

UKOPA Report

2022 Infringement database report

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EXECUTIVE SUMMARY

The Infringement Working Group (IWG) is one of six working groups of UKOPA and it is responsible for collecting and collating incidents (accidental or malicious) where cross country pipelines have been damaged and near misses where there was a potential for damage (Infringements) to have occurred. The IWG produces an annual report that identifies the number of Infringements recorded by UKOPA members in the UKOPA infringement database and provides some statistical analysis regarding, the type of infringement, where it occurred and how it happened.

In 2022 there were 801 infringements recorded, down from 884 in 2021, none of which were categorised as malicious damage associated with theft of product from a pipeline.

There were two A1 category (actual damage) infringements in 2022, 0.2% of infringements recorded, which is the same as in 2021. An overview of those infringements is provided below:

- A landowner was carrying out ditch clearance over a pipeline without notifying the operator and thus not adhering to the required process. The pipeline was found exposed at the bottom of the ditch with coating damage and signs of pitting corrosion (potentially from previous unreported coating damage). An inspection was carried out and found peak depth metal loss of 6.8%. The pipe was cleaned, recoated and sandbags were laid in the ditch to cover the exposed pipe.
- A landowner had started to construct a barn. One of the foundations was found to be located on the pipe causing some minor coating damage that had to be repaired.

The number of B infringements recorded, (those that have serious potential for damage) is 165 (20.6% of the total reported) compared with 15.6% in 2021 and 18% in 2020. Category C infringements (those with limited potential for damage) accounted for 79.2% (634) of reports.

The greatest number of infringements recorded continues to occur on “farmland” and this will remain the major focus area for the IWG. Flooding and water course infringements have started to increase, as does members awareness of flooding in the whole of the UK, as such a cross UKOPA project has been established to prepare guidance for members.

Infringements by contractors has increased during 2022 and as such, IWG are considering ways to better engage and raise awareness with the contracting community.

IWG action plan for 2022/2023

The specific actions for 2022/23 for the IWG from this report are:

- Action 1: Further investigation should take place into the 15 infringements where pipeline operators were aware of work taking place before they occurred and learnings shared across UKOPA.
- Action 2: IWG will investigate the increase in ditching infringements, and if required put in place an action plan for reducing the number.
- Action 3: IWG to work with Linewatch to prepare pipeline operator guidance for collecting infringement data and publish to members in 2024.
- Action 4: IWG are to update the Agricultural Course and find ways of sharing the course more widely.

- Action 5: Pipeline Operators are to review 'unknown' location types before data is submitted in 2023 to determine what type of location the infringement occurred and update data accordingly.
- Action 6: IWG to consider ways of engaging with the contracting community (as well as reissuing the Contractor Guidance document) with the aim of reducing the percentage of contractor infringements.

The IWG will also:

- Re-establish links with NFU and SNFU and explore ways of raising awareness of high pressure pipelines – via the support of the wider UKOPA Stakeholder Strategy.

1. INTRODUCTION

Since 2002 UKOPA members have shared information following investigation of 'near miss' and damage incidents ('infringements') on their buried pipeline assets to ensure that:

- Any information, analysis and learning from near miss incidents benefits all member companies.
- The Association exploits its collective experience to establish a national data set and trends.
- The pipelines industry is co-ordinated and has national coherence.

The UKOPA infringement database provides a framework for recording industrywide statistics in order that the Association can develop effective improvement plans as well as ensuring its UK wide experience is fully exploited to reduce the potential for damage to high hazard pipeline assets in order to protect people and property and to influence regulatory processes.

The Infringement Working Group (IWG) members share experiences and manage the infringement database to allow this report to be produced. More information on the IWG members and tasks can be found in Appendix B and C.

2. UPDATE ON ACTIONS FROM THE 2021 INFRINGEMENT REPORT

This section provides an update on the specific actions from the 2021 infringement report to be carried out during 2022/23:

- Action 1: The IWG should agree the definition of 'aware of work taking place' and ensure that all operators recording systems collect the same data.
 - All operators have agreed that 'aware' means that they were informed / knew about work that was taking place prior to the infringement occurring. Recording systems are aligned.
- Action 2: IWG will investigate the increase in fencing infringements, and if required put in place an action plan for reducing the number.
 - IWG have engaged with the Association of Fencing Industry regarding knowledge sharing and awareness raising.
 - GPG043 Installation of Fencing Near HP Pipelines has been developed and publish (referencing the much publicised medium pressure fencing incident) in July 2023 <https://www.ukopa.co.uk/wp-content/uploads/2023/08/UKOPA-Fencing-Guide-July-2023.pdf>
 - LSBUD's learning video from the medium pressure gas pipeline fencing incident has a link from the UKOPA Website <https://www.ukopa.co.uk/explosion-awareness-video/>
- Action 3: Awareness raising initiatives by IWG and UKOPA member companies will continue with the aim of reducing the number of infringements in Farmland, Private Land and in Road / Waterways.
 - IWG members continue to share good practice with all involved in the industry. Including producing a course hosted on the Landex, Agricultural College website, that students are encouraged to complete. To date over 3000 people have completed the course.
- Action 4: IWG will find ways of engaging with the forestry industry body to raise awareness with the aim of reducing this figure.
 - IWG have engaged with the Confor (Confederation of Forest Industries) and had an article about working safely near high pressure pipelines in their April 2023 magazine <https://www.confor.org.uk/media/3513192/ftn-apr-2023-web.pdf>
 - IWG have also produced and published GPG041 guidance for tree planting <https://www.ukopa.co.uk/wp-content/uploads/2022/09/UKOPA-GPG41-Tree-Planting-Guidelines-Jul-22-approved.pdf>
- Action 5: IWG to consider if there is a need to reissue the 'contractor' working safely guidance document with the aim of helping to reduce the number of contractor / utility infringements.
 - IWG has considered attending contractor shows, to engage with the contracting community, but this will now be aligned with the wider UKOPA strategy for stakeholder engagement, so the action is still ongoing.

The IWG will also:

- Re-establish links with NFU and SNFU and explore ways of raising awareness of high pressure pipelines.
 - This action has still not been completed. Although members have contacts at a local level a more strategic approach is required and will be focused on during 2024.

3. MAIN FINDINGS

Appendix D provides the definition of infringements as agreed by UKOPA members. In summary infringements are categorised based on a Risk Index (A – pipeline damage or leak, B – serious potential for damage, or C – limited potential for damage) and a Location Index (1 – within operators' wayleave or easement or 2 – within operators' notification zone).

3.1 Infringements by Category

Figure 3-1 below presents the overall combined UKOPA data by infringement category. Analysis of the 2022 infringements by category shows the distribution of infringements is generally consistent with a proportional relationship between learning events, near-misses and more serious incidents (the so-called 'Heinrich's triangle').

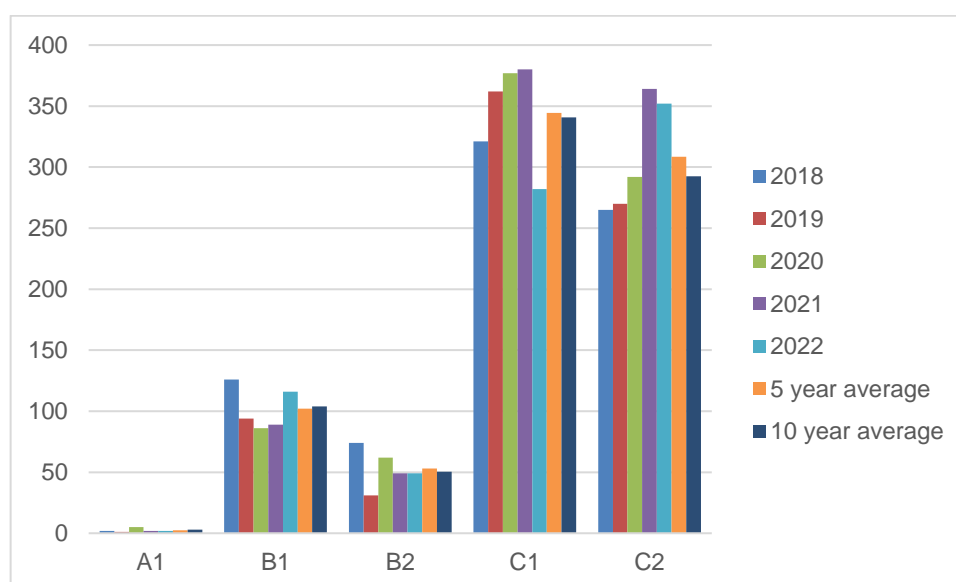


Figure 3-1 Infringements by category

	2018	2019	2020	2021	2022	5 year rolling average	10 year rolling average
A1	2	1	5	2	2	2.4	3.0
B1	126	94	86	89	116	102.2	104.0
B2	74	31	62	49	49	53	50.5
C1	321	362	377	380	282	344.4	340.7
C2	265	270	292	364	352	308.6	292.4
Total	788	758	822	884	801	810.6	790.6

Table 3-1 Rolling average by category



Figure 3-2 Annual Total Number of Infringements

In 2022 there were a total of 801 infringements recorded in the database this is 83 less than in 2021, equivalent to a 9.4% decrease.

There were two A1 category (actual damage) infringement in 2022, out of 801 recorded events, (0.2%) which is the same as the number in 2021.

An overview of each of the 2022 A1 infringements is given below:

- A landowner was carrying out ditch clearance over a pipeline without notifying the operator and thus not adhering to the required process. The pipeline was found exposed at the bottom of the ditch with coating damage and signs of pitting corrosion (potentially from previous unreported coating damage). An inspection was carried out and found peak depth metal loss of 6.8%. The pipe was cleaned, recoated and sandbags were laid in the ditch to cover the exposed pipe.
- A landowner had started to construct a barn. One of the foundations was found to be located on the pipe causing some minor coating damage that had to be repaired.

There was an increase of 30.3% in the number of B1 infringements recorded (116 in 2022 compared with 89 in 2021 and 86 in 2020), with the number of B2 infringements remaining the same at 49. Overall, the number of category 'B' Infringements (B1+ B2), i.e. those infringements with a serious potential to cause harm increased to 20.6% of the total number of infringements recorded. In 2021, the figure was 15.6%, whilst in 2020 it was 18%. Learnings from these infringements should still be shared with the aim of reducing the overall percentage figure again.

Category C infringements, those with limited potential to cause damage, accounted for 634 of the 801 infringements or 79.2%. This is a decrease from the 84.2% in 2021 and correlates to the increase in B infringements in 2022.

Not all recorded data is indicating whether the pipeline operator was 'aware' that the work was taking place before an infringement occurred. Of the 497 records recording this information, 15 indicate that the pipeline operator was aware that work was going to take place before the infringement occurred. It is recommended that further work feedback is sought from those operators to establish where systems broke down to enable infringements to take despite the person carrying out the work being aware of the pipeline operator requirements for working safely. These learning should be shared across UKOPA.

Action 1: Further investigation should take place into the 15 infringements where pipeline operators were aware of work taking place before they occurred and learnings shared across UKOPA

3.2 Infringements by Activity Type

Understanding the types of activity contributing to infringement statistics provides important information for:

- Targeting awareness training and communication.
- Relating to infringement location and vulnerable areas.

Figure 3-3 shows the distribution of infringements across reported activity types.

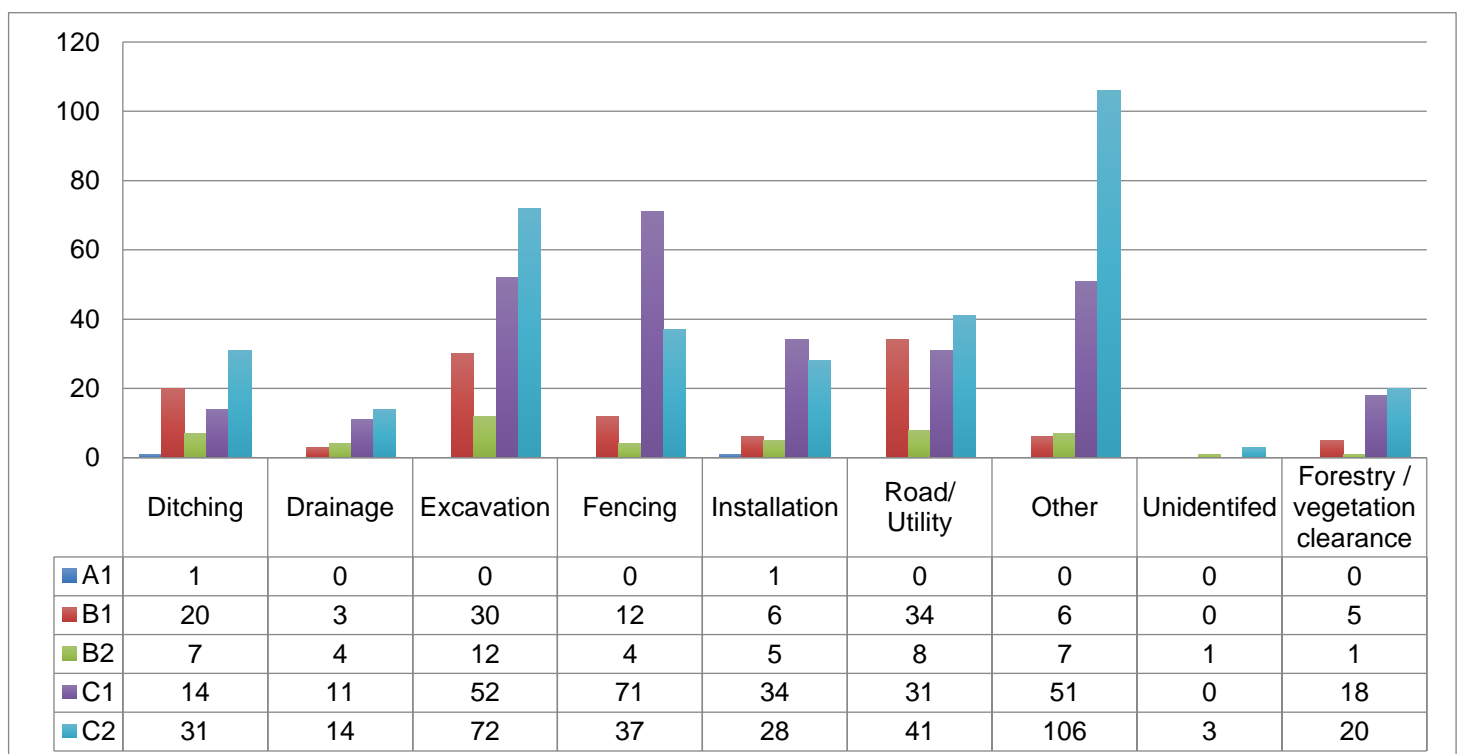


Figure 3-3 Infringements by activity type 2022

During 2022 there were only 4 infringements recorded as unidentified, one of which was in the B2 category and the other 3 were in the C2s. This is one more than in 2021. The B2 unidentified infringement requires further investigation by the pipeline operator.

The A infringements have been categories as 1 x Ditching, 1 x Installation (building works) – which was due to the building of a barn extension.

This year, Road/Utility works (including pipelaying and surveying, roadworks, utility works, railway maintenance) had to greatest number of recorded B1 infringements with 34 (up from 16 in 2021) followed by excavation works (including excavations for services, repairs, earthmoving, groundworks etc) with 30 (up from 21 in 2021) and Ditching with 20 infringements – which is a 567% increase from the 3 B1 ditching infringements recorded in 2021.

Action 2: IWG will investigate the increase in ditching infringements, and if required put in place an action plan for reducing the number

Following an incident where a fencing contractor was injured when the fence post he was installing punctured a medium pressure gas main, there was a lot of publicity regarding how to work safely when installing fencing. UKOPA also published GPG043 Installation of Fencing Near High Pressure Pipelines in July 2023. Despite both of these initiatives, the overall percentage of fencing infringement in 2022 (124 of 801 infringements) and 2021 (137 of 884 infringements) has remained at approximately 15.5% of all infringements recorded.

Those activities grouped together as “other” are made up of 10 activity types – Crossing by Heaving Vehicles/machinery (5), Flooding (15), Landscaping (4), Machinery Parked (45), Structures near pipelines/Caravan parks (5), Quarrying/Mineral extraction (2), Storage (18), Waste Burning/Fire (10), Waste Dumping (9) and Waterway repairs/Riverbank Erosion (5) - which individually are low in the number of events but total 118 infringements. There is however, also a specific activity type in the infringement database entitled ‘other/festivals’ which accounts for 52 infringements (down from 87 in 2021). This is how members record infringements that do not specifically fit into one of the categories in the data base.

The combined total of all the ‘other’ infringements is 170 compared with 231 in 2021. This is 21.2% of all infringements in 2022 down from 26.1 in 2021.

Flooding / waterway infringements have increased from 14 in 2021 to 20 in 2022, with members being more aware of flooding events increasing. This being the case, UKOPA has a cross working group project to develop guidance for membership regarding this issue. This should be issued during 2024.

In preparing the 2022 report, it has been identified that there can be a lack of consistency among pipeline operators in the way data is being recorded and collated. As such, IWG is to engage with Linewatch (which collects the data for a number of pipeline operators) to prepare additional guidance for pipeline operators and this is to be shared across all operators in 2024.

Action 3: IWG to work with Linewatch to prepare pipeline operator guidance for collecting infringement data and publish to members in 2024

3.3 Infringements by Location

Locations where infringements take place may provide key information for:

- The main areas of pipeline vulnerability.
- Areas where marking is critical.
- Areas where excavator vigilance is particularly important.

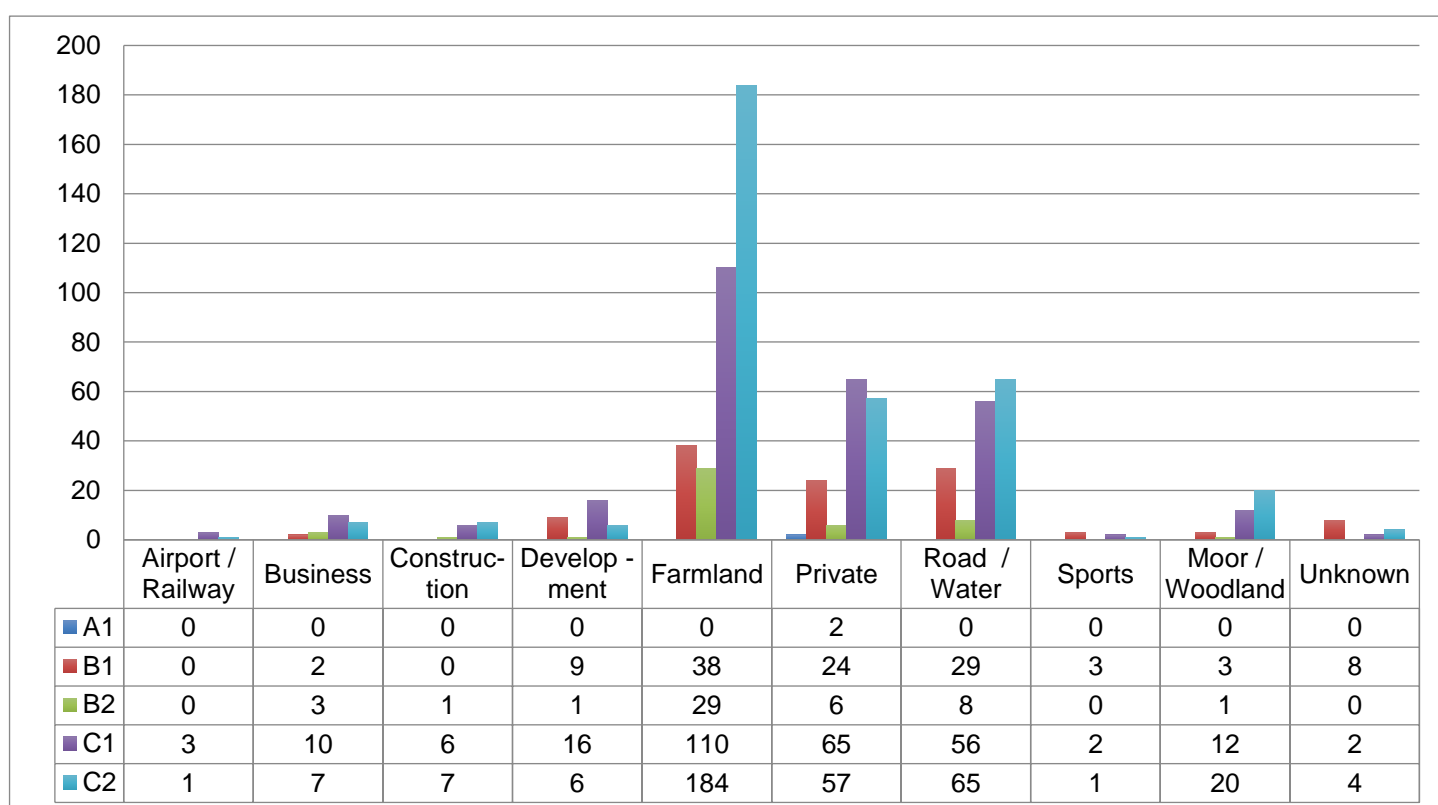


Figure 3-4 Infringements by location type 2022

Incidents in 'Farmland' continues to provide the largest number of records in the database. In 2022 these accounted for 361 infringements or 45.1% of all records. This is a decrease of almost 8% (53.3% in 2021) from the previous year and the lowest figures in the last 3 years. The majority of the incidents that occurred in farmland in 2022 (81.4%) have been recorded as category C infringements, but that does not mean that the infringer or the pipeline operator should be complacent.

It should be noted that there is possibly an overlap between those records reported as being in Farmland and those recorded in Private Land (another 154 of the 801 records), but the infringement reports themselves do not provide enough detail to draw any further conclusions.

The UKOPA agricultural college course hosted by Landex Agricultural College platform went live in September 2022. During the first year, over 3000 people have completed the course. During 2023-4 IWG are going to review and update the course as well as investigating ways

of sharing the course more widely, particularly with agricultural colleges that are not members of Landex.

Action 4: IWG are to update the Agricultural Course and find ways of sharing the course more widely

Work in Farmland (361), Private Land (154) and Roads / Waterways (158) continues to provide the greatest number of incident reports recorded, accounting for 84% of all recorded infringements and back a similar figure from between 2015-19 after a 3 year increase.

UKOPA members still need to consider how infringements are recorded in their own systems since it is difficult to understand how an infringement could be recorded where the location type is unknown. In 2022 this increase to 14 (from 3 in 2021) with 8 of these being B1 infringements that will have been investigated further by pipeline operators.

Action 5: Pipeline Operators are to review ‘unknown’ location types before data is submitted in 2023 to determine what type of location the infringement occurred and update data accordingly

3.4 Infringements by Third Party Type

UKOPA is interested in which types of third parties are infringing:

- Are there any patterns?
- What does it tell us about potential weaknesses in the sub-contracting ‘chain’?
- Who is responsible for checks and searches in each case?
- What does it tell us about the ‘pipeline awareness’ of those actually doing the digging?

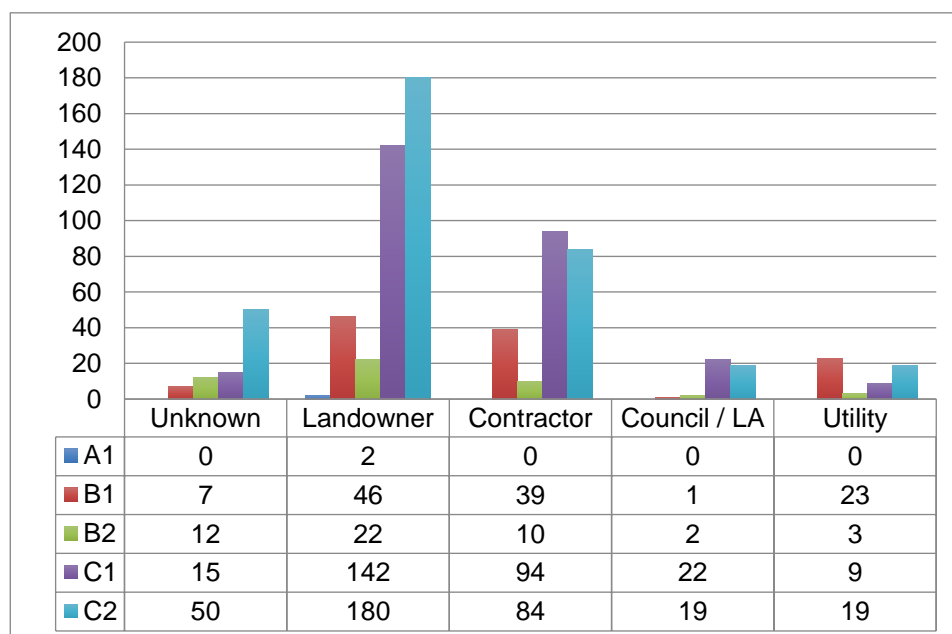


Figure 3-5 Infringements by infringer type 2022

Figure 3-5 describes the current position of infringements by infringer type. Landowners continue to be the largest single infringing group with 48.9% of all infringements being in this category. However, this has dropped from 56.1% of all infringements in 2021.

Contractor infringer type accounts for 28.3% which is an increase of 6.5% from the 21.8% recorded in 2021, and the highest figure it has been in the past 3 years.

It is acknowledged that the Contractor figure will include both rural (for example agricultural activities) and urban activities (for example on development land). It should be noted, however, that the distinction between 'Contractor', 'Utility' and 'Council/Local Authority' work can be seen as a very fine one and is masked by the significant level of contractor-delivered utility and council services in the UK. Utility infringements accounted for 6.7% and Council/Local Authority infringement accounted for 5.5% of all infringements.

Action 6: IWG to consider ways of engaging with the contracting community (as well as reissuing the Contractor Guidance document) with the aim of reducing the percentage of contractor infringements

The downward trend in 'unknown' infringer type has continued in 2022 with 10.5% of recorded infringements, down from 12.56% in 2021 and 16.5% for the previous two years. This figure will include infringements where parties have left the site between the sighting being reported and a site visit taking place, hence being recorded as unknown. However, the reduction in number builds on the work that members have been doing to investigate 'unknown' reports and where possible provide more information.

3.5 Third Party Infringement Performance

UKOPA are interested in identifying and working with anyone who has, or has the potential, to infringe. Those third parties who, via the database, are identified as having made multiple infringements are a particular concern, but also give a focus to where member awareness raising could be targeted.

A summary of the main activity groups is presented at the top of the Table 3-3 to give a flavour of the overall numbers of infringers and as an indicator of how much improvement there has been in reducing potential risk or consequence. The weighted score for the unknown infringer type has decreased again 2022, this is due to a reduction in A and B infringements which have a greater bearing on the weighted average. The score is down to 139 compared with 185 in 2021 and 298 in 2020.

The contractor and utility infringer weighted score have by contrast increased to 487 and 158 from 422 and 88 respectively.

In an effort to rank repeat infringers, more "weight" is given to the raw count of infringements based on the seriousness of the infringement by applying a multiplier to each risk category, included in Table 3-3 as an adjacent column. The multiplier "risk" values are based upon the model developed in consultation between the IWG, Linewatch and UKOPA, as below in Table 3-2.

A1	10
B1	5
B2	2
C1	2
C2	1

Table 3-2 Risk Multiplier Matrix

UKOPA remains very aware that the infringement performance of particular companies or agencies is a very sensitive issue. Data is provided by individual operators for use in the database on the understanding that individual records are, in the first instance, confidential. Hence names of the work promoters (identified as company A, company B, etc.) in Table 3-3 are not published and remain confidential to UKOPA secretariat.

However, as an invited member of UKOPA, the Health & Safety Executive (HSE) has access to the list of 'repeat infringers'. The database output in the form shown in Table 3-3 has been previously used by HSE to inform their operational strategy. There is no doubt that to date, this is the area where the database has had its greatest impact. For companies that operate on a region-by-region basis, there is some evidence to suggest that through UKOPA's activities, they have become aware of their overall infringement behaviour. HSE's feedback is that this data has received serious attention at senior levels within each company when brought to their attention.

Identifier/Category	Number of infringements	A1	Weight X10	B1	Weight X5	B2	Weight X2	C1	Weight X2	C2	Total weighted score
Unknown		0		7	35	12	24	15	30	50	139
Land/Farm		2	20	46	230	22	44	142	284	180	758
Contractor total		0		39	195	10	20	94	188	84	487
Council/LA/ Government		0		1	5	2	4	22	44	19	72
Utility/Infrastructure		0		23	115	3	6	9	18	19	158
Local Authority A	8	0	-	0	-	0	-	2	4	6	10
Company A	4	0	-	1	5	1	2	1	2	12	9
Utility A	2	0	-	1	5	0	-	0	-	0	7
Company B	6	0	-	0	-	0	-	0	-	6	6
Utility B	6	0	-	0	-	0	-	0	-	6	6
Utility C	4	0	-	0	-	0	-	2	4	2	6
Local Authority B	5	0	-	0	-	0	-	1	2	4	6
Company C	2	0	-	1	5	0	-	0	-	1	6
Company D	4	0	-	0	-	0	-	1	2	3	5

Table 3-3 Significant Infringers 2022

A further point to note regarding this data is that it currently makes no attempt to analyse numbers of infringements per third party with their national excavation activity rate. Such a measure, if it were to be developed in future, may provide an alternative expression of each third party's effectiveness in managing activities adjacent to hazardous pipelines.

As in the previous six years, the records for 2022 show no infringer with more than 10 infringements recorded against them. Many of the contractor companies in table 3.3 were working on behalf by a variety of Utilities/Infrastructure companies and Local Authorities and generally indicate those operating at a national level and across a number of work sectors. This year there were still no significant issues noted with housing developers.

Given the low incident of overall number (and weighted averages) of infringements by any one organisation, then no individual company, contractor or local authority needs to be a focus of the IWG for 2023-4. However, engagement with the wider contracting community should be considered.

4. CONCLUSIONS AND RECOMMENDATIONS

In 2022 there was a decrease in the number of recorded infringements of 9.4% from 884 to 801.

There were 2 infringements that caused actual damage, category A, which accounts for 0.2% of all infringements reported. Which is the same as in 2021.

Those infringements that have serious potential to cause damage, i.e. B category (B1 and B2) total 165 of the 801 report (20.6%) compared with 138 of the 884 reports (15.6%) in 2021, which is a 5% increase. Category C infringements, those with limited potential to cause damage, accounted for 634 of the 801 reports (79.2%) compared with 744 of the 884 reports (84.2%) 2021 – a comparable 5% decrease.

In 2022, the number of B1 and C1 findings (within the pipeline easement) was 398 or 49.7% of the total infringements. This is a reduction of 3.4% from 2021 (469 of 884 reports) 53.1% figure and continues the downward trend from 2020 (56.3%). This therefore means that the number of B2 and C2 (within the pipeline operator's zone of interest) accounted for 50.1% of the infringements compared with 46.7% in 2021 and 43.1% in 2020. Operator companies do, however, investigate all types of infringements and are encouraged to share the findings across the UKOPA membership.

IWG members have prepared 'Safety Alerts' from infringement investigations and share them with UKOPA members, these will be changed to 'Learning Briefs' during 2023. This continues to be an agenda item at IWG meetings with the aim of improving the dissemination of learning.

UKOPA members, and in particular the IWG, will continue to raise awareness of working safely within pipeline easements, particularly with contractors, utilities, landowners and tenants. Work will continue to develop and further share the UKOPA agricultural pipeline awareness course as well as identifying specific contractor conferences / stakeholders where engagement can take place.

Members of IWG should continue to ensure that data is collected and submitted in a timely manner and engage with their companies to encourage completion of all fields within the infringement database. Consistency of reporting terminology and structured approaches to reporting needs to continue to be developed a meeting has been arranged with Linewatch for early 2024 to develop additional guidance for all operators.

The IWG will continue to engage with the HSE to obtain their support and discuss ways of raising awareness of pipeline infringements across all sectors.

4.1 Specific actions regarding infringements for IWG

The specific actions for 2023/24 for the IWG from this report are:

- Action 1: Further investigation should take place into the 15 infringements where pipeline operators were aware of work taking place before they occurred and learnings shared across UKOPA.
- Action 2: IWG will investigate the increase in ditching infringements, and if required put in place an action plan for reducing the number.

- Action 3: IWG to work with Linesearch to prepare pipeline operator guidance for collecting infringement data and publish to members in 2024.
- Action 4: IWG are to update the Agricultural Course and find ways of sharing the course more widely.
- Action 5: Pipeline Operators are to review 'unknown' location types before data is submitted in 2023 to determine what type of location the infringement occurred and update data accordingly.
- Action 6: IWG to consider ways of engaging with the contracting community (as well as reissuing the Contractor Guidance document) with the aim of reducing the percentage of contractor infringements.

The IWG will also:

- Re-establish links with NFU and SNFU and explore ways of raising awareness of high pressure pipelines – via the support of the wider UKOPA Stakeholder Strategy.

5. ACKNOWLEDGEMENTS

The development and current success of the infringement database would not have been possible without the support of UKOPA members. Their trust in providing the infringement records and the resources necessary to make the input to UKOPA should not be underestimated.

It is also important to recognise the role played by HSE's Energy Division Unit 3 – Onshore and Offshore Gas & Pipelines, Offshore Oil and Gas Inspection Management Team. They have shown faith in UKOPA's excavation safety activities, providing a valuable member to the IWG, who in turn has worked very effectively with UKOPA colleagues in pursuit of improved awareness of excavation safety in the vicinity of hazardous pipelines.

APPENDIX A: CURRENT STATUS AND MANAGEMENT OF DATABASE

At the end of 2022, the following Operating companies provided a submission (including nil reports) for the UKOPA infringement database:

- BPA
- CATS
- Eon*
- Essar
- Exolum
- iGas**
- Ineos FPS
- Manchester Jetline
- National Grid
- Oikos Storage
- Perenco
- SABIC UK Petrochemicals
- Shell
- Uniper
- Cadent
- Conoco Philips**
- EP Langage**
- Esso
- Humbly Grove Energy*
- Ineos
- Mainline Pipelines Ltd
- Marchwood Power**
- Northern Gas Networks
- Prax
- Petrolneos
- SGN
- Wales & West Utilities

A number of these organisations provided their data via a single route, by means of their participation in Linewatch.

Those companies indicated with * provided a response indicating they had zero infringements during the year, whilst those indicated with ** did not report in 2022.

APPENDIX B: IWG OBJECTIVES AND TARGETS

The IWG strategy sets out a number of objectives and these are reviewed regularly to ensure that they are still relevant.

Currently, these are to:

- Engage with companies identified as the “most frequent infringers” from annual Infringement review to improve pipeline safety awareness.
- Continue to collect 3rd party pipeline infringement data and publish an annual report.
- Raise the profile of the UKOPA and the management of pipeline safety in the general contractor community.
- Raise awareness of working safely within cross-country pipeline easements in the general contractor community.
- Improve awareness of working safely within cross-country pipeline easements with landowners and tenants.
- Work with all operators, particularly gas operators, to ensure standardisation of data submitted, utilising the selection criteria already developed.
- Identify ways of engaging with the landowner / farming community to reduce the number of infringements that occur on farming land.
- Good progress continues to be made against many of the objectives and the IWG will continue to develop on the work done to date.

IWG achievements from 2022:

- Agricultural Course completed and uploaded to Ladex website in readiness for September 2022 with over 3000 completed courses during 2022/23 academic year.
- Published GPG036 Managing developments and works in the proximity of high pressure pipelines.
- Published GPG-41 Tree planting near high pressure pipelines.

And in 2023/24, the IWG (and member companies) will:

- Close out the actions from the 2022 infringement report (see section 4.1).
- Develop and publish fencing guidance.
- Engage with NFU and SNFU at a strategic level.

B.1 Data Collection

IWG is committed to the continued improvements of data and working to reduce the number of infringements that take place on an annual basis. To this aim, the following areas continue to the focus for the group.

- Work to further improve the quality of the reported data.

Members will continue to work to improve the quality of the data submissions, with all members provided with a template of the information required for the UKOPA report.

As with any mass collation of data, data quality is an issue and there remains a wide variety in how third parties or, in the case of contractors, “who they are working for” are named, this is also true of the “unknown” records. The IWG continues to engage with members to ensure that fields are completed as fully as possible.

- Review the database content to ensure that only relevant data is collected.

The IWG will continue to consult with UKOPA members to ensure that the data fields within the database appropriately represent the findings from operator’s investigations of infringements. In doing so the challenge for the IWG is to ensure that there is due regard for the evolutionary nature of development of data collection by the large volume of gas contributors. These operators use large scale integrated databases which exist for purposes much wider than support of the infringement database, and so addition of new fields will be subjected to critical value and timing assessments.

- Ensure data is collected in a timely and efficient manner.

Pipeline operators are requested to provide data annually, although encourage to report throughout the year. Gas operator data is subject to a review in the first quarter of each year prior to submission for inclusion in the IWG infringement report. All data is then critically reviewed for apparent errors and to ensure that appropriate data field entries are consistent with agreed standards. The Linewatch members and other authorised operators utilise the Linewatch Infringement database (LIDB) for recording all events; records are submitted via this system on a daily basis. IWG is to liaise with Linewatch to try to ensure that those UKOPA members who are also members of Linewatch submit data. Even if no infringements have occurred, members should still return a ‘nil report’ submission.

- Greater use of statistical techniques to reveal trends.

As the infringement database continues to increase, so its statistical significance as a source of data for UK excavation safety will follow. The size of the dataset will enable the use of statistical analysis techniques to reveal trends and outputs. Critical to this will be to improve the quality of the report dataset to encourage greater consistency in terminology and reporting against all the UKOPA data fields.

APPENDIX C: IWG MEMBERSHIP 2022

Although it has proved difficult to formally confirm the total number of oil, petrochemical and gas pipeline operators in the UK, UKOPA membership (and hence database representation) is considered to exceed 95% of operators by underground pipeline length. As a result, it provides an authoritative view on the third-party threat to hazardous pipelines in the UK.

The database is managed on behalf of UKOPA incorporating input from the Linewatch Infringement reporting database where authorised member contributions are provided in a uniform format.

Activities relating to the operation of the database and development of excavation safety strategy are managed by UKOPA's Infringement Working Group (IWG), whose membership during 2022 was constituted as follows:

- IWG Secretary
- BPA (IWG Chair)
- GNI
- Cadent
- CATS
- Essar
- Esso
- Exolum
- HSE (invited member)
- Ineos
- Ineos FPS
- National Grid Gas Transmission
- NGN
- Mutual Energy
- Perenco
- Petrolneos
- SABIC
- SGN
- Shell
- Valero
- Wales & West Utilities

The 2022 report includes data imported from several sources of aerial surveillance databases. The gas network data has been subject to an extensive filtering exercise to retain only those events which are relevant for the infringement report. Details of the filtering process are published in the guidance to UKOPA members on the population of the infringement data by IWG. Linewatch member data is imported directly from the Linewatch database.

APPENDIX D: GUIDANCE ON INFRINGEMENT CATEGORIES

The UKOPA database categorises infringements on the basis of risk and location indices as follows:

Risk index can be one of three levels:

Risk Index	Infringement Type	Infringement Description
A	Pipeline Damage or Leak	Includes damage to wrap or protective sleeve
B	Serious Potential for Damage	Methods or equipment used could have resulted in significant damage had excavation taken place at pipeline
C	Limited Potential for Damage	Methods or equipment would not have resulted in serious damage

Table D-1 Risk index

Location index can be in two forms:

Location Index	Location Description
1	Within the pipeline wayleave or easement. Typically, this is the zone within which the pipeline operator has legal rights, including a requirement by the landowner to notify planned work (although may be different for non-Pipelines Act lines laid by Statutory Undertakers).
2	Within the pipeline operators zone of interest, but outside the pipeline wayleave or easement. It is the area within which the operator would have reasonably expected a competent third party to have given notification in the prevailing circumstances.

Table D-2 Location index

So that infringement categories can be summarised as follows:

	Actual Damage	Serious Potential for Damage	Limited Potential for Damage
Within Wayleave or Easement	A1	B1	C1
Within Operators Notification Zone	-	B2	C2

Table D-3 Infringement categories