Havering Council – Delegated Officer Report

15 October 2025

Contaminated Land at Arnold's Field, Launders Lane, Rainham

Purpose of Report

To provide a recommendation as to whether or not land at Arnolds Field, Launders Lane, Rainham ("the Site") should be identified by the Council as "contaminated land" within the meaning of Part 2A of the Environmental Protection Act 1990 in the light of the further investigations carried out by the Council and the judgment handed down in a judicial review of the Council's previous decision not to identify the land as such.

Summary

It is recommended that the Site is identified by the Council as contaminated land.

Decision-Maker

The Council's constitution was revised in April 2025. On 27 March 2025, it was discussed and adopted at the Constitution Committee, and came into force on 1 April 2025, Havering.gov.uk - Democracy.

Within the Constitution is the Council's scheme of delegation, which determines who is responsible for making decisions. In the case of Contaminated Land, decisions are governed under Part 3, Section 5(6) and are taken by the Strategic Director of Place. This has been further delegated to Michael Richardson, Team Leader, Environmental Health (Environmental Protection), who was fully authorised on 14 July 2025.

This report is prepared for the benefit of Mr Richardson to set out the considerations which should inform, and provide a recommendation as to, a decision whether the Council should identify the Site as "Contaminated Land" under the provisions of Part 2A of the Environmental Protection Act 1990 and to be presented to the Launders Lane Officers Group.

Report Authors: Ciara Longman*, Public Protection Officer (Env. Protection)
Mike Richardson**, Team Leader, Env. Health (Env. Protection)

Contact: (email). Environmental.Health@havering.gov.uk.

** primary author (substantively completed report) but left Havering Council on 3rd Oct. 2025*
*** minor amendments following receipt of landowner's second round of comments*

Background

1. The Site was subject to the extraction of sand and gravel in the 1960s, with the void created by the extraction then filled with waste with the levels restored to their previous (pre-extraction) levels. In 1999, planning permission (ref P0954.96) was given for development comprising “land raising to improve agricultural quality.” The proposal was to increase the depth of soils on the site through importation of material to support productive agriculture on the land. In 2000, further planning permission was granted, under section 73 of the Act, to “change end use of current permission (P0954.96) from agriculture to woodland”.

2. The 2000 Permission was implemented through the importation of material onto the Site. However, the nature of the material deposited, the amount of material deposited, and the subsequent contours of the land were well in excess of the approval granted, with the approved contours being exceeded by up to 3.5 meters. As a result of the unauthorised development, a stop notice and two enforcement notices were served. An appeal against the enforcement notices was dismissed in 2006. The enforcement notices remain in force and have not been complied with. The company that owned the site went into liquidation in 2006 without removing any soils as required by the notices.

3. Around 2009, a new owner acquired the Site. Between 2011 and 2016, significant and unlawful deposition and burying of waste on the Site took place, resulting in the Environment Agency bringing prosecutions against various individuals. As part of the EA’s investigations, it commissioned the testing of soil samples recovered from the Site for possible contamination. That investigations identified elevated levels of lead and benzo[a]pyrene. The main part of the site was bought by the current owners in 2017. There have been no significant occurrences of fly tipping onto the Site since then. Land Registry records indicate that the majority of the Site has a single owner DMC Services (Essex) Limited but two small areas with different owners, and two other unregistered portions. It should be noted that DMC have indicated throughout the Council’s engagement with them that they own the whole site.

4. The Site is not in any currently active use for any purpose. It is not open to the public and is bounded by dense vegetation and steep banks at the boundaries which physically limits public access. The main gate to the Site was constructed after 2011 and a further gate has been erected at the southern entrance to the site in late 2024 following a request by the Council to the landowner.

5. Local residents have anecdotally stated that fires had been occurring on the site for approximately 20 years, however from c.2018, the Council has been aware that occasional fires (officially recorded by the London Fire Brigade -

"LFB") have taken place on the Site to which the LFB have been called. The incidents of fires appear to have intensified over the last few years. These fires produce smoke, which blows over homes, the school, and the golf club close to the Site. It appears that these fires are spontaneous – that is, they do not result from acts of arson on the Site. The London Borough of Havering's Launder's Lane visual dashboard which has an api link to the LFB data. In 2022 there were 4 reported days on which there were fires on the Site that required LFB attendance ("fire days"); in 2023 there were 18 fire days, and in 2024 there were 18 fire days.[1]

6. To address the understandable concerns of local people about the cause and effects of the fires, the Council established an expert technical group. This includes the Council's public health, public protection, and communications officers; the UK Health Security Agency; the Environment Agency; Imperial College London; University College London; the Greater London Authority; and the London Fire Brigade. This group met monthly between September 2022 and December 2024 Currently, this group meets only on an *ad hoc* basis when required.

7. The Council also created a "Launders Lane Officers Group" to coordinate action and respond within the Council to the issues created by the Site.

8. The investigation has included the following:

   (i) A contamination assessment for the Site, carried out by Geo Environmental Services Limited ("GESL"), which reported in December 2023;

   (ii) Air quality monitoring of nitrogen dioxide and PM2.5 particulates was (and continues to be) carried out by the Environmental Research Group at Imperial College, intensifying their existing monitoring of air quality in Havering by installing further 'nodes';

   (iii) A report entitled "Review of PM2.5 concentrations in the vicinity of Arnold's Field, Launders Lane, Rainham" (August 2025) which focusses on short-term peaks in PM2.5 levels near the Site, written by Ciara Longman;

   (iv) TRL carried out further monitoring of air quality between May 2023 and September 2024 to identify and measure the levels of specific, harmful

[1] There are some differences between the number of "fire days" described in the reports provided to support this decision. The data used may be across a number of days when a fire persisted over this period, rather than using only the day the LFB attended. However, in determining these fire days for the purpose of this report, we have used the data provided by the LFB, collated by the Council's Public Health Team. This is further addressed within the report, "Review of PM2.5 concentrations in the vicinity of Arnold's Field, Launders Lane, Rainham" (August 2025)

compounds in the air, and assess whether increases were caused by fires on the Site, providing their final report in March 2025;

(v) An epidemiological analysis of NHS data to identify the prevalence of specific forms of cancer and mesothelioma within the local population (which reported in 16 August 2024)

(vi) An assessment of available health data entitled "The effect of Arnold's Fields fires on the respiratory health of the surrounding population" (November 2024) by Dr Samantha Westrop;

(vii) An assessment of asbestos fibre escape from the Site, which reported in September 2024;

(viii) Water monitoring by the EA during March 2025;

(ix) An assessment dated July 2025 by Dr Paul Nathanail of LQM Limited of the evidence gathered and advice about the Part 2A status of the Site.

9. The Council was also provided with and had regard a report prepared by GEMCO on the instructions of the landowner, DMC Services (Essex) Limited which reviewed the GESL report (para. 8(i) above) ("Review of GESL Site Investigation and Risk Assessment Arnolds Field, Launders Lane, Rainham", (1774 R03: Issue 1 March 2024)).

10. In April 2024, the Council decided at that time not to identify the Site as contaminated land but to continue its investigations and in the meanwhile use statutory nuisance and community protection powers to seek to remedy the problems on the Site. A Havering resident brought judicial review proceedings challenging the Council's decision not to identify the Site as contaminated, and in June 2025, the High Court quashed that decision, finding that it had been taken prematurely and without the benefit of a full year's worth of air quality monitoring.

11. The Council has been in continuing dialogue with the present owner of the Site, which has included the provision of pre-application advice. However, to date, no planning application that proposes to satisfactorily address the issues with the site has been received.

Statutory Scheme

12. The Council is under a statutory duty to inspect the land within its area and identify land which is "contaminated land". This means:

> "any land which appears to the local authority in whose area it is situated to be in such a condition, by reason of substances in, on or under the land, that—
>
> (a) significant harm is being caused or there is a significant possibility of such harm being caused; or
>
> (b) significant pollution of controlled waters is being caused or there is a significant possibility of such pollution being caused."

13. Whether or not land should be identified as contaminated land is a matter for the Council's judgement, properly directed, acting reasonably, and acting in accordance with statutory guidance issued in April 2012 under section 78YA EPA 1990 ("the Statutory Guidance").

14. The Statutory Guidance explains that the starting point under the statutory scheme is that "land is not contaminated land unless there is a reason to consider otherwise" (para. 1.3). Only land where such evidence shows that "unacceptable risks are clearly identified" should be considered for designation (para. 1.3), and decision-making must be based on a "robust, appropriate, scientific and technical assessment of all the relevant and available evidence".

15. The Statutory Guidance states at para. 1.4 that:

> "The overarching objectives of the Government's policy on contaminated land and the Part 2A regime are:
>
> (a) To identify and remove unacceptable risks to human health and the environment.
> (b) To seek to ensure that contaminated land is made suitable for its current use.
> (c) To ensure that the burdens faced by individuals, companies and society as a whole are proportionate, manageable and compatible with the principles of sustainable development."

16. The assessment of risks must be made in relation to the current use of the land (para. 3.5) which includes not only the use which is being made of the land currently, but also "reasonable likely future uses of the land" that would not require planning permission, "temporary uses… within the bounds of the current planning permission; and "likely informal use of the land" whether trespassory or not. The Statutory Guidance stresses the importance of a realistic

assessment of likelihood, and requires the Council to "disregard any receptors which are not likely to be present" (para. 3.6).

17. For a relevant risk to exist, the evidence must show that there exists:

> "one or more contaminant-pathway-receptor linkages – "contaminant linkage" – by which a relevant receptor might be affected by the contaminants in question. In other words, for a risk to exist there must be contaminants present in, on or under the land in a form and quantity that poses a hazard, and one or more pathways by which they might significantly harm people, the environment, or property; or significantly pollute controlled waters."

18. If a contaminant linkage is established, it must then be shown that as a consequence the contaminant is causing significant harm, or there is a significant possibility of significant harm ("SPOSH").

19. When considering whether SPOSH exists, the Council must consider:

> "(a) The estimated likelihood that significant harm might occur to an identified receptor, taking account of the current use of the land in question.
>
> (b) The estimated impact if the significant harm did occur i.e. the nature of the harm, the seriousness of the harm to any person who might suffer it, and (where relevant) the extent of the harm in terms of how many people might suffer it."

20. The Council should then place the land and its risks, so far as they relate to human health, into one of the four Categories identified at paras. 4.16-4.29 of the Statutory Guidance. If in Category 1-2, the land should be identified as contaminated; if in Category 3-4, it should not be.

21. Tables 1-2 of the Statutory Guidance give direction as to risks to non-human receptors.

Recommended Course of Action

22. As a result of reviewing on-site and off-site contaminant linkages, officers recommend that the Site is identified as contaminated land.

Reasons for Recommendation

23. As explained above, a decision about whether or not the identify land as contaminated land is solely for the Council, properly directed and applying the Statutory Guidance. To assist it in reaching that decision, the Council has taken advice from various experts, but it remains solely responsible for reaching the necessary decision, including making careful value judgements. Others could reasonably reach different conclusions on these questions, but the statutory scheme allocates responsibility to the Council to reach those conclusions. The decision-maker may also reach a different view on these matters of judgement than the officers who make the recommendation in this report.

24. A draft of this report was shared with current landowners of the Site who were able to make comments. Any comments made have been taken into account in preparing the final version of the report and supplied to the decision maker.

Effect on human health

25. Dr Nathanail (LQM Ltd) advises in his report that both the original waste material deposited on the Site (lawfully or unlawfully) and the smoke that is generated when that material combusts (since it is a colloid of solid particles dispersed in a gas medium) fall with the definition of a “substance in, on or under the land” for the purposes of Part 2A. It is noted that one of the landowners’ experts disagrees that smoke can be a substance for these purposes. The Council sees no reason to disagree with Dr Nathanail’s advice on this particular point, which is also consistent with the ruling by Mrs Justice Lieven in the judicial review proceedings that the effects of the smoke generated by fires on the Site should be taken into account in determining whether it is Contaminated Land.

26. The GESL report, compiled following site investigation and laboratory testing of material found on the site, identified that there were unsafe levels of arsenic, lead, benzo(b)fluoranthene, benzo(a)pyrene, and dibenzo(ah)anthracene in the soil samples recovered from the Site (summarised in Table 1 in Dr Nathanail’s report). Importantly, as pointed out by Dr Nathanail, these exceedances were measured against generic assessment criteria for public open space park land use, assuming a large amount of frequency of use by receptors. These assessment criteria were chosen on a precautionary basis, as the Site is not currently used in this way or in a manner close to it. Gas monitoring shows presence of methane, carbon dioxide, hydrogen sulphide, carbon monoxide,

and volatile organic compounds ("VOCs"). There was also evidence of loose asbestos fibres.

27. There is also the presence of fires on the Site, and GESL identified the potential for explosions associated with any fires/ignition sources.

28. There are in practice two ways in which a contaminant linkage could be established in these circumstances: either a receptor coming onto the Site and coming into contact with contaminants and/or fire; or a linkage being created with an off-site receptor through the impact of the smoke generated by fires or other substances escaping from the Site.

SPOSH to onsite receptors

29. Dr Nathanail has referred to a news report dated 4 March 2025 which reports an incident in July 2011, when an 11-year-old boy suffered third-degree burns to his foot after falling into a crater on the Site. He advises that these injuries constitute a serious injury and hence significant harm in terms of the Statutory Guidance before noting that:

> "the conditions that caused the third degree burns remain in place in the form of both fires resulting in the call out of the London Fire Brigade and smouldering of subsurface materials. Should members of the public access the land at Arnold's Field – with or without permission – they could suffer the same fate as William Knowlden."

30. This is an isolated incident, and no other reports of injuries taking place after this incident in 2011 have been received by the Council.

31. In terms of the GESL-measured exceedances, GESL's view was that these were generally present at depth, such that where the soils remain undisturbed there is not significant risk in terms of risk to human health. They were not able to "rule out" contaminant concentrations at shallow depth or at the surface however. The risk of harm from contaminants in and on the land is determined by toxicity and the length of time exposed to them by being on site. Officers note, as above, that the exceedances identified by GESL are exceedances of levels of exposure which are predicated upon regular use by receptor of the Site. In the generic assessment criteria for public open space park land use (detailed within the CLEA Contaminated land exposure assessment (CLEA) tool), the default exposure time is for 365 days/year for 2 hours per day. This equates to 30.42 days per year (residency time) when normalised for a full 24 hour day.

32. There is no “safe” level for asbestos, however the risk from asbestos exposure is also linked to length of time of exposure, and the volume of asbestos fibres exposed to.

33. The question which Category to place these risks in and whether SPOSH is present therefore depends on the likelihood, in the light of the current use of the Site, of persons coming onto the Site and therefore into contact with the fires (even on a single occasion as with William Knowlden) and/or contaminants (over longer periods). Officers consider that likelihood in what follows.

34. Officers have attended the Site frequently over the last 3 years. These visits have been as part of the ongoing site visits with the owner and other parties, such as LFB and contaminated land consultants to discuss the ongoing status of the Site and to resolve the issue with the ongoing fires. Visits to the area around the side continue to be made on a regular basis to try and witness the smoke from the Site.

35. It is clear to officers that the Site is not in an active use and it is not open to the public. It is not reasonably likely given the state of the land that this position will change in the medium-term without the land contamination issues being resolved. LFB have informed the Council that firefighters do not go onto the majority of the Site due to site instability. The question is therefore what the likelihood is of trespassers accessing the Site.

36. During officer visits in 2023, there were some indications of access to the Site at its south-east entrance in the form of recent deposits of waste on the Site (whether by commercial dumpers, trader fly-tippers or individuals discarding domestic refuse or other littering). Whilst the main entrance to the Site is in the east and has been secured (with a gate and fencing) for some years, in 2023 access to the south-east entrance of the Site was possible by climbing over a small earth bund.

37. It was over this bund that small amounts of fly tipping were observed, however the majority of any fly tipping incidents were deposited in front of this bund, behind a concrete barrier which restricted vehicle access to the site. Similar tipping occurred at the northern entrance with waste being deposited between the main gate and concrete barriers on the entrance splay.

38. Following a meeting with the landowner in September 2024, a second gate (with fencing) was constructed in November 2024 at the south-eastern entrance to the Site with further upgrades to the gate/fencing in July 2025 to enhance security by ensuring that any gaps around the gate were fully closed.

39. The rest (the vast majority) of the Site is not accessible. The boundary with Launders Lane to the east and New Road (A1306) to the west is inaccessible due to significant overgrowth, brambles and vegetation, which sits behind a wooden fence line. Whilst would conceivably be possible to hack one's way through this with appropriate equipment, no evidence of such access has been seen, and it is very unlikely that someone (especially informal users) would wish to gain access via this method. Along Launders Lane, there is the additional barrier of a ditch. Along New Road (A1306) there is the additional barrier of a very steep incline (created by deposited waste) rising for several metres.

40. The western and northern boundary of the Site is bounded by the Common Watercourse, and the high sides of the land where waste has been deposited. The Common Watercourse can only be accessed through privately-owned land (known locally as the "Moretti Land"), which is also subject to security, and which has been further improved over the last 9 months.

41. It is noted that Mr Richardson gained access to the Moretti Land in August 2024, to accompany the Council's contractors in carrying out asbestos monitoring. Gaining access to the Site via this route would be extremely difficult, due to the high sides of the landform and the presence of vegetation and the Common Watercourse. The Moretti Land itself is very uneven, with holes and trenches within it, which makes access it (particularly considering access by bikes) very difficult. There was no obvious or easy access across the watercourse.

42. To the north of the Site, is the Spring Farm development site, which has been closed for over a year. This too is a secure site, with no easy access by members of the public, either from Launders Lane, the Satmar or Jewish Cemeteries adjacent, or from Spring Farm Park to the west.

43. As such, whilst there has been some evidence (in the form of fly tipping) in the past of limited access to the Site at its entrances, officers consider that there is a relatively low likelihood of unauthorised access to the Site. This is due to the changes in accessibility to the Site in the areas concerned and the inaccessibility of the majority of the site, including from via neighbouring sites. The Site is not used as or accessible as a public open space (authorised or unauthorised) and therefore any injury similar to that suffered in 2011 would be very unlikely.

44. In the light of the above, Officers conclude that there is a low likelihood that persons will come onto the Site and thereby create a source-pathway-receptor linkage. Whilst there are contaminants present on the Site, source-pathway-receptor linkages have not been demonstrated by the evidence, and there is not an unacceptable risk that the harm that occurred to the child in 2011 will reoccur, nor is there a significant possibility that significant harm of another kind

will be caused. This is not a conclusion that there is *no* prospect that *any* person could *ever* gain access to the Site: the Council is not required by the Statutory Guidance to approach this issue to that that level of certainty. The Council has considered the question of likelihood, the severity of harm, and considered whether there is a *significant possibility* of significant harm.

45. Officers therefore recommend that in respect of these potential linkages, the Site should be placed in Category 3.

SPOSH to offsite receptors

46. This section deals primarily with the issues raised by smoke emanating from the Site.

47. In respect of other matters, GESL concluded that there was a low risk of the migration of other forms of gas from the Site to offsite receptors. In addition, the levels of airborne asbestos observed at the boundary of Spring Farm Park and the Site during the asbestos monitoring exercise do not indicate any material airborne migration of asbestos fibres. A contaminant linkage here can therefore be discounted.

PM2.5

48. PM2.5 is a size of particulate in the air. In relation to PM2.5 levels generally, the ERG/Breathe London monitoring has shown that the fires on the Site coincide with large but short-lived peaks of particulate air pollution at individual monitoring nodes depending on the size and location of the fire, the speed with which LFB can extinguish the fire and the strength and direction of the wind.

49. Table 4 in Dr Nathanail's report shows that on fire days in 2018, 2020, and 2021, PM2.5 levels were significantly higher on average than on non-fire days, although that relationship was not the same in 2019, 2022 (notwithstanding the exceptionally large number of fires), and 2023 (when PM2.5 levels were on average lower on fire days).

50. It has been well established by academia and the WHO that the effects of long-term exposure to PM2.5 have a great impact on public health.

51. Exposure over the long term increases the risk of developing respiratory and cardiovascular disease, lung cancer and dementia and reduces overall life expectancy. It is of relevance that the UK government's Committee on the Medical Effects of Air Pollutants (COMEAP) advise that, broadly-speaking, the

effects of long-term exposure to PM2.5 have a greater impact on public health than effects of short-term exposure.[2]

52. The Council's Director of Public Health has assisted with understanding the harm to health caused by particulate air pollution, and the Council has commissioned specific pieces of work to assess those harms objectively, in a proportionate manner. One of the issues raised has been mental health impacts arising from living and working in close proximity to the Site.

53. These potential health impacts can arise purely due to the inhalation of particles of this size, regardless of the nature of the substance in question. Officers first need to consider the significant possibility of significant risk of harm from levels of PM2.5, before considering significant possibility of significant risk of harm from the chemical composition of those particulate matters.

54. As a starting point, in terms of long-term exposure to high levels of PM2.5 (identified by COMEAP as of most importance in terms of harm), the daily PM2.5 levels averaged across the year experienced in the vicinity of the Site do not exceed the statutory thresholds set out in the Air Quality Standards Regulations 2010 of an average daily value across the year of 20 $\mu g/m^3$. The Environmental Targets (Fine Particulate Matter) (England) Regulations (2023) require that in England by the end of 2040 an annual average of 10 $\mu g/m^3$ for PM2.5 is not exceeded at any monitoring station. This would have been exceeded in 2018, 2019 and 2022 had it been in force, but this is a target value for 2040 and the interim annual average of 12 $\mu g/m^3$ was not exceeded in any year. Dr Nathanail's view is that those target levels currently in force have not been exceeded and this militates against a finding of SPOSH. Officers consider however that it is necessary to look further than merely target or threshold values to understand impacts on receptors.

55. The possibility for long-term exposure to have adverse health impacts in terms of cancer incidence was explored by the Council in a report "The Possible Health Impact of Fires at Launders Lane: Havering Cancer Incidence". This concludes that the incidence of brain, lung, and haematological cancers and mesothelioma was not higher in populations resident close to the Site than the London Borough of Havering average, suggesting that the burning of fires on the Site has not caused any increase in levels of these serious diseases to date. Plainly however, as fires continue (and without remediation it is assumed that they will continue indefinitely) the duration of time over which exposure takes place increases, thereby increasing the prospect of impacts from prolonged exposure which may not be evident at present. Malignancies also take time to develop, cause symptoms and then diagnose, so any effects of past burning

[2] COMEAP PM2.5 targets health evidence questions responses - GOV.UK

may not yet be apparent. Officers also note that this assessment was focussed on a relatively narrow range of serious physical health conditions.

56. With respect to impacts of long-term exposure to increased particulate pollution levels on the mental health of residents, it is well-established that persistent stress regarding an issue that is perceived to be out of one's control can result in negative psychological and physical reactions. The UK government (DEFRA) report a significant correlation between degree of annoyance and mental health issues (depression, anxiety disorder and general mental health)[3]. Officers are not aware of a precedent for mental health impacts for land contamination detailed assessments. In addition, no further guidance is provided by DEFRA on how to deal with the risk of mental health issues which are related to sites being inspected under Part IIA of the Environmental Protection Act 1990. Nevertheless, given the continued fires over several years and the general evidential link between elevated level of PM2.5 and mental health impacts, officers consider that an assessment is warranted.

57. To assist in gathering information, an email address was created for residents mid-July 2024, to enable them to contact the Council regarding reports or concerns about fires or smoke from the Site. This was used by residents during the rest of the summer of 2024 summer but has not been used since, and often came in on or around fire days or days of significant smoke/odour impact. During that period, 58 emails were received. Those emails normally came in either during or just after a fire or smoke event. Analysis of the emails received showed that residents often raised multiple issues in a single email. This is detailed further in paragraph 96.

58. Analysis of the data available on the LFB website indicates that in the summer of 2024, there were 7 major fires in and around Rainham (which required the attendance of more than 4 fire appliances) which were not related to the site. (Recorded between 1 March 2024 and 30 September 2024).

59. The emails received during the second half of the summer of 2024 (see Appendix 1 attached) indicated, over a two month period (albeit 99% of correspondence was in the six week period mid-July to end of August) that residents experienced significant disturbance, disruption, frustration and anxiety as a result of the fires/smoke. Wording in the emails such as "urgent emergency now", "yet again", "urgent, health affected", "worried for children's health", "again, help", "don't feel good and safe", "fear of what breathing in", "barbaric living conditions" etc. were considered to be reflective of the extent of annoyance and stress experienced by residents due to the situation.

[3] Impacts on health of emissions from landfill sites - GOV.UK

60. In part as a result of patient data security, it has not been possible to commission and carry out a more granular review of mental health conditions and presentations in local populations. This means that there is no direct scientific evidence for worsening mental health outcomes as a result of increase PM2.5 levels, to the extent that they are caused by the fires.

61. Officers do not consider that it would be reasonable to defer determination in order to conduct a detailed mental health study that would take a considerable time to carry out.

62. In addition, such a study may itself be challenging and public health colleagues have queries whether or not it would be possible to extract meaningful data from health records, similar to the level of data provided concerning the direct impact of fires on respiratory illness presentations, due to such presentations being more likely unrelated to fire days, but part of ongoing, chronic, mental health conditions, exacerbated by the fires.

63. Similarly, prolonged, increased, but low-level, impacts from the fires on the mental wellbeing of residents would be difficult to quantify. The feelings of anxiety, stress, worry, etc about the fires when they are occurring, or leading into the summer months and the concern of what the coming months may bring, may not result in presentation to their GP or other mental health services, but clearly have a real impact on residents. Moreover, they are consistent with the broader evidential association between increased PM2.5 levels and adverse mental health effects.

64. It is apparent that there is unavoidable uncertainty about the nature and extent of adverse mental health impacts arising from the effects of combustion on the Site. Therefore in line with paragraph 1.6 of the Statutory Guidance, the decision-maker should –

> "take a precautionary approach to the risks raised by contamination, whilst avoiding a disproportionate approach given the circumstances of each case. The aim should be to consider the various benefits and costs of taking action, with a view to ensuring that the regime produces net benefits, taking account of local circumstances."

65. This balancing exercise is considered further below at paragraphs 100-110.

66. Turning next to short-term exposure to high levels of PM2.5, it is accepted that it increases respiratory symptoms and exacerbates pre-existing respiratory and cardiovascular problems increasing the risk of heart attacks, strokes, and respiratory crisis amongst those with pre-existing conditions. These have been

a specific cause of concern for local residents, notwithstanding the annual averages referred to above (Para 54).

67. The Council therefore undertook additional work to understand the levels of short-time exposures to high levels of PM2.5 caused by fires on the Site. This work is complicated by the fact that the London average concentrations of PM2.5 tend to be high and that fine particulate matter is transboundary and travels over great distances. This means that the concentrations monitored in Rainham are also impacted by particles which originate from Greater London, Essex and Kent, continental Europe and even further afield. It is clear that there are many exceedances of the WHO guidelines values throughout each year around the Site, but it is important to try and understand the extent to which these exceedances are specifically caused by fires of the Site.

68. Daily exposure to PM2.5 was assessed and screened by comparison with the World Health Organisation's (WHO) daily average concentration of 15µg/m3. The WHO recommends that this daily average concentration is exceeded no more than 3-4 times per year. Neither the WHO nor the UK government provide hourly guideline levels because there is currently insufficient evidence to recommend guideline levels for shorter averaging times than 24 hours.

69. Two alternative scenarios were assessed in an attempt to isolate so far as possible the PM2.5 impacts attributable to fires on the Site:

70. First, the London-wide average of node data was subtracted from the levels measured at the nodes proximate to the Site on fire days. When the reading were 'corrected' for the London-wide average (i.e. the average level that residents in the area would in any event be exposed to), there were 3 exceedances of the WHO daily guideline levels in each of 2023 and 2024 but not in other years for which data is available.

71. Secondly, fire days on which London-wide PM2.5 levels in any event exceeded the WHO guideline levels were discounted. In this scenario, there were no exceedances of the WHO daily guideline levels.

72. In writing both this report, and that detailing the PM2.5 levels, the data from 2025 has not been reviewed, as a whole year has not elapsed.

73. Officers advise that whilst fires at the Arnolds Field site are likely to increase PM2.5 pollution on some occasions at monitoring sites in the area, with impacts detectable at least 1 km away, this increase has a limited contribution to daily average levels and very limited contribution to annual average concentrations.

74. There are far more exceedances of the daily guideline value London-wide than there were as a result of fires at the Site. The WHO recommend that there are no more than 4 exceedances of the daily value per year. Levels within London exceed this recommendation regularly in any event. This means that the emissions from fires are adding to existing exceedances. The report highlights the importance of reviewing medical data is far more efficacious than the uncertainties inherent in comparing concentrations which include a mixture of pollutants with guideline levels.

75. In order to assess if short term increases PM2.5 levels from the Site, regardless of how measured against guideline levels, is having adverse health effects in the local population, the Council's Public Health Team commissioned expert support from Imperial College London environmental epidemiology academics to advised on the preparation of a report entitled, "The Effect of Arnold's Field Fires on the Respiratory Health of the Surrounding Population." This report interprets healthcare data to identify any temporal relationship between occurrence of fires at the site and use of health care services for respiratory symptoms/illness amongst residents living close to the Site.

76. The report looked at fire days and the cumulative three- and seven-day periods following fire days. These latter periods capture delays in the onset of symptoms, presentation, or in obtaining NHS appointments, as well as the fact that the Site may smoulder and smoke after the extinguishment of a principal fire. The assessment concluded that there was no statistically significant increase in GP visits, in prescriptions issued for the treatment of respiratory conditions, A&E attendance or hospital admissions for respiratory illness/symptoms amongst the local population generally.

77. However, the report did conclude that there was a statistically-significant increase in GP attendance by those with pre-existing long-term respiratory conditions (such as asthma or chronic obstructive pulmonary disorder) on fire days. The scale of the increase was "equivalent to one extra GP appointment every five fire days, compared to days without a fire (or 0.2 extra appointments per day), amongst the local resident population of 23,656 people". The report put this conclusion another way: "Overall, out of 1,231 respiratory [long term conditions] GP attendances recorded between January 2018 and September 2023, approximately 20 could be attributed to the impact of reported fire incidents."

78. Whilst Dr Nathanail considered that the test for SPOSH was not met, and, whilst significant, the increase in GP presentations cannot be described as sizeable, the findings of the statistical analysis are in line with the broader medical literature, namely that those with pre-existing conditions are more vulnerable to the effects of short-lived peaks in PM2.5 levels. Moreover, officers are

conscious in weighing the evidence of the comments of the Director of Public Health that, “given the relatively small population size, this study has limited statistical power and should not be over interpreted as evidence of no impact on more significant health outcomes.” Officers also note that, without intervention, fires will continue at the Site and impact the local community. In this context, Paragraph 4.7 of the Statutory Guidance is important for this purpose, which states, “that repeated episodes of minor harm (e.g. repeated skin ailments) might lead to more serious harm in the longer term.”

79. It is also to be recognised that the peaks in PM2.5 may not be directly related to the recorded fire days, when the LFB have attended the site. It is clear from the reports provided by ERG that there is a diurnal pattern to the PM2.5 levels, particularly elevations in the early hours of the morning, due to atmospheric phenomena reducing the dispersion of PM2.5 away from the site. There is also evidence from officers, who have driven past the site, and the reports from the residents of Rainham, that smoke can be smelt in the vicinity of the site, with no obvious plumes of smoke emanating from the site. These smoke incidents would not trigger a visit from the LFB, but do increase the PM2.5 levels in the area, and therefore could contribute to further visits to medical services, which were not captured in the public health reports. This would result in bias towards the null; i.e. reduce the magnitude of the impact reported.

80. The relationship between the fire days and medical attention is a clear signal regarding the impact on the health of residents, the ongoing low level of smoke which is regularly detected in the area, and reflected in the PM2.5 levels, though often below the WHO limits, will have an effect on the respiratory health of residents, particularly those who are susceptible to such issues.

81. Officers therefore advise that, whilst a source-pathway-receptor linkage has been established: it is not clear either that there is only no or low risk of significant harm; the position is not definitive or clear-cut; and the Council needs to determine the question having regard to and striking a balance between the benefits and disbenefits of regulatory intervention. This balance is explored further at paragraphs 100-110 below.

<u>Specific Contaminants</u>

82. The work by TRL assessed the presence within the smoke from fires on the Site of specific dangerous compounds, namely. Volatile Organic Compounds (VOCs), Poly Aromatic Hydrocarbons (PAHs), Polychlorinated Biphenyls (PCBs) and Heavy Metals (Mercury and Lead). Monitoring was undertaken from May 2023-September 2024. TRL worked with the technical group and UK

Health Security Authority to identify appropriate thresholds against which to assess measures levels. TRL's overall advice is that:

83. "From the monitoring carried out and summarised in th[e] report, it is likely that the emissions of some pollutants do increase during fires at the Launders Lane site. However, the increased levels do not exceed any National or WHO objectives, and therefore the risk of adverse health effects is low."

84. TENAX passive monitoring tubes were used to measure VOCs, this means that only monthly average concentrations could be recorded. High concentrations of Toluene were detected in October 2023, January 2024 and February 2024. These instances are not attributed to fires at the Site. Concentrations of Ethylbenzene and Xylenes were also high in February 2024. Benzene was compared to the England and Wales objective of 5 µg/3 and concentrations were consistently well below the objective.

85. TRL report that, "it is likely that the emissions of some pollutants do increase during fires at the Launders Lane site. However, the increased levels do not exceed any National or WHO objectives, and therefore the risk of adverse health effects is low. Due to the findings outlined above we do not recommend the need for any further monitoring of these pollutants".

Effects on controlled waters

86. GESL when compiling their report noted that whilst there was some evidence of contaminants leaching into water, this was likely to be in isolated pockets of 'perched' rainwater and no evidence of a continuous water body was found within the waste materials. They were however unable to sample the watercourse passing through the Site due it being inaccessible.

87. Subsequently, the EA carried out sampling of surface water upstream and downstream of the Site on 7 March 2025 the results of which are set out in Table 2 of Dr Nathanail's report.

88. Dr Nathanail has reviewed the results and concludes:

89. "The results show the water chemistry upstream and downstream of the Site are very similar and if anything the water quality downstream is slightly better than it is upstream. This evidence does not indicate a significant possibility of significant pollution of controlled waters associated with the Site."

Conclusion

90. Officers therefore recommend that the Site falls within Category 4 (Water) and therefore should not be identified as contaminated land.

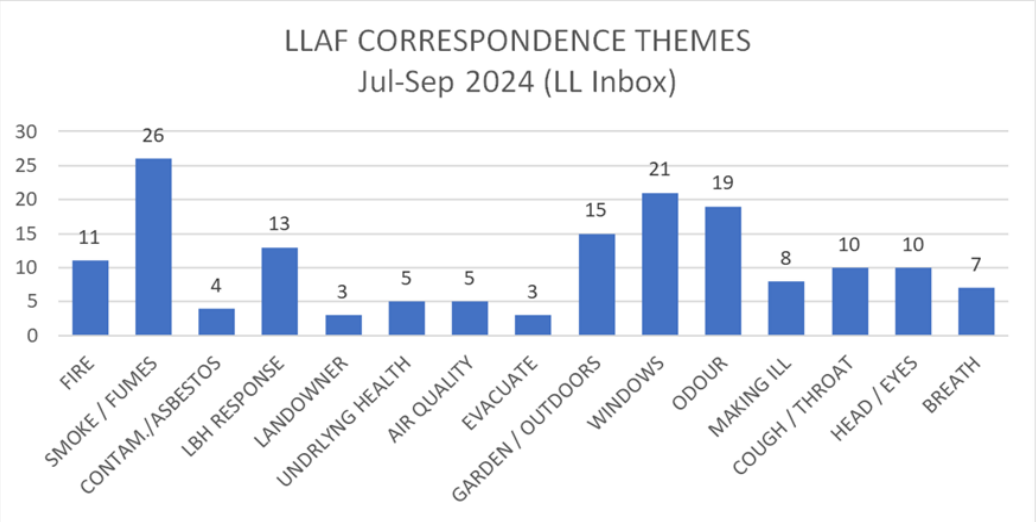
Effects on non-human receptors

91. The Statutory Guidance directs the Council also to consider effects on specific non-human receptors. These are regarding ecological system effects, and property, both in the form of owned produce and owned animals and buildings.

92. There is no evidence before the Council of effects on any relevant ecological system, as defined within the Guidance.

93. In respect of effects on property, officers are aware of allegations regarding the effect of smoke at times during which fires on the Site are burning on local residents and adjoining uses. For example, it has been suggested that residents cannot use their gardens, need to keep windows and doors closed, and that schools cannot do outdoor sports or other strenuous exercise in these periods. However, diary sheets have not been submitted to the Council to support these claims, despite requests for them to be submitted.

94. Specific concerns have been captured below and have been collated from emails to the Launders Lane specific email address by residents concerning reports incidents of fire or smoke. This was used by residents during the summer of 2024 but has very little traffic in 2025. During that period, 58 emails were received. Those emails normally came in either during or just after a fire or smoke event. Analysis of the emails received showed that residents often raised multiple issues in a single email.



95. Officers are aware that on certain occasions, activities at the golf course have been affected by smoke by fires: they definitely had to close for the summer bank holiday 2023 (due to an exceptional amount of smoke blowing their way). There has also been information from the nearby school that pupils have on occasions been unable to exercise outside.

96. Table 2 of the Statutory Guidance lists “building” as the relevance form of receptor, and the test for significant harm is:

97. “Structural failure, substantial damage or substantial interference with any right of occupation. The local authority should regard substantial damage or substantial interference as occurring when any part of the building ceases to be capable of being used for the purpose for which it is or was intended.”

98. Notwithstanding the obvious and understandable discomfort experienced during periods of smoke, the effects suggested fall very well short of establishing significant harm to any building, as defined in the Statutory Guidance. This is because there is little evidence, save the anecdotal evidence from residents that any buildings cease to be capable of being used for the purpose for which it is or was intended when fires are occurring.

99. Officers therefore do not consider that the Site should be identified as contaminated land on the basis of any effects on non-human receptors, and would be considered as Category 4 in this case.

Conclusions on reasons for recommendation

100. As set out above, officers have carefully examined all the material available to the Council at this time, including a significant body of further information collated during and after its previous decision and the judicial review proceedings.

101. Officers consider that there are not grounds for identifying the Site as contaminated on the grounds of impacts on on-site receptors, on controlled waters, or non-human receptors.

102. However, the position is less clear-cut in relation to impacts on off-site receptors arising from increases in PM2.5 levels and other airbourne pollutants. This specifically relates to the effect of short-term spikes in particulate levels on those with pre-existing respiratory and cardiovascular conditions, where the

evidence demonstrates that health impacts are causing GP presentations; and the effect of long-term exposure to increased PM2.5 levels on health and particularly mental health.

103. As explained above, the Council is required to assess the Site and its risks, so far as they relate to human health, into one of the four Categories identified at paras. 4.16-4.29 of the Statutory Guidance. If in Category 1-2, the land should be identified as contaminated; if in Category 3-4, it should not be.

104. Officers do not think that this is a clear-cut case in which it would be justified to place the Site into either Category 1 or 4. The Council therefore needs to carefully consider the decision-making process set out at paras. 4.24-4.29 of the Statutory Guidance.

105. The Statutory Guidance explains Categories 2 and 3 as follows:

> "(a) **Category 2:** Human Health. Land should be placed into Category 2 if the authority concludes, on the basis that there is a strong case for considering that the risks from the land are of sufficient concern, that the land poses a significant possibility of significant harm, with all that this might involve and having regard to Section 1. Category 2 may include land where there is little or no direct evidence that similar land, situations or levels of exposure have caused harm before, but nonetheless the authority considers on the basis of the available evidence, including expert opinion, that there is a strong case for taking action under Part 2A on a precautionary basis.
>
> "(b) **Category 3:** Human Health. Land should be placed into Category 3 if the authority concludes that the strong case described in 4.25(a) does not exist, and therefore the legal test for significant possibility of significant harm is not met. Category 3 may include land where the risks are not low, but nonetheless the authority considers that regulatory intervention under Part 2A is not warranted. This recognises that placing land in Category 3 would not stop others, such as the owner or occupier of the land, from taking action to reduce risks outside of the Part 2A regime if they choose. The authority should consider making available the results of its inspection and risk assessment to the owners/occupiers of Category 3 land."

106. In this case, officers recommend that the Site is placed in Category 2 and is therefore identified as contaminated. There is evidence of harm: the evidence (both in terms of general evidence about causal relationship between PM2.5 levels and physical and mental health impacts, and specific evidence relating to the Site which in consonant with that general evidence) demonstrates a

connection between the smoke coming from the fires on the Site and adverse health effects for local populations.

107. There is uncertainty about the precise nature and extent of those impacts, but in the context of this uncertainty and given (in respect to the mental health impact in particular) that it may not be possible to resolve that uncertainty, officers consider a precautionary approach is justified.

108. That precautionary approach is strongly influenced by officers' assessment that the fires on the Site have been a significant issue now for some seven years, and, absent intervention, they are likely to continue to burn and it is not possible to identify when they might cease of their own accord. Moreover, if the London Fire Brigade did not attend the Site regularly, the escape of substances from the site would be greater and for longer periods, so the resulting exposure to contaminants by people outside the site is only being mitigated by the LFB repeated actions over several years. This itself is a factor which weighs in favour of regulatory action, given the pressure that it places on public services.

109. One of the purposes of intervention is to ensure that burdens experienced by individuals, companies and society as a whole are proportionate, manageable and compatible with the principles of sustainable development. Officers consider that the evidence demonstrates that the burdens faced by local people, the emergency services, and healthcare services are unlikely to be manageable. Whilst Part 2A intervention is likely to be costly, in particular for the landowner and potentially for the Council, officers consider, in line with the statutory scheme, that acceptable solutions can be identified and implemented in collaboration with the landowner to address the reasons for identification (specifically the fires), and that this will be facilitated by the focus and structure offered by the contaminated land scheme.

110. In conclusion, on the material available to the Council at this time, officers recommend that it has been demonstrated that substances in, on, or under the Site are causing significant harm or a significant risk of significant harm and that the Site be identified as contaminated land within the meaning of Part 2A.

Next steps

111. The consequences of the identification of land as contaminated are set out in Part 2A and the Statutory Guidance at paras. 5.5 and following. In summary, the Council must now consult with the owners and occupiers of the land, and other persons who might also fall responsible for the remediation of the land concerning what is to be done by way of remediation. Having done so, the Council must serve a remediation notice the remediation of the land, unless it considers that remediation can occur without the need for the service of a notice. E.g. where the Council considers that there are good prospects of the land being remediated by voluntary arrangements.

Background Documents

Department for Environment, Food and Rural Affairs, "Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance." Dated April 2012.

Geo Environmental Services Limited, Report (v2.0) entitled: "Ground investigation report for the land at Arnold's Field, Launders Lane, Rainham, RM13 9FL" on behalf of London Borough of Havering Council. December 2023.

LB Havering, "The Possible Health Impact of Fires at Launders Lane: Havering Cancer Incidence". (undated but possibly 16 August 2024).

Redacted. A-10106 Letter Report for Air Monitoring - Launder's Lane Rv2 Redacted 30 September 2024.

LB Havering, "Review of Asbestos Monitoring at Arnolds Field," Launders Lane by Mike Richardson, Senior Public Protection Officer. November 2024

LB Havering, "The Effect of Arnold's Field Fires on the Respiratory Health of the Surrounding Population" – Full Technical Report, November 2024 (FTR).

LB Havering, "The Effect of Arnold's Field Fires on the Respiratory Health of the Surrounding Population" – Short Report, November 2024.

TRL Limited. March 2025. Final Report entitled "Launders Lane Air Quality Monitoring report May 2023 – September 2024" Prepared for: Havering Borough Council (previously supplied as Draft Final dated December 2024).

Environment Agency sampling of the "RODING / INGREBOURNE CATCHMENT RIVER N.C.R.S. Sampling results, March 2025.

Environmental Research Group, Imperial College, "2nd (update) report relating to fires at Arnolds Field on Launders Lane in Rainham, Havering." Technical report, not dated (received July 2025.)

Land Quality Management Ltd, "Part 2A Risk Assessment, Arnold's Field, Launders Lane, London Borough of Havering. July 2025.

LB Havering, "The (risk of) harm to health caused by recurrent fires at Launders lane." Short report. August 2025.

LB Havering, "Review of daily concentrations PM2.5 in the vicinity of Arnold's Field, Launders Lane, Rainham". Technical Report. August 2025.

Record of Delegated Decision

I, Michael Richardson, Team Leader, Environmental Health (Environmental Protection)

☒ agree with the recommendation in this report.

OR

☐ disagree with the recommendation in this report for the following summary reasons:

Signed: 

Dated: 16th October 2025