

Added congestion

Overwhelming local opposition

TATE ACTION GROUP  
**TAG**

Gridlock on the bridge again

Does this look like brownfield to you?

**TAG - THORP ARCH TRADING ESTATE ACTION GROUP  
OBJECTION TO PLANNING APPLICATION 16/05226/OT**

Contact: Peter Locke, Chairman. 14 Thorp Arch Park, Thorp Arch, LS23 7AN

VOLUME 7

# CONTAMINATION

**Objection to Planning Application 16/05266 for 874 dwellings etc.  
Volume 7 – Contamination.**

**Objection on grounds of insufficient information on the contamination present on site, and inadequate proposals for further investigation and remediation.**

**Executive summary:**

This objection is based on the advice given in three separate reports, all of which are authoritative. They are:

- R&D Technical Report P5-042/TR/03, prepared by Atkins/BAE.
- Royal Ordnance report 14053/2137/95/1
- Stanger report of 2001 for Trustees of Hanover Property Trust (the Trust).

The first of these is Technical Guidance on Explosive Manufacturing & Processing sites produced for the Environment Agency. The next two are specifically about contamination on Thorp Arch Trading Estate (TATE).

The reports all indicate the hazards of former Royal Ordnance Filling Factory (ROF) sites, and make it clear that ‘irregular’ activities and disposal of material are a significant risk over all of such sites, not just the apparently developed areas.

TAG have also looked at how BAE go about remediation of such sites (they took over many of these sites from Royal Ordnance). In particular we examined the site at Chorley, only recently developed for housing by BAE. Fortunately we were able to contact members of Chorley Council contaminated land team, who were involved in the planning application for that site. It is clear that BAE, experts in the field, take an entirely more thorough approach, and complete both desk-top and physical site surveys **before** applying for planning permission.

This planning application tries to ignore this advice and good practice. It takes an unsafe approach. It is fundamental to granting planning permission that the scheme should be deliverable. Until a full physical survey is completed, it will not be possible to know which parts of the site can be decontaminated, by what methods and at what cost. So deliverability is unknown.

Parts of the site are also classified as a Local Wildlife Site (LWS) for their ecological value. There is a direct conflict between preservation of the ecology, and making the site safe. This issue is not clearly addressed.

The applicants propose to sort and reuse 'scrape' material on site. This is not consistent with the way the experts in remediation of such sites work. BAE mound and cap the scraped material on site. It is very unclear how the many tons of scraped material (approx 5000 tonnes per hectare) could be sorted and made safe, when they may contain a whole range of contaminants, from explosive residues and degradation products, through asbestos and other chemical contamination to explosive devices, some very small (size of a small coin) but still capable of destroying a hand.

LCC would be unwise to consider this application until the contamination extent has been fully physically examined, and the remediation and ecology preservation methods, phasing and costings (to ensure viability) have been presented.

### **Reports.**

It is worthy of note that, in the precursor application for this site (13/03061), none of the above reports was highlighted. The Stanger report, produced for the Trust, was referred to but not included in the application itself, the other two reports were not mentioned. This despite the fact that the Royal Ordnance report specifically about TATE was, we believe, in the possession of the applicant (it was included in an application for an employment development on another part of the site).

To compound this, a new report by Powell was commissioned for that application, which failed to include the two Environment Agency and Royal Ordnance reports, even in its list of sources. This Powell report was (we understand) not considered a reliable source by LCC.

This is part of a pattern where the applicant appears to be trying to minimise the risks inherent in the site.

Details of the reports we rely on, and abbreviations for them, follow:

- R&D Technical Report P5-042/TR/03, prepared by Atkins/BAE.  
This report is hereafter referred to as the **EA report**, since it was produced for the Environment Agency, as an R&D project. The work was undertaken by WS Atkins Consultants Ltd, in association with BAE Systems. It was published by the EA in 2001.
- Royal Ordnance report 14053/2137/95/1.  
This report is hereafter referred to as the **RO report**.  
This report was found in an appendix to an application for planning permission for a new warehouse on TATE, made by the applicant. As such we do not have full details. The report was clearly part of a bigger study, since the available section is numbered as section 8. Section 8 is specific to ROF Thorp Arch. It has reference number 14053/2137/95/1 at the top. We presume it is one chapter of a report

on many such sites. The report footers show that it was produced for the Royal Ordnance Environmental Services Group (then part of British Aerospace Defence), and we assume the /95 in the document reference refers to the date - 1995.

We have been unable to trace the full document. However the extract appears to be the entire chapter on Thorp Arch. This is clearly an authoritative document, produced by the company who had taken over such sites.

- Stanger report of 2001 for Trustees of Hanover Property Trust. This report is hereafter referred to as the **Stanger report**. The report is dated November 2001. It was produced for the Royal Bank of Canada Trust Corporation as Trustee for Hanover Property Unit Trust (the applicant). It is specific to “Ground and Groundwater Conditions - proposed housing area IN8, Thorp Arch Estate, Wetherby.” This report focussed on the ‘initiator’ production area of the site, ROF group 1.
- Missing reports: The Stanger report para 2.0 refers to “ a detailed review of the site setting, development and operational history” of the site by Royal Ordnance in 1996, reference 2157/96/1. This would clearly be a very useful source of information to assist in the desk-top study. We can find no other references to that report, and have been unable to locate it.

### **The site:**

The site was requisitioned at the start of WW2 in order to build the ROF. It had been farmland. This is important, because the current appearance - largely vegetated with extensive areas of scrub and many trees, is very misleading. Aerial photos taken in 1946 show almost no vegetation. The relevance of this relates to the possibility of unrecorded activities and waste material burials, which the reports indicate are very likely to have taken place in the vacant areas of the site. Thus it is entirely possible, if not likely, that any location, even if now under scrub or tree cover, may have been used for such disposal. How these areas can be made safe for access by the public is entirely unexplained at present.

### **‘Vacant’ areas of the site:**

All three reports indicate the fallacy of assuming that apparently ‘vacant’ areas of the site are not contaminated:-

EA report 4.2.

*lack of information (in particular in relation to sites involved with military*

*explosives) may be a major barrier to understanding the activities carried out and the contaminants which may be encountered;*

EA report 4.3.2 'Investigation design'.

*Due to the hazards of explosives, processes such as disposal, or testing may have been conducted in remote areas of the site away from the main manufacturing area. Little visible evidence may be available of historical activities due to demolition, covering with earth or simply vegetation grow back. Some of these 'remote' activities may not have been fully documented. Consequently such remote areas **may in fact carry a higher risk of explosive contamination** and consideration should be given to allocating a higher than normal level of priority. Given the unusual distribution of contamination which may be found on explosives sites, the use of **grid patterns and geostatistical methods** for locating exploratory holes **is less likely to be effective in locating 'hotspots'** than on many conventional contaminated sites.*

Stanger report 9.3.5 'decontamination - surface scrape'.

*To overcome the potential for explosive articles lying at or near the surface of open ground within the factory, it is proposed that a shallow scrape of depth 0.4m be **conducted over the whole site**.*

Although Stanger was principally concerned with the ROF Group 1 area, it is clear that they wanted the whole site scraped. In discussing the Strategy Outline 9.3.1 para 3, they comment that:-

*This area (for site scrape material disposal) should be large enough to accommodate a scrape from across **the entire development site**, and not just area IN8.*

Royal Ordnance report 8.1, 'General', para 4:-

*Materials were often stored or secreted within non-designated areas.*

### **Site scrape / Confidence scrape.**

In order to make the site safe for residential use, all the reports state that a scrape will be necessary. Stanger refer to it as a 'site scrape', while the EA call it a 'confidence scrape'. This is in recognition of the need to reassure the house buying public, as well as actually making the site safe. The applicant is trying to present the scrape as being purely for 'confidence' or psychological reasons. This is clearly not the case, although the 'confidence' requirement is an associated benefit. The material risks are still need to be addressed.

EA report - Box 6.1 Confidence Scrapes - General Explosive Site Remediation Practice:-

*It is common practice as part of a remediation strategy, to undertake a so called "confidence scrape" of near surface soils (e.g. the upper 300mm). This allows **removal of vegetation cover** and rapidly demonstrates the absence of explosive devices/fragments as a means of reassuring the public regarding a site. In essence, should a discarded device or local spillage of explosives be present in the near surface soils, this would be removed as part of the*

*confidence scrape excavation and disposal of surface soils. **This not only helps to minimise the actual risk, but also reassures any purchaser or potential site user i.e. also addresses the perceived risks. This is particularly important in residential development or open space land which will have regular and unrestricted public access and may be more cost effective than extensive metal detection or geophysical scanning.***

Stanger report 9.3.1:-

*A site scrape to remove the upper layers of Made Ground is proposed, thus excavating material identified as containing limited amounts of explosive residues and potentially containing buried explosive devices.*

Royal Ordnance report, 9.3.6 'Devices' - last para:-

*There is potential for explosive devices to be within the ground or within any drains which have been left in-situ, particularly in the former Group 1 and 2 areas.*

### **Disposal of scraped material:**

The applicant is proposing that scraped material would be sorted to remove contaminants and re-used on site. There are two significant issues with this approach:

1. Despite being very well versed in decontaminating such sites, BAE does not take this route. Being a commercial company, it surely would if it were feasible, to save cost. Instead it mounds the scrape material on-site and caps it (provided the general level of contamination is not too high). Stanger, too, only offer the option of mounding material on-site. (See Stanger Executive Summary, paragraphs 13 and 14, "A site scrape.....")
2. Many tonnes (about 5,000 per hectare) of scraped material would need to be sorted, to remove several types of contaminant - dispersed chemicals, asbestos sheeting, loose asbestos fibre and explosive devices - some very small. These contaminants could all be commingled, with no indication of which ones are present in any particular batch of scraped material. The application gives no indication of how this very complicated task might be accomplished. TAG do not believe it can be safely achieved.

### **Undeveloped area risks:**

The main risks present in the apparently undeveloped areas of the site are:

- Deliberate wartime activities which were done away from the normal operational areas, because of secrecy, being non-standard operations,

or because of extremely high hazards attached.

- Accidental spillages by staff, or from transportation of devices. Such spillages could be within operating areas, from path/roadways, or from rail networks. The internal narrow gauge railways were a particular source, as they were less stable, and the items being transported were for internal purposes, and therefore not always as well packaged. (see EA report 2.3.7). There were apparently 25 miles of narrow gauge internal railways on the whole ROF site, and the location of all of these, including across 'undeveloped' areas, has not been identified.
- Contamination in and around the burning grounds, where waste and explosive materials were burnt on open ground or in trays on the ground. BAE 'scrape' such areas down to original undisturbed ground. The extent of the burning grounds has not yet been defined.
- Deliberate burial of waste material on site (it was policy not to move waste off-site). Following non-standard operations in the undeveloped areas, waste may not have been suitable for transportation to the landfill areas, and could have been buried at the place it was generated.
- Post decommissioning burials of industrial waste (anecdotal evidence), or pipe lagging asbestos. See the copy of our objection made to planning application 13/03061 attached.
- Contamination of the railway sidings area. BAE clearly consider the sidings as a major contamination risk. At Chorley the normal 'scrape' was 250mm, but the sidings were scraped to 1 metre. See 'Chorley - Group 1 - Remediation Strategy, section 9.3:  
*Within the area of the former railway siding the confidence scrape is expected to be increased in depth up to 1,000mm. The rationale for this is that the ash located within this area has been determined to be up to 1,000mm deep and as the majority of all the raw explosive materials and completed munitions were transported by rail (when the railway line was in use) this area has a particularly high risk of encountering explosive components.*  
This is likely to be equally applicable at TATE, due to the similarity of the sites and operations. However the sidings area is now largely 'returned to nature'. The application does not address how this area is to be decontaminated.
- Landfills. There are landfills on site dating from the operational period. It is unclear if they have all been identified. With the policy of on-site

disposal, they may contain significant levels of hazardous materials, and should be fully investigated.

Note that many of these potential areas of contamination could be quite small, **and therefore very difficult to locate using sampling techniques.**

EA report 4.3.2 'Investigation Design' highlights the issues of identifying such contamination:-

*The distribution of exploratory points may differ for an explosives site. For conventional sites, those areas shown to be more remote or apparently unused would perhaps be investigated to a lesser degree than an area of obvious industrial activity. Due to the hazards of explosives, processes such as disposal, or testing may have been conducted in remote areas of the site away from the main manufacturing area. Little visible evidence may be available of historical activities due to demolition, covering with earth or simply vegetation grow back. Some of these 'remote' activities may not have been fully documented. Consequently such **remote areas** may in fact **carry a higher risk of explosive contamination** and consideration should be given to allocating a higher than normal level of priority. Given the unusual distribution of contamination which may be found on explosives sites, **the use of grid patterns and geostatistical methods for locating exploratory holes is less likely to be effective in locating 'hotspots' than on many conventional contaminated sites***

It seems that the applicant has not fully identified the burning site location. Indeed similar sites (like ROF Chorley) had more than one such burning ground. The routes and transport methods by which materials were taken to the burning ground(s) have not been defined. Neither have the locations of all the internal railway lines. Stanger makes it clear that spillages or deliberately discarded material or devices could be found within 30m of such routes. Without knowing where they ran, or where waste burials may have occurred, this makes the whole undeveloped area one of potential risk. (See Stanger 9.3.5 'Decontamination - Surface scrape').

### **Site scrape v ecology:**

From the above, it can be seen that to make all areas of the site which have public access safe, both practically and also for 'confidence', it is necessary to remove all vegetation and scrape the top 250-400mm of soil.

We have already noted that at the time when the site operated as a munitions factory, there was no scrub or tree cover. So hazards as described above can be anywhere, including under the flora which has grown in the intervening years.

It is not possible to see how the scrape, required for decontamination, can be reconciled with the applicant's claim to retain much of the sensitive ecology of the site. They even show retained trees/shrubs as part of the landscaping running between houses, and along the roads.

## **The BAE approach to decontamination at Chorley:**

When investigating the previous planning application for TATE, by the same applicant, TAG were very concerned by the approach being taken to decontamination of the site. We remain as concerned by this application.

As a result of our concerns, we investigated the decontamination of similar sites by BAE. In doing so we found ROF Chorley, which BAE was decontaminating to create Buckshaw Village. BAE too were needing to decontaminate an area which had contained a group 1 initiator production unit, burning grounds and railway sidings. The area involved was 61 hectares. Thus it is extremely similar to the TATE application, except it included an area of historic woodland that pre-dated the construction of ROF Chorley.

It is notable that:

BAE conducted a very thorough desk-top study, followed by an extensive physical survey which included 322 trial pits and 140 other assorted sampling methods, before applying for planning permission (07/2009/0062/FUL). The application included a full remediation strategy for the entire site.

A detailed desk-top study was performed despite the fact that the site was still operational until early 2008. BAE's knowledge of the site history was far greater than the applicant's knowledge of the TATE ROF site, which had ceased being operational in the 1950s.

Areas not within the Biological Heritage Site (BHS) (ancient woodlands, pre-dating the ROFF) were to be the subject of a confidence scrape, of 250mm generally and 1000mm at the higher risk railway sidings. The burning grounds were to be scraped down to natural ground level.

The BHS site was the subject of special analysis, including a 'police forensic type' line search, and survey with unexploded ordnance detection equipment.

Despite the fact that no dangerous explosive concentrations or devices were found in the extensive physical survey, BAE still conducted a full remediation of the entire site, including a scrape. (see Chorley Group 1 remediation strategy, section 8.4 'remediation strategy:-

*"BAE Systems Environmental's previous experience of redeveloping explosives sites, has indicated that there is only one remedial approach that can feasibly meet all the remediation objectives."*)

Contrast this with the applicant's position that, since no explosive devices have yet been found at TATE, with far more limited investigation, then it is reasonable to assume none are existing. (Note, the previous application by Rockspring made reference to the history of the site, including the death of an individual caused by an unexploded device being triggered when he jumped over a wall).

Even though part of the Chorley site is BHS, and would not be fully scraped, BAE's plans involved the excavation of 250,000 cubic metres of soil - so about 400,000 tonnes. The TATE site is likely to generate a similar quantity.

BAE were used by Atkins in preparation of the EA report, so are obviously considered experts in the field of decontamination of former explosive sites.

Given all the above, if it is necessary to choose between the BAE approach, and that of WYG as expressed in the application, it would seem unsound not to base the appraisal on the BAE methods.

Because of this TAG drew the ROF Chorley information to the attention of LCC contaminated land team, in August 2015. TAG was in contact with the council officers involved for Chorley, who had been acting at the time of the BAE application, and who were still working for Chorley council. They provided a selection of the application materials, including the Group 1 Contamination Desk Study and the Remediation Strategy. One of the Chorley officers (Jo Oliver) had apparently been specially recruited by Chorley Council for this application, because of her expertise in the field.

After providing the contacts to LCC, we felt it inappropriate to contact Chorley again ourselves. We have recently re-sent the contact details, as it was not clear in discussions that LCC had managed to contact the correct persons at Chorley.

### **Physical Site Survey:**

From the BAE information above, it can be seen that their approach is extremely thorough. It is also clear that both the EA and Atkins Consulting value their experience, since they assisted Atkins in the preparation of the EA report.

BAE at Chorley conducted a full physical site survey before applying for planning permission. They also undertook the decontamination of the site in one operation, under a planning approval to construct the development platform.

Given that the costs and constraints of decontamination are likely to be considerable, it makes no sense to grant outline planning permission before they are defined by a physical survey. Planning approvals should be deliverable. The deliverability of this application is unknown until the remediation strategy and costs are properly defined, which depends on such a physical survey.

Even after a survey, the remediation has to be done under strictly controlled conditions, with explosive experts on site. This is because localised small-dimension hotspots are unlikely to be found by the site survey. In this case 'small dimension' is a hot-spot that has a smaller diameter than the physical survey test-hole spacing.

The location of the red-line boundary includes three of the most hazardous areas within TATE as a whole. The Group 1 initiator fabrication area (accepted by all parties as a significant hazard, where decontamination of the buildings was not attempted, instead they were razed to ground level), the burning ground(s), and also the railway sidings. Yet the applicant claims that, because explosives and devices have not been uncovered elsewhere on site, then they are unlikely to be present here. This is the opposite of the precautionary principle, instead it is waiting for an accident to occur.

From the above it is clear that the only way to see if decontamination and development is possible at an affordable cost is to conduct the physical survey **before any outline planning permission is considered.**

This is not just TAG's view. It was also the view of Sarah Stanton of the LCC contaminated land team. However it is clear from documents obtained under the FOI act that during the previous 2000 house application she was being pressured by the planning officers to accept a detailed phased scheme, incorporating the physical site survey and its analysis as a condition of the planning application approval. (See consultation documents in appendix 1)

As an example of the impractical nature of this, consider the disposal of the scrape material. If it proves too difficult to sort (which TAG believes is certainly the case), then it will need to be mounded and capped on-site. Doing so will require a very significant area of land. This will obviously affect the entire site layout, thus completely changing the vision and design proposals.

### **Phasing:**

The application is based on a phased development of the site. The Design and Access statement section 7.1 shows three phases of development. The third and last stage of housing development is at the location of Group 1, thought to be the most contaminated area on site. There is an implication in 7.1.4 that the remediation of that area will be done as part of that phase of development. This is in line with the proposals for the previous application.

At this point in the development it is likely that housing from phases 1 and 2, which are immediately adjacent and abut phase 3, will already be occupied. Occupants are likely to include the most sensitive humans - the very young, the very old, and pregnant women. It seems quite extraordinary to contemplate remediating this hazardous area with such vulnerable people in the immediate vicinity. Again we refer to the BAE approach, where the whole site is remediated and a development platform created (under a separate planning application) before any housing construction even starts.

### **Enforcement of planning conditions:**

During the previous application (13/03061), the LCC contaminated land team had extensive discussions with the applicants. It is apparent from the internal LCC consultation correspondence (see document from Sarah Stanton to

planning officers ref: 13\_03061\_PRD6 of 12/2/2014, in appendix 1), that there were considerable concerns about the approach being taken by the applicant. The applicant had to be most strongly 'encouraged' to agree to a sufficient level of physical surveys. The contaminated land team made it absolutely clear that their preferred option, which they believed could be legally supported, was to have the physical survey completed before grant of outline permission. However, due to the "*drive to issue a permission*" they were prepared to agree to a detailed site appraisal as a condition of the planning consent, to be conducted after grant of the outline planning permission, with 'road blocks' if problems were uncovered.

The applicant has a history of being 'economical with the truth'. Examples include the bus service details, the missing coach station, their failure to present the Royal Ordnance report, and their commissioning of the Powell contamination study - which managed to omit all the key documents and their safety recommendations.

Taking all the above into account, and having reviewed the survey and remediation strategies of BAE, it is apparent that the only safe option is to require similar surveys and remediation from the applicant, **before any grant of permission. Otherwise LCC will be forced into a position of playing 'policeman' to the applicant's conduct** which, with their history of trying not to fully cooperate, is just too risky. It would put the public at risk. It would also impose a considerable, and unnecessary, burden on the council staff.

### **Conclusions:**

- The application is woefully short on details of the current site condition, and what steps would be required to decontaminate it.
- Full physical site surveys, and a remediation strategy based on the findings, should be produced before the application is decided.
- The conflict between preservation of the ecology, and remediation, must be clearly resolved (not swept under the carpet, as now).
- The treatment of scraped soils must be agreed and practical.
- The BAE experience of such remediation should be fully incorporated into the proposals.
- The whole red-line site should be remediated and a development platform created before any housing is occupied, to protect the health of residents.

PL - 2 November 2016