation / Risk Assessment	A number of phases of consultation were made to NIEA regarding the application and through the activity of planning the applicant brought forth works to satisfy the requirements of CLR11 to investigate the site. Groundwater monitoring and risk assessment was undertaken to define the remedial requirements and a remedial strategy has been agreed for the site to be implemented prior to award of planning.			
Part III relevance	In the absence of Planning, this would be a potential Part III site.			
Relevant N.I. Regulatory regimes	The Planning Act (Northern Ireland) 2011: ✓ Voluntary remediation in the absence of Part III: Groundwater Regulations: Water (Northern Ireland) Order 1999: ✓ Waste and Contaminated Land (Northern Ireland) Order 1997: ✓ Landfill Regulations (Northern Ireland) 2003: ✗ Industrial Emissions Directive: ✗ Environmental Liability Regulations (Northern Ireland) 2009: Clean Neighbourhoods and Environment Act (N.I.) 2011: Building Regulations and Control: ✓	Likelihood of occurrence	Potential impact of not having Part III	Risk score
Financial Risks	The site has been investigated and risk assessed through the planning regime. The financial risks to the public purse have been managed at a cost to the developer.	Unlikely = 1	Low = 1	Risk score = 1
Environmental Risks	The site has been investigated and risk assessed through the planning regime. The environmental risks have been shown to be significant from any on site contamination sources. Retrospective nature of application made remedial action problematic. Issues resolved eventually, but impacts may have occurred to the water course during that period.	Unlikely = 1	High = 3	Risk score = 3
Health Risks	The site has been investigated and risk assessed through the planning regime. The human health risks have been shown to be low.	Unlikely = 1	Low = 1	Risk score = 1

Site Code	B1			
Scenario B	Planning regime – sites with planning but not remediated			
Proposed end use	Mixed use			
Site History (Regulatory/Planning/Voluntary)	Site with a long history of potentially contaminating uses including glass, chemical and light engineering works. Planning applications were made for the site supported by site investigation data and risk assessments in 2006 and 2009. A decision notice was issued in March 2011 which included detailed conditions requiring a remedial strategy and verification of remedial works. Additional site investigations and risk assessment were undertaken in 2013 to assess liabilities. Further work on the environmental liabilities took place in 2013.			
Investigation / Risk Assessment	The site has been extensively investigated given its site area (6 hectares) over a period between 2000 and 2013, including soil sampling, groundwater monitoring and ground gas monitoring. The site is extensively impacted by relatively low concentrations of contaminants. No unacceptable risks to the adjacent river have been identified in the most recent site investigations. Unacceptable risks to human health receptors on site were identified in 2013.			
Part III relevance	In the absence of Planning, this would be a potential Part III site.			
Relevant N.I. Regulatory regimes	The Planning Act (Northern Ireland) 2011: ✓ Voluntary remediation in the absence of Part III Groundwater Regulations: Water (Northern Ireland) Order 1999: ✓ Waste and Contaminated Land (Northern Ireland) Order 1997: ✓ Landfill Regulations (Northern Ireland) 2003: ✗ Industrial Emissions Directive: ✗ Environmental Liability Regulations (Northern Ireland) 2009: Clean Neighbourhoods and Environment Act (N.I.) 2011: Building Regulations and Control:	Likelihood of occurrence	Potential impact of not having Part III	Risk score
Financial Risks	This site represents an important investment potential within a major urban area of Northern Ireland. It has spent more than a decade as a derelict site with unquantifiable costs in lost taxable revenue and economic development. Part III may have had a role in allowing this site to be brought into productive use sooner.	Likely = 3	Moderate = 2	Risk score = 6
Environmental Risks	The site has been extensively investigated. The risks to environmental receptors, such as the adjacent river have been assessed as low and manageable through any planning permission for future development, however no development plans have been presented to date, therefore outstanding risks are still present to environmental receptors in the absence of Part III.	Potential = 2	Moderate = 2	Risk score = 4
Health Risks	The site has been extensively investigated. The risks to health receptors have been assessed and unacceptable risks to on site receptors have been identified. In the absence of Part III or a development plan these risks remain to be mitigated.	Potential = 2	Significant = 3	Risk score = 6

Site Code	B2			
Scenario B	Planning regime – sites with planning but not remediated			
Proposed end use	Commercial			
Site History (Regulatory/Planning/Voluntary)	The site has been the subject of a number planning applications and developments. An application for a large scale commercial park in 2005 was granted full planning permission in October 2008. The majority of the site remains undeveloped. Parts of the site have been developed under separate planning applications.			
Investigation / Risk Assessment	The site has been extensively investigated over a number of years. A number of potential risks have been identified to the environment and human health receptors, including asbestos containing materials. The site has not been remediated and conditions have not been met. The site remains unremediated.			
Part III relevance	In the absence of planning, this would be a potential Part III site.			
Relevant N.I. Regulatory regimes	The Planning Act (Northern Ireland) 2011: ✓ Voluntary remediation in the absence of Part III: Groundwater Regulations: Water (Northern Ireland) Order 1999: ✗ Waste and Contaminated Land (Northern Ireland) Order 1997: ✓ Landfill Regulations (Northern Ireland) 2003: ✗ Industrial Emissions Directive: ✗ Environmental Liability Regulations (Northern Ireland) 2009: Clean Neighbourhoods and Environment Act (N.I.) 2011: Building Regulations and Control:	Likelihood of occurrence	Potential impact of not having Part III	Risk score
Financial Risks	This site is large and is in a prime location for future commercial development. It remaining out of use for many years has had unquantifiable costs in taxable revenue and economic development. Part III may have had a role in allowing this site to be brought into productive use sooner.	Likely = 3	Moderate = 2	Risk score = 6
Environmental Risks	The site has been extensively investigated. The risks to environmental receptors have been assessed and risk have been identified but no remedial works have taken place.	Potential = 2	High = 3	Risk score = 6
Health Risks	The site has been extensively investigated. The risks to health receptors have been assessed and unacceptable risks to on site receptors have been identified, notably from asbestos.	Potential = 2	Very High = 4	Risk score = 8

Site Code	B3			
Scenario B	Planning regime – sites with planning but not remediated			
Proposed end use	Commercial / industrial			
Site History (Regulatory/Planning/Voluntary)	The site is was formerly used for a range of uses including a brick pit, glass works, munitions / motor factory and metal foundry. Fuel oil storage also took place at the site. Invest NI have undertaken works to investigate the contamination risks for the site. Development of the site is not currently proposed and the site remain derelict. A planning application has been granted for limited development for access road ways and services only, with no conditions for remediation.			
Investigation / Risk Assessment	Site investigations and groundwater monitoring have been undertaken 2003/4 up to and including quantitative risk assessment to define remedial targets and a remediation strategy was developed at the time for the site. However the risks to environmental and human health receptors remain to be addressed, and the risk assessments and remedial measures would need to be revised in any new plans for the site.			
Part III relevance	In the absence of Planning, this would be a potential Part III site.			
Relevant N.I. Regulatory regimes	The Planning Act (Northern Ireland) 2011: ✓ Voluntary remediation in the absence of Part III: Groundwater Regulations: Water (Northern Ireland) Order 1999: ✗ Waste and Contaminated Land (Northern Ireland) Order 1997: ✓ Landfill Regulations (Northern Ireland) 2003: ✗ Industrial Emissions Directive: ✗ Environmental Liability Regulations (Northern Ireland) 2009: ✗ Clean Neighbourhoods and Environment Act (N.I.) 2011: Building Regulations and Control:	Likelihood of occurrence	Potential impact of not having Part III	Risk score
Financial Risks	There are financial risks to the Local Council from this site as a former owner/operator. Remedial works are likely to be required for environmental and human health risks.	Likely = 3	High = 3	Risk score = 9
Environmental Risks	The site has been investigated. The risks to environmental receptors have been assessed and risk have been identified but remedial works have not addressed all unacceptable risks.	Potential = 2	High = 3	Risk score = 6
Health Risks	The site has been investigated. The risks to human health receptors have been assessed and risk have been identified but remedial works have not addressed all unacceptable risks.	Potential = 2	High = 3	Risk score = 6

Site Code	B4			
Scenario B	Planning regime – sites with planning but not remediated			
Proposed end use	Commercial			
Site History (Regulatory/Planning/Voluntary)	The site is was formerly used as a gasworks. The site was remediated historically (1996/7), during redevelopment in support of an outline planning permission. Areas of the site remain undeveloped and pose risks to environmental receptors and potentially health receptors depending on development usage.			
Investigation / Risk Assessment	Site investigations and groundwater monitoring were undertaken historically and remedial works to depths of up to 3m below ground level to standards acceptable at the time. The site is adjacent to a main river with sensitive designations. The risk assessments and remedial measures for the undeveloped parts of the site will require revision in support of any new plans for the development of the site. Plots exist within the site which have not been developed.			
Part III relevance	In the absence of Planning, the undeveloped plots would be potential Part III sites.			
Relevant N.I. Regulatory regimes	The Planning Act (Northern Ireland) 2011: ✓ Voluntary remediation in the absence of Part III: Groundwater Regulations: Water (Northern Ireland) Order 1999: ✓ Waste and Contaminated Land (Northern Ireland) Order 1997: ✓ Landfill Regulations (Northern Ireland) 2003: ✗ Industrial Emissions Directive: ✗ Environmental Liability Regulations (Northern Ireland) 2009: ✗ Clean Neighbourhoods and Environment Act (N.I.) 2011: Building Regulations and Control: ✓	Likelihood of occurrence	Potential impact of not having Part III	Risk score
Financial Risks	There are financial risks to the Local Council from this site as a former owner/operator. Remedial works are likely to be required for environmental and human health risks. Sites such as this may remain under developed to the detriment of local economy.	Potential = 2	High = 3	Risk score = 6
Environmental Risks	The site has been investigated. The risks to environmental receptors have been assessed and risks have been identified but remedial works have not addressed all unacceptable risks. In the absence of Part III or new planning applications remediation is unlikely to occur.	Likely = 3	High = 3	Risk score = 9
Health Risks	The site has been investigated. The risks to human health receptors have been assessed and risk have been identified but remedial works may not have addressed all unacceptable risks.	Potential = 2	High = 3	Risk score = 6

Site	B5			
Scenario B	Planning regime – sites with planning but not remediated			
Proposed end use	Residential			
Site History (Regulatory/Planning /Voluntary)	Waste disposal activities on site for several years breaking vehicles and sorting skip wastes. The operator was prosecuted for contraventions of the Waste and Contaminated Land Order for the burial of controlled wastes on site. Fines were issued however the waste remains in-situ.			
Investigation / Risk Assessment	The site is the subject of pre-application planning discussions for residential development. It is understood the site is being investigated and risk assessed with the intention to remediate in support of a planning application, however the site lies within the green belt , so is not scheduled for development in the current area plans. The sale, development and remediation of the site are predicated on the basis of the success of the planning application.			
Part III relevance	Remediation to be undertaken via Art 28 of the Waste & Contaminated Land Order, Environmental Liability Directive or via Planning consent			
Relevant N.I. Regulatory regimes	The Planning Act (Northern Ireland) 2011: ? Voluntary remediation in the absence of Part III: Groundwater Regulations: Water (Northern Ireland) Order 1999: ✓ Waste and Contaminated Land (Northern Ireland) Order 1997: ✓ Landfill Regulations (Northern Ireland) 2003: ✗ Industrial Emissions Directive: ✗ Environmental Liability Regulations (Northern Ireland) 2009: ✗ Clean Neighbourhoods and Environment Act (N.I.) 2011: Building Regulations and Control:	Likelihood of occurrence	Potential impact of not having Part III	Risk score
Financial Risks	The polluter pays principal would have a preventative element in this kind of criminal activity. Part III inspection regimes might have detected the activities which lead to the waste being deposited at an earlier stage.	Low = 1	Moderate = 2	Risk score = 2
Environmental Risks	Environmental risks have not been established through investigation. A local water course runs adjacent to the site. Risks to the environment are evident in the absence of planning permission with remediation/mitigation of the risks.	Potential = 2	High = 3	Risk score = 6
Health Risks	The risks to human health receptors have not been established through investigation. Burial of waste has the potential to cause landfill gas build up and migration. Local residential dwellings are the potential receptors, but none are located in close proximity to the site.	Potential = 2	Moderate = 2	Risk score = 4

Site Code	C1			
Scenario C	Voluntary Remediation			
Proposed end use	None			
Site History (Regulatory/Planning/Voluntary)	A voluntary scheme to remediate off-site impacts related to the operations of the fuel reprocessing plant was made. The remedial strategy required planning permission to implement. No development was proposed as part of the planning application.			
Investigation / Risk Assessment	The investigations and remedial works concentrated on the off-site sources and impacts to the north and west of the site. The on-site contaminant sources were not investigated as part of the scheme. The field to the west of the site was contaminated along field drains which had channelled shallow groundwater contamination across the field. The field was to be remediated with contaminated soils to be removed and an interception trench placed along the western site boundary to prevent further migration of contaminants onto the field. A plume of groundwater contamination was mapped through groundwater monitoring spreading north and west from the site from free product sources around and just north of the plant. A groundwater scheme to pump and treat free product and contaminated water was proposed to alleviate the movement of the plume and remove the source of groundwater contamination.			
Part III relevance	Without the voluntary scheme to remediate these areas of contamination, Part III would have been relevant as a means to enforce the polluter pays principal as the impacts were off site.			
Relevant N.I. Regulatory regimes	The Planning Act (Northern Ireland) 2011: ✓ Voluntary remediation in the absence of Part III: ✓ Groundwater Regulations: Water (Northern Ireland) Order 1999: ✓ Waste and Contaminated Land (Northern Ireland) Order 1997: ✓ Landfill Regulations (Northern Ireland) 2003: ✗ Industrial Emissions Directive: ✓ Environmental Liability Regulations (Northern Ireland) 2009: Clean Neighbourhoods and Environment Act (N.I.) 2011: Building Regulations and Control:	Likelihood of occurrence	Potential impact of not having Part III	Risk score
Financial Risks	In the absence of Part III the risk to the public purse could apply as the impacts were off site and enforcement of polluter pays principal would be more difficult through other regulatory means which could have been used to enforce action on the operators.	Potential = 2	Moderate = 2	Risk score = 4
Environmental Risks	In the absence of Part III and the voluntary remediation there is a significant risk of impacts from the plume north of the site to groundwater quality. On-site contamination not addressed by the voluntary remediation works.	Likely = 3	High = 3	Risk score = 9
Health Risks	In the absence of Part III and the voluntary remediation there is a significant risk of impacts from the soil contamination in the field west of the site. On-site contamination not addressed by the voluntary remediation works.	Likely = 3	High = 3	Risk score = 9

Site Code	C2			
Scenario C	Voluntary Remediation			
Proposed end use	Commercial			
Site History (Regulatory/Planning /Voluntary)	<p>Reports were voluntarily submitted to NIEA land and groundwater team (LGW). These outlined site investigation, monitoring and remediation trials to mitigate a plume of total petroleum hydrocarbon contamination in the groundwater, including free phase hydrocarbons which had leaked from fuel dispensing infrastructure or underground fuel storage tanks near the northern boundary of the site. The contamination was suspected to have migrated off site to the north and potentially towards the east.</p> <p>A planning application for the site area included a remedial strategy was subsequently issued. LGW urged cooperation between all parties to resolve the contamination issues in the interests of the site development through planning consultations.</p> <p>Comprehensive proposals for the further investigation of contamination risks to inform a revised risk assessment and remedial strategy were subsequently provided. These works are currently in progress.</p>			
Investigation / Risk Assessment	Site fully investigated and risk assessed including detailed quantitative risk assessment. Voluntary remedial works undertaken by previous operator to permit new landowner to develop site through planning permission.			
Part III relevance	Without voluntary action to investigate, risk assess and remediate it is unlikely the development would have been possible. In the absence of Part III, enforcing authorities have little power to enforce the remediation of sites. Where contamination extends off-site planning regulations alone are not sufficient to protect receptors.			
Relevant N.I. Regulatory regimes	<p>The Planning Act (Northern Ireland) 2011: ✓</p> <p>Voluntary remediation in the absence of Part III:</p> <p>Groundwater Regulations:</p> <p>Water (Northern Ireland) Order 1999: ✓</p> <p>Waste and Contaminated Land (Northern Ireland) Order 1997: ✓</p> <p>Landfill Regulations (Northern Ireland) 2003: ✗</p> <p>Industrial Emissions Directive: ✗</p> <p>Environmental Liability Regulations (Northern Ireland) 2009:</p> <p>Clean Neighbourhoods and Environment Act (N.I.) 2011:</p> <p>Building Regulations and Control: ✓</p>	Likelihood of occurrence	Potential impact of not having Part III	Risk score
Financial Risks	In the absence of Part III, or a responsible former owner/operator willing to voluntarily investigate and remediate sites such as this, they may remain undeveloped to the detriment of local economy.	Likely = 3	Moderate = 2	Risk score = 6
Environmental Risks	The plume of groundwater contamination fed from the liquid hydrocarbons present in the ground has the potential to migrate through groundwater to impact the local river. Groundwater itself is also a receptor for contamination. The potential environmental risks from operational and former petrol filling stations exists across Northern Ireland.	Likely = 3	High = 3	Risk score = 9
Health Risks	The plume of groundwater contamination fed from the liquid hydrocarbons present in the ground has the potential to migrate through groundwater beneath other areas of future development or existing developed areas. Hydrocarbons have volatile components that can make their way into voids and buildings and cause risks to health receptors from explosions or asphyxiation. The potential health risks from operational and former petrol filling stations exists across Northern Ireland.	Likely = 3	High = 3	Risk score = 9

Site Code	C3			
Scenario C	Voluntary Remediation			
Proposed end use	Park land?			
Site History (Regulatory/Planning/Voluntary)	Site owners have had a long liaison with NIEA to voluntarily investigate, risk assess and remediate ground and groundwater contaminated areas of the site. A former unlined lagoon used historically to hold tarry wastes from historical operations. Impacts of associated contaminants were being noted in the adjacent river at certain periods of the tide and these were linked to the former lagoon through a groundwater pathway.			
Investigation / Risk Assessment	Investigations and monitoring have led to the development of a detailed 3D conceptual model of the former lagoon and the pathways to the adjacent river. A remedial strategy to mitigate the risks has been devised for which planning permission is required. A planning application has been made for the implementation of the required remedial works.			
Part III relevance	Without voluntary action to investigate, risk assess and remediate it is unlikely the risks would be apparent. In the absence of Part III enforcing authorities have little power to enforce the remediation of sites like this in the absence of a planning application. Where contamination extends off-site planning regulations alone are not sufficient to protect receptors.			
Relevant N.I. Regulatory regimes	The Planning Act (Northern Ireland) 2011: ✓ Voluntary remediation in the absence of Part III: ✓ Groundwater Regulations: Water (Northern Ireland) Order 1999: ✓ Waste and Contaminated Land (Northern Ireland) Order 1997: ✓ Landfill Regulations (Northern Ireland) 2003: ✗ Industrial Emissions Directive: ✗ Environmental Liability Regulations (Northern Ireland) 2009: Clean Neighbourhoods and Environment Act (N.I.) 2011: Building Regulations and Control:	Likelihood of occurrence	Potential impact of not having Part III	Risk score
Financial Risks	In the absence of Part III the risk to the public purse could apply but is unlikely.	Unlikely = 1	High = 3	Risk score = 3
Environmental Risks	In the absence of Part III and the voluntary remediation there is a significant risk of impacts to the local salmonid river which is protected by a number of sensitive ecological designations.	Likely = 3	High = 3	Risk score = 9
Health Risks	In the absence of Part III and the voluntary remediation there are significant risk to on site human health receptors.	Unlikely = 1	High = 3	Risk score = 3

Site Code	C4			
Scenario C	Voluntary Remediation			
Proposed end use	N/A			
Site History (Regulatory/Planning/Voluntary)	Contamination of ground and groundwater with Trichloroethene (TCE) and its natural breakdown products 1,2-dichloroethene (1,2 DCE) and vinyl chloride (VC) detected at the rear of the facility. It transpired that the staff had used TCE which is an industrial degreasing agent to clean metal components on the hardstanding backing onto a field at the rear of the facility. It was assumed that the TCE would volatilise to the atmosphere however over time runoff occurred which contaminated the adjacent field and the underlying shallow groundwater. Investigation of the contamination was completed and NIEA land and groundwater team was contacted regarding regulatory supervision of the works. Over a period of 5 years the works have included initial source characterisation, risk assessment and agreement of a remedial strategy. The remedial works have been carried out and a 2 year groundwater monitoring period has validated the assumptions and conclusions of the risk assessment. The site has been successfully remediated through monitored natural attenuation in the absence of Part III because of the responsible action of site owners.			
Investigation / Risk Assessment	Site fully investigated and risk assessed including detailed quantitative risk assessment.			
Part III relevance	Without voluntary action to investigate, risk assess and remediate it is unlikely the contamination would have been detected or remediated. In the absence of Part III enforcing authorities have little power to enforce the remediation of sites like this in the absence of a planning application. Where contamination extends off site as it did in this case, Planning regulations alone are not sufficient to protect receptors, or make the polluter pay.			
Relevant N.I. Regulatory regimes	The Planning Act (Northern Ireland) 2011: ✘ Voluntary remediation in the absence of Part III: ✔ Groundwater Regulations: Water (Northern Ireland) Order 1999: ✔ Waste and Contaminated Land (Northern Ireland) Order 1997: ✔ Landfill Regulations (Northern Ireland) 2003: ✘ Industrial Emissions Directive: ✔ Environmental Liability Regulations (Northern Ireland) 2009: Clean Neighbourhoods and Environment Act (N.I.) 2011: Building Regulations and Control:	Likelihood of occurrence	Potential impact of not having Part III	Risk score
Financial Risks	In the absence of Part III and a responsible former owner/operator willing to voluntarily investigate and remediate, sites such as this may remain undeveloped to the detriment of local economy.	Likely = 3	Moderate = 2	Risk score = 6
Environmental Risks	The plume of groundwater contamination fed from the TCE source present in the ground has the potential to migrate through groundwater to impact local surface water courses. Groundwater itself is a receptor for contamination. The potential environmental risks from TCE spills and leaks from industrial cleaning activities exists across Northern Ireland.	Likely = 3	High = 3	Risk score = 9
Health Risks	The plume of groundwater contamination fed from the soil TCE present in the ground had the potential to migrate through groundwater beneath other areas of future development and agricultural land. TCE is a volatile organic contaminant that can migrate to voids and buildings and cause risks to health receptors from explosions or asphyxiation. The potential environmental risks from TCE spills and leaks from industrial cleaning activities exists across Northern Ireland.	Likely = 3	High = 3	Risk score = 9

Site Code	C5			
Scenario C	Voluntary Remediation			
Proposed end use	Residential			
Site History (Regulatory/Planning/Voluntary)	A residential estate built on former industrial land granted planning permission without land contamination investigation / risk assessment or remediation. Organic contaminants subsequently suspected of being present in the soils/made ground at the site. Risk assessment to derive remedial targets was undertaken at the public expense.			
Investigation / Risk Assessment	Site investigated retrospectively and risk assessed including detailed quantitative risk assessment for human health risks for the novel contaminant present. Remediation on a plot by plot basis for human health risks to residential receptors at the cost of the developer.			
Part III relevance	Voluntary action undertaken retrospectively by the developer to remediate hot spots of contamination that posed risks to human health residential receptors. Part III would have applied if voluntary remediation was not undertaken.			
Relevant N.I. Regulatory regimes	The Planning Act (Northern Ireland) 2011: ✓ Voluntary remediation in the absence of Part III: ✓ Groundwater Regulations: Water (Northern Ireland) Order 1999: x Waste and Contaminated Land (Northern Ireland) Order 1997: Landfill Regulations (Northern Ireland) 2003: Industrial Emissions Directive: x Environmental Liability Regulations (Northern Ireland) 2009: x Clean Neighbourhoods and Environment Act (N.I.) 2011: ✓ Building Regulations and Control:	Likelihood of occurrence	Potential impact of not having Part III	Risk score
Financial Risks	In the absence of Part III and a responsible former owner/operator willing to voluntarily investigate and remediate the site the cost is likely to have fallen to the public purse.	Likely = 3	High = 3	Risk score = 9
Environmental Risks	The risks in this case were primarily to human health receptors due to the contaminant type present.	Unlikely = 1	Moderate = 2	Risk score = 2
Health Risks	The potential health risks were high at this site. Similar sites in the UK have been investigated through Part 2A. In the absence of Part III or a responsible previous owner/operator/developer there is no viable means to protect receptors.	Likely = 3	High = 3	Risk score = 9

Site Code	D1			
Scenario D	Off-site contaminant sources			
Proposed end use	Residential			
Site History (Regulatory/Planning/Voluntary)	A number of planning applications in the area have included site investigations which have found a diffuse plume of TCE and it's daughter products in the groundwater aquifer beneath the site. The source of the contamination has not been identified definitely. A court case regarding one site was settled out of court. No remedial works have been undertaken to alleviate the source, however mitigation measures have to be required for potential vapour intrusion to buildings in the area impacted.			
Investigation / Risk Assessment	Site investigations in the area have found a diffuse plume of TCE and it's daughter products in groundwater in the aquifer beneath the site. Groundwater in the general area flows towards the south or south east. Impacts have been noted in a borehole at a local hospital.			
Part III relevance	Without voluntary action to investigate and mitigate the source, Part III would be the most relevant regulatory means to inspect and investigate risks of this nature.			
Relevant N.I. Regulatory regimes	The Planning Act (Northern Ireland) 2011: ✘ Voluntary remediation in the absence of Part III: Groundwater Regulations; Water (Northern Ireland) Order 1999: ✔ Waste and Contaminated Land (Northern Ireland) Order 1997: ✔ Landfill Regulations (Northern Ireland) 2003: ✘ Industrial Emmissions Directive: ✔ Environmental Liability Regulations (Northern Ireland) 2009: ✔ Clean Neighbourhoods and Environment Act (N.I.) 2011: Building Regulations and Control:	Likelihood of occurrence	Potential impact of not having Part III	Risk score
Financial Risks	In the absence of Part III and a responsible owner/operator willing to voluntarily investigate and remediate sites such as this impacts may occur in an ongoing way until another regulatory regime is triggered. Unlikely to impact the public purse, however potentially Part III could prevent impacts.	Unlikely = 1	High = 3	Risk score = 3
Environmental Risks	The plume of TCE can only be effectively remediated at source, without this being identified the environmental risks are real and on-going.	Likely = 3	High = 3	Risk score = 9
Health Risks	The plume of TCE can only be effectively treated at source, without this being identified the human health risks are real and on-going.	Likely = 3	High = 3	Risk score = 9

Site Code	D2			
Scenario D	Off-site contaminant sources			
Proposed end use	Leisure / recreation			
Site History (Regulatory/Planning/Voluntary)	Application site is located immediately south of a historic gasworks which partially encroached onto application site. A further education college has been developed on this adjacent site with uncertainty as to the risk assessment and remediation works undertaken for that prior development. The buried foundations of two former gas holders, thought to be unremediated, are likely to be present in the adjacent college site, directly adjacent to planning application site.			
Investigation / Risk Assessment	Site investigations have confirmed the presence of dense non-aqueous phase liquids (DNAPL) in the form of coal tar materials in both shallow and deep boreholes on the application site along the boundary with the adjacent site. Free phase coal tar product has migrated onto the application site with DNAPL present in shallow and deeper boreholes further across site. Unacceptable risks to human health are identified for current site conditions. Risks for further mobilisation of contamination and introduction of new risks during development works as dewatering is confirmed as required during excavations for the proposed development.			
Part III relevance	Planning inappropriate to address the impacts of off site sources on a development site. Part III would be the most relevant regulatory means to inspect and investigate risks of this nature.			
Relevant N.I. Regulatory regimes	The Planning Act (Northern Ireland) 2011: x Voluntary remediation in the absence of Part III: Groundwater Regulations: Water (Northern Ireland) Order 1999: ✓ Waste and Contaminated Land (Northern Ireland) Order 1997: ✓ Landfill Regulations (Northern Ireland) 2003: x Industrial Emissions Directive: x Environmental Liability Regulations (Northern Ireland) 2009: ✓ Clean Neighbourhoods and Environment Act (N.I.) 2011: Building Regulations and Control: ✓	Likelihood of Occurance	Potential impact of not having Part III	Risk score
Financial Risks	In the absence of Part III contamination, which spans a planning red line boundary is difficult to assess. In this case both areas are potentially subject to remedial requirements at the expense of the public purse.	Likely = 3	High = 4	Risk score = 12
Environmental Risks	The environmental risks from DNAPLS are potentially high. In the absence of Part III it is difficult to see an alternative regulatory arrangement that could span multiple sites. Environmental Liability Regulations are difficult to apply unless significant groundwater contamination has already occurred.	Likely = 3	High = 4	Risk score = 12
Health Risks	The environmental risks from free product hydrocarbons that can volatilise are potentially high. In the absence of Part III it is difficult to see an alternative regulatory arrangement that could span multiple sites.	Likely = 3	High = 4	Risk score = 12

Site Coce	D3			
Scenario D	Off-site contaminant sources			
Proposed end use	Mixed use			
Site History (Regulatory/Planning/Voluntary)	An outline planning application was made for a large scale mixed landuse redevelopment of the area, roads and to provide a new residential district in a village. A later full planning application removed the residential portion of the site from the red line area, excluding an area indicated on maps as a "dump".			
Investigation / Risk Assessment	Site investigations in the area detected made ground and some human health risks to be addressed through mitigation measures, however the residential part of the original outline application was not investigated in support of the planning application. This part of the site had references on maps indicating it may have been former dump site. Potential risks to the development prevented planning conditions without investigation of the risks associated with a potential dump/landfill. The dump may have been outside the area of the outline planning application but this was not investigated.			
Part III relevance	Without investigation in support of a planning application or voluntary action to investigate and mitigate the dump it remains a potential risk locally. Part III would be the most relevant regulatory means to inspect and investigate risks of this nature outside of the planning regime.			
Relevant N.I. Regulatory regimes	The Planning Act (Northern Ireland) 2011: ✘ Voluntary remediation in the absence of Part III: Groundwater Regulations: Water (Northern Ireland) Order 1999: ✔ Waste and Contaminated Land (Northern Ireland) Order 1997: ✔ Landfill Regulations (Northern Ireland) 2003: ✘ Industrial Emmissions Directive: Environmental Liability Regulations (Northern Ireland) 2009: Clean Neighbourhoods and Environment Act (N.I.) 2011: Building Regulations and Control:	Likelihood of occurrence	Potential impact of not having Part III	Risk score
Financial Risks	In the absence of Part III or a planning application, historical sources such as this are unlikely to be investigated. With no issues locally regarding the dump, the risks to the public purse is low. Some loss of tax revenue possibly, but value of site is low.	Unlikely = 1	Low = 1	Risk score = 1
Environmental Risks	The environmental risks will be site specific. Provided the dump site is not disturbed the risks should be low due to the historical nature of the potential source.	Potential = 2	Low = 1	Risk score = 2
Health Risks	The human health risks will be site specific. Provided the dump site is not disturbed/built on the risks should be low due to the historical nature of the potential source.	Potential = 2	Low = 1	Risk score = 2

Site Code	D4			
Scenario D	Off-site contaminant sources			
Proposed end use	Residential			
Site History (Regulatory/Planning/Voluntary)	Planning application for a large scale residential development granted with negative conditions for investigation of the potential for landfill gas to influence human health risks for the development.			
Investigation / Risk Assessment	The site boundary between the development and the off site area of unlicensed/illegal waste deposits was investigated with boreholes to assess the landfill gas migration risks. The remediation strategy included containment of the off site source and gas protection measures.			
Part III relevance	Remedial works reliant on planning conditions. Developer rather than the pollutor is paying for the required gas mitigation measures. Due to shared ownership in this case off site impacts to a planning area are being dealt with through planning regime.			
Relevant N.I. Regulatory regimes	The Planning Act (Northern Ireland) 2011: ✓ Voluntary remediation in the absence of Part III: ✓ Groundwater Regulations: Water (Northern Ireland) Order 1999: ✗ Waste and contaminated Land (Northern Ireland) Order 1997: ✓ Landfill Regulations (Northern Ireland) 2003: ✗ Industrial Emissions Directive: Environmental Liability Regulations (Northern Ireland) 2009: ✗ Clean Neighbourhoods and Environment Act (N.I.) 2011: Building Regulations and Control:	Likelihood of occurrence	Potential impact of not having Part III	Risk score
Financial Risks	The potential health impacts from an off-site source of waste to a residential receptor are significant and the mitigate measures could impact the public purse if the developer or operator are no longer identifiable and no legislation exists to enforce the pollutor pays principle. The cost and effectiveness of retrospective gas protection measures could be higher than preventative measures included at the time of construction.	Potential = 2	High = 3	Risk score = 6
Environmental Risks	The off-site source presents potential risks to environmental receptors, but not to the development itself. The potential impacts would be moderate if realised, but is considered unlikely in this case due to the generally (but not strictly) inert nature of the wastes.	Unlikely = 1	Moderate = 2	Risk score = 2
Health Risks	The potential health impacts, if the off-site source was unknown at the time of the application, could have been high and the likelihood of that impact being realised is possible. The waste in question was largely (but not strictly) inert in this case so presented a relatively low risk of gas migration, although landfill gas was present.	Potential = 2	High = 3	Risk score = 6

Site code	D5			
Scenario D	Off-site contaminant sources			
Proposed end use	N/A			
Site History (Regulatory/Planning /Voluntary)	Prior to formal waste management licensing (Late 1960s and early 1970's) in Northern Ireland hydrocarbon wastes were deposited in a number of locations across parts of Northern Ireland in an unregulated manner.			
Investigation / Risk Assessment	The locations of a large number of these waste deposits were verified in publically financed project in the 1990's. No formal risk assessment or remedial works were defined for these sites. In many cases the locations of the waste deposits were not specifically identified.			
Part III relevance	In the absence of Part III remedial works reliant on planning applications for the various locations. Several Planning applications have been lodged which have been affected by the various sites identified as being potentially or adjacent to these waste sites.			
Relevant N.I. Regulatory regimes	The Planning Act (Northern Ireland) 2011: ✓ Voluntary remediation in the absence of Part III: x Groundwater Regulations: Water (Northern Ireland) Order 1999: ✓ Waste and contaminated Land (Northern Ireland) Order 1997: Landfill Regulations (Northern Ireland) 2003: x Industrial Emmissions Directive: x Environmental Liability Regulations (Northern Ireland) 2009: x Clean Neighbourhoods and Environment Act (N.I.) 2011: Building Regulations and Control:	Likelihood of occurrence	Potential impact of not having Part III	Risk score
Financial Risks	The financial risks for remedial works could potentially apply to the public purse if impacts to receptors were identified retrospectively. Planning regime likely to make the developer/site owner pay for any remedial works or mitigation works for risks from adjacent sites. No specific additional risk from not having Part III at this time. Part III could act to aid future development of sites and mitigate future illegal waste site through the polluter pays principle.	Potential = 2	Moderate = 2	Risk score = 4
Environmental Risks	The environmental risks will be site specific. Provided the sources are not disturbed the risks should be low after the passage of 40+ years.	Potential = 2	Moderate = 2	Risk score = 4
Health Risks	The human health risks will be site specific and could be greater than the enviromental risks due to proximity of any development, and the nature of the contaminants present in the wastes.	Potential = 2	High = 3	Risk score = 6

Site Code	E1			
Scenario E	Former waste sites			
Site History (Regulatory/Planning /Voluntary)	Large scale site with a mixture of licenced, unlicenced and illegal waste deposits. Some of the waste deposits were into areas of quarrying which were not granted planning permission. Sensitive environmental and health receptors are located adjacent to the contamination.			
Investigation / Risk Assessment	The site has been extensively investigated and risk assessed at public expence and risks to environmental and health receptors are evident which require a remedial strategy.			
Part III relevance	In the absence of Part III to enforce the pollutor pays principle a range of other regulatory and legislative arrangement may apply to the site e.g. Planning enfocement and the Environmental Liability Act. However the implimentation of these regimes is untested at present.			
Relevant N.I. Regulatory regimes	The Planning Act (Northern Ireland) 2011: ✓ Voluntary remediation in the absence of Part III: ✗ Groundwater Regulations: ✓ Water (Northern Ireland) Order 1999: ✓ Waste and contaminated Land (Northern Ireland)Order 1997: ✓ Landfill Regulations (Northern Ireland) 2003: ✗ Industrial Emmissions Directive: ✗ Environmental Liability Regulations (Northern Ireland) 2009: ✓ Clean Neighbourhoods and Environment Act (N.I.) 2011: Building Regulations and Control:	Likelihood of occurance	Potential impact of not having Part III	Risk score
Financial Risks	The financial costs of investigating the site have been through the public purse. There are risks that in the absence of Part III no other regulatory regime will successfully apply the pollutors pays prinicipal and the cost of necessary remediation may be at the cost of the public purse.	Likely = 3	High = 3	Risk score = 9
Environmental Risks	The environmental risks are due to the sensitivity of the receptor and the the long term risk the site poses. In the absence of Part III and public ownership there is uncertainty that the full remedial requirements can be implimented.	Likely = 3	High = 3	Risk score = 9
Health Risks	The human health risks are due to the high sensitivity of the receptor (public water supply) and the the long term risk the site poses. In the absence of Part III and public ownership there is uncertainty that the full remedial requirements can be implimented.	Likely = 3	Very High = 4	Risk score = 12

Site Code	E2			
Scenario E	Former waste sites			
Site History (Regulatory/Planning /Voluntary)	Unregulated waste site on land adjacent to, and within red line planning boundary of a new housing development. Development was on green field land otherwise. Site and risks from wastes were investigated and risk assessed in support of the planning application.			
Investigation / Risk Assessment	Site investigations and risk assessments, including landfill gas risk assessment were provided by the developer in support of the planning application. Mitigation measures were built into the development to alleviate risks from gases. Environmental risks from waste not addressed in remedial strategy.			
Part III relevance	In the absence of Part III the source of contamination and risks to receptors remains extant. Mitigation measures do not prevent future impacts to new developments or to changes to the existing residential buildings. The costs of mitigation were not borne by the polluter, but by the developer.			
Relevant N.I. Regulatory regimes	The Planning Act (Northern Ireland) 2011: ✓ Voluntary remediation in the absence of Part III: x Groundwater Regulations: Water (Northern Ireland) Order 1999: ✓ Waste and contaminated Land (Northern Ireland) Order 1997: ✓ Landfill Regulations (Northern Ireland) 2003: x Industrial Emissions Directive: x Environmental Liability Regulations (Northern Ireland) 2009: x Clean Neighbourhoods and Environment Act (N.I.) 2011: Building Regulations and Control:	Likelihood of occurrence	Potential impact of not having Part III	Risk score
Financial Risks	In the absence of Part III or a new planning application the risk from the wastes are unlikely to be further investigated or remediated. There is a possibility that the public purse could be impacted if risks or impacts become evident from the wastes in future.	Potential = 2	Moderate = 2	Risk score = 4
Environmental Risks	The environmental risks from the wastes remain to be addressed due to the off site nature of the source of contamination in this case. If undisturbed wastes are unlikely to produce enhanced risks to receptors.	Potential = 2	High = 3	Risk score = 6
Health Risks	The human health risks from the wastes to the immediate development have been addressed through mitigation measures for the buildings. The source however remains and could pose risks to new developments on or near the waste. If undisturbed however wastes are unlikely to produce enhanced risks to receptors.	Potential = 2	High = 3	Risk score = 6

Site Code	E3			
Scenario E	Former waste sites			
Site History (Regulatory/Planning /Voluntary)	Licensed waste site (revoked) into an unlined former quarry site. Rural location, with little likelihood of redevelopment or voluntary remediation. Owner operator did not comply with licence requirements.			
Investigation / Risk Assessment	Little information on wastes deposited and no environmental monitoring data. Site is adjacent to water course which may be impacted by any leachate. Licence has been revoked.			
Part III relevance	In the absence of Part III the site is unlikely to be investigated through other regulatory regimes unless impacts are detected to the local water courses. Redevelopment of the site is unlikely given rural location.			
Relevant N.I. Regulatory regimes	The Planning Act (Northern Ireland) 2011: x Voluntary remediation in the absence of Part III: x Groundwater Regulations: <input type="radio"/> Water (Northern Ireland) Order 1999: <input checked="" type="checkbox"/> Waste and contaminated Land (Northern Ireland) Order 1997: <input checked="" type="checkbox"/> Landfill Regulations (Northern Ireland) 2003: x Industrial Emmissions Directive: x Environmental Liability Regulations (Northern Ireland) 2009: x Clean Neighbourhoods and Environment Act (N.I.) 2011:	Likelihood of occurrence	Potential impact of not having Part III	Risk score
Financial Risks	In the absence of Part III the wastes are unlikely to be further investigated or remediated. There is a possibility that the public purse could be impacted if risks or impacts become evident from the wastes in future.	Potential = 2	Moderate = 2	Risk score = 4
Environmental Risks	The environmental risks from the waste remain. If undisturbed however wastes are unlikely to produce enhanced risks to receptors, however adjacent water course is likely to recive some leachate impact over time.	Likely = 2	Moderate = 2	Risk score = 6
Health Risks	The human health risks from the wastes are uncertain, however if undisturbed the wastes are unlikely to produce enhanced risks to receptors.	Potential = 2	Moderate = 2	Risk score = 4

Site Code	E4			
Scenario E	Former waste sites			
Site History (Regulatory/Planning /Voluntary)	The site has a complex history of waste disposal including a licensed waste management facility (license lapsed due to operator liquidation) and illegal waste deposits forming a nearly continuous mass of waste. The site now remains derelict as waste ground used for grazing and remains controversial locally.			
Investigation / Risk Assessment	The site has been investigated for risks to the environment and from landfill gases. The extent of the waste has not been defined in many places, however landfill gas concentrations at the site are of low risk.			
Part III relevance	In the absence of Part III further remedial works reliant on planning applications.			
Relevant N.I. Regulatory regimes	The Planning Act (Northern Ireland) 2011: x Voluntary remediation in the absence of Part III: x Groundwater Regulations: Water (Northern Ireland) Order 1999: ✓ Waste and contaminated Land (Northern Ireland) Order 1997: ✓ Landfill Regulations (Northern Ireland) 2003: x Industrial Emissions Directive: x Environmental Liability Regulations (Northern Ireland) 2009: x Clean Neighbourhoods and Environment Act (N.I.) 2011: Building Regulations and Control:	Likelihood of occurrence	Potential impact of not having Part III	Risk score
Financial Risks	The financial risks for remedial works could potentially apply to the public purse if impacts to receptors are identified in future. No specific additional risk from not having Part III at this time, but a potential project to investigate the site at public expense. Part III could act to mitigate future illegal waste sites through the polluter pays principle.	Likely = 3	Moderate = 2	Risk score = 6
Environmental Risks	The environmental risks will be site specific. Provided the sources are not disturbed, the risks should be low as a result of the previous site investigation information.	Potential = 2	Moderate = 2	Risk score = 4
Health Risks	The human health risks are site specific. Provided the sources are not disturbed the risks should be low, however there is the potential for new preferential pathways to be created for landfill gases which could impact new or existing residential receptors. The likelihood for such risks is only potential, but the impacts in such circumstances could be high.	Potential = 2	High = 3	Risk score = 6

Site Code	E5			
Scenario E	Former waste sites			
Site History (Regulatory/Planning /Voluntary)	This is a former licensed landfill site, part of a wider industrial site which saw the deposition of solid industrial type wastes over a long period. The site has existing housing on three sides of the site. A planning application to voluntarily recover the site was granted, which was not fully implemented and has now lapsed. A recent PAD and subsequent full planning application for a residential development on the site has been made.			
Investigation / Risk Assessment	The site has been thoroughly investigated and risk assessed on two occasions for the respective remedial strategy and newly proposed residential development. Asbestos is a contaminant of concern on this site. Remediation of the potential impacts to environmental receptors such as the adjacent streams, and the human health risks to future residential receptors have been proposed and agreed through the planning regime.			
Part III relevance	There are risks from the site to environmental and health receptors which as yet remain unremediated. The planning regime may deliver a remedial strategy to alleviate those risks and redevelop the site for residential properties. In the absence of planning Part III would apply to this site. Voluntary works to remediate some of the risks were agreed through a previous planning permit but not implemented.			
Relevant N.I. Regulatory regimes	The Planning Act (Northern Ireland) 2011: ✓ Voluntary remediation in the absence of Part III: ✓ Groundwater Regulations: Water (Northern Ireland) Order 1999: ✓ Waste and contaminated Land (Northern Ireland) Order 1997: ✓ Landfill Regulations (Northern Ireland) 2003: ✗ Industrial Emissions Directive: ✗ Environmental Liability Regulations (Northern Ireland) 2009: Clean Neighbourhoods and Environment Act (N.I.) 2011: Building Regulations and Control: ✓	Likelihood of occurrence	Potential impact of not having Part III	Risk score
Financial Risks	In the absence of Part III or voluntary works which have not been implemented the remedial works are dependent on planning being granted. If the planning regime fails to address the risks there are risks to the public purse as the site is adjacent to environmental receptors and human health receptors in the form of residential housing estates.	Likely = 3	Moderate = 2	Risk score = 6
Environmental Risks	The environmental risks from the contamination are not great due to the nature of the solid wastes posing a low risk, however there are surface water receptors surrounding the site on three sides.	Potential = 2	Moderate = 2	Risk score = 4
Health Risks	Human health risks are evident to existing properties on land adjacent to the site. In the absence of Part III the site needs planning permission for redeveloped to make remediation of the site viable.	Likely = 3	High = 3	Risk score = 9

Site Code	F1			
Scenario F	Regulated industrial sites			
Proposed end use	N/A			
Site History (Regulatory/Planning/Voluntary)	The site was farmland prior to the building of an industrial plant. Site has undergone redevelopment and extension over decades. IPPC permit was granted to limit contamination risks from the operations, but made no allowances for pre-permit land condition. Site is due to close in 2018 for decommissioning and closure and the operators intend to satisfy the closure requirements of the permit. Remedial works with the intention of returning the site to productive use are currently proposed.			
Investigation / Risk Assessment	Site will be investigated to establish ground and groundwater contamination and risks. No pre permit land condition report appears to have been produced therefore remedial works envisaged to require similar measures to Part III/Planning.			
Part III relevance	IPPC Permit covers land condition during the permit period. Intentions of operator to remediate site for useful redevelopment (commercial industrial envisaged). Part III would be relevant as a means to enforce the polluter pays principle if operator only remediated to pre IPPC Permit land quality.			
Relevant N.I. Regulatory regimes	The Planning Act (Northern Ireland) 2011: ✓ Voluntary remediation in the absence of Part III: ✓ Groundwater Regulations: Water (Northern Ireland) Order 1999: ✓ Waste and contaminated Land (Northern Ireland) Order 1997: ✓ Landfill Regulations (Northern Ireland) 2003: ✗ Industrial Emissions Directive: ✓ Environmental Liability Regulations (Northern Ireland) 2009: Clean Neighbourhoods and Environment Act (N.I.) 2011: Building Regulations and Control:	Likelihood of occurrence	Potential impact of not having Part III	Risk score
Financial Risks	No land condition report means operator must remediate risks to release site from the IPPC permit and facilitate sale of the site for which planning would be required. The lack of Part III is unlikely to be a risk to the public purse.	Unlikely = 1	Low = 1	Risk score = 1
Environmental Risks	No land condition report means operator must remediate environmental risks to release site from the IPPC permit and facilitate sale of the site for which planning would be required. The lack of Part III is unlikely to be a risk in this case.	Potential = 2	Low = 1	Risk score = 2
Health Risks	No land condition report means operator must remediate human health risks to release site from the IPPC permit and facilitate sale of the site for which planning would be required. The lack of Part III is unlikely to be a risk in this case.	Potential = 2	Low = 1	Risk score = 2

Site Code	F2			
Scenario F	Regulated industrial sites			
Proposed end use	N/A			
Site History (Regulatory/Planning/Voluntary)	The plant was opened in the late 60's and has recently ceased production. The IPPC permit is in the process of being discharged with a view to resale of the site.			
Investigation / Risk Assessment	Site will be investigated to establish ground and groundwater contamination and risks. No pre permit land condition report appears to have been produced therefore remedial works likely to require similar measures to Part III/Planning.			
Part III relevance	IPPC Permit covers land condition during the permit period. Intentions of operator to remediate site for redevelopment. Part III would be relevant as a means to enforce the polluter pays principle if operator only remediated to pre IPPC Permit land quality.			
Relevant N.I. Regulatory regimes	The Planning Act (Northern Ireland) 2011: ✓ Voluntary remediation in the absence of Part III: ✓ Groundwater Regulations: Water (Northern Ireland) Order 1999: ✓ Waste and Contaminated Land (Northern Ireland) Order 1997: ✓ Landfill Regulations (Northern Ireland) 2003: ✗ Industrial Emissions Directive: ✓ Environmental Liability Regulations (Northern Ireland) 2009: Clean Neighbourhoods and Environment Act (N.I.) 2011: Building Regulations and Control:	Likelihood of occurrence	Potential significance of not having Part III	Risk score
Financial Risks	No land condition report means operator must remediate risks to release site from the IPPC permit and facilitate sale of the site for which planning would be required. The lack of Part III is unlikely to be a risk to the public purse.	Unlikely = 1	Low = 1	Risk score = 1
Environmental Risks	No land condition report means operator must remediate environmental risks to release site from the IPPC permit and facilitate sale of the site for which planning would be required. The lack of Part III is unlikely to be a risk in this case.	Potential = 2	Low = 1	Risk score = 2
Health Risks	No land condition report means operator must remediate human health risks to release site from the IPPC permit and facilitate sale of the site for which planning would be required. The lack of Part III is unlikely to be a risk in this case.	Potential = 2	Low = 1	Risk score = 2

Site Code	F3			
Scenario F	Regulated industrial sites			
Proposed end use	N/A			
Site History (Regulatory/Planning/Voluntary)	The former factory applied to discharge IPPC permit for the site. Some demolition groundworks encountered hydrocarbon contamination which was investigated further and found to be extensive. NIEA reviewed site investigations, risk assessment remedial works to alleviate the risks to River Bann which flows adjacent to the site. Site wide investigations and risk assessment have not been carried out therefore there are potential issues for any future development of the site.			
Investigation / Risk Assessment	Works were undertaken to investigate and risk assess the site. A relatively simple remedial strategy entailed chasing out the identified contamination through excavations around the original leak/spillage source from former underground pipe work and ducting from fuel storage tanks on site. Groundwater monitoring was used in addition to testing of the sides and base of the excavation to verify the effectiveness of the remedial works.			
Part III relevance	IPPC Permit covers land condition during the permit period. Intensions of operator to remediate site for useful redevelopment. Part III would be relevant as a means to enforce the polluter pays principal if operator only remediated to pre IPPC Permit land quality.			
Other relevant Regulatory regimes	The Planning Act (Northern Ireland) 2011: ✓ Voluntary remediation in the absence of Part III: ✓ Groundwater Regulations: Water (Northern Ireland) Order 1999: ✓ Waste and contaminated Land (Northern Ireland) Order 1997: ✓ Landfill Regulations (Northern Ireland) 2003: ✗ Industrial Emmissions Directive: ✓ Environmental Liability Regulations (Northern Ireland) 2009: Clean Neighbourhoods and Environment Act (N.I.) 2011: Building Regulations and Control:	Likelihood of occurrence	Potential significance of not having Part III	Risk score
Financial Risks	No land condition report means operator must remediate risks to release site from the IPPC permit and facilitate sale of the site for which planning would be required. The lack of Part III is unlikely to be a risk to the public purse. However potential contamination is still a potential risk unless site is redvelopment through planning regime.	Unlikely = 1	Low = 1	Risk score = 1
Environmental Risks	No land condition report means operator must remediate environmental risks to release site from the IPPC permit and facilitate sale of the site for which planning would be required. The lack of Part III is unlikely to be a risk in this case. However potential contamination is still a potential risk unless site is redvelopment through planning regime.	Potential = 2	Moderate = 2	Risk score = 4
Health Risks	No land condition report means operator must remediate human health risks to release site from the IPPC permit and facilitate sale of the site for which planning would be required. The lack of Part III is unlikely to be a risk in this case. However potential contamination is still a potential risk unless site is redvelopment through planning regime.	Potential = 2	Moderate = 2	Risk score = 4

Site Code	F4			
Scenario F	Regulated industrial sites			
Proposed end use	N/A			
Site History (Regulatory/Planning/Voluntary)	The operation has lands used for waste disposal historically, prior to the IPPC permit for the installation. Contacts have been made to facilitate voluntary remediation of these areas with the NIEA.			
Investigation / Risk Assessment	Some investigations to establish the source area and contaminants types has been undertaken historically.			
Part III relevance	IPPC Permit covers land condition during the permit period so would not include the waste deposits in question. Intentions of operator to remediate site for useful redevelopment are uncertain. Part III would be relevant as a means to enforce the polluter pays principle if operator only remediated to pre IPPC Permit land quality.			
Other relevant Regulatory regimes	The Planning Act (Northern Ireland) 2011: Voluntary remediation in the absence of Part 3: ✓ Groundwater Regulations: Water (Northern Ireland) Order 1999: ✓ Waste and contaminated Land (Northern Ireland) Order 1997: ✓ Landfill Regulations (Northern Ireland) 2003: ✗ Industrial Emissions Directive: ✓ Environmental Liability Regulations (Northern Ireland) 2009: Clean Neighbourhoods and Environment Act (N.I.) 2011: Building Regulations and Control:	Likelihood of occurrence	Potential significance of not having Part III	Risk score
Financial Risks	The lack of Part III could be a risk to the public purse for historical land contamination as the IPPC permit would not require remediation of such areas and the future use of the land is unlikely to require planning.	Unlikely = 1	Low = 1	Risk score = 2
Environmental Risks	There are environmental risks associated with area of historical contamination within IPPC sites. The lack of Part III could be a risk in this case as site may not be subject to redevelopment.	Potential = 2	Moderate = 2	Risk score = 4
Health Risks	There are human health risks associated with area of historical contamination within IPPC sites. The lack of Part III could be a risk in this case as site may not be subject to redevelopment.	Potential = 2	Moderate = 2	Risk score = 4

Annex 3

Northern Ireland Contaminated Land Regime: Part III of WCLO'97

Consultation on Final Draft Report: Feedback Questionnaire

Dear Consultee,

The Northern Ireland Environment Agency (NIEA) has prepared a final draft report to address the Public Accounts Committee's (PAC) recommendation regarding the non-commencement of Part III of the Waste and Contaminated Land Order 1997 (WCLO'97). This recommendation stated:

Department of the Environment, in consultation with Councils, to fully assesses the financial, environmental and health risks associated with having a regulatory regime that falls short of that in place in other regions.

The final draft report is included within this consultation pack. NIEA is seeking your feedback on your preferred option(s) from the four options presented in Chapter 6; namely:

- **Option 1:** Do nothing
- **Option 2:** Councils to develop Inspection Strategies for their areas outside the Part III regime
- **Option 3:** Implementation of Part III with no Capital funding
- **Option 4:** Implementation of Part III with a Capital funding cap

In support of **your preferred option above**, please address questions 1-5 below and provide suitable evidence (where relevant):

Question 1: **Does your preferred option have an impact on the PAC recommendation, if so, please explain how.**

Question 2: **How deliverable is your preferred option for the Council?**

Question 3: **How affordable is your preferred option for the Council?**

Question 4: **What potential impacts does your preferred option have on commencing Part III?**

Question 5: **What are the risks for Council(s) of not pursuing with your preferred option as you have identified above?**

Ards and North Down Borough Council Response

Northern Ireland Contaminated Land Regime: Part III of WCLO's 1997
Consultation of Final Draft Report
Recommendation:

‘Department of the Environment, in consultation with Councils, to fully assess the financial, environmental and health risks associated with having a regulatory regime that falls short of that in place in other regions’

Four options:

1. Do nothing
2. Councils to develop inspection strategies for their areas outside the Part III regime
3. Implementation of Part III with no capital funding
4. Implementation of Part III with a capital funding cap

Consultee response from Ards and North Down Borough Council.

The following comments are made on the context of an initial technical response on a draft report on the understanding that this matter will be further considered by the elected members of Ards and North Down Borough Council in due course. The comments made may therefore be subject to change.

Ards and North Down Borough Councils preferred option would be **Option 4**

1. Does your preferred option have an impact on the PAC recommendation, if so explain how?

Yes, the decision to choose option 4 will ensure that Councils in Northern Ireland will have the same legislative duties as that of their counterparts in the rest of the UK for the inspection and remediation of contaminated sites in their own area. The implementation of Part III will close the legislative gap due to the non-commencement and avoid the potential of infraction by the EU for non-compliance with Article 15 of the Mercury Regulations. Options 1 & 2 will still result in NI not being aligned with the rest of the UK. Option 3 is not financially feasible. It is worthy to note that the current situation, where contaminated sites are dealt with through the planning regime works well and in other regions of the UK it is still the mechanism that deals with the majority of the contaminated sites. However, it is suggested that the introduction of Part III could work in tandem the planning system to manage contaminated sites (which fall outside of the planning regime). Such sites, in the absence of Part III, could remain unidentified and continue to pose human health and environmental risks.

2. How deliverable is your preferred option for the Council?

In order to deliver on option 4, it is of vital importance that sufficient and ongoing funding is made available to each Local Authority.

Comment has been made regarding the outdated and incomplete data sets including NIEAs Historical Land use data base, waste management database etc. There will be a need for a more integrated GIS/ IT system which will allow data to be extracted and gathered/merged from various sources e.g. EPIC to ensure complete data capture. In order to record the full extent of potentially contaminated sites each Local Authority will need to have a complete data set which will need to be regularly updated. Contaminated sites could also span adjacent Council areas and there would need to be information sharing between neighbouring Councils.

To ensure that this preferred option can be delivered, consideration must be given to the need for adequate staffing resource. Councils will be required to recruit and retain qualified and competent staff to enforce the regulations. Additional and ongoing training of these officers will also be required in this developing/ changing specialist field.

3. How affordable is your preferred option for the Council?

Ards and North Down Borough Council would find it difficult to make judgement on how affordable option 4 would be. The report is limited on the financial implications and before making any meaningful comment it is felt that more information is provided on the financial implications of the implementation of Part III.

It is difficult at this stage to predict the financial outlay required and there has been no recent estimates undertaken at a local level. In considering the experience of other local authorities in the rest of the UK, it is likely to be significant and has the potential to vary from area to area. It has been confirmed, however, that there will be a cap on the capital funding and no detail is provided on the length of time the funding will be continued. It is suggested that individual Councils would subsequently bid for funding individual projects/sites.

Prior to this bidding situation It would be recommended that initial resource would be required in order to allow Councils to produce a verified system for identifying the number of potential sites before bidding for specific funding would commence.

It is noted that project funding is to be prioritised on the basis of risk to health on a cost benefit basis which is to be welcomed. No specific funding time table been confirmed; however, it would be accepted that it would be temporary in nature with an example of 10 years being used. In comparing the situation in the rest of the UK it is noted that initial funding has been significantly reduced over time. The Defra study in 2014 confirmed that in England LAs have spent at least 32 million pounds on the implementation of Part 2A with 64% of this coming from Local Authority budgets. Local Councils have ongoing competing financial pressures and commitment will depend on local circumstances. Councils would want to avoid the scenario that funding streams were reduced / withdrawn leaving a shortfall of money and several sites determined.

Experience in the UK would indicate that the majority of the responsibility of the remediation of the sites ultimately falls to the Local Authority (or NIEA for Special sites). It is envisaged that Class A polluters would rarely cover the costs and the financial burden on pursuing such would be prohibitive somewhat undermining the key principle of the Polluter Pays.

4. What potential impacts does your preferred option have on commencing Part III?

The requirement to develop an inspection strategy under Part III and subsequently progress towards identifying contaminated land in ANDBC area

will be the main impact of choosing Option 4. It is obvious that more preliminary work is required in order to better understand the financial implications, however the implementation of the Part III regime must be accompanied by sufficient and sustained funding to ensure that the objectives are fully met.

If appropriately managed and resourced Option 4 could identify and remove unacceptable risks to human health & the environment and ensure that land affected by contamination is identified, risk assessed, remediated and consequently made suitable for use if possible employing the polluter pays principle.

5. What are the risks for Council(s) of not pursuing with your preferred option as you have identified above?

In not pursuing Option 4 it is envisaged that the situation will remain as present and contaminated sites will be dealt with through the current planning system. This will rely on EHDs within local Councils responding to Planning Consultations continuing to use the current outdated site location system which has already been determined to be inadequate. For example, anecdotal evidence would indicate that in ANDBC area there are several closed landfill sites not recorded. Enforcement of planning conditions in relation to the verification of remediation works can be inadequate.

There will consequently been no proactive approach to identify and record sites which are or have been affected by contamination.

Historically contaminated land which is not proposed for development could have the ability to continue to have significant human health, environmental and financial impacts into the future. The number and location of these sites could be largely unknown and as time passes without any meaningful inspection strategy to locate such sites, the risks to human health, the wider environmental and the future financial implications will undoubtedly increase.

Councils in NI are currently in the early stages of Local Development Plan (LDP) preparation. This 15-year plan seeks to apply regional policies at a local level in a policy framework and determine land use proposals that will guide development decisions within each Council area until 2035. Without a detailed knowledge of the potential number and distribution of contaminated land sites in each area Councils will be disadvantaged through a lack of information which could assist with the allocation of suitable and sufficient land to meet need.

Armagh City, Banbridge and Craigavon Borough Council

In support of **your preferred option above**, please address questions 1-5 below and provide suitable evidence (where relevant):

The following interim response is provided on behalf of Armagh City, Banbridge and Craigavon Borough Council. Due to the consultation timeframe it is not possible to provide a ratified response. This will follow in due course.

Question 1: Does your preferred option have an impact on the PAC recommendation, if so, please explain how.

The preferred option (Option 4: Implementation of Part III with a Capital funding cap) will obviously introduce the regime and therefore will result in no regulatory deficit compared to the rest of the UK.

Question 2: How deliverable is your preferred option for the Council?

Subject to appropriate levels of funding as indicated in previous reports, we would be confident that the requirements of Part III could be met by the Council. Whilst some skill sets have been developed by Council officers further training and development would be critical to ensure delivery of the statutory requirements.

Question 3: How affordable is your preferred option for the Council?

The preferred option would be affordable as it would be expected that adequate funding would be provided to deliver the statutory requirements. With reference to capital schemes, it would be a matter for prioritization of sites and a competitive bidding process would seem appropriate for such a purpose.

Question 4: What potential impacts does your preferred option have on commencing Part III?

As the preferred option is the introduction of Part III this would generate the need for a commencement order.

Question 5: What are the risks for Council(s) of not pursuing with your preferred option as you have identified above?

There are no risks to the Council in that no statutory duties presently exist. There are unquantified risks to public health and the environment associated with land contamination sites that have not been risk assessed. There are also risks to purchasers and owners of land contamination sites from the absence of Part III.

Derry City and Strabane District Council

Question 1: Does your preferred option have an impact on the PAC recommendation, if so, please explain how.

Answer. The Council preferred option is option 4. Capital funding is essential in delivering the objectives of Part III of the Waste and Contaminated Land (NI) Order 1997. In the absence of sustained Capital funding package over a period of 10 years as suggested in the report there is potential for sites to remain unidentified and for those already identified a mechanism outside the planning regime to ensure that such sites are risk assessed and remediated. Option 4 appears to be the only one that would deliver the PAC recommendation.

Question 2: How deliverable is your preferred option for the Council?

Answer. The deliverability of option 4 is dependent on Capital funding. It is understood that the amount of capital funding is to have a cap and monies need to be secured to support Councils and NIEA in delivering

the Part III regime. It is understood that the funding would be prioritised on the risk to health on a cost benefit basis. It is noted that the value of the Capital funding was outside the scope of the report and as such depending on the monies made available it is difficult to assess the deliverability of option 4. The deliverability of option 4 would require the work to be undertaken by competent staff with the relevant expertise in contaminated land assessment and confirmation on the number of contaminated land sites across the Council area.

Question 3: How affordable is your preferred option for the Council?

Answer. Same as question 2. The affordability of option 4 is dependent on Capital funding. It is understood that the amount of Capital funding is to have a cap and monies need to be secured to support Councils and NIEA in delivering the Part III regime. It is understood that the funding would be prioritised on the risk to health on a cost benefit basis. It is noted that the value of the Capital funding was outside the scope of the report and as such depending on the monies made available it is difficult to assess the monetary contribution required by Council in the delivery of option 4. If the Part III regime is implemented there is potential that the enforcement authority may undertake remediation works. Capital funding must ensure that costs of such remediation are fully funded particularly where contaminated sites have an impact on human health.

Question 4: What potential impacts does your preferred option have on commencing Part III?

Answer Option 4 requires securing adequate Capital funding over a sustained period of time. In the absence of adequate Capital funding then it is difficult to see how the objectives of the Part III regime can be achieved. With a fully funded Part III regime in place contaminated land sites can be identified, risk assessed and remediated on the basis of polluter pays principle. The full implementation of a Part III regime would ensure that contaminated land sites are remediated and the risks to human health and the environment are minimised.

Question 5: What are the risks for Council(s) of not pursuing with your preferred option as you have identified above?

Answer. Council is acutely aware of the impacts of contaminated land associated with illegal waste sites and land with previously industrial uses has on human health and the wider environment. Such contaminated sites have very significant financial impacts in terms of site assessment and remediation. In the absence of a fully funded Part III regime in place there is the possibility that contaminated sites have not been identified and there could be continued impacts from them on human health and the environment. The Council is currently in the process of developing its Local Development Plan. In the absence of the identification of all contaminated land sites within its district there are risks associated with the designation of certain lands which may not have been identified as being contaminated.

Mid Ulster District Council

The Environmental Health Department of Mid Ulster District Council welcomes the opportunity for reviewing the assessment of the financial, environmental and health risks associated with not having a specific Contaminated Land regulatory regime in Northern Ireland.

The following comments are made on behalf of the Environmental Health Department (MUDC EHD)

Question 1: Does your preferred option have an impact on the PAC recommendation, if so, please explain how.

The MUDC EHD, whilst in support of the review of the current scheme. However, given the potential for major resource investment from Councils, in the introduction of options 2, 3 and 4 MUDC EHD would welcome extended consideration.

Question 2: How deliverable is your preferred option for the Council?

Option 1: Do nothing. MUDC EHD will continue to deal with potentially contaminated land sites through the current planning regime.

Question 3: How affordable is your preferred option for the Council?

No change anticipated.

Question 4: What potential impacts does your preferred option have on commencing Part III?

No change to the existing regulatory position. Sites which fall outside the exiting regulatory system may not be easily dealt with through current legislation.

Question 5: What are the risks for Council(s) of not pursuing with your preferred option as you have identified above?

No change

Belfast City Council

Thanks for your reminder in respect of the Part III report. I would advise that we are presently in the process of considering the detail of the report and its implications. Just to advise however that an issue such as the commencement of Part III, where there are clear staffing and wider council resource issues, is something that would have to be considered in detail by Committee and the council before a formal council response could be

provided. That is not going to be possible within the response deadline of 1st June 2018.

Moreover, one of the challenges in understanding the likely implications of the commencement of Part III for the council is that with the exception of your former / historical land use database, local knowledge and referral to the planning database, the number and type of contaminated land sites across Belfast (and indeed Northern Ireland) are largely unknown in the absence of a comprehensive inspection strategy for such sites. It is acknowledged, however, that your former land use database contains 14,000 records and that the 2006 Casella Stanger report estimated there to be around 11,606 potentially contaminated sites. This uncertainty has been identified as a risk within the project report. Presumably therefore, the number and location of potential high-risk sites are also largely unknown, as are the anticipated costs of site investigation and site remediation for such sites. It is noted though that the UK Environment Agency previously reported the average cost of an approved site investigation bid to be £14,500 and the average cost of site remediation to be £105,800. It is considered therefore that some form of Regulatory Impact Assessment would have to be undertaken by NIEA in order to help inform the Public Accounts Committee and to enable councils to come to an informed decision concerning the possible implementation of Part III.

You have proposed four options in respect of Part III. It is considered that a form of cost / benefit analysis would have to be undertaken for each option leading to a preferred government delivery option that could subsequently be considered by councils. A full economic appraisal of each option is something that Councils would expect and this type of due diligence exercise would be considered essential to inform any possible future regulatory regime and any recommendation Councils might want to make in respect of it.

It is noted however that the *'option iv'* recommendation for commencement of Part III of the Waste and Contaminated Land (Northern Ireland) Order 1997, with the imposition of a Capital funding cap, is consistent with Recommendation 5 of the Northern Ireland Audit Office report, *'We recommend that the current gap in the legislation is closed and effective inspection and regulatory powers enabled. This should ensure that the appropriate person(s) are held responsible for remediation'*, albeit the NIAO comment related to *'The Transfer of Former Military and Security Sites to the Northern Ireland Executive'*.

Economist Department of Infrastructure

Ideally Option 4 would be implemented but affordability and a lack of information means my preferred option would be Option 2, with a view to implementing Part III in the future. This is essentially a phased approach to allow more information to be gathered by enabling the councils to develop an inspection strategy. This will then feed into work to estimate the cost of remediation and identify those sites with the highest level of risk to human life

and the environment. A remediation strategy can then be developed by central and local Government before the introduction of Part III.

Q1: I think this option helps the Department adhere to the PAC recommendation as it should allow a more informed assessment of the cost of remediation. It will also provide more info on the scale of the environmental and health risks of not implementing Part III.

Q2: Depends on funding being made available to ease the burden on the council and rate payers. Other than that it is difficult to answer that question as councils would be better placed to do so.

Q3: As above, I think it would require some central Govt funding for this option work.

Q4: I think it will allow a more informed decision to be made as regards whether or not to commence Part III. It certainly doesn't restrict the implementation of Part III in future.

Q5: As identified in the report, there are health and environmental risks of doing nothing. In terms of the other options, Option 3 places the financial burden on the councils whereas Option 4 helps ease this burden but will have PE implications.

The ideal outcome would be the Polluter Pays Principle being upheld although none of the options guarantee this and there is every chance the Government will foot most of the bill for remediation. However, when compared to the risk to the environment and human health, and it may be possible to monetise some of those risks with more information, the financial cost of remediation would arguably be lower. Nevertheless, I believe a phased approach by implementing Option 2 would be a good way to bridge the knowledge gap and leave open the possibility of introducing Part III in future.

Department of Health

From a public health perspective, the key objectives in addressing contaminated land are to be able to identify and eliminate significant risks to human health and the environment, and to seek to ensure that land is rendered suitable for its current or intended use. The absence of a local regulatory regime is likely to have contributed to the current lack of knowledge as to the full extent of potentially contaminated sites in NI. On that basis, I agree that it is not possible to quantify the potential health risks at this stage.

I note that the NIAO report recommended that the current gap in legislation be closed so that effective inspection and regulatory powers are in place to ensure that the appropriate person(s) are held responsible for remediation, i.e. the polluter pays; and that this recommendation was subsequently endorsed by the Public Accounts Committee. The DAERA assessment suggests that in the continued absence of a dedicated statutory regime, there

are very limited legal powers available to protect health and prevent environmental damage emanating from land affected by contamination, particularly where this is not under consideration as part of the planning regime. It is also noted that there is a lack of parity with the rest of the UK and that there is currently no regulatory mechanism in NI to implement the EU Mercury Regulations.

Issues relating to funding and any division of future responsibilities between DAERA/NIEA and district councils is not a matter for this Department, however, given the need for an enforceable mechanism for dealing with contaminated sites that may pose significant public health risks in the context of their current or intended use, I would support options 3 or 4 that each involve the commencement of Part III of the Waste and Contaminated Land (Northern Ireland) Order 1997. Evidence from other parts of the UK would also seem to suggest that a regulatory regime could further act as an incentive in encouraging voluntary remediation and remediation through the planning system.

Public Health Agency

The Public Health Agency as an arm's length body would not normally submit a response to consultations.

I did attend the workshop on this issue and contributed to the discussions. In general, given experience with contaminated land issues in Northern Ireland, I felt that there would be a need to address the legislative gaps. The principal problems were the identification of contaminated land sites in Northern Ireland leading to the risk of required action taking place at a relatively later stage in the development process than elsewhere. A particular potential problem appeared to be the extension of the contamination to adjacent sites and the apparent lack of enforcement of remediation measures if the developer decided to cease the development.

Other than acknowledging that the "do nothing " approach is not a viable option, I would not express a preference for any of the other options on Public Health grounds.