Contaminated Land
Air Quality
Environmental Audit

Partnership No: OC 300776

Heyford Park

Dorchester Living: Phase 10 (Centre and West) Remediation Earthworks Completion Report

For Urban Regen Ltd. & Dorchester Living

June 2023

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1. Introduction

1.1. Dorchester Living (DL) has submitted an application for Reserved Matters Approval (ref: 22/02255/REM) for redevelopment of an area of land referred to as Phase 10 within the former RAF/USAF Upper Heyford Airbase off Camp Road. It is understood that the application, which falls under the overarching Planning Permission for the wider site (ref: 18/00825/HYBRID), was permitted by Cherwell District Council (CDC) on 27th February 2023. DL intend to redevelop the site to 138 residential dwellings with associated infrastructure and areas of landscaping and public open space (POS).

1.2. Urban Regen Ltd. (URL) was instructed by DL to carry out demolition, remediation and preparatory earthworks across Phase 10 to allow construction works to commence. URL duly instructed Smith Grant LLP (SGP) to carry out the verification works and produce the earthworks completion reporting.

1.3. Planning Permission 18/00825/HYBRID contains the following Conditions relating to contaminated land:

32	*No operational development hereby approved shall commence in a phase of development until a remediation strategy to address the risks associated with contamination of that phase has been submitted to, and approved in writing by, the Local Planning Authority. This strategy shall include the following components:*
i.	*A site investigation scheme, based on (1) to provide information for a detailed assessment of the risk to all receptors that may be affected, including those off site [Condition (1) relates to the "application for approval of all the reserved matters" which has been undertaken for Phase 10 as discussed in Section 1.1];*
ii.	*The results of the site investigation and the detailed risk assessment referred to in (2) and, based on these, an options appraisal and remediation strategy giving full details of the remediation measures required and how they are to be undertaken;*
iii.	*A verification plan providing details of the data that will be collected in order to demonstrate that the works set out in the remediation strategy in (3) are complete and identifying any requirements for longer-term monitoring of pollutant linkages, maintenance and arrangements for contingency action.*
	Any changes to these components require the express written consent from the Local Planning Authority. The scheme shall be implemented as approved.
	Reason: This former RAF base is located over the White Limestone (Great Oolite) that is classified as a Principal Aquifer. Due to the potential for disturbance of historic contamination to impact on groundwater quality, this Principal Aquifer needs to be protected during development of this site.
33.	*Prior to any operational development within a phase or sub-phase being occupied a verification report demonstrating the completion of works set out in the approved remediation strategy approved under Condition 32 and the effectiveness of the remediation shall be submitted to, and approved in writing, by the local planning authority. The report shall include results of sampling and monitoring carried out in accordance with the approved verification plan to demonstrate that the site remediation criteria have been met.*

	Reason: This site is located over a Principal Aquifer (Great Oolite White Limestone) and there is the potential for contamination to be present in the soils from previous use of this site as an RAF Air Base. Demolition and construction might result in disturbance of petroleum hydrocarbons that could impact on the groundwater quality of the Principal Aquifer.

1.4. An initial site investigation report was produced by Hydrock for Phase 10 and other development areas within the wider site in February 2017 (ref. HPW-HYD-MS-ZZ-RP-G-0001). This was supplemented by further site investigation works carried out within Phase 10 by Jomas Engineering Environmental (JEE) as reported in their Geo-Environmental & Geotechnical Assessment (Ground Investigation) Report (ref: P4280J2513/SC; 18th August 2022).

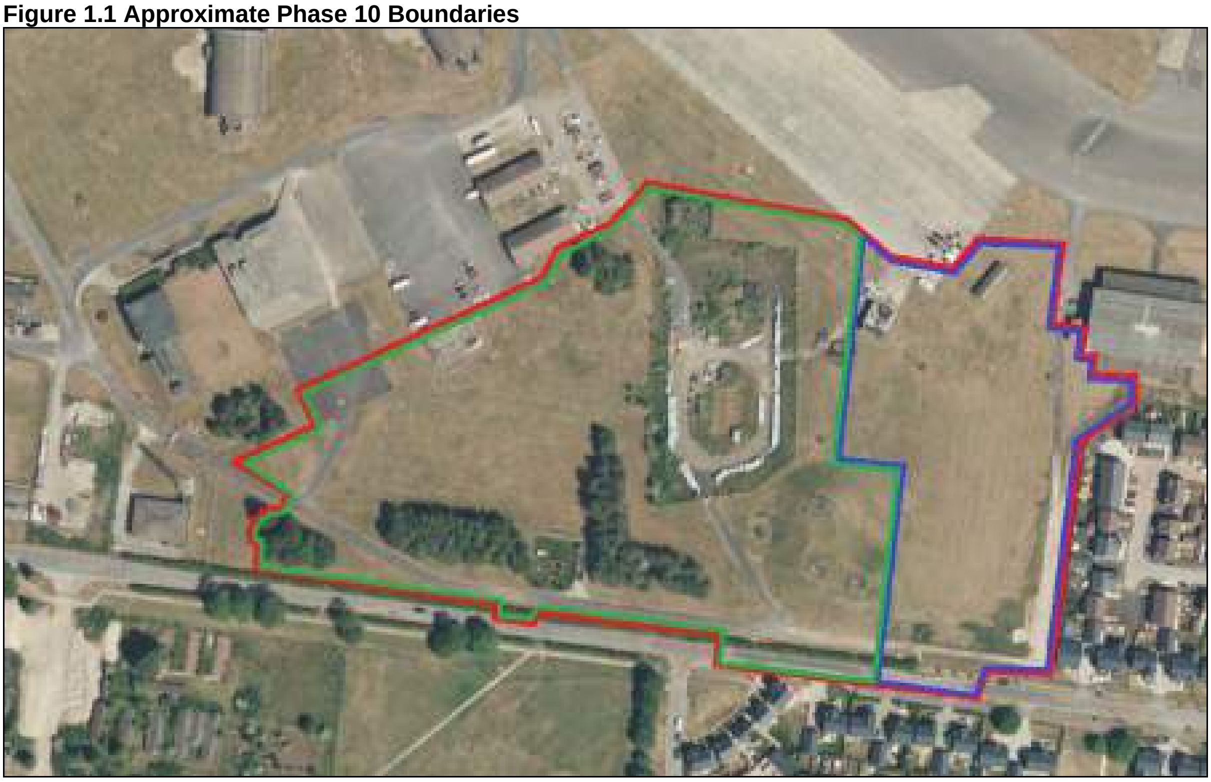
1.5. A Remediation Statement which covers Phase 10 was prepared by Hydrock (ref. HPW-HYD-PX-REM-RP-GE-P1-S2, April 2017), however it was decided that a revised Strategy was required to align the remedial and verification works to the SGP Remediation Strategy which was produced to cover the neighbouring NSA area (R1742-R01-v1; May 2014) under Planning Consent 10/1642/OUT for consistency and to take into account the supplementary investigation works completed by JEE in 2022. SGP therefore produced a revised Remediation Strategy for Phase 10 (ref: R1742d-R04-v1; September 2022).

1.6. It is understood that the supplementary JEE Ground Investigation Report and the revised SGP Remediation Strategy for Phase 10 were both submitted to CDC under discharge of condition application 22/03017/DISC. Following a review of these reports, CDC confirmed approval of both documents and recommended partial discharge of Condition 32 (‘partial’ as it relates to Phase 10 of the development only).

1.7. The preparatory earthworks in the western and central sections of Phase 10 have now been completed and this verification report is intended to assist in the discharge of Condition 33 for these parts of the site, although some aspects can only be completed by the developers. The preparatory earthworks in the eastern section of Phase 10 were completed in January 2023 and have been reported separately (report ref: R1742-R24-v2). This was to allow early handover of this sub-phase for construction works to commence whilst remediation earthworks continued within the wider Phase 10 development area (see drawing D01 and Figure 1.1 for development boundaries). No comments have been received with respect to the Phase 10 (East) report as it is understood this is to be submitted to CDC in a single package together with this report under a Discharge of Condition application.

1.8. A development layout has been provided by DL (ref. 0521-PH10-102 D) which shows that Phase 10 is to comprise a variety of detached, semi-detached and terraced housing with private gardens, areas of POS, and associated infrastructure. Several attenuation ponds are also indicated on the site and a children’s play area is proposed in the centre-southeast.

Figure 1.1 Approximate Phase 10 Boundaries



Red – Phase 10 Site Boundary
Green – Area covered by this report (ref. R1742-R25)
Blue – Wider Phase 10 Development Area (east) covered by previous report (ref: R1742-R24)

1.9. SGP has inspected the URL preparatory earthworks carried out in the central and western parts of Phase 10, collected samples of recovered topsoil, site-generated aggregate and formation soils, directed and oversaw tank / hotspot excavations with the collection of validation samples from the excavation bases and sidewalls as well as from replaced / retained soils, and undertaken a vapour intrusion risk assessment via the installation of vapour monitoring probes. This report describes the works carried out, drawing conclusions and making recommendations concerning the further works required by DL in order to fully discharge Planning Condition 33 for the western and central parts of the site.

2. Remediation Strategy

2.1. Site Characterisation *(Entire site – not restricted to central and western parts of Phase 10)*

Development History

2.1.1. The Phase 10 area was occupied by agricultural farmland during the time of the earliest available mapping (1875-1880) until 1916-1918 when the Upper Heyford airbase was constructed which was used by the Royal Flying Corps (later merging with the Royal Naval Air Service in 1918 to become the Royal Air Force (RAF)). The United States Air Force (USAF) then took over the site in 1950 until its eventual closure in 1994.

2.1.2. There is limited historical mapping covering the site due to national security reasons therefore some uncertainties remain regarding its development; however, OS mapping from 1974-75 shows the presence of tanks in the south referred to as above ground storage tanks (ASTs) by JEE in their site investigation reporting. Mapping from 2002 shows the presence of raised mounds on the site associated with the Petroleum Oil Lubricant (POL) system – a network of tanks and pipes which transported aviation fuel around the wider airbase – although it is considered that these features were present from a much earlier date but were omitted from OS mapping for security reasons. The mounds are referred to as 'POL2' comprising a collection of 12 tanks in the centre / centre-north of the site and 'POL21' consisting of a cluster of 3 tanks in the centre-southeast (these are both located outside of the Phase 10 East area).

2.1.3. The POL pipeline entered the site from the south before forming a "T-junction" in the southwest in the location of the ASTs described by JEE, although Vertase who carried out the POL decommissioning works referred to this feature as a 'Valve-Pit' (both terms are used throughout this report for clarity). From the "T-junction", one line extends westwards exiting the western site boundary with the other traversing eastwards to POL2 and POL21 before continuing off-site to the north and northeast. The site underwent little change after its closure with both the POL tanks and pipeline remaining onsite, although these were decommissioned by Vertase as described in the SGP Remediation Strategy.

Intrusive Investigation Works

2.1.4. The only significant indicator of contamination reported during the initial intrusive site investigation carried out by Hydrock was a "slight hydrocarbon odour and sheen observed within groundwater ingress" into trial pit TP109 in the far west of the site. During the 2022 JEE investigation more frequent contamination indicators were encountered as follows:

- JBH4 (southwest, near ASTs / Valve-Pit) – Black staining with hydrocarbon odour reported in cohesive deposits of weathered bedrock at 1.2-2.0m bgl;

- JTP10 (southwest, near ASTs / Valve-Pit) – Black staining with hydrocarbon odour reported in granular deposits of weathered bedrock at 1.5-1.7m bgl;
- JSTP1 (centre-northwest) – Black staining with slight hydrocarbon odour reported within the made ground at 1.4-1.5m bgl;
- JSTP2 (southwest, near ASTs / Valve-Pit) – Black staining with no odours within made ground at 0.9-1.1m bgl.

2.1.5. A log of a BGS trial pit historically excavated in the northeast corner of the site (TP7) was also reviewed which indicated the potential presence of an asbestos pipe at 0.8m bgl.

2.1.6. Made ground soils have been identified across the site which generally consisted of natural reworked soils with inclusions of brick and occasional asphalt fragments. No inclusions of ash, clinker or slag were reported and the descriptions of the made ground were typical to that within the wider Heyford Development site.

2.1.7. Soil testing has indicated the presence of low-level PAHs within the shallow made ground above residential screening criteria at locations across the site (Hydrock entry TP128 and JEE entries JWS1, JBH2, JBH3 and JTP8). No discussion was made on the probable source of the PAHs but it is most likely to be attributed to the minor inclusions of asphalt which were recorded within some of the investigation entries.

2.1.8. Minor exceedances of the aromatic C16-C21 and C21-C35 hydrocarbon fractions were recorded in 2 locations: JBH3 (0.25m bgl), located in the centre-northwest of the site, and JBH4 (1.5m bgl) located in the southwest near the ASTs / Valve-Pit. No obvious source of the contamination was identified, however JEE concluded this was most likely attributable to the presence of asphalt fragments.

2.1.9. The detection of asbestos was limited to a single incidence of loose fibres of chrysotile and amosite within the made ground in entry JTP8 (0.5m bgl) located in the far west of the site, however quantification analysis confirmed only trace levels with a fibre mass below detection limits (<0.001%).

2.1.10. In all instances concentrations of heavy metals, VOCs and PCBs were below their respective generic assessment criteria (GAC) with VOCs and PCBs all reported below analytical detection limits.

2.1.11. A large number of entries were made in the vicinity of the POL tanks and pipeline with no impacted soils encountered; however, it was acknowledged that 1) due to the extent of the mounds overlying the tanks impacted soils could be present directly around these, and 2) locally impacted soils around the decommissioned fuel lines could still exist.

Groundwater Monitoring

2.1.12. Hydrock carried out a single round of groundwater monitoring on the six boreholes they installed across the site. Minor exceedances were detected for the heavy metals copper, manganese, nickel and zinc and elevated hydrocarbons were recorded in five of the six wells. One entry (BH12) also recorded the presence of VOCs, however these all consisted of individual hydrocarbon compounds which were present at low concentrations.

2.1.13. During the JEE supplementary investigation works, two rounds of monitoring were carried out on the eleven newly installed boreholes as well as on the six existing Hydrock wells. Consistent with the Hydrock results, minor exceedances for heavy metals were reported (copper, lead and nickel) with exceedances for total cyanide also reported in four of the entries. Further assessment undertaken by JEE however concluded there was no risk from either the heavy metal or cyanide groundwater concentrations.

2.1.14. Elevated hydrocarbons above WHO drinking water guideline values were also recorded in three of the boreholes sampled by JEE, whereas VOCs were reported below detection limits in all instances. The exceedances were generally minor with JEE concluding that these were highly localised and that there was no evidence of offsite migration. This was consistent with Hydrock's assessment which concluded that the groundwater contamination recorded on Phase 10 does not represent a significant risk of pollution to the groundwater beneath the site, although it was also recommended that existing fuel stores (tanks / pipelines) and impacted soils should be removed.

Ground Gas

2.1.15. No significant sources of hazardous ground gas have been identified on the site or surrounding area with no significant depths of made ground soils encountered during the investigations.

2.1.16. A total of six ground gas monitoring rounds were carried out by Hydrock and JEE during which marginally elevated methane (max. 1.7%) and carbon dioxide (max. 9.3%) concentrations were recorded; however, given that there were no significantly elevated flows JEE concluded that the site should be classified as CIRIA Characteristic Situation 1 (no gas protection measures required).

2.1.17. JEE also carried out screening of the well headspaces with a PID to detect the presence of VOCs which recorded some elevated readings above 50ppm at locations across the site (max. 565ppm). JEE also compared the groundwater hydrocarbon concentrations to SoBRA GAC_{gwvap} to assess the risk from vapour generation / migration into future dwellings from this source with one exceedance reported for Aliphatic C10-C12 hydrocarbons (JBH6). JEE concluded that a localised vapour intrusion risk could be present in the vicinity of JBH6 possibly necessitating the installation of protection measures, however the assessment largely focussed on vapour risks from groundwater concentrations and did not take into account the elevated PID readings recorded within the boreholes.

2.2. Expected Contamination

2.2.1. Identified known or potential contamination sources determined from the historical uses of the site and the site investigations were determined to be:

- Decommissioned fuel tanks and pipework associated with POL2 and POL21 where there is the potential for residual hydrocarbon impacted soils associated with historic leaks and spills;
- Decommissioned POL pipeline which crosses the site from west to north-east where there is potential for residual hydrocarbon impacted soils associated with historic leaks and spills;
- ASTs / Valve-Pit located in the southwest where elevated TPHCWG hydrocarbons / indicators of hydrocarbon contamination have been reported within nearby soils (JBH4, JSTP2 & JTP10);
- Other areas where indicators of hydrocarbon contamination have been reported in the soils in the centre-northwest (JSTP1) and far west (TP109) of the site;
- Possible asbestos pipe in the northeast (BGS TP7);
- Occasional PAH exceedances (site-wide) and trace asbestos fibre (west - JTP8) within the made ground soils;
- Potential vapour migration risk from areas of former fuel storage / transmission where leaks / spills may have occurred (general) and from localised impacted groundwater (centre-east - JBH6).

2.2.2. Natural background contamination may be present in the bedrock and soils. The site lies within, or adjacent to, the "ironstone domain" as described in DEFRA Technical Guidance Sheet TGS01 "Arsenic", July 2012, and within 1km of mapped outcrops of ironstones within the Jurassic sedimentary rocks. Within the ironstone domain, the normal background concentration (NBC) of arsenic is reported to be 220 mg/kg; the NBC is defined as the upper 95% confidence limit of the 95th percentile of topsoil concentrations. This value substantially exceeds the criteria for garden soils (Remediation Strategy, Table 3.3).

2.3. Remediation Objectives and Approach

2.3.1. The key contamination remediation objectives are to:

- create a significant betterment of the groundwater environment thereby protecting groundwater quality at and beyond the site boundary;
- remove / remediate significant pollution sources such as hydrocarbon hotspots, if present, that pose a risk to man and the environment, to the extent feasible;

- break significant or potentially significant future pollutant linkages resulting from the change of land use, in particular related to shallow garden soils and human exposure;
- respond appropriately to contingencies, in particularly the discovery of previously undisclosed contamination;
- remove development constraints and prepare the site physically to enable residential development with associated infrastructure;
- manage all emissions to air and water to protect surface waters, groundwater and the atmosphere during the remediation works;
- provide appropriate additional protection measures, where necessary, to be implemented during construction – including building gas barriers, water mains protection, and garden / open space soil quality and thickness.

2.3.2. Dedicated inspections by an Environmental Consultant were recommended in the areas where visual / olfactory fuel contamination indicators were reported (TP109, JBH4, JTP10, JSTP1 and JSTP2). These supplementary investigation works were carried out on the 18th-19th October 2022 and have been reported separately in SGP letter report 'Upper Heyford – Dorchester Phase 10: Supplementary Trial-Pits & Fuel Hotspot' (ref: R1742B-L20221027) which is to be submitted to CDC together with this report and the Phase 10 (East) Remediation Earthworks Completion Report (ref: R1742-R25-v2). It was concluded that hydrocarbon impacted soils were present in the southwest of the site in the vicinity of the Valve-Pit and that any significantly impacted soils would require removal and replacement with non-impacted fills, with lesser impacted soils requiring excavation and aeration / volatilisation before testing and replacement. It was also recommended that a more extensive vapour monitoring should be carried out in this area (25-30m grid spacing) to adequately assess whether vapour protection measures would be required within plots over this area. It was, however, considered that there were appropriate provisions within the Strategy to deal with the identified contamination and that an update to the Strategy was not required.

2.3.3. Full time attendance was also required during the break-out and removal of the base of the POL tanks and the AST / Valve-Pit due to the potential for fuel contamination in these areas. The pipeline will be subject to removal, although full time attendance by a consultant is not considered necessary unless contamination indicators are encountered (in which case verification sampling would be required as described below following the removal of any impacted material).

2.3.4. Where identified, it was specified that hydrocarbon contaminated soils would be chased out up to either site boundaries, retained buildings, services or intact bedrock as determined through use of a PID and visual inspection. Impacted soils would then be removed to a secure stockpile on an impermeable membrane liner or suitable impermeable paved surface pending treatment or offsite removal. It was then recommended that the sidewalls and bases of the excavations should be sampled to verify that the contamination has been removed to acceptable concentrations or to the extents feasible (there was no requirement to sample intact bedrock). Verification sampling of the POL tank excavation extents was determined to be required whether hydrocarbon contamination indicators were encountered or not.

2.3.5. A dedicated inspection by an Environmental Consultant was also recommended within the area of the suspected asbestos containing material (ACM) pipeline (BGS TP7) with samples of the underlying soils collected for an appropriate analysis suite (i.e., asbestos identification) following removal of the pipeline. Soils with asbestos fibre at quantifiable amounts (>0.001%) would be excluded from use in soil cover systems and placed at depths over 1m below ground level, subject to suitability. This provision did not apply to hazardous levels of unbonded asbestos (>0.1%) which would require offsite disposal.

2.3.6. General inspections of the ground conditions by operatives and supervisors were recommended during site turnover and construction excavations and removal of the POL pipeline. Attendance by an Environmental Consultant was only considered necessary if contamination indicators were encountered and, if confirmed, such areas would be treated as a contamination hotspot requiring full time Consultant attendance.

2.3.7. The general requirements for garden and landscaped soils taken from the Remediation Strategy are as follows:

- provision of 600mm clean soil cover within garden areas / 300mm in soft landscaping where the underlying soils contain one or more concentrations of substances in excess of contamination targets set out in Table 3.3 of the Strategy;
- site won materials to be used as garden / landscaping soils must be suitable for use, validated, and comply with contamination targets set out in the Remediation Strategy at a rate of 1 sample per 500m^3;
- imported soils used for cover purposes to comply with contamination targets set out in the approved Remediation Strategy at a rate of 1 sample per 250m^3 with a minimum of 3 samples per source;
- in areas where natural, uncontaminated soils are present following the site re-grade, clean topsoil may be required as a growing medium but there will be no requirement for a full 600mm of placed soil cover.

2.3.8. It is confirmed that Phase 10 may be generally classed as “Green” under the NHBC classification scheme with no special measures required to address risks posed by ground gas. However, due to the recognised potential for hydrocarbon contamination on the site relating to the POL tanks and pipeline, a post-remediation vapour monitoring programme was recommended to assess the intrusion risk of volatile hydrocarbons into future built development / inhalation by site users. Dependant on the findings of the assessment, precautionary VOC protection measures may be required in dwellings.

2.4. Phase-specific Strategy (Phase 10 Centre and West)

2.4.1. It was concluded that the Phase 10 central and western areas posed a potential risk of localised hydrocarbon contamination where visual and/or olfactory indicators of fuel impacted soils were previously recorded in the vicinity of the Valve-Pit (JBH4, JTP10 & JSTP2), and in the west (TP109) and centre-northwest (JSTP1) of the site. During the supplementary investigation carried out by SGP in October 2022 (as detailed in the SGP 'Supplementary Trial-Pits & Fuel Hotspot' report (ref: R1742B-L20221027)), no significant contamination indicators were recorded in the vicinity of trial pits 'TP109' and 'JSTP1' therefore no further specific actions were considered necessary in these areas. However, significant fuel contamination indicators were detected in the vicinity of the Valve-Pit in the southwest and it was determined that this area should be treated as a hydrocarbon hotspot. Consequently, removal of significantly impacted soils under the direction of an Environmental Consultant was required in this area with verification testing as detailed in the Remediation Strategy.

2.4.2. Similarly, as the POL2 and POL21 tanks in the central part of the site were known to have historically been used to store aviation fuel it was determined that consultant attendance would be required following breakout of these structures whether hydrocarbon contamination indicators were observed or not. The Strategy detailed that the consultant would initially assess whether removal of residual contamination from the tank surrounds was required, and, once satisfied that no significantly contaminated soils remained, verification samples of the surrounding soils would then be collected to determine the presence / absence of any residual hydrocarbon contamination. It was also recognised that there was potential around the area of the decommissioned pipeline for localised impacted soils associated with historical leaks.

2.4.3. Given the identified hydrocarbon hotspot in the southwest of the site and the recognised potential for further hydrocarbon hotspots associated with the POL tanks / pipeline, a post-remediation vapour assessment programme was also recommended to assess the potential hydrocarbon vapour risk to future site users.

2.4.4. The site-wide strategy of ensuring clean cover soils to 600mm depth (subject to formation testing) is considered to be an appropriate approach.

3. Description of Works

3.1. General Approach

3.1.1. Preparatory works within the Phase 10 (Centre and West) site included:

- asbestos survey and strip of onsite buildings and structures;
- demolition of all above ground structures;
- soft strip and vegetation clearance;
- segregation of waste materials for recovery / disposal (i.e. metal and timber);
- recovery of topsoil.

3.1.2. Remediation earthworks within the Phase 10 (Centre and West) site included:

- grubbing out of relict ground floor slabs, substructures, foundations and roadways;
- removal of relict utilities (i.e. cables, ducts, water mains and drains);
- removal of decommissioned POL pipeline;
- removal of decommissioned POL2 and POL21 tanks including transfer of pulverised fuel ash (PFA) fill to hard materials stockpile;
- processing and crushing of site-recovered hard materials to produce aggregate for reuse on site (stockpile ‘Agg-SP1’ mixed with PFA);
- hydrocarbon hotspot excavations (various including Southwest (Valve-Pit) Hotspot – discussed in more detail in Section 4);
- excavation of asbestos impacted soils in centre-northwest and burial of arisings at depth within POS area in southwest of site (discussed in more detail in Section 4.17);
- removal of hydrocarbon impacted soils, initially to temporary stockpiles in northwest of site then to long-term quarantine area within wider Heyford development (both stockpile areas underlain by solid concrete);
- regrading of site using suitable recovered subsoils / POL21 bund soils.

3.1.3. The main preparatory and remediation earthworks within the Phase 10 central and western parts of the site were carried out between October 2022 and April 2023.

3.1.4. The existing buildings were demolished following an asbestos survey and removal was carried out by a specialist sub-contractor (Elite) prior to the main earthworks mobilisation. Copies of the asbestos survey reports and removal of ACM certificates are retained by URL and are available on request.

3.1.5. Relict structures including basal slabs, foundations and redundant infrastructure were excavated and recoverable materials such as concrete, brick and masonry were segregated for processing. Rebar was separated from the concrete to be recycled and the hard materials were then crushed to produce aggregate for reuse by the developer. Scrap metal and any timbers were sent off-site for recycling.

3.1.6. It is understood that both stockpiles of site-generated aggregate (stockpile refs: Agg-SP1, vol. ~4,731m^3 / Agg-SP2, vol. ~802m^3) are intended to be as general fill and as sub-base for road construction on the site. The locations and volumes of the aggregate stockpiles are shown on the appended URL As-built drawings and the aggregate testing results are included in Section 4.18.

3.1.7. Approximately 6,022m^3 of topsoil has been recovered from the entirety of the Phase 10 site which was initially placed into five separate stockpiles (TS-SP1 to TS-SP5), although two of the stockpiles (TS-SP3 & TS-SP4) have since been combined to form a single stockpile. The locations and volumes of the various topsoil stockpiles are shown on the appended URL As-built drawings. This report only describes the testing results of stockpiles 'TS-SP4' (Section 4.2) and 'TS-SP5' (Section 4.3) as the testing results of stockpiles 'TS-SP1', 'TS-SP2' and 'TS-SP3' have already been included in the previous reporting (ref: R1742-R24-v2).

3.1.8. Removal of the POL21(A-C) tanks initially entailed the excavation of the bund soils which surrounded them. During the bund excavation, the soils were periodically screened by SGP with a PID to determine which soils could be retained within the development for use as general fill and which required removal from site due to exhibiting significant indicators of hydrocarbon contamination (i.e. PID readings >10ppm). Once the concrete sidewalls were exposed, these were broken out followed by the concrete base. The demolition rubble was then transferred to the hard materials stockpile for processing as described in Section 3.1.5. Verification testing of the exposed soils at the base (where bedrock – for which there is no requirement to test – was not present) and sidewalls was then carried out, the results of which are detailed in Sections 4.5 to 4.7. The results of the verification testing of the retained bund soils are included in Section 4.8.

3.1.9. As opposed to the POL21 tanks, the POL2 (N & S) tanks were located underground beneath a layer of surface hardstanding. Initially, the overlying hardstanding was broken out to expose the tanks and the hard materials were stockpiled for processing. Once exposed, the tanks were broken open exposing the PFA fill (this was introduced into the emptied tanks during the decommissioning process) which was also transferred to the hard materials stockpile; the tanks were then removed for recycling. The POL2(S) and POL2(N) tanks differed in that the former were surrounded by sand whereas the latter were entirely encased in concrete. The sands surrounding the POL2(S) tanks demonstrated indicators of hydrocarbon contamination so were removed to the temporary contamination stockpile area in the northwest of the site before removal to the long-term quarantine area within the wider development. The concrete encasing the POL2(N) tanks was broken out and transferred to the hard materials stockpile for processing. The results of the soil verification testing of the tank sidewalls (both sets of tanks were located on competent bedrock so the bases were not samples) are discussed in Sections 4.9 (POL2(S)) and 4.10 (POL2(N)).

3.1.10. As described in section 2.4.1, a supplementary investigation was carried out during the early stages of the remediation earthworks and a hydrocarbon hotspot was identified in the southwest of the site (hotspot ref: Southwest Hotspot (SWHS)). As the earthworks progressed, several other hydrocarbon hotspots were identified throughout the site (no. 5) which appeared to be associated with relict infrastructure and/or leaked POL pipework / impacted drains. Given the nature of the contamination encountered, it was determined that all of these areas could be dealt with under the provisions made within the Remediation Strategy. These hotspots are referred to as follows (locations are shown on drawing D03):

- Central Hotspot (CHS);
- Interceptor Hotspot (Interceptor-HS);
- Pit Hotspot (Pit-HS);
- Northern Hotspot (NHS):
- Southern Hotspot (SHS).

3.1.11. Each hydrocarbon hotspot was dealt with in the same way in accordance with the approach outlined in the Remediation Strategy with an SGP Consultant in attendance full time. As each hotspot was encountered, overburden soils were stripped, periodically screened with a PID and side-cast until significant hydrocarbon contamination indicators were encountered (odours, staining, PID readings >10ppm). At this point excavation of the impacted material was undertaken within working remediation cells before site-won replacement fills were compacted within the excavation and the neighbour cell was excavated. This process was repeated until remediation of each hotspot area was completed as confirmed by site observations and screening of soils with a PID.

3.1.12. The impacted soils were initially removed to the temporary stockpile area in the northwest of the site and were later transferred to the long-term quarantine area within the wider Heyford development. A material tracking record showing the relocation of these soils has been provided by URL and is included in Appendix E. The excavations were progressed vertically until soils demonstrating PID readings of <10ppm or in-tact bedrock was encountered and laterally until either again soil PID readings were <10ppm or significant constraints were encountered (i.e. site boundary / services). Verification testing of the excavation base (where bedrock was not present) and sidewalls as well as the replaced soils was then carried out and the results are presented in Sections 4.11-4.16. A different, sweeter odour was reported emanating from the soils during the 'Pit-HS' excavation therefore the testing suite was extended to include VOCs as well as hydrocarbons at this location.

3.2. Unforeseen Contamination

3.2.1. A small cache of soil with asbestos fragments was identified above the fuel line in the southwest of the site which was excavated and temporarily side-cast. Given the small size of the cement fragments, hand picking of these was not considered a practical approach. The soils in this area were therefore excavated, removed and buried at depth (~2m bgl) in a future POS area in the southwest of the site (location shown on URL As-built drawing 372-22-001-04) which was considered a proportionate approach.

3.2.2. During the foundations excavation for Plots 1-2 (centre-west of site), an area of buried, concrete-infilled drums and posts was encountered (hotspot ref: Asbestos Hotspot – West) and SGP were requested to attend site to inspect the arisings. No indicators of hydrocarbon or VOC contamination were recorded; however, small fragments of potential ACM cement were observed. The soils in this area were therefore excavated and removed to the quarantine area within the wider Heyford Development until a decision is made of what to do with the material (i.e. handpicking the asbestos fragments followed by further soil sampling to confirm its suitability for reuse or disposal). Verification samples were then collected from the excavation base and sidewalls (asbestos only) and the results are detailed in Section 4.17.

3.2 Post-remediation Vapour Monitoring

3.2.1 SGP undertook a vapour monitoring programme which involved the installation of vapour monitoring probes / passive diffusion tubes across the central and western areas of Phase 10 which, after a period of 3 weeks, were collected and submitted for laboratory analysis. This was carried out in two batches with the western part of the site monitored first followed by the central area. Given the unexpected hydrocarbon hotspots discovered across the site it was considered appropriate to increase the density of the vapour probe installations from the 50m grid spacing specified in the Remediation Strategy to an approximate 25m grid spacing across the areas of proposed housing. Upon receipt of the laboratory results a vapour intrusion risk assessment was then undertaken. Details are provided in Section 5.

3.3 Validation of Formation Level Strata

3.3.1 It is a requirement under the Remediation Strategy that a 600mm cover of clean soils is to be placed over made ground in garden areas. In the areas of the site where natural strata or clean site-recovered subsoils are currently present at development formation levels then these could form the lower 400mm part of the full 600mm depth of garden soil cover with placement of an additional 200mm of garden topsoil to follow. This applies to the west of the site only (with exception of the area along the southern boundary) as the rest of the site is currently sat below development formation levels.

3.3.2 Where applicable, in-situ sampling of the formation level strata was carried out by sampling the upper 400mm at a test frequency of 1 sample per 500m^3, the residual 400mm depth equating to 1 sample per 1,250m^2 plan area of development. Fourteen in-situ samples were collected from the exposed formation level with depth validation photos showing the 0-400mm soil profile. Samples were analysed for a suite of contaminants as specified with the Remediation Strategy. Discussion of the results is included in Section 4.4.

3.4 Site Waste Management

3.4.1 Waste materials removed from the Phase 10 East area included timber, scrap metal and ACM. Wood and metal were carefully segregated and sent off-site to be recycled and ACMs were stripped from the buildings prior to demolition by an appropriately qualified sub-contractor and disposed of at an appropriate waste accepting facility. URL maintain copies of all waste transfer documentation which can be provided on request.

3.5 Constraints and Limitations

3.5.1 Several constraints to the hydrocarbon hotspot excavations were encountered during the Phase 10 Centre and West remediation earthworks as follows:

- SWHS: Unable to continue excavation of impacted soils southwards as contamination extends beneath a live gas main which is present along the southern boundary. A stand off from a live drain was also observed that bisects Cells 9-13 of the excavation beneath which contaminated soils were left in-situ, although all significantly impacted soils were removed from the footprints of future gardens / plots in this area;
- NHS: Unable to continue excavation of impacted soils north/eastwards in a small area in the northeast corner of the excavation as contaminated soils were observed to extend beyond the site boundary (sample location: NHS-SS38);
- Interceptor HS: Thin band of contaminated soils retained in-situ along the northern extent of the excavation at the site development boundary.

4. Inspections and Testing

4.1. SGP attended site on 60 days during the remediation earthworks carried out in the centre and west of Phase 10 between October 2022 and April 2023. The dates and activities carried out during SGP attendance are cross-referenced in the table below to the site inspection photographic record (Appendix A), the hotspot remediation photographic record (Appendix B), the formation soils photographic record (Appendix C), and the attached laboratory analysis certificates (Appendix D).

Table 4.1 SGP Inspection Summary

Date	Description of Site Works	SGP Activities	Record
18.10.22	None (topsoil strip carried out prior to site visit).	Site walkover / topsoil sampling (TS-SP1 & TS-SP2 – results reported in R1742-R24).	Appendix A – Photos 1-8
25.10.22	Excavation and relocation of bund soils around POL21 tanks to expose their upper extents.	Site walkover.	Appendix A – Photos 9-10
08.11.22	Sidewalls of POL21A tank demolished prior to site visit; demolition of upper sidewalls of POL21C tank.	Site walkover.	Appendix A – Photo 11 Appendix B – POL21A
09.11.22	Excavation of bund soils around POL21B & C tanks to expose their sidewalls and relocation to contamination stockpile area in northwest if demonstrating significant contamination indicators.	Sampling of soils recovered from POL21 tank bund / topsoil sampling (TS-SP2 – results reported in R1742-R24).	Appendix D – 22/43692
14.11.22	POL21A tank base broken out prior to site visit; demolition of upper sidewalls of POL21B and POL21C tanks; breaking of site-won concrete to recover rebar.	Site walkover / validation sampling of POL21A tank excavation base and sidewalls.	Appendix A – Photos 13-14 Appendix B – POL21A Appendix D – 22/44055
17.11.22	Excavation of bund soils around POL21B & C tanks to expose their sidewalls and relocation to contamination stockpile area in northwest if demonstrating significant contamination indicators; sorting recovered scrap metal; breaking of site-won concrete to recover rebar.	Site walkover / screening of POL21 bund soils to determine their suitability for replacement on site.	Appendix A – Photos 15-17
18.11.22	Excavation of bund soils around POL21B & C tanks to expose their sidewalls and relocation to contamination stockpile area in northwest if demonstrating significant contamination indicators; replacement of suitable soils into POL21A tank void.	Screening of POL21 bund soils to determine their suitability for replacement on site.	Appendix B – POL21A

Date	Description of Site Works	SGP Activities	Record
22.11.22	Excavation of bund soils around POL21B & C tanks to expose their sidewalls and relocation to contamination stockpile area in northwest if demonstrating significant contamination indicators; demolition of POL21C tank sidewalls.	Site walkover / screening of POL21 bund soils to determine their suitability for replacement on site.	Appendix A – Photos 18-20 Appendix B – POL21C
23.11.22	Excavation of bund soils around POL21B tank to expose their sidewalls and relocation to contamination stockpile area in northwest if demonstrating significant contamination indicators; demolition of POL21C tank sidewalls.	Screening of POL21 bund soils to determine their suitability for replacement on site.	Appendix A – Photo 21 Appendix B – POL21C
24.11.22	Breakout of POL21C tank base.	Screening of POL21 bund soils to determine their suitability for replacement on site.	Appendix A – Photo 22 Appendix B – POL21C
28.11.22	Sidewalls of POL21C tank demolished prior to site visit; clearance of demolition rubble from tank base; breaking of site-won concrete to recover rebar.	Site walkover.	Appendix A – Photo 23 Appendix B – POL21C
29.11.22	Breakout of POL21C tank base; Southwest Hotspot (SWHS) – Cell 1 excavation.	Validation sampling of POL21C tank excavation sidewalls; directing SWHS excavation with validation sampling.	Appendix B – POL21C & SWHS Appendix D – 22/46573 & 22/46575
30.11.22	SWHS – Cell 2 excavation.	SWHS validation sampling.	Appendix B – SWHS Appendix D – 22/46596
01.12.22	Breakout of POL21B tank base; SWHS – Cell 2 excavation; breaking of site-won concrete to recover rebar.	Site walkover; validation sampling of POL21B tank excavation sidewalls; directing SWHS excavation with validation sampling / topsoil sampling (TS-SP3 – results reported in R1742-R24).	Appendix A – Photo 24 Appendix B – POL21B & SWHS Appendix D – 22/46596 & 22/46599
05.12.22	SWHS – Cell 3 excavation.	Directing SWHS excavation with validation sampling.	Appendix B – SWHS Appendix D – 22/47488
06.12.22	SWHS – Cell 4 excavation.	Directing SWHS excavation with validation sampling.	Appendix B – SWHS Appendix D – 22/47488
07.12.22	SWHS – Cell 5 & Cell 6 excavations; breakout of concrete overlying POL2 (North) tanks.	Directing SWHS excavation with validation sampling.	Appendix B – SWHS & POL2 (North) Appendix D – 22/47500
08.12.22	SWHS – Cell 6 & Cell 7 excavations; breakout of POL2 (North) tanks including removal of PFA tank fill to hard materials stockpile.	Directing SWHS excavation with validation sampling.	Appendix B – SWHS & POL2 (North) Appendix D – 22/47500

Date	Description of Site Works	SGP Activities	Record
12.12.22	SWHS – Cell 7 excavation; initial Central Hotspot excavation (CHS); excavation of POL (South) tanks including removal of PFA tank fill to hard materials stockpile; sorting recovered scrap metal; breaking of site-won concrete to recover rebar.	Site walkover; directing SWHS excavation with validation sampling.	Appendix A – Photos 25-27 Appendix B – SWHS, CHS & POL2 (South) Appendix D – 22/48018
13.12.22	SWHS – Cell 7 & Cell 8 excavations; excavation of POL (South) tanks including removal of PFA tank fill to hard materials stockpile.	Directing SWHS excavation with validation sampling.	Appendix B – SWHS & POL2 (South) Appendix D – 22/48395
14.12.22	SWHS – Cell 8 excavation; excavation of hydrocarbon impacted soils which previously surrounded POL (South) tanks and removal to contamination stockpile area in northwest; exposure and breakout of POL2 (North) tanks.	Directing SWHS excavation with validation sampling.	Appendix B – SWHS, POL2 (South) & POL2 (North) Appendix D – 22/48395
15.12.22	Exposure and breakout of POL2 (North) tanks including removal of PFA tank fill to hard materials stockpile.	Validation sampling of POL2 (South) tank excavation sidewalls.	Appendix B – POL2 (South) & POL2 (North) Appendix D – 22/48400
11.01.23	Complete removal of POL2 (North) tanks prior to site attendance; crushing of site-recovered hard materials to produce aggregate for reuse on site.	Validation sampling of POL2 (North) tank excavation sidewalls.	Appendix A – Photos 28-29 Appendix B – POL2 (North) Appendix D – 23/01130
19.01.23	Limited topsoil strip prior to site visit in vicinity of former trial pit 'JTP8' and placement into stockpile (TS-SP4); site-recovered subsoil placed to raise ground levels in southwest prior to site visit; crushing of site-recovered hard materials to produce aggregate for reuse on site; excavation of relict brick chamber in centre-northwest.	Site walkover; topsoil sampling (TS-SP4).	Appendix A – Photos 30-38 Appendix D – 23/01971
23.01.23	Crushing of site-recovered hard materials to produce aggregate for reuse on site; scrap metal recovery.	Site walkover.	Appendix A – Photos 39-41
24.01.23	Crushing of site-recovered hard materials to produce aggregate for reuse on site.	Formation soils sampling (west).	Appendix C – Photos 1-14 Appendix D – 23/01394 & 23/02888
25.01.23	Interceptor Hotspot excavation; crushing of site-recovered hard materials to produce aggregate for reuse on site.	Directing Interceptor Hotspot excavation with validation sampling.	Appendix B – Interceptor Hotspot Appendix D – 23/02900 & 23-02988

Date	Description of Site Works	SGP Activities	Record
26.01.23	Interceptor Hotspot excavation / Central Hotspot (CHS) – Cell 1 excavation / Vapour probe installation (west); consolidation of aggregate stockpile.	Directing Interceptor Hotspot and CHS excavations with validation sampling; diffusion tube installation (west).	Appendix A – Photos 42-43 Appendix B – Interceptor Hotspot / CHS Appendix D – 23/02988
27.01.23	CHS – Cell 1 excavation.	Aggregate stockpile sampling (Agg-SP1 & Agg-SP2); directing CHS excavation with validation sampling.	Appendix A – Photos 44-45 Appendix B – CHS Appendix D – 23-02988 & 23/02990-2
30.01.23	CHS – Cell 2 excavation; relocation of aggregate stockpile onto POS area in southeast.	Site walkover; directing CHS excavation.	Appendix A – Photo 46 Appendix B – CHS
31.01.23	CHS – Cell 2 excavation; relocation of aggregate stockpile onto POS area in southeast.	Directing CHS excavation with validation sampling.	Appendix B – CHS Appendix D – 23/03626
01.02.23	CHS – Cell 2 & Cell 3 excavations / Pit Hotspot excavation; relocation of aggregate stockpile onto POS area in southeast.	Directing CHS and Pit Hotspot excavations with validation sampling.	Appendix B – CHS & Pit Hotspot Appendix D – 23/03626, 23/03818 & 23/03827
02.02.23	CHS – Cell 4 excavation; relocation of aggregate stockpile onto POS area in southeast.	Directing CHS excavation with validation sampling.	Appendix B – CHS Appendix D – 23/03818
06.02.23	CHS – Cell 5 excavation.	Directing CHS excavation with validation sampling.	Appendix B – CHS Appendix D – 23/04757
08.02.23	CHS – Cell 5 & Cell 6 excavations.	Directing CHS excavation with validation sampling.	Appendix B – CHS Appendix D – 23/04757
09.02.23	CHS – Cell 7 excavation.	Directing CHS excavation.	Appendix B – CHS
10.02.23	CHS – Cell 7 excavation.	Directing CHS excavation with validation sampling.	Appendix B – CHS Appendix D – 23/04867
13.02.23	CHS – Cell 7 & Cell 8 excavations.	Directing CHS excavation with validation sampling.	Appendix B – CHS Appendix D – 23/05343
14.02.23	CHS – Cell 8 excavation.	Directing CHS excavation.	Appendix B – CHS
15.02.23	CHS – Cell 8 excavation.	Directing CHS excavation with validation sampling.	Appendix B – CHS Appendix D – 23/05829
16.02.23	CHS – Cell 8 & Cell 9 excavations.	Directing CHS excavation with validation sampling; diffusion tubes (west) collection.	Appendix B – CHS Appendix D – 23/05829 & R01620R
20.02.23	Backfilling of CHS area with site recovered subsoil; removal of contaminated soils stockpiled in northwest of site to quarantine area within wider Heyford development.	Site walkover.	Appendix A – Photos 47-48
21.02.23	Northern Hotspot (NHS) excavation; removal of contaminated soils stockpiled in northwest of site to quarantine area within wider Heyford development.	Directing NHS excavation with validation sampling.	Appendix B – NHS Appendix D – 23/06457

Date	Description of Site Works	SGP Activities	Record
22.02.23	NHS excavation; removal of contaminated soils stockpiled in northwest of site to quarantine area within wider Heyford development.	Directing NHS excavation.	Appendix B – NHS
28.02.23	NHS excavation; removal of contaminated soils stockpiled in northwest of site and recovered concrete to quarantine area within wider Heyford development; relocation of site-recovered topsoil stockpiles from centre-northwest of site (TS-SP3 & TS-SP4) to north of site prior to visit.	Site walkover; directing NHS excavation with validation sampling.	Appendix A – Photos 49-51 Appendix B – NHS Appendix D – 23/07540
01.03.23	Southern Hotspot (SHS) excavation; removal of contaminated soils stockpiled in northwest of site to quarantine area within wider Heyford development.	Directing SHS excavation with validation sampling.	Appendix B – SHS Appendix D – 23/07544
02.03.23	NHS excavation; removal of contaminated soils stockpiled in northwest of site to quarantine area within wider Heyford development.	Directing NHS excavation with validation sampling.	Appendix B – NHS Appendix D – 23/07540
06.03.23	NHS excavation; removal of contaminated soils stockpiled in northwest of site to quarantine area within wider Heyford development.	Directing NHS excavation with validation sampling.	Appendix B – NHS Appendix D – 23/08277
07.03.23	NHS excavation; topsoil strip in north and south in areas of recently felled trees; removal of contaminated soils stockpiled in northwest of site to quarantine area within wider Heyford development.	Site walkover; directing NHS excavation with validation sampling.	Appendix A – Photos 52-57 Appendix B – NHS Appendix D – 23/08277
08.03.23	CHS – Cell 9 excavation; NHS excavation; removal of relict cables in south.	Site walkover; directing NHS and CHS excavations with validation sampling; topsoil sampling (TS-SP5).	Appendix A – Photos 57-60 Appendix B – CHS & NHS Appendix D – 23/08277
14.03.23	SWHS – Cell 9 excavation.	Directing SWHS excavation with validation sampling.	Appendix B – SWHS Appendix D – 23/09442
15.03.23	SWHS – Cell 9 excavation; excavation and removal of relict POL pipelines.	Site walkover; directing SWHS excavation.	Appendix A – Photos 61-65 Appendix B – SWHS
16.03.23	SWHS – Cell 9 excavation; excavation and removal of relict water mains pipeline; vapour probe installation (central area).	Directing SWHS excavation with validation sampling; diffusion tube installation (central area).	Appendix A – Photo 66 Appendix B – SWHS Appendix D – 23/09442
20.03.23	SWHS – Cell 10 excavation.	Directing SWHS excavation with validation sampling.	Appendix B – SWHS Appendix D – 23/09958
21.03.23	SWHS – Cell 11 excavation.	Directing SWHS excavation with validation sampling.	Appendix B – SWHS Appendix D – 23/09958

Date	Description of Site Works	SGP Activities	Record
22.03.23	SWHS – Cell 12 excavation.	Directing SWHS excavation with validation sampling.	Appendix B – SWHS Appendix D – 23/10270
23.03.23	SWHS – Cell 12 & Cell 13 excavations.	Directing SWHS excavation with validation sampling.	Appendix B – SWHS Appendix D – 23/10270
24.03.23	Interceptor Hotspot excavation.	Site walkover; directing Interceptor Hotspot excavation with validation sampling.	Appendix A – Photos 67-71 Appendix B – Interceptor Hotspot Appendix D – 23/10270
03.04.23	Asbestos Hotspot (West) excavation.	Directing Asbestos Hotspot (West) excavation with validation sampling.	Appendix B – Asbestos Hotspot – West Appendix D – 23/11439
06.04.23	None – works complete.	Diffusion tubes (central area) collection.	Appendix D – R02902R & R02905R

4.2. Phase 10 Topsoil (TS-SP4)

4.2.1. In addition to the topsoil recovered previously (stockpiles TS-SP1 to TS-SP3), as reported in the Phase 10 (East) Remediation Earthworks Completion Report (ref: R1742b-R42-v2), circa. 100m^3 of topsoil was recovered in the vicinity of Jomas trial pit 'JTP8' in the west of the site which was placed into a stockpile in the centre-northwest of the site referred to as 'TS-SP4'.

4.2.2. SGP attended site on 19.01.23 and collected 3 samples of this material satisfying the prescribed sampling frequency of 1 per 500m^3 for site-won topsoil. Full copies of the results are provided in Appendix D (ref. 23-01971) and are summarised below with comparison to the residential soils criteria as outlined in Table 3.3 of the Remediation Strategy. Due to the detection of several PAH exceedances, the results have also been compared to Public Open Space Park (POS$_{park}$) criteria (at 2.5% SOM to reflect the reported organic content of the soil) to determine its suitability for use within the proposed POS areas on the site.

Table 4.2 Summary of Ph10 Topsoil (TS-SP4)

Contaminant	Samples	Range of Concentrations (mg/kg unless stated)	Garden Cover System		POS$_{park}$ (2.5% SOM)	
			Screening criteria (mg/kg unless stated)	Exceedances	Screening criteria (mg/kg unless stated)	Exceedances
SOM (%)	3	5.1-6.2	-	-	-	-
pH (units)	3	8.0-8.1	-	-	-	-
asbestos fibre (%)	3	NAD	<0.001%	None	<0.001%	None
arsenic	3	14-18	37 (S4UL)	None	170 (S4UL)	None
cadmium	3	0.27-0.34	11 (S4UL)	None	532 (S4UL)	None
chromium	3	21-25	910 (S4UL)	None	33,000 (S4UL)	None
chromium IV	3	<0.5	6 (S4UL)	None	220 (S4UL)	None
copper	3	13-17	2,400 (S4UL)	None	44,000 (S4UL)	None
lead	3	34-39	200 (C4SL)	None	1,300 (C4SL)	None
mercury	3	<0.05-0.05	1.2 (S4UL)	None	30 (S4UL)	None
nickel	3	16-20	180 (S4UL)	None	800 (S4UL)	None
vanadium	3	40-46	410 (S4UL)	None	5,000 (S4UL)	None
zinc	3	52-63	3,700 (S4UL)	None	170,000 (S4UL)	None

Contaminant	Samples	Range of Concentrations (mg/kg unless stated)	Garden Cover System		POS$_{park}$ (2.5% SOM)	
			Screening criteria (mg/kg unless stated)	Exceedances	Screening criteria (mg/kg unless stated)	Exceedances
naphthalene	3	<0.1	2.3 (S4UL)	None	1,900 (S4UL)	None
acenaphthylene	3	<0.1	170 (S4UL)	None	30,000 (S4UL)	None
acenaphthene	3	<0.1	210 (S4UL)	None	30,000 (S4UL)	None
fluorene	3	<0.1	170 (S4UL)	None	20,000 (S4UL)	None
phenanthrene	3	0.64-2.8	95(S4UL)	None	6,200 (S4UL)	None
anthracene	3	0.19-0.87	280 (S4UL)	None	150,000 (S4UL)	None
fluoranthene	3	2.2-7.6	2,400 (S4UL)	None	6,300 (S4UL)	None
pyrene	3	2.3-7.5	620 (S4UL)	None	15,000 (S4UL)	None
benzo(a)anthracene	3	1.2-3.5	7.2 (S4UL)	None	56 (S4UL)	None
chrysene	3	1.9-4.4	15 (S4UL)	None	110 (S4UL)	None
benzo(b)fluoranthene	3	2.2-4.7	2.6 (S4UL)	**2) JTP8-TS1 & JTP8-TS2**	15 (S4UL)	None
benzo(k)fluoranthene	3	0.67-1.6	77 (S4UL)	None	410 (S4UL)	None
benzo(a)pyrene	3	1.4-3.3	2.2 (S4UL)	**1) JTP8-TS1**	12 (S4UL)	None
indeno(123cd)pyrene	3	1.0-2.3	27 (S4UL)	None	170 (S4UL)	None
dibenzo(ah)anthracene	3	0.23-0.56	0.24(S4UL)	**2) JTP8-TS1 & JTP8-TS2**	1.3 (S4UL)	None
benzo(ghi)perylene	3	0.9-1.9	320 (S4UL)	None	1,500 (S4UL)	None
aliphatic C5-C6	3	<1	42 (S4UL)	None	130,000 (S4UL)	None
aliphatic C6-C8	3	<1	100 (S4UL)	None	220,000 (S4UL)	None
aliphatic C8-C10	3	<1	27 (S4UL)	None	18,000 (S4UL)	None
aliphatic C10-C12	3	<1	130 (S4UL)	None	23,000 (S4UL)	None
aliphatic C12-C16	3	<1	1,100 (S4UL)	None	25,000 (S4UL)	None
aliphatic C16-C21	3	<1	65,000 (S4UL)	None	480,000 (S4UL)	None
aliphatic C21-C35	3	<1	65,000 (S4UL)	None	480,000 (S4UL)	None
aromatic C5-C7	3	<1	70 (S4UL)	None	84,000 (S4UL)	None
aromatic C7-C8	3	<1	130 (S4UL)	None	95,000 (S4UL)	None
aromatic C8-C10	3	<1	34 (S4UL)	None	8,500 (S4UL)	None
aromatic C10-C12	3	<1	74 (S4UL)	None	9,700 (S4UL)	None
aromatic C12-C16	3	<1	140 (S4UL)	None	10,000 (S4UL)	None
aromatic C16-C21	3	<1	260 (S4UL)	None	7,700 (S4UL)	None
aromatic C21-C35	3	<1	1,100 (S4UL)	None	7,800 (S4UL)	None
benzene	3	<0.001	0.08 (S4UL)	None	100 (S4UL)	None
toluene	3	<0.001	130 (S4UL)	None	95,000 (S4UL)	None
ethylbenzene	3	<0.001	47 (S4UL)	None	22,000 (S4UL)	None
o-xylene	3	<0.001	60 (S4UL)	None	24,000 (S4UL)	None
m/p-xylene	3	<0.001	56 (S4UL)	None	23,000 (S4UL)	None

S4UL: Suitable For Use Levels published by Chartered Institute of Environmental Health and Land Quality Management Ltd, residential with plant uptake scenario (1% SOM) – unless stated otherwise; copyright Land Quality Management Ltd reproduced with permission publication number S4UL3102. All rights reserved.
C4SL: CL:AIRE Category 4 Screening Level, residential with plant uptake scenario (1% SOM) – unless stated otherwise.

4.2.3. When compared against the adopted residential screening criteria, several PAH exceedances (benzo(b)fluoranthene, benzo(a)pyrene & dibenzo(ah)anthracene) were reported within sample 'JTP8-TS1' and 'JTP8-TS2' indicating that this material is not suitable for reuse in gardens within the development.

4.2.4. As large areas of public open space are proposed within Phase 10, comparison of the results to POS_{park} (2.5% SOM) criteria (defined as an area of open space provided for recreational use) was carried out. No exceedances were reported and it is therefore considered that this material is suitable for reuse within the POS areas of the development.

4.3. Phase 10 Topsoil (TS-SP5)

4.3.1 A further circa. 751m^3 of topsoil was recovered from the areas where trees were formerly present in the north and south of the site and were placed into a stockpile in the southeast referred to as 'TS-SP5'. SGP attended site on 08.03.23 and collected 3 samples of this material, satisfying the prescribed sampling frequency of 1 per 500m^3 for site-won topsoil. Full copies of the results are provided in Appendix D (ref. 23-08277) and are summarised below with comparison to the residential soils criteria as outlined in Table 3.3 of the Remediation Strategy. Due to the detection of several PAH exceedances, the results have also been compared to Public Open Space Park (POS_{park}) criteria (at 6% SOM to reflect the reported organic content of the soil) to determine its suitability for use within the proposed POS areas on the site.

Table 4.3 Summary of Ph10 Topsoil (TS-SP5)

Contaminant	Samples	Range of Concentrations (mg/kg unless stated)	Garden Cover System		POS_{park} (2.5% SOM)	
			Screening criteria (mg/kg unless stated)	Exceedances	Screening criteria (mg/kg unless stated)	Exceedances
SOM (%)	3	5.1-7.6	-	-	-	-
pH (units)	3	7.8-7.9	-	-	-	-
asbestos fibre (%)	3	NAD	<0.001%	None	<0.001%	None
arsenic	3	27-31	37 (S4UL)	None	170 (S4UL)	None
cadmium	3	0.48-3.1	11 (S4UL)	None	532 (S4UL)	None
chromium	3	20-170	910 (S4UL)	None	33,000 (S4UL)	None
chromium IV	3	<0.5	6 (S4UL)	None	220 (S4UL)	None
copper	3	30-210	2,400 (S4UL)	None	44,000 (S4UL)	None
lead	3	49-170	200 (C4SL)	None	1,300 (C4SL)	None
mercury	3	0.07-0.39	1.2 (S4UL)	None	30 (S4UL)	None
nickel	3	50-110	180 (S4UL)	None	800 (S4UL)	None
vanadium	3	51-110	410 (S4UL)	None	5,000 (S4UL)	None
zinc	3	190-630	3,700 (S4UL)	None	170,000 (S4UL)	None
naphthalene	3	<0.1-0.24	2.3 (S4UL)	None	3,000 (S4UL)	None
acenaphthylene	3	<0.1-0.32	170 (S4UL)	None	30,000 (S4UL)	None
acenaphthene	3	<0.1-0.7	210 (S4UL)	None	30,000 (S4UL)	None
fluorene	3	<0.1-0.48	170 (S4UL)	None	20,000 (S4UL)	None
phenanthrene	3	<0.1-5.4	95(S4UL)	None	6,200 (S4UL)	None
anthracene	3	<0.1-0.87	280 (S4UL)	None	150,000 (S4UL)	None
fluoranthene	3	0.88-12	2,400 (S4UL)	None	6,300 (S4UL)	None
pyrene	3	0.88-12	620 (S4UL)	None	15,000 (S4UL)	None
benzo(a)anthracene	3	0.75-5.2	7.2 (S4UL)	None	62 (S4UL)	None
chrysene	3	0.94-7.1	15 (S4UL)	None	110 (S4UL)	None

Contaminant	Samples	Range of Concentrations (mg/kg unless stated)	Garden Cover System		POS$_{park}$ (2.5% SOM)	
			Screening criteria (mg/kg unless stated)	Exceedances	Screening criteria (mg/kg unless stated)	Exceedances
benzo(b)fluoranthene	3	<0.1-7.9	2.6 (S4UL)	**1) TSSP5-S3**	16 (S4UL)	None
benzo(k)fluoranthene	3	<0.1-3.1	77 (S4UL)	None	440 (S4UL)	None
benzo(a)pyrene	3	<0.1-5.7	2.2 (S4UL)	**1) TSSP5-S3**	13 (S4UL)	None
indeno(123cd)pyrene	3	<0.1-4.2	27 (S4UL)	None	180 (S4UL)	None
dibenzo(ah)anthracene	3	<0.1-1.2	0.24(S4UL)	**1) TSSP5-S3**	1.4 (S4UL)	None
benzo(ghi)perylene	3	<0.1-4.3	320 (S4UL)	None	1,600 (S4UL)	None
aliphatic C5-C6	3	<1	42 (S4UL)	None	180,000 (S4UL)	None
aliphatic C6-C8	3	<1	100 (S4UL)	None	320,000 (S4UL)	None
aliphatic C8-C10	3	<1	27 (S4UL)	None	21,000 (S4UL)	None
aliphatic C10-C12	3	<1	130 (S4UL)	None	24,000 (S4UL)	None
aliphatic C12-C16	3	<1	1,100 (S4UL)	None	26,000 (S4UL)	None
aliphatic C16-C21	3	<1	65,000 (S4UL)	None	490,000 (S4UL)	None
aliphatic C21-C35	3	<1	65,000 (S4UL)	None	490,000 (S4UL)	None
aromatic C5-C7	3	<1	70 (S4UL)	None	92,000 (S4UL)	None
aromatic C7-C8	3	<1	130 (S4UL)	None	100,000 (S4UL)	None
aromatic C8-C10	3	<1	34 (S4UL)	None	9,300 (S4UL)	None
aromatic C10-C12	3	<1	74 (S4UL)	None	10,000 (S4UL)	None
aromatic C12-C16	3	<1	140 (S4UL)	None	10,000 (S4UL)	None
aromatic C16-C21	3	<1	260 (S4UL)	None	7,800 (S4UL)	None
aromatic C21-C35	3	<1	1,100 (S4UL)	None	7,900 (S4UL)	None
benzene	3	<0.001	0.08 (S4UL)	None	110 (S4UL)	None
toluene	3	<0.001	130 (S4UL)	None	100,000 (S4UL)	None
ethylbenzene	3	<0.001	47 (S4UL)	None	27,000 (S4UL)	None
o-xylene	3	<0.001	60 (S4UL)	None	33,000 (S4UL)	None
m/p-xylene	3	<0.001	56 (S4UL)	None	31,000 (S4UL)	None

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C4SL: CL:AIRE Category 4 Screening Level, residential with plant uptake scenario (1% SOM) – unless stated otherwise.

4.3.2 When compared against the adopted residential screening criteria, several PAH exceedances (benzo(b)fluoranthene, benzo(a)pyrene & dibenzo(ah)anthracene) were reported within sample 'TSSP5-S3' indicating that this material is not suitable for reuse in gardens within the development.

4.3.3 As large areas of public open space are proposed within Phase 10, comparison of the results to POS$_{park}$ (6% SOM) criteria (defined as an area of open space provided for recreational use) was carried out. No exceedances were reported, and it is therefore considered that this material is suitable for reuse within the POS areas of the development.

4.4 Validation of Formation Soils

4.4.1 Sampling and analysis was carried out to determine the suitability of the formation level soils in the western part of the site (with exception of the area along the southern boundary) for retention within the top 600mm of gardens / 300mm of landscaped soils within the development. This will determine whether a reduced 200mm cover of topsoil can be placed within gardens / landscaped areas in this part of the site providing that the underlying strata is chemically suitable for retention.

4.4.2 No formation sampling was carried out in the central area or along the southern boundary in the west of the site as it is understood that ground levels in these areas have been left low as a result of the remediation excavations. Consequently, at the time of reporting, the formation soils in these areas would not form the top 600mm of future garden soils therefore making these areas unsuitable for such testing.

4.4.3 In-situ sampling of formation soils was carried out through the excavation and sampling of the top 400mm of formation subsoil (natural undisturbed or re-worked natural) with a total of 14 samples collected. Assuming an approximate area of 16,175m^2, the volume of validated soils is effectively 6,470m^3 and the test rate is equivalent to 1 sample per 462m^2, achieving the specified rate of 1 sample per 500m^3. The area covered by the formation soils testing is indicated on drawing D01.

4.4.4 Sampled soils generally consisted of a slightly sandy, silty clay with frequent coarse limestone gravel / cobbles. No anthropogenic inclusions such as ash, clinker or slag were observed during sampling.

4.4.5 A photographic record confirming the depth and soil profile at each test location is provided within Appendix C and the relevant laboratory test certificates (lab refs. 23-01394 & 23-02888) are provided in Appendix D. All sample locations are shown on Drawing D01.

4.4.6 The results are summarised in the table below and are compared to the adopted assessment criteria for garden cover soils. As large sections of the western part of the site surrounding the proposed built development are going to be occupied by POS, the results have also been compared to Public Open Space Residential (POS_{resi}) criteria to determine their suitability for retention within these areas of the site.

Table 4.4 Analysis of Formation Soils

Contaminant	Samples	Range of Concentrations (mg/kg unless stated)	Residential Use		POS_{resi}	
			Screening criteria (mg/kg unless stated)	Exceedances	Screening criteria (mg/kg unless stated)	Exceedances
SOM (%)	14	1.1-4.2	-	-	-	-
pH (units)	14	8.0-8.3	-	-	-	-
asbestos fibre (%)	14	NAD	<0.001%	None	<0.001%	None

Contaminant	Samples	Range of Concentrations (mg/kg unless stated)	Residential Use		POS_{resi}	
			Screening criteria (mg/kg unless stated)	Exceedances	Screening criteria (mg/kg unless stated)	Exceedances
arsenic	14	<0.5-27	37 (S4UL)	None	37 (S4UL)	None
cadmium	14	<0.1-0.37	11 (S4UL)	None	11 (S4UL)	None
chromium	14	<0.5-68	910 (S4UL)	None	910 (S4UL)	None
chromium IV	14	<0.5	6 (S4UL)	None	6 (S4UL)	None
copper	14	<0.5-16	2,400 (S4UL)	None	2,400 (S4UL)	None
lead	14	0.84-70	200 (C4SL)	None	200 (C4SL)	None
mercury	14	<0.05-0.05	1.2 (S4UL)	None	1.2 (S4UL)	None
nickel	14	0.52-44	180 (S4UL)	None	180 (S4UL)	None
vanadium	14	0.9-77	410 (S4UL)	None	410 (S4UL)	None
zinc	14	1.5-140	3,700 (S4UL)	None	3,700 (S4UL)	None
naphthalene	14	<0.1	2.3 (S4UL)	None	4,900 (S4UL)	None
acenaphthylene	14	<0.1	170 (S4UL)	None	15,000 (S4UL)	None
acenaphthene	14	<0.1	210 (S4UL)	None	15,000 (S4UL)	None
fluorene	14	<0.1	170 (S4UL)	None	9,900 (S4UL)	None
phenanthrene	14	<0.1-1.8	95(S4UL)	None	3,100 (S4UL)	None
anthracene	14	<0.1-0.58	280 (S4UL)	None	74,000 (S4UL)	None
fluoranthene	14	<0.1-6.2	2,400 (S4UL)	None	3,100 (S4UL)	None
pyrene	14	<0.1-7.2	620 (S4UL)	None	7,400 (S4UL)	None
benzo(a)anthracene	14	<0.1-2.4	7.2 (S4UL)	None	29 (S4UL)	None
chrysene	14	<0.1-3.1	15 (S4UL)	None	57 (S4UL)	None
benzo(b)fluoranthene	14	<0.1-4.1	2.6 (S4UL)	**3) Ph10-S15, Ph10-S20 & Ph10-S25**	7.1 (S4UL)	None
benzo(k)fluoranthene	14	<0.1-1.6	77 (S4UL)	None	190 (S4UL)	None
benzo(a)pyrene	14	<0.1-3.0	2.2 (S4UL)	**3) Ph10-S15, Ph10-S20 & Ph10-S25**	5.7 (S4UL)	None
indeno(123cd)pyrene	14	<0.1-2.2	27 (S4UL)	None	82 (S4UL)	None
dibenzo(ah)anthracene	14	<0.1-0.84	0.24 (S4UL)	**4) Ph10-S15, Ph10-S16, Ph10-S19 & Ph10-S20**	0.57 (S4UL)	**4) Ph10-S15, Ph10-S16, Ph10-S19 & Ph10-S20**
benzo(ghi)perylene	14	<0.1-2.3	320 (S4UL)	None	640 (S4UL)	None
aliphatic C5-C6	14	<0.01	42 (S4UL)	None	570,000 (S4UL)	None
aliphatic C6-C8	14	<0.05	100 (S4UL)	None	600,000 (S4UL)	None
aliphatic C8-C10	14	<2-16	27 (S4UL)	None	13,000 (S4UL)	None
aliphatic C10-C12	14	<2-29	130 (S4UL)	None	13,000 (S4UL)	None
aliphatic C12-C16	14	<3-30	1,100 (S4UL)	None	13,000 (S4UL)	None
aliphatic C16-C21	14	<3	65,000 (S4UL)	None	250,000 (S4UL)	None
aliphatic C21-C35	14	<10	65,000 (S4UL)	None	250,000 (S4UL)	None
aromatic C5-C7	14	<0.01	70 (S4UL)	None	56,000 (S4UL)	None
aromatic C7-C8	14	<0.05	130 (S4UL)	None	56,000 (S4UL)	None
aromatic C8-C10	14	<2-16	34 (S4UL)	None	5,000 (S4UL)	None
aromatic C10-C12	14	<2-14	74 (S4UL)	None	5,000 (S4UL)	None
aromatic C12-C16	14	<2-13	140 (S4UL)	None	5,100 (S4UL)	None
aromatic C16-C21	14	<3-19	260 (S4UL)	None	3,800 (S4UL)	None
aromatic C21-C35	14	<10-29	1,100 (S4UL)	None	3,800 (S4UL)	None

Contaminant	Samples	Range of Concentrations (mg/kg unless stated)	Residential Use		POS_{resi}	
			Screening criteria (mg/kg unless stated)	Exceedances	Screening criteria (mg/kg unless stated)	Exceedances
benzene	14	<0.001	0.08 (S4UL)	None	72 (S4UL)	None
toluene	14	<0.001	130 (S4UL)	None	56,000 (S4UL)	None
ethylbenzene	14	<0.001	47 (S4UL)	None	24,000 (S4UL)	None
o-xylene	14	<0.001-0.033	60 (S4UL)	None	41,000 (S4UL)	None
m/p-xylene	14	<0.001-0.150	56 (S4UL)	None	41,000 (S4UL)	None

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C4SL: CL:AIRE Category 4 Screening Level, residential with plant uptake scenario (1% SOM) – unless stated otherwise.

4.4.7 When compared against the adopted residential screening criteria, several PAH exceedances (benzo(b)fluoranthene, benzo(a)pyrene & dibenzo(ah)anthracene) were reported within samples 'Ph10-S15', 'Ph10-S16', 'Ph10-S19', 'Ph10-S20' and 'Ph10-S25' indicating that the formation soils in these areas are not suitable for retention in future gardens. However, as no exceedances were detected in samples 'Ph10-S23', 'Ph10-S24' and 'Ph10-S26', all of which are in the vicinity of future Plots 1-8, this indicates that the soils in this part of the development are suitable for retention within gardens.

4.4.8 Four exceedances of the POS_{resi} criteria (defined as public open space in close proximity to housing) have been reported, however, these were all either located in areas of proposed housing where a clean soil cover system will be required (SS15, SS16 & SS19) or in an area where a balancing pond is to be constructed (SS20). No other exceedances were reported. It is therefore considered that the formation soils in the western part of the site are suitable for retention within future POS areas. For clarity, this corresponds to all of the POS areas to the west of future Apartment Block A (Plots 25-30) and the road which extends southwards from these plots.

4.5 POL21A Tank Excavation Validation Sampling Results

4.5.1 Following breakout of the POL21A tank, the exposed sidewalls (which consisted of clay from 0-1.4m bgl and limestone bedrock from 1.4-2.0m bgl) were inspected and no visual or olfactory indicators of contamination were recorded; PID readings of the sidewalls were also consistently <0.1ppm. The base consisted of bedrock with a small volume of wet clay left from the removal works. PID screening of the base ranged from <0.1ppm to 30ppm but given the limited volume of the residual soils, the depth at which they were present, and the difficulty in removing the material, it was left in-situ

4.5.2 Samples were collected on an approximate frequency of 1 sample per 15m^2 of exposed sidewall in accordance with the Strategy and a reduced frequency of 1 per 25m^2 from the residual material at the base of the excavation. The position of the former POL21A tank and the validation sample locations (including any exceedances) are shown on Drawing D02 and a photographic record of the works is provided in Appendix B.

4.5.3 The eleven verification samples ('POL21A-SS1' to 'SS11') were collected from the base and sidewalls of the POL21A tank excavation were submitted to accredited laboratory Eurofins Chemtest Ltd. for full TPHCWG banding and BTEX analysis. The results of the validation testing (lab ref. 22-44055) are compared to the assessment criteria set out in Table 3.4 of the Remediation Strategy (adopted from Table B3 of the Watermans Controlled Waters DQRA, ref. EED10658-14.1.7_FA). The results of the sampling have also been compared against the adopted assessment criteria for garden cover soils (from Table 3.3 of the Remediation Strategy).

Table 4.5 POL21A Remediation Validation Data

Contaminant	Samples	Range of Concentrations (mg/kg unless stated)	Table B3		Residential Use	
			Screening criteria (mg/kg unless stated)	Exceedance Concentration & location	Screening criteria (mg/kg unless stated)	Exceedance Concentration & location
Aliphatic C5-C6	11	<0.05	-	-	42 (S4UL)	None
Aliphatic C6-C8	11	<0.1-0.83	-	-	100 (S4UL)	None
Aliphatic C8-C10	11	<0.05-5.8	80	None	27 (S4UL)	None
Aliphatic C10-C12	11	<2-140	1,000	None	130 (S4UL)	**1) POL21A-SS8**
Aliphatic C12-C16	11	<1-160	1,000	None	1,100 (S4UL)	None
Aliphatic C16-C21	11	<2-64	1,000	None	65,000 (S4UL)	None
Aliphatic C21-C35	11	<3-7.8	1,000	None	65,000 (S4UL)	None
Aliphatic C35-C40	11	<1-2.6	-	-	65,000 (S4UL)	None
Aromatic C5-C7	11	<0.05-2.7	-	-	70 (S4UL)	None
Aromatic C7-C8	11	<0.05	-	-	130 (S4UL)	None
Aromatic C8-C10	11	<0.05	-	-	34 (S4UL)	None
Aromatic C10-C12	11	<1-13	7	**1) POL21A-SS8**	74 (S4UL)	None
Aromatic C12-C16	11	<1-34	120	None	140 (S4UL)	None
Aromatic C16-C21	11	2.1-13	440	None	260 (S4UL)	None
Aromatic C21-C35	11	2-17	1,000	None	1,100 (S4UL)	None
Aromatic C35-C40	11	1.6-3.8	-	-	1,100 (S4UL)	None
Benzene	11	<0.001	0.08 (Table 3.3*)	None	0.08 (S4UL)	None
Toluene	11	<0.001-0.0017	120 (Table 3.3*)	None	130 (S4UL)	None
Ethylbenzene	11	<0.001-0.01	65 (Table 3.3*)	None	47 (S4UL)	None
m/p-Xylene	11	<0.001-0.058	42 (Table 3.3*)	None	60 (S4UL)	None
o-xylene	11	<0.001-0.031	44 (Table 3.3*)	None	56 (S4UL)	None

**Shallow garden soils compliance criteria (Remediation Strategy, Table 3.3)*
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4.5.4 Hydrocarbon concentrations were below the controlled waters assessment criteria within all of the validation samples with the exception of 'SS8' (13 mg/kg) for the aromatic C10-C12 hydrocarbon range (criteria = 7 mg/kg). This sample was collected from the small volume of residual soils at the base of the excavation and the exceedance is only marginally above the assessment criteria (<2x criteria). And whilst it is recognised as a minor exceedance of the derived values for the protection of controlled waters, it remains below the respective screening value for garden cover soils (74 mg/kg). It is therefore considered that the minor exceedance is not indicative of the presence of unacceptable levels of residual contamination with the potential to cause significant pollution.

4.5.5 A single minor exceedance of the garden soils criteria was also recorded within sample ‘SS8’ at 140mg/kg for the aliphatic C10-12 hydrocarbon range (criteria = 130mg/kg). However, given the depth at which this sample was collected (~2m bgl), this does not indicate that elevated hydrocarbons will be present in residual soils which would be retained in gardens or landscaped areas, especially as elevated hydrocarbons above the garden soils criteria were not detected in the samples collected from the sidewalls.

4.6 POL21B Tank Excavation Validation Sampling Results

4.6.1 Following breakout of the POL21B tank, the exposed sidewalls (which consisted of clay from 0-2.2m bgl and limestone bedrock from 2.2-2.6m bgl) were inspected and, although pockets of grey-staining and hydrocarbon odours were noted in the sidewalls, PID readings were consistently <10ppm. The tank was situated directly on limestone bedrock and, as such, there was no requirement to collect samples from the base.

4.6.2 Samples were collected on an approximate frequency of 1 sample per 15m^2 of exposed sidewall in accordance with the Strategy. The position of the former POL21B tank and the validation sample locations (including any exceedances) are shown on Drawing D02 and a photographic record of the works is provided in Appendix B.

4.6.3 The seven verification samples (‘POL21b-V1’ to ‘V7’) collected from the sidewalls of the POL21B tank excavation were submitted to Eurofins Chemtest Ltd. for full TPHCWG banding and BTEX analysis. The results of the validation testing (lab ref. 22-46599) are compared to the assessment criteria set out in Table 3.4 of the Remediation Strategy (adopted from Table B3 of the Watermans Controlled Waters DQRA, ref. EED10658-14.1.7_FA). The results of the sampling have also been compared against the adopted assessment criteria for garden cover soils (from Table 3.3 of the Remediation Strategy).

Table 4.6 POL21B Remediation Validation Data

Contaminant	Samples	Range of Concentrations (mg/kg unless stated)	Table B3		Residential Use	
			Screening criteria (mg/kg unless stated)	Exceedance Concentration & location	Screening criteria (mg/kg unless stated)	Exceedance Concentration & location
Aliphatic C5-C6	7	<0.05	-	-	42 (S4UL)	None
Aliphatic C6-C8	7	<0.1	-	-	100 (S4UL)	None
Aliphatic C8-C10	7	<0.05-2.5	80	None	27 (S4UL)	None
Aliphatic C10-C12	7	<2-290	1,000	None	130 (S4UL)	**1) POL21b-v3**

Contaminant	Samples	Range of Concentrations (mg/kg unless stated)	Table B3		Residential Use	
			Screening criteria (mg/kg unless stated)	Exceedance Concentration & location	Screening criteria (mg/kg unless stated)	Exceedance Concentration & location
Aliphatic C12-C16	7	<1-98	1,000	None	1,100 (S4UL)	None
Aliphatic C16-C21	7	<2-6.8	1,000	None	65,000 (S4UL)	None
Aliphatic C21-C35	7	<3-4.3	1,000	None	65,000 (S4UL)	None
Aliphatic C35-C40	7	<1	-	-	65,000 (S4UL)	None
Aromatic C5-C7	7	<0.05	-	-	70 (S4UL)	None
Aromatic C7-C8	7	<0.05	-	-	130 (S4UL)	None
Aromatic C8-C10	7	<0.05	-	-	34 (S4UL)	None
Aromatic C10-C12	7	<1-50	7	**1) POL21b-v3**	74 (S4UL)	None
Aromatic C12-C16	7	<1-27	120	None	140 (S4UL)	None
Aromatic C16-C21	7	2.2-3.5	440	None	260 (S4UL)	None
Aromatic C21-C35	7	<2-9.6	1,000	None	1,100 (S4UL)	None
Aromatic C35-C40	7	<1	-	-	1,100 (S4UL)	None
Benzene	7	<0.001	0.08 (Table 3.3*)	None	0.08 (S4UL)	None
Toluene	7	<0.001	120 (Table 3.3*)	None	130 (S4UL)	None
Ethylbenzene	7	<0.001	65 (Table 3.3*)	None	47 (S4UL)	None
m/p-Xylene	7	<0.001	42 (Table 3.3*)	None	60 (S4UL)	None
o-xylene	7	<0.001	44 (Table 3.3*)	None	56 (S4UL)	None

**Shallow garden soils compliance criteria (Remediation Strategy, Table 3.3)*
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4.6.4 Hydrocarbon concentrations were below the controlled waters assessment criteria within all of the validation samples with the exception of ‘v3’ (50 mg/kg) for the aromatic C10-C12 hydrocarbon range (criteria = 7 mg/kg). This sample was collected from an area of the sidewall where slight hydrocarbon odours and staining were observed but the material was left in-situ as the PID reading from it was less than 10ppm. And whilst it is recognised as a minor exceedance of the derived values for the protection of controlled waters, it remains below the respective screening value for garden cover soils (74 mg/kg). It is therefore considered that the exceedance is not indicative of the presence of unacceptable levels of residual contamination with the potential to cause significant pollution.

4.6.5 A single exceedance of the garden soils criteria was also recorded within sample ‘v5’ at 290mg/kg for the aliphatic C10-12 hydrocarbon range (criteria = 130mg/kg). However, the sample was collected from an area of the site which is proposed for future POS use (park with balancing pond) and when comparing the recorded concentration to the more applicable POS_{park} criteria (21,000mg/kg) it falls significantly below this value indicating that it is suitable for retention within future landscaped areas (subject to further testing to demonstrate compliance with the Remediation Strategy). In any case, fill soils will be required to raise ground levels in this area which will sequester the minor, residual contamination.

4.7 POL21C Tank Excavation Validation Sampling Results

4.7.1 Following breakout of the POL21C tank, the exposed sidewalls (which consisted of clay from 0-1.8m bgl) were inspected and no significant visual or olfactory indicators of contamination were recorded; PID readings of the sidewalls were also consistently <10ppm. The tank was situated directly on limestone bedrock and, as such, there was no requirement to collect samples from the base.

4.7.2 Samples were collected on an approximate frequency of 1 sample per 15m^2 of exposed sidewall in accordance with the Strategy. The position of the former POL21C tank and the validation sample locations are shown on Drawing D02 and a photographic record of the works is provided in Appendix B.

4.7.3 The ten verification samples ('POL21C-SS1' to 'SS10') collected from the sidewalls of the POL21C tank excavation were submitted to Eurofins Chemtest Ltd. for full TPHCWG banding and BTEX analysis. The results of the validation testing (lab ref. 22-46573) are compared to the assessment criteria set out in Table 3.4 of the Remediation Strategy (adopted from Table B3 of the Watermans Controlled Waters DQRA, ref. EED10658-14.1.7_FA). The results of the sampling have also been compared against the adopted assessment criteria for garden cover soils (from Table 3.3 of the Remediation Strategy).

Table 4.7 POL21C Remediation Validation Data

Contaminant	Samples	Range of Concentrations (mg/kg unless stated)	Table B3		Residential Use	
			Screening criteria (mg/kg unless stated)	Exceedance Concentration & location	Screening criteria (mg/kg unless stated)	Exceedance Concentration & location
Aliphatic C5-C6	10	<0.05	-	-	42 (S4UL)	None
Aliphatic C6-C8	10	<0.1	-	-	100 (S4UL)	None
Aliphatic C8-C10	10	<0.05-0.1	80	None	27 (S4UL)	None
Aliphatic C10-C12	10	<2-10	1,000	None	130 (S4UL)	None
Aliphatic C12-C16	10	<1-14	1,000	None	1,100 (S4UL)	None
Aliphatic C16-C21	10	<2-21	1,000	None	65,000 (S4UL)	None
Aliphatic C21-C35	10	<3-4.7	1,000	None	65,000 (S4UL)	None
Aliphatic C35-C40	10	<1-4	-	-	65,000 (S4UL)	None
Aromatic C5-C7	10	<0.05	-	-	70 (S4UL)	None
Aromatic C7-C8	10	<0.05	-	-	130 (S4UL)	None
Aromatic C8-C10	10	<0.05	-	-	34 (S4UL)	None
Aromatic C10-C12	10	<1	7	None	74 (S4UL)	None
Aromatic C12-C16	10	<1	120	None	140 (S4UL)	None
Aromatic C16-C21	10	<2-4.1	440	None	260 (S4UL)	None
Aromatic C21-C35	10	<2	1,000	None	1,100 (S4UL)	None
Aromatic C35-C40	10	<1-3.5	-	-	1,100 (S4UL)	None
Benzene	10	<0.001	0.08 (Table 3.3*)	None	0.08 (S4UL)	None
Toluene	10	<1-0.0015	120 (Table 3.3*)	None	130 (S4UL)	None
Ethylbenzene	10	<0.001	65 (Table 3.3*)	None	47 (S4UL)	None
m/p-Xylene	10	<0.001	42 (Table 3.3*)	None	60 (S4UL)	None

Contaminant	Samples	Range of Concentrations (mg/kg unless stated)	Table B3		Residential Use	
			Screening criteria (mg/kg unless stated)	Exceedance Concentration & location	Screening criteria (mg/kg unless stated)	Exceedance Concentration & location
o-xylene	10	<0.001	44 (Table 3.3*)	None	56 (S4UL)	None

**Shallow garden soils compliance criteria (Remediation Strategy, Table 3.3)*
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4.7.4 No exceedances of either the controlled waters assessment criteria or the garden cover soils criteria were recorded within any of the validation samples.

4.8 POL21 Tanks – Bund Soils Validation

4.8.1 Prior to the excavation and removal of the POL21(A-C) tanks, URL excavated potentially clean bund soils surrounding the tanks which did not exhibit significant visual of olfactory indicators of contamination. These soils were screened with a PID for VOCs and providing readings were below 10ppm, the material was relocated to a temporary stockpiling area in the northwest of the site to undergo chemical testing to determine their suitability for reuse. Bund soils demonstrating significant contamination indicators (i.e. PID readings >10ppm) were stockpiled separately and were later transferred to the long-term quarantine rea within the wider Heyford development.

4.8.2 One stockpile was produced containing approximately 1,000m^3 of soil. Four validation samples were collected at an approximate frequency of 1 composite per 250m^3 which were submitted to Eurofins Chemtest Ltd. for full TPHCWG banding and BTEX analysis. The results of the validation testing (lab ref. 22-43692) are compared to the assessment criteria for hydrocarbon remediation as set out in Table 3.4 of the Remediation Strategy (adopted from Table B3 of the Watermans Controlled Waters DQRA, ref. EED10658-14.1.7_FA) to assess their suitability for reuse as general fill (their known intended use).

Table 4.8 POL21 Bund Soils Remediation Validation Data

Contaminant	Samples	Range of Concentrations (mg/kg unless stated)	Table B3		Residential Use	
			Screening criteria (mg/kg unless stated)	Exceedance Concentration & location	Screening criteria (mg/kg unless stated)	Exceedance Concentration & location
Aliphatic C5-C6	4	<0.05	-	-	42 (S4UL)	None
Aliphatic C6-C8	4	<0.1	-	-	100 (S4UL)	None
Aliphatic C8-C10	4	<0.05-0.43	80	None	27 (S4UL)	None
Aliphatic C10-C12	4	<2	1,000	None	130 (S4UL)	None
Aliphatic C12-C16	4	<1	1,000	None	1,100 (S4UL)	None
Aliphatic C16-C21	4	<2-2.9	1,000	None	65,000 (S4UL)	None
Aliphatic C21-C35	4	<3	1,000	None	65,000 (S4UL)	None
Aliphatic C35-C40	4	<1	-	-	65,000 (S4UL)	None
Aromatic C5-C7	4	<0.05	-	-	70 (S4UL)	None

Contaminant	Samples	Range of Concentrations (mg/kg unless stated)	Table B3		Residential Use	
			Screening criteria (mg/kg unless stated)	Exceedance Concentration & location	Screening criteria (mg/kg unless stated)	Exceedance Concentration & location
Aromatic C7-C8	4	<0.05	-	-	130 (S4UL)	None
Aromatic C8-C10	4	<0.05	-	-	34 (S4UL)	None
Aromatic C10-C12	4	<2	7	None	74 (S4UL)	None
Aromatic C12-C16	4	<1	120	None	140 (S4UL)	None
Aromatic C16-C21	4	<2-2.9	440	None	260 (S4UL)	None
Aromatic C21-C35	4	<3	1,000	None	1,100 (S4UL)	None
Aromatic C35-C40	4	<1	-	-	1,100 (S4UL)	None
Benzene	4	<0.001	0.08 (Table 3.3*)	None	0.08 (S4UL)	None
Toluene	4	<0.001	120 (Table 3.3*)	None	130 (S4UL)	None
Ethylbenzene	4	<0.001	65 (Table 3.3*)	None	47 (S4UL)	None
m/p-Xylene	4	<0.001	42 (Table 3.3*)	None	60 (S4UL)	None
o-xylene	4	<0.001	44 (Table 3.3*)	None	56 (S4UL)	None

**Shallow garden soils compliance criteria (Remediation Strategy, Table 3.3)*
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4.8.3 Hydrocarbon concentrations were below the assessment criteria for the protection of controlled waters (Table 3.4) and residential soils. The material is therefore considered suitable for reuse on the development as general fill (it is understood that this material was placed as general fill during the latter stages of the remediation earthworks).

4.9 POL2 (South) Tank Excavation Validation Sampling Results

4.9.1 Following breakout and removal of the POL2 (South) tanks and the underlying concrete slab (including removal of the surrounding hydrocarbon impacted sands to the contamination stockpile area), the exposed sidewalls (which consisted of fine to medium sub-rounded gravel in a sandy clay soil from approximately 0-2.4m bgl and limestone bedrock from 2.4-3.5m bgl) were inspected and no visual or olfactory indicators of contamination were recorded within the superficial soils (i.e. PID readings <10ppm), although some PID readings within the bedrock sidewalls – for which there is no requirement to remove – were recorded up to 130ppm. The tanks was situated directly on limestone bedrock and, as such, there was no requirement to collect samples from the base.

4.9.2 Samples were collected on an approximate frequency of 1 sample per 15m^2 of exposed sidewall in accordance with the Strategy. The position of the former POL21 (South) tanks and the validation sample locations are shown on Drawing D02 and a photographic record of the works is provided in Appendix B.

4.9.3 The ten verification samples (‘POL2S-SS1’ to ‘SS10’) collected from the sidewalls of the POL2 (South) excavation were submitted to Eurofins Chemtest Ltd. for full TPHCWG banding and BTEX analysis. The results of the validation testing (lab ref. 22-48400) are compared to the assessment criteria set out in Table 3.4 of the Remediation Strategy (adopted from Table B3 of the Watermans Controlled Waters DQRA, ref. EED10658-14.1.7_FA). The results of the sampling have also been compared against the adopted assessment criteria for garden cover soils (from Table 3.3 of the Remediation Strategy) to ascertain whether the residual soils within the sidewalls would be unsuitable for retention within future garden areas.

Table 4.9 POL2(S) Remediation Validation Data

Contaminant	Samples	Range of Concentrations (mg/kg unless stated)	Table B3		Residential Use	
			Screening criteria (mg/kg unless stated)	Exceedance Concentration & location	Screening criteria (mg/kg unless stated)	Exceedance Concentration & location
Aliphatic C5-C6	10	<0.05	-	-	42 (S4UL)	None
Aliphatic C6-C8	10	<0.1-9.7	-	-	100 (S4UL)	None
Aliphatic C8-C10	10	<0.05-25	80	None	27 (S4UL)	None
Aliphatic C10-C12	10	<2-18	1,000	None	130 (S4UL)	None
Aliphatic C12-C16	10	<1-14	1,000	None	1,100 (S4UL)	None
Aliphatic C16-C21	10	<2	1,000	None	65,000 (S4UL)	None
Aliphatic C21-C35	10	<3	1,000	None	65,000 (S4UL)	None
Aliphatic C35-C40	10	<1	-	-	65,000 (S4UL)	None
Aromatic C5-C7	10	<0.05	-	-	70 (S4UL)	None
Aromatic C7-C8	10	<0.05	-	-	130 (S4UL)	None
Aromatic C8-C10	10	<0.05	-	-	34 (S4UL)	None
Aromatic C10-C12	10	<1-5.4	7	None	74 (S4UL)	None
Aromatic C12-C16	10	<1-1.8	120	None	140 (S4UL)	None
Aromatic C16-C21	10	<2	440	None	260 (S4UL)	None
Aromatic C21-C35	10	<2	1,000	None	1,100 (S4UL)	None
Aromatic C35-C40	10	<1	-	-	1,100 (S4UL)	None
Benzene	10	<0.001	0.08 (Table 3.3*)	None	0.08 (S4UL)	None
Toluene	10	<0.001	120 (Table 3.3*)	None	130 (S4UL)	None
Ethylbenzene	10	<0.001	65 (Table 3.3*)	None	47 (S4UL)	None
m/p-Xylene	10	<0.001	42 (Table 3.3*)	None	60 (S4UL)	None
o-xylene	10	<0.001	44 (Table 3.3*)	None	56 (S4UL)	None

**Shallow garden soils compliance criteria (Remediation Strategy, Table 3.3)*
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4.9.4 No exceedances of either the controlled waters assessment or the garden cover soils criteria were recorded within any of the validation samples.

4.10 POL2 (North) Tank Excavation Validation Sampling Results

4.10.1 Following breakout and removal of the POL2 (North) tanks and the surrounding concrete, the exposed sidewalls (which consisted of approximately 0-2m of fine to medium sub-rounded gravel in a sandy clay soil underlain by bedrock to ~4m bgl) were inspected and no visual or olfactory indicators of contamination were recorded within the superficial soils (i.e. PID readings <10ppm). The tanks was situated directly on limestone bedrock and, as such, there was no requirement to collect samples from the base.

4.10.2 Samples were collected on an approximate frequency of 1 sample per 15m^2 of exposed sidewall in accordance with the Strategy. The position of the former POL21 (North) tanks and the validation sample locations are shown on Drawing D02 and a photographic record of the works is provided in Appendix B.

4.10.3 The twelve verification samples ('POL2(N)-SS1' to 'SS12') collected from the sidewalls of the POL2 (North) excavation were submitted to Eurofins Chemtest Ltd. for full TPHCWG banding and BTEX analysis. The results of the validation testing (lab ref. 23-01130) are compared to the assessment criteria set out in Table 3.4 of the Remediation Strategy (adopted from Table B3 of the Watermans Controlled Waters DQRA, ref. EED10658-14.1.7_FA). The results of the sampling have also been compared against the adopted assessment criteria for garden cover soils (from Table 3.3 of the Remediation Strategy).

Table 4.10 POL2(N) Remediation Validation Data

Contaminant	Samples	Range of Concentrations (mg/kg unless stated)	Table B3		Residential Use	
			Screening criteria (mg/kg unless stated)	Exceedance Concentration & location	Screening criteria (mg/kg unless stated)	Exceedance Concentration & location
Aliphatic C5-C6	12	<0.01	-	-	42 (S4UL)	None
Aliphatic C6-C8	12	<0.05	-	-	100 (S4UL)	None
Aliphatic C8-C10	12	<2	80	None	27 (S4UL)	None
Aliphatic C10-C12	12	<2	1,000	None	130 (S4UL)	None
Aliphatic C12-C16	12	<3	1,000	None	1,100 (S4UL)	None
Aliphatic C16-C21	12	<3	1,000	None	65,000 (S4UL)	None
Aliphatic C21-C35	12	<10	1,000	None	65,000 (S4UL)	None
Aromatic C5-C7	12	<0.01	-	-	70 (S4UL)	None
Aromatic C7-C8	12	<0.05	-	-	130 (S4UL)	None
Aromatic C8-C10	12	<2	-	-	34 (S4UL)	None
Aromatic C10-C12	12	<2	7	None	74 (S4UL)	None
Aromatic C12-C16	12	<2	120	None	140 (S4UL)	None
Aromatic C16-C21	12	<3-24	440	None	260 (S4UL)	None
Aromatic C21-C35	12	<10-82	1,000	None	1,100 (S4UL)	None
Benzene	12	<0.001	0.08 (Table 3.3*)	None	0.08 (S4UL)	None
Toluene	12	<0.001-0.0018	120 (Table 3.3*)	None	130 (S4UL)	None
Ethylbenzene	12	<0.001	65 (Table 3.3*)	None	47 (S4UL)	None
m/p-Xylene	12	<0.001	42 (Table 3.3*)	None	60 (S4UL)	None
o-xylene	12	<0.001-0.0016	44 (Table 3.3*)	None	56 (S4UL)	None

**Shallow garden soils compliance criteria (Remediation Strategy, Table 3.3)*
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4.10.4 No exceedances of either the controlled waters assessment criteria or the garden cover soils criteria were recorded within any of the validation samples.

4.11 Southwest Hotspot (SWHS) Excavation Validation Sampling Results

4.11.1 Contaminated soils determined through visual / olfactory assessment (i.e. silver staining and hydrocarbon odours) and/or with elevated PID readings (max. 1,450ppm) in the area of the relict Valve-Pit were removed by mechanical excavator and temporarily stockpiled on concrete hardstanding in the northwest of the site (these were later removed to the long-term contamination stockpile area within the wider Heyford development). Hydrocarbon impacted soils were removed vertically and laterally until soils absent of any significant contamination indicators and/or elevated PID readings above 10ppm were encountered, with some exceptions due to the constraints described below. Where soils demonstrated some indicators of hydrocarbon contamination but not significant enough to warrant removal (i.e., within Cells 4-7), these were excavated, aerated and replaced after verification sampling, although removal of some soils was also required in Cells 6 and 7 – these areas are referred to as 'Cell 6 Hotspot' and 'Cell 7 Hotspot', respectively.

4.11.2 The excavation towards Camp Road to the south was limited due to the known presence of a live gas main and, as such, an appropriate stand-off was adopted to ensure that the gas main was not damaged. A live drain also bisected the excavation area between Cells 9-13 (as indicated on Drawing D03) so similarly a standoff was observed so as not to damage it. A band of soils (circa. 0.6-0.7m thick) demonstrating indicators of hydrocarbon contamination including PID readings up to 545ppm was left in-situ at approximately 2.2m bgl to the west / north of Cell 12 (samples 'SS16' and 'SS18' to 'SS20') as it was determined that the material would not present a significant risk at the depth at which it was present and was therefore deemed impractical to remove.

4.11.3 Samples were collected on an approximate frequency of 1 sample per 15m^2 of exposed sidewall in accordance with the Strategy and at a reduced frequency of 1 per 25m^2 from the base of the excavation. Additional verification samples were also collected from aerated soils previously demonstrating slight contamination indicators and suspected clean, overburden soils prior to replacement. The position of the Southwest Hotspot and the validation sample locations (including any exceedances) are shown on Drawing D03 and a photographic record of the works is provided in Appendix B.

4.11.4 One hundred and twenty-six verification samples (samples: Cell 1-SS1 to SS8, Cell 2-SS1 to SS14, Cell 3-SS1 to SS10, Cell 4-S1 & S2, Cell 5-S1 to S3, Cell 6-S1 & S2, Cell 6-HS-SS1 to SS8, Cell 7-S1 to S4, Cell 7-HS-SS1 to SS7, Cell 8-S1 to S3, Cell 8-SS1 to SS7, HS-Cell9-S1 & S2, HS-Cell9-SS1 to SS8, HS-CELL10-SS1 to SS13, HS-CELL11-SS1 to SS6, Cell12-SS1 to SS20, Cell12-S1 & S2, Cell13-SS1 to SS6 and Cell13-S1) were submitted to Eurofins Chemtest Ltd. for full TPHCWG banding and BTEX analysis. The results of the validation testing (lab refs. 22-46575, 22-46596, 22-47488, 22-47500, 22-48018, 22-48395, 23-09442, 23-09958 & 23-10270) are compared to the assessment criteria set out in Table 3.4 of the Remediation Strategy (adopted from Table B2 of the Watermans Controlled Waters DQRA, ref. EED10658-14.1.7_FA). The results of the sampling have also been compared against the adopted assessment criteria for garden cover soils (from Table 3.3 of the Remediation Strategy).

Table 4.11 Southwest Hotspot Remediation Validation Data

Contaminant	Samples	Range of Concentrations (mg/kg unless stated)	Table B3		Residential Use	
			Screening criteria (mg/kg unless stated)	Exceedance Concentration & location	Screening criteria (mg/kg unless stated)	Exceedance Concentration & location
Aliphatic C5-C6	126	<0.05-1.03	-	-	42 (S4UL)	None
Aliphatic C6-C8	126	<0.1-66.6	-	-	100 (S4UL)	None
Aliphatic C8-C10	126	<0.05-120	80	**3) Cell 11-SS5, Cell12-SS4 & SS6**	27 (S4UL)	**5) Cell12-SS2, SS4, SS6, SS12 & SS14**
Aliphatic C10-C12	126	<2-1,700	1,000	**1) Cell 1-SS1**	130 (S4UL)	**5) Cell 1-SS1, Cell 11-SS5, Cell12-SS4, SS6 & SS12**
Aliphatic C12-C16	126	<1-1,300	1,000	**1) Cell 1-SS1**	1,100 (S4UL)	**1) Cell 1-SS1**
Aliphatic C16-C21	126	<2-1,600	1,000	**1) Cell 8-S3**	65,000 (S4UL)	None
Aliphatic C21-C35	126	<3-2,400	1,000	**1) Cell 6-S1**	65,000 (S4UL)	None
Aliphatic C35-C40	126	<1-14	-	-	65,000 (S4UL)	None
Aromatic C5-C7	126	<0.05-0.18	-	-	70 (S4UL)	None
Aromatic C7-C8	126	<0.05-0.13	-	-	130 (S4UL)	None
Aromatic C8-C10	126	<0.05-0.80	-	-	34 (S4UL)	None
Aromatic C10-C12	126	<1-530	7	**35) Various**	74 (S4UL)	**8) Cell 1-SS1, Cell 11-SS5, Cell12-SS4, SS6, SS12, SS14, SS18 & SS20**
Aromatic C12-C16	126	<1-1,200	120	**11) Cell 1-SS1, Cell6-S1, Cell 11-SS5, Cell12-SS2, SS4, SS6, SS8, SS12, SS14, SS18 & SS20**	140 (S4UL)	**10) Cell 1-SS1, Cell 11-SS5, Cell12-SS2, SS4, SS6, SS8, SS12, SS14, SS18 & SS20**
Aromatic C16-C21	126	<2-580	440	**1) Cell 5-S1**	260 (S4UL)	**1) Cell 5-S1**
Aromatic C21-C35	126	<2-24,000	1,000	**2) Cell 5-S1 & Cell6-S1**	1,100 (S4UL)	**2) Cell 5-S1 & Cell 6-S1**
Aromatic C35-C40	126	<1-37	-	-	1,100 (S4UL)	None
Benzene	126	<0.001	0.08 (Table 3.3*)	None	0.08 (S4UL)	None
Toluene	126	<0.001	120 (Table 3.3*)	None	130 (S4UL)	None
Ethylbenzene	126	<0.001	65 (Table 3.3*)	None	47 (S4UL)	None
m/p-Xylene	126	<0.001	42 (Table 3.3*)	None	60 (S4UL)	None
o-xylene	126	<0.001	44 (Table 3.3*)	None	56 (S4UL)	None

**Shallow garden soils compliance criteria (Remediation Strategy, Table 3.3)*
S4UL: Suitable For Use Levels published by Chartered Institute of Environmental Health and Land Quality Management Ltd, residential with plant uptake scenario (1% SOM);

4.11.5 Hydrocarbon concentrations were below the controlled waters assessment criteria within the majority of the validation samples, although 39 samples did demonstrate exceedances. These were predominantly for the aromatic C10-C12 hydrocarbon range but also for the aliphatic C8-10, C10-12, C12-16, C16-21, C21-35 ranges and the aromatic C12-16, C16-21 and C21-35 ranges. Of these, however, significantly less (no. 13) also reported exceedances of the garden soils criteria as follows:

- Cell 1-SS1: collected from base of excavation at 1.9m bgl;
- Cell 5-S1 & S2 and Cell 6-S1: collected from replaced soils;
- Cell 11-SS5: collected from sidewall where excavation was constrained by the presence of a live drain and where impacted material was left in-situ;
- Cell 12-SS2, SS4, SS6, SS8, SS12 & SS14: collected from southern sidewall where excavation was constrained by the presence of a live gas main and where impacted material was left in-situ;
- Cell 12-SS18 & SS20: impacted material retained at depth (>2.2m bgl).

4.11.6 Although several exceedances have been reported for both the controlled waters and garden soils criteria, the vast majority of these have been collected from either sidewalls where further excavation could not be progressed due to the presence of live services, particularly along the southern boundary towards Camp Road (i.e. Cell 12-SS2, SS4, SS6, SS8, SS12 & SS14), or at depth (>1.9m bgl) where exposure to future site users is considered highly unlikely. The only exceptions to this are the samples collected from the replaced soils in Cells 5 and 6 which reported exceedances of heavy-end, non-volatile C16-35 aromatic hydrocarbons only (with respect to both sets of criteria), the likely source of which is a degraded tarmac layer which was observed during the excavations of the corresponding cells.

4.12 Central Hotspot (CHS) Excavation Validation Sampling Results

4.12.1 Contaminated soils identified in the central part of the site through visual / olfactory assessment (i.e. silver staining and hydrocarbon odours) and/or with elevated PID readings (max. 2,412ppm) were removed by mechanical excavator and temporarily stockpiled on concrete hardstanding in the northwest of the site (these were later removed to the quarantine area within the wider Heyford development). Hydrocarbon impacted soils were removed vertically until bedrock was encountered and laterally until soils no longer demonstrated any significant contamination indicators and/or elevated PID readings above 10ppm.

4.12.2 Samples were collected on an approximate frequency of 1 sample per 15m^2 of exposed sidewall in accordance with the Strategy but no samples were required from the base of the excavation due to the presence of competent bedrock. Additional verification samples were also collected from suspected clean, overburden soils prior to replacement. The position of the Central Hotspot and the validation sample locations (including any exceedances) are shown on Drawing D03 and a photographic record of the works is provided in Appendix B.

4.12.3 Seventy-two verification samples (samples: CHS-Cell 1-S1, CH-Cell 1-SS1 to SS6, CHS-Cell 2-S1 & S2, CHS-Cell 2-SS1 to SS7, CHS-Cell 3-S1 & S2, CHS-Cell 3-SS1 to SS5, CHS-Cell 4-SS1 & SS2, CHS-CELL5-SS1 to SS6, CHS-Cell 7-S1 to S4, CHS-Cell 7-SS1 to SS10, CHS-Cell 8-S1 & S2, CHS-Cell 8-SS1 to SS16, CHS-Cell 9-S1 and CHS-Cell 9-SS1 to SS8) were submitted to Eurofins Chemtest Ltd. for full TPHCWG banding and BTEX analysis. The results of the validation testing (lab refs. 23-02988, 23-03626, 23-03818, 23-04757, 23-05343, 23-04867, 23-05829 & 23-08277) are compared to the assessment criteria set out in Table 3.4 of the Remediation Strategy (adopted from Table B2 of the Watermans Controlled Waters DQRA, ref. EED10658-14.1.7_FA). The results of the sampling have also been compared against the adopted assessment criteria for garden cover soils (from Table 3.3 of the Remediation Strategy).

Table 4.12 Central Hotspot Remediation Validation Data

Contaminant	Samples	Range of Concentrations (mg/kg unless stated)	Table B3		Residential Use	
			Screening criteria (mg/kg unless stated)	Exceedance Concentration & location	Screening criteria (mg/kg unless stated)	Exceedance Concentration & location
Aliphatic C5-C6	72	<0.05-0.19	-	-	42 (S4UL)	None
Aliphatic C6-C8	72	<0.1-6.5	-	-	100 (S4UL)	None
Aliphatic C8-C10	72	<0.05-0.26	80	None	27 (S4UL)	None
Aliphatic C10-C12	72	<2-250	1,000	None	130 (S4UL)	**1) CELL5-SS5**
Aliphatic C12-C16	72	<1-620	1,000	None	1,100 (S4UL)	None
Aliphatic C16-C21	72	<2-620	1,000	None	65,000 (S4UL)	None
Aliphatic C21-C35	72	<3-2,200	1,000	**1) CELL5-SS5**	65,000 (S4UL)	None
Aliphatic C35-C40	72	<10	-	-	65,000 (S4UL)	None
Aromatic C5-C7	72	<0.05	-	-	70 (S4UL)	None
Aromatic C7-C8	72	<0.05	-	-	130 (S4UL)	None
Aromatic C8-C10	72	<0.05	-	-	34 (S4UL)	None
Aromatic C10-C12	72	<0.05-110	7	**24) Various**	74 (S4UL)	**1) CELL5-SS5**
Aromatic C12-C16	72	<1-200	120	**1) CELL5-SS5**	140 (S4UL)	**1) CELL5-SS5**
Aromatic C16-C21	72	<2-140	440	None	260 (S4UL)	None
Aromatic C21-C35	72	<2-81	1,000	None	1,100 (S4UL)	None
Aromatic C35-C40	72	<1-30	-	-	1,100 (S4UL)	None
Benzene	72	<0.001	0.08 (Table 3.3*)	None	0.08 (S4UL)	None
Toluene	72	<0.001-0.0023	120 (Table 3.3*)	None	130 (S4UL)	None
Ethylbenzene	72	<0.001	65 (Table 3.3*)	None	47 (S4UL)	None
m/p-Xylene	72	<0.001	42 (Table 3.3*)	None	60 (S4UL)	None
o-xylene	72	<0.001	44 (Table 3.3*)	None	56 (S4UL)	None

**Shallow garden soils compliance criteria (Remediation Strategy, Table 3.3)*
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4.12.4 Hydrocarbon concentrations were below the controlled waters assessment criteria within most of the validation samples, although 24 samples did demonstrate exceedances with the majority of these located along the eastern sidewall of Cell 8 and the western sidewall of Cell

2. These were predominantly for the aromatic C10-C12 hydrocarbon range but also for the aliphatic C21-35 and the C12-16 aromatic ranges. Of these, however, only 1 sample also reported exceedances of the garden soils criteria (Cell 5-SS5) which was collected at depth (1.9-2.2m bgl) from the southern sidewall.

4.12.5 Given the generally low hydrocarbon concentrations reported within the exceeding samples which were typically below the garden soils criteria (with the exception of 1 of the 74 validation samples collected), it is considered that the results are not indicative of the presence of unacceptable levels of residual contamination with the potential to cause significant pollution.

4.13 Interceptor Hotspot Excavation Validation Sampling Results

4.13.1 Contaminated soils determined through visual / olfactory assessment (i.e. silver staining and hydrocarbon odours) and/or with elevated PID readings (max. 405ppm) in the area of a relict interceptor in the west were removed by mechanical excavator and temporarily stockpiled on concrete hardstanding in the northwest of the site (these were later removed to the quarantine area within the wider Heyford development). Hydrocarbon impacted soils were removed vertically and laterally until soils absent of any significant contamination indicators and/or elevated PID readings above 10ppm were encountered with exception of the northern extent where impacted soils were removed up unto an area of future POS (i.e. contaminated soils were removed from the footprint of any proposed plots / gardens within the development). In this area, a thin band of soils (circa. 0.4m thick) with indicators of hydrocarbon contamination including PID readings up to 104ppm was left in-situ at approximately 1.2m bgl (samples 'SS16' to 'SS18').

4.13.2 Samples were collected on an approximate frequency of 1 sample per 15m^2 of exposed sidewall in accordance with the Strategy and at a reduced frequency of 1 per 25m^2 from the base of the excavation. An additional verification sample was also collected from recovered overburden soils prior to replacement. The position of the Interceptor Hotspot and the validation sample locations (including any exceedances) are shown on Drawing D03 and a photographic record of the works is provided in Appendix B.

4.13.3 Nineteen verification samples (samples: Inter-S1 and Inter-SS1 to SS18) were submitted to Eurofins Chemtest Ltd. for full TPHCWG banding and BTEX analysis. The results of the validation testing (lab refs. 23-02900, 23-02988 & 23-10270) are compared to the assessment criteria set out in Table 3.4 of the Remediation Strategy (adopted from Table B2 of the Watermans Controlled Waters DQRA, ref. EED10658-14.1.7_FA). The results of the sampling have also been compared against the adopted assessment criteria for garden cover soils (from Table 3.3 of the Remediation Strategy).

Table 4.13 Interceptor Hotspot Remediation Validation Data

Contaminant	Samples	Range of Concentrations (mg/kg unless stated)	Table B3		Residential Use	
			Screening criteria (mg/kg unless stated)	Exceedance Concentration & location	Screening criteria (mg/kg unless stated)	Exceedance Concentration & location
Aliphatic C5-C6	19	<0.05-0.15	-	-	42 (S4UL)	None
Aliphatic C6-C8	19	<0.1-0.21	-	-	100 (S4UL)	None
Aliphatic C8-C10	19	<0.05-0.26	80	None	27 (S4UL)	None
Aliphatic C10-C12	19	<2-59	1,000	None	130 (S4UL)	None
Aliphatic C12-C16	19	<1-100	1,000	None	1,100 (S4UL)	None
Aliphatic C16-C21	19	<2-84	1,000	None	65,000 (S4UL)	None
Aliphatic C21-C35	19	<1-79	1,000	None	65,000 (S4UL)	None
Aliphatic C35-C40	19	<1-20	-	-	65,000 (S4UL)	None
Aromatic C5-C7	19	<0.05	-	-	70 (S4UL)	None
Aromatic C7-C8	19	<0.05	-	-	130 (S4UL)	None
Aromatic C8-C10	19	<0.05	-	-	34 (S4UL)	None
Aromatic C10-C12	19	<1-20	7	**10) SS1 to SS7, SS16-SS18 & S1**	74 (S4UL)	None
Aromatic C12-C16	19	<1-34	120	None	140 (S4UL)	None
Aromatic C16-C21	19	<2-85	440	None	260 (S4UL)	None
Aromatic C21-C35	19	<2-58	1,000	None	1,100 (S4UL)	None
Aromatic C35-C40	19	1.5-26	-	-	1,100 (S4UL)	None
Benzene	19	<0.001	0.08 (Table 3.3*)	None	0.08 (S4UL)	None
Toluene	19	<0.001	120 (Table 3.3*)	None	130 (S4UL)	None
Ethylbenzene	19	<0.001	65 (Table 3.3*)	None	47 (S4UL)	None
m/p-Xylene	19	<0.001	42 (Table 3.3*)	None	60 (S4UL)	None
o-xylene	19	<0.001	44 (Table 3.3*)	None	56 (S4UL)	None

**Shallow garden soils compliance criteria (Remediation Strategy, Table 3.3)*
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4.13.4 Exceedances of the controlled waters assessment criteria were detected within 10 of the 19 verification samples for the C10-12 aromatic hydrocarbon range only. The exceedances were, however, fairly minor in nature (<3x criteria) and it is noted that the criteria is significantly lower than the corresponding garden soils criteria for which no exceedances were reported. It is therefore considered that the results are not indicative of the presence of unacceptable levels of residual contamination with the potential to cause significant pollution.

4.14 Pit Hotspot Excavation Validation Sampling Results

4.14.1 Contaminated soils determined through visual / olfactory assessment (i.e. silver staining and sweet odour) and/or with elevated PID readings (max. 3,781ppm) in an area in the centre-northwest referred colloquially to as “The Pit” where relict infrastructure was once present (as indicated by the presence of a below ground concrete slab) were removed by mechanical excavator and temporarily stockpiled on concrete hardstanding in the northwest of the site (these were later removed to the long-term contamination stockpile area within the wider

Heyford development). Hydrocarbon / VOC impacted soils were removed vertically and laterally until soils absent of any significant contamination indicators and/or elevated PID readings above 10ppm were encountered.

4.14.2 Samples were collected on an approximate frequency of 1 sample per 15m^2 of exposed sidewall in accordance with the Strategy and at a reduced frequency of 1 per 25m^2 from the base of the excavation. Additional verification samples were also collected from suspected clean, overburden soils prior to replacement. The position of the Interceptor Hotspot and the validation sample locations (including any exceedances) are shown on Drawing D03 and a photographic record of the works is provided in Appendix B.

4.14.3 Twelve verification samples (samples: Pit-HS-S1 & S2 and Pit-SS1 to SS10) were submitted to Eurofins Chemtest Ltd. for full TPHCWG banding and BTEX analysis. Given that a different, sweet odour was noted emanating from the soils during the excavation in addition to the uncertainty of the former processes carried out in this part of the site, samples were also submitted for VOC analysis. The results of the validation testing (lab refs. 23-03827) for speciated hydrocarbons / BTEX are compared to the assessment criteria set out in Table 3.4 of the Remediation Strategy (adopted from Table B2 of the Watermans Controlled Waters DQRA, ref. EED10658-14.1.7_FA) and, where applicable, garden soils criteria with plant uptake (1% SOM) has been used to assess soil VOC concentrations (VOCs have only been inputted into the table if recorded above laboratory detection limits). The results of the sampling have also been compared against the adopted assessment criteria for garden cover soils (from Table 3.3 of the Remediation Strategy).

Table 4.14 Pit Hotspot Remediation Validation Data

Contaminant	Samples	Range of Concentrations (mg/kg unless stated)	Table B3		Residential Use	
			Screening criteria (mg/kg unless stated)	Exceedance Concentration & location	Screening criteria (mg/kg unless stated)	Exceedance Concentration & location
Aliphatic C5-C6	13	<0.05-0.13	-	-	42 (S4UL)	None
Aliphatic C6-C8	13	<0.1	-	-	100 (S4UL)	None
Aliphatic C8-C10	13	<0.05-0.18	80	None	27 (S4UL)	None
Aliphatic C10-C12	13	<2	1,000	None	130 (S4UL)	None
Aliphatic C12-C16	13	<1-3.1	1,000	None	1,100 (S4UL)	None
Aliphatic C16-C21	13	<2-76	1,000	None	65,000 (S4UL)	None
Aliphatic C21-C35	13	<3-66	1,000	None	65,000 (S4UL)	None
Aliphatic C35-C40	13	<10	-	-	65,000 (S4UL)	None
Aromatic C5-C7	13	<0.05	-	-	70 (S4UL)	None
Aromatic C7-C8	13	<0.05	-	-	130 (S4UL)	None
Aromatic C8-C10	13	<0.05	-	-	34 (S4UL)	None
Aromatic C10-C12	13	1.7-5.4	7	None	74 (S4UL)	None
Aromatic C12-C16	13	4.2-6.5	120	None	140 (S4UL)	None
Aromatic C16-C21	13	9-13	440	None	260 (S4UL)	None
Aromatic C21-C35	13	<2-2	1,000	None	1,100 (S4UL)	None

Contaminant	Samples	Range of Concentrations (mg/kg unless stated)	Table B3		Residential Use	
			Screening criteria (mg/kg unless stated)	Exceedance Concentration & location	Screening criteria (mg/kg unless stated)	Exceedance Concentration & location
Aromatic C35-C40	13	2.3-4.5	-	-	1,100 (S4UL)	None
Benzene	13	<0.001	0.08 (Table 3.3*)	None	0.08 (S4UL)	None
Toluene	13	<0.001	120 (Table 3.3*)	None	130 (S4UL)	None
Ethylbenzene	13	<0.001	65 (Table 3.3*)	None	47 (S4UL)	None
m/p-Xylene	13	<0.001-0.0051	42 (Table 3.3*)	None	60 (S4UL)	None
o-xylene	13	<0.001-0.003	44 (Table 3.3*)	None	56 (S4UL)	None
cis 1,2-Dichloroethene	13	<0.001-0.0910	-	-	-	-
Trichloroethene (TCE)	13	<0.001-0.1	-	-	0.016 (S4UL)	**9) Pit-HS-Contam, SS1 to SS4, SS7, SS8, S1 & S2**
Trans 1,2-Dichloroethene	13	<0.001-0.0270	-	-	-	-
Tetrachloroethene (PCE)	13	<0.001-0.0370	-	-	0.18 (S4UL)	None

** Screening Criteria for Hydrocarbon hotspots dependent on distance from the southern / south-eastern site boundary (from Waterman Table B3) (Remediation Strategy, Table 3.4)*

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4.14.4 With regards to hydrocarbon concentrations, no exceedances of either the controlled waters assessment criteria or the garden cover soils criteria were recorded within any of the validation samples.

4.14.5 Exceedances of the S4UL garden soils criteria were, however, detected within 8 out of the 12 validation samples for TCE ranging from between 0.019-0.088 mg/kg (criteria = 0.016 mg/kg). The highest value of 0.1 mg/kg (sample: Pit-HS-Contam) was collected from soils which have since been removed from the site. Given the low concentrations reported and that the hotspot appeared to be limited in extent, it is not considered that the residual contamination identified presents a significant risk to controlled waters. The hotspot area is also located within the footprint of the western part of proposed Apartment Block A (Plots 25-30 – for which no private gardens are to be provided) and the road extending southwards from these plots so will therefore be encapsulated by hardstanding; direct exposure of the impacted soils to future site users will therefore be significantly inhibited. The location of this remediated hotspot area was identified as requiring placement of a dedicated soil-vapour monitoring probe with vapour analysis extending to TCE within this locality. The results are discussed further in Section 5.

4.15 Northern Hotspot (NHS) Excavation Validation Sampling Results

4.15.1 Contaminated soils determined through visual / olfactory assessment (i.e. silver staining and hydrocarbon odours) and/or with elevated PID readings (max. 1,240ppm) in the area of a relict POL pipeline distribution chamber in the north of the site were removed by mechanical excavator and temporarily stockpiled on concrete hardstanding in the northwest of the site (these were later removed to the long-term contamination stockpile area within the wider

Heyford development). Hydrocarbon impacted soils were removed vertically and laterally until either bedrock or soils absent of any significant contamination indicators and/or elevated PID readings above 10ppm were encountered, with some exceptions due to the constraints described below.

4.15.2 Part of the northeast extent of the excavation was constrained by the site boundary and a thin band of soils (circa. 0.5m thick) demonstrating indicators of hydrocarbon contamination including PID readings up to 167ppm was left in-situ at approximately 1.2m bgl (sample location 'SS38'); however, this is outside of the footprint of any of the proposed plots / gardens within the development.

4.15.3 Samples were collected on an approximate frequency of 1 sample per 15m^2 of exposed sidewall in accordance with the Strategy (with exception of part of the southern extent where the excavation linked to the CHS area) and at a reduced frequency of 1 per 25m^2 from the base of the excavation where clays were present (the majority of the excavation base was competent bedrock). Additional verification samples were also collected from suspected clean, overburden soils prior to replacement. The position of the Northern Hotspot and the validation sample locations (including any exceedances) are shown on Drawing D03 and a photographic record of the works is provided in Appendix B.

4.15.4 Forty-one verification samples (samples: NHS-S1 to S8 and NHS-SS1 to SS41) were submitted to Eurofins Chemtest Ltd. for full TPHCWG banding and BTEX analysis. The results of the validation testing (lab refs. 23-06457, 23-07540 & 23-08277) are compared to the assessment criteria set out in Table 3.4 of the Remediation Strategy (adopted from Table B2 of the Watermans Controlled Waters DQRA, ref. EED10658-14.1.7_FA). The results of the sampling have also been compared against the adopted assessment criteria for garden cover soils (from Table 3.3 of the Remediation Strategy).

Table 4.15 Northern Hotspot Remediation Validation Data

Contaminant	Samples	Range of Concentrations (mg/kg unless stated)	Table B3		Residential Use	
			Screening criteria (mg/kg unless stated)	Exceedance Concentration & location	Screening criteria (mg/kg unless stated)	Exceedance Concentration & location
Aliphatic C5-C6	49	<0.05	-	-	42 (S4UL)	None
Aliphatic C6-C8	49	<0.1-0.6	-	-	100 (S4UL)	None
Aliphatic C8-C10	49	<0.05-3.5	80	None	27 (S4UL)	None
Aliphatic C10-C12	49	<2-42	1,000	None	130 (S4UL)	None
Aliphatic C12-C16	49	<1-200	1,000	None	1,100 (S4UL)	None
Aliphatic C16-C21	49	<2-1,100	1,000	**1) SS21**	65,000 (S4UL)	None
Aliphatic C21-C35	49	<3-680	1,000	None	65,000 (S4UL)	None
Aliphatic C35-C40	49	<10	-	-	65,000 (S4UL)	None
Aromatic C5-C7	49	<0.05	-	-	70 (S4UL)	None
Aromatic C7-C8	49	<0.05	-	-	130 (S4UL)	None
Aromatic C8-C10	49	<0.05	-	-	34 (S4UL)	None

Contaminant	Samples	Range of Concentrations (mg/kg unless stated)	Table B3		Residential Use	
			Screening criteria (mg/kg unless stated)	Exceedance Concentration & location	Screening criteria (mg/kg unless stated)	Exceedance Concentration & location
Aromatic C10-C12	49	<1-72	7	**24) Various**	74 (S4UL)	None
Aromatic C12-C16	49	<1-520	120	**1) SS21**	140 (S4UL)	**1) SS21**
Aromatic C16-C21	49	<2-97	440	None	260 (S4UL)	None
Aromatic C21-C35	49	<2-160	1,000	None	1,100 (S4UL)	None
Aromatic C35-C40	49	<1-54	-	-	1,100 (S4UL)	None
Benzene	49	<0.001	0.08 (Table 3.3*)	None	0.08 (S4UL)	None
Toluene	49	<0.001	120 (Table 3.3*)	None	130 (S4UL)	None
Ethylbenzene	49	<0.001	65 (Table 3.3*)	None	47 (S4UL)	None
m/p-Xylene	49	<0.001	42 (Table 3.3*)	None	60 (S4UL)	None
o-xylene	49	<0.001	44 (Table 3.3*)	None	56 (S4UL)	None

**Shallow garden soils compliance criteria (Remediation Strategy, Table 3.3)*
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4.15.5 Hydrocarbon concentrations were below the controlled waters assessment criteria within approximately half of the validation samples with 24 of the 49 samples demonstrating exceedances. These were predominantly for the aromatic C10-C12 hydrocarbon range but single exceedances were also reported for the aliphatic C16-21 and the aromatic C12-16 ranges in sample 'SS21'. Of these, however, only 1 sample also reported exceedances of the garden soils criteria (SS21) for aromatic C12-16 hydrocarbons which was collected at depth (1.2-1.8m bgl) from the southern sidewall.

4.15.6 Given the generally low hydrocarbon concentrations reported within the exceeding samples which were typically below the garden soils criteria (with the exception of 1 of the 49 validation samples collected), it is considered that the results are not indicative of the presence of unacceptable levels of residual contamination with the potential to cause significant pollution. It is also noted that under current plans the sample which recorded an exceedance of the garden soils criteria (SS21) is to be located under hardstanding associated with future Apartment Block A (Plots 25-30).

4.16 Southern Hotspot (SHS) Excavation Validation Sampling Results

4.16.1 Contaminated soils identified in the southern part of the site through visual / olfactory assessment (i.e. silver staining and hydrocarbon odours) and/or with elevated PID readings (max. 397ppm) were removed by mechanical excavator and temporarily stockpiled on concrete hardstanding in the northwest of the site (these were later removed to the long-term contamination stockpile area within the wider Heyford development). Hydrocarbon impacted soils were removed vertically until bedrock was encountered and laterally until soils no longer demonstrated any significant contamination indicators and/or elevated PID readings above 10ppm.

4.16.2 Samples were collected on an approximate frequency of 1 sample per 15m^2 of exposed sidewall in accordance with the Strategy but no samples were required from the base of the excavation due to the presence of competent bedrock (although one of the sidewall verification samples, 'SS8', was collected from impacted bedrock). An additional verification sample was also collected from suspected clean, overburden soils prior to replacement. The position of the Southern Hotspot and the validation sample locations (including any exceedances) are shown on Drawing D03 and a photographic record of the works is provided in Appendix B.

4.16.3 Nine verification samples (samples: SHS-S1 and SHS-SS1 to SS8) were submitted to Eurofins Chemtest Ltd. for full TPHCWG banding and BTEX analysis. The results of the validation testing (lab ref. 23-07544) are compared to the assessment criteria set out in Table 3.4 of the Remediation Strategy (adopted from Table B2 of the Watermans Controlled Waters DQRA, ref. EED10658-14.1.7_FA). The results of the sampling have also been compared against the adopted assessment criteria for garden cover soils (from Table 3.3 of the Remediation Strategy).

Table 4.16 Southern Hotspot Remediation Validation Data

Contaminant	Samples	Range of Concentrations (mg/kg unless stated)	Table B3		Residential Use	
			Screening criteria (mg/kg unless stated)	Exceedance Concentration & location	Screening criteria (mg/kg unless stated)	Exceedance Concentration & location
Aliphatic C5-C6	9	<0.05	-	-	42 (S4UL)	None
Aliphatic C6-C8	9	<0.1-1.24	-	-	100 (S4UL)	None
Aliphatic C8-C10	9	<0.05-19	80	None	27 (S4UL)	None
Aliphatic C10-C12	9	2.3-190	1,000	None	130 (S4UL)	None
Aliphatic C12-C16	9	1.4-150	1,000	None	1,100 (S4UL)	None
Aliphatic C16-C21	9	<2	1,000	None	65,000 (S4UL)	None
Aliphatic C21-C35	9	4.2-5.9	1,000	None	65,000 (S4UL)	None
Aliphatic C35-C40	9	<10	-	-	65,000 (S4UL)	None
Aromatic C5-C7	9	<0.05	-	-	70 (S4UL)	None
Aromatic C7-C8	9	<0.05	-	-	130 (S4UL)	None
Aromatic C8-C10	9	<0.05	-	-	34 (S4UL)	None
Aromatic C10-C12	9	<0.1-48	7	**1) SS8**	74 (S4UL)	None
Aromatic C12-C16	9	<1-43	120	None	140 (S4UL)	None
Aromatic C16-C21	9	6.1-12	440	None	260 (S4UL)	None
Aromatic C21-C35	9	<2-12	1,000	None	1,100 (S4UL)	None
Aromatic C35-C40	9	9.5-12	-	-	1,100 (S4UL)	None
Benzene	9	<0.001	0.08 (Table 3.3*)	None	0.08 (S4UL)	None
Toluene	9	<0.001	120 (Table 3.3*)	None	130 (S4UL)	None
Ethylbenzene	9	<0.001	65 (Table 3.3*)	None	47 (S4UL)	None
m/p-Xylene	9	<0.001	42 (Table 3.3*)	None	60 (S4UL)	None
o-xylene	9	<0.001	44 (Table 3.3*)	None	56 (S4UL)	None

**Shallow garden soils compliance criteria (Remediation Strategy, Table 3.3)*

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4.16.4 Hydrocarbon concentrations were below the controlled waters assessment criteria within all of the validation samples with the exception of ‘SS8’ (48 mg/kg) for the aromatic C10-C12 hydrocarbon range (criteria = 7 mg/kg). This sample was collected from an area of the deeper sidewall (1.8-2.3m bgl) where impacted bedrock demonstrating hydrocarbon odours, staining and elevated PID readings up to 164ppm were recorded. And whilst it is recognised as a minor exceedance of the derived values for the protection of controlled waters, it remains below the respective screening value for garden cover soils (74 mg/kg). It is therefore considered that the exceedance is not indicative of the presence of unacceptable levels of residual contamination with the potential to cause significant pollution.

4.16.5 A single minor exceedance of the garden soils criteria was also recorded within sample ‘SS8’ at 190mg/kg for the aliphatic C10-12 hydrocarbon range (criteria = 130mg/kg). However, given the depth at which this sample was collected (1.8-2.3m bgl), this does not indicate that elevated hydrocarbons will be present in residual soils which would be retained in gardens or landscaped areas, especially as elevated hydrocarbons above the garden soils criteria were not detected in the samples collected from the superficial soils higher up in the sidewalls. The exceedance could, however, indicate a potential vapour risk into future properties hence why this area was targeted as part of the post-remediation vapour monitoring programme.

4.17 Asbestos Hotspot (West) Excavation Validation Sampling Results

4.17.1 During the foundations excavation for Plots 1-2 located in the west of site, an area of made ground was encountered beneath approximately 1m of reworked natural soils. The made ground consisted of buried, concrete-infilled drums and posts and SGP were requested to attend site to inspect the ground conditions for contamination.

4.17.2 Soils were screened with a PID which remained below detection limits (<0.1 ppm) in all instances with no visual or olfactory evidence of contamination. It was considered that the drums had been infilled with concrete for use as temporary bollards etc.

4.17.3 The area of buried made ground was effectively limited to the plot footprint of Plots 1-2. DL requested that the made ground was removed and so this was undertaken under the supervision of SGP. Initially the made ground was removed and temporarily removed to allow the removal of the relict concrete drums and allow replacement of the soils at depth within the Phase 10. As removal of the made ground continued, occasional fragment of suspected asbestos cement sheeting were observed and so the made ground soils were re-directed to the soils quarantine area within the wider Heyford Park development site.

4.17.4 The excavation continued until the lateral and vertical extents of the made ground were removed. This resulted in the excavation extending approximately 10m x 8m to a depth of approximately 1.3m bgl where a dense coarse gravel (weathered bedrock) was encountered.

4.17.5 Samples were collected at approximate 5m centres of the exposed sidewall and base. The extents of the Asbestos Hotspot (West) excavation and the validation sample locations are shown on Drawing D03 and a photographic record of the works is provided in Appendix B.

4.17.6 A total of 14 validation samples were collected including 12 from the excavation sidewalls and base (samples PH10-MGPIT-SS1 to SS12) and 2 from the soil arisings (samples PH10-MGPIT-S1 & S2) which were submitted to accredited laboratory Eurofins Chemtest Ltd. for asbestos identification analysis. The results of the validation testing are provided in Appendix D (lab ref. 23-11439) and are summarised in Table 4.17 below.

Table 4.17 Asbestos Screening Summary for Asbestos Hotspot (West)

Lab Ref	Sample	Asbestos Identification	Asbestos Concentration (%)	ACM Identification
23-11439	PH10-MGPIT-S1	NAD	-	-
	PH10-MGPIT-S2	NAD	-	-
	PH10-MGPIT-SS1	NAD	-	-
	PH10-MGPIT-SS2	NAD	-	-
	PH10-MGPIT-SS3	NAD	-	-
	PH10-MGPIT-SS4	NAD	-	-
	PH10-MGPIT-SS5	NAD	-	-
	PH10-MGPIT-SS6	NAD	-	-
	PH10-MGPIT-SS7	NAD	-	-
	PH10-MGPIT-SS8	NAD	-	-
	PH10-MGPIT-SS9	NAD	-	-
	PH10-MGPIT-SS10	NAD	-	-
	PH10-MGPIT-SS11	NAD	-	-
	PH10-MGPIT-SS12	NAD	-	-

NAD = No asbestos detected

4.17.7 No asbestos was detected in the samples collected from the excavation base and sidewalls confirming successful removal of the hotspot. No asbestos was detected in the samples collected from the soil arisings either potentially indicating that the asbestos fibres have not significantly degraded from their cement matrix into the surrounding soils which, in any case, have been buried at depth on site in an area where disturbance is considered highly unlikely.

4.18 Validation of Phase 10 Generated Aggregate

4.18.1 Two stockpiles of aggregate have been generated from hardstanding recovered from the Phase 10 area. The approximate volume of the stockpiles and the completed testing frequencies are summarised in the table below. The requirement or frequency of geotechnical sampling of aggregates was not specified within the Strategy and so testing was completed as per the client's request by a third party, I2 Analytical (lab ref: 23-33873-1).

Table 4.18 Summary of Phase 10 generated aggregate

Stockpile Ref	Approximate Volume (m^3)	No. Asbestos Tests	Sampling Frequency	No. Geotech Tests	Sampling Frequency#
Agg-SP1	4,731	10	1 per $473m^3$	3	1 per $1,577m^3$
Agg-SP2	802	2	1 per $401m^3$	1	1 per $401m^3$

#No frequency for geotechnical testing under approved Strategy. Sampling carried out by I2 analytical as instructed by client.

4.18.2 Sampling of the aggregate for asbestos identification (lab ref. 23-02990) was undertaken in accordance with the approved Remediation Strategy at a frequency of 1 sample per $500m^3$. The results are summarised below:

Table 4.19 Asbestos Screening Summary for Phase 10 Generated Aggregate

Stockpile Ref	Lab Ref	Sample	Asbestos Identification	Asbestos Concentration (%)	ACM Identification
Agg-SP1	23-02990	Agg-SP1-S1	NAD	-	-
		Agg-SP1-S2	Yes	0.003	Chrysotile & Crocidolite fibres / clumps
		Agg-SP1-S3	NAD	-	-
		Agg-SP1-S4	NAD	-	-
		Agg-SP1-S5	NAD	-	-
		Agg-SP1-S6	NAD	-	-
		Agg-SP1-S7	NAD	-	-
		Agg-SP1-S8	NAD	-	-
		Agg-SP1-S9	NAD	-	-
		Agg-SP1-S10	NAD	-	-
Agg-SP2		Agg-SP2-S1	NAD	-	-
		Agg-SP2-S2	NAD	-	-

4.18.3 No asbestos was detected in stockpile 'Agg-SP2' whilst a positive incidence of chrysotile and crocidolite was reported in 1 of the 10 samples from 'Agg-SP1' in sample '-S2'. Following the positive identification, quantification was scheduled to determine the mass of asbestos present which was recorded at 0.003%. This signified the requirement for further assessment to assess the suitability for use of the aggregate within the development. Even though feedstock materials were inspected by URL for ACM prior to crushing, it is envisaged that the most likely source of the contamination was discrete deposits of ACM within recovered structures.

4.18.4 The ACM present within the aggregate has been confirmed by the laboratory analysis as chrysotile & crocidolite (fibres / clumps). As the asbestos was detected in a loose form and has therefore already degraded from its former matrix, it is considered to be in the state with the highest amount of respirable fibres (CIRIA C733[1]). The influence on soil type can also affect fibre release with granular soils (sands and gravels) resulting in a higher airborne fibre count following disturbance compared to clay soils[1]. As the material is question is aggregate (i.e., gravel), a high proportion for airborne release of fibres can therefore be assumed.

4.18.5 The main receptors considered are adult workers during the movement and placement of aggregate as general fill (the understood proposed use of this material). The aggregate within stockpile 'Agg-SP1' is not suitable for placement within service corridors where disturbance during maintenance works could occur. The isolation of this material outside of service corridors or the top 600mm of garden soils / 300mm of landscaped soils is unlikely to result in exposure to future site occupants or maintenance workers. During construction phase works, exposure is likely to occur during the disturbance and movement of the aggregate.

4.18.6 Even though the sensitivity of the site is considered to be high (residential), due to the isolation of the material at depth as general fill this will greatly limit the pathway for future exposure. For this assessment to remain valid and in accordance with the requirement to maintain exposure to asbestos to levels which are as low as reasonably practicable, aggregate from stockpile 'Agg-SP1' must be excluded from the upper 600mm of private garden areas or upper 300mm within areas of public open space / landscaping.

4.18.7 No asbestos was detected in the samples of aggregate collected from 'Agg-SP2'.

4.18.8 It is therefore considered that the site generated aggregate is suitable for its understood use as general fill and as sub-base for road construction although appropriate control measures in accordance with CAR2012 should be employed during the initial placement of the 'Agg-SP1' material within the development to minimise the level of exposure to site workers. Such measures are anticipated to include dust suppression during disturbance / placement works.

[1] CIRIA (C733). Asbestos in soil and made ground.

5. Post-remediation Vapour Monitoring

5.1. Post-Remediation Vapour Monitoring

5.1.1. Due to the recognised potential for hydrocarbon contamination on the site relating to the POL tanks, pipeline and various hydrocarbon hotspots, as well as an isolated area where elevated TCE has been reported, a post-remediation vapour monitoring programme was recommended to assess the potential intrusion risk of volatile hydrocarbons and, locally, TCE into future built development and the subsequent inhalation risk to future site users. Ultimately this is to determine whether precautionary VOC protection measures are required in future dwellings on the site.

5.1.2. Installations for the monitoring of VOCs were constructed in accordance with British Standard BS8576:2013 (Section 10.2.3) on two separate occasions, initially in the west of the site on 26.01.23, then in the central part of the site on 16.03.23. These were located on an approximate 25m grid spacing across the residential areas of the site as indicated on Drawing D04 which is half the grid spacing originally specified in the Remediation Strategy. The greater density of entries is to reflect the substantial areas of the site occupied by hotspots of hydrocarbon contamination, now remediated, and the potential presence of residual contaminants, especially within the bedrock. The monitoring locations have been selected to target both the former hotspot areas and to provide good general coverage across the areas of the site proposed for residential development. The vapour probes which specifically target the hotspot areas are as follows:

Western Vapour Probes:

- Interceptor-HS: VP1
- SWHS: VP3 & VP5, VP6, VP7 & VP8

Central Vapour Probes:

- NHS: VP1 & VP2
- SHS: VP10
- SWHS: VP11
- CHS: VP12, VP14, VP15, VP17 & VP18
- Pit-HS: VP19

5.1.3. A total of 28 window sampler boreholes were drilled to 1m below ground level in the assessment area followed by the placement of 1.5m steel monitoring probes with holes drilled in the bottom 0.5m to provide a response zone. Approximately 0.5m of the probe was left above ground level to allow their identification and to minimise potential disturbance or destruction. The lower 0.5m was surrounded by permeable fill (10mm single-sized stone gravel) and an annulus of hydrated bentonite pellets was compacted at the surface down to 0.5m bgl (above the placed gravel) to provide a sufficient seal.

5.1.4. Following installation of the probes, passive diffusion tubes (provided by Gradko International Ltd.) with appropriate adsorption media for volatile aliphatic and aromatic hydrocarbons (<C16 and BTEX) – and TCE in the 'Pit-HS' area (ref: VP19) – were secured to probe caps and sealed with PTFE tape. This was done in two separate batches, initially in the west (26.01.23) and then in the centre of the site (16.03.23). The diffusion tubes were then left in-situ for a period specified by the laboratory (3 weeks) to allow sufficient adsorption of determinants and achieve a suitable limit of detection (LOD) for comparison with assessment criteria.

5.1.5. Travel blanks (to check for cross-contamination which remained sealed) and external tubes located along the site boundary to provide background concentrations were also used during each monitoring period.

5.1.6. Diffusion tubes were left in-situ for a period of 3 weeks before collection on 16.02.23 (west) and 06.04.23 (centre) and were couriered to Gradko International Ltd. for analysis (lab refs: R01620R & R02905R / R02905R, respectively).

5.2. <u>Derivation of Inhalation Assessment Criteria</u>

5.2.1. To determine whether concentrations of the contaminants of concern were present at levels which may pose a risk to human health, derivation of assessment criteria was carried out.

5.2.2. The methodology for deriving assessment screening criteria for health impacts from VOCs at the receptor is set out in Appendix 9 of the VOC handbook[2]. Tolerable Daily Soil Intake values (TDIs) or Index Doses (IDs) (for non-carcinogens and carcinogens respectively) are multiplied by the body weight (13.3 kg) and divided by the inhalation rate (8.8 m^3/day) of a child receptor as defined in the most recent published UK guidance (DEFRA C4SL). Most of the substances under consideration have toxicological inhalation data published in the "LQM/CIEH S4ULs for Human Health Risk Assessment" (S4UL) - *Copyright Land Quality Management Limited reproduced with Permission* or CL:AIRE "Soil Generic Assessment Criteria for Human Health Risk Assessment". The exceptions to this are TCE, for which the Low Level of Toxicological Concern (LLTC) inhalation value from the C4SL Phase 2 Technical Reports has been utilised instead (as recommended by LCRM[3]) and benzene, for which a UK Air Quality Standard (AQS) is available (5 µg/m^3) which has been used.

5.2.3. The assessment criteria are inherently conservative as they assume long-term, constant exposure of residents over 24 hr periods, 365 days a year and a continuous source which does not diminish over time. However, for the most vulnerable receptors (infants and small children), significant amounts of time spent within dwellings may be anticipated.

[2] CIRIA C682: The VOCs Handbook: Investigating, assessing and managing risks from inhalation of VOCs at land affected by contamination 2009
[3] https://www.gov.uk/guidance/land-contamination-how-to-manage-the-risks/stage-1-risk-assessment

5.2.4. The TDIs, IDs or LLTCs used in the determination of inhalation assessment criteria are summarised in the table below:

Table 5.1. Derived Inhalation Assessment Criteria

Contaminant	Index Dose/Tolerable Daily Intake ($\mu g/kg.bw.day^{-1}$)	Assessment Criteria ($\mu g.m^3$)
Benzene	1.4 (S4UL)	5 (AQS)
Toluene	1400 (S4UL)	2,115.91
Ethylbenzene	74.3 (S4UL)	112.29
m/p-xylene	60 (S4UL)	90.68
o-xylene	60 (S4UL)	90.68
Aliphatic Hydrocarbons (C5-C6)	5000 (S4UL)	7,556.82
Aliphatic Hydrocarbons (C6-C8)	5000 (S4UL)	7,556.82
Aliphatic Hydrocarbons (C8-C10)	290 (S4UL)	438.3
Aliphatic Hydrocarbons (C10-C12)	290 (S4UL)	438.3
Aliphatic Hydrocarbons (C12-C16)	290 (S4UL)	438.3
Aromatic Hydrocarbons (C5-C7)*	Benzene	Benzene
Aromatic Hydrocarbons (C7-C8)*	Toluene	Toluene
Aromatic Hydrocarbons (C8-C10)	60 (S4UL)	90.68
Aromatic Hydrocarbons (C10-C12)	60 (S4UL)	90.68
Aromatic Hydrocarbons (C12-C16)	60 (S4UL)	90.68
Trichloroethene (TCE)	1.2 (C4SL)	1.81

**Aromatic C5-C7 and C7-C8 correspond to benzene and toluene. As BTEX analysis has been undertaken repetition of these results in the aromatic fraction have not been reported.*

5.3. Vapour Risk Assessment

5.3.1. Comparison of soil-vapour concentrations determined through diffusion tube monitoring are compared to the derived inhalation assessment criteria in the table below. The Gradko laboratory reports are provided in Appendix D.

Table 5.2. Derivation of Assessment Criteria and Comparison to Soil-Vapour Concentrations

Contaminant	Assessment Criteria ($\mu g/m^3$)	Soil-Vapour Range of concentrations ($\mu g/m^3$)	Exceedances
Benzene	5	<0.7-9.5	**1: VP6 (west)**
Toluene	2,115.91	<0.6-2.4	None
Ethylbenzene	112.29	<0.5-7.8	None
m/p-xylene	90.68	<0.5-8.6	None
o-xylene	90.68	<0.5-5.7	None
Aliphatic Hydrocarbons (EC5-6)	7,556.82	ND-7.3	None
Aliphatic Hydrocarbons (EC6-8)	7,556.82	ND-126	None
Aliphatic Hydrocarbons (EC8-10)	438.3	ND-1,175	**1: VP1 (west)**
Aliphatic Hydrocarbons (EC10-12)	438.3	ND-258	None
Aliphatic Hydrocarbons (EC12-16)	438.3	ND-76	None
Aromatic Hydrocarbons (EC5-7)	As Benzene	As Benzene	None
Aromatic Hydrocarbons (EC7-8)	As Toluene	As Toluene	None
Aromatic Hydrocarbons (EC8-10)	90.68	<1.4-80	None
Aromatic Hydrocarbons (EC10-12)	90.68	ND-213	**1: VP11 (centre)**
Aromatic Hydrocarbons (EC12-16)	90.68	ND-14	None

Contaminant	Assessment Criteria (µg/m³)	Soil-Vapour Range of concentrations (µg/m³)	Exceedances
Trichloroethene (TCE)	1.81	0.2	None

ND = None detected

5.3.2. Exceedances of the derived assessment criteria were reported for benzene within vapour probe ‘VP6 (west)’ at 9.5 µg/m³, for aliphatic C8-10 hydrocarbons within vapour probe ‘VP1 (west)’ at 1,175 µg/m³, and for aromatic C10-12 hydrocarbons within vapour probe ‘VP11 (centre)’ at 213 µg/m³. Vapour probes ‘VP6 (west)’ and ‘VP11 (centre)’ were both targeted to the SWHS area and ‘VP1 (west)’ was targeted to the Interceptor Hotspot (exceedance locations are indicated on drawing D04). It should be noted that remediation of these hotspots was not completed until after the removal of constraints in both areas by which time the vapour monitoring programme had already been undertaken.

5.3.3. No other exceedances were reported and many of the determinants tested for were either not detectable or below quantifiable limits.

5.4. Quantitative Risk Assessment (Benzene, Aliphatic C8-10 & Aromatic C10-12 hydrocarbons)

5.4.1. The CLEA model predicts indoor vapour concentrations based on the Johnson and Ettinger (1991) equations utilising predicted soil-gas concentrations as derived through CLEA. The maximum recorded soil-gas concentrations for benzene, aliphatic C8-10 hydrocarbons and aromatic C10-12 hydrocarbons determined through monitoring (as described above) has been input into the CLEA v1.071 model to derive a site-specific indoor vapour concentration for comparison to the health-critical indoor air targets.

5.4.2. To produce an assessment of predicted indoor vapour concentrations, site-specific criteria have been adopted where possible, supplemented by literature-based or default values. A summary of the CLEA parameters of contaminant, building, soil and receptor are provided below whilst the values and their justification / source are referenced in Appendix F.

Contaminants

5.4.3. Physio-chemical and toxicological values for benzene, aliphatic C8-10 hydrocarbons and aromatic C10-12 hydrocarbons were adopted from LQM/CIEH S4ULs (2015); the specific sources for each parameter are referenced in Appendix F.

Building

5.4.4. A number of building parameters including air exchange rates, pressure difference, floor crack area, dust loading factor and soil gas ingress rate were used based on the CLEA SR3 default building parameters for residential properties. In the absence of default parameters for apartments and where site-specific data is not available, the worst-case values for the differing types of residential properties have been utilised, where applicable, to allow for a conservative assessment (i.e. floor crack area – bungalow).

5.4.5. To allow a conservative yet representative assessment, the size of the smallest apartment (as detailed in plans provided by DL) has been utilised. This corresponds to Plot 101 which has a footprint of approximately $51m^2$ and a living space height of 2.31m. The minimum specified thickness of concrete topping overlying the block and beam foundation construction (150mm) has also been utilised for the 'foundation thickness' value.

Soil

5.4.6. To allow for a highly conservative assessment, the worst-case granular constituent soil (sand) has been adopted as the dominant soil type.

5.4.7. Soil Organic Matter (SOM) and pH values of 2.4 and 8.4%, respectively, have been generated through the averaging of soil data from formation sampling across the Phase 10 area.

Receptor

5.4.8. A future site resident has been identified as the critical receptor with the model utilising the CLEA default values as reported within the SR3 document for a female aged between 0 and 6 years.

5.5. CLEA Predicted Indoor Air Concentrations

5.5.1. The CLEA model was run utilising the published values and site-specific criteria for all of the contaminants which exceeded the derived inhalation criteria with an inhalation exposure pathway only. The output values are compared to the derived inhalation assessment criteria as summarised in Table 5.3. The CLEA output worksheet is provided in Appendix G.

Table 5.3 Comparison of assessment criteria and CLEA predicted indoor air concentrations

Compound	CLEA predicted indoor air concentration ($\mu g.m^3$)	Assessment Criteria ($\mu g.m^3$)	Exceedances
Benzene	0.000997	5	None
Aliphatic hydrocarbons (C8-10)	0.128	438.3	None
Aromatic hydrocarbons (C10-12)	0.0233	90.68	None

5.5.2. The predicted indoor air concentrations of benzene (0.000997 $\mu g.m^3$), C8-10 aliphatic hydrocarbons (0.128 $\mu g.m^3$) and aromatic C10-12 hydrocarbons (0.0233 $\mu g.m^3$) are all substantially below their respective inhalation assessment criteria of 5 $\mu g.m^3$, 438.3 $\mu g.m^3$ and 90.68 $\mu g.m^3$. This assessment is considered to be highly conservative based on the assumptions made, including duration of indoor occupation, sand as being the predominant soil type and the smallest dwelling type. It is also recognised that the model does not take into account the dilution and dispersion that takes place within the sub-floor void which is to be constructed under current foundation designs.

5.5.3. It is therefore considered that neither further assessment nor specific measures to afford protection from vapour ingress are required within properties within the development.

6. Conclusions & Recommendations

6.1. Conclusions

6.1.1. SGP considers that the remedial works within the Phase 10 Central and Western areas have been completed in accordance with the Remediation Strategy.

Topsoil

6.1.2. Approximately 851m^3 of additional topsoil has been recovered from the Phase 10 site since the prior Phase 10 (East) Completion Reporting (ref: R1742b-R24-v2) which, at the time of testing, was separated into two stockpiles – 'TS-SP4' & 'TS-SP5' – with volumes of approximately 100m^3 and 751m^3, respectively. Several PAH exceedances were detected within samples collected from both stockpiles which were considered significant enough to preclude reuse of these soils within gardens in the development but further assessment has indicated that the soils are suitable for use within the proposed POS areas on the site.

6.1.3. The topsoil from stockpiles 'TS-SP1' and 'TS-SP2' has, however, been deemed suitable for use in gardens as reported within R1742-R24-v2. A sampling frequency of 1 per 33m^3 (TS-SP4) and 1 per 250m^3 (TS-SP5) has been achieved, thereby satisfying the 1 per 500m^3 frequency specified in the Remediation Strategy.

Formation Soils

4.18.9 Formation testing of the top 400mm of site soils has been completed within the western part of the site only (with exception of the area along the southern boundary) and with a total of 14 samples collected over this area an effective sampling frequency of 1 sample per 462m^2 has been achieved, satisfying the prescribed sampling rate of 1 per 500m^3. Several exceedances of the garden soils criteria were detected for PAHs (samples 'Ph10-S15', 'Ph10-S16', 'Ph10-S19', 'Ph10-S20' & 'Ph10-S25') indicating that the formation soils in these areas are not suitable for retention in future gardens; however, as no exceedances were detected in the vicinity of future Plots 1-8 (samples 'Ph10-S23', 'Ph10-S24' & 'Ph10-S26') the formation soils can be retained within the gardens of these plots. The only exceedances of the POS_{resi} criteria were reported in areas where housing is proposed (and will therefore require clean soil cover to be placed within gardens) and where a balancing pond is to be constructed. It is therefore considered that the formation soils in the western part of the site are suitable for retention within future POS areas. The area where formation soils are considered to be suitable for retention within gardens / POS areas is shown on Drawing D01.

6.1.4. Due to the amount of material that has been excavated and removed offsite during the hotspot excavations the site has been left low in the central area as well as along the southern boundary in the west. Consequently, formation sampling in these areas would have not been appropriate as levels need to be raised and any testing would not be representative of the garden / POS soils (i.e. within the top 600mm / 300mm from final levels, respectively).

Placement of suitable soils will therefore be required within the top 600mm of gardens (corresponding to Plots 9-89) and the top 300mm of POS (as indicated on Drawing D01) in these areas. It is understood that if suitable subsoils are recovered from the foundation excavations (as confirmed by testing) then these will be used for this purpose in addition to the site-recovered topsoil. These should be subject to testing in stockpile prior to placement to confirm suitability for reuse as forming the subsoil element of the garden subsoil.

Site-Generated Aggregate

6.1.5. Two stockpiles of site generated aggregate ('Agg-SP1' and 'Agg-SP2') have been produced with a total volume of 5,533m^3 and testing was undertaken for asbestos identification at a sampling rate exceeding the required frequency 1 per 500m^3. No asbestos was detected in 'Agg-SP2', however low-level fibres were reported within 1 of the 10 samples collected from 'Agg-SP1' (0.003%).

6.1.6. Aggregate from 'Agg-SP1' should therefore not be used as backfill within service corridors but is considered suitable for use below permanent structures (plots, drives, roads etc.) or as general fill where future disturbance is highly unlikely. Appropriate mitigation measures should be deployed during the movement of the aggregate to reduce the likelihood of residual fibre mobilisation and to maintain exposure to asbestos to levels which are as low as reasonably practicable.

Contamination Hotspot Remediation

6.1.7. Numerous tanks (POL21A-C & POL2(N & S)) which previously contained jet fuel (kerosene) for use across the former airbase have been removed from the site. A total of fifty validation samples have been collected from the bases (where applicable) and sidewalls of these excavations with only 2 exceedances reported for aromatic C10-12 hydrocarbons ('POL21A-SS8' & 'POL21b-V3'); however, in both instances the concentrations were below the respective garden soils criteria and therefore does not indicate a significant pollution risk from the residual impacted soils.

6.1.8. Several hydrocarbon hotspots (with TCE identified locally) associated with either relict infrastructure, a leaked section of POL pipeline or impacted drains were identified during either the supplementary investigation works undertaken by SGP or the remediation earthworks; these have now been remediated in accordance with the Remediation Strategy. Approximately 9,425m^3 of impacted soils have been removed from the hotspot areas and have been temporarily stockpiled within a quarantine area on the airfield. It is understood that due to the highly volatile nature of the contamination that it is proposed to reprofile the removed impacted soils into a series of windows to allow turnover and aeration to facilitate the natural degradation and volatilisation of contamination. The stockpiles will then be subject to confirmatory testing at a later date to establish whether contaminant concentrations have sufficiently reduced to allow the replacement of the soils back into the development, either within Phase 10 or future developments within Heyford Park where there is a requirement to source and place fill materials.

6.1.9. Validation sampling of the base and sidewalls of the hotspot remediation excavations has been undertaken in accordance with the Strategy with a total of 275 validation samples collected including those from the replaced soils. Of these, 98 have demonstrated exceedances of the controlled water assessment criteria, typically for aromatic C10-12 hydrocarbons, but only 14 of these also demonstrated exceedances of the garden soils criteria. The most significant exceedances (i.e. those which exceeded both the controlled waters and garden soils criteria) were typically associated with samples collected from the along the southern extent of the Southwest Hotspot where the excavation could not be progressed any further due to live services or where thin bands of impacted soils have been retained at depth.

6.1.10. In any case, the removal of significant volumes of secondary sources of contamination (i.e. soils) will create betterment of future groundwater quality and the widespread construction of hard surfaces as part of the redevelopment of the site will reduce surface infiltration rates and the mobilisation of any residual contamination. It should also be noted that in the previous reporting produced for the site by Hydrock and JEE that there was no indication of groundwater pollution on site or any migration of contaminants offsite before remediation was carried out and that these works will only have served to improve this.

6.1.11. TCE was identified within one of the hotspot excavations (‘Pit-HS’) at levels exceeding S4UL garden soils criteria so, consistent with the other hotspot excavations, soils were removed until visual / olfactory indicators of contamination were no longer present and PID readings from the excavation extents were below 10ppm. Of the 13 validation samples collected from the base, sidewalls and replaced soils, 9 demonstrated exceedances of the garden soils criteria (max. 0.088mg/kg) however this doesn’t indicate a significant groundwater risk due to the low concentrations identified. Additionally, the affected area is located within the footprint of proposed Apartment Block A, for which no private gardens are to be provided, and the road extending southwards from these plots so will therefore be encapsulated by hardstanding; direct exposure of the impacted soils to future site users will therefore be significantly inhibited.

6.1.12. In the area where small fragments of potential ACM cement were observed (‘Asbestos Hotspot – West’) within buried made ground soils within the footprint of Plots 1-2, made ground soils were removed both laterally and vertically and placed in the quarantine area. Validation samples were collected from the base and sides and confirmed that no fibres were present confirming sufficient removal of impacted soils.

Vapour Monitoring & Assessment

6.1.13. In-situ vapour monitoring was undertaken on a 25m grid spacing across the residential areas of the site (28 no. monitoring points) to assess whether residual contamination associated with the decommissioned POL tanks / pipeline and the former hotspots present a possible vapour intrusion risk into future built development. Concentrations of BTEX and volatile hydrocarbons (<C16), and locally TCE, within the soil-gas phase were compared to derived inhalation criteria with concentrations of benzene, aliphatic C8-10 hydrocarbons and aromatic C10-12 hydrocarbons exceeding the criteria within three locations ('VP6 (west)', 'VP1 (west)' and 'VP11 (centre)', respectively).

6.1.14. To assess the significance of the exceedances within the soil-vapour phase further, the CLEA model was used to predict indoor air concentrations. The model used authoritative physio-chemical and toxicological data for the determinants and provided a conservative assessment based on duration of occupation, soil type and building type. Site specific parameters for the building type were used to provide a representative assessment of the dwelling with the smallest living space taken from plans provided by Dorchester Living: Plot 101 (apartment).

6.1.15. Predicted indoor air concentrations were significantly below the derived inhalation assessment criteria and it is recognised that this is a highly conservative assessment and that the model does not take into account the protection provided by a sub-floor void where further dilution and dispersion of vapour is likely to occur.

6.1.16. The soil-vapour monitoring programme and subsequent assessment demonstrates that predicted indoor air concentrations of hydrocarbons and TCE into the proposed future dwellings are substantially below the derived inhalation criteria. It is considered that further monitoring or assessment is not required and that there is no requirement for the installation of VOC resistant gas protection measures within plots in Phase 10 of the development. It is, however, recommended that all plots within the Phase 10 are constructed with a sub-floor void to allow sufficient dilution and dispersion of any residual vapours.

Other

6.1.17. A risk assessment with regards to water pipelines may be required by the utility provider or barrier pipe should be used in the absence of a pipeline risk assessment which utilises the post-remediation data obtained within this report.

6.1.18. No specific testing has been undertaken for potentially aggressive conditions to concrete. Reference should be made to the preceding JEE Geo-Environmental & Geotechnical Assessment (Ground Investigation) Report (ref: P4280j2513) which recommended that buried concrete for foundations should be designed to Class DS-1 (AC-1).

6.1.19. URL has confirmed that the onsite boreholes have been decommissioned via infilling with hydrated bentonite pellets in accordance with the appropriate Environment Agency Guidance[4] as per the requirements of the Remediation Strategy.

6.2. Recommendations

6.2.1. To secure completion of remediation in the Phase 10 (Centre and West) area in accordance with the Remediation Strategy and the recommendations made within this report (subject to Local Authority Approval), the developer is required to complete the following actions:

- placement of clean topsoil to a nominal depth of 200mm within gardens / POS areas where formation soils testing has confirmed that these are suitable for retention (see Drawing D01 – corresponds to Plots 1-8);
- placement of 600mm clean soil cover within gardens (reduced to 300mm in POS areas) in the remaining areas where formation soils testing has not been completed (corresponds to Plots 20-70 & 72-89) or it has confirmed that they are not suitable for retention (corresponds to Plots 9-19 & 71);
- depth verification testing to confirm 600mm soil cover has been placed within rear gardens (where required) at a frequency of 1 test pit per 3 plots;
- depth verification testing to confirm 300mm soil cover has been placed within POS areas (where required) at a frequency of 1 test pit per 25m grid;
- the topsoil in stockpiles 'TS-SP4' and 'TS-SP5' is considered unsuitable for reuse as garden soils but is suitable for use within less sensitive areas such as the POS areas outside the development area (see drawing D05 for suggested locations);
- any other site-won materials to be used within the top 600mm of gardens / 300mm of landscaped areas must be demonstrably suitable for use and comply with the contamination targets set out in Table 3.3 with sampling carried out at a rate of 1 sample per 500m^3;
- imported soils used for cover purposes are to comply with the contamination targets set out in Table 3.3 of the Remediation Strategy with sampling to be carried out at a rate of 1 sample per 250m^3 (minimum 3 samples per single source);
- the recycled aggregate stockpiled within the development is considered chemically suitable for its intended use on site as general fill ('Agg-SP1) or as road base ('Agg-SP2'), although material from 'Agg-SP1' must be excluded from service corridors;

[4] Environment Agency. Decommissioning redundant boreholes and wells (1996)

- if any recycled aggregate is to be imported onto site then this must be sampled for asbestos identification at a frequency of 1 sample per 500m^3 – if concentrations exceed the quantification threshold (0.001%) then further assessment will be required to determine its suitability.

6.2.2. With the adoption of the above normal practices for Brownfield development, and on the information available to it, SGP concludes that the preparatory remedial works have been completed in accordance with the agreed strategy. In the event that any previously undisclosed contamination or suspect materials are identified then this should be assessed by an appropriately qualified and experienced person.

6.3. Limitations

6.3.1. SGP reserves the right to alter any of the foregoing information in the event of new information being disclosed or provided and in the light of changes to legislation, guidelines and responses by the statutory and regulatory authorities.

6.3.2. This report has been prepared by Smith Grant LLP, for the sole and exclusive use of Urban Regen Ltd. and Dorchester Living, and the benefit of this report may not be assigned to any third party without the prior agreement in writing of Smith Grant LLP.

6.3.3. Reasonable skill, care and diligence have been exercised within the timescale and budget available, and in accordance with the technical requirements of the brief. Notwithstanding the efforts made by the professional team in undertaking the assessment and preparing this report, it is possible that other ground conditions and contamination as yet undetected may exist. Reliance on the findings of this report must therefore be limited accordingly. Such reliance must be based on the whole report and not on extracts which may lead to incomplete or incorrect conclusions when taken out of context. This report reviews and relies upon site investigations largely conducted by others. If errors or omissions in previous work have been noted then these have been duly noted, however SGP accepts no responsibility for advice given on the basis of incorrect factual information provided to it.

DRAWINGS

Phase 10 Boundary

Phase 10 East (Early Handover Area covered by R24 report)

Area where soil cover system not required

Formation Soils Sample Location

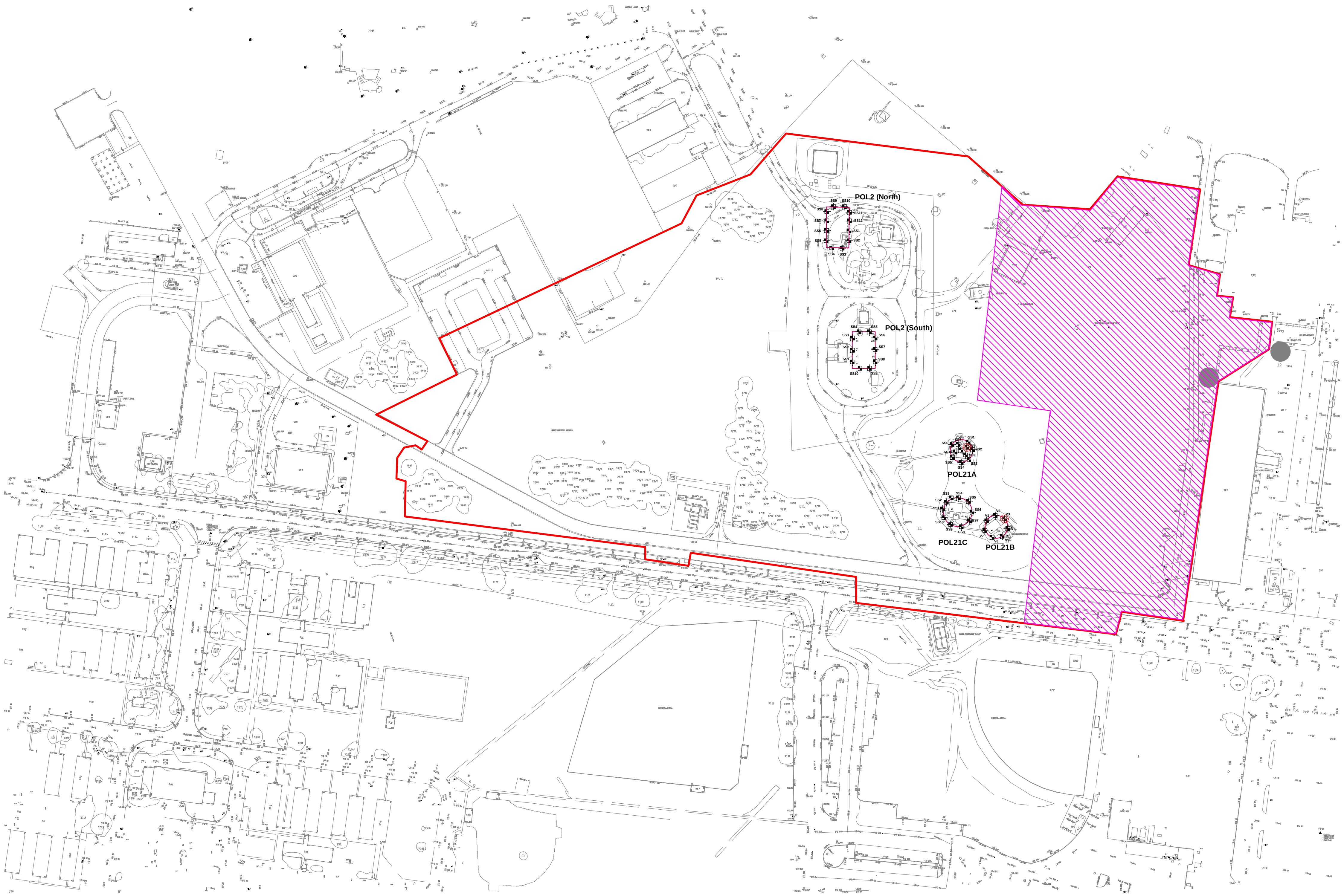
SMITH GRANT Environmental Consultancy LLP

Smith Grant LLP
Station House, Station Road
Ruabon, Wrexham LL14 6DL

Tel: 01978 822367
Fax: 01978 8247182

www.smithgrant.co.uk
email: consult@smithgrant.co.uk

Project: Heyford Park: Dorchester Phase 10 (Centre & West)	
Drawing: Site Boundary & Formation Sampling Locations	
Drawn: SM	Checked: DW
Date: 28.04.23	Scale: 1:2,000 @ A3
Job No: R1742b	Drg No: D01



Phase 10 Boundary

Phase 10 East (Early Handover Area covered by R24 report)

POL Tank Locations

Validation Sample Locations

Hydrocarbon Exceedance Locations

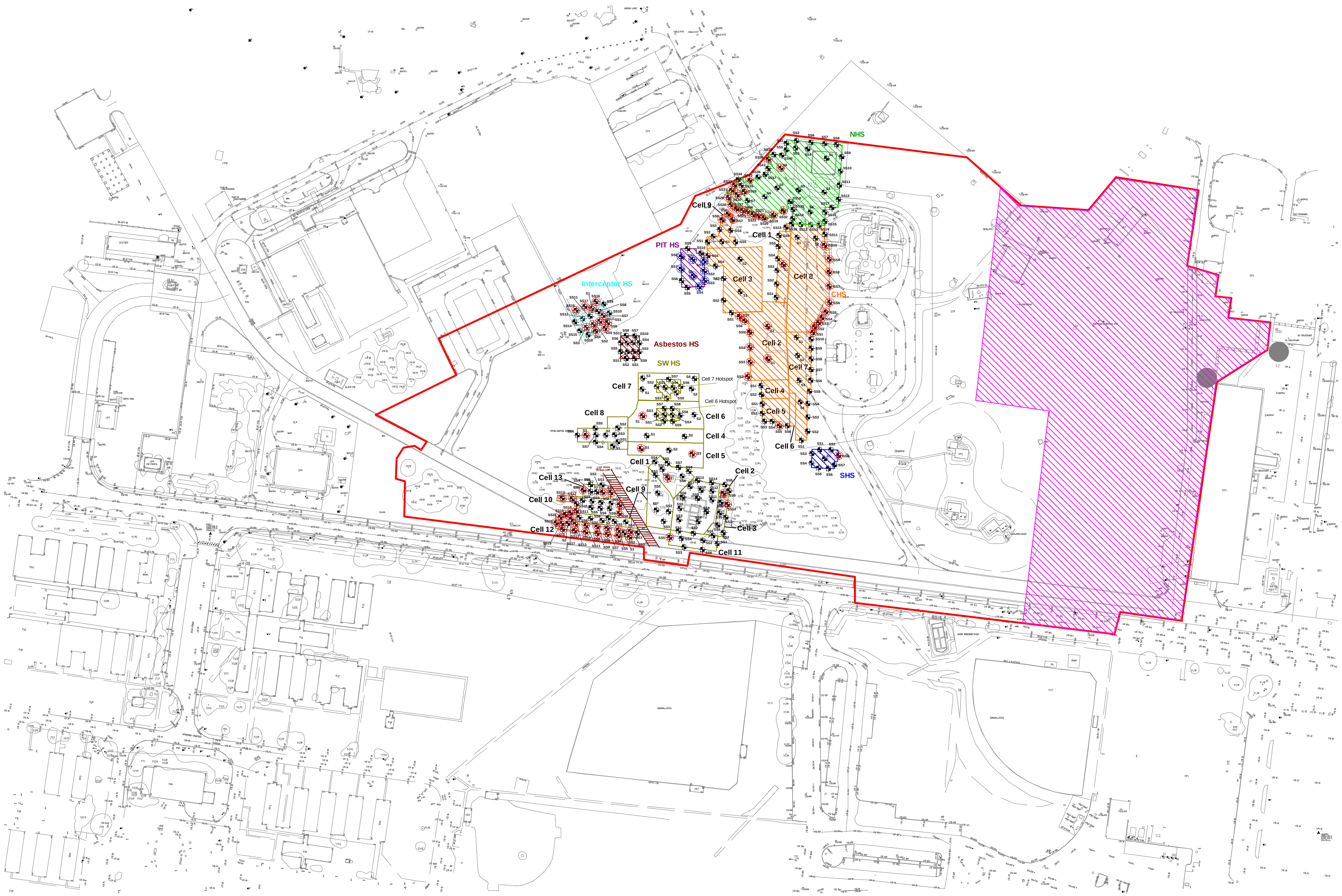
SMITH GRANT Environmental Consultancy LLP

Smith Grant LLP
Station House, Station Road
Ruabon, Wrexham LL14 6DL

Tel: 01978 822367
Fax: 01978 8247182

www.smithgrant.co.uk
email: consult@smithgrant.co.uk

Project: Heyford Park: Dorchester Phase 10 (Centre & West)	
Drawing: POL Tanks & Validation Samplling Locations	
Drawn: SM	Checked: DW
Date: 28.04.23	Scale: 1:2,000 @ A3
Job No: R1742b	Drg No: D02



Phase 10 Boundary

Phase 10 East (Early Handover Area covered by R24 report)

Sample Locations

Hydrocarbon Exceedance Locations

TCE Exceedance Locations

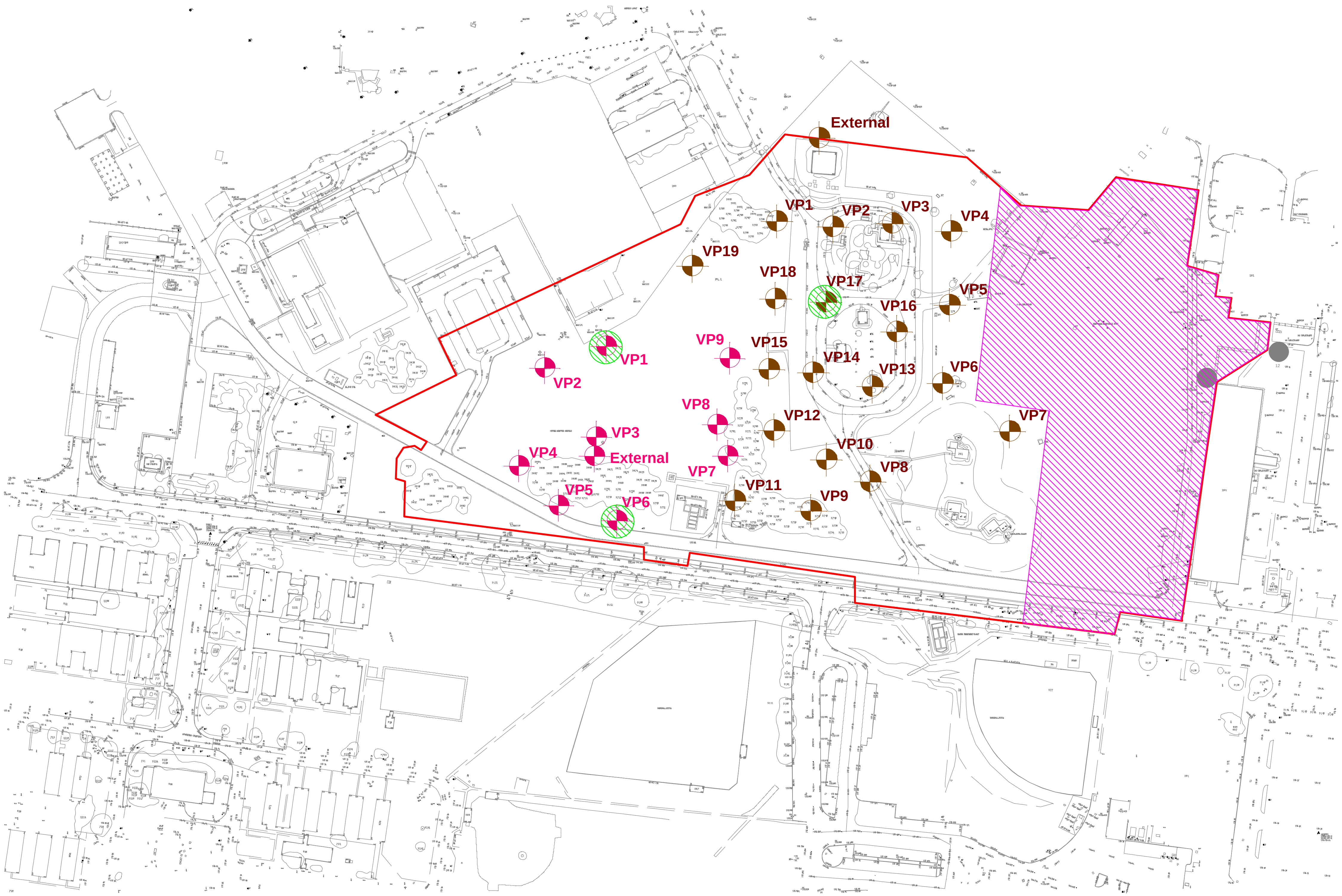
SMITH GRANT Environmental Consultancy LLP

Smith Grant LLP
Station House, Station Road
Ruabon, Wrexham LL14 6DL

Tel: 01978 822367
Fax: 01978 8247182

www.smithgrant.co.uk
email: consult@smithgrant.co.uk

Project: Heyford Park: Dorchester Phase 10 (East)	
Drawing: Hotspots & Validation Sampling Locations	
Drawn: SM	Checked: DW
Date: 10.05.23	Scale: 1:2,000 @ A3
Job No: R1742b	Drg No: D03



Phase 10 Boundary

Phase 10 East (Early Handover Area covered by R24 report)

Vapour Probes - West (Lab ref: R01620R)

Vapour Probes - Centre (Lab refs: R02902 / R02905)

Exceedance Locations

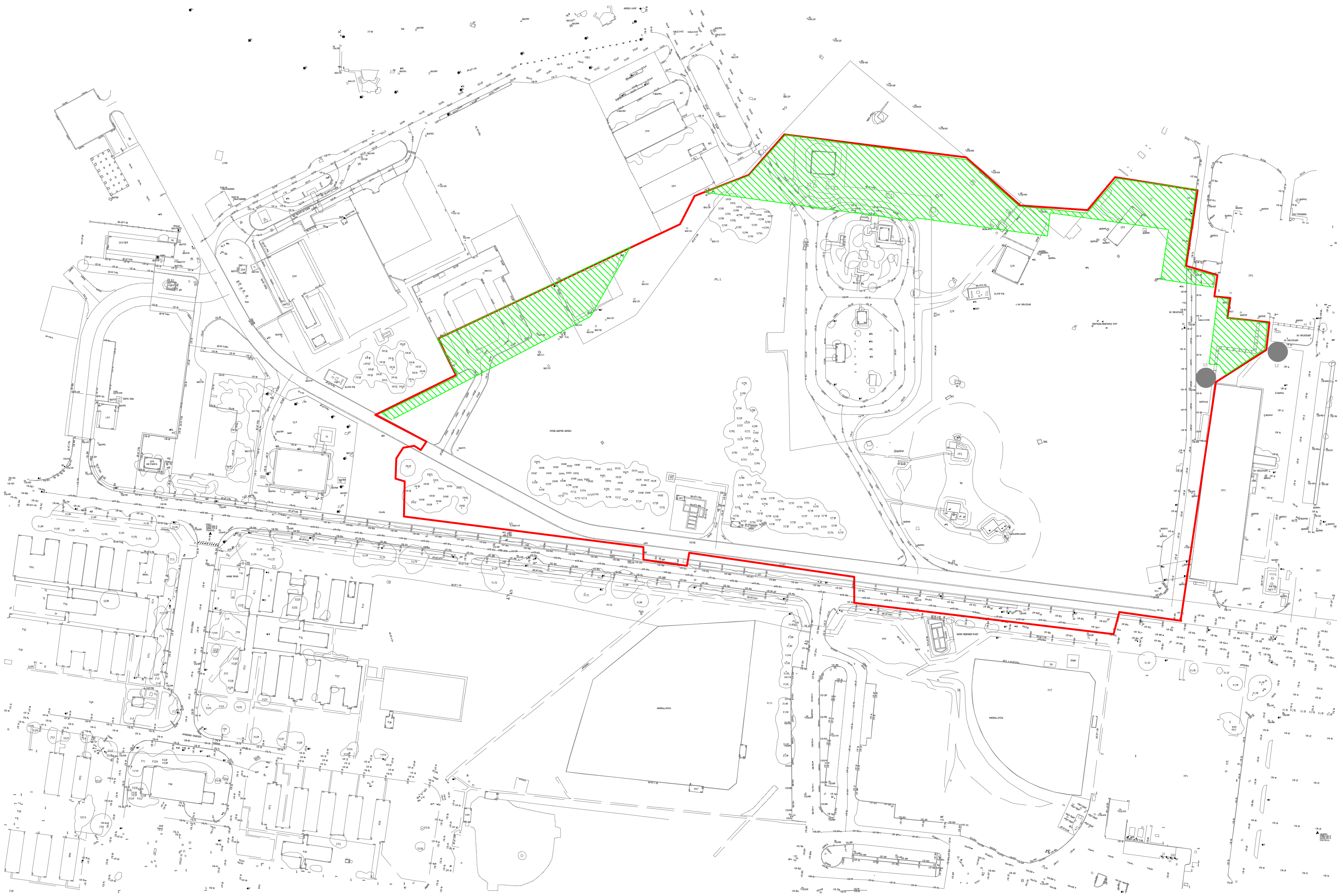
SMITH GRANT Environmental Consultancy LLP

Smith Grant LLP
Station House, Station Road
Ruabon, Wrexham LL14 6DL

Tel: 01978 822367
Fax: 01978 8247182

www.smithgrant.co.uk
email: consult@smithgrant.co.uk

Project: Heyford Park: Dorchester Phase 10 (East)	
Drawing: Vapour Probe Locations	
Drawn: SM	Checked: DW
Date: 10.05.23	Scale: 1:2,000 @ A3
Job No: R1742b	Drg No: D04



Phase 10 Boundary

Suggested Locations for TS-SP4 & TS-SP5 Soil Placement

SMITH GRANT Environmental Consultancy LLP
Smith Grant LLP
Station House, Station Road
Ruabon, Wrexham LL14 6DL

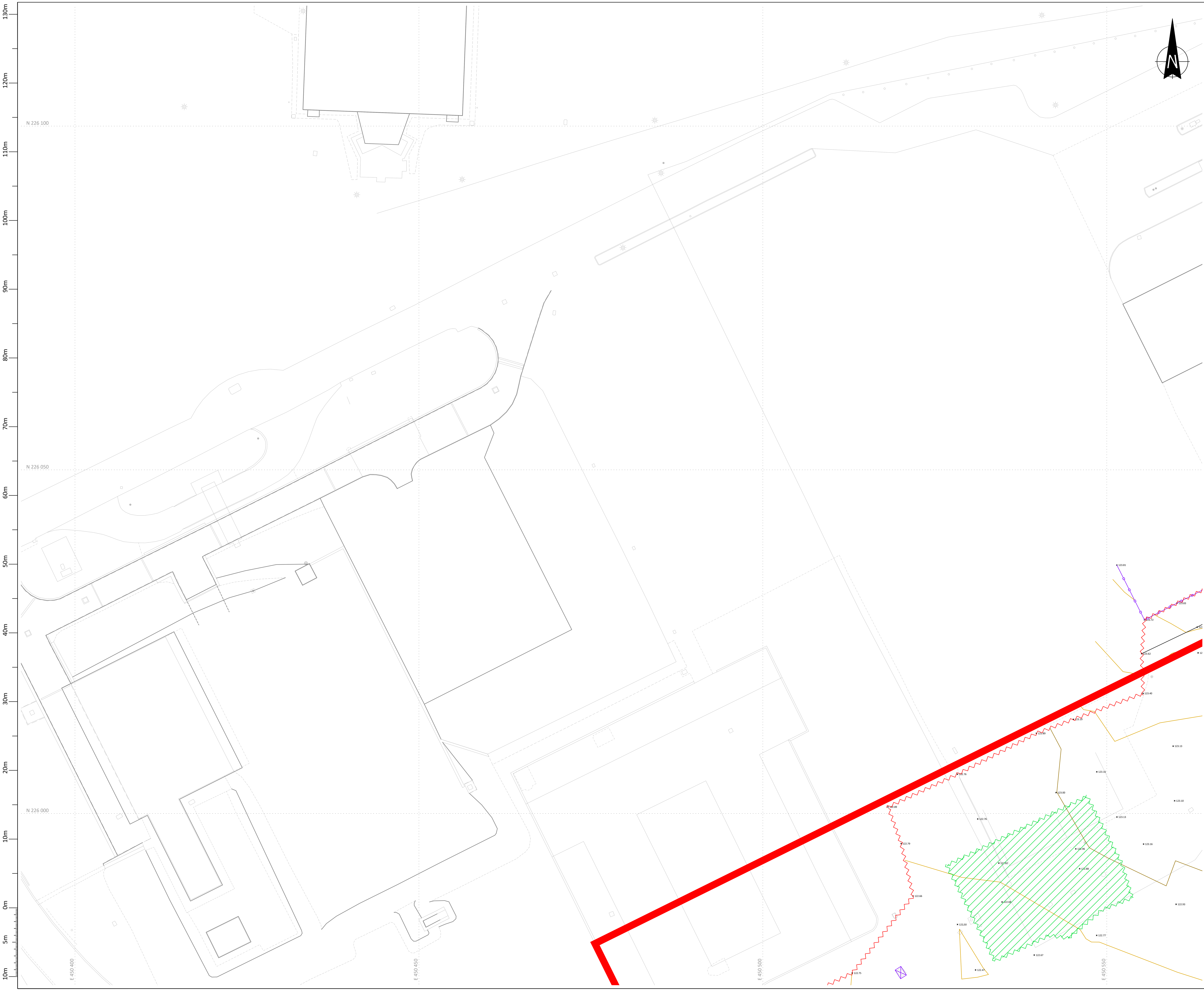
Tel: 01978 822367
Fax: 01978 8247182

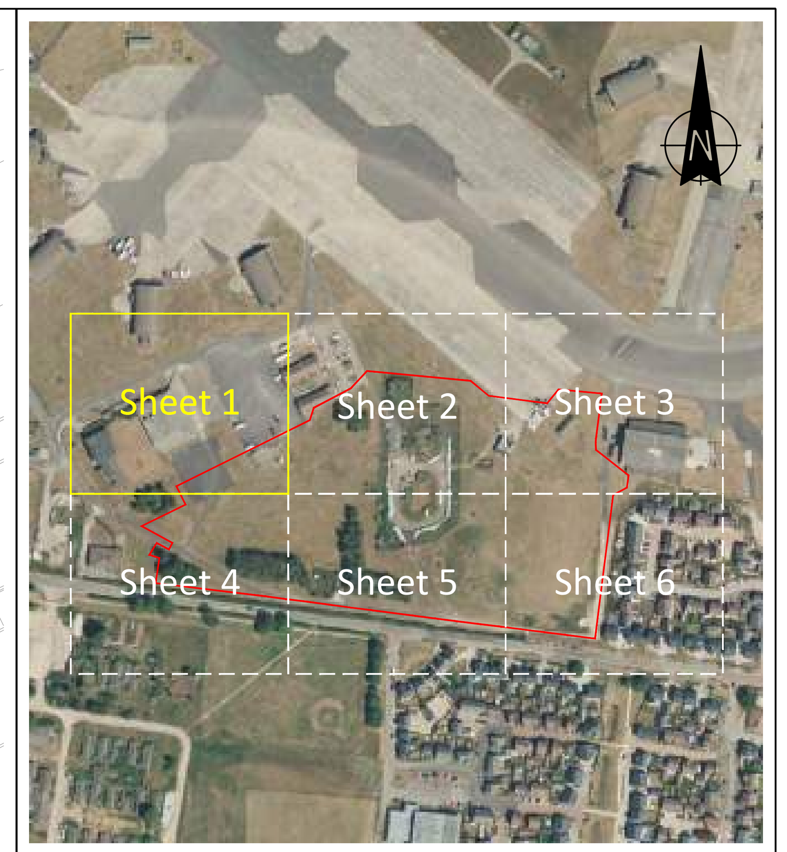
www.smithgrant.co.uk
email: consult@smithgrant.co.uk

Project:
Heyford Park: Dorchester
Phase 10 (East)

Drawing:
Suggested Locations for TS-SP4 & TS-SP5 Soil Placement

Drawn: SM	Checked: DW
Date: 10.05.23	Scale: 1:2,000 @ A3
Job No: R1742b	Drg No: D05





Sheet Plan Scale 1:5000

Notes:

Site boundary	
Phase boundary	
Approximate extent of remediation works	
Contour (0.25m interval)	
Spot level	× 120.12
Bottom/top of bank	
Fenceline	
Historic building footprints (see note 2)	
Tank excavation (see note 4)	
Contamination excavation (see notes 6, 7, and 8)	
Buried asbestos impacted soils >2m bgl (see note 6)	
Manhole (see note 10)	
Stockpile (extents)	
Services - Telecommunications	

Notes

1. This plan is to be read in conjuction with the associated SGP validation reports R1742b-R24 and R1742b-R25, and all other associated documents/drawings.
2. Made ground associated with the removal of the historic building foundations extends to approximately 0.5-1.5m below remediated ground levels.
3. Made ground associated with the removal of building service trenches, deep foundations and EWS's extends to approximately 1.5-2.5m below remediated ground levels.
4. Made ground associated with the removal of in-ground tanks extends to approximately 3-4m below remediated ground levels.
5. Localised areas of made ground associated with the remediation works may be present but which are not detailed on this plan.
6. The extent of the contamination excavation/burial is approximate only.
7. In-ground contamination excavations extend to circa 2.5m below remediated ground levels as detailed.
8. Fill materials used to make up any bulk deficit due to the contamination excavation was provided by the Client.
9. The central area of the site has been left low to a accommodate future development arisings (as instructed by the Client).
10. Live manholes and drainage infrastructure have been retained.

Survey Information:

Co-ord System:	Co-ord Type:	Primary Survey Control:	Secondary Survey Control:
OSGB36(15)	Grid	Leica SmartNet	Site

Rev	Date	Amendment	Drawn	Checked

Urban Regen
ESTABLISHED 2001

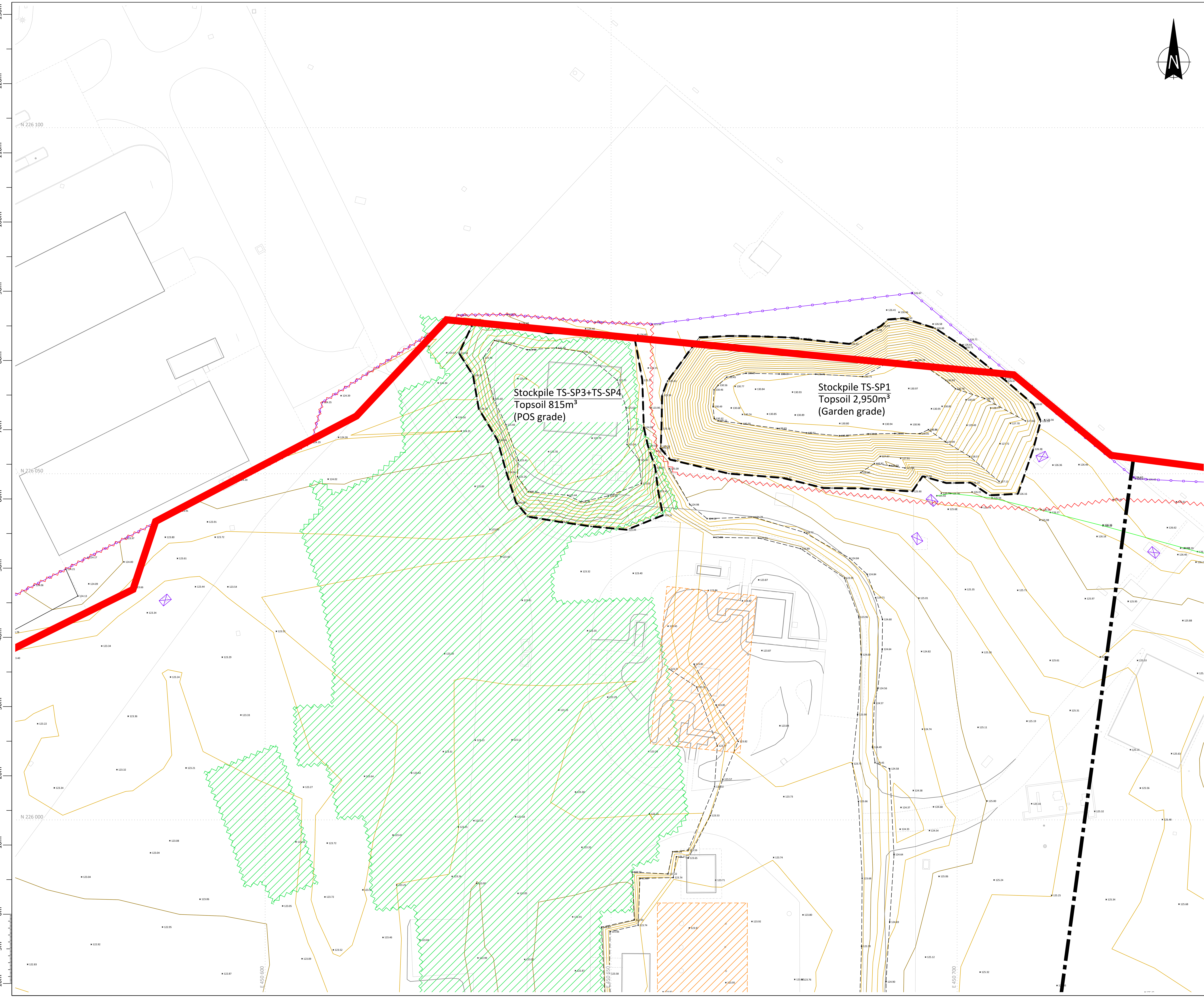
Client:
Dorchester Homes

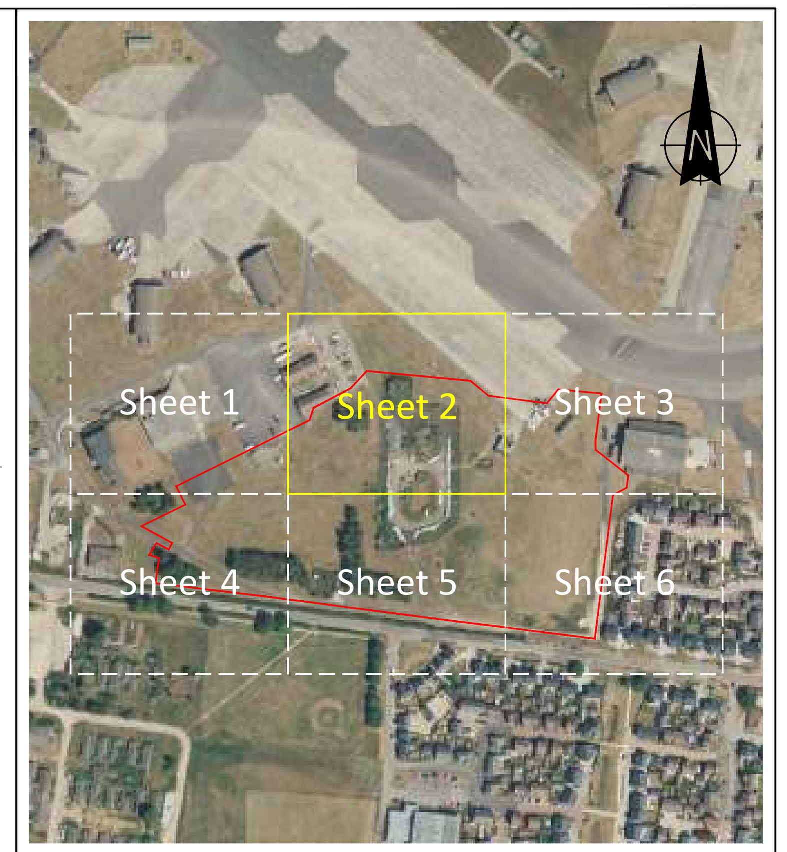
Project:
Upper Heyford (Phase 10)

Title:
As built topographic survey and constraints (Sheet 1 of 6)

Scale:	First Issue:	Drawn:	Checked:
1:250 @A1	18th April 2023	D.J.Woodrow	B.Carter

Drawing No:	Revision:
372-22-001-01	





Sheet Plan Scale 1:5000

Notes:

Site boundary	
Phase boundary	
Approximate extent of remediation works	
Contour (0.25m interval)	
Spot level	× 120.12
Bottom/top of bank	
Fenceline	
Historic building footprints (see note 2)	
Tank excavation (see note 4)	
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Buried asbestos impacted soils >2m bgl (see note 6)	
Manhole (see note 10)	
Stockpile (extents)	
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Co-ord System:	Co-ord Type:	Primary Survey Control:	Secondary Survey Control:
OSGB36(15)	Grid	Leica SmartNet	Site

Rev	Date	Amendment	Drawn	Checked

Urban Regen
ESTABLISHED 2001

Client:
Dorchester Homes

Project:
Upper Heyford (Phase 10)

Title:
As built topographic survey and constraints (Sheet 2 of 6)

Scale:	First Issue:	Drawn:	Checked:
1:250 @A1	18th April 2023	D.J.Woodrow	B.Carter

Drawing No:	Revision:
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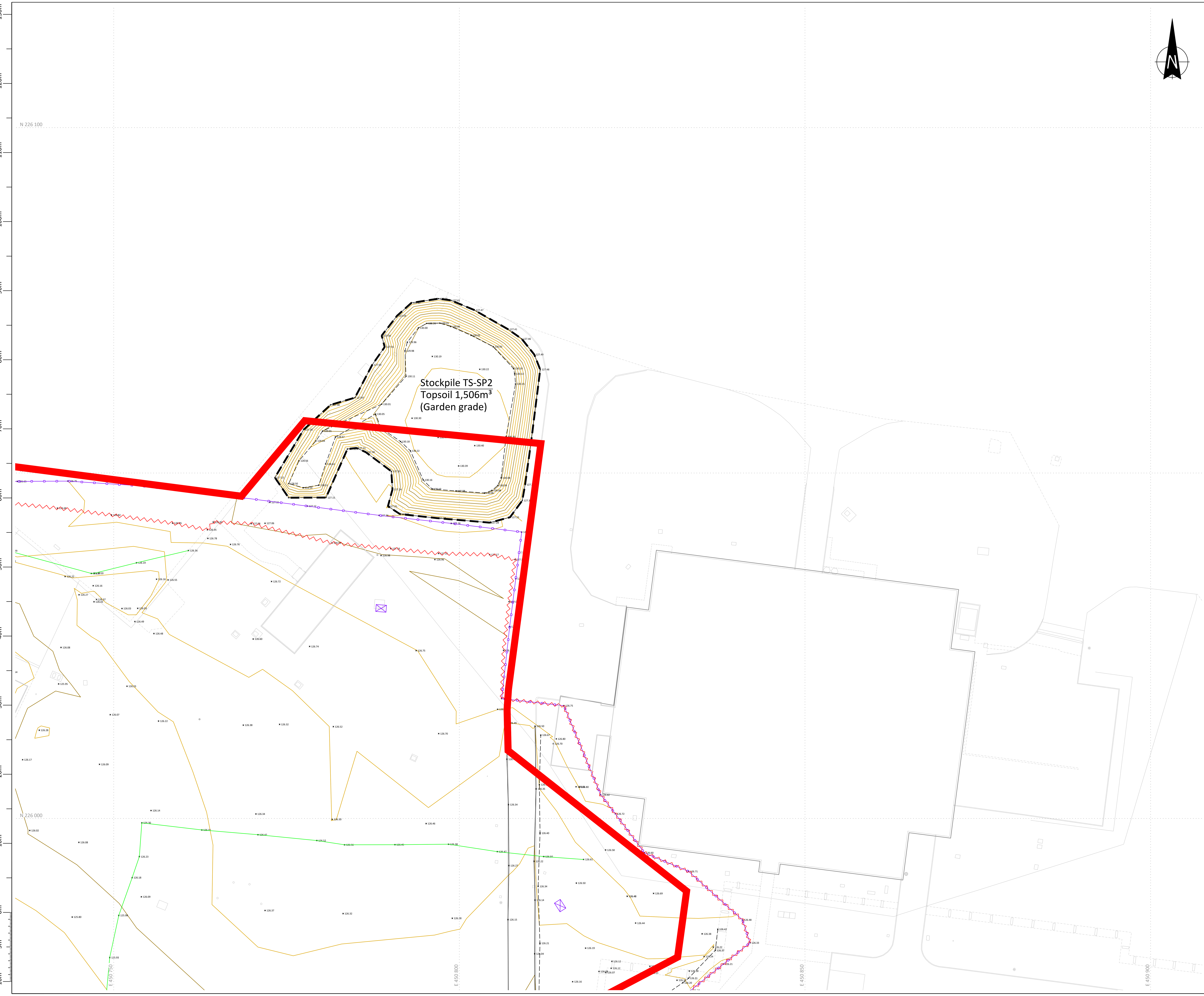

Sheet Plan Scale 1:5000

Legend	
Site boundary	
Phase boundary	
Approximate extent of remediation works	
Contour (0.25m interval)	
Spot level	× 120.12
Bottom/top of bank	
Fenceline	
Historic building footprints (see note 2)	
Tank excavation (see note 4)	
Contamination excavation (see notes 6, 7, and 8)	
Buried asbestos impacted soils >2m bgl (see note 6)	
Manhole (see note 10)	
Stockpile (extents)	
Services - Telecommunications	

Notes:

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Survey Information:

Co-ord System:	Co-ord Type:	Primary Survey Control:	Secondary Survey Control:
OSGB36(15)	Grid	Leica SmartNet	Site

Rev	Date	Amendment	Drawn	Checked

Urban Regen
ESTABLISHED 2001

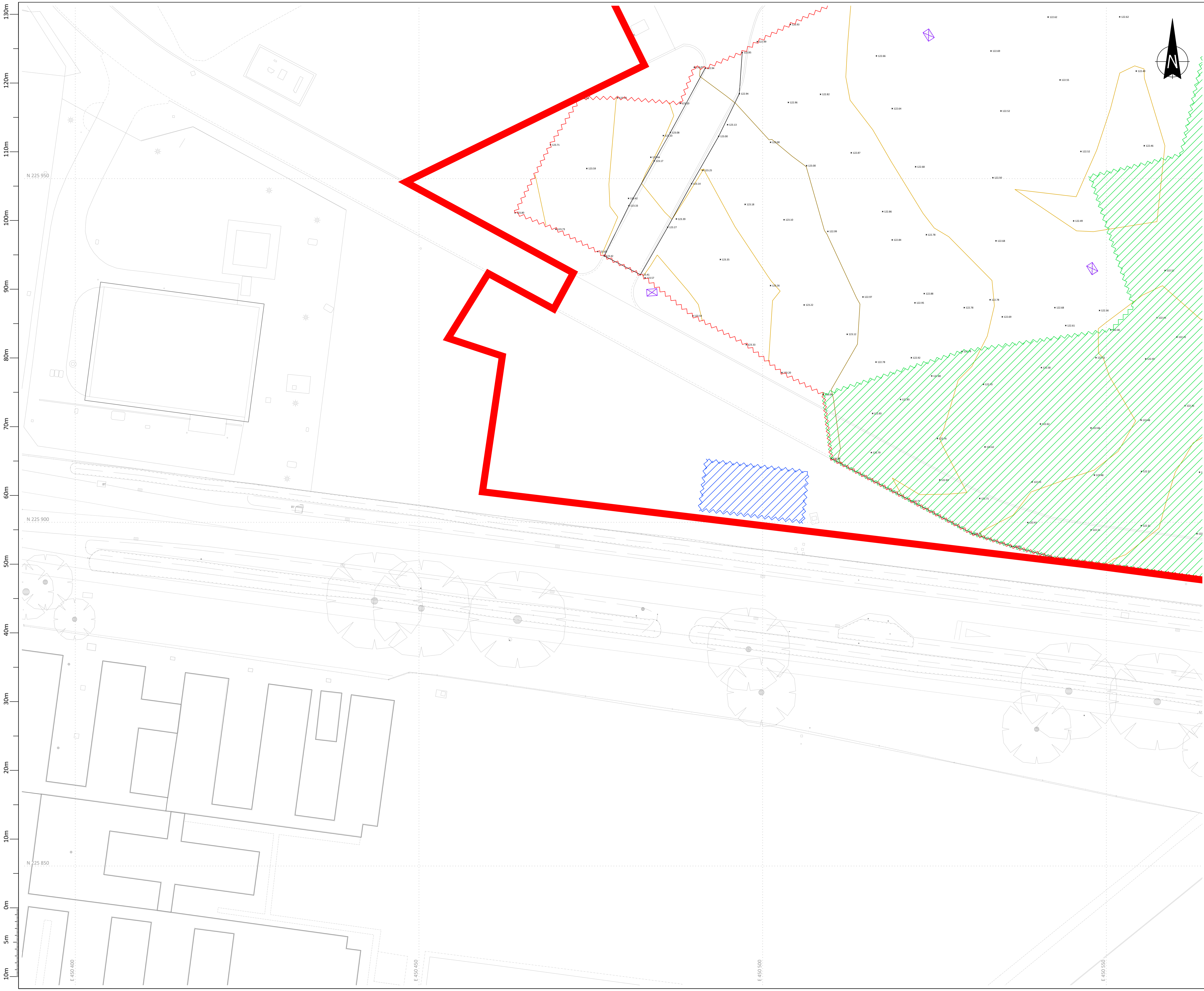
Client:
Dorchester Homes

Project:
Upper Heyford (Phase 10)

Title:
As built topographic survey and constraints (Sheet 3 of 6)

Scale:	First Issue:	Drawn:	Checked:
1:250 @A1	18th April 2023	D.J.Woodrow	B.Carter

Drawing No:	Revision:
372-22-001-03	



Sheet Plan Scale 1:5000

Key	
Site boundary	
Phase boundary	
Approximate extent of remediation works	
Contour (0.25m interval)	
Spot level	× 120.12
Bottom/top of bank	
Fenceline	
Historic building footprints (see note 2)	
Tank excavation (see note 4)	
Contamination excavation (see notes 6, 7, and 8)	
Buried asbestos impacted soils >2m bgl (see note 6)	
Manhole (see note 10)	
Stockpile (extents)	
Services - Telecommunications	

Notes:

Notes

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Survey Information:

Co-ord System:	Co-ord Type:	Primary Survey Control:	Secondary Survey Control:
OSGB36(15)	Grid	Leica SmartNet	Site

Rev	Date	Amendment	Drawn	Checked

Urban Regen
ESTABLISHED 2001

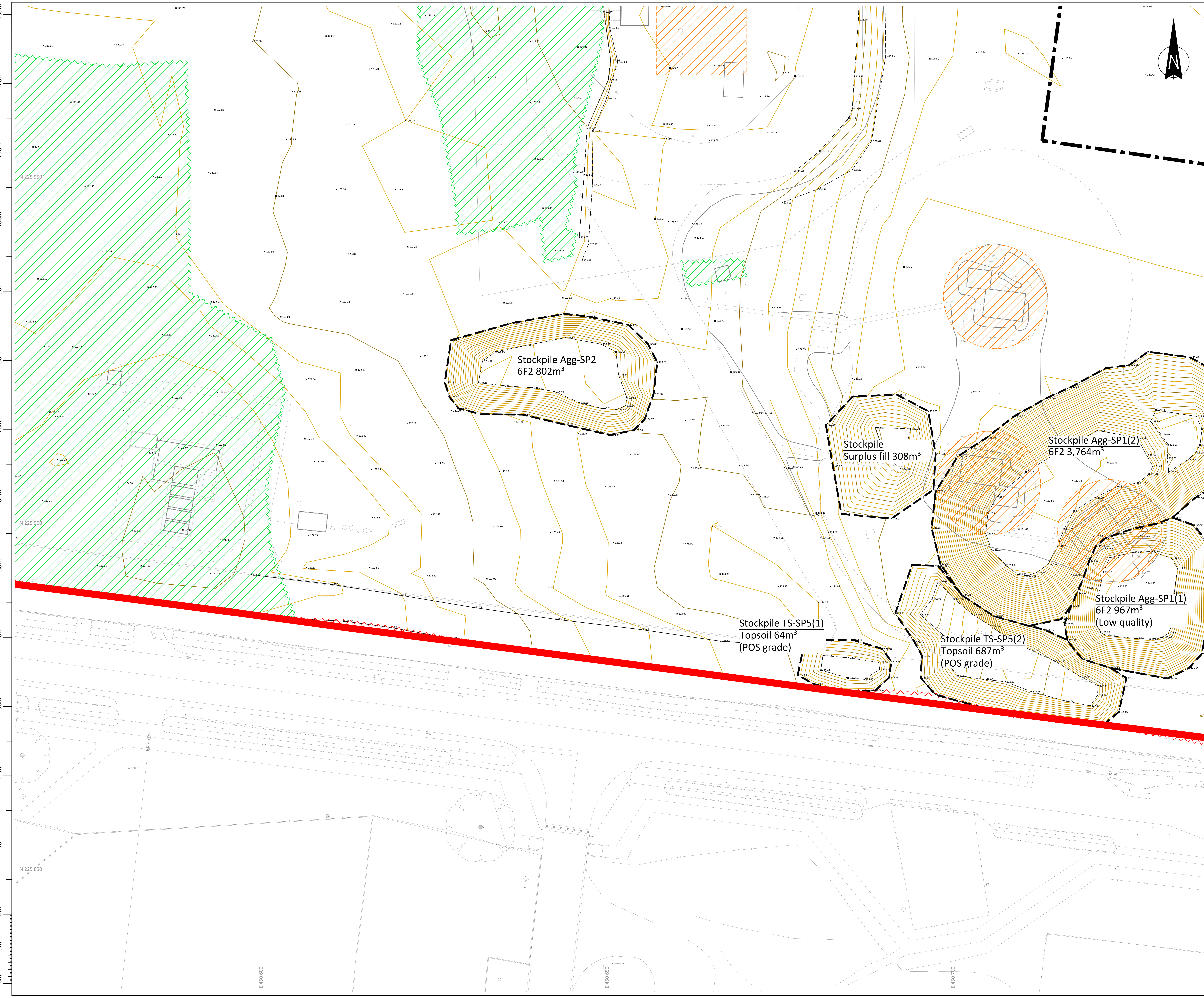
Client:
Dorchester Homes

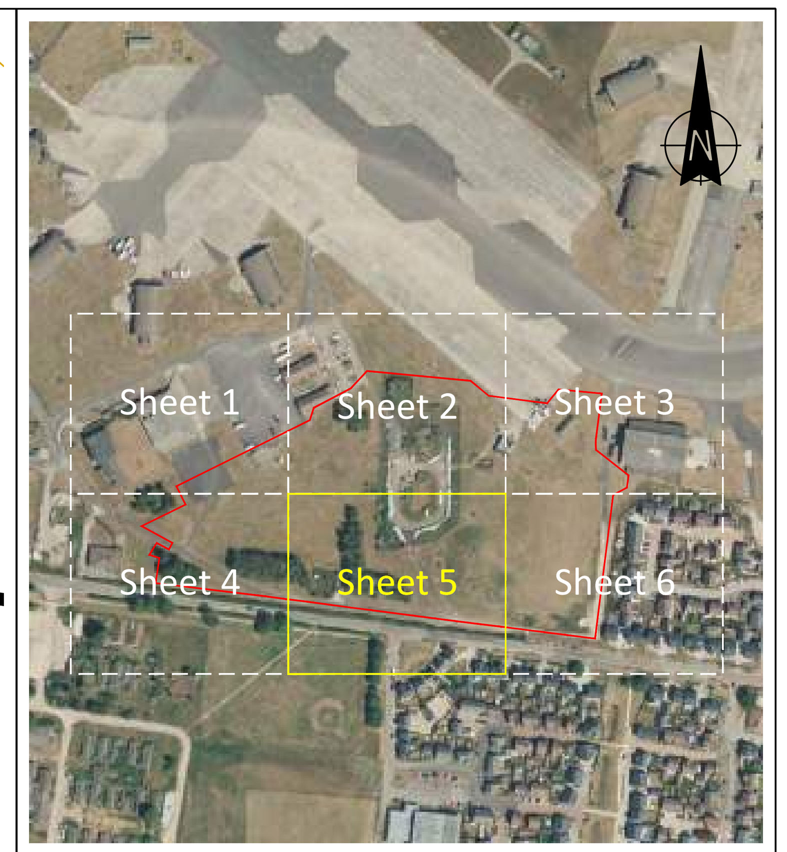
Project:
Upper Heyford (Phase 10)

Title:
As built topographic survey and constraints (Sheet 4 of 6)

Scale:	First Issue:	Drawn:	Checked:
1:250 @A1	18th April 2023	D.J.Woodrow	B.Carter

Drawing No:	Revision:
372-22-001-04	





Sheet Plan Scale 1:5000

Site boundary	
Phase boundary	
Approximate extent of remediation works	
Contour (0.25m interval)	
Spot level	×120.12
Bottom/top of bank	
Fenceline	
Historic building footprints (see note 2)	
Tank excavation (see note 4)	
Contamination excavation (see notes 6, 7, and 8)	
Buried asbestos impacted soils >2m bgl (see note 6)	
Manhole (see note 10)	
Stockpile (extents)	
Services - Telecommunications	

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Survey Information:

Co-ord System:	Co-ord Type:	Primary Survey Control:	Secondary Survey Control:
OSGB36(15)	Grid	Leica SmartNet	Site

Rev	Date	Amendment	Drawn	Checked

Urban Regen
ESTABLISHED 2001

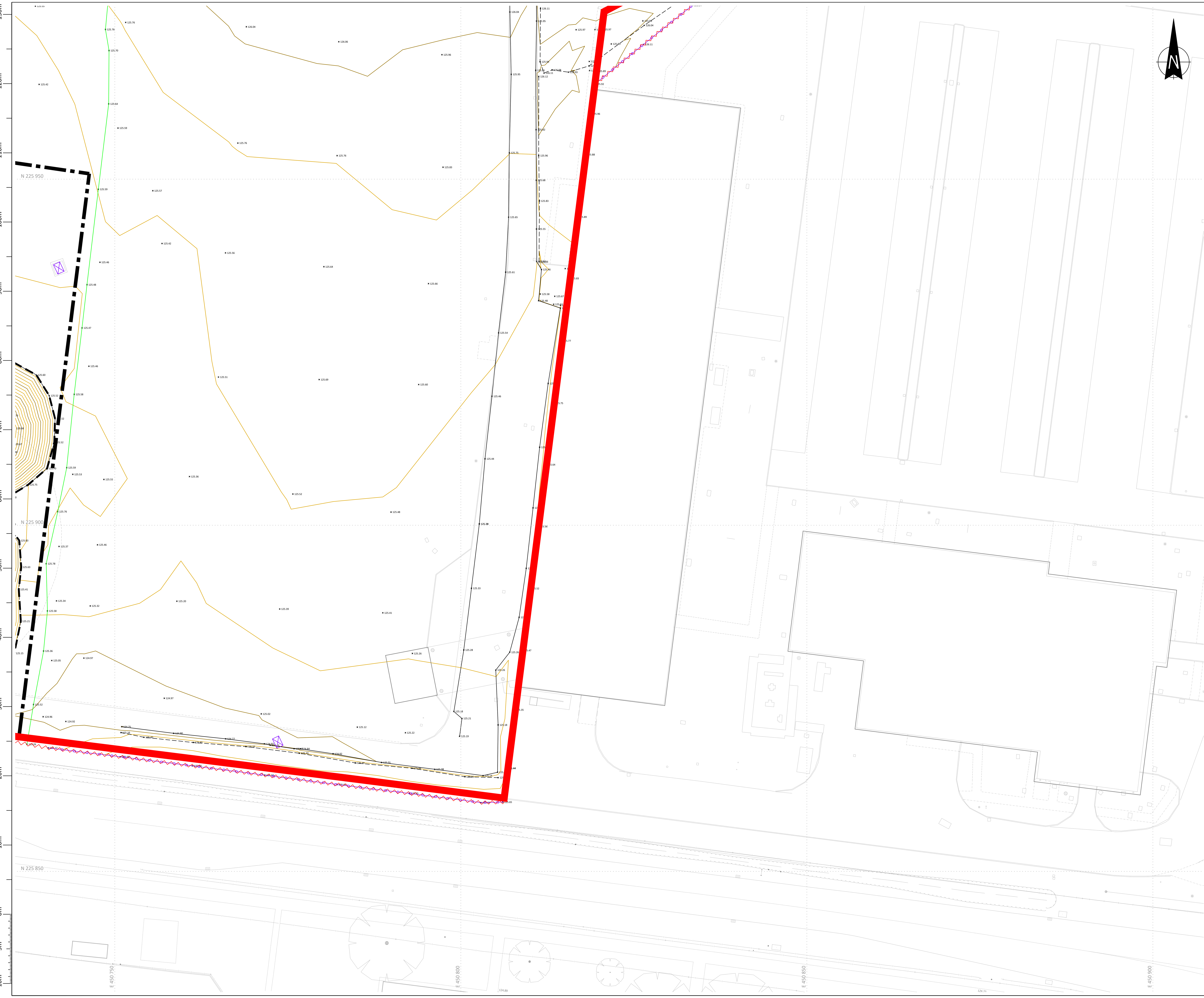
Client:
Dorchester Homes

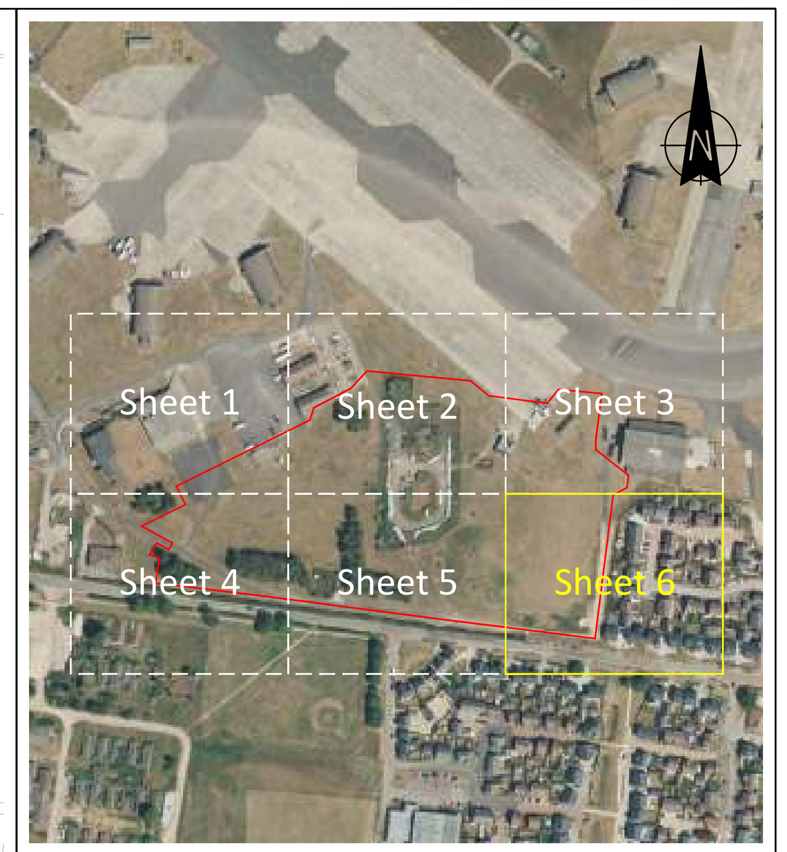
Project:
Upper Heyford (Phase 10)

Title:
As built topographic survey and constraints (Sheet 5 of 6)

Scale:	First Issue:	Drawn:	Checked:
1:250 @A1	18th April 2023	D.J.Woodrow	B.Carter

Drawing No:	Revision:
372-22-001-05	





Sheet Plan Scale 1:5000

Legend	
Site boundary	
Phase boundary	
Approximate extent of remediation works	
Contour (0.25m interval)	
Spot level	× 120.12
Bottom/top of bank	
Fenceline	
Historic building footprints (see note 2)	
Tank excavation (see note 4)	
Contamination excavation (see notes 6, 7, and 8)	
Buried asbestos impacted soils >2m bgl (see note 6)	
Manhole (see note 10)	
Stockpile (extents)	
Services - Telecommunications	

Notes:

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Survey Information:

Co-ord System:	Co-ord Type:	Primary Survey Control:	Secondary Survey Control:
OSGB36(15)	Grid	Leica SmartNet	Site

Rev	Date	Amendment	Drawn	Checked

Urban Regen
ESTABLISHED 2001

Client:

Dorchester Homes

Project:

Upper Heyford (Phase 10)

Title:

As built topographic survey and constraints (Sheet 6 of 6)

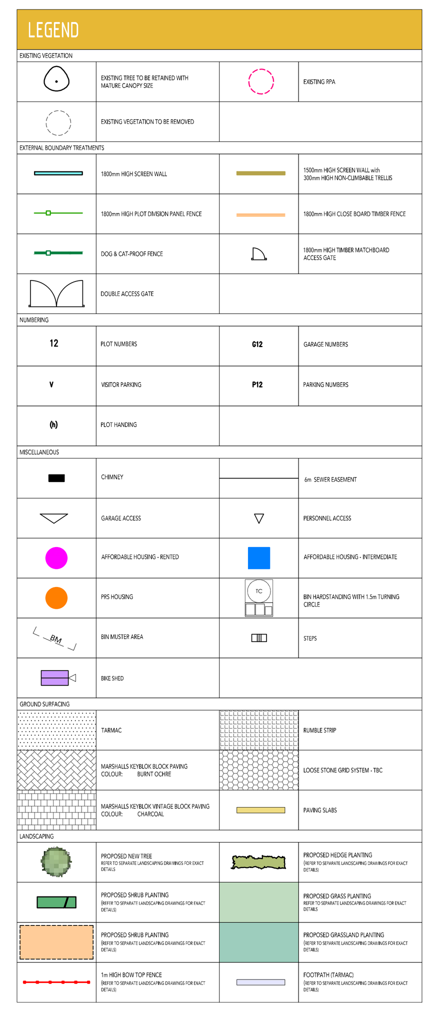
Scale:	First Issue:	Drawn:	Checked:
1:250 @A1	18th April 2023	D.J.Woodrow	B.Carter

Drawing No:	Revision:
372-22-001-06	

DORCHESTER LIVING

REVISION/S:

A. 2022-11-03. Planning Layout revised to comments received from the LPA and Client. PVA
B. 2022-11-30. Material of private drives revised. SO
C. 2022-12-14. Plots 9-20 Repositioned and Plots 50-53, 86-93 and 97-104 moved south. JB/DGK
D. 2023-01-09. Updated in response to LA comments. DJE



	Housetypes	No. Of Storeys	No. Of Beds	No. Of Units
OPEN MARKET UNITS				
	SP1-V2	2.5 Storey	4 Bed house	4
	SP6	3 Storey	5 Bed house	7
TOTAL OPEN MARKET UNITS				11
PRS				
	2B.T1	2 Storey	2 Bed house	30
	3B.T1	2 Storey	3 Bed house	44
	3B.T3	2 Storey	3 Bed house	16
	4B.T1	2 Storey	4 Bed house	10
TOTAL PRS UNITS				100
AFFORDABLE HOUSING UNITS - SOCIAL RENTED				
	1BF1	3 Storey	1 Bed flat	2
	2B3P	3 Storey	2 Bed maisonette	4
	AF2	2 Storey	2 Bed house	7
	AF3	2 Storey	3 Bed house	4
	AF4	2 Storey	4 Bed house	1
TOTAL RENTED UNITS				18
AFFORDABLE HOUSING UNITS - INTERMEDIATE				
	1BF2	3 Storey	1 Bed flat	3
	2BF	3 Storey	2 Bed house	3
	AF3	2 Storey	3 Bed house	3
TOTAL INTERMEDIATE UNITS				9
TOTAL AFFORDABLE UNITS				27
OVERALL TOTAL UNITS				138

HEYFORD PARK, UPPER HEYFORD

PLANNING LAYOUT

DATE : MARCH 2022
DRAWN : DJE
CHECKED : DRB

DRAWING TITLE : PLANNING LAYOUT
DRAWING NO : 0521-PH10-102

SCALE : 1:500 @ A0
0 5 10 15 [m]

The Distillery, The Old Brewery Office Park,
7 - 11 Lodway, Pill, Bristol BS20 0DH
T. 01275 813380 E:admin@focusdp.com
www.focusdp.com

FOCUS ON DESIGN

APPENDIX A

Site Walkover Photographic Record

1.  18.10.22 – View north across central area of site from south; topsoil strip carried out prior to site visit.	2.  18.10.22 – View northwest across central area of site from south; topsoil strip carried out prior to site visit.
3.  18.10.22 – View west across northern part of western part of site; topsoil strip carried out prior to site visit.	4.  18.10.22 – View southwest across western part of site; topsoil strip carried out prior to site visit.
5.  18.10.22 – Partially demolished interceptor in centre-southwest of site.	6.  18.10.22 – Interceptor demolition arisings and valve pit in centre-southwest of site.

7.

18.10.22 – Bund surrounding POL21 tanks in south of site.

8.

18.10.22 – Topsoil stockpile (TSSP1) in north of site.

9.

25.10.22 – Turf stripped from POL21 bund.

10.

25.10.22 – Excavation and relocation of POL21 bund soils to expose upper extents of tanks.

11.

08.11.22 – Upper extents of POL21B & POL21C tanks exposed and commencement of demolition (POL21C only).

12.

09.11.22 – Soils from POL21 tank excavations stockpiled on concrete hardstanding in northwest.

13.  14.11.22 – Breaking of site won concrete to recover rebar.	14.  14.11.22 – Recovered sections of the decommissioned POL pipeline.
15.  17.11.22 – Breaking of site won concrete to recover rebar.	16.  17.11.22 – Sorting recovered scrap metal.
17.  17.11.22 – Full demolition of interceptor in centre-southwest including breakout of floor slab.	18.  22.11.22 – Excavation of soils around POL21C tank to fully expose walls; soils demonstrating contamination indicators removed to contamination stockpiles in northwest.

19.

22.11.22 – POL21C tank walls fully exposed

20.

22.11.22 – Stockpile of hydrocarbon contaminated soils located on hardstanding in the northwest of site.

21.

23.11.22 – Excavation of soils around POL21B tank to fully expose walls; soils demonstrating contamination indicators removed to contamination stockpiles in northwest

22.

24.11.22 – Stockpile of hydrocarbon contaminated soils located on hardstanding in northwest of site.

23.

28.11.22 – Breaking of site won concrete to recover rebar.

24.

01.12.22 – Recovered topsoil stockpiled in centre-northwest of site (stockpile ref: TSSP3).

25.  12.12.22 – Stockpiles of hydrocarbon contaminated soils located on hardstanding in the northwest of site.	26.  12.12.22 – Sorting recovered scrap metal.
27.  12.12.22 – Breaking of site won concrete to recover rebar.	28.  11.01.23 – Crushing of site-recovered hard materials to produce aggregate for reuse on site.
29.  11.01.23 – Stockpiling of site-generated aggregate in south of site.	30.  19.01.22 – View southeast across central part of site.
31.  19.01.22 – View south across central part of site.	32.  19.01.22 – View southwest across western part of site.

33.  19.01.22 – Crushing of site-recovered hard materials to produce aggregate for reuse on site.	34.  19.01.22 – Stockpiling of site-generated aggregate in south of site.
35.  19.01.22 – Small stockpile of topsoil recovered from the area around trial pit 'JTP8' (stockpile ref: TS-SP4) in centre-northwest.	36.  19.01.22 – Stockpiles of contaminated soils placed on concrete hardstanding along northern site boundary.
37.  19.01.22 – Excavation of brick chamber in centre-northwest.	38.  19.01.22 – Clean, recovered soils placed to raise levels in 'SW-HS' area prior to site visit.

39.

23.01.23 – Crushing of site-recovered hard materials to produce aggregate for reuse on site.

40.

23.01.23 – Stockpiling of site-generated aggregate in south of site.

41.

23.01.23 – Magnet used to recover surface metal scrap.

42.

26.01.22 – Vapour probe (VP1) installation - West (1/2)

43.

26.01.22 – Vapour probe (VP1) installation - West (2/2)

44.

27.01.23 – Aggregate stockpile in southeast of site (stockpile ref: ‘Agg-SP1’).

45.  27.01.23 – Aggregate stockpile in south of site (stockpile ref: 'Agg-SP2').	46.  30.01.23 – Reprofiling of aggregate stockpile in southeast of site (stockpile ref: 'Agg-SP1').
47.  20.02.23 – Backfilling of 'Central Hotspot' excavation area with suitable site soils.	48.  20.02.23 – Removal of contaminated soils to holding area within wider Heyford development site.
49.  28.02.23 – Removal of site-recovered concrete to holding area within wider Heyford development site.	50.  28.02.23 – Relocation of site-recovered topsoil stockpiles from centre-northwest of site (stockpile refs: TS-SP3 & TS-SP4) to north of site for future placement within northern POS area.

51.  28.02.23 – Removal of contaminated soils to holding area within wider Heyford development site.	52.  07.03.23 – View southeast across central part of site.
53.  07.03.23 – View south across central part of site.	54.  07.03.23 – View southwest across western part of site.
55.  07.03.23 – Topsoil strip in north of site following tree felling (1/2).	56.  07.03.23 – Topsoil strip in north of site following tree felling (2/2).
57.  07.03.23 – Removal of contaminated soils to holding area within wider Heyford development site.	58.  08.03.23 – Topsoil strip complete in centre-south / southwest of site following tree felling.

59.

08.03.23 – Removal of relict cables in south of site.

60.

08.03.23 – Stripped topsoil stockpiled in southeast of site (stockpile ref: 'TS-SP5').

61.

15.03.23 – POL pipeline uncovered in southwest of site demonstrating evidence of leakage – see hotspot records for further photos showing contamination removal.

62.

15.03.23 – Second POL pipeline uncovered in southwest of site – no evidence of leakage (1/2).

63.

15.03.23 – Second POL pipeline uncovered in southwest of site – no evidence of leakage (2/2).

64.

15.03.23 – Removal of second POL pipeline.

65.

15.03.23 – Recovered sections of POL pipeline.

66.

16.03.23 – Example vapour probe installation (central area)

67.

24.03.23 – Stockpiles of contaminated soils located within holding area in wider Heyford development site (1/5).

68.

24.03.23 – Stockpiles of contaminated soils located within holding area in wider Heyford development site (2/5).

69.

24.03.23 – Stockpiles of contaminated soils located within holding area in wider Heyford development site (3/5).

70.

24.03.23 – Stockpiles of contaminated soils located within holding area in wider Heyford development site (4/5).

71.

24.03.23 – Stockpiles of contaminated soils located within holding area in wider Heyford development site (5/5).

APPENDIX B

Hotspot Remediation Photographic Records

Job Number: R1742b (Heyford) – Phase 10	**Date:** 14.11.22	**Location:** POL21A	**Compiled By:** SM
Lab Ref: 22-44055		**Samples:** POL21A-SS1 to SS11	


08.11.22 – POL21A tank walls broken out leaving concrete base exposed.


14.11.22 – View west across POL21A area following breakout and removal of tank.


14.11.22 – View west along northern edge of POL21A area following breakout and removal of tank.


14.11.22 – View west along southern edge of POL21A area following breakout and removal of tank.


14.11.22 – View north across POL21A area following breakout and removal of tank.


18.11.22 – Backfilling of POL21A area with site recovered soils.

Job Number: R1742b (Heyford) – Phase 10	**Date:** 01.12.22	**Location:** POL21B	**Compiled By:** SM
Lab Ref: 22-46599		**Samples:** POL21b-V1 to V7	

28.11.22 – Demolition of tank walls complete; clearance of demolition rubble from tank base.

01.12.22 – Clearance of rebar broken out from tank base

01.12.22 – Breakout of tank base.

01.12.22 – Clearance of broken out concrete.

01.12.22 – Removal of broken out concrete to be stockpiled for processing.

01.12.22 – Stockpile of recovered concrete undergoing further breaking to recover rebar.

 01.12.22 – View south of POL21B area following majority of clearance (full clearance occurred prior to sampling but too dark to photograph).	**NO PHOTOGRAPH**	**NO PHOTOGRAPH**

Job Number: R1742b (Heyford) – Phase 10	**Date:** 22.11.22-29.11.22	**Location:** POL21C	**Compiled By:** SM
Lab Ref: 22-46573		**Samples:** POL21C-SS1 to SS10	

22.11.22 – Demolition of tank sidewalls

22.11.22 – Demolition of tank sidewalls

23.11.22 – Demolition of tank sidewalls

23.11.22 – Tank sidewalls demolished

24.11.22 – Exposure of tank base

24.11.22 – Breakout of tank base

Job Number: R1742b (Heyford) – Phase 10	**Date:** 13.12.22-15.12.22	**Location:** POL2 (South)	**Compiled By:** SM
Lab Ref: 22-48400		**Samples:** POL2S-SS to SS10	


12.12.22 – Exposure of POL2 (South) tank.


12.12.22 – Excavation of PFA from tank.


12.12.22 – Removal of PFA to hardcore stockpile.


13.12.22 – Excavation of final tank and PFA from POL2 (South) area.


14.12.22 – View north across POL2 (South) area following tank removal.


14.12.22 – View south across POL2 (South) area following tank removal.

 14.12.22 – Excavation of sands which separated tanks within POL2 (South) area	 14.12.22 – Continued excavation of sands which separated tanks within POL2 (South) area.	 15.12.22 – Excavation of sands from POL2 (South) area complete and sidewalls exposed.

Job Number: R1742b (Heyford) – Phase 10	**Date:** 14.12.22-11.01.23	**Location:** POL2 (North)	**Compiled By:** SM
Lab Ref: 23-01130		**Samples:** POL2(N)-SS1 to SS12	


07.12.22 – Location of POL2 (North) tanks.


07.12.22 – Breakout of concrete slab overlying POL2 (North) tanks.


07.12.22 – Exposure of northernmost tank surrounded by PFA fill.


08.12.22 – Northernmost tank broken open and PFA fill excavated.


08.12.22 –PFA tank fill relocated to hard materials stockpile.


08.12.22 – Northernmost tank removed.

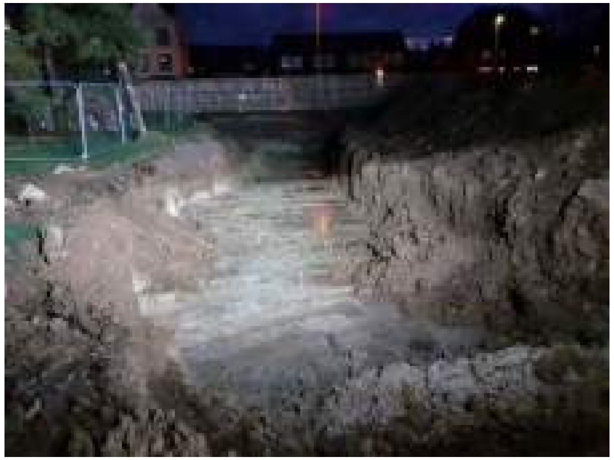
 14.12.22 – Exposure of concrete slab overlying POL2 (North) tanks	 14.12.22 – Concrete base in area of northernmost tank undergoing breakout.	 15.12.22 – Further breakout of concrete slab overlying POL2 (North) tanks.
 15.12.22 – Removal of broken out concrete slab and exposure of underlying tanks.	 15.12.22 – Tank opened exposing PFA fill.	 15.12.22 – Removal of PFA to hardcore stockpile.

 11.01.23 – POL2 (North) tanks removed and base and sidewalls exposed (partially limestone bedrock); view southwest.	 11.01.23 – POL2 (North) tanks removed and base and sidewalls exposed (partially limestone bedrock); view northeast.	**NO PHOTOGRAPH**

Job Number: R1742b (Heyford) – Phase 10	**Date:** 29.11.22 – 24.03.23	**Location:** Southwest Hotspot (SWHS)	**Compiled By:** SM
Lab Ref: 22-46575, 22-46596, 22-47488, 22-47500, 22-48018, 22-48395, 23-09442, 23-09958 & 23-10270		**Samples:** Cell 1-SS1 to SS8, Cell 2-SS1 to SS14, Cell 3-SS1 to SS10, Cell 4-S1 & S2, Cell 5-S1 to S3, Cell 6-S1 & S2, Cell 6-HS-SS1 to SS8, Cell 7-S1 to S4, Cell 7-HS-SS1 to SS7, Cell 8-S1 to S3, Cell 8-SS1 to SS7, HS-Cell9-S1 & S2, HS-Cell9-SS1 to SS8, HS-CELL10-SS1 to SS13, HS-CELL11-SS1 to SS6, Cell12-SS1 to SS20, Cell12-S1 & S2, Cell13-SS1 to SS6 and Cell13-S1.	

 29.11.22 – Cell 1: Commencement of excavation in vicinity of former "Valve Pit" (southwest corner of Cell 1).	 29.11.22 – Cell 1: Contaminated soils removed down to clean clays; contamination indicators still present along western sidewall.	 29.11.22 – Cell 1: Excavation progressed northwards with contaminated soils removed down to clean clays; contamination indicators still present along western sidewall.

 29.11.22 – Cell 1: Excavation progressed northwards with contaminated soils removed down to clean clays; contamination indicators still present along all four sidewalls.	 30.11.22 – Cell 2: Commencement of excavation to southwest of demolished interceptor (southwest corner of Cell 2).	 30.11.22 – Cell 2: Excavation progressed northwards and eastwards with contaminated soils removed down to clean clays; contamination indicators still present along western sidewall.
 30.11.22 – Cell 2: Excavation progressed northwards and eastwards with contaminated soils removed down to clean clays; contamination indicators still present along eastern sidewall.	 30.11.22 – Cell 2: Excavation progressed northwards and eastwards with contaminated soils removed down to clean clays; contamination indicators still present along southern sidewall.	 30.11.22 – Cell 2: Excavation progressed northwards (until joined with Cell 1) and eastwards with contaminated soils removed down to clean clays.

 01.12.22 – Cell 2: Excavation progressed northwards (until joined with Cell 1) and eastwards with contaminated soils removed down to clean clays.	 01.12.22 – Cell 2: Excavation progressed northwards and eastwards with contaminated soils removed down to clean clays; contamination indicators still present along eastern sidewall.	 01.12.22 – Cell 2: Excavation progressed northwards with contaminated soils removed down to clean clays; contamination indicators absent along eastern part of northern sidewall.
 05.12.22 – Cell 3: Commencement of excavation to east of southern part of Cell 2; contamination indicators still present along southern sidewall.	 05.12.22 – Cell 3: Excavation progressed northwards with contaminated soils removed down to clean clays; contamination indicators absent along eastern sidewall.	 05.12.22 – Cell 3: Excavation progressed northwards with contaminated soils removed down to clean clays; contamination indicators absent along eastern and northern sidewalls.

06.12.22 – Cell 4: Commencement of excavation (western extent of Cell 4).

06.12.22 – Cell 4: Soils demonstrating slight contamination indicators but not significant enough to warrant removal so excavated, aerated and replaced into excavation.

06.12.22 – Cell 4: Excavation and replacement of soils progressed eastwards

06.12.22 – Cell 4: Excavation and replacement of soils progressed eastwards to eastern extent of Cell 4.

07.12.23 – Cell 5: Commencement of excavation to south of western part of Cell 4.

07.12.22 – Cell 5: Soils demonstrating slight contamination indicators but not significant enough to warrant removal so excavated, aerated and replaced into excavation.

 07.12.22 – Cell 5: Excavation and replacement of soils progressed eastwards.	 07.12.22 – Cell 5: Excavation and replacement of soils progressed eastwards to eastern extent of Cell 5.	 07.12.22 – Cell 5: Excavation continued to south of previous excavation area bridging gap to Cell1.
 07.12.22 – Cell 5: Excavation and replacement of soils progressed eastwards.	 07.12.22 – Cell 5: Excavation and replacement of soils progressed eastwards to eastern extent of Cell 5.	 08.12.22 – Cell 6: Commencement of excavation to north of western part of Cell 4.

 08.12.22 – Cell 6: Soils demonstrating slight contamination indicators but not significant enough to warrant removal so excavated, aerated and replaced into excavation.	 08.12.22 – Cell 6: Excavation progressed eastwards and more significant contamination indicators encountered (Cell 6 Hotspot).	 08.12.22 – Cell 6: Excavation of Cell 6 Hotspot down to clean clays.
 08.12.22 – Cell 6: Excavation of Cell 6 Hotspot complete; significant contamination indicators absent from base and sidewalls (1/2).	 08.12.22 – Cell 6: Excavation of Cell 6 Hotspot complete; significant contamination indicators absent from base and sidewalls (2/2).	 08.12.22 – Cell 6: Excavation and replacement of soils to east of Cell 6 Hotspot.

 08.12.22 – Cell 7: Commencement of excavation to north of western part of Cell 6.	 08.12.22 – Cell 7: Soils demonstrating slight contamination indicators but not significant enough to warrant removal so excavated, aerated and replaced into excavation.	 08.12.22 – Cell 7: Excavation progressed eastwards and more significant contamination indicators encountered (Cell 7 Hotspot) so soils were removed down to clean clays; contamination indicators absent from base and western / southern sidewalls but still present in northern and eastern sidewalls.
 12.12.22 – Cell 7: Recommencement of excavation to east of previous excavation area; clean overburden soils side-cast.	 12.12.22 – Cell 7: Excavation of Cell 7 Hotspot progressed eastwards; contamination indicators absent from base and western / southern / eastern sidewalls but still present in northern sidewall (1/2).	 12.12.22 – Cell 7: Excavation of Cell 7 Hotspot progressed eastwards; contamination indicators absent from base and western / southern / eastern sidewalls but still present in northern sidewall (2/2).

 12.12.22 – Cell 7: Excavation and replacement of soils to east of Cell 7 Hotspot.	 12.12.22 – Cell 7: Excavation continued to north of western part of previous excavation area; soils demonstrating slight contamination indicators but not significant enough to warrant removal so excavated, aerated and replaced into excavation.	 13.12.22 – Cell 7: Excavation of northern part of Cell 7 Hotspot.
 13.12.22 – Cell 7: Excavation and replacement of soils to east of Cell 7 Hotspot.	 13.12.22 – Cell 8: Commencement of excavation to west of Cells 4-6; contamination indicators identified to west of Cell 4.	 13.12.22 – Cell 8: Contaminated soils to west of Cell 4 excavated down to clean clays


13.12.22 – Cell 8: Excavation progressed northwards; southern / northern extents of contamination hotspot identified.


13.12.22 – Cell 8: Excavation progressed westwards with contaminated soils removed down to clean clays; significant contamination indicators absent along northern and southern sidewalls.


14.12.22 – Cell 8: Excavation progressed westwards with contaminated soils removed down to clean clays; significant contamination indicators absent along northern and southern sidewalls.


14.12.22 – Cell 8: Excavation of contaminated soils complete; significant contamination indicators absent along northern, southern and western sidewalls.


14.03.23 – Cell 9: Commencement of excavation from west of Cell 1 with removal of contaminated soils down to clean clays.


14.03.23 – Cell 9: Excavation progressed southwards alongside Cell 2 with contaminated soils removed down to clean clays

 14.03.23 – Cell 9: Excavation progressed southwards with contaminated soils removed down to clean clays; contamination indicators still present in southern sidewall (haul road to be temporarily retained) and western sidewall (unable to progress due to standoff from live drain).	 14.03.23 – Cell 9: View of Cell 9 excavation area (day 1).	 15.03.23 – Cell 9: Excavation continued to west of live drain / north of haul road; relict water main encountered alongside road which was removed.
 16.03.23 – Cell 9: Excavation progressed westwards with contaminated soils removed down to clean clays.	 16.03.23 – Cell 9: Excavation progressed westwards with contaminated soils removed down to clean clays.	 16.03.23 – Cell 9: Excavation progressed westwards with contaminated soils removed down to clean clays and clean overburden soils replaced into excavation; contamination indicators present in all 4 sidewalls so excavation to continue in all directions with exception of eastwards due to presence of live drain.

 15.03.23 – Cell 10: Relict POL pipeline discovered to north of Cell 9 (1/2).	 15.03.23 – Cell 10: Cell 10: Relict POL pipeline discovered to north of Cell 9 (2/2).	 15.03.23 – Cell 10: Relict POL pipeline cut which had not been properly decommissioned; small volume of residual jet fuel (kerosene) leaked into trench.
 15.03.23 – Cell 10: Soil placed into trench to soak up leaked jet fuel – to be removed at later date.	 20.03.23 – Cell 10: Contaminated soils underlying, and to south of, former pipeline removed down to clean clays; significant contamination indicators absent from western sidewall but present in northern sidewall.	 20.03.23 – Cell 10: Excavation continued to south of previous excavation area towards northern extent of Cell 9.

 20.03.23 – Cell 10: Excavation progressed southwards (joining northern extent of Cell 9) and westwards with contaminated soils removed down to clean clays and clean overburden soils replaced into excavation area.	 20.03.23 – Cell 10: Excavation progressed westwards; significant contamination indicators absent from western sidewall.	 20.03.23 – Cell 10: Excavation complete and clean overburden soils replaced into excavation area.
 21.03.23 – Cell 11: Commencement of excavation from south of Cell 3.	 21.03.23 – Cell 11: Contaminated soils removed down to clean clays; significant contamination indicators absent from eastern sidewall but present in southern sidewall (unable to progress due to standoff from Camp Road / live services).	 21.03.23 – Cell 11: Excavation progressed westwards; contamination indicators still present in southern sidewall (unable to progress due to standoff from Camp Road / live services).

<table>
<tr>
<td>
21.03.23 – Cell 11: Excavation progressed westwards; contamination indicators still present in southern and western sidewalls (unable to progress due to standoff from Camp Road / live services and live drain, respectively).</td>
<td>
21.03.23 – Cell 11: Excavation complete and clean overburden soils replaced into excavation area.</td>
<td>
22.03.23 – Cell 12: Commencement of excavation from south of Cell 9 / west of live drain.</td>
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<td>
22.03.23 – Cell 12: Contaminated soils removed down to clean clays; significant contamination indicators absent from eastern sidewall.</td>
<td>
22.03.23 – Cell 12: Excavation progressed westwards with contaminated soils removed down to clean clays; contamination indicators present in southern sidewall but unable to progress due to standoff from Camp Road / live services.</td>
<td>
22.03.23 – Cell 12: Excavation progressed westwards with contaminated soils removed down to clean clays; contamination indicators present in southern sidewall but unable to progress due to standoff from Camp Road / live services.</td>
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 22.03.23 – Cell 12: Excavation progressed westwards with contaminated soils removed down to clean clays; contamination indicators present in southern sidewall but unable to progress due to standoff from Camp Road / live services.	 23.03.23 – Cell 12: Excavation progressed westwards with contaminated soils removed down to clean clays; significant contamination indicators absent along western sidewall but still present in southern sidewall (unable to progress due to standoff from Camp Road / live services).	 23.03.23 – Cell 12: Contamination indicators still present in northern sidewall however these were present at depth (>2m bgl) within a thin band of soils (circa. 0.5m thick) so deemed impractical to remove and considered unlikely to present a significant risk to human health or the environment.
 23.03.23 – Cell 12: Excavation continued to the north of previous excavation area / west of Cell 9.	 23.03.23 – Cell 12: Excavation progressed westwards with contaminated soils removed down to clean clays; contamination indicators still present in northern sidewall however these were present at depth (>2m bgl) within a thin band of soils (circa. 0.5m thick) so deemed impractical to remove and considered unlikely to present a significant risk to human health and/or the environment.	 23.03.23 – Cell 12: Excavation progressed westwards with contaminated soils removed down to clean clays; contamination indicators still present in western / northern sidewalls however these were present at depth (>2m bgl) within a thin band of soils (circa. 0.5m thick) so deemed impractical to remove and considered unlikely to present a significant risk to human health and/or the environment.

 23.03.23 – Cell 12: View of entire Cell 12 excavation area; clean overburden soils replaced into excavation.	 23.03.23 – Cell 13: Commencement of excavation from north of Cell 10 / west of live drain.	 23.03.23 – Cell 13: Excavation progressed westwards with contaminated soils removed down to clean clays; slight contamination indicators still present in eastern sidewall (unable to progress due to live drain) and northern sidewall however these were present at depth (>1.5m bgl) within a thin band of soils (circa. 0.5m thick) so deemed impractical to remove and considered unlikely to present a significant risk to human health and/or the environment.

 23.03.23 – Cell 13: Excavation progressed westwards with contaminated soils removed down to clean clays; slight contamination indicators still present in western and northern sidewalls however these were present at depth (>1.5m bgl) within a thin band of soils (circa. 0.5m thick) so deemed impractical to remove and considered unlikely to present a significant risk to human health and/or the environment.	**NO PHOTOGRAPH**	**NO PHOTOGRAPH**

Job Number: R1742b (Heyford) – Phase 10	**Date:** 12.12.22 – 07.03.23	**Location:** Central Hotspot (CHS)	**Compiled By:** SM
Lab Refs: 23-02988, 23-03626, 23-03818, 23-04757, 23-05343, 23-04867, 23-05829 & 23-08277		**Samples:** CHS-Cell 1-S1, CH-Cell 1-SS1 to SS6, CHS-Cell 2-S1 & S2, CHS-Cell 2-SS1 to SS7, CHS-Cell 3-S1 & S2, CHS-Cell 3-SS1 to SS5, CHS-Cell 4-SS1 & SS2, CHS-CELL5-SS1 to SS6, CHS-Cell 7-S1 to S4, CHS-Cell 7-SS1 to SS10, CHS-Cell 8-S1 & S2, CHS-Cell 8-SS1 to SS16, CHS-Cell 9-S1 and CHS-Cell 9-SS1 to SS8	

 12.12.22 – Contaminated soils encountered in centre-north of site underlying relict pipeline.	 12.12.22 – Contaminated soils underlying relict pipeline removed down to bedrock; contaminated soils present along all four sidewalls near excavation base.	 12.12.22 – Relict pipeline removed but excavation of contaminated soils paused until later date.
 26.01.23 – Cell 1: Excavation progressed to east of previous excavation area up unto haul road (which was to be temporarily retained) with contaminated soils removed down to bedrock; contamination indicators still present along eastern sidewall.	 26.01.23 – Cell 1: Excavation progressed northwards with contaminated soils removed down to bedrock and clean overburden soils replaced into excavation; significant indicators of contamination absent along western sidewall.	 26.01.23 – Cell 1: Excavation progressed northwards with contaminated soils removed down to bedrock and clean overburden soils replaced into excavation; contamination indicators still present along eastern sidewall.

 27.01.23 – Cell 1: Contamination appeared to be associated with a relict drain at interface between bedrock and superficial soils along eastern sidewall where the highest PID readings and strongest odours were noted.	 27.01.23 – Cell 1: Excavation progressed northwards with contaminated soils removed down to bedrock and clean overburden soils replaced into excavation; significant contamination indicators absent along western sidewall and western part of northern sidewall.	 27.01.23 – Cell 1: Excavation progressed northwards with contaminated soils removed down to bedrock and clean overburden soils replaced into excavation; contamination indicators still present along eastern sidewall and eastern part of northern sidewall.
 30.01.23 – Cell 2: Excavation commenced from southeast corner of Cell progressing north towards Cell 1 with contaminated soils removed down to bedrock; contamination indicators still present along eastern and western sidewalls.	 30.01.23 – Cell 2: Excavation progressed north towards Cell 1 with contaminated soils removed down to bedrock; contamination indicators still present along eastern and western sidewalls.	 30.01.23 – Cell 2: Excavation progressed northwards until joined with Cell 1 with contaminated soils removed down to bedrock; contamination indicators still present along eastern and western sidewalls.

 30.01.23 – Cell 2: Clean overburden soils replaced into excavation area.	 31.01.23 – Cell 2: Excavation continued to west of previous excavation area (southwest corner of Cell 2) and progressed northwards with contaminated soils removed down to bedrock; significant contamination indicators absent along western sidewall.	 31.01.23 – Cell 2: Excavation progressed northwards with contaminated soils removed down to bedrock; significant contamination indicators absent along western sidewall.
 31.01.23 – Cell 2: Excavation progressed northwards with contaminated soils removed down to bedrock; significant contamination indicators absent along western sidewall.	 01.02.23 – Cell 2: Excavation progressed westwards and northwards with contaminated soils removed down to bedrock; significant contamination indicators absent along western and southern sidewalls.	 01.02.23 – Cell 3: Excavation commenced from northeast corner of Cell progressing south towards Cell 2 with contaminated soils removed down to bedrock; contamination indicators present along northern part of western sidewall.

 01.02.23 – Cell 3: Excavation progressed southwards with contaminated soils removed down to bedrock; significant contamination indicators absent along southern part of western sidewall and southern sidewall.	 01.02.23 – Cell 3: Excavation progressed westwards from northern part of excavation area with contaminated soils removed down to bedrock; significant contamination indicators absent along western and southern sidewalls.	 01.02.23 – Cell 3: Contamination indicators present along northern sidewall.
 01.02.23 – Cell 3: View of entire Cell 3 excavation area.	 02.02.23 – Cell 4: Commencement of excavation from southern extent of Cell 3.	 02.02.23 – Cell 4: Excavation progrressed southwards from southwest corner of Cell 3 with contaminated soils removed down to bedrock; significant contamination indicators absent along western sidewall but still present along southern sidewall.

 02.02.23 – Cell 4: Excavation progressed eastwards with contaminated soils removed down to bedrock; contamination indicators present along both eastern and southern sidewalls.	 06.02.23 – Cell 5: Commencement of excavation from southwest extent of Cell 4.	 06.02.23 – Cell 5: Excavation progressed to south and east with contaminated soils removed down to bedrock.
 08.02.23 – Cell 5: Excavation progressed to south and east with contaminated soils removed down to bedrock.	 08.02.23 – Cell 5: Excavation progressed to south and east with contaminated soils removed down to bedrock; significant contamination indicators absent along southern sidewall but still present along eastern sidewall.	 08.02.23 – Cell 6: Commencement of excavation along eastern extent of Cell 5; clean overburden soils placed into Cell 5 excavation area.

 08.02.23 – Cell 6: Excavation of contaminated soils down to bedrock; significant contamination indicators absent along southern sidewall but still present along eastern sidewall.	 08.02.23 – Cell 6: Excavation progressed northwards with contaminated soils removed down to bedrock; contamination indicators still present along eastern sidewall.	 09.02.23 – Cell 6: View of entire Cell 6 excavation area.
 09.02.23 – Cell 7: Commencement of excavation along eastern extent of Cell 6; contaminated soils removed down to bedrock and clean overburden soils placed into Cell 6 excavation area.	 09.02.23 – Cell 7: Excavation progressed northwards with contaminated soils removed down to bedrock; significant contamination indicators absent along eastern sidewall.	 10.02.23 – Cell 7: Excavation progressed northwards with contaminated soils removed down to bedrock; significant contamination indicators absent along eastern sidewall.

 10.02.23 – Cell 7: Excavation progressed northwards with contaminated soils removed down to bedrock; significant contamination indicators absent along eastern sidewall.	 10.02.23 – Cell 7: Excavation progressed southwards with contaminated soils removed down to bedrock; significant contamination indicators absent along eastern and western sidewalls.	 10.02.23 – Cell 7: Excavation progressed southwards with contaminated soils removed down to bedrock; significant contamination indicators absent along eastern, western and southern sidewalls.
 10.02.23 – Cell 7: View of entire Cell 7 excavation area.	 13.02.23 – Cell 7: View south along eastern sidewall.	 13.02.23 – Cell 7: View of central part of eastern sidewall; no significant contamination indicators.

 13.02.23 – Cell 7: View of northern part of eastern sidewall; no significant contamination indicators.	 13.02.23 – Cell 8: Commencement of excavation from northern extent of Cell 7 / eastern extent of Cell 2.	 13.02.23 – Cell 8: Excavation progressed northwards with contaminated soils removed down to bedrock; significant contamination indicators absent along eastern sidewall.
 14.02.23 – Cell 8: Excavation progressed northwards with contaminated soils removed down to bedrock and clean overburden soils placed into Cell 2 excavation area; significant contamination indicators absent along eastern sidewall.	 14.02.23 – Cell 8: Excavation progressed northwards with contaminated soils removed down to bedrock and clean overburden soils placed into Cell 2 excavation area; significant contamination indicators absent along eastern sidewall.	 14.02.23 – Cell 8: Excavation progressed northwards with contaminated soils removed down to bedrock and clean overburden soils placed into Cell 2 excavation area; significant contamination indicators absent along eastern sidewall.

 15.02.23 – Cell 8: Excavation progressed northwards / eastwards with contaminated soils removed down to bedrock and clean overburden soils placed into previous excavation area; significant contamination indicators absent along eastern sidewall.	 15.02.23 – Cell 8: Excavation progressed northwards / eastwards with contaminated soils removed down to bedrock and clean overburden soils placed into previous excavation area; significant contamination indicators absent along eastern sidewall.	 15.02.23 – Cell 8: Excavation progressed northwards / eastwards with contaminated soils removed down to bedrock and clean overburden soils placed into previous excavation area; significant contamination indicators absent along eastern sidewall.
 15.02.23 – Cell 8: Excavation progressed northwards / eastwards with contaminated soils removed down to bedrock and clean overburden soils placed into previous excavation area.	 15.02.23 – Cell 8: Excavation progressed northwards / eastwards with contaminated soils removed down to bedrock and clean overburden soils placed into previous excavation area; significant contamination indicators absent along eastern and northern sidewalls.	 16.02.23 – Cell 8: Excavation of contaminated soils complete; significant contamination indicators absent along western and northern sidewalls.

 16.02.23 – Cell 9: Commencement of excavation from northwest extent of Cell 3	 16.02.23 – Cell 9: Contaminated soils removed down to bedrock; significant contamination indicators absent along western sidewall.	 16.02.23 – Cell 9: Excavation progressed eastwards with contaminated soils removed down to bedrock; significant contamination indicators absent along eastern sidewall.
 16.02.23 – Cell 9: Excavation progressed to north of previous excavation area.	 16.02.23 – Cell 9: Excavation progressed eastwards with contaminated soils removed down to bedrock and clean overburden placed into previous excavation area; significant contamination indicators absent along western sidewall.	 16.02.23 – Cell 9: Excavation progressed eastwards with contaminated soils removed down to bedrock and clean overburden placed into previous excavation area; significant contamination indicators absent along eastern sidewall.

 07.03.23 – Cell 9: Excavation progressed northwards with contaminated soils removed down to bedrock; significant contamination indicators absent along eastern sidewall.	 07.03.23 – Cell 9: Excavation progressed northwards / westwards with contaminated soils removed down to bedrock; significant contamination indicators absent along western and northern sidewalls.	**NO PHOTOGRAPH**

Job Number: R1742b (Heyford) – Phase 10	**Date:** 25.01.23 – 24.03.23	**Location:** Interceptor Hotspot	**Compiled By:** SM
Lab Ref: 23-02900, 23-02988 & 23-10270		**Samples:** Inter-S1 and Inter-SS1 to SS18	


25.01.23 – Relict fibreglass interceptor encountered in centre-northwest of site underlain by black gravel and silver clays with strong hydrocarbon odours.


25.01.23 – Relict interceptor tank and associated pipework removed.


25.01.23 – Excavation and removal of hydrocarbon impacted soils in vicinity of former interceptor.


25.01.23 – Impacted soils in vicinity of interceptor removed; no significant contamination indicators at base or along southern or western sidewalls.


25.01.23 – Excavation of impacted soils to north of previous excavation area.


25.01.23 – Impacted soils present from layer of black, weathered asphalt into underlying silver clays.

 25.01.23 – Impacted soils removed with no significant contamination indicators at base or along eastern sidewall; thin band of impacted soils in northern sidewall but excavation constrained by presence of stockpile.	 25.01.23 – Excavation of impacted soils progressed to west.	 26.01.23 – Impacted soils removed with no significant contamination indicators at base; thin band of impacted soils in northern sidewall but excavation constrained by presence of stockpile.
 26.01.23 – Excavation of impacted soils progressed to west until significant contamination indicators absent from base and western sidewall.	 26.01.23 – Excavation of impacted soils progressed to west and south until significant contamination indicators absent from base and western and southern sidewalls (southwest corner of excavation area).	 26.01.23 – View of hotspot area excavated over the previous 2 days during backfilling with retained overburden soils.

 24.03.23 – Following removal of soil stockpile excavation progressed to north (red stake placed at northeast corner of previous excavation area).	 24.03.23 – Thin band of contaminated gravel and clay removed; significant contamination indicators absent from base but still present along northern sidewall – not progressed any further as outside of proposed development area (i.e. outside of future plot footprints and gardens).	 24.03.23 – Excavation progressed to west and thin band of contaminated gravel and clay removed; significant contamination indicators absent from base but still present along northern sidewall – not progressed further as outside proposed of development area.
 24.03.23 – Excavation progressed to west and thin band of contaminated gravel and clay removed; significant contamination indicators absent from base and western sidewall but still present along northern sidewall – not progressed any further as outside of proposed development area.	 24.03.23 – View of hotspot area excavated over the previous day during backfilling with retained overburden soils.	**NO PHOTOGRAPH**

Job Number: R1742b (Heyford) – Phase 10	**Date:** 01.02.23-02.23	**Location:** Pit Hotspot	**Compiled By:** SM
Lab Ref: 23-03827		**Samples:** Pit-HS-SS1 to SS10, Pit-HS-S1 & S2 and Pit-HS-Contam	


01.02.23 – Starting point of excavation; indicators of contamination present in all sidewalls underlying clean overburden; contaminated soils excavated to bedrock.


01.02.23 – Excavation continued southwards until significant contamination indicators were no longer present along southern sidewall.


01.02.23 – Excavation continued along eastern extent until significant contamination indicators were no longer present along eastern sidewall (1/2).


01.02.23 – Excavation continued along eastern extent until significant contamination indicators were no longer present along eastern sidewall (2/2).


02.02.23 – Excavation continued along western extent until significant contamination indicators were no longer present in western sidewall.


02.02.23 – Excavation continued along northern extent until significant contamination indicators were no longer present along northern sidewall (1/2).

 02.02.23 – Excavation continued along northern extent until significant contamination indicators were no longer present along northern sidewall (2/2).	 02.02.23 – Degraded metal drum removed from north of excavation area.	 02.02.23 – Full excavation extent; excavation backfilled with clean overburden soils.

Job Number: R1742b (Heyford) – Phase 10	**Date:** 21.02.23 – 08.03.23	**Location:** Northern Hotspot (NHS)	**Compiled By:** SM
Lab Refs: 23-06457, 23-07540 & 23-08277		**Samples:** NHS-S1 to S8 and NHS-SS1 to SS41	

21.02.23 – Commencement of NHS hotspot excavation from northern site boundary / to east of site access road.

21.02.23 – No contamination indicators along northern extent of initial excavation area.

21.02.23 – Excavation progressed southwards with contaminated soils removed down to clean clays / solid bedrock; contamination indicators not present along northern part of western sidewall (~7m) but were as excavation continued southwards.

21.02.23 – Excavation progressed southwards alongside access road which curves to the east with contaminated soils removed down to bedrock and clean overburden soils replaced into excavation area; contaminated soils continued beneath roadway (1/2).

21.02.23 – Excavation progressed southwards alongside access road which curves to the east with contaminated soils removed down to bedrock and clean overburden soils replaced into excavation area; contaminated soils continued beneath roadway (2/2).

22.02.23 – Excavation continued to east of initial excavation area and progressed southwards; contaminated soils removed down to bedrock and clean overburden soils replaced into excavation area.

 28.02.23 – View along northern extent of eastern NHS excavation area; no contamination indicators present along sidewall.	 28.02.23 – View along eastern extent of NHS excavation; contamination indicators largely absent from sidewall with exception of in the approximate centre however these were present at depth (>2m bgl) and were located within a future POS area so further removal was not considered necessary.	 02.03.23 – Excavation continued to south in footprint of former roadway.
 02.03.23 – No contamination indicators present along eastern sidewall as excavation progressed southwards.	 02.03.23 – Excavation progressed southwards to northern extent of CHS excavation area and westwards until contamination indicators were absent from sidewall; contaminated soils removed down to bedrock and clean overburden soils replaced into excavation.	 02.03.23 – Excavation continued to west of previous excavation area in footprint of former roadway.

 02.03.23 – Excavation progressed northwards along former roadway with contaminated soils removed down to bedrock; contaminated soils still present along northern / western sidewalls.	 02.03.23 – No contamination indicators present along southern sidewall of excavation along former roadway.	 06.03.23 – Excavation continued to west of previous excavation area.
 06.03.23 – Excavation progressed northwards with contaminated soils removed down to bedrock and clean overburden soils replaced into excavation; contaminated soils still present along northern / western sidewalls.	 06.03.23 – Excavation continued to west and progressed northwards; contaminated soils removed down to bedrock and clean overburden soils replaced into excavation.	 06.03.23 – Contamination indicators still present along western (with exception of the southernmost area) and northern sidewalls.

 07.03.23 – Excavation continued to west; contamination indicators absent along southern part of western sidewall.	 07.03.23 – Excavation progressed northwards with contaminated soils removed down to bedrock / clean clays and clean overburden soils replaced into excavation; contaminated soils still present along northern / western sidewalls.	 07.03.23 – Excavation continued to west; significant indicators of contamination absent along western sidewall (1/2).
 07.03.23 – Excavation continued to west; significant indicators of contamination absent along western and northern sidewalls and clay at base.	 07.03.23 – Photograph showing southern and western extents of the western NHS excavation area prior to the final dig to north; topsoil earmarked for future POS areas stockpiled in eastern NHS excavation area (foreground).	 08.03.23 – Excavation continued to north of previous excavation area.

<table>
<tr>
<td>
08.03.23 – Excavation progressed eastwards with contaminated soils removed down to clean clays and clean overburden soils replaced into excavation; significant contamination indicators absent along northern and western sidewalls.</td>
<td>
08.03.23 – Excavation progressed eastwards with contaminated soils removed down to bedrock and clean overburden soils replaced into excavation; significant contamination indicators absent along northern sidewall.</td>
<td>
08.03.23 – Excavation progressed eastwards until joining with previously excavated / replaced soils; contaminated soils removed down to bedrock and clean overburden soils replaced into excavation; contamination indicators present along northern sidewall.</td>
</tr>
<tr>
<td>
08.03.23 – Excavation progressed northwards with contaminated soils removed down to bedrock and clean overburden soils replaced into excavation; thin band of potentially contaminated soil still present along northern sidewall from ~1.1m bgl however excavation nearing site boundary and any retained impacted soils will be located in future POS area.</td>
<td>
08.03.23 – Excavation progressed northwards / eastwards with contaminated soils removed down to bedrock and clean overburden soils replaced into excavation; thin band of potentially contaminated soil still present along northern sidewall from ~1.1m bgl however excavation nearing site boundary and any retained impacted soils will be located in future POS area.</td>
<td>
08.03.23 – Excavation progressed northwards / eastwards with contaminated soils removed down to bedrock and clean overburden soils replaced into excavation; thin band of potentially contaminated soil still present along eastern sidewall from ~1.2m bgl however excavation nearing site boundary and any retained impacted soils will be located in future POS area.</td>
</tr>
</table>

Job Number: R1742b (Heyford) – Phase 10	**Date:** 01.03.23	**Location:** Southern Hotspot (SHS)	**Compiled By:** SM
Lab Ref: 23-07544		**Samples:** SHS-S1 and SHS-SS1 to SS8	

01.03.23 – Contaminated soils encountered at ~1.3m bgl during removal of relict POL pipeline.

01.03.23 – Southwest corner of SHS excavation area: contaminated soils removed down to bedrock; no significant contamination indicators present along western or southern sidewalls.

01.03.23 – Southern extent / southeast corner of SHS excavation area: contaminated soils removed down to bedrock; no significant contamination indicators present along eastern or southern sidewalls.

01.03.23 – Northwest corner of SHS excavation area: contaminated soils removed down to bedrock; no significant contamination indicators present along western or northern sidewalls.

01.03.23 – Northern extent of SHS excavation area: contaminated soils removed down to bedrock; no significant contamination indicators present along northern sidewall.

01.03.23 – Northeast corner of SHS excavation area; contaminated soils removed down to bedrock; no significant contamination indicators present along eastern or northern sidewalls with exception of the weathered bedrock at ~1.8-2.3m bgl.

 01.03.23 – View of entire SHS excavation area during backfilling with retained overburden soils.	**NO PHOTOGRAPH**	**NO PHOTOGRAPH**

Job Number: R1742b (Heyford) – Phase 10	**Date:** 03.04.23	**Location:** Asbestos Hotspot - West	**Compiled By:** SM
Lab Ref: 23-11439		**Samples:** PH10-MGPIT-S1 & S2, PH10-MGPIT-SS1 to SS12	

03.04.23 – Foundation excavation in area of Plots 1-2 in centre-northwest of site; drums infilled with concrete and posts identified amongst excavation.

03.04.23 – Drums and posts excavated and removed.

03.04.23 – Fragments of ACM identifed in soils; impacted soils therefore excavated and transferred to holding area within wider Heyford Development site.

03.04.23 – Continuation of excavation with removal of ACM impacted soils to holding area.

03.04.23 – Excavation of ACM impacted soils complete.

NO PHOTOGRAPH

APPENDIX C

Formation Validation Photographic Record

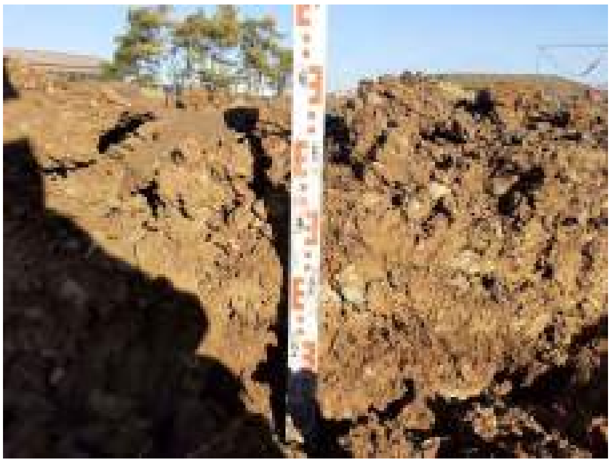
1.

24.01.23 – Formation Validation: S15

2.

24.01.23 – Formation Validation: S16

3.



24.01.23 – Formation Validation: S17

4.

24.01.23 – Formation Validation: S18

5.

24.01.23 – Formation Validation: S19

6.

24.01.23 – Formation Validation: S20

7.  24.01.23 – Formation Validation: S21	8.  24.01.23 – Formation Validation: S22
9.  24.01.23 – Formation Validation: S23	10.  24.01.23 – Formation Validation: S24
11.  24.01.23 – Formation Validation: S25	12.  24.01.23 – Formation Validation: S26

13.  24.01.23 – Formation Validation: S27	14.  24.01.23 – Formation Validation: S28

APPENDIX D

Laboratory Certificates

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	22-43692-1
Initial Date of Issue:	12-Dec-2022
Client	Smith Grant LLP
Client Address:	Bryn Estyn Business Centre Bryn Estyn Road Wrexham LL13 9TY
Contact(s):	Dan Wayland
Project	R1742b Heyford Park - Phase 10

Quotation No.:		**Date Received:**	14-Nov-2022
Order No.:		**Date Instructed:**	14-Nov-2022
No. of Samples:	9		
Turnaround (Wkdays):	10	**Results Due:**	25-Nov-2022
Date Approved:	12-Dec-2022		

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Soil

Project: R1742b Heyford Park - Phase 10

Client: Smith Grant LLP				**Chemtest Job No.:**	22-43692	22-43692	22-43692	22-43692	22-43692	22-43692	22-43692	22-43692	22-43692
Quotation No.:				**Chemtest Sample ID.:**	1544902	1544903	1544904	1544905	1544906	1544907	1544908	1544909	1544910
				Sample Location:	POL21-Soil-S1	POL21-Soil-S2	POL21-Soil-S3	POL21-Soil-S4	PH10-TS-SP2-S5	PH10-TS-SP2-S6	PH10-TS-SP2-S7	PH10-TS-SP2-S8	PH10-TS-SP2-S9
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Date Sampled:	09-Nov-2022	09-Nov-2022	09-Nov-2022	09-Nov-2022	09-Nov-2022	09-Nov-2022	09-Nov-2022	09-Nov-2022	09-Nov-2022
				Asbestos Lab:	IN-TRAN-D								
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Moisture	N	2030	%	0.020	11	13	13	12	19	20	20	21	21
Aliphatic VPH >C5-C6	U	2780	µg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05					
Aliphatic VPH >C6-C7	U	2780	µg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05					
Aliphatic VPH >C7-C8	U	2780	µg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05					
Aliphatic VPH >C8-C10	U	2780	µg/kg	0.05	< 0.05	< 0.05	0.43	0.16					
Total Aliphatic VPH >C5-C10	U	2780	µg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25					
Aromatic VPH >C5-C7	U	2780	µg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05					
Aromatic VPH >C7-C8	U	2780	µg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05					
Aromatic VPH >C8-C10	U	2780	µg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05					
Total Aromatic VPH >C5-C10	U	2780	µg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25					
Total VPH >C5-C10	U	2780	µg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50					
Aliphatic EPH >C10-C12	U	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0					
Aliphatic EPH >C12-C16	U	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0					
Aliphatic EPH >C16-C21	U	2690	mg/kg	2.00	< 2.0	2.9	< 2.0	< 2.0					
Aliphatic EPH >C21-C35	U	2690	mg/kg	3.00	< 3.0	< 3.0	< 3.0	< 3.0					
Aliphatic EPH >C35-C40	N	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0					
Total Aliphatic EPH >C10-C35	U	2690	mg/kg	5.00	< 5.0	8.0	6.7	< 5.0					
Aromatic EPH >C10-C12	U	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0					
Aromatic EPH >C12-C16	U	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0					
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	2.7					
Aromatic EPH >C21-C35	U	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0					
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0					
Total Aromatic EPH >C10-C35	U	2690	mg/kg	5.00	< 5.0	< 5.0	< 5.0	< 5.0					
Total EPH >C10-C35	U	2690	mg/kg	10.00	< 10	< 10	< 10	< 10					
Naphthalene	U	2700	mg/kg	0.10					< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10					< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	U	2700	mg/kg	0.10					< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10					< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10					< 0.10	0.26	0.23	< 0.10	< 0.10
Anthracene	U	2700	mg/kg	0.10					< 0.10	0.15	0.14	< 0.10	< 0.10
Fluoranthene	U	2700	mg/kg	0.10					0.48	1.2	0.72	0.60	0.34
Pyrene	U	2700	mg/kg	0.10					0.58	1.1	0.80	0.66	0.44
Benzo[a]anthracene	U	2700	mg/kg	0.10					0.22	0.68	0.34	0.25	0.14
Chrysene	U	2700	mg/kg	0.10					0.40	0.91	0.61	0.47	0.40
Benzo[b]fluoranthene	U	2700	mg/kg	0.10					0.37	0.94	0.65	0.51	0.48
Benzo[k]fluoranthene	U	2700	mg/kg	0.10					0.14	0.35	0.28	0.20	0.17
Benzo[a]pyrene	U	2700	mg/kg	0.10					0.54	1.1	0.78	0.63	0.26
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10					< 0.10	0.55	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10					< 0.10	0.23	< 0.10	< 0.10	< 0.10

Results - Soil

Project: R1742b Heyford Park - Phase 10

Client: Smith Grant LLP				Chemtest Job No.:	22-43692	22-43692	22-43692	22-43692	22-43692	22-43692	22-43692	22-43692	22-43692
Quotation No.:				Chemtest Sample ID.:	1544902	1544903	1544904	1544905	1544906	1544907	1544908	1544909	1544910
				Sample Location:	POL21-Soil-S1	POL21-Soil-S2	POL21-Soil-S3	POL21-Soil-S4	PH10-TS-SP2-S5	PH10-TS-SP2-S6	PH10-TS-SP2-S7	PH10-TS-SP2-S8	PH10-TS-SP2-S9
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Date Sampled:	09-Nov-2022	09-Nov-2022	09-Nov-2022	09-Nov-2022	09-Nov-2022	09-Nov-2022	09-Nov-2022	09-Nov-2022	09-Nov-2022
				Asbestos Lab:	IN-TRAN-D								
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10					< 0.10	0.51	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0					2.7	8.0	4.6	3.3	2.2
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0					
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0					
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0					
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0					
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0					

Test Methods

SOP	Title	Parameters included	Method summary
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C44 Aromatics: >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Acetone/Heptane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10 Aromatics: >C5–C6, >C6–C8,>C8–C10	Water extraction / Headspace GCxGC FID detection

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

UKAS TESTING 2183

Final Report

Report No.:	22-44055-1
Initial Date of Issue:	10-Jan-2023
Client	Smith Grant LLP
Client Address:	Bryn Estyn Business Centre Bryn Estyn Road Wrexham LL13 9TY
Contact(s):	Dan Wayland
Project	R1742B Heyford - Phase 10

Quotation No.:		**Date Received:**	16-Nov-2022
Order No.:		**Date Instructed:**	16-Nov-2022
No. of Samples:	11		
Turnaround (Wkdays):	10	**Results Due:**	29-Nov-2022
Date Approved:	09-Jan-2023		

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Soil

Project: R1742B Heyford - Phase 10

Client: Smith Grant LLP	Chemtest Job No.:				22-44055	22-44055	22-44055	22-44055	22-44055	22-44055	22-44055	22-44055	22-44055	22-44055
Quotation No.:	Chemtest Sample ID.:				1546716	1546717	1546718	1546719	1546720	1546721	1546722	1546723	1546724	1546725
	Sample Location:				POL21A-SS1	POL21A-SS2	POL21A-SS3	POL21A-SS4	POL21A-SS5	POL21A-SS6	POL21A-SS7	POL21A-SS8	POL21A-SS9	POL21A-SS10
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00	2.00	2.00
	Bottom Depth (m):				1.40	1.40	1.40	1.40	1.40	1.40				
	Date Sampled:				14-Nov-2022	14-Nov-2022	14-Nov-2022	14-Nov-2022	14-Nov-2022	14-Nov-2022	14-Nov-2022	14-Nov-2022	14-Nov-2022	14-Nov-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**										
Moisture	N	2030	%	0.020	6.6	13	22	13	16	12	12	15	11	13
Aliphatic VPH >C5-C6	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.78	< 0.05	0.17
Aliphatic VPH >C8-C10	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	5.8	0.18	1.0
Total Aliphatic VPH >C5-C10	N	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	3.3	< 0.25	0.59
Aliphatic EPH >C10-C12	N	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	140	6.2	25
Aliphatic EPH >C12-C16	N	2690	mg/kg	1.00	1.1	2.0	1.0	< 1.0	< 1.0	< 1.0	11	160	7.4	37
Aliphatic EPH >C16-C21	N	2690	mg/kg	2.00	4.4	4.8	< 2.0	< 2.0	< 2.0	4.2	16	64	3.0	6.6
Aliphatic EPH >C21-C35	N	2690	mg/kg	3.00	5.0	3.2	< 3.0	< 3.0	< 3.0	4.1	4.2	7.8	< 3.0	< 3.0
Aliphatic EPH >C35-C40	N	2690	mg/kg	1.00	1.2	1.2	2.2	2.6	< 1.0	1.5	< 1.0	1.1	1.5	1.8
Total Aliphatic EPH >C10-C35	N	2690	mg/kg	5.00	11	11	6.0	< 5.0	< 5.0	11	33	370	18	70
Aromatic VPH >C5-C7	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	2.7	< 0.05	< 0.05
Aromatic VPH >C7-C8	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	N	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	1.4	< 0.25	< 0.25
Aromatic EPH >C10-C12	N	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	13	< 1.0	2.2
Aromatic EPH >C12-C16	N	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.2	34	1.3	5.8
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	3.8	2.1	3.4	3.3	3.4	3.3	3.3	13	3.4	4.2
Aromatic EPH >C21-C35	N	2690	mg/kg	2.00	8.5	17	4.2	3.6	12	3.0	12	5.0	< 2.0	8.3
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	2.1	3.1	3.8	2.2	3.6	3.7	3.8	3.2	3.3	2.6
Total Aromatic EPH >C10-C35	N	2690	mg/kg	5.00	13	20	8.2	7.9	16	6.8	16	66	6.1	21
Total VPH >C5-C10	N	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	4.7	< 0.50	0.59
Total EPH >C10-C35	N	2690	mg/kg	10.00	25	31	14	12	20	17	49	440	24	90
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.7
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	10
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	58
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	31

Results - Soil

Project: R1742B Heyford - Phase 10

Client: Smith Grant LLP	**Chemtest Job No.:**				22-44055
Quotation No.:	**Chemtest Sample ID.:**				1546726
	Sample Location:				POL21A-SS11
	Sample Type:				SOIL
	Top Depth (m):				2.00
	Bottom Depth (m):				
	Date Sampled:				14-Nov-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Moisture	N	2030	%	0.020	15
Aliphatic VPH >C5-C6	N	2780	mg/kg	0.05	< 0.05
Aliphatic VPH >C6-C7	N	2780	mg/kg	0.05	< 0.05
Aliphatic VPH >C7-C8	N	2780	mg/kg	0.05	0.12
Aliphatic VPH >C8-C10	N	2780	mg/kg	0.05	0.49
Total Aliphatic VPH >C5-C10	N	2780	mg/kg	0.25	0.30
Aliphatic EPH >C10-C12	N	2690	mg/kg	2.00	23
Aliphatic EPH >C12-C16	N	2690	mg/kg	1.00	34
Aliphatic EPH >C16-C21	N	2690	mg/kg	2.00	13
Aliphatic EPH >C21-C35	N	2690	mg/kg	3.00	4.9
Aliphatic EPH >C35-C40	N	2690	mg/kg	1.00	1.1
Total Aliphatic EPH >C10-C35	N	2690	mg/kg	5.00	75
Aromatic VPH >C5-C7	N	2780	mg/kg	0.05	< 0.05
Aromatic VPH >C7-C8	N	2780	mg/kg	0.05	< 0.05
Aromatic VPH >C8-C10	N	2780	mg/kg	0.05	< 0.05
Total Aromatic VPH >C5-C10	N	2780	mg/kg	0.25	< 0.25
Aromatic EPH >C10-C12	N	2690	mg/kg	1.00	1.6
Aromatic EPH >C12-C16	N	2690	mg/kg	1.00	2.6
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	4.7
Aromatic EPH >C21-C35	N	2690	mg/kg	2.00	4.4
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	1.6
Total Aromatic EPH >C10-C35	N	2690	mg/kg	5.00	13
Total VPH >C5-C10	N	2780	mg/kg	0.50	< 0.50
Total EPH >C10-C35	N	2690	mg/kg	10.00	88
Benzene	U	2760	µg/kg	1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	2.2
m & p-Xylene	U	2760	µg/kg	1.0	9.1
o-Xylene	U	2760	µg/kg	1.0	7.1

Test Methods

SOP	Title	Parameters included	Method summary
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35–C40	Acetone/Heptane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

UKAS TESTING 2183

Final Report

Report No.:	22-46573-1
Initial Date of Issue:	17-Jan-2023
Client	Smith Grant LLP
Client Address:	Bryn Estyn Business Centre Bryn Estyn Road Wrexham LL13 9TY
Contact(s):	Dan Wayland
Project	Hayford - Phase 10 R1742B

Quotation No.:		**Date Received:**	05-Dec-2022
Order No.:		**Date Instructed:**	05-Dec-2022
No. of Samples:	10		
Turnaround (Wkdays):	10	**Results Due:**	16-Dec-2022
Date Approved:	17-Jan-2023		

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Soil

Project: Hayford - Phase 10 R1742B

Client: Smith Grant LLP				**Chemtest Job No.:**	22-46573	22-46573	22-46573	22-46573	22-46573	22-46573	22-46573	22-46573	22-46573
Quotation No.:				**Chemtest Sample ID.:**	1558051	1558052	1558053	1558054	1558055	1558056	1558057	1558058	1558059
				Sample Location:	POL21C-SS1	POL21C-SS2	POL21C-SS3	POL21C-SS4	POL21C-SS5	POL21C-SS6	POL21C-SS7	POL21C-SS8	POL21C-SS9
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
				Bottom Depth (m):	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
				Date Sampled:	29-Nov-2022	29-Nov-2022	29-Nov-2022	29-Nov-2022	29-Nov-2022	29-Nov-2022	29-Nov-2022	29-Nov-2022	29-Nov-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Moisture	N	2030	%	0.020	16	14	14	14	16	16	15	15	14
Aliphatic EPH >C8-C10	N	2690	mg/kg	1.00							5.7	5.4	5.2
Aliphatic VPH >C5-C6	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C8-C10	N	2780	mg/kg	0.05	< 0.05	< 0.05	0.10	< 0.05	< 0.05	0.10	< 0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	N	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12	N	2690	mg/kg	2.00	2.4	10	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C12-C16	N	2690	mg/kg	1.00	5.4	6.5	5.5	14	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic EPH >C16-C21	N	2690	mg/kg	2.00	4.6	< 2.0	3.5	21	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C21-C35	N	2690	mg/kg	3.00	< 3.0	< 3.0	< 3.0	4.7	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Aliphatic EPH >C35-C40	N	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	4.0	< 1.0	< 1.0
Total Aliphatic EPH >C10-C35	N	2690	mg/kg	5.00	13	18	11	42	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic VPH >C5-C7	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	N	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	N	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic EPH >C12-C16	N	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	2.4	2.6	2.2	4.1	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Aromatic EPH >C21-C35	N	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	3.5	1.6	< 1.0
Total Aromatic EPH >C10-C35	N	2690	mg/kg	5.00	< 5.0	< 5.0	< 5.0	5.5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total VPH >C5-C10	N	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35	N	2690	mg/kg	10.00	16	21	15	47	< 10	< 10	< 10	< 10	< 10
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	1.5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: Hayford - Phase 10 R1742B

Client: Smith Grant LLP				**Chemtest Job No.:**	22-46573
Quotation No.:				**Chemtest Sample ID.:**	1558060
				Sample Location:	POL21C-SS10
				Sample Type:	SOIL
				Top Depth (m):	0.0
				Bottom Depth (m):	1.8
				Date Sampled:	29-Nov-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Moisture	N	2030	%	0.020	14
Aliphatic EPH >C8-C10	N	2690	mg/kg	1.00	
Aliphatic VPH >C5-C6	N	2780	mg/kg	0.05	< 0.05
Aliphatic VPH >C6-C7	N	2780	mg/kg	0.05	< 0.05
Aliphatic VPH >C7-C8	N	2780	mg/kg	0.05	< 0.05
Aliphatic VPH >C8-C10	N	2780	mg/kg	0.05	< 0.05
Total Aliphatic VPH >C5-C10	N	2780	mg/kg	0.25	< 0.25
Aliphatic EPH >C10-C12	N	2690	mg/kg	2.00	< 2.0
Aliphatic EPH >C12-C16	N	2690	mg/kg	1.00	< 1.0
Aliphatic EPH >C16-C21	N	2690	mg/kg	2.00	< 2.0
Aliphatic EPH >C21-C35	N	2690	mg/kg	3.00	< 3.0
Aliphatic EPH >C35-C40	N	2690	mg/kg	1.00	< 1.0
Total Aliphatic EPH >C10-C35	N	2690	mg/kg	5.00	< 5.0
Aromatic VPH >C5-C7	N	2780	mg/kg	0.05	< 0.05
Aromatic VPH >C7-C8	N	2780	mg/kg	0.05	< 0.05
Aromatic VPH >C8-C10	N	2780	mg/kg	0.05	< 0.05
Total Aromatic VPH >C5-C10	N	2780	mg/kg	0.25	< 0.25
Aromatic EPH >C10-C12	N	2690	mg/kg	1.00	< 1.0
Aromatic EPH >C12-C16	N	2690	mg/kg	1.00	< 1.0
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	< 2.0
Aromatic EPH >C21-C35	N	2690	mg/kg	2.00	< 2.0
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	< 1.0
Total Aromatic EPH >C10-C35	N	2690	mg/kg	5.00	< 5.0
Total VPH >C5-C10	N	2780	mg/kg	0.50	< 0.50
Total EPH >C10-C35	N	2690	mg/kg	10.00	< 10
Benzene	U	2760	µg/kg	1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0

Test Methods

SOP	Title	Parameters included	Method summary
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35–C40	Acetone/Heptane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

UKAS TESTING 2183

Final Report

Report No.:	22-46575-1
Initial Date of Issue:	16-Jan-2023
Client	Smith Grant LLP
Client Address:	Bryn Estyn Business Centre Bryn Estyn Road Wrexham LL13 9TY
Contact(s):	Dan Wayland
Project	Heyford - Phase 10 R1742b

Quotation No.:		**Date Received:**	05-Dec-2022
Order No.:		**Date Instructed:**	05-Dec-2022
No. of Samples:	8		
Turnaround (Wkdays):	10	**Results Due:**	16-Dec-2022
Date Approved:	16-Jan-2023		

Approved By:

[redacted]

Details:	Stuart Henderson, Technical Manager

Results - Soil

Project: Heyford - Phase 10 R1742b

Client: Smith Grant LLP				**Chemtest Job No.:**	22-46575	22-46575	22-46575	22-46575	22-46575	22-46575	22-46575	22-46575
Quotation No.:				**Chemtest Sample ID.:**	1558068	1558069	1558070	1558071	1558072	1558073	1558074	1558075
				Sample Location:	Cell I1-SS1	Cell I1-SS2	Cell I1-SS3	Cell I1-SS4	Cell I1-SS5	Cell I1-SS6	Cell I1-SS7	Cell I1-SS8
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	1.9	1.9	1.5	1.5	1.5	2.4	1.4	1.4
				Bottom Depth (m):	1.9	1.9	1.9	1.9	1.9	2.4	2.4	2.4
				Date Sampled:	29-Nov-2022	29-Nov-2022	29-Nov-2022	29-Nov-2022	29-Nov-2022	29-Nov-2022	29-Nov-2022	29-Nov-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
Moisture	N	2030	%	0.020	16	12	13	14	15	18	15	15
Aliphatic EPH >C8-C10	N	2690	mg/kg	1.00	1200	16	16	4.3	5.7	5.8	6.2	4.7
Aliphatic VPH >C5-C6	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	N	2780	mg/kg	0.05	< 0.05	0.14	0.12	< 0.05	0.13	0.17	0.19	0.16
Aliphatic VPH >C7-C8	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C8-C10	N	2780	mg/kg	0.05	0.17	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	N	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12	N	2690	mg/kg	2.00	1700	3.7	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C12-C16	N	2690	mg/kg	1.00	1300	6.1	1.9	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic EPH >C16-C21	N	2690	mg/kg	2.00	18	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C21-C35	N	2690	mg/kg	3.00	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Aliphatic EPH >C35-C40	N	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic EPH >C10-C35	N	2690	mg/kg	5.00	3000	13	7.3	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic VPH >C5-C7	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	N	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	N	2690	mg/kg	1.00	530	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.4
Aromatic EPH >C12-C16	N	2690	mg/kg	1.00	310	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	3.1	3.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Aromatic EPH >C21-C35	N	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	4.9	< 2.0	2.4	< 2.0	< 2.0
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic EPH >C10-C35	N	2690	mg/kg	5.00	850	< 5.0	< 5.0	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total VPH >C5-C10	N	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35	N	2690	mg/kg	10.00	3900	16	10	< 10	< 10	< 10	< 10	< 10
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Test Methods

SOP	Title	Parameters included	Method summary
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35–C40	Acetone/Heptane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection

Report Information

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LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

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A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

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D - Broken Container

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All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

2183

Final Report

Report No.:	22-46596-1
Initial Date of Issue:	17-Jan-2023
Client	Smith Grant LLP
Client Address:	Bryn Estyn Business Centre Bryn Estyn Road Wrexham LL13 9TY
Contact(s):	Scott Miller
Project	R1742b Heyford (Dorchester URL)

Quotation No.:	Q15-02887	**Date Received:**	05-Dec-2022
Order No.:		**Date Instructed:**	05-Dec-2022
No. of Samples:	14		
Turnaround (Wkdays):	10	**Results Due:**	16-Dec-2022
Date Approved:	17-Jan-2023		

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Soil

Project: R1742b Heyford (Dorchester URL)

Client: Smith Grant LLP				**Chemtest Job No.:**	22-46596	22-46596	22-46596	22-46596	22-46596	22-46596	22-46596	22-46596	22-46596
Quotation No.: Q15-02887				**Chemtest Sample ID.:**	1558192	1558193	1558194	1558195	1558196	1558197	1558198	1558199	1558200
				Sample Location:	Cell-2-SS1	Cell-2-SS2	Cell-2-SS3	Cell-2-SS4	Cell-2-SS5	Cell-2-SS6	Cell-2-SS7	Cell-2-SS8	Cell-2-SS9
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	1.1	0.9	2.2	2.0	2.2	2.2	2.2	2.0	2.0
				Bottom Depth (m):	2.2	2.0							
				Date Sampled:	30-Nov-2022	30-Nov-2022	30-Nov-2022	30-Nov-2022	30-Nov-2022	30-Nov-2022	30-Nov-2022	30-Nov-2022	01-Dec-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Moisture	N	2030	%	0.020	16	15	20	9.7	14	17	17	13	11
Aliphatic EPH >C8-C10	N	2690	mg/kg	1.00									
Aliphatic VPH >C5-C6	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	N	2780	mg/kg	0.05	< 0.05	0.66	< 0.05	1.4	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	N	2780	mg/kg	0.05	< 0.05	2.5	0.17	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.90
Aliphatic VPH >C8-C10	N	2780	mg/kg	0.05	0.17	4.0	0.65	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	3.4
Total Aliphatic VPH >C5-C10	N	2780	mg/kg	0.25	< 0.25	3.5	0.41	0.71	< 0.25	< 0.25	< 0.25	< 0.25	2.2
Aliphatic EPH >C10-C12	N	2690	mg/kg	2.00	< 2.0	100	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C12-C16	N	2690	mg/kg	1.00	3.0	19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic EPH >C16-C21	N	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C21-C35	N	2690	mg/kg	3.00	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Aliphatic EPH >C35-C40	N	2690	mg/kg	1.00	1.3	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.1	< 1.0	< 1.0
Total Aliphatic EPH >C10-C35	N	2690	mg/kg	5.00	7.2	120	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic VPH >C5-C7	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	N	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	N	2690	mg/kg	1.00	< 1.0	5.1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic EPH >C12-C16	N	2690	mg/kg	1.00	< 1.0	2.8	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	< 2.0	2.3	2.2	2.1	2.1	2.4	2.1	< 2.0	2.5
Aromatic EPH >C21-C35	N	2690	mg/kg	2.00	96	35	3.0	28	8.6	14	8.2	11	7.0
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic EPH >C10-C35	N	2690	mg/kg	5.00	98	45	5.7	31	11	17	11	14	10
Total VPH >C5-C10	N	2780	mg/kg	0.50	< 0.50	3.5	< 0.50	0.71	< 0.50	< 0.50	< 0.50	< 0.50	2.2
Total EPH >C10-C35	N	2690	mg/kg	10.00	110	170	< 10	34	12	18	12	15	12
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: R1742b Heyford (Dorchester URL)

Client: Smith Grant LLP				**Chemtest Job No.:**	22-46596	22-46596	22-46596	22-46596	22-46596
Quotation No.: Q15-02887				**Chemtest Sample ID.:**	1558201	1558202	1558203	1558204	1558205
				Sample Location:	Cell-2-SS10	Cell-2-SS11	Cell-2-SS12	Cell-2-SS13	Cell-2-SS14
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	2.0	1.9	1.9	1.1	1.1
				Bottom Depth (m):				2.2	2.2
				Date Sampled:	01-Dec-2022	01-Dec-2022	01-Dec-2022	01-Dec-2022	01-Dec-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**					
Moisture	N	2030	%	0.020	8.9	13	12	13	15
Aliphatic EPH >C8-C10	N	2690	mg/kg	1.00		17	13	15	17
Aliphatic VPH >C5-C6	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	1.4
Aliphatic VPH >C7-C8	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C8-C10	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	N	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	0.68
Aliphatic EPH >C10-C12	N	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C12-C16	N	2690	mg/kg	1.00	< 1.0	< 1.0	2.0	< 1.0	< 1.0
Aliphatic EPH >C16-C21	N	2690	mg/kg	2.00	< 2.0	< 2.0	3.2	< 2.0	< 2.0
Aliphatic EPH >C21-C35	N	2690	mg/kg	3.00	< 3.0	< 3.0	4.7	< 3.0	< 3.0
Aliphatic EPH >C35-C40	N	2690	mg/kg	1.00	1.1	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic EPH >C10-C35	N	2690	mg/kg	5.00	< 5.0	< 5.0	11	< 5.0	< 5.0
Aromatic VPH >C5-C7	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	N	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	N	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic EPH >C12-C16	N	2690	mg/kg	1.00	< 1.0	< 1.0	1.0	< 1.0	< 1.0
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	2.2	2.5	7.1	2.0	< 2.0
Aromatic EPH >C21-C35	N	2690	mg/kg	2.00	12	4.9	12	10	6.9
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	< 1.0	< 1.0	2.6	< 1.0	< 1.0
Total Aromatic EPH >C10-C35	N	2690	mg/kg	5.00	15	7.7	20	13	8.8
Total VPH >C5-C10	N	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.68
Total EPH >C10-C35	N	2690	mg/kg	10.00	15	< 10	31	14	< 10
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Test Methods

SOP	Title	Parameters included	Method summary
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35–C40	Acetone/Heptane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

UKAS TESTING 2183

Amended Report

Report No.:	22-46599-2		
Initial Date of Issue:	19-Jan-2023	**Date of Re-Issue:**	20-Jan-2023
Client	Smith Grant LLP		
Client Address:	Bryn Estyn Business Centre Bryn Estyn Road Wrexham LL13 9TY		
Contact(s):	Scott Miller		
Project	R1742b Heyford (Dorchester URL)		
Quotation No.:	Q15-02887	**Date Received:**	05-Dec-2022
Order No.:		**Date Instructed:**	05-Dec-2022
No. of Samples:	10		
Turnaround (Wkdays):	10	**Results Due:**	16-Dec-2022
Date Approved:	20-Jan-2023		
Approved By:			

[redacted]

Details:	Stuart Henderson, Technical Manager

Results - Soil

Project: R1742b Heyford (Dorchester URL)

Client: Smith Grant LLP	**Chemtest Job No.:**				22-46599	22-46599	22-46599	22-46599	22-46599	22-46599	22-46599	22-46599	22-46599
Quotation No.: Q15-02887	**Chemtest Sample ID.:**				1558208	1558209	1558210	1558211	1558212	1558213	1558214	1558215	1558216
	Sample Location:				POL21b-V1	POL21b-V2	POL21b-V3	POL21b-V4	POL21b-V5	POL21b-V6	POL21b-V7	PH10-TSSP3-ES1	PH10-TSSP3-ES2
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0	0	0	0	0	0	0		
	Bottom Depth (m):				2.2	2.2	2.2	2.2	2.2	2.2	2.2		
	Date Sampled:				01-Dec-2022	01-Dec-2022	01-Dec-2022	01-Dec-2022	01-Dec-2022	01-Dec-2022	01-Dec-2022	01-Dec-2022	01-Dec-2022
	Asbestos Lab:											DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
ACM Type	U	2192		N/A								-	-
Asbestos Identification	U	2192		N/A								No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	13	13	15	15	15	13	15	19	21
pH	U	2010		4.0								7.9	8.1
Arsenic	U	2455	mg/kg	0.5								20	12
Cadmium	U	2455	mg/kg	0.10								0.61	0.41
Chromium	U	2455	mg/kg	0.5								25	18
Copper	U	2455	mg/kg	0.50								39	18
Mercury	U	2455	mg/kg	0.05								0.06	0.08
Nickel	U	2455	mg/kg	0.50								23	14
Lead	U	2455	mg/kg	0.50								40	31
Selenium	U	2455	mg/kg	0.25								0.88	0.61
Vanadium	U	2455	mg/kg	0.5								46	32
Zinc	U	2455	mg/kg	0.50								180	150
Chromium (Hexavalent)	N	2490	mg/kg	0.50								< 0.50	< 0.50
Aliphatic VPH >C5-C6	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Aliphatic VPH >C6-C7	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Aliphatic VPH >C7-C8	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Aliphatic VPH >C8-C10	N	2780	mg/kg	0.05	< 0.05	0.20	0.20	< 0.05	0.52	2.5	0.11		
Total Aliphatic VPH >C5-C10	N	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	0.52	2.5	< 0.25		
Aliphatic EPH >C10-C12	N	2690	mg/kg	2.00	< 2.0	< 2.0	290	< 2.0	9.7	11	7.0		
Aliphatic EPH >C12-C16	N	2690	mg/kg	1.00	< 1.0	< 1.0	98	2.4	8.7	6.9	3.8		
Aliphatic EPH >C16-C21	N	2690	mg/kg	2.00	2.0	< 2.0	5.7	< 2.0	6.8	2.2	5.6		
Aliphatic EPH >C21-C35	N	2690	mg/kg	3.00	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	4.3		
Aliphatic EPH >C35-C40	N	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
Total Aliphatic EPH >C10-C35	N	2690	mg/kg	5.00	< 5.0	< 5.0	400	< 5.0	25	21	21		
Aromatic VPH >C5-C7	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Aromatic VPH >C7-C8	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Aromatic VPH >C8-C10	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Total Aromatic VPH >C5-C10	N	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25		
Aromatic EPH >C10-C12	N	2690	mg/kg	1.00	< 1.0	< 1.0	50	< 1.0	< 1.0	< 1.0	< 1.0		
Aromatic EPH >C12-C16	N	2690	mg/kg	1.00	< 1.0	< 1.0	27	< 1.0	< 1.0	< 1.0	< 1.0		
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	2.3	2.4	2.2	2.6	3.0	3.2	3.5		
Aromatic EPH >C21-C35	N	2690	mg/kg	2.00	9.6	< 2.0	6.1	4.3	3.7	7.5	4.6		
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
Total Aromatic EPH >C10-C35	N	2690	mg/kg	5.00	12	< 5.0	85	7.1	7.3	12	8.9		

Results - Soil

Project: R1742b Heyford (Dorchester URL)

Client: Smith Grant LLP	**Chemtest Job No.:**				22-46599	22-46599	22-46599	22-46599	22-46599	22-46599	22-46599	22-46599	22-46599
Quotation No.: Q15-02887	**Chemtest Sample ID.:**				1558208	1558209	1558210	1558211	1558212	1558213	1558214	1558215	1558216
	Sample Location:				POL21b-V1	POL21b-V2	POL21b-V3	POL21b-V4	POL21b-V5	POL21b-V6	POL21b-V7	PH10-TSSP3-ES1	PH10-TSSP3-ES2
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0	0	0	0	0	0	0		
	Bottom Depth (m):				2.2	2.2	2.2	2.2	2.2	2.2	2.2		
	Date Sampled:				01-Dec-2022	01-Dec-2022	01-Dec-2022	01-Dec-2022	01-Dec-2022	01-Dec-2022	01-Dec-2022	01-Dec-2022	01-Dec-2022
	Asbestos Lab:											DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Total VPH >C5-C10	N	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.52	2.5	< 0.50		
Total EPH >C10-C35	N	2690	mg/kg	10.00	16	< 10	480	11	33	33	30		
Organic Matter	U	2625	%	0.40								5.2	5.9
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0								< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0								< 1.0	< 1.0
Aliphatic TPH >C8-C10	N	2680	mg/kg	1.0								< 1.0	< 1.0
Aliphatic TPH >C10-C12	N	2680	mg/kg	1.0								< 1.0	< 1.0
Aliphatic TPH >C12-C16	N	2680	mg/kg	1.0								< 1.0	< 1.0
Aliphatic TPH >C16-C21	N	2680	mg/kg	1.0								< 1.0	< 1.0
Aliphatic TPH >C21-C35	N	2680	mg/kg	1.0								< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0								< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0								< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0								< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0								< 1.0	< 1.0
Aromatic TPH >C8-C10	N	2680	mg/kg	1.0								< 1.0	< 1.0
Aromatic TPH >C10-C12	N	2680	mg/kg	1.0								< 1.0	< 1.0
Aromatic TPH >C12-C16	N	2680	mg/kg	1.0								< 1.0	< 1.0
Aromatic TPH >C16-C21	N	2680	mg/kg	1.0								< 1.0	< 1.0
Aromatic TPH >C21-C35	N	2680	mg/kg	1.0								< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0								< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0								< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0								< 10	< 10
Naphthalene	U	2700	mg/kg	0.10								< 0.10	0.38
Acenaphthylene	U	2700	mg/kg	0.10								< 0.10	0.29
Acenaphthene	U	2700	mg/kg	0.10								< 0.10	2.3
Fluorene	U	2700	mg/kg	0.10								< 0.10	1.9
Phenanthrene	U	2700	mg/kg	0.10								0.32	21
Anthracene	U	2700	mg/kg	0.10								0.14	5.9
Fluoranthene	U	2700	mg/kg	0.10								1.0	24
Pyrene	U	2700	mg/kg	0.10								1.1	23
Benzo[a]anthracene	U	2700	mg/kg	0.10								0.40	8.8
Chrysene	U	2700	mg/kg	0.10								1.0	10
Benzo[b]fluoranthene	U	2700	mg/kg	0.10								1.1	10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10								0.36	4.1
Benzo[a]pyrene	U	2700	mg/kg	0.10								0.90	8.6
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10								0.53	5.3
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10								0.12	1.4

Results - Soil

Project: R1742b Heyford (Dorchester URL)

Client: Smith Grant LLP				**Chemtest Job No.:**	22-46599	22-46599	22-46599	22-46599	22-46599	22-46599	22-46599	22-46599	22-46599
Quotation No.: Q15-02887				**Chemtest Sample ID.:**	1558208	1558209	1558210	1558211	1558212	1558213	1558214	1558215	1558216
				Sample Location:	POL21b-V1	POL21b-V2	POL21b-V3	POL21b-V4	POL21b-V5	POL21b-V6	POL21b-V7	PH10-TSSP3-ES1	PH10-TSSP3-ES2
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	0	0	0	0	0	0	0		
				Bottom Depth (m):	2.2	2.2	2.2	2.2	2.2	2.2	2.2		
				Date Sampled:	01-Dec-2022	01-Dec-2022	01-Dec-2022	01-Dec-2022	01-Dec-2022	01-Dec-2022	01-Dec-2022	01-Dec-2022	01-Dec-2022
				Asbestos Lab:								DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10								0.69	4.4
Total Of 16 PAH's	U	2700	mg/kg	2.0								7.7	130
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: R1742b Heyford (Dorchester URL)

Client: Smith Grant LLP			**Chemtest Job No.:**		22-46599
Quotation No.: Q15-02887			**Chemtest Sample ID.:**		1558217
			Sample Location:		PH10-TSSP3-ES3
			Sample Type:		SOIL
			Top Depth (m):		
			Bottom Depth (m):		
			Date Sampled:		01-Dec-2022
			Asbestos Lab:		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
ACM Type	U	2192		N/A	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected
Moisture	N	2030	%	0.020	17
pH	U	2010		4.0	8.0
Arsenic	U	2455	mg/kg	0.5	15
Cadmium	U	2455	mg/kg	0.10	0.94
Chromium	U	2455	mg/kg	0.5	17
Copper	U	2455	mg/kg	0.50	180
Mercury	U	2455	mg/kg	0.05	< 0.05
Nickel	U	2455	mg/kg	0.50	19
Lead	U	2455	mg/kg	0.50	26
Selenium	U	2455	mg/kg	0.25	0.84
Vanadium	U	2455	mg/kg	0.5	33
Zinc	U	2455	mg/kg	0.50	99
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50
Aliphatic VPH >C5-C6	N	2780	mg/kg	0.05	
Aliphatic VPH >C6-C7	N	2780	mg/kg	0.05	
Aliphatic VPH >C7-C8	N	2780	mg/kg	0.05	
Aliphatic VPH >C8-C10	N	2780	mg/kg	0.05	
Total Aliphatic VPH >C5-C10	N	2780	mg/kg	0.25	
Aliphatic EPH >C10-C12	N	2690	mg/kg	2.00	
Aliphatic EPH >C12-C16	N	2690	mg/kg	1.00	
Aliphatic EPH >C16-C21	N	2690	mg/kg	2.00	
Aliphatic EPH >C21-C35	N	2690	mg/kg	3.00	
Aliphatic EPH >C35-C40	N	2690	mg/kg	1.00	
Total Aliphatic EPH >C10-C35	N	2690	mg/kg	5.00	
Aromatic VPH >C5-C7	N	2780	mg/kg	0.05	
Aromatic VPH >C7-C8	N	2780	mg/kg	0.05	
Aromatic VPH >C8-C10	N	2780	mg/kg	0.05	
Total Aromatic VPH >C5-C10	N	2780	mg/kg	0.25	
Aromatic EPH >C10-C12	N	2690	mg/kg	1.00	
Aromatic EPH >C12-C16	N	2690	mg/kg	1.00	
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	
Aromatic EPH >C21-C35	N	2690	mg/kg	2.00	
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	
Total Aromatic EPH >C10-C35	N	2690	mg/kg	5.00	

Results - Soil

Project: R1742b Heyford (Dorchester URL)

Client: Smith Grant LLP				**Chemtest Job No.:**	22-46599
Quotation No.: Q15-02887				**Chemtest Sample ID.:**	1558217
				Sample Location:	PH10-TSSP3-ES3
				Sample Type:	SOIL
				Top Depth (m):	
				Bottom Depth (m):	
				Date Sampled:	01-Dec-2022
				Asbestos Lab:	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Total VPH >C5-C10	N	2780	mg/kg	0.50	
Total EPH >C10-C35	N	2690	mg/kg	10.00	
Organic Matter	U	2625	%	0.40	6.3
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C8-C10	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C10-C12	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C12-C16	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C16-C21	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C21-C35	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C8-C10	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C10-C12	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C12-C16	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C16-C21	N	2680	mg/kg	1.0	3.6
Aromatic TPH >C21-C35	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10
Naphthalene	U	2700	mg/kg	0.10	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10
Acenaphthene	U	2700	mg/kg	0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	0.41
Anthracene	U	2700	mg/kg	0.10	0.16
Fluoranthene	U	2700	mg/kg	0.10	1.1
Pyrene	U	2700	mg/kg	0.10	1.2
Benzo[a]anthracene	U	2700	mg/kg	0.10	0.55
Chrysene	U	2700	mg/kg	0.10	1.2
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	0.93
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	0.32
Benzo[a]pyrene	U	2700	mg/kg	0.10	0.76
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10

Results - Soil

Project: R1742b Heyford (Dorchester URL)

Client: Smith Grant LLP				**Chemtest Job No.:**	22-46599
Quotation No.: Q15-02887				**Chemtest Sample ID.:**	1558217
				Sample Location:	PH10-TSSP3-ES3
				Sample Type:	SOIL
				Top Depth (m):	
				Bottom Depth (m):	
				Date Sampled:	01-Dec-2022
				Asbestos Lab:	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	6.6
Benzene	U	2760	μg/kg	1.0	< 1.0
Toluene	U	2760	μg/kg	1.0	< 1.0
Ethylbenzene	U	2760	μg/kg	1.0	< 1.0
m & p-Xylene	U	2760	μg/kg	1.0	< 1.0
o-Xylene	U	2760	μg/kg	1.0	< 1.0

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35–C40	Acetone/Heptane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

eurofins Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

UKAS TESTING 2183

Final Report

Report No.:	22-47488-1		
Initial Date of Issue:	24-Jan-2023		
Client	Smith Grant LLP		
Client Address:	Bryn Estyn Business Centre Bryn Estyn Road Wrexham LL13 9TY		
Contact(s):	Dan Wayland		
Project	R1724b Heyford - Phase 10		
Quotation No.:		**Date Received:**	12-Dec-2022
Order No.:		**Date Instructed:**	12-Dec-2022
No. of Samples:	12		
Turnaround (Wkdays):	10	**Results Due:**	23-Dec-2022
Date Approved:	24-Jan-2023		
Approved By:			

[redacted]

Details:	Stuart Henderson, Technical Manager

Results - Soil

Project: R1724b Heyford - Phase 10

Client: Smith Grant LLP				**Chemtest Job No.:**	22-47488	22-47488	22-47488	22-47488	22-47488	22-47488	22-47488	22-47488	22-47488
Quotation No.:				**Chemtest Sample ID.:**	1562464	1562465	1562466	1562467	1562468	1562469	1562470	1562471	1562472
				Sample Location:	Cell 3 - SS1	Cell 3 - SS2	Cell 3 - SS3	Cell 3 - SS4	Cell 3 - SS5	Cell 3 - SS6	Cell 3 - SS7	Cell 3 - SS8	Cell 3 - SS9
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	1.8	1.8	1.8	2.6	2.6	2.6	2.6	1.8	1.8
				Bottom Depth (m):	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
				Date Sampled:	05-Dec-2022	05-Dec-2022	05-Dec-2022	05-Dec-2022	05-Dec-2022	05-Dec-2022	05-Dec-2022	05-Dec-2022	05-Dec-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Moisture	N	2030	%	0.020	15	14	15	20	21	19	14	15	18
Aliphatic VPH >C5-C6	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	N	2780	mg/kg	0.05	< 0.05	< 0.05	0.11	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C8-C10	N	2780	mg/kg	0.05	< 0.05	< 0.05	0.31	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	N	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12	N	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	5.8	4.9	< 2.0	5.6
Aliphatic EPH >C12-C16	N	2690	mg/kg	1.00	1.2	< 1.0	< 1.0	< 1.0	< 1.0	1.9	2.5	2.6	3.6
Aliphatic EPH >C16-C21	N	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C21-C35	N	2690	mg/kg	3.00	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	6.3	8.2	< 3.0	5.6
Aliphatic EPH >C35-C40	N	2690	mg/kg	1.00	1.2	< 1.0	< 1.0	< 1.0	< 1.0	9.7	6.6	4.6	5.7
Total Aliphatic EPH >C10-C35	N	2690	mg/kg	5.00	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	14	16	6.1	16
Aromatic VPH >C5-C7	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	N	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	N	2690	mg/kg	1.00	< 1.0	1.1	< 1.0	< 1.0	< 1.0	6.6	9.3	6.0	3.9
Aromatic EPH >C12-C16	N	2690	mg/kg	1.00	1.6	1.3	1.8	1.5	1.3	12	5.2	5.1	10
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	3.8	< 2.0	2.9	< 2.0	4.2	24	20	15	32
Aromatic EPH >C21-C35	N	2690	mg/kg	2.00	5.2	7.0	6.4	12	5.8	< 2.0	< 2.0	< 2.0	< 2.0
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	3.6	3.6	3.9	4.5	3.8	27	14	14	37
Total Aromatic EPH >C10-C35	N	2690	mg/kg	5.00	11	11	12	16	12	43	34	26	46
Total VPH >C5-C10	N	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35	N	2690	mg/kg	10.00	15	15	16	20	15	57	50	33	62
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: R1724b Heyford - Phase 10

Client: Smith Grant LLP				**Chemtest Job No.:**	22-47488	22-47488	22-47488
Quotation No.:				**Chemtest Sample ID.:**	1562473	1562474	1562475
				Sample Location:	Cell 3 - SS10	Cell 4 - S1	Cell 4 - S2
				Sample Type:	SOIL	SOIL	SOIL
				Top Depth (m):	1.8	1.5	1.5
				Bottom Depth (m):	2.6	1.8	1.8
				Date Sampled:	05-Dec-2022	06-Dec-2022	06-Dec-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**			
Moisture	N	2030	%	0.020	20	12	17
Aliphatic VPH >C5-C6	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C8-C10	N	2780	mg/kg	0.05	< 0.05	0.11	< 0.05
Total Aliphatic VPH >C5-C10	N	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12	N	2690	mg/kg	2.00	7.4	2.3	< 2.0
Aliphatic EPH >C12-C16	N	2690	mg/kg	1.00	8.1	6.1	1.4
Aliphatic EPH >C16-C21	N	2690	mg/kg	2.00	7.8	6.5	< 2.0
Aliphatic EPH >C21-C35	N	2690	mg/kg	3.00	15	7.9	< 3.0
Aliphatic EPH >C35-C40	N	2690	mg/kg	1.00	< 1.0	1.8	3.6
Total Aliphatic EPH >C10-C35	N	2690	mg/kg	5.00	38	23	< 5.0
Aromatic VPH >C5-C7	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	N	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	N	2690	mg/kg	1.00	8.0	< 1.0	2.6
Aromatic EPH >C12-C16	N	2690	mg/kg	1.00	14	3.0	4.3
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	11	6.2	34
Aromatic EPH >C21-C35	N	2690	mg/kg	2.00	24	17	< 2.0
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	20	1.6	15
Total Aromatic EPH >C10-C35	N	2690	mg/kg	5.00	58	26	41
Total VPH >C5-C10	N	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35	N	2690	mg/kg	10.00	96	49	45
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0

Test Methods

SOP	Title	Parameters included	Method summary
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35–C40	Acetone/Heptane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

UKAS TESTING 2183

Final Report

Report No.:	22-47500-1
Initial Date of Issue:	16-Jan-2023
Client	Smith Grant LLP
Client Address:	Bryn Estyn Business Centre Bryn Estyn Road Wrexham LL13 9TY
Contact(s):	Scott Miller
Project	R1742.B Heyford (Dorchester URL)

Quotation No.:	Q15-02887	**Date Received:**	12-Dec-2022
Order No.:		**Date Instructed:**	12-Dec-2022
No. of Samples:	17		
Turnaround (Wkdays):	10	**Results Due:**	23-Dec-2022
Date Approved:	16-Jan-2023		

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Soil

Project: R1742.B Heyford (Dorchester URL)

Client: Smith Grant LLP				**Chemtest Job No.:**	22-47500	22-47500	22-47500	22-47500	22-47500	22-47500	22-47500	22-47500	22-47500
Quotation No.: Q15-02887				**Chemtest Sample ID.:**	1562530	1562531	1562532	1562533	1562534	1562535	1562536	1562537	1562538
				Client Sample ID.:	Cell 5 - S1	Cell 5 - S2	Cell 5 - S3	Cell 6 - S1	Cell 6 - S2	Cell 6 - HS - SS1	Cell 6 - HS - SS2	Cell 6 - HS - SS3	Cell 6 - HS - SS4
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Date Sampled:	07-Dec-2022	07-Dec-2022	07-Dec-2022	08-Dec-2022	08-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022	08-Dec-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Moisture	N	2030	%	0.020	16	12	13	16	14	15	16	14	19
Aliphatic EPH >C8-C10	N	2690	mg/kg	1.00	12		2.2		2.1	2.2	2.4	1.7	45
Aliphatic VPH >C5-C6	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	0.13	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C8-C10	N	2780	mg/kg	0.05	< 0.05	< 0.05	0.10	0.12	< 0.05	0.18	< 0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	N	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12	N	2690	mg/kg	2.00	< 2.0	3.7	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C12-C16	N	2690	mg/kg	1.00	5.0	1.7	1.3	19	1.2	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic EPH >C16-C21	N	2690	mg/kg	2.00	20	130	< 2.0	53	< 2.0	< 2.0	< 2.0	< 2.0	8.9
Aliphatic EPH >C21-C35	N	2690	mg/kg	3.00	31	270	< 3.0	2400	< 3.0	< 3.0	< 3.0	< 3.0	12
Aliphatic EPH >C35-C40	N	2690	mg/kg	1.00	< 1.0	7.1	< 1.0	14	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic EPH >C10-C35	N	2690	mg/kg	5.00	56	410	< 5.0	2500	< 5.0	< 5.0	< 5.0	< 5.0	23
Aromatic VPH >C5-C7	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	N	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	N	2690	mg/kg	1.00	2.8	< 1.0	< 1.0	1.0	< 1.0	< 1.0	< 1.0	< 1.0	6.2
Aromatic EPH >C12-C16	N	2690	mg/kg	1.00	110	40	< 1.0	130	< 1.0	< 1.0	< 1.0	< 1.0	4.7
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	580	41	< 2.0	150	< 2.0	< 2.0	< 2.0	< 2.0	7.3
Aromatic EPH >C21-C35	N	2690	mg/kg	2.00	700	24000	5.3	11000	5.2	4.0	4.8	2.6	< 2.0
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	29	1.8	< 1.0	2.2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic EPH >C10-C35	N	2690	mg/kg	5.00	1400	24000	6.8	11000	7.3	< 5.0	5.6	< 5.0	18
Total VPH >C5-C10	N	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35	N	2690	mg/kg	10.00	1500	25000	< 10	14000	10	< 10	< 10	< 10	41
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: R1742.B Heyford (Dorchester URL)

Client: Smith Grant LLP				**Chemtest Job No.:**	22-47500	22-47500	22-47500	22-47500	22-47500	22-47500	22-47500	22-47500
Quotation No.: Q15-02887				**Chemtest Sample ID.:**	1562539	1562540	1562541	1562542	1562543	1562544	1562545	1562546
				Client Sample ID.:	Cell 6 - HS - SS5	Cell 6 - HS - SS6	Cell 6 - HS - SS7	Cell 6 - HS - SS8	Cell 7 - S1	Cell 7 - HS - SS1	Cell 7 - HS - SS2	Cell 7 - HS - SS3
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Date Sampled:	08-Dec-2022	08-Dec-2022	08-Dec-2022	08-Dec-2022	08-Dec-2022	08-Dec-2022	08-Dec-2022	08-Dec-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
Moisture	N	2030	%	0.020	13	15	13	14	14	17	17	16
Aliphatic EPH >C8-C10	N	2690	mg/kg	1.00	2.0	2.2	2.0	1.9	1.7	1.6	1.4	1.3
Aliphatic VPH >C5-C6	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C8-C10	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.32	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	N	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12	N	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C12-C16	N	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0	1.4	< 1.0	< 1.0	< 1.0
Aliphatic EPH >C16-C21	N	2690	mg/kg	2.00	32	< 2.0	< 2.0	< 2.0	53	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C21-C35	N	2690	mg/kg	3.00	35	< 3.0	< 3.0	< 3.0	65	< 3.0	< 3.0	< 3.0
Aliphatic EPH >C35-C40	N	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic EPH >C10-C35	N	2690	mg/kg	5.00	67	< 5.0	< 5.0	< 5.0	120	< 5.0	< 5.0	< 5.0
Aromatic VPH >C5-C7	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	N	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	N	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic EPH >C12-C16	N	2690	mg/kg	1.00	1.7	< 1.0	< 1.0	< 1.0	2.7	< 1.0	< 1.0	< 1.0
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	4.6	< 2.0	< 2.0	< 2.0	6.5	< 2.0	< 2.0	< 2.0
Aromatic EPH >C21-C35	N	2690	mg/kg	2.00	2.1	< 2.0	< 2.0	< 2.0	6.8	2.4	< 2.0	< 2.0
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic EPH >C10-C35	N	2690	mg/kg	5.00	8.4	< 5.0	< 5.0	< 5.0	16	< 5.0	< 5.0	< 5.0
Total VPH >C5-C10	N	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35	N	2690	mg/kg	10.00	76	< 10	< 10	< 10	140	< 10	< 10	< 10
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Test Methods

SOP	Title	Parameters included	Method summary
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35–C40	Acetone/Heptane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

UKAS TESTING 2183

MCERTS

Final Report

Report No.:	22-48018-1		
Initial Date of Issue:	16-Jan-2023		
Client	Smith Grant LLP		
Client Address:	Bryn Estyn Business Centre Bryn Estyn Road Wrexham LL13 9TY		
Contact(s):	Scott Miller		
Project	R17426 Heyford (Dorchester URL)		
Quotation No.:	Q15-02887	**Date Received:**	15-Dec-2022
Order No.:		**Date Instructed:**	15-Dec-2022
No. of Samples:	4		
Turnaround (Wkdays):	10	**Results Due:**	04-Jan-2023
Date Approved:	16-Jan-2023		
Approved By:			

[redacted]

Details:	Stuart Henderson, Technical Manager

Results - Soil

Project: R17426 Heyford (Dorchester URL)

Client: Smith Grant LLP				**Chemtest Job No.:**	22-48018	22-48018	22-48018	22-48018
Quotation No.: Q15-02887				**Chemtest Sample ID.:**	1564916	1564917	1564918	1564919
				Sample Location:	Cell 7-S2	Cell 7-SS4	Cell 7-SS5	Cell 7-SS6
				Sample Type:	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	1.5	2.5	1.5	1.5
				Bottom Depth (m):	2.1	2.5	2.5	2.5
				Date Sampled:	12-Dec-2022	12-Dec-2022	12-Dec-2022	12-Dec-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**				
Moisture	N	2030	%	0.020	15	16	16	12
Soil Colour	N	2040		N/A	Brown	Brown	Brown	Brown
Other Material	N	2040		N/A	Stones	Stones	Stones	Stones
Soil Texture	N	2040		N/A	Clay	Clay	Loam	Clay
Aliphatic VPH >C5-C6	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C8-C10	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	N	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12	N	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C12-C16	N	2690	mg/kg	1.00	1.8	< 1.0	1.2	< 1.0
Aliphatic EPH >C16-C21	N	2690	mg/kg	2.00	78	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C21-C35	N	2690	mg/kg	3.00	130	< 3.0	< 3.0	< 3.0
Aliphatic EPH >C35-C40	N	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic EPH >C10-C35	N	2690	mg/kg	5.00	210	< 5.0	< 5.0	< 5.0
Aromatic VPH >C5-C7	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	N	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	N	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic EPH >C12-C16	N	2690	mg/kg	1.00	7.0	< 1.0	4.1	< 1.0
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	7.3	< 2.0	4.5	< 2.0
Aromatic EPH >C21-C35	N	2690	mg/kg	2.00	12	< 2.0	< 2.0	< 2.0
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic EPH >C10-C35	N	2690	mg/kg	5.00	26	< 5.0	8.8	< 5.0
Total VPH >C5-C10	N	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35	N	2690	mg/kg	10.00	240	< 10	11	< 10
Benzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0

Test Methods

SOP	Title	Parameters included	Method summary
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35–C40	Acetone/Heptane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection

Report Information

Key	
U	UKAS accredited
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S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
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I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Amended Report

Report No.:	22-48395-2		
Initial Date of Issue:	16-Jan-2023	**Date of Re-Issue:**	03-Apr-2023
Client	Smith Grant LLP		
Client Address:	Bryn Estyn Business Centre Bryn Estyn Road Wrexham LL13 9TY		
Contact(s):	Dan Wayland		
Project	R17426 Hayford - Phase 10		
Quotation No.:		**Date Received:**	19-Dec-2022
Order No.:		**Date Instructed:**	19-Dec-2022
No. of Samples:	13		
Turnaround (Wkdays):	10	**Results Due:**	06-Jan-2023
Date Approved:	16-Jan-2023		

Approved By:

[redacted]

Details:	Stuart Henderson, Technical Manager

Results - Soil

Project: R17426 Hayford - Phase 10

Client: Smith Grant LLP	**Chemtest Job No.:**				22-48395	22-48395	22-48395	22-48395	22-48395	22-48395	22-48395	22-48395	22-48395
Quotation No.:	**Chemtest Sample ID.:**				1566304	1566305	1566306	1566307	1566308	1566309	1566310	1566311	1566312
	Sample Location:				Cell7-SS7	Cell7-S3	Cell7-S4	Cell8-SS1	Cell8-SS2	Cell8-SS3	Cell8-SS4	Cell8-SS5	Cell8-SS6
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				1.50			2.20	2.20	2.60	1.50	1.50	1.50
	Bottom Depth (m):				2.20			2.60	260	2.60	2.00	2.00	2.00
	Date Sampled:				13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Moisture	N	2030	%	0.020	15	12	13	14	13	17	16	9.1	10
Aliphatic VPH >C5-C6	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	N	2780	mg/kg	0.05	0.14	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.32
Aliphatic VPH >C8-C10	N	2780	mg/kg	0.05	< 0.05	0.12	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	4.2
Total Aliphatic VPH >C5-C10	N	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	2.3
Aliphatic EPH >C10-C12	N	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C12-C16	N	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.5	6.0	19
Aliphatic EPH >C16-C21	N	2690	mg/kg	2.00	8.2	37	< 2.0	< 2.0	25	< 2.0	59	480	830
Aliphatic EPH >C21-C35	N	2690	mg/kg	3.00	9.6	42	< 3.0	< 3.0	6.5	< 3.0	58	27	820
Aliphatic EPH >C35-C40	N	2690	mg/kg	10.00	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.4	6.5
Total Aliphatic EPH >C10-C35	N	2690	mg/kg	5.00	18	80	< 5.0	< 5.0	32	< 5.0	120	510	1700
Aromatic VPH >C5-C7	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	N	2780	mg/kg	0.05	< 0.05	< 0.05	0.11	0.12	0.13	0.11	0.16	< 0.05	0.58
Total Aromatic VPH >C5-C10	N	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	0.29
Aromatic EPH >C10-C12	N	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic EPH >C12-C16	N	2690	mg/kg	1.00	< 1.0	2.3	< 1.0	< 1.0	< 1.0	< 1.0	3.0	27	110
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	< 2.0	3.5	< 2.0	2.1	< 2.0	< 2.0	7.6	33	170
Aromatic EPH >C21-C35	N	2690	mg/kg	2.00	7.2	5.7	4.6	< 2.0	4.0	< 2.0	9.0	45	180
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.1	< 1.0	< 1.0	< 1.0
Total Aromatic EPH >C10-C35	N	2690	mg/kg	5.00	9.5	11	5.2	< 5.0	6.4	< 5.0	20	100	460
Total VPH >C5-C10	N	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	2.5
Total EPH >C10-C35	N	2690	mg/kg	10.00	27	91	< 10	< 10	38	< 10	140	620	2100
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: R17426 Hayford - Phase 10

Client: Smith Grant LLP				**Chemtest Job No.:**	22-48395	22-48395	22-48395	22-48395
Quotation No.:				**Chemtest Sample ID.:**	1566313	1566314	1566315	1566316
				Sample Location:	Cell8-SS7	Cell8-S1	Cell8-S2	Cell8-S3
				Sample Type:	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	2.00			
				Bottom Depth (m):	2.00			
				Date Sampled:	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**				
Moisture	N	2030	%	0.020	13	9.4	12	7.8
Aliphatic VPH >C5-C6	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C8-C10	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	N	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12	N	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C12-C16	N	2690	mg/kg	1.00	< 1.0	1.0	10	22
Aliphatic EPH >C16-C21	N	2690	mg/kg	2.00	2.1	110	440	1600
Aliphatic EPH >C21-C35	N	2690	mg/kg	3.00	43	110	410	99
Aliphatic EPH >C35-C40	N	2690	mg/kg	10.00	< 1.0	< 1.0	2.2	8.9
Total Aliphatic EPH >C10-C35	N	2690	mg/kg	5.00	46	220	860	1700
Aromatic VPH >C5-C7	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	N	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	N	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic EPH >C12-C16	N	2690	mg/kg	1.00	< 1.0	5.4	55	120
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	2.4	13	130	170
Aromatic EPH >C21-C35	N	2690	mg/kg	2.00	< 2.0	14	130	220
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	1.4
Total Aromatic EPH >C10-C35	N	2690	mg/kg	5.00	< 5.0	33	310	510
Total VPH >C5-C10	N	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35	N	2690	mg/kg	10.00	51	250	1200	2200
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	1.3	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0

Test Methods

SOP	Title	Parameters included	Method summary
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35–C40	Acetone/Heptane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

UKAS TESTING 2183

Final Report

Report No.:	22-48400-1		
Initial Date of Issue:	16-Jan-2023		
Client	Smith Grant LLP		
Client Address:	Bryn Estyn Business Centre Bryn Estyn Road Wrexham LL13 9TY		
Contact(s):	Dan Wayland		
Project	R17426 Hayford - Phase 10		
Quotation No.:		**Date Received:**	19-Dec-2022
Order No.:		**Date Instructed:**	19-Dec-2022
No. of Samples:	10		
Turnaround (Wkdays):	10	**Results Due:**	06-Jan-2023
Date Approved:	16-Jan-2023		
Approved By:			

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Soil

Project: R17426 Hayford - Phase 10

Client: Smith Grant LLP	Chemtest Job No.:				22-48400	22-48400	22-48400	22-48400	22-48400	22-48400	22-48400	22-48400	22-48400
Quotation No.:	Chemtest Sample ID.:				1566332	1566333	1566334	1566335	1566336	1566337	1566338	1566339	1566340
	Sample Location:				POL2S-SS1	POL2S-SS2	POL2S-SS3	POL2S-SS4	POL2S-SS5	POL2S-SS6	POL2S-SS7	POL2S-SS8	POL2S-SS9
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
	Bottom Depth (m):				3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
	Date Sampled:				15-Dec-2022	15-Dec-2022	15-Dec-2022	15-Dec-2022	15-Dec-2022	15-Dec-2022	15-Dec-2022	15-Dec-2022	15-Dec-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Moisture	N	2030	%	0.020	9.5	9.9	10	7.4	7.6	6.1	8.5	11	12
Aliphatic VPH >C5-C6	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	N	2780	mg/kg	0.05	0.34	< 0.05	< 0.05	0.16	0.24	0.12	0.16	2.7	0.35
Aliphatic VPH >C7-C8	N	2780	mg/kg	0.05	0.49	< 0.05	< 0.05	< 0.05	0.23	< 0.05	0.23	7.0	1.2
Aliphatic VPH >C8-C10	N	2780	mg/kg	0.05	0.35	< 0.05	< 0.05	< 0.05	0.36	< 0.05	0.41	25	1.7
Total Aliphatic VPH >C5-C10	N	2780	mg/kg	0.25	0.59	< 0.25	< 0.25	< 0.25	0.41	< 0.25	0.40	17	1.6
Aliphatic EPH >C10-C12	N	2690	mg/kg	2.00	18	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	5.7	< 2.0
Aliphatic EPH >C12-C16	N	2690	mg/kg	1.00	14	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.2	< 1.0
Aliphatic EPH >C16-C21	N	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C21-C35	N	2690	mg/kg	3.00	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Aliphatic EPH >C35-C40	N	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic EPH >C10-C35	N	2690	mg/kg	5.00	32	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	7.1	< 5.0
Aromatic VPH >C5-C7	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	N	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	N	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	N	2690	mg/kg	1.00	5.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic EPH >C12-C16	N	2690	mg/kg	1.00	1.8	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Aromatic EPH >C21-C35	N	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic EPH >C10-C35	N	2690	mg/kg	5.00	7.5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total VPH >C5-C10	N	2780	mg/kg	0.50	0.59	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	17	1.6
Total EPH >C10-C35	N	2690	mg/kg	10.00	40	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: R17426 Hayford - Phase 10

Client: Smith Grant LLP				**Chemtest Job No.:**	22-48400
Quotation No.:				**Chemtest Sample ID.:**	1566341
				Sample Location:	POL2S-SS10
				Sample Type:	SOIL
				Top Depth (m):	0.50
				Bottom Depth (m):	3.20
				Date Sampled:	15-Dec-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Moisture	N	2030	%	0.020	8.8
Aliphatic VPH >C5-C6	N	2780	mg/kg	0.05	< 0.05
Aliphatic VPH >C6-C7	N	2780	mg/kg	0.05	< 0.05
Aliphatic VPH >C7-C8	N	2780	mg/kg	0.05	< 0.05
Aliphatic VPH >C8-C10	N	2780	mg/kg	0.05	0.12
Total Aliphatic VPH >C5-C10	N	2780	mg/kg	0.25	< 0.25
Aliphatic EPH >C10-C12	N	2690	mg/kg	2.00	< 2.0
Aliphatic EPH >C12-C16	N	2690	mg/kg	1.00	2.6
Aliphatic EPH >C16-C21	N	2690	mg/kg	2.00	< 2.0
Aliphatic EPH >C21-C35	N	2690	mg/kg	3.00	< 3.0
Aliphatic EPH >C35-C40	N	2690	mg/kg	1.00	< 1.0
Total Aliphatic EPH >C10-C35	N	2690	mg/kg	5.00	5.5
Aromatic VPH >C5-C7	N	2780	mg/kg	0.05	< 0.05
Aromatic VPH >C7-C8	N	2780	mg/kg	0.05	< 0.05
Aromatic VPH >C8-C10	N	2780	mg/kg	0.05	< 0.05
Total Aromatic VPH >C5-C10	N	2780	mg/kg	0.25	< 0.25
Aromatic EPH >C10-C12	N	2690	mg/kg	1.00	< 1.0
Aromatic EPH >C12-C16	N	2690	mg/kg	1.00	< 1.0
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	< 2.0
Aromatic EPH >C21-C35	N	2690	mg/kg	2.00	< 2.0
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	< 1.0
Total Aromatic EPH >C10-C35	N	2690	mg/kg	5.00	< 5.0
Total VPH >C5-C10	N	2780	mg/kg	0.50	< 0.50
Total EPH >C10-C35	N	2690	mg/kg	10.00	< 10
Benzene	U	2760	µg/kg	1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0

Test Methods

SOP	Title	Parameters included	Method summary
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35–C40	Acetone/Heptane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection

Report Information

Key	
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N	Unaccredited
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SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

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The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Jason King
Eurofins Chemtest Ltd
Depot Road
Newark
Suffolk
CB8 0AL

Derwentside Environmental Testing Services Ltd
Unit 1
Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Kent
ME17 2JN
t: 01622 850410

DETS Report No: 23-00845

Site Reference:	None Supplied
Project / Job Ref:	23-01130
Order No:	24005
Sample Receipt Date:	19/01/2023
Sample Scheduled Date:	23/01/2023
Report Issue Number:	2
Reporting Date:	03/02/2023

Authorised by:

[redacted]
Technical Manager

Dates of laboratory activities for each tested analyte are available upon request.
This report supersedes 23-00845, issue no.1.
Reason for re-issue:
BTEX & MTBE results removed and HWOL Format added.

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

Soil Analysis Certificate - TPH CWG Banded						
DETS Report No: 23-00845	Date Sampled	11/01/23	11/01/23	11/01/23	11/01/23	11/01/23
Eurofins Chemtest Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: None Supplied	TP / BH No	1574472	1574473	1574474	1574475	1574476
Project / Job Ref: 23-01130	Additional Refs	POL2(N)-SS1	POL2(N)-SS2	POL2(N)-SS3	POL2(N)-SS4	POL2(N)-SS5
Order No: 24005	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 03/02/2023	DETS Sample No	629557	629558	629559	629560	629561

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6 : HS_1D_MS_AL	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8 : HS_1D_MS_AL	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic >C8 - C10 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C10 - C12 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C12 - C16 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C16 - C21 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C21 - C34 : EH_CU_1D_AL	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aliphatic (C5 - C34) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	< 21
Aromatic >C5 - C7 : HS_1D_MS_AR	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C7 - C8 : HS_1D_MS_AR	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic >C8 - C10 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C10 - C12 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aromatic (C5 - C35) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	< 21
Total >C5 - C35 : HS_1D_MS+EH_CU_1D_Total	mg/kg	< 42	NONE	< 42	< 42	< 42	< 42	< 42

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Soil Analysis Certificate - TPH CWG Banded						
DETS Report No: 23-00845	Date Sampled	11/01/23	11/01/23	11/01/23	11/01/23	11/01/23
Eurofins Chemtest Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: None Supplied	TP / BH No	1574477	1574478	1574479	1574480	1574481
Project / Job Ref: 23-01130	Additional Refs	POL2(N)-SS6	POL2(N)-SS7	POL2(N)-SS8	POL2(N)-SS9	POL2(N)-SS10
Order No: 24005	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 03/02/2023	DETS Sample No	629562	629563	629564	629565	629566

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6 : HS_1D_MS_AL	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8 : HS_1D_MS_AL	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic >C8 - C10 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C10 - C12 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C12 - C16 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C16 - C21 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C21 - C34 : EH_CU_1D_AL	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aliphatic (C5 - C34) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	< 21
Aromatic >C5 - C7 : HS_1D_MS_AR	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C7 - C8 : HS_1D_MS_AR	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic >C8 - C10 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C10 - C12 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aromatic (C5 - C35) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	< 21
Total >C5 - C35 : HS_1D_MS+EH_CU_1D_Total	mg/kg	< 42	NONE	< 42	< 42	< 42	< 42	< 42

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Soil Analysis Certificate - TPH CWG Banded						
DETS Report No: 23-00845	Date Sampled	11/01/23	11/01/23			
Eurofins Chemtest Ltd	Time Sampled	None Supplied	None Supplied			
Site Reference: None Supplied	TP / BH No	1574482	1574483			
Project / Job Ref: 23-01130	Additional Refs	POL2(N)-SS11	POL2(N)-SS12			
Order No: 24005	Depth (m)	None Supplied	None Supplied			
Reporting Date: 03/02/2023	DETS Sample No	629567	629568			

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6 : HS_1D_MS_AL	mg/kg	< 0.01	NONE	< 0.01	< 0.01			
Aliphatic >C6 - C8 : HS_1D_MS_AL	mg/kg	< 0.05	NONE	< 0.05	< 0.05			
Aliphatic >C8 - C10 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2			
Aliphatic >C10 - C12 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2			
Aliphatic >C12 - C16 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3	< 3			
Aliphatic >C16 - C21 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3	< 3			
Aliphatic >C21 - C34 : EH_CU_1D_AL	mg/kg	< 10	MCERTS	< 10	< 10			
Aliphatic (C5 - C34) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 21	NONE	< 21	< 21			
Aromatic >C5 - C7 : HS_1D_MS_AR	mg/kg	< 0.01	NONE	< 0.01	< 0.01			
Aromatic >C7 - C8 : HS_1D_MS_AR	mg/kg	< 0.05	NONE	< 0.05	< 0.05			
Aromatic >C8 - C10 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2			
Aromatic >C10 - C12 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2			
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2			
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	MCERTS	24	< 3			
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	MCERTS	82	< 10			
Aromatic (C5 - C35) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 21	NONE	105	< 21			
Total >C5 - C35 : HS_1D_MS+EH_CU_1D_Total	mg/kg	< 42	NONE	105	< 42			

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Soil Analysis Certificate - Sample Descriptions
DETS Report No: 23-00845
Eurofins Chemtest Ltd
Site Reference: None Supplied
Project / Job Ref: 23-01130
Order No: 24005
Reporting Date: 03/02/2023

DETS Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
$ 629557	1574472	POL2(N)-SS1	None Supplied	14.1	Grey sandy clay with stones
$ 629558	1574473	POL2(N)-SS2	None Supplied	17.8	Brown sandy clay with stones
$ 629559	1574474	POL2(N)-SS3	None Supplied	11.9	Light brown sandy clay with stones
$ 629560	1574475	POL2(N)-SS4	None Supplied	9.9	Light brown sandy clay with stones
$ 629561	1574476	POL2(N)-SS5	None Supplied	14.4	Light brown sandy clay with stones
$ 629562	1574477	POL2(N)-SS6	None Supplied	16.2	Brown sandy clay with stones
$ 629563	1574478	POL2(N)-SS7	None Supplied	16.8	Brown sandy clay with stones
$ 629564	1574479	POL2(N)-SS8	None Supplied	8.1	Light brown sandy clay with stones
$ 629565	1574480	POL2(N)-SS9	None Supplied	12.6	Light brown sandy clay with stones
$ 629566	1574481	POL2(N)-SS10	None Supplied	16.9	Light brown sandy clay with stones
$ 629567	1574482	POL2(N)-SS11	None Supplied	16	Light brown sandy clay with stones
$ 629568	1574483	POL2(N)-SS12	None Supplied	10.6	Light brown sandy clay with stones

Moisture content is part of procedure E003 & is not an accredited test

Insufficient Sample I/S

Unsuitable Sample U/S

$ samples exceeded recommended holding times

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Soil Analysis Certificate - Methodology & Miscellaneous Information
DETS Report No: 23-00845
Eurofins Chemtest Ltd
Site Reference: None Supplied
Project / Job Ref: 23-01130
Order No: 24005
Reporting Date: 03/02/2023

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 – C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	Fraction Organic Carbon (FOC)	Determination of TOC by combustion analyser.	E027
Soil	D	Organic Matter (SOM)	Determination of TOC by combustion analyser.	E027
Soil	D	TOC (Total Organic Carbon)	Determination of TOC by combustion analyser.	E027
Soil	AR	Exchangeable Ammonium	Determination of ammonium by discrete analyser.	E029
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (ali: C5- C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

D Dried
AR As Received

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List of HWOL Acronyms and Operators
DETS Report No: 23-00845
Eurofins Chemtest Ltd
Site Reference: None Supplied
Project / Job Ref: 23-01130
Order No: 24005
Reporting Date: 03/02/2023

Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS_Total or EH_CU+HS_Total

Det - Acronym
TPH CWG - Aliphatic >C10 - C12 - EH_CU_1D_AL
TPH CWG - Aliphatic >C12 - C16 - EH_CU_1D_AL
TPH CWG - Aliphatic >C16 - C21 - EH_CU_1D_AL
TPH CWG - Aliphatic >C21 - C34 - EH_CU_1D_AL
TPH CWG - Aliphatic >C5 - C6 - HS_1D_MS_AL
TPH CWG - Aliphatic >C6 - C8 - HS_1D_MS_AL
TPH CWG - Aliphatic >C8 - C10 - EH_CU_1D_AL
TPH CWG - Aliphatic C5 - C34 - HS_1D_MS+EH_CU_1D_AL
TPH CWG - Aromatic >C10 - C12 - EH_CU_1D_AR
TPH CWG - Aromatic >C12 - C16 - EH_CU_1D_AR
TPH CWG - Aromatic >C16 - C21 - EH_CU_1D_AR
TPH CWG - Aromatic >C21 - C35 - EH_CU_1D_AR
TPH CWG - Aromatic >C5 - C35 - HS_1D_MS+EH_CU_1D_AR
TPH CWG - Aromatic >C5 - C7 - HS_1D_MS_AR
TPH CWG - Aromatic >C7 - C8 - HS_1D_MS_AR
TPH CWG - Aromatic >C8 - C10 - EH_CU_1D_AR
TPH CWG - Total >C5 - C35 - HS_1D_MS+EH_CU_1D_Total

UKAS TESTING 2183

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Final Report

Report No.:	23-01130-1		
Initial Date of Issue:	07-Feb-2023		
Client	Smith Grant LLP		
Client Address:	Bryn Estyn Business Centre Bryn Estyn Road Wrexham LL13 9TY		
Contact(s):	Scott Miller		
Project	R1742b Heyford (Phase 10)		
Quotation No.:	Q15-02887	**Date Received:**	16-Jan-2023
Order No.:		**Date Instructed:**	16-Jan-2023
No. of Samples:	12		
Turnaround (Wkdays):	10	**Results Due:**	27-Jan-2023
Date Approved:	07-Feb-2023	**Subcon Results Due:**	06-Feb-2023

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Soil

Project: R1742b Heyford (Phase 10)

Client: Smith Grant LLP				**Chemtest Job No.:**	23-01130	23-01130	23-01130	23-01130	23-01130	23-01130	23-01130	23-01130	23-01130
Quotation No.: Q15-02887				**Chemtest Sample ID.:**	1574472	1574473	1574474	1574475	1574476	1574477	1574478	1574479	1574480
				Sample Location:	POL2(N)-SS1	POL2(N)-SS2	POL2(N)-SS3	POL2(N)-SS4	POL2(N)-SS5	POL2(N)-SS6	POL2(N)-SS7	POL2(N)-SS8	POL2(N)-SS9
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
				Bottom Depth (m):	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
				Date Sampled:	11-Jan-2023	11-Jan-2023	11-Jan-2023	11-Jan-2023	11-Jan-2023	11-Jan-2023	11-Jan-2023	11-Jan-2023	11-Jan-2023
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
EPH Aro Ali Soils	SN		µg/kg	20	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached
VPH Aro Ali Soils	SN		µg/kg	20	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached
Moisture	N	2030	%	0.020	21	17	13	14	11	11	14	11	9.8
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	1.8	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	1.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: R1742b Heyford (Phase 10)

Client: Smith Grant LLP				**Chemtest Job No.:**	23-01130	23-01130	23-01130
Quotation No.: Q15-02887				**Chemtest Sample ID.:**	1574481	1574482	1574483
				Sample Location:	POL2(N)-SS10	POL2(N)-SS11	POL2(N)-SS12
				Sample Type:	SOIL	SOIL	SOIL
				Top Depth (m):	0.0	0.0	0.0
				Bottom Depth (m):	2.0	2.0	2.0
				Date Sampled:	11-Jan-2023	11-Jan-2023	11-Jan-2023
Determinand	**Accred.**	**SOP**	**Units**	**LOD**			
EPH Aro Ali Soils	SN		µg/kg	20	See Attached	See Attached	See Attached
VPH Aro Ali Soils	SN		µg/kg	20	See Attached	See Attached	See Attached
Moisture	N	2030	%	0.020	10	11	8.9
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0

Test Methods

SOP	Title	Parameters included	Method summary
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Jason King
Eurofins Chemtest Ltd
Depot Road
Newark
Suffolk
CB8 0AL

Derwentside Environmental Testing Services Ltd
Unit 1
Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Kent
ME17 2JN
t: 01622 850410

DETS Report No: 23-01394

Site Reference:	None Supplied
Project / Job Ref:	23-02888
Order No:	24095
Sample Receipt Date:	02/02/2023
Sample Scheduled Date:	02/02/2023
Report Issue Number:	1
Reporting Date:	17/02/2023

Authorised by:

[redacted]

Dave Ashworth
Technical Manager

Dates of laboratory activities for each tested analyte are available upon request.

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

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Soil Analysis Certificate - TPH CWG Banded						
DETS Report No: 23-01394	Date Sampled	24/01/23	24/01/23	24/01/23	24/01/23	24/01/23
Eurofins Chemtest Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: None Supplied	TP / BH No	1581572	1581573	1581574	1581575	1581576
Project / Job Ref: 23-02888	Additional Refs	ph10-S15	ph10-S16	ph10-S17	ph10-S18	ph10-S19
Order No: 24095	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 17/02/2023	DETS Sample No	631913	631914	631915	631916	631917

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6 : HS_1D_MS_AL	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8 : HS_1D_MS_AL	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic >C8 - C10 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C10 - C12 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C12 - C16 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C16 - C21 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C21 - C34 : EH_CU_1D_AL	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aliphatic (C5 - C34) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	< 21
Aromatic >C5 - C7 : HS_1D_MS_AR	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C7 - C8 : HS_1D_MS_AR	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic >C8 - C10 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C10 - C12 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	MCERTS	10	< 3	< 3	< 3	< 3
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	MCERTS	17	< 10	< 10	< 10	< 10
Aromatic (C5 - C35) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 21	NONE	27	< 21	< 21	< 21	< 21
Total >C5 - C35 : HS_1D_MS+EH_CU_1D_Total	mg/kg	< 42	NONE	< 42	< 42	< 42	< 42	< 42

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Soil Analysis Certificate - TPH CWG Banded						
DETS Report No: 23-01394	Date Sampled	24/01/23	24/01/23	24/01/23	24/01/23	24/01/23
Eurofins Chemtest Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: None Supplied	TP / BH No	1581577	1581578	1581579	1581580	1581581
Project / Job Ref: 23-02888	Additional Refs	ph10-S20	ph10-S21	ph10-S22	ph10-S23	ph10-S24
Order No: 24095	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 17/02/2023	DETS Sample No	631918	631919	631920	631921	631922

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6 : HS_1D_MS_AL	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8 : HS_1D_MS_AL	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic >C8 - C10 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2	16	< 2	< 2
Aliphatic >C10 - C12 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2	29	< 2	< 2
Aliphatic >C12 - C16 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3	< 3	30	< 3	< 3
Aliphatic >C16 - C21 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C21 - C34 : EH_CU_1D_AL	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aliphatic (C5 - C34) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 21	NONE	< 21	< 21	75	< 21	< 21
Aromatic >C5 - C7 : HS_1D_MS_AR	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C7 - C8 : HS_1D_MS_AR	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic >C8 - C10 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	2	< 2	< 2
Aromatic >C10 - C12 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	14	< 2	< 2
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	13	< 2	< 2
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	MCERTS	19	< 3	< 3	< 3	< 3
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	MCERTS	29	< 10	< 10	< 10	< 10
Aromatic (C5 - C35) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 21	NONE	48	< 21	29	< 21	< 21
Total >C5 - C35 : HS_1D_MS+EH_CU_1D_Total	mg/kg	< 42	NONE	48	< 42	104	< 42	< 42

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Soil Analysis Certificate - TPH CWG Banded						
DETS Report No: 23-01394	Date Sampled	24/01/23	24/01/23	24/01/23	24/01/23	
Eurofins Chemtest Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	
Site Reference: None Supplied	TP / BH No	1581582	1581583	1581584	1581585	
Project / Job Ref: 23-02888	Additional Refs	ph10-S25	ph10-S26	ph10-S27	ph10-S28	
Order No: 24095	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	
Reporting Date: 17/02/2023	DETS Sample No	631923	631924	631925	631926	

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6 : HS_1D_MS_AL	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	
Aliphatic >C6 - C8 : HS_1D_MS_AL	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
Aliphatic >C8 - C10 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	
Aliphatic >C10 - C12 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	
Aliphatic >C12 - C16 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	
Aliphatic >C16 - C21 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	
Aliphatic >C21 - C34 : EH_CU_1D_AL	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	
Aliphatic (C5 - C34) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	
Aromatic >C5 - C7 : HS_1D_MS_AR	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	
Aromatic >C7 - C8 : HS_1D_MS_AR	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
Aromatic >C8 - C10 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	
Aromatic >C10 - C12 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	
Aromatic (C5 - C35) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	
Total >C5 - C35 : HS_1D_MS+EH_CU_1D_Total	mg/kg	< 42	NONE	< 42	< 42	< 42	< 42	

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Soil Analysis Certificate - Sample Descriptions
DETS Report No: 23-01394
Eurofins Chemtest Ltd
Site Reference: None Supplied
Project / Job Ref: 23-02888
Order No: 24095
Reporting Date: 17/02/2023

DETS Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
631913	1581572	ph10-S15	None Supplied	11	Brown sandy clay with stones
631914	1581573	ph10-S16	None Supplied	18.2	Brown sandy clay with stones
631915	1581574	ph10-S17	None Supplied	16.1	Brown sandy clay with stones
631916	1581575	ph10-S18	None Supplied	13.1	Light brown sandy clay with stones
631917	1581576	ph10-S19	None Supplied	15.8	Brown sandy clay
631918	1581577	ph10-S20	None Supplied	14.8	Brown sandy clay with stones
631919	1581578	ph10-S21	None Supplied	15.2	Brown sandy clay with stones
631920	1581579	ph10-S22	None Supplied	11.5	Brown sandy clay with stones
631921	1581580	ph10-S23	None Supplied	9.3	Brown sandy clay with stones
631922	1581581	ph10-S24	None Supplied	14.3	Brown sandy clay with stones
631923	1581582	ph10-S25	None Supplied	9.8	Brown sandy clay with stones
631924	1581583	ph10-S26	None Supplied	13.4	Brown sandy clay with stones
631925	1581584	ph10-S27	None Supplied	14.1	Brown sandy clay with stones
631926	1581585	ph10-S28	None Supplied	17.5	Brown sandy clay with stones

Moisture content is part of procedure E003 & is not an accredited test

Insufficient Sample [I/S]

Unsuitable Sample [U/S]

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Soil Analysis Certificate - Methodology & Miscellaneous Information
DETS Report No: 23-01394
Eurofins Chemtest Ltd
Site Reference: None Supplied
Project / Job Ref: 23-02888
Order No: 24095
Reporting Date: 17/02/2023

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 – C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	Fraction Organic Carbon (FOC)	Determination of TOC by combustion analyser.	E027
Soil	D	Organic Matter (SOM)	Determination of TOC by combustion analyser.	E027
Soil	D	TOC (Total Organic Carbon)	Determination of TOC by combustion analyser.	E027
Soil	AR	Exchangeable Ammonium	Determination of ammonium by discrete analyser.	E029
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (ali: C5- C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

D Dried
AR As Received

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List of HWOL Acronyms and Operators
DETS Report No: 23-01394
Eurofins Chemtest Ltd
Site Reference: None Supplied
Project / Job Ref: 23-02888
Order No: 24095
Reporting Date: 17/02/2023

Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS_Total or EH_CU+HS_Total

Det - Acronym
TPH CWG - Aliphatic >C10 - C12 - EH_CU_1D_AL
TPH CWG - Aliphatic >C12 - C16 - EH_CU_1D_AL
TPH CWG - Aliphatic >C16 - C21 - EH_CU_1D_AL
TPH CWG - Aliphatic >C21 - C34 - EH_CU_1D_AL
TPH CWG - Aliphatic >C5 - C6 - HS_1D_MS_AL
TPH CWG - Aliphatic >C6 - C8 - HS_1D_MS_AL
TPH CWG - Aliphatic >C8 - C10 - EH_CU_1D_AL
TPH CWG - Aliphatic C5 - C34 - HS_1D_MS+EH_CU_1D_AL
TPH CWG - Aromatic >C10 - C12 - EH_CU_1D_AR
TPH CWG - Aromatic >C12 - C16 - EH_CU_1D_AR
TPH CWG - Aromatic >C16 - C21 - EH_CU_1D_AR
TPH CWG - Aromatic >C21 - C35 - EH_CU_1D_AR
TPH CWG - Aromatic >C5 - C35 - HS_1D_MS+EH_CU_1D_AR
TPH CWG - Aromatic >C5 - C7 - HS_1D_MS_AR
TPH CWG - Aromatic >C7 - C8 - HS_1D_MS_AR
TPH CWG - Aromatic >C8 - C10 - EH_CU_1D_AR
TPH CWG - Total >C5 - C35 - HS_1D_MS+EH_CU_1D_Total

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Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	23-01971-1
Initial Date of Issue:	31-Jan-2023
Client	Smith Grant LLP
Client Address:	Bryn Estyn Business Centre Bryn Estyn Road Wrexham LL13 9TY
Contact(s):	Scott Miller
Project	R1742b Heyford (Dorchester URL)

Quotation No.:	Q15-02887	**Date Received:**	23-Jan-2023
Order No.:		**Date Instructed:**	23-Jan-2023
No. of Samples:	15		
Turnaround (Wkdays):	5	**Results Due:**	27-Jan-2023
Date Approved:	31-Jan-2023		

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Soil

Project: R1742b Heyford (Dorchester URL)

Client: Smith Grant LLP				**Chemtest Job No.:**	23-01971	23-01971	23-01971	23-01971	23-01971	23-01971	23-01971	23-01971	23-01971
Quotation No.: Q15-02887				**Chemtest Sample ID.:**	1577764	1577765	1577766	1577767	1577768	1577769	1577770	1577771	1577772
				Client Sample ID.:	ASBPL-SS1	ASBPL-SS2	ASBPL-SS3	ASBPL-SS4	ASBPL-SS5	ASBPL-SS6	ASBPL-SS7	ASBPL-SS8	ASBPL-SS9
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Date Sampled:	09-Jan-2023	09-Jan-2023	09-Jan-2023	09-Jan-2023	09-Jan-2023	09-Jan-2023	09-Jan-2023	09-Jan-2023	09-Jan-2023
				Asbestos Lab:	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
ACM Type	U	2192		N/A	-	-	-	-	-	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020									
pH	U	2010		4.0									
Arsenic	U	2455	mg/kg	0.5									
Cadmium	U	2455	mg/kg	0.10									
Chromium	U	2455	mg/kg	0.5									
Copper	U	2455	mg/kg	0.50									
Mercury	U	2455	mg/kg	0.05									
Nickel	U	2455	mg/kg	0.50									
Lead	U	2455	mg/kg	0.50									
Selenium	U	2455	mg/kg	0.25									
Vanadium	U	2455	mg/kg	0.5									
Zinc	U	2455	mg/kg	0.50									
Chromium (Hexavalent)	N	2490	mg/kg	0.50									
Organic Matter	U	2625	%	0.40									
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0									
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0									
Aliphatic TPH >C8-C10	N	2680	mg/kg	1.0									
Aliphatic TPH >C10-C12	N	2680	mg/kg	1.0									
Aliphatic TPH >C12-C16	N	2680	mg/kg	1.0									
Aliphatic TPH >C16-C21	N	2680	mg/kg	1.0									
Aliphatic TPH >C21-C35	N	2680	mg/kg	1.0									
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0									
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0									
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0									
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0									
Aromatic TPH >C8-C10	N	2680	mg/kg	1.0									
Aromatic TPH >C10-C12	N	2680	mg/kg	1.0									
Aromatic TPH >C12-C16	N	2680	mg/kg	1.0									
Aromatic TPH >C16-C21	N	2680	mg/kg	1.0									
Aromatic TPH >C21-C35	N	2680	mg/kg	1.0									
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0									
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0									
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0									
Naphthalene	U	2700	mg/kg	0.10									
Acenaphthylene	U	2700	mg/kg	0.10									
Acenaphthene	U	2700	mg/kg	0.10									
Fluorene	U	2700	mg/kg	0.10									

Results - Soil

Project: R1742b Heyford (Dorchester URL)

Client: Smith Grant LLP				**Chemtest Job No.:**	23-01971	23-01971	23-01971	23-01971	23-01971	23-01971	23-01971	23-01971	23-01971
Quotation No.: Q15-02887				**Chemtest Sample ID.:**	1577764	1577765	1577766	1577767	1577768	1577769	1577770	1577771	1577772
				Client Sample ID.:	ASBPL-SS1	ASBPL-SS2	ASBPL-SS3	ASBPL-SS4	ASBPL-SS5	ASBPL-SS6	ASBPL-SS7	ASBPL-SS8	ASBPL-SS9
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Date Sampled:	09-Jan-2023	09-Jan-2023	09-Jan-2023	09-Jan-2023	09-Jan-2023	09-Jan-2023	09-Jan-2023	09-Jan-2023	09-Jan-2023
				Asbestos Lab:	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Phenanthrene	U	2700	mg/kg	0.10									
Anthracene	U	2700	mg/kg	0.10									
Fluoranthene	U	2700	mg/kg	0.10									
Pyrene	U	2700	mg/kg	0.10									
Benzo[a]anthracene	U	2700	mg/kg	0.10									
Chrysene	U	2700	mg/kg	0.10									
Benzo[b]fluoranthene	U	2700	mg/kg	0.10									
Benzo[k]fluoranthene	U	2700	mg/kg	0.10									
Benzo[a]pyrene	U	2700	mg/kg	0.10									
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10									
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10									
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10									
Total Of 16 PAH's	U	2700	mg/kg	2.0									
Benzene	U	2760	µg/kg	1.0									
Toluene	U	2760	µg/kg	1.0									
Ethylbenzene	U	2760	µg/kg	1.0									
m & p-Xylene	U	2760	µg/kg	1.0									
o-Xylene	U	2760	µg/kg	1.0									

Results - Soil

Project: R1742b Heyford (Dorchester URL)

Client: Smith Grant LLP	Chemtest Job No.:				23-01971	23-01971	23-01971	23-01971	23-01971	23-01971
Quotation No.: Q15-02887	Chemtest Sample ID.:				1577773	1577774	1577775	1577776	1577777	1577778
	Client Sample ID.:				ASBPL-SS10	ASBPL-SS11	ASBPL-SS12	JTP8-TS1	JTP8-TS2	JTP8-TS3
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Date Sampled:				09-Jan-2023	09-Jan-2023	09-Jan-2023	09-Jan-2023	09-Jan-2023	09-Jan-2023
	Asbestos Lab:				NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**Accred.**	**SOP**	**Units**	**LOD**						
ACM Type	U	2192		N/A	-	-	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020				16	18	18
pH	U	2010		4.0				8.1	8.0	8.0
Arsenic	U	2455	mg/kg	0.5				16	18	14
Cadmium	U	2455	mg/kg	0.10				0.29	0.34	0.27
Chromium	U	2455	mg/kg	0.5				24	25	21
Copper	U	2455	mg/kg	0.50				15	17	13
Mercury	U	2455	mg/kg	0.05				0.05	< 0.05	< 0.05
Nickel	U	2455	mg/kg	0.50				19	20	16
Lead	U	2455	mg/kg	0.50				38	39	34
Selenium	U	2455	mg/kg	0.25				0.60	0.73	0.59
Vanadium	U	2455	mg/kg	0.5				46	46	40
Zinc	U	2455	mg/kg	0.50				60	63	52
Chromium (Hexavalent)	N	2490	mg/kg	0.50				< 0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40				6.2	5.1	5.9
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0				< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0				< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	N	2680	mg/kg	1.0				< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	N	2680	mg/kg	1.0				< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	N	2680	mg/kg	1.0				< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	N	2680	mg/kg	1.0				< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	N	2680	mg/kg	1.0				< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0				< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0				< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0				< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0				< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	N	2680	mg/kg	1.0				< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	N	2680	mg/kg	1.0				< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	N	2680	mg/kg	1.0				< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	N	2680	mg/kg	1.0				< 1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	N	2680	mg/kg	1.0				< 1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0				< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0				< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0				< 10	< 10	< 10
Naphthalene	U	2700	mg/kg	0.10				< 0.10	< 0.10	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10				< 0.10	< 0.10	< 0.10
Acenaphthene	U	2700	mg/kg	0.10				< 0.10	< 0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10				< 0.10	< 0.10	< 0.10

Results - Soil

Project: R1742b Heyford (Dorchester URL)

Client: Smith Grant LLP				**Chemtest Job No.:**	23-01971	23-01971	23-01971	23-01971	23-01971	23-01971
Quotation No.: Q15-02887				**Chemtest Sample ID.:**	1577773	1577774	1577775	1577776	1577777	1577778
				Client Sample ID.:	ASBPL-SS10	ASBPL-SS11	ASBPL-SS12	JTP8-TS1	JTP8-TS2	JTP8-TS3
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Date Sampled:	09-Jan-2023	09-Jan-2023	09-Jan-2023	09-Jan-2023	09-Jan-2023	09-Jan-2023
				Asbestos Lab:	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**Accred.**	**SOP**	**Units**	**LOD**						
Phenanthrene	U	2700	mg/kg	0.10				2.8	1.5	0.64
Anthracene	U	2700	mg/kg	0.10				0.87	0.42	0.19
Fluoranthene	U	2700	mg/kg	0.10				7.6	3.5	2.2
Pyrene	U	2700	mg/kg	0.10				7.5	3.5	2.3
Benzo[a]anthracene	U	2700	mg/kg	0.10				3.5	1.5	1.2
Chrysene	U	2700	mg/kg	0.10				4.4	2.4	1.9
Benzo[b]fluoranthene	U	2700	mg/kg	0.10				4.7	2.9	2.2
Benzo[k]fluoranthene	U	2700	mg/kg	0.10				1.6	0.90	0.67
Benzo[a]pyrene	U	2700	mg/kg	0.10				3.3	2.0	1.4
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10				2.3	1.4	1.0
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10				0.56	0.39	0.23
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10				1.9	1.3	0.90
Total Of 16 PAH's	U	2700	mg/kg	2.0				41	22	15
Benzene	U	2760	µg/kg	1.0				< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0				< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0				< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0				< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0				< 1.0	< 1.0	< 1.0

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

UKAS TESTING 2183

Final Report

Report No.:	23-02888-1
Initial Date of Issue:	20-Feb-2023
Client	Smith Grant LLP
Client Address:	Bryn Estyn Business Centre Bryn Estyn Road Wrexham LL13 9TY
Contact(s):	Dan Wayland
Project	R1742b Heyford Park - Phase 10

Quotation No.:		**Date Received:**	30-Jan-2023
Order No.:		**Date Instructed:**	30-Jan-2023
No. of Samples:	14		
Turnaround (Wkdays):	5	**Results Due:**	03-Feb-2023
Date Approved:	17-Feb-2023	**Subcon Results Due:**	20-Feb-2023

Approved By:

[redacted]

Details:	Stuart Henderson, Technical Manager

Results - Soil

Project: R1742b Heyford Park - Phase 10

Client: Smith Grant LLP				**Chemtest Job No.:**	23-02888	23-02888	23-02888	23-02888	23-02888	23-02888	23-02888	23-02888	23-02888
Quotation No.:				**Chemtest Sample ID.:**	1581572	1581573	1581574	1581575	1581576	1581577	1581578	1581579	1581580
				Sample Location:	ph10-S15	ph10-S16	ph10-S17	ph10-S18	ph10-S19	ph10-S20	ph10-S21	ph10-S22	ph10-S23
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Date Sampled:	24-Jan-2023	24-Jan-2023	24-Jan-2023	24-Jan-2023	24-Jan-2023	24-Jan-2023	24-Jan-2023	24-Jan-2023	24-Jan-2023
				Asbestos Lab:	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
EPH Aro Ali Soils	SN		µg/kg	20	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached
VPH Aro Ali Soils	SN		µg/kg	20	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached
ACM Type	U	2192		N/A	-	-	-	-	-	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	11	14	16	13	16	12	15	15	13
pH	U	2010		4.0	8.0	8.1	8.0	8.1	8.0	8.0	8.3	8.3	8.2
Arsenic	U	2455	mg/kg	0.5	< 0.5	9.9	11	21	20	12	25	16	13
Cadmium	U	2455	mg/kg	0.10	< 0.10	0.23	0.15	0.24	0.36	0.22	0.27	0.11	0.37
Chromium	U	2455	mg/kg	0.5	< 0.5	15	15	28	42	40	68	24	48
Copper	U	2455	mg/kg	0.50	< 0.50	9.0	5.6	12	15	9.6	16	5.5	12
Mercury	U	2455	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	U	2455	mg/kg	0.50	0.52	12	12	22	28	32	44	12	26
Lead	U	2455	mg/kg	0.50	0.84	13	9.8	21	35	21	20	7.4	70
Selenium	U	2455	mg/kg	0.25	< 0.25	0.74	0.46	0.81	0.97	0.62	1.2	0.60	0.70
Vanadium	U	2455	mg/kg	0.5	0.9	29	32	52	56	33	77	29	36
Zinc	U	2455	mg/kg	0.50	1.5	29	20	44	140	64	52	25	110
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40	2.7	2.2	3.0	1.4	2.3	2.8	2.0	1.1	2.8
Naphthalene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	1.7	1.2	< 0.10	0.38	0.47	1.2	< 0.10	< 0.10	< 0.10
Anthracene	U	2700	mg/kg	0.10	0.50	0.27	< 0.10	0.17	0.10	0.50	< 0.10	< 0.10	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	4.3	1.7	< 0.10	0.60	1.0	4.1	6.2	1.4	2.7
Pyrene	U	2700	mg/kg	0.10	4.3	1.8	< 0.10	0.65	1.1	4.4	7.2	1.6	3.3
Benzo[a]anthracene	U	2700	mg/kg	0.10	2.2	1.0	< 0.10	< 0.10	0.68	2.4	< 0.10	< 0.10	1.1
Chrysene	U	2700	mg/kg	0.10	2.6	1.2	< 0.10	< 0.10	0.74	3.1	< 0.10	< 0.10	2.0
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	3.2	1.3	< 0.10	< 0.10	0.99	4.1	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	1.2	0.52	< 0.10	< 0.10	0.41	1.6	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	2.3	0.82	< 0.10	< 0.10	0.62	3.0	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	1.8	0.52	< 0.10	< 0.10	0.42	2.2	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	0.75	0.65	< 0.10	< 0.10	0.58	0.84	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	1.7	0.63	< 0.10	< 0.10	0.42	2.3	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	27	12	< 2.0	< 2.0	7.5	30	13	3.0	9.1
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	150	< 1.0

Results - Soil

Project: R1742b Heyford Park - Phase 10

Client: Smith Grant LLP				**Chemtest Job No.:**	23-02888	23-02888	23-02888	23-02888	23-02888	23-02888	23-02888	23-02888	23-02888
Quotation No.:				**Chemtest Sample ID.:**	1581572	1581573	1581574	1581575	1581576	1581577	1581578	1581579	1581580
				Sample Location:	ph10-S15	ph10-S16	ph10-S17	ph10-S18	ph10-S19	ph10-S20	ph10-S21	ph10-S22	ph10-S23
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Date Sampled:	24-Jan-2023	24-Jan-2023	24-Jan-2023	24-Jan-2023	24-Jan-2023	24-Jan-2023	24-Jan-2023	24-Jan-2023	24-Jan-2023
				Asbestos Lab:	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	33	< 1.0

Results - Soil

Project: R1742b Heyford Park - Phase 10

Client: Smith Grant LLP				**Chemtest Job No.:**	23-02888	23-02888	23-02888	23-02888	23-02888
Quotation No.:				**Chemtest Sample ID.:**	1581581	1581582	1581583	1581584	1581585
				Sample Location:	ph10-S24	ph10-S25	ph10-S26	ph10-S27	ph10-S28
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL
				Date Sampled:	24-Jan-2023	24-Jan-2023	24-Jan-2023	24-Jan-2023	24-Jan-2023
				Asbestos Lab:	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**					
EPH Aro Ali Soils	SN		µg/kg	20	See Attached	See Attached	See Attached	See Attached	See Attached
VPH Aro Ali Soils	SN		µg/kg	20	See Attached	See Attached	See Attached	See Attached	See Attached
ACM Type	U	2192		N/A	-	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	13	14	15	13	18
pH	U	2010		4.0	8.3	8.1	8.2	8.2	8.3
Arsenic	U	2455	mg/kg	0.5	6.0	27	13	13	7.5
Cadmium	U	2455	mg/kg	0.10	0.13	0.27	0.24	0.13	0.10
Chromium	U	2455	mg/kg	0.5	21	37	17	18	12
Copper	U	2455	mg/kg	0.50	5.9	14	10	6.5	4.5
Mercury	U	2455	mg/kg	0.05	< 0.05	0.05	< 0.05	< 0.05	< 0.05
Nickel	U	2455	mg/kg	0.50	14	30	14	14	11
Lead	U	2455	mg/kg	0.50	7.6	21	26	12	7.0
Selenium	U	2455	mg/kg	0.25	0.52	1.1	0.52	0.50	0.37
Vanadium	U	2455	mg/kg	0.5	18	68	34	32	19
Zinc	U	2455	mg/kg	0.50	16	54	39	27	16
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40	2.3	4.2	1.9	1.8	1.9
Naphthalene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	< 0.10	1.8	< 0.10	< 0.10	< 0.10
Anthracene	U	2700	mg/kg	0.10	< 0.10	0.58	< 0.10	< 0.10	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	0.88	4.8	< 0.10	< 0.10	< 0.10
Pyrene	U	2700	mg/kg	0.10	0.83	4.6	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	2.3	< 0.10	< 0.10	< 0.10
Chrysene	U	2700	mg/kg	0.10	< 0.10	2.9	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	3.2	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	1.4	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	2.4	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0	24	< 2.0	< 2.0	< 2.0
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: R1742b Heyford Park - Phase 10

Client: Smith Grant LLP				**Chemtest Job No.:**	23-02888	23-02888	23-02888	23-02888	23-02888
Quotation No.:				**Chemtest Sample ID.:**	1581581	1581582	1581583	1581584	1581585
				Sample Location:	ph10-S24	ph10-S25	ph10-S26	ph10-S27	ph10-S28
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL
				Date Sampled:	24-Jan-2023	24-Jan-2023	24-Jan-2023	24-Jan-2023	24-Jan-2023
				Asbestos Lab:	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**					
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by ‘Aquakem 600’ Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	23-02900-1		
Initial Date of Issue:	07-Feb-2023		
Client	Smith Grant LLP		
Client Address:	Bryn Estyn Business Centre Bryn Estyn Road Wrexham LL13 9TY		
Contact(s):	Dan Wayland		
Project	R1742b Heyford Park - Phase 10		
Quotation No.:		**Date Received:**	31-Jan-2023
Order No.:		**Date Instructed:**	31-Jan-2023
No. of Samples:	6		
Turnaround (Wkdays):	10	**Results Due:**	13-Feb-2023
Date Approved:	07-Feb-2023		

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Soil

Project: R1742b Heyford Park - Phase 10

Client: Smith Grant LLP				**Chemtest Job No.:**	23-02900	23-02900	23-02900	23-02900	23-02900	23-02900
Quotation No.:				**Chemtest Sample ID.:**	1581608	1581609	1581610	1581611	1581612	1581613
Order No.:				Client Sample Ref.:	Inter-SS1	Inter-SS2	Inter-SS4	Inter-SS5	Inter-SS6	Inter-SS7
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Date Sampled:	25-Jan-2023	25-Jan-2023	25-Jan-2023	25-Jan-2023	25-Jan-2023	25-Jan-2023
Determinand	**Accred.**	**SOP**	**Units**	**LOD**						
Moisture	N	2030	%	0.020	16	21	15	19	14	22
Aliphatic VPH >C5-C6	U	2780	mg/kg	0.05	< 0.05	0.13	0.12	< 0.05	0.12	< 0.05
Aliphatic VPH >C6-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12	U	2690	mg/kg	2.00	2.5	2.1	2.9	2.1	< 2.0	< 2.0
Aliphatic EPH >C12-C16	U	2690	mg/kg	1.00	3.1	2.5	4.5	3.4	2.2	2.1
Aliphatic EPH >C16-C21	U	2690	mg/kg	2.00	3.5	3.0	4.8	3.0	2.9	3.0
Aliphatic EPH >C21-C35	U	2690	mg/kg	3.00	6.5	6.6	8.5	5.9	6.0	5.5
Aliphatic EPH >C35-C40	N	2690	mg/kg	1.00	2.0	2.0	1.5	1.5	2.4	1.7
Total Aliphatic EPH >C10-C35	U	2690	mg/kg	5.00	16	14	21	14	13	12
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10.00	18	16	22	16	15	14
Aromatic VPH >C5-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	U	2690	mg/kg	1.00	18	16	15	16	15	13
Aromatic EPH >C12-C16	U	2690	mg/kg	1.00	23	22	18	21	16	16
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	24	26	25	27	24	23
Aromatic EPH >C21-C35	U	2690	mg/kg	2.00	< 2.0	< 2.0	3.9	3.1	< 2.0	3.6
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	26	19	16	19	13	17
Total Aromatic EPH >C10-C35	U	2690	mg/kg	5.00	67	65	62	67	57	56
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10.00	93	84	77	86	71	73
Total VPH >C5-C10	U	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35	U	2690	mg/kg	10.00	83	80	82	81	70	68
Total EPH >C10-C40	N	2690	mg/kg	10.00	110	100	100	100	86	87
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Test Methods

SOP	Title	Parameters included	Method summary
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35–C40	Acetone/Heptane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection

Report Information

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<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

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None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

UKAS TESTING 2183

Final Report

Report No.:	23-02988-1		
Initial Date of Issue:	08-Feb-2023		
Client	Smith Grant LLP		
Client Address:	Bryn Estyn Business Centre Bryn Estyn Road Wrexham LL13 9TY		
Contact(s):	Scott Miller		
Project	R17426 Heyford (URL Dorchester)		
Quotation No.:	Q15-02887	**Date Received:**	31-Jan-2023
Order No.:		**Date Instructed:**	31-Jan-2023
No. of Samples:	15		
Turnaround (Wkdays):	10	**Results Due:**	13-Feb-2023
Date Approved:	08-Feb-2023		

Approved By:

[redacted]

Details:	Stuart Henderson, Technical Manager

Results - Soil

Project: R17426 Heyford (URL Dorchester)

Client: Smith Grant LLP				**Chemtest Job No.:**	23-02988	23-02988	23-02988	23-02988	23-02988	23-02988	23-02988	23-02988	23-02988
Quotation No.: Q15-02887				**Chemtest Sample ID.:**	1582000	1582001	1582002	1582003	1582004	1582005	1582006	1582007	1582008
				Client Sample ID.:	Inter-SS3	Inter-SS8	Inter-SS9	Inter-SS10	Inter-SS11	Inter-SS12	Inter-SS13	Inter-SS14	Inter-SS15
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	3.1	2.6	1.5	1.6	2.6	3.1	1.4	1.6	1.6
				Bottom Depth (m):			2.6	2.4			2.5	2.8	2.6
				Date Sampled:	26-Jan-2023	25-Jan-2023	25-Jan-2023	25-Jan-2023	25-Jan-2023	26-Jan-2023	26-Jan-2023	26-Jan-2023	26-Jan-2023
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Moisture	N	2030	%	0.020	11	14	12	13	13	13	9.5	8.2	12
Aliphatic VPH >C5-C6	U	2780	mg/kg	0.05	0.14	0.14	0.13	0.13	0.15	0.15	0.14	0.12	0.13
Aliphatic VPH >C6-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.21	< 0.05	< 0.05
Aliphatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C8-C10	U	2780	mg/kg	0.05	0.19	0.27	0.17	0.24	0.26	0.38	0.16	0.18	0.19
Total Aliphatic VPH >C5-C10	U	2780	mg/kg	0.25	0.33	0.41	0.30	0.37	0.41	0.53	0.51	0.30	0.32
Aliphatic EPH >C10-C12	U	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	9.0	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C12-C16	U	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	100	< 1.0	< 1.0	< 1.0
Aliphatic EPH >C16-C21	U	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	84	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C21-C35	U	2690	mg/kg	3.00	3.7	< 3.0	< 3.0	< 3.0	< 3.0	8.4	< 3.0	< 3.0	< 3.0
Aliphatic EPH >C35-C40	N	2690	mg/kg	1.00	< 1.0	< 1.0	1.1	< 1.0	< 1.0	< 1.0	1.0	< 1.0	< 1.0
Total Aliphatic EPH >C10-C35	U	2690	mg/kg	5.00	6.6	< 5.0	< 5.0	< 5.0	< 5.0	210	< 5.0	< 5.0	< 5.0
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10	< 10	210	< 10	< 10	< 10
Aromatic VPH >C5-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	U	2690	mg/kg	1.00	1.3	< 1.0	< 1.0	1.2	< 1.0	1.6	< 1.0	< 1.0	< 1.0
Aromatic EPH >C12-C16	U	2690	mg/kg	1.00	1.2	1.1	1.4	2.1	< 1.0	17	< 1.0	1.2	1.6
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	2.9	2.1	2.9	< 2.0	3.0	6.5	3.4	2.5	< 2.0
Aromatic EPH >C21-C35	U	2690	mg/kg	2.00	< 2.0	< 2.0	4.1	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	1.5	2.9	2.4	2.6	2.1	3.0	1.9	1.6	2.1
Total Aromatic EPH >C10-C35	U	2690	mg/kg	5.00	5.8	< 5.0	9.0	5.1	< 5.0	25	< 5.0	< 5.0	< 5.0
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10.00	< 10	< 10	11	< 10	< 10	28	< 10	< 10	< 10
Total VPH >C5-C10	U	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.53	0.51	< 0.50	< 0.50
Total EPH >C10-C35	U	2690	mg/kg	10.00	12	< 10	14	< 10	< 10	230	< 10	< 10	< 10
Total EPH >C10-C40	N	2690	mg/kg	10.00	< 10	< 10	11	< 10	< 10	230	< 10	< 10	< 10
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: R17426 Heyford (URL Dorchester)

Client: Smith Grant LLP				**Chemtest Job No.:**	23-02988	23-02988	23-02988	23-02988	23-02988	23-02988
Quotation No.: Q15-02887				**Chemtest Sample ID.:**	1582009	1582010	1582011	1582012	1582013	1582014
				Client Sample ID.:	CH-Cell 1-SS1	CH-Cell 1-SS2	CH-Cell 1-SS3	CH-Cell 1-SS4	CH-Cell 1-SS5	CH-Cell 1-SS6
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	1.4	1.4	1.4	1.4	1.4	1.4
				Bottom Depth (m):	2.0	1.9	1.9	1.9	2.0	2.0
				Date Sampled:	26-Jan-2023	26-Jan-2023	27-Jan-2023	27-Jan-2023	27-Jan-2023	27-Jan-2023
Determinand	**Accred.**	**SOP**	**Units**	**LOD**						
Moisture	N	2030	%	0.020	9.6	9.5	10	8.9	8.8	8.3
Aliphatic VPH >C5-C6	U	2780	mg/kg	0.05	0.13	0.13	0.14	0.14	0.13	0.13
Aliphatic VPH >C6-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12	U	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C12-C16	U	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	1.5	2.5	1.4
Aliphatic EPH >C16-C21	U	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C21-C35	U	2690	mg/kg	3.00	< 3.0	< 3.0	< 3.0	3.1	< 3.0	< 3.0
Aliphatic EPH >C35-C40	N	2690	mg/kg	1.00	< 1.0	< 1.0	1.1	< 1.0	< 1.0	< 1.0
Total Aliphatic EPH >C10-C35	U	2690	mg/kg	5.00	< 5.0	< 5.0	< 5.0	8.1	8.5	< 5.0
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10	< 10	< 10
Aromatic VPH >C5-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	U	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	1.1	< 1.0	1.2
Aromatic EPH >C12-C16	U	2690	mg/kg	1.00	< 1.0	< 1.0	1.1	2.4	1.6	1.6
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	2.3	3.2	2.0	3.1	4.4	4.4
Aromatic EPH >C21-C35	U	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	4.0	3.1	< 2.0
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	1.7	2.1	1.6	< 1.0	2.3	5.9
Total Aromatic EPH >C10-C35	U	2690	mg/kg	5.00	< 5.0	< 5.0	< 5.0	11	9.8	8.9
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10.00	< 10	< 10	< 10	11	12	15
Total VPH >C5-C10	U	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35	U	2690	mg/kg	10.00	< 10	< 10	< 10	19	18	14
Total EPH >C10-C40	N	2690	mg/kg	10.00	< 10	< 10	< 10	11	12	15
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Test Methods

SOP	Title	Parameters included	Method summary
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35–C40	Acetone/Heptane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com

Eurofins Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

UKAS TESTING 2183

Amended Report

Report No.:	23-02990-2		
Initial Date of Issue:	03-Feb-2023	**Date of Re-Issue:**	06-Feb-2023
Client	Smith Grant LLP		
Client Address:	Bryn Estyn Business Centre Bryn Estyn Road Wrexham LL13 9TY		
Contact(s):	Scott Miller		
Project	R1742b Heyford (Dorchester URL)		
Quotation No.:	Q15-02887	**Date Received:**	31-Jan-2023
Order No.:		**Date Instructed:**	31-Jan-2023
No. of Samples:	12		
Turnaround (Wkdays):	9	**Results Due:**	10-Feb-2023
Date Approved:	06-Feb-2023		
Approved By:			

[redacted]

Details:	Stuart Henderson, Technical Manager

Results - Soil

Project: R1742b Heyford (Dorchester URL)

Client: Smith Grant LLP				**Chemtest Job No.:**	23-02990	23-02990	23-02990	23-02990	23-02990	23-02990	23-02990	23-02990	23-02990
Quotation No.: Q15-02887				**Chemtest Sample ID.:**	1582016	1582017	1582018	1582019	1582020	1582021	1582022	1582023	1582024
				Client Sample ID.:	Agg-SP1-S1	Agg-SP1-S2	Agg-SP1-S3	Agg-SP1-S4	Agg-SP1-S5	Agg-SP1-S6	Agg-SP1-S7	Agg-SP1-S8	Agg-SP1-S9
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Date Sampled:	27-Jan-2023	27-Jan-2023	27-Jan-2023	27-Jan-2023	27-Jan-2023	27-Jan-2023	27-Jan-2023	27-Jan-2023	27-Jan-2023
				Asbestos Lab:	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
ACM Type	U	2192		N/A	-	Fibres/Clumps	-	-	-	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	Chrysotile Crocidolite	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Asbestos by Gravimetry	U	2192	%	0.001		0.003							
Total Asbestos	U	2192	%	0.001		0.003							

Results - Soil

Project: R1742b Heyford (Dorchester URL)

Client: Smith Grant LLP				**Chemtest Job No.:**	23-02990	23-02990	23-02990
Quotation No.: Q15-02887				**Chemtest Sample ID.:**	1582025	1582026	1582027
				Client Sample ID.:	Agg-SP1-S10	Agg-SP2-S1	Agg-SP2-S2
				Sample Type:	SOIL	SOIL	SOIL
				Date Sampled:	27-Jan-2023	27-Jan-2023	27-Jan-2023
				Asbestos Lab:	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**Accred.**	**SOP**	**Units**	**LOD**			
ACM Type	U	2192		N/A	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Asbestos by Gravimetry	U	2192	%	0.001			
Total Asbestos	U	2192	%	0.001			

Test Methods

SOP	Title	Parameters included	Method summary
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

UKAS TESTING 2183

eurofins | Chemtest

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	23-03626-1		
Initial Date of Issue:	15-Feb-2023		
Client	Smith Grant LLP		
Client Address:	Bryn Estyn Business Centre Bryn Estyn Road Wrexham LL13 9TY		
Contact(s):	Dan Wayland		
Project	R1742b Heyford Park Ph10		
Quotation No.:		**Date Received:**	03-Feb-2023
Order No.:		**Date Instructed:**	03-Feb-2023
No. of Samples:	10		
Turnaround (Wkdays):	10	**Results Due:**	16-Feb-2023
Date Approved:	15-Feb-2023		
Approved By:			

[redacted]

Details:	Stuart Henderson, Technical Manager

Results - Soil

Project: R1742b Heyford Park Ph10

Client: Smith Grant LLP	Chemtest Job No.:				23-03626	23-03626	23-03626	23-03626	23-03626	23-03626	23-03626	23-03626	23-03626
Quotation No.:	Chemtest Sample ID.:				1584407	1584408	1584409	1584410	1584411	1584412	1584413	1584414	1584415
	Sample Location:				CH5-Cell1-S1	CH5-Cell2-S1	CH5-Cell2-S2	CH5-Cell2-SS1	CH5-Cell2-SS2	CH5-Cell2-SS3	CH5-Cell2-SS4	CH5-Cell2-SS5	CH5-Cell2-SS6
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):							1.9	1.9	1.9	1.9	1.9	1.6
	Bottom Depth (m):							2.6	2.4	2.4	2.4	2.4	1.9
	Date Sampled:				31-Jan-2023	31-Jan-2023	31-Jan-2023	31-Jan-2023	31-Jan-2023	31-Jan-2023	31-Jan-2023	31-Jan-2023	01-Feb-2023
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Moisture	N	2030	%	0.020	14	11	15	14	13	12	14	15	14
Aliphatic VPH >C5-C6	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12	U	2690	mg/kg	2.00	2.1	< 2.0	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C12-C16	U	2690	mg/kg	1.00	3.0	2.5	2.6	2.7	2.3	2.3	2.2	2.4	2.5
Aliphatic EPH >C16-C21	U	2690	mg/kg	2.00	3.7	4.7	3.5	2.8	2.4	2.2	3.0	2.7	2.5
Aliphatic EPH >C21-C35	U	2690	mg/kg	3.00	5.5	5.4	5.3	4.9	4.5	4.9	4.8	4.9	4.3
Aliphatic EPH >C35-C40	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Total Aliphatic EPH >C10-C35	U	2690	mg/kg	5.00	14	14	13	12	11	11	12	11	11
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10.00	14	14	13	12	11	11	12	11	11
Aromatic VPH >C5-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	U	2690	mg/kg	1.00	13	12	12	12	11	9.7	11	11	11
Aromatic EPH >C12-C16	U	2690	mg/kg	1.00	20	14	17	20	18	18	19	16	19
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	21	19	22	18	18	18	18	18	14
Aromatic EPH >C21-C35	U	2690	mg/kg	2.00	5.0	12	16	3.6	3.6	5.2	< 2.0	< 2.0	4.0
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	8.9	9.5	9.3	9.3	8.5	8.4	9.4	8.8	11
Total Aromatic EPH >C10-C35	U	2690	mg/kg	5.00	60	57	67	53	51	50	50	46	48
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10.00	68	67	77	63	59	59	59	55	58
Total VPH >C5-C10	U	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35	U	2690	mg/kg	10.00	74	71	81	65	62	62	61	57	59
Total EPH >C10-C40	N	2690	mg/kg	10.00	83	81	90	75	70	70	71	66	69
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: R1742b Heyford Park Ph10

Client: Smith Grant LLP	**Chemtest Job No.:**				23-03626
Quotation No.:	**Chemtest Sample ID.:**				1584416
	Sample Location:				CH5-Cell2-SS7
	Sample Type:				SOIL
	Top Depth (m):				1.8
	Bottom Depth (m):				2.0
	Date Sampled:				01-Feb-2023
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Moisture	N	2030	%	0.020	14
Aliphatic VPH >C5-C6	U	2780	mg/kg	0.05	0.13
Aliphatic VPH >C6-C7	U	2780	mg/kg	0.05	0.15
Aliphatic VPH >C7-C8	U	2780	mg/kg	0.05	0.47
Aliphatic VPH >C8-C10	U	2780	mg/kg	0.05	2.2
Total Aliphatic VPH >C5-C10	U	2780	mg/kg	0.25	2.9
Aliphatic EPH >C10-C12	U	2690	mg/kg	2.00	8.6
Aliphatic EPH >C12-C16	U	2690	mg/kg	1.00	4.7
Aliphatic EPH >C16-C21	U	2690	mg/kg	2.00	2.3
Aliphatic EPH >C21-C35	U	2690	mg/kg	3.00	5.0
Aliphatic EPH >C35-C40	N	2690	mg/kg	10.00	< 10
Total Aliphatic EPH >C10-C35	U	2690	mg/kg	5.00	21
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10.00	21
Aromatic VPH >C5-C7	U	2780	mg/kg	0.05	< 0.05
Aromatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05
Aromatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05
Total Aromatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25
Aromatic EPH >C10-C12	U	2690	mg/kg	1.00	12
Aromatic EPH >C12-C16	U	2690	mg/kg	1.00	16
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	18
Aromatic EPH >C21-C35	U	2690	mg/kg	2.00	5.8
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	9.4
Total Aromatic EPH >C10-C35	U	2690	mg/kg	5.00	52
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10.00	61
Total VPH >C5-C10	U	2780	mg/kg	0.50	2.9
Total EPH >C10-C35	U	2690	mg/kg	10.00	73
Total EPH >C10-C40	N	2690	mg/kg	10.00	82
Benzene	U	2760	µg/kg	1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0

Test Methods

SOP	Title	Parameters included	Method summary
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35–C40	Acetone/Heptane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

UKAS TESTING 2183

eurofins Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	23-03818-1		
Initial Date of Issue:	21-Feb-2023		
Client	Smith Grant LLP		
Client Address:	Bryn Estyn Business Centre Bryn Estyn Road Wrexham LL13 9TY		
Contact(s):	Dan Wayland Scott Miller		
Project	R1742b Heyford (URL Dorchester)		
Quotation No.:	Q15-02887	**Date Received:**	06-Feb-2023
Order No.:		**Date Instructed:**	06-Feb-2023
No. of Samples:	9		
Turnaround (Wkdays):	10	**Results Due:**	17-Feb-2023
Date Approved:	21-Feb-2023		
Approved By:			

[redacted]

Details:	Stuart Henderson, Technical Manager

Results - Soil

Project: R1742b Heyford (URL Dorchester)

Client: Smith Grant LLP				**Chemtest Job No.:**	23-03818	23-03818	23-03818	23-03818	23-03818	23-03818	23-03818	23-03818	23-03818
Quotation No.: Q15-02887				**Chemtest Sample ID.:**	1585429	1585430	1585431	1585432	1585433	1585434	1585435	1585436	1585437
				Client Sample ID.:	CHS- Cell 3 - SS1	CHS- Cell 3 - SS2	CHS- Cell 3 - SS3	CHS- Cell 3 - SS4	CHS- Cell 3 - SS5	CHS- Cell 3 - S1	CHS- Cell 3 - S2	CHS- Cell 4 - SS1	CHS- Cell 4 - SS2
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	1.2	1.2	1.2	1.2	1.2	1.2	1.2	2.0	2.0
				Bottom Depth (m):	1.8	1.8	1.8	1.9	1.9	1.9	1.9	2.5	2.5
				Date Sampled:	01-Feb-2023	01-Feb-2023	01-Feb-2023	01-Feb-2023	01-Feb-2023	01-Feb-2023	01-Feb-2023	02-Feb-2023	02-Feb-2023
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Moisture	N	2030	%	0.020	11	14	10	14	12	23	13	9.9	11
Aliphatic VPH >C5-C6	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12	U	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C12-C16	U	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic EPH >C16-C21	U	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C21-C35	U	2690	mg/kg	3.00	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	4.8	< 3.0	< 3.0	< 3.0
Aliphatic EPH >C35-C40	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Total Aliphatic EPH >C10-C35	U	2690	mg/kg	5.00	< 5.0	< 5.0	< 5.0	< 5.0	5.1	7.5	< 5.0	< 5.0	< 5.0
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Aromatic VPH >C5-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	U	2690	mg/kg	1.00	3.0	2.5	3.0	2.5	2.8	3.2	2.8	2.3	3.2
Aromatic EPH >C12-C16	U	2690	mg/kg	1.00	4.6	4.8	4.5	4.8	4.6	6.5	4.8	4.6	4.7
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	13	12	13	12	13	14	15	12	12
Aromatic EPH >C21-C35	U	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	2.5	2.3	2.4	2.3	2.5	3.8	3.3	2.6	3.9
Total Aromatic EPH >C10-C35	U	2690	mg/kg	5.00	20	20	20	20	21	25	22	19	20
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10.00	23	22	22	22	23	28	26	22	24
Total VPH >C5-C10	U	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35	U	2690	mg/kg	10.00	25	24	25	24	26	32	27	24	25
Total EPH >C10-C40	N	2690	mg/kg	10.00	23	22	22	22	23	36	26	26	24
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Test Methods

SOP	Title	Parameters included	Method summary
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35–C40	Acetone/Heptane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection

Report Information

Key

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N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
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I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

UKAS TESTING 2183

Amended Report

Report No.:	23-03827-2		
Initial Date of Issue:	22-Feb-2023	**Date of Re-Issue:**	07-Mar-2023
Client	Smith Grant LLP		
Client Address:	Bryn Estyn Business Centre Bryn Estyn Road Wrexham LL13 9TY		
Contact(s):	Dan Wayland Scott Miller		
Project	R1742b		
Quotation No.:		**Date Received:**	06-Feb-2023
Order No.:	Heyford (URL Dorchester)	**Date Instructed:**	06-Feb-2023
No. of Samples:	13		
Turnaround (Wkdays):	25	**Results Due:**	10-Mar-2023
Date Approved:	07-Mar-2023		

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Soil

Project: R1742b

Client: Smith Grant LLP				**Chemtest Job No.:**	23-03827	23-03827	23-03827	23-03827	23-03827	23-03827	23-03827	23-03827	23-03827
Quotation No.:				**Chemtest Sample ID.:**	1585469	1585470	1585471	1585472	1585473	1585474	1585475	1585476	1585477
				Client Sample ID.:	Pit-HS-SS1	Pit-HS-SS2	Pit-HS-SS3	Pit-HS-SS4	Pit-HS-SS5	Pit-HS-SS6	Pit-HS-SS7	Pit-HS-SS8	Pit-HS-SS9
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
				Bottom Depth (m):	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
				Date Sampled:	01-Feb-2023	01-Feb-2023	01-Feb-2023	01-Feb-2023	01-Feb-2023	01-Feb-2023	01-Feb-2023	01-Feb-2023	01-Feb-2023
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Moisture	N	2030	%	0.020	26	15	17	13	13	13	12	14	13
Aliphatic VPH >C5-C6	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.13	< 0.05
Aliphatic VPH >C6-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.18	< 0.05
Total Aliphatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	0.30	< 0.25
Aliphatic EPH >C10-C12	U	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C12-C16	U	2690	mg/kg	1.00	< 1.0	< 1.0	1.0	< 1.0	1.1	< 1.0	< 1.0	1.4	< 1.0
Aliphatic EPH >C16-C21	U	2690	mg/kg	2.00	76	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	2.3	< 2.0
Aliphatic EPH >C21-C35	U	2690	mg/kg	3.00	66	< 3.0	4.6	< 3.0	4.1	< 3.0	< 3.0	4.0	< 3.0
Aliphatic EPH >C35-C40	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Total Aliphatic EPH >C10-C35	U	2690	mg/kg	5.00	140	< 5.0	8.3	< 5.0	6.9	< 5.0	< 5.0	8.0	< 5.0
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10.00	140	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Aromatic VPH >C5-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	U	2690	mg/kg	1.00	2.9	2.7	3.0	3.0	2.7	2.7	1.7	2.6	2.3
Aromatic EPH >C12-C16	U	2690	mg/kg	1.00	6.5	6.2	5.2	4.2	4.3	4.5	4.4	4.5	5.8
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	10	13	11	12	11	10	11	11	10
Aromatic EPH >C21-C35	U	2690	mg/kg	2.00	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	3.9	4.5	3.3	2.8	2.8	2.9	2.5	2.9	3.6
Total Aromatic EPH >C10-C35	U	2690	mg/kg	5.00	22	22	20	19	19	18	18	18	18
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10.00	25	26	23	22	22	21	20	21	22
Total VPH >C5-C10	U	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35	U	2690	mg/kg	10.00	170	26	28	24	26	22	22	26	22
Total EPH >C10-C40	N	2690	mg/kg	10.00	170	26	23	22	22	21	20	21	22
Dichlorodifluoromethane	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	U	2760	µg/kg	20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
Chloroethane	U	2760	µg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichlorofluoromethane	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760	µg/kg	1.0	3.3	27	12	3.4	< 1.0	< 1.0	< 1.0	20	< 1.0
1,1-Dichloroethane	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	U	2760	µg/kg	1.0	10	41	20	4.2	2.3	< 1.0	3.8	23	< 1.0
Bromochloromethane	U	2760	µg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

Results - Soil

Project: R1742b

Client: Smith Grant LLP				**Chemtest Job No.:**	23-03827	23-03827	23-03827	23-03827	23-03827	23-03827	23-03827	23-03827	23-03827
Quotation No.:				**Chemtest Sample ID.:**	1585469	1585470	1585471	1585472	1585473	1585474	1585475	1585476	1585477
				Client Sample ID.:	Pit-HS-SS1	Pit-HS-SS2	Pit-HS-SS3	Pit-HS-SS4	Pit-HS-SS5	Pit-HS-SS6	Pit-HS-SS7	Pit-HS-SS8	Pit-HS-SS9
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
				Bottom Depth (m):	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
				Date Sampled:	01-Feb-2023	01-Feb-2023	01-Feb-2023	01-Feb-2023	01-Feb-2023	01-Feb-2023	01-Feb-2023	01-Feb-2023	01-Feb-2023
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Trichloromethane	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	U	2760	µg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichloroethene	N	2760	µg/kg	1.0	88	54	37	19	11	8.1	24	21	4.5
1,2-Dichloropropane	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	U	2760	µg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	µg/kg	10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	µg/kg	10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
1,1,2-Trichloroethane	U	2760	µg/kg	10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Tetrachloroethene	U	2760	µg/kg	1.0	30	8.1	20	1.9	< 1.0	< 1.0	2.0	< 1.0	< 1.0
1,3-Dichloropropane	U	2760	µg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Dibromochloromethane	U	2760	µg/kg	10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
1,2-Dibromoethane	U	2760	µg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	µg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	4.9	2.7	5.1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	2.6	1.9	3.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	µg/kg	50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
N-Propylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Sec-Butylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Isopropyltoluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: R1742b

Client: Smith Grant LLP				**Chemtest Job No.:**	23-03827	23-03827	23-03827	23-03827	23-03827	23-03827	23-03827	23-03827	23-03827
Quotation No.:				**Chemtest Sample ID.:**	1585469	1585470	1585471	1585472	1585473	1585474	1585475	1585476	1585477
				Client Sample ID.:	Pit-HS-SS1	Pit-HS-SS2	Pit-HS-SS3	Pit-HS-SS4	Pit-HS-SS5	Pit-HS-SS6	Pit-HS-SS7	Pit-HS-SS8	Pit-HS-SS9
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
				Bottom Depth (m):	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
				Date Sampled:	01-Feb-2023	01-Feb-2023	01-Feb-2023	01-Feb-2023	01-Feb-2023	01-Feb-2023	01-Feb-2023	01-Feb-2023	01-Feb-2023
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
N-Butylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	2760	µg/kg	50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
1,2,4-Trichlorobenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	N	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	U	2760	µg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50									
Phenol	U	2790	mg/kg	0.50									
2-Chlorophenol	U	2790	mg/kg	0.50									
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50									
1,3-Dichlorobenzene	U	2790	mg/kg	0.50									
1,4-Dichlorobenzene	N	2790	mg/kg	0.50									
1,2-Dichlorobenzene	U	2790	mg/kg	0.50									
2-Methylphenol	U	2790	mg/kg	0.50									
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50									
Hexachloroethane	N	2790	mg/kg	0.50									
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50									
4-Methylphenol	U	2790	mg/kg	0.50									
Nitrobenzene	U	2790	mg/kg	0.50									
Isophorone	U	2790	mg/kg	0.50									
2-Nitrophenol	N	2790	mg/kg	0.50									
2,4-Dimethylphenol	N	2790	mg/kg	0.50									
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50									
2,4-Dichlorophenol	U	2790	mg/kg	0.50									
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50									
Naphthalene	U	2790	mg/kg	0.50									
4-Chloroaniline	N	2790	mg/kg	0.50									
Hexachlorobutadiene	U	2790	mg/kg	0.50									
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50									
2-Methylnaphthalene	U	2790	mg/kg	0.50									
4-Nitrophenol	N	2790	mg/kg	0.50									
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50									
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50									
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50									
2-Chloronaphthalene	U	2790	mg/kg	0.50									
2-Nitroaniline	U	2790	mg/kg	0.50									
Acenaphthylene	U	2790	mg/kg	0.50									

Results - Soil

Project: R1742b

Client: Smith Grant LLP				**Chemtest Job No.:**	23-03827	23-03827	23-03827	23-03827	23-03827	23-03827	23-03827	23-03827	23-03827
Quotation No.:				**Chemtest Sample ID.:**	1585469	1585470	1585471	1585472	1585473	1585474	1585475	1585476	1585477
				Client Sample ID.:	Pit-HS-SS1	Pit-HS-SS2	Pit-HS-SS3	Pit-HS-SS4	Pit-HS-SS5	Pit-HS-SS6	Pit-HS-SS7	Pit-HS-SS8	Pit-HS-SS9
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
				Bottom Depth (m):	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
				Date Sampled:	01-Feb-2023	01-Feb-2023	01-Feb-2023	01-Feb-2023	01-Feb-2023	01-Feb-2023	01-Feb-2023	01-Feb-2023	01-Feb-2023
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Dimethylphthalate	U	2790	mg/kg	0.50									
2,6-Dinitrotoluene	U	2790	mg/kg	0.50									
Acenaphthene	U	2790	mg/kg	0.50									
3-Nitroaniline	N	2790	mg/kg	0.50									
Dibenzofuran	U	2790	mg/kg	0.50									
4-Chlorophenylphenylether	U	2790	mg/kg	0.50									
2,4-Dinitrotoluene	U	2790	mg/kg	0.50									
Fluorene	U	2790	mg/kg	0.50									
Diethyl Phthalate	U	2790	mg/kg	0.50									
4-Nitroaniline	U	2790	mg/kg	0.50									
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50									
Azobenzene	U	2790	mg/kg	0.50									
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50									
Hexachlorobenzene	U	2790	mg/kg	0.50									
Pentachlorophenol	N	2790	mg/kg	0.50									
Phenanthrene	U	2790	mg/kg	0.50									
Anthracene	U	2790	mg/kg	0.50									
Carbazole	U	2790	mg/kg	0.50									
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50									
Fluoranthene	U	2790	mg/kg	0.50									
Pyrene	U	2790	mg/kg	0.50									
Butylbenzyl Phthalate	U	2790	mg/kg	0.50									
Benzo[a]anthracene	U	2790	mg/kg	0.50									
Chrysene	U	2790	mg/kg	0.50									
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50									
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50									
Benzo[b]fluoranthene	U	2790	mg/kg	0.50									
Benzo[k]fluoranthene	U	2790	mg/kg	0.50									
Benzo[a]pyrene	U	2790	mg/kg	0.50									
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50									
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50									
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50									

Results - Soil

Project: R1742b

Client: Smith Grant LLP	**Chemtest Job No.:**				23-03827	23-03827	23-03827	23-03827
Quotation No.:	**Chemtest Sample ID.:**				1585478	1585479	1585480	1585481
	Client Sample ID.:				Pit-HS-SS10	Pit-HS-S1	Pit-HS-S2	Pit-HS-Contam
	Sample Type:				SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				1.8	1.8	1.8	1.8
	Bottom Depth (m):				2.8	2.8	2.8	2.8
	Date Sampled:				01-Feb-2023	01-Feb-2023	01-Feb-2023	01-Feb-2023
Determinand	**Accred.**	**SOP**	**Units**	**LOD**				
Moisture	N	2030	%	0.020	12	14	13	15
Aliphatic VPH >C5-C6	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12	U	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C12-C16	U	2690	mg/kg	1.00	< 1.0	3.1	< 1.0	< 1.0
Aliphatic EPH >C16-C21	U	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C21-C35	U	2690	mg/kg	3.00	< 3.0	5.1	< 3.0	< 3.0
Aliphatic EPH >C35-C40	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10
Total Aliphatic EPH >C10-C35	U	2690	mg/kg	5.00	< 5.0	11	5.2	5.2
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10.00	< 10	11	< 10	< 10
Aromatic VPH >C5-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	U	2690	mg/kg	1.00	2.7	2.3	2.7	5.4
Aromatic EPH >C12-C16	U	2690	mg/kg	1.00	4.2	5.2	4.7	5.2
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	11	11	9.0	10
Aromatic EPH >C21-C35	U	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	2.3	3.7	2.6	3.6
Total Aromatic EPH >C10-C35	U	2690	mg/kg	5.00	18	19	17	21
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10.00	20	23	19	24
Total VPH >C5-C10	U	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35	U	2690	mg/kg	10.00	22	29	22	26
Total EPH >C10-C40	N	2690	mg/kg	10.00	20	33	19	24
Dichlorodifluoromethane	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	U	2760	µg/kg	20	< 20	< 20	< 20	< 20
Chloroethane	U	2760	µg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichlorofluoromethane	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760	µg/kg	1.0	< 1.0	2.8	5.2	< 1.0
1,1-Dichloroethane	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	U	2760	µg/kg	1.0	< 1.0	< 1.0	3.6	91
Bromochloromethane	U	2760	µg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0

Results - Soil

Project: R1742b

Client: Smith Grant LLP				**Chemtest Job No.:**	23-03827	23-03827	23-03827	23-03827
Quotation No.:				**Chemtest Sample ID.:**	1585478	1585479	1585480	1585481
				Client Sample ID.:	Pit-HS-SS10	Pit-HS-S1	Pit-HS-S2	Pit-HS-Contam
				Sample Type:	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	1.8	1.8	1.8	1.8
				Bottom Depth (m):	2.8	2.8	2.8	2.8
				Date Sampled:	01-Feb-2023	01-Feb-2023	01-Feb-2023	01-Feb-2023
Determinand	**Accred.**	**SOP**	**Units**	**LOD**				
Trichloromethane	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	U	2760	µg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichloroethene	N	2760	µg/kg	1.0	7.0	78	66	100
1,2-Dichloropropane	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	U	2760	µg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	µg/kg	10	< 10	< 10	< 10	< 10
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	µg/kg	10	< 10	< 10	< 10	< 10
1,1,2-Trichloroethane	U	2760	µg/kg	10	< 10	< 10	< 10	< 10
Tetrachloroethene	U	2760	µg/kg	1.0	1.4	37	6.1	< 1.0
1,3-Dichloropropane	U	2760	µg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Dibromochloromethane	U	2760	µg/kg	10	< 10	< 10	< 10	< 10
1,2-Dibromoethane	U	2760	µg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	µg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	µg/kg	50	< 50	< 50	< 50	< 50
N-Propylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Sec-Butylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Isopropyltoluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: R1742b

Client: Smith Grant LLP				**Chemtest Job No.:**	23-03827	23-03827	23-03827	23-03827
Quotation No.:				**Chemtest Sample ID.:**	1585478	1585479	1585480	1585481
				Client Sample ID.:	Pit-HS-SS10	Pit-HS-S1	Pit-HS-S2	Pit-HS-Contam
				Sample Type:	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	1.8	1.8	1.8	1.8
				Bottom Depth (m):	2.8	2.8	2.8	2.8
				Date Sampled:	01-Feb-2023	01-Feb-2023	01-Feb-2023	01-Feb-2023
Determinand	**Accred.**	**SOP**	**Units**	**LOD**				
N-Butylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	2760	µg/kg	50	< 50	< 50	< 50	< 50
1,2,4-Trichlorobenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	N	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	U	2760	µg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50				< 0.50
Phenol	U	2790	mg/kg	0.50				< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50				< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50				< 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50				< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50				< 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50				< 0.50
2-Methylphenol	U	2790	mg/kg	0.50				< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50				< 0.50
Hexachloroethane	N	2790	mg/kg	0.50				< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50				< 0.50
4-Methylphenol	U	2790	mg/kg	0.50				< 0.50
Nitrobenzene	U	2790	mg/kg	0.50				< 0.50
Isophorone	U	2790	mg/kg	0.50				< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50				< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50				< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50				< 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50				< 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50				< 0.50
Naphthalene	U	2790	mg/kg	0.50				< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50				< 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50				< 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50				< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50				< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50				< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50				< 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50				< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50				< 0.50
2-Chloronaphthalene	U	2790	mg/kg	0.50				< 0.50
2-Nitroaniline	U	2790	mg/kg	0.50				< 0.50
Acenaphthylene	U	2790	mg/kg	0.50				< 0.50

Results - Soil

Project: R1742b

Client: Smith Grant LLP				**Chemtest Job No.:**	23-03827	23-03827	23-03827	23-03827
Quotation No.:				**Chemtest Sample ID.:**	1585478	1585479	1585480	1585481
				Client Sample ID.:	Pit-HS-SS10	Pit-HS-S1	Pit-HS-S2	Pit-HS-Contam
				Sample Type:	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	1.8	1.8	1.8	1.8
				Bottom Depth (m):	2.8	2.8	2.8	2.8
				Date Sampled:	01-Feb-2023	01-Feb-2023	01-Feb-2023	01-Feb-2023
Determinand	**Accred.**	**SOP**	**Units**	**LOD**				
Dimethylphthalate	U	2790	mg/kg	0.50				< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50				< 0.50
Acenaphthene	U	2790	mg/kg	0.50				< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50				< 0.50
Dibenzofuran	U	2790	mg/kg	0.50				< 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50				< 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50				< 0.50
Fluorene	U	2790	mg/kg	0.50				< 0.50
Diethyl Phthalate	U	2790	mg/kg	0.50				< 0.50
4-Nitroaniline	U	2790	mg/kg	0.50				< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50				< 0.50
Azobenzene	U	2790	mg/kg	0.50				< 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50				< 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50				< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50				< 0.50
Phenanthrene	U	2790	mg/kg	0.50				< 0.50
Anthracene	U	2790	mg/kg	0.50				< 0.50
Carbazole	U	2790	mg/kg	0.50				< 0.50
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50				< 0.50
Fluoranthene	U	2790	mg/kg	0.50				< 0.50
Pyrene	U	2790	mg/kg	0.50				< 0.50
Butylbenzyl Phthalate	U	2790	mg/kg	0.50				< 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50				< 0.50
Chrysene	U	2790	mg/kg	0.50				< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50				< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50				< 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50				< 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50				< 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50				< 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50				< 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50				< 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50				< 0.50

Test Methods

SOP	Title	Parameters included	Method summary
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35–C40	Acetone/Heptane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

UKAS TESTING 2183

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Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	23-04757-1		
Initial Date of Issue:	20-Feb-2023		
Client	Smith Grant LLP		
Client Address:	Bryn Estyn Business Centre Bryn Estyn Road Wrexham LL13 9TY		
Contact(s):	Dan Wayland		
Project	R1742b Heyford Park - PH10		
Quotation No.:		**Date Received:**	13-Feb-2023
Order No.:		**Date Instructed:**	13-Feb-2023
No. of Samples:	6		
Turnaround (Wkdays):	10	**Results Due:**	24-Feb-2023
Date Approved:	20-Feb-2023		
Approved By:			

[redacted]

Details:	Stuart Henderson, Technical Manager

Results - Soil

Project: R1742b Heyford Park - PH10

Client: Smith Grant LLP				**Chemtest Job No.:**	23-04757	23-04757	23-04757	23-04757	23-04757	23-04757
Quotation No.:				**Chemtest Sample ID.:**	1589139	1589140	1589141	1589142	1589143	1589144
				Sample Location:	CH5-CELL5-SS1	CH5-CELL5-SS2	CH5-CELL5-SS3	CH5-CELL5-SS4	CH5-CELL5-SS5	CH5-CELL5-SS6
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	1.9	1.9	1.9	1.9	2.3	2.3
				Bottom Depth (m):	2.2	2.2	2.3	2.3	2.5	2.5
				Date Sampled:	06-Feb-2023	07-Feb-2023	07-Feb-2023	07-Feb-2023	07-Feb-2023	07-Feb-2023
Determinand	**Accred.**	**SOP**	**Units**	**LOD**						
Moisture	N	2030	%	0.020	11	17	17	22	12	10
Aliphatic VPH >C5-C6	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.17	< 0.05
Aliphatic VPH >C6-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	1.3	< 0.05
Aliphatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	5.2	0.18
Aliphatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	0.19	< 0.05	0.40	3.1	2.0
Total Aliphatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	0.40	9.7	2.1
Aliphatic EPH >C10-C12	U	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	7.3	250	< 2.0
Aliphatic EPH >C12-C16	U	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	5.8	620	2.0
Aliphatic EPH >C16-C21	U	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0	620	< 2.0
Aliphatic EPH >C21-C35	U	2690	mg/kg	3.00	< 3.0	< 3.0	< 3.0	< 3.0	2200	< 3.0
Aliphatic EPH >C35-C40	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10	< 10	< 10
Total Aliphatic EPH >C10-C35	U	2690	mg/kg	5.00	< 5.0	< 5.0	< 5.0	14	3600	< 5.0
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10.00	< 10	< 10	< 10	14	3600	< 10
Aromatic VPH >C5-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	U	2690	mg/kg	1.00	1.1	1.1	< 1.0	< 1.0	110	< 1.0
Aromatic EPH >C12-C16	U	2690	mg/kg	1.00	1.7	1.1	1.6	1.9	200	1.0
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	< 2.0	4.2	< 2.0	< 2.0	59	2.2
Aromatic EPH >C21-C35	U	2690	mg/kg	2.00	< 2.0	2.0	< 2.0	< 2.0	37	< 2.0
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	2.1	2.8	2.4	2.9	< 1.0	2.3
Total Aromatic EPH >C10-C35	U	2690	mg/kg	5.00	< 5.0	8.3	< 5.0	< 5.0	400	< 5.0
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10.00	< 10	11	< 10	< 10	400	< 10
Total VPH >C5-C10	U	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	9.7	2.1
Total EPH >C10-C35	U	2690	mg/kg	10.00	< 10	10	< 10	19	4000	< 10
Total EPH >C10-C40	N	2690	mg/kg	10.00	< 10	13	< 10	21	4000	< 10
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Test Methods

SOP	Title	Parameters included	Method summary
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35–C40	Acetone/Heptane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

UKAS TESTING 2183

Final Report

Report No.:	23-04867-1		
Initial Date of Issue:	24-Feb-2023		
Client	Smith Grant LLP		
Client Address:	Bryn Estyn Business Centre Bryn Estyn Road Wrexham LL13 9TY		
Contact(s):	Scott Miller		
Project	R1742b Heyford (URL Dorchester)		
Quotation No.:	Q15-02887	**Date Received:**	14-Feb-2023
Order No.:		**Date Instructed:**	14-Feb-2023
No. of Samples:	4		
Turnaround (Wkdays):	10	**Results Due:**	27-Feb-2023
Date Approved:	24-Feb-2023		
Approved By:			

[redacted]

Details:	Stuart Henderson, Technical Manager

Results - Soil

Project: R1742b Heyford (URL Dorchester)

Client: Smith Grant LLP				**Chemtest Job No.:**	23-04867	23-04867	23-04867	23-04867
Quotation No.: Q15-02887				**Chemtest Sample ID.:**	1589662	1589663	1589664	1589665
				Sample Location:	CH5-Cell 7-S1	CH5-Cell 7-S2	CH5-Cell 7-S3	CH5-Cell 7-S4
				Sample Type:	SOIL	SOIL	SOIL	SOIL
				Date Sampled:	10-Feb-2023	10-Feb-2023	10-Feb-2023	10-Feb-2023
Determinand	**Accred.**	**SOP**	**Units**	**LOD**				
Moisture	N	2030	%	0.020	8.2	12	12	11
Aliphatic VPH >C5-C6	U	2780	mg/kg	0.05	0.11	0.12	0.12	0.11
Aliphatic VPH >C6-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12	U	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C12-C16	U	2690	mg/kg	1.00	3.6	3.6	1.7	3.6
Aliphatic EPH >C16-C21	U	2690	mg/kg	2.00	2.7	2.3	< 2.0	3.1
Aliphatic EPH >C21-C35	U	2690	mg/kg	3.00	5.7	5.6	4.3	5.7
Aliphatic EPH >C35-C40	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10
Total Aliphatic EPH >C10-C35	U	2690	mg/kg	5.00	14	13	7.9	14
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10.00	14	13	< 10	14
Aromatic VPH >C5-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	U	2690	mg/kg	1.00	11	12	8.6	11
Aromatic EPH >C12-C16	U	2690	mg/kg	1.00	18	19	10	18
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	26	24	19	26
Aromatic EPH >C21-C35	U	2690	mg/kg	2.00	9.3	6.6	8.7	11
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	8.9	9.2	7.4	7.9
Total Aromatic EPH >C10-C35	U	2690	mg/kg	5.00	65	61	47	66
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10.00	74	70	54	74
Total VPH >C5-C10	U	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35	U	2690	mg/kg	10.00	79	73	55	79
Total EPH >C10-C40	N	2690	mg/kg	10.00	87	82	62	87
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0

Test Methods

SOP	Title	Parameters included	Method summary
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection

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customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

UKAS TESTING 2183

Final Report

Report No.:	23-05343-1		
Initial Date of Issue:	27-Feb-2023		
Client	Smith Grant LLP		
Client Address:	Bryn Estyn Business Centre Bryn Estyn Road Wrexham LL13 9TY		
Contact(s):	Dan Wayland		
Project	R1742b Heyford Park - Ph10		
Quotation No.:		**Date Received:**	16-Feb-2023
Order No.:		**Date Instructed:**	16-Feb-2023
No. of Samples:	10		
Turnaround (Wkdays):	10	**Results Due:**	01-Mar-2023
Date Approved:	27-Feb-2023		
Approved By:			

[redacted]

Details:	Stuart Henderson, Technical Manager

Results - Soil

Project: R1742b Heyford Park - Ph10

Client: Smith Grant LLP				**Chemtest Job No.:**	23-05343	23-05343	23-05343	23-05343	23-05343	23-05343	23-05343	23-05343	23-05343
Quotation No.:				**Chemtest Sample ID.:**	1591542	1591543	1591544	1591545	1591546	1591547	1591548	1591549	1591550
				Sample Location:	CH5-Cell7-SS1	CH5-Cell7-SS2	CH5-Cell7-SS3	CH5-Cell7-SS4	CH5-Cell7-SS5	CH5-Cell7-SS6	CH5-Cell7-SS7	CH5-Cell7-SS8	CH5-Cell7-SS9
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	2.20	2.20	2.20	2.20	2.20	2.20	1.90	1.90	1.90
				Bottom Depth (m):	3.20	3.20	3.20	3.20	3.20	3.20	2.60	2.60	2.60
				Date Sampled:	13-Feb-2023	13-Feb-2023	13-Feb-2023	13-Feb-2023	13-Feb-2023	13-Feb-2023	13-Feb-2023	13-Feb-2023	13-Feb-2023
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Moisture	N	2030	%	0.020	8.8	9.1	12	10	7.7	5.5	9.7	8.5	12
Aliphatic VPH >C5-C6	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	0.34	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	0.96	< 0.05	< 0.05	< 0.05	0.20	< 0.05	0.19
Aliphatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	0.33	0.57	0.14	0.87	< 0.05	0.26	0.13	0.24
Total Aliphatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	0.33	1.9	< 0.25	0.87	< 0.25	0.46	< 0.25	0.42
Aliphatic EPH >C10-C12	U	2690	mg/kg	2.00	< 2.0	35	< 2.0	< 2.0	8.3	< 2.0	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C12-C16	U	2690	mg/kg	1.00	1.2	38	2.0	< 1.0	6.8	1.8	1.3	< 1.0	< 1.0
Aliphatic EPH >C16-C21	U	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C21-C35	U	2690	mg/kg	3.00	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Aliphatic EPH >C35-C40	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Total Aliphatic EPH >C10-C35	U	2690	mg/kg	5.00	< 5.0	76	< 5.0	< 5.0	17	< 5.0	< 5.0	< 5.0	< 5.0
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10.00	< 10	76	< 10	< 10	17	< 10	< 10	< 10	< 10
Aromatic VPH >C5-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	U	2690	mg/kg	1.00	1.8	3.4	< 1.0	1.5	2.1	< 1.0	3.4	1.6	1.5
Aromatic EPH >C12-C16	U	2690	mg/kg	1.00	2.1	6.2	2.3	1.7	1.7	2.2	1.3	2.5	1.8
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	3.1	4.4	< 2.0	2.7	2.8	< 2.0	2.6	< 2.0	2.0
Aromatic EPH >C21-C35	U	2690	mg/kg	2.00	30	9.5	12	4.6	5.0	15	7.0	5.7	7.7
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	< 1.0	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.2	< 1.0
Total Aromatic EPH >C10-C35	U	2690	mg/kg	5.00	37	23	17	10	12	19	14	11	13
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10.00	37	25	17	10	12	19	14	13	13
Total VPH >C5-C10	U	2780	mg/kg	0.50	< 0.50	< 0.50	1.9	< 0.50	0.87	< 0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35	U	2690	mg/kg	10.00	41	100	22	14	29	24	19	14	16
Total EPH >C10-C40	N	2690	mg/kg	10.00	41	100	22	14	29	24	19	15	16
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: R1742b Heyford Park - Ph10

Client: Smith Grant LLP				**Chemtest Job No.:**	23-05343
Quotation No.:				**Chemtest Sample ID.:**	1591551
				Sample Location:	CH5-Cell7-SS10
				Sample Type:	SOIL
				Top Depth (m):	1.90
				Bottom Depth (m):	2.60
				Date Sampled:	13-Feb-2023
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Moisture	N	2030	%	0.020	11
Aliphatic VPH >C5-C6	U	2780	mg/kg	0.05	< 0.05
Aliphatic VPH >C6-C7	U	2780	mg/kg	0.05	0.13
Aliphatic VPH >C7-C8	U	2780	mg/kg	0.05	0.21
Aliphatic VPH >C8-C10	U	2780	mg/kg	0.05	0.16
Total Aliphatic VPH >C5-C10	U	2780	mg/kg	0.25	0.50
Aliphatic EPH >C10-C12	U	2690	mg/kg	2.00	< 2.0
Aliphatic EPH >C12-C16	U	2690	mg/kg	1.00	1.3
Aliphatic EPH >C16-C21	U	2690	mg/kg	2.00	< 2.0
Aliphatic EPH >C21-C35	U	2690	mg/kg	3.00	< 3.0
Aliphatic EPH >C35-C40	N	2690	mg/kg	10.00	< 10
Total Aliphatic EPH >C10-C35	U	2690	mg/kg	5.00	< 5.0
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10.00	< 10
Aromatic VPH >C5-C7	U	2780	mg/kg	0.05	< 0.05
Aromatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05
Aromatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05
Total Aromatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25
Aromatic EPH >C10-C12	U	2690	mg/kg	1.00	1.5
Aromatic EPH >C12-C16	U	2690	mg/kg	1.00	1.6
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	< 2.0
Aromatic EPH >C21-C35	U	2690	mg/kg	2.00	11
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	< 1.0
Total Aromatic EPH >C10-C35	U	2690	mg/kg	5.00	16
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10.00	16
Total VPH >C5-C10	U	2780	mg/kg	0.50	< 0.50
Total EPH >C10-C35	U	2690	mg/kg	10.00	20
Total EPH >C10-C40	N	2690	mg/kg	10.00	20
Benzene	U	2760	µg/kg	1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0

Test Methods

SOP	Title	Parameters included	Method summary
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35–C40	Acetone/Heptane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection

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Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

UKAS TESTING 2183

Final Report

Report No.:	23-05829-1
Initial Date of Issue:	06-Mar-2023
Client	Smith Grant LLP
Client Address:	Bryn Estyn Business Centre Bryn Estyn Road Wrexham LL13 9TY
Contact(s):	Scott Miller
Project	R1742b Heyford (Dorchester URL)

Quotation No.:	Q15-02887	**Date Received:**	20-Feb-2023
Order No.:		**Date Instructed:**	20-Feb-2023
No. of Samples:	24		
Turnaround (Wkdays):	7	**Results Due:**	28-Feb-2023
Date Approved:	06-Mar-2023		

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Soil

Project: R1742b Heyford (Dorchester URL)

Client: Smith Grant LLP				**Chemtest Job No.:**	23-05829	23-05829	23-05829	23-05829	23-05829	23-05829	23-05829	23-05829	23-05829
Quotation No.: Q15-02887				**Chemtest Sample ID.:**	1593825	1593826	1593827	1593828	1593829	1593830	1593831	1593832	1593833
				Sample Location:	CH5-Cell8-SS1	CH5-Cell8-SS2	CH5-Cell8-SS3	CH5-Cell8-SS4	CH5-Cell8-SS5	CH5-Cell8-SS6	CH5-Cell8-SS7	CH5-Cell8-SS8	CH5-Cell8-SS9
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	2.4	2.4	2.3	2.3	1.9	1.9	1.9	1.9	1.9
				Bottom Depth (m):	3.0	3.0	2.9	2.9	2.6	2.4	2.4	2.4	2.4
				Date Sampled:	15-Feb-2023	15-Feb-2023	15-Feb-2023	15-Feb-2023	15-Feb-2023	15-Feb-2023	15-Feb-2023	15-Feb-2023	15-Feb-2023
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Moisture	N	2030	%	0.020	10	14	9.1	16	13	16	12	11	13
Aliphatic VPH >C5-C6	U	2780	mg/kg	0.05	< 0.05	0.19	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	U	2780	mg/kg	0.05	0.12	1.2	< 0.05	< 0.05	0.12	0.17	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	U	2780	mg/kg	0.05	0.29	3.2	< 0.05	0.13	0.20	0.17	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C8-C10	U	2780	mg/kg	0.05	0.29	1.7	0.27	0.18	0.72	0.41	0.12	0.12	< 0.05
Total Aliphatic VPH >C5-C10	U	2780	mg/kg	0.25	0.70	6.3	0.27	0.31	1.0	0.74	< 0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12	U	2690	mg/kg	2.00	2.4	2.3	2.6	< 2.0	13	4.6	< 2.0	2.1	< 2.0
Aliphatic EPH >C12-C16	U	2690	mg/kg	1.00	3.6	4.6	4.4	3.4	71	4.1	4.5	6.9	3.1
Aliphatic EPH >C16-C21	U	2690	mg/kg	2.00	4.4	3.1	< 2.0	2.8	64	3.6	3.6	10	4.0
Aliphatic EPH >C21-C35	U	2690	mg/kg	3.00	11	9.2	6.4	9.8	16	9.0	8.4	21	11
Aliphatic EPH >C35-C40	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Total Aliphatic EPH >C10-C35	U	2690	mg/kg	5.00	21	19	15	17	160	21	18	40	20
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10.00	21	19	15	17	160	21	18	40	20
Aromatic VPH >C5-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	U	2690	mg/kg	1.00	12	14	13	14	15	11	16	36	13
Aromatic EPH >C12-C16	U	2690	mg/kg	1.00	24	25	23	24	30	27	26	59	22
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	27	27	26	27	27	28	27	62	29
Aromatic EPH >C21-C35	U	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	11	13	11	9.6	12	13	12	30	11
Total Aromatic EPH >C10-C35	U	2690	mg/kg	5.00	62	65	62	64	72	67	70	160	64
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10.00	74	78	73	74	84	80	82	190	75
Total VPH >C5-C10	U	2780	mg/kg	0.50	0.70	6.3	< 0.50	< 0.50	1.0	0.74	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35	U	2690	mg/kg	10.00	83	85	77	81	240	88	88	200	84
Total EPH >C10-C40	N	2690	mg/kg	10.00	94	98	88	91	250	100	100	230	95
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	2.3	< 1.0	< 1.0	1.2	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: R1742b Heyford (Dorchester URL)

Client: Smith Grant LLP				Chemtest Job No.:	23-05829	23-05829	23-05829	23-05829	23-05829	23-05829	23-05829	23-05829	23-05829
Quotation No.: Q15-02887				Chemtest Sample ID.:	1593834	1593835	1593836	1593837	1593838	1593839	1593840	1593841	1593842
				Sample Location:	CH5-Cell8-SS10	CH5-Cell8-SS11	CH5-Cell8-SS12	CH5-Cell8-SS13	CH5-Cell8-SS14	CH5-Cell8-SS15	CH5-Cell8-SS16	CH5-Cell8-S1	CH5-Cell8-S2
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	1.8	1.8	1.5	1.6	1.6	1.2	1.2		
				Bottom Depth (m):	2.4	2.4	2.1	2.1	2.1	1.8	1.8		
				Date Sampled:	15-Feb-2023	15-Feb-2023	15-Feb-2023	15-Feb-2023	15-Feb-2023	15-Feb-2023	15-Feb-2023	15-Feb-2023	15-Feb-2023
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Moisture	N	2030	%	0.020	12	14	9.7	13	11	13	27	12	10
Aliphatic VPH >C5-C6	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C8-C10	U	2780	mg/kg	0.05	0.13	0.17	0.13	0.15	< 0.05	< 0.05	0.14	0.13	< 0.05
Total Aliphatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12	U	2690	mg/kg	2.00	2.1	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C12-C16	U	2690	mg/kg	1.00	3.8	1.8	< 1.0	< 1.0	2.6	2.0	2.2	1.3	< 1.0
Aliphatic EPH >C16-C21	U	2690	mg/kg	2.00	3.3	< 2.0	< 2.0	< 2.0	3.5	2.3	2.3	< 2.0	< 2.0
Aliphatic EPH >C21-C35	U	2690	mg/kg	3.00	8.4	9.2	< 3.0	4.1	9.1	7.1	7.6	6.4	4.4
Aliphatic EPH >C35-C40	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Total Aliphatic EPH >C10-C35	U	2690	mg/kg	5.00	18	14	< 5.0	6.6	17	13	14	11	7.1
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10.00	18	14	< 10	< 10	17	13	14	11	< 10
Aromatic VPH >C5-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	U	2690	mg/kg	1.00	13	1.5	< 1.0	< 1.0	1.1	< 1.0	1.1	1.1	1.5
Aromatic EPH >C12-C16	U	2690	mg/kg	1.00	25	1.1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.2	17
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	27	< 2.0	< 2.0	6.0	< 2.0	5.0	3.1	3.8	140
Aromatic EPH >C21-C35	U	2690	mg/kg	2.00	< 2.0	3.6	< 2.0	< 2.0	5.8	3.3	3.9	< 2.0	81
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	12	7.0	6.5	7.0	7.9	9.7	9.8	9.6	12
Total Aromatic EPH >C10-C35	U	2690	mg/kg	5.00	65	7.9	< 5.0	7.5	8.6	9.9	8.5	7.7	240
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10.00	77	15	< 10	14	17	20	18	17	250
Total VPH >C5-C10	U	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35	U	2690	mg/kg	10.00	82	22	< 10	14	26	23	22	18	250
Total EPH >C10-C40	N	2690	mg/kg	10.00	94	29	< 10	21	33	32	32	28	260
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.3	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: R1742b Heyford (Dorchester URL)

Client: Smith Grant LLP				**Chemtest Job No.:**	23-05829	23-05829	23-05829	23-05829	23-05829	23-05829
Quotation No.: Q15-02887				**Chemtest Sample ID.:**	1593843	1593844	1593845	1593846	1593847	1593848
				Sample Location:	CH5-Cell9-SS1	CH5-Cell9-SS2	CH5-Cell9-SS3	CH5-Cell9-SS4	CH5-Cell9-SS5	CH5-Cell9-S1
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	1.4	.14	1.3	1.3	1.3	
				Bottom Depth (m):	1.8	1.8	1.9	1.9	2.0	
				Date Sampled:	15-Feb-2023	15-Feb-2023	15-Feb-2023	15-Feb-2023	15-Feb-2023	15-Feb-2023
Determinand	**Accred.**	**SOP**	**Units**	**LOD**						
Moisture	N	2030	%	0.020	9.4	11	11	14	12	15
Aliphatic VPH >C5-C6	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C8-C10	U	2780	mg/kg	0.05	0.12	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12	U	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C12-C16	U	2690	mg/kg	1.00	1.8	2.6	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic EPH >C16-C21	U	2690	mg/kg	2.00	2.6	3.0	< 2.0	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C21-C35	U	2690	mg/kg	3.00	7.5	6.6	< 3.0	< 3.0	5.4	< 3.0
Aliphatic EPH >C35-C40	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10	< 10	< 10
Total Aliphatic EPH >C10-C35	U	2690	mg/kg	5.00	13	14	5.1	< 5.0	8.0	< 5.0
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10.00	13	14	< 10	< 10	< 10	< 10
Aromatic VPH >C5-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	U	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	2.2	1.4	1.4
Aromatic EPH >C12-C16	U	2690	mg/kg	1.00	< 1.0	2.0	< 1.0	2.6	1.1	2.6
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	4.6	4.6	3.2	6.2	2.4	4.6
Aromatic EPH >C21-C35	U	2690	mg/kg	2.00	3.0	3.2	< 2.0	< 2.0	2.0	< 2.0
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	8.7	8.5	4.9	4.5	3.3	3.8
Total Aromatic EPH >C10-C35	U	2690	mg/kg	5.00	8.6	11	< 5.0	11	7.0	8.5
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10.00	17	19	< 10	16	10	12
Total VPH >C5-C10	U	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35	U	2690	mg/kg	10.00	21	24	< 10	15	15	12
Total EPH >C10-C40	N	2690	mg/kg	10.00	30	33	< 10	20	18	16
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	1.2	< 1.0	1.4	< 1.0	< 1.0	1.4
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Test Methods

SOP	Title	Parameters included	Method summary
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35–C40	Acetone/Heptane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

UKAS TESTING 2183

Final Report

Report No.:	23-06457-1		
Initial Date of Issue:	14-Mar-2023		
Client	Smith Grant LLP		
Client Address:	Bryn Estyn Business Centre Bryn Estyn Road Wrexham LL13 9TY		
Contact(s):	Scott Miller		
Project	R1742b Heyford, Dorchester (URL)		
Quotation No.:	Q15-02887	**Date Received:**	24-Feb-2023
Order No.:		**Date Instructed:**	24-Feb-2023
No. of Samples:	5		
Turnaround (Wkdays):	7	**Results Due:**	06-Mar-2023
Date Approved:	14-Mar-2023		
Approved By:			

[redacted]

Details:	Stuart Henderson, Technical Manager

Results - Soil

Project: R1742b Heyford, Dorchester (URL)

Client: Smith Grant LLP				**Chemtest Job No.:**	23-06457	23-06457	23-06457	23-06457	23-06457
Quotation No.: Q15-02887				**Chemtest Sample ID.:**	1596956	1596957	1596958	1596959	1596960
				Client Sample ID.:	NHS-SS1	NHS-SS2	NHS-SS3	NHS-SS4	NHS-SS5
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	1.6	1.6	2.4	2.4	1.6
				Bottom Depth (m):	2.4	2.4			2.4
				Date Sampled:	21-Feb-2023	21-Feb-2023	21-Feb-2023	21-Feb-2023	21-Feb-2023
Determinand	**Accred.**	**SOP**	**Units**	**LOD**					
Moisture	N	2030	%	0.020	14	11	10	9.5	12
Aliphatic VPH >C5-C6	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.19
Aliphatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.41
Aliphatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.63
Total Aliphatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	1.2
Aliphatic EPH >C10-C12	U	2690	mg/kg	2.00	4.3	4.4	5.0	< 2.0	42
Aliphatic EPH >C12-C16	U	2690	mg/kg	1.00	4.9	5.4	6.2	< 1.0	18
Aliphatic EPH >C16-C21	U	2690	mg/kg	2.00	4.5	4.6	6.0	< 2.0	< 2.0
Aliphatic EPH >C21-C35	U	2690	mg/kg	3.00	7.2	9.6	13	4.9	5.4
Aliphatic EPH >C35-C40	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10	< 10
Total Aliphatic EPH >C10-C35	U	2690	mg/kg	5.00	21	24	30	8.0	66
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10.00	21	24	30	< 10	66
Aromatic VPH >C5-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	U	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	1.1	3.4
Aromatic EPH >C12-C16	U	2690	mg/kg	1.00	2.0	2.1	1.6	< 1.0	4.0
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	4.8	4.7	2.8	< 2.0	4.3
Aromatic EPH >C21-C35	U	2690	mg/kg	2.00	5.4	7.4	9.6	< 2.0	2.2
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	9.9	9.3	8.7	5.7	5.7
Total Aromatic EPH >C10-C35	U	2690	mg/kg	5.00	13	15	15	< 5.0	14
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10.00	23	24	23	< 10	19
Total VPH >C5-C10	U	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.2
Total EPH >C10-C35	U	2690	mg/kg	10.00	34	39	45	12	80
Total EPH >C10-C40	N	2690	mg/kg	10.00	44	48	53	18	86
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Test Methods

SOP	Title	Parameters included	Method summary
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35–C40	Acetone/Heptane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

UKAS TESTING 2183

Final Report

Report No.:	23-07540-1
Initial Date of Issue:	17-Mar-2023
Client	Smith Grant LLP
Client Address:	Bryn Estyn Business Centre Bryn Estyn Road Wrexham LL13 9TY
Contact(s):	Scott Miller
Project	R1742b Heyford (Dorchester URL)

Quotation No.:	Q15-02887	**Date Received:**	06-Mar-2023
Order No.:		**Date Instructed:**	06-Mar-2023
No. of Samples:	17		
Turnaround (Wkdays):	7	**Results Due:**	14-Mar-2023
Date Approved:	17-Mar-2023		

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Soil

Project: R1742b Heyford (Dorchester URL)

Client: Smith Grant LLP				**Chemtest Job No.:**	23-07540	23-07540	23-07540	23-07540	23-07540	23-07540	23-07540	23-07540	23-07540
Quotation No.: Q15-02887				**Chemtest Sample ID.:**	1601959	1601960	1601961	1601962	1601963	1601964	1601965	1601966	1601967
				Sample Location:	NHS-S1	NHS-S2	NHS-S3	NHS-S4	NHS-SS6	NHS-SS7	NHS-SS8	NHS-SS9	NHS-SS10
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):					1.9	2.2	2.4	2.2	2.3
				Bottom Depth (m):					2.8	3.0	3.2	3.2	3.2
				Date Sampled:	28-Feb-2023	28-Feb-2023	28-Feb-2023	02-Mar-2023	28-Feb-2023	28-Feb-2023	28-Feb-2023	28-Feb-2023	28-Feb-2023
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Moisture	N	2030	%	0.020	11	9.4	12	12	18	16	17	20	14
Aliphatic VPH >C5-C6	U	2780	mg/kg	0.10	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	U	2780	mg/kg	0.50	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	U	2780	mg/kg	0.10	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C8-C10	U	2780	mg/kg	0.10	0.17	0.15	0.26	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	U	2780	mg/kg	0.10	< 0.25	< 0.25	0.26	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12	U	2690	mg/kg	2.00	2.9	2.5	8.8	2.2	2.6	2.7	2.6	2.7	3.4
Aliphatic EPH >C12-C16	U	2690	mg/kg	1.00	2.8	2.5	5.4	2.5	2.8	3.1	3.2	3.6	2.5
Aliphatic EPH >C16-C21	U	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	2.1	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C21-C35	U	2690	mg/kg	3.00	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	3.3	3.7	5.7
Aliphatic EPH >C35-C40	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Total Aliphatic EPH >C10-C35	U	2690	mg/kg	5.00	8.2	7.3	18	7.5	7.6	11	11	12	12
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10.00	< 10	< 10	18	< 10	< 10	11	11	12	12
Aromatic VPH >C5-C7	U	2780	mg/kg	0.10	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	U	2780	mg/kg	0.10	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	U	2780	mg/kg	0.10	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	U	2780	mg/kg	0.50	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	U	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic EPH >C12-C16	U	2690	mg/kg	1.00	< 1.0	1.2	1.2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	3.2	4.1	6.0	6.4	6.5	6.9	6.9	6.9	7.7
Aromatic EPH >C21-C35	U	2690	mg/kg	2.00	5.4	6.7	4.9	4.5	4.8	5.9	6.2	5.6	< 2.0
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	13
Total Aromatic EPH >C10-C35	U	2690	mg/kg	5.00	10	12	13	12	13	14	15	14	11
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10.00	10	12	13	12	13	14	15	14	23
Total VPH >C5-C10	U	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35	U	2690	mg/kg	10.00	18	20	31	20	20	25	26	26	23
Total EPH >C10-C40	N	2690	mg/kg	10.00	18	20	31	20	20	25	26	26	36
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: R1742b Heyford (Dorchester URL)

Client: Smith Grant LLP				**Chemtest Job No.:**	23-07540	23-07540	23-07540	23-07540	23-07540	23-07540	23-07540	23-07540
Quotation No.: Q15-02887				**Chemtest Sample ID.:**	1601968	1601969	1601970	1601971	1601972	1601973	1601974	1601975
				Sample Location:	NHS-SS11	NHS-SS12	NHS-SS13	NHS-SS14	NHS-SS15	NHS-SS16	NHS-SS17	NHS-SS18
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	2.2	2.2	1.4	1.4	1.5	1.5	1.4	1.1
				Bottom Depth (m):	3.0	3.0	1.9	1.9	2.0	2.0	2.2	1.9
				Date Sampled:	28-Feb-2023	28-Feb-2023	02-Mar-2023	02-Mar-2023	02-Mar-2023	02-Mar-2023	28-Feb-2023	02-Mar-2023
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
Moisture	N	2030	%	0.020	13	15	13	11	7.6	9.6	14	8.0
Aliphatic VPH >C5-C6	U	2780	mg/kg	0.10	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	U	2780	mg/kg	0.50	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	U	2780	mg/kg	0.10	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C8-C10	U	2780	mg/kg	0.10	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	U	2780	mg/kg	0.10	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12	U	2690	mg/kg	2.00	3.0	3.0	2.6	2.7	2.3	2.3	2.7	2.6
Aliphatic EPH >C12-C16	U	2690	mg/kg	1.00	2.3	2.0	2.0	1.9	1.8	1.7	1.9	2.1
Aliphatic EPH >C16-C21	U	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C21-C35	U	2690	mg/kg	3.00	5.4	7.5	7.0	5.0	4.9	9.7	5.0	4.0
Aliphatic EPH >C35-C40	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Total Aliphatic EPH >C10-C35	U	2690	mg/kg	5.00	11	13	12	10	9.3	14	10	9.2
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10.00	11	13	12	10	< 10	14	10	< 10
Aromatic VPH >C5-C7	U	2780	mg/kg	0.10	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	U	2780	mg/kg	0.10	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	U	2780	mg/kg	0.10	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	U	2780	mg/kg	0.50	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	U	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic EPH >C12-C16	U	2690	mg/kg	1.00	1.2	1.0	< 1.0	< 1.0	< 1.0	1.2	< 1.0	1.1
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	6.8	7.1	8.0	4.3	6.3	6.8	6.8	8.2
Aromatic EPH >C21-C35	U	2690	mg/kg	2.00	3.2	2.4	3.9	3.6	< 2.0	3.1	2.7	3.2
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	10	11	12	11	8.9	8.6	9.4	8.6
Total Aromatic EPH >C10-C35	U	2690	mg/kg	5.00	11	11	12	8.3	8.1	11	11	13
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10.00	22	22	24	19	17	20	20	21
Total VPH >C5-C10	U	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35	U	2690	mg/kg	10.00	22	24	24	18	17	25	21	22
Total EPH >C10-C40	N	2690	mg/kg	10.00	33	35	36	29	26	34	30	30
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Test Methods

SOP	Title	Parameters included	Method summary
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

UKAS TESTING 2183

Final Report

Report No.:	23-07544-1		
Initial Date of Issue:	17-Mar-2023		
Client	Smith Grant LLP		
Client Address:	Bryn Estyn Business Centre Bryn Estyn Road Wrexham LL13 9TY		
Contact(s):	Scott Miller		
Project	R1742b Heyford (Dorchester URL)		
Quotation No.:	Q15-02887	**Date Received:**	06-Mar-2023
Order No.:		**Date Instructed:**	06-Mar-2023
No. of Samples:	9		
Turnaround (Wkdays):	7	**Results Due:**	14-Mar-2023
Date Approved:	17-Mar-2023		

Approved By:

[redacted]

Details:	Stuart Henderson, Technical Manager

Results - Soil

Project: R1742b Heyford (Dorchester URL)

Client: Smith Grant LLP				**Chemtest Job No.:**	23-07544	23-07544	23-07544	23-07544	23-07544	23-07544	23-07544	23-07544	23-07544
Quotation No.: Q15-02887				**Chemtest Sample ID.:**	1601984	1601985	1601986	1601987	1601988	1601989	1601990	1601991	1601992
				Sample Location:	SHS - S1	SHS - SS1	SHS - SS2	SHS - SS3	SHS - SS4	SHS - SS5	SHS - SS6	SHS - SS7	SHS - SS8
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.80
				Bottom Depth (m):		1.70	1.70	1.70	1.80	1.80	1.80	2.00	2.30
				Date Sampled:	01-Mar-2023	01-Mar-2023	01-Mar-2023	01-Mar-2023	01-Mar-2023	01-Mar-2023	01-Mar-2023	01-Mar-2023	01-Mar-2023
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Moisture	N	2030	%	0.020	13	12	13	13	11	12	10	9.1	8.7
Aliphatic VPH >C5-C6	U	2780	mg/kg	0.10	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	U	2780	mg/kg	0.50	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.14
Aliphatic VPH >C7-C8	U	2780	mg/kg	0.10	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	1.1
Aliphatic VPH >C8-C10	U	2780	mg/kg	0.10	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	19
Total Aliphatic VPH >C5-C10	U	2780	mg/kg	0.10	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	20
Aliphatic EPH >C10-C12	U	2690	mg/kg	2.00	2.5	2.8	2.3	2.4	2.7	2.4	2.7	2.3	190
Aliphatic EPH >C12-C16	U	2690	mg/kg	1.00	2.2	1.8	1.8	1.9	1.9	1.7	1.8	1.4	150
Aliphatic EPH >C16-C21	U	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C21-C35	U	2690	mg/kg	3.00	4.4	4.3	4.2	5.5	5.9	5.3	5.3	5.3	4.5
Aliphatic EPH >C35-C40	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Total Aliphatic EPH >C10-C35	U	2690	mg/kg	5.00	9.5	9.3	8.9	10	11	9.5	10	9.1	340
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10.00	< 10	< 10	< 10	10	11	< 10	10	< 10	340
Aromatic VPH >C5-C7	U	2780	mg/kg	0.10	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	U	2780	mg/kg	0.10	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	U	2780	mg/kg	0.10	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	U	2780	mg/kg	0.50	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	U	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	48
Aromatic EPH >C12-C16	U	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	43
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	7.7	7.9	6.7	6.7	12	7.6	6.1	7.5	6.5
Aromatic EPH >C21-C35	U	2690	mg/kg	2.00	< 2.0	2.6	6.1	5.8	12	6.1	7.6	6.3	7.1
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	9.5	11	12	10	9.6	11	12	12	12
Total Aromatic EPH >C10-C35	U	2690	mg/kg	5.00	9.7	11	13	13	25	14	14	15	100
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10.00	19	22	25	23	34	25	26	26	120
Total VPH >C5-C10	U	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	20
Total EPH >C10-C35	U	2690	mg/kg	10.00	19	21	22	23	35	24	24	24	450
Total EPH >C10-C40	N	2690	mg/kg	10.00	29	31	34	33	45	35	36	36	460
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Test Methods

SOP	Title	Parameters included	Method summary
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35–C40	Acetone/Heptane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

UKAS TESTING 2183

eurofins | Chemtest

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	23-08277-1
Initial Date of Issue:	24-Mar-2023
Client	Smith Grant LLP
Client Address:	Bryn Estyn Business Centre Bryn Estyn Road Wrexham LL13 9TY
Contact(s):	Scott Miller
Project	Heyford Phase 10 Heyford (Dorchester URL) R1742b

Quotation No.:	Q15-02887	**Date Received:**	10-Mar-2023
Order No.:		**Date Instructed:**	10-Mar-2023
No. of Samples:	33		
Turnaround (Wkdays):	7	**Results Due:**	20-Mar-2023
Date Approved:	24-Mar-2023		

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Soil

Project: Heyford Phase 10 Heyford (Dorchester URL) R1742b

Client: Smith Grant LLP				**Chemtest Job No.:**	23-08277	23-08277	23-08277	23-08277	23-08277	23-08277	23-08277	23-08277	23-08277
Quotation No.: Q15-02887				**Chemtest Sample ID.:**	1605410	1605411	1605412	1605413	1605414	1605415	1605416	1605417	1605418
				Sample Location:	NHS-S5	NHS-S6	NHS-S7	NHS-S8	CH5-Cell9-SS6	CH5-Cell9-SS7	CH5-Cell9-SS8	TSSP5-S1	TSSP5-S2
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):					1.3	1.3	1.3		
				Bottom Depth (m):					1.8	1.9	1.9		
				Date Sampled:	06-Mar-2023	07-Mar-2023	07-Mar-2023	08-Mar-2023	07-Mar-2023	07-Mar-2023	07-Mar-2023	08-Mar-2023	08-Mar-2023
				Asbestos Lab:								DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
ACM Type	U	2192		N/A								-	-
Asbestos Identification	U	2192		N/A								No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	10	10	15	15	15	13	13	18	17
pH	U	2010		4.0								7.9	7.9
Arsenic	U	2455	mg/kg	0.5								27	31
Cadmium	U	2455	mg/kg	0.10								0.48	1.5
Chromium	U	2455	mg/kg	0.5								55	20
Copper	U	2455	mg/kg	0.50								30	74
Mercury	U	2455	mg/kg	0.05								0.16	0.07
Nickel	U	2455	mg/kg	0.50								50	83
Lead	U	2455	mg/kg	0.50								63	49
Selenium	U	2455	mg/kg	0.25								2.3	1.5
Vanadium	U	2455	mg/kg	0.5								110	51
Zinc	U	2455	mg/kg	0.50								190	460
Chromium (Hexavalent)	N	2490	mg/kg	0.50								< 0.50	< 0.50
Aliphatic VPH >C5-C6	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Aliphatic VPH >C6-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Aliphatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.19		
Aliphatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.26		
Total Aliphatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	0.44		
Aliphatic EPH >C10-C12	U	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	2.7	2.3	3.3	2.5		
Aliphatic EPH >C12-C16	U	2690	mg/kg	1.00	1.5	2.6	1.7	3.2	3.8	4.0	3.5		
Aliphatic EPH >C16-C21	U	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	2.1	2.1	2.3	2.2		
Aliphatic EPH >C21-C35	U	2690	mg/kg	3.00	3.1	3.0	< 3.0	4.3	4.4	11	4.2		
Aliphatic EPH >C35-C40	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
Total Aliphatic EPH >C10-C35	U	2690	mg/kg	5.00	6.2	8.3	5.9	12	13	20	12		
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10.00	< 10	< 10	< 10	12	13	20	12		
Aromatic VPH >C5-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Aromatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Aromatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Total Aromatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25		
Aromatic EPH >C10-C12	U	2690	mg/kg	1.00	< 1.0	< 1.0	1.6	13	9.9	9.4	11		
Aromatic EPH >C12-C16	U	2690	mg/kg	1.00	< 1.0	< 1.0	1.5	17	20	16	15		
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	5.2	4.2	4.2	18	19	20	17		
Aromatic EPH >C21-C35	U	2690	mg/kg	2.00	< 2.0	2.1	2.4	7.1	5.5	9.1	7.0		

Results - Soil

Project: Heyford Phase 10 Heyford (Dorchester URL) R1742b

Client: Smith Grant LLP				**Chemtest Job No.:**	23-08277	23-08277	23-08277	23-08277	23-08277	23-08277	23-08277	23-08277	23-08277
Quotation No.: Q15-02887				**Chemtest Sample ID.:**	1605410	1605411	1605412	1605413	1605414	1605415	1605416	1605417	1605418
				Sample Location:	NHS-S5	NHS-S6	NHS-S7	NHS-S8	CH5-Cell9-SS6	CH5-Cell9-SS7	CH5-Cell9-SS8	TSSP5-S1	TSSP5-S2
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):					1.3	1.3	1.3		
				Bottom Depth (m):					1.8	1.9	1.9		
				Date Sampled:	06-Mar-2023	07-Mar-2023	07-Mar-2023	08-Mar-2023	07-Mar-2023	07-Mar-2023	07-Mar-2023	08-Mar-2023	08-Mar-2023
				Asbestos Lab:								DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	2.8	3.9	3.7	8.7	8.6	8.1	8.6		
Total Aromatic EPH >C10-C35	U	2690	mg/kg	5.00	8.4	7.7	9.7	55	55	55	51		
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10.00	11	12	13	63	63	63	59		
Total VPH >C5-C10	U	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		
Total EPH >C10-C35	U	2690	mg/kg	10.00	15	16	16	67	67	75	63		
Total EPH >C10-C40	N	2690	mg/kg	10.00	17	20	19	76	76	83	71		
Organic Matter	U	2625	%	0.40								5.1	5.8
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0								< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0								< 1.0	< 1.0
Aliphatic TPH >C8-C10	N	2680	mg/kg	1.0								< 1.0	< 1.0
Aliphatic TPH >C10-C12	N	2680	mg/kg	1.0								< 1.0	< 1.0
Aliphatic TPH >C12-C16	N	2680	mg/kg	1.0								< 1.0	< 1.0
Aliphatic TPH >C16-C21	N	2680	mg/kg	1.0								< 1.0	< 1.0
Aliphatic TPH >C21-C35	N	2680	mg/kg	1.0								< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0								< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0								< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0								< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0								< 1.0	< 1.0
Aromatic TPH >C8-C10	N	2680	mg/kg	1.0								< 1.0	< 1.0
Aromatic TPH >C10-C12	N	2680	mg/kg	1.0								< 1.0	< 1.0
Aromatic TPH >C12-C16	N	2680	mg/kg	1.0								< 1.0	< 1.0
Aromatic TPH >C16-C21	N	2680	mg/kg	1.0								< 1.0	< 1.0
Aromatic TPH >C21-C35	N	2680	mg/kg	1.0								< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0								< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0								< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0								< 10	< 10
Naphthalene	U	2700	mg/kg	0.10								< 0.10	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10								< 0.10	< 0.10
Acenaphthene	U	2700	mg/kg	0.10								< 0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10								< 0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10								< 0.10	< 0.10
Anthracene	U	2700	mg/kg	0.10								< 0.10	< 0.10
Fluoranthene	U	2700	mg/kg	0.10								1.3	0.88
Pyrene	U	2700	mg/kg	0.10								1.5	0.88
Benzo[a]anthracene	U	2700	mg/kg	0.10								0.85	0.75
Chrysene	U	2700	mg/kg	0.10								1.2	0.94

Results - Soil

Project: Heyford Phase 10 Heyford (Dorchester URL) R1742b

Client: Smith Grant LLP				**Chemtest Job No.:**	23-08277	23-08277	23-08277	23-08277	23-08277	23-08277	23-08277	23-08277	23-08277
Quotation No.: Q15-02887				**Chemtest Sample ID.:**	1605410	1605411	1605412	1605413	1605414	1605415	1605416	1605417	1605418
				Sample Location:	NHS-S5	NHS-S6	NHS-S7	NHS-S8	CH5-Cell9-SS6	CH5-Cell9-SS7	CH5-Cell9-SS8	TSSP5-S1	TSSP5-S2
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):					1.3	1.3	1.3		
				Bottom Depth (m):					1.8	1.9	1.9		
				Date Sampled:	06-Mar-2023	07-Mar-2023	07-Mar-2023	08-Mar-2023	07-Mar-2023	07-Mar-2023	07-Mar-2023	08-Mar-2023	08-Mar-2023
				Asbestos Lab:								DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Benzo[b]fluoranthene	U	2700	mg/kg	0.10								< 0.10	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10								< 0.10	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10								< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10								< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10								< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10								< 0.10	< 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0								4.9	3.5
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: Heyford Phase 10 Heyford (Dorchester URL) R1742b

Client: Smith Grant LLP				**Chemtest Job No.:**	23-08277	23-08277	23-08277	23-08277	23-08277	23-08277	23-08277	23-08277	23-08277
Quotation No.: Q15-02887				**Chemtest Sample ID.:**	1605419	1605420	1605421	1605422	1605423	1605424	1605425	1605426	1605427
				Sample Location:	TSSP5-S3	NHS-SS19	NHS-SS20	NHS-SS21	NHS-SS22	NHS-SS23	NHS-SS24	NHS-SS25	NHS-SS26
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		1.2	1.2	1.2	1.2	1.2	1.1	1.1	
				Bottom Depth (m):		1.9	1.9	1.8	1.8	1.9	1.7	1.6	1.7
				Date Sampled:	08-Mar-2023	06-Mar-2023	06-Mar-2023	07-Mar-2023	07-Mar-2023	07-Mar-2023	07-Mar-2023	07-Mar-2023	07-Mar-2023
				Asbestos Lab:	DURHAM								
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
ACM Type	U	2192		N/A	-								
Asbestos Identification	U	2192		N/A	No Asbestos Detected								
Moisture	N	2030	%	0.020	26	10	9.9	11	9.6	13	15	9.3	16
pH	U	2010		4.0	7.8								
Arsenic	U	2455	mg/kg	0.5	29								
Cadmium	U	2455	mg/kg	0.10	3.1								
Chromium	U	2455	mg/kg	0.5	170								
Copper	U	2455	mg/kg	0.50	210								
Mercury	U	2455	mg/kg	0.05	0.39								
Nickel	U	2455	mg/kg	0.50	110								
Lead	U	2455	mg/kg	0.50	170								
Selenium	U	2455	mg/kg	0.25	2.5								
Vanadium	U	2455	mg/kg	0.5	86								
Zinc	U	2455	mg/kg	0.50	630								
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50								
Aliphatic VPH >C5-C6	U	2780	mg/kg	0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	U	2780	mg/kg	0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	U	2780	mg/kg	0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C8-C10	U	2780	mg/kg	0.05		< 0.05	< 0.05	0.20	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	U	2780	mg/kg	0.25		< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12	U	2690	mg/kg	2.00		2.4	< 2.0	18	2.1	6.8	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C12-C16	U	2690	mg/kg	1.00		2.8	2.9	200	3.1	6.2	2.5	2.1	2.4
Aliphatic EPH >C16-C21	U	2690	mg/kg	2.00		< 2.0	2.2	1100	2.2	2.3	2.2	< 2.0	2.3
Aliphatic EPH >C21-C35	U	2690	mg/kg	3.00		3.6	4.1	680	3.8	4.0	4.2	3.9	4.4
Aliphatic EPH >C35-C40	N	2690	mg/kg	10.00		< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Total Aliphatic EPH >C10-C35	U	2690	mg/kg	5.00		11	11	2000	11	19	11	9.6	11
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10.00		11	11	2000	11	19	11	< 10	11
Aromatic VPH >C5-C7	U	2780	mg/kg	0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	U	2780	mg/kg	0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	U	2780	mg/kg	0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	U	2780	mg/kg	0.25		< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	U	2690	mg/kg	1.00		11	12	72	12	11	12	11	11
Aromatic EPH >C12-C16	U	2690	mg/kg	1.00		17	18	520	17	18	20	16	18
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00		18	17	40	18	17	18	16	18
Aromatic EPH >C21-C35	U	2690	mg/kg	2.00		2.2	2.3	8.7	< 2.0	2.7	2.8	< 2.0	< 2.0

Results - Soil

Project: Heyford Phase 10 Heyford (Dorchester URL) R1742b

Client: Smith Grant LLP				**Chemtest Job No.:**	23-08277	23-08277	23-08277	23-08277	23-08277	23-08277	23-08277	23-08277	23-08277
Quotation No.: Q15-02887				**Chemtest Sample ID.:**	1605419	1605420	1605421	1605422	1605423	1605424	1605425	1605426	1605427
				Sample Location:	TSSP5-S3	NHS-SS19	NHS-SS20	NHS-SS21	NHS-SS22	NHS-SS23	NHS-SS24	NHS-SS25	NHS-SS26
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		1.2	1.2	1.2	1.2	1.2	1.1	1.1	
				Bottom Depth (m):		1.9	1.9	1.8	1.8	1.9	1.7	1.6	1.7
				Date Sampled:	08-Mar-2023	06-Mar-2023	06-Mar-2023	07-Mar-2023	07-Mar-2023	07-Mar-2023	07-Mar-2023	07-Mar-2023	07-Mar-2023
				Asbestos Lab:	DURHAM								
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00		8.1	8.2	7.9	9.0	7.9	7.9	8.3	10
Total Aromatic EPH >C10-C35	U	2690	mg/kg	5.00		49	50	640	48	48	53	44	49
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10.00		57	58	650	57	56	61	53	60
Total VPH >C5-C10	U	2780	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35	U	2690	mg/kg	10.00		59	61	2600	59	67	63	54	60
Total EPH >C10-C40	N	2690	mg/kg	10.00		67	69	2600	68	75	71	62	70
Organic Matter	U	2625	%	0.40	7.6								
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0								
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0								
Aliphatic TPH >C8-C10	N	2680	mg/kg	1.0	< 1.0								
Aliphatic TPH >C10-C12	N	2680	mg/kg	1.0	< 1.0								
Aliphatic TPH >C12-C16	N	2680	mg/kg	1.0	< 1.0								
Aliphatic TPH >C16-C21	N	2680	mg/kg	1.0	< 1.0								
Aliphatic TPH >C21-C35	N	2680	mg/kg	1.0	< 1.0								
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0								
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0								
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0								
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0								
Aromatic TPH >C8-C10	N	2680	mg/kg	1.0	< 1.0								
Aromatic TPH >C10-C12	N	2680	mg/kg	1.0	< 1.0								
Aromatic TPH >C12-C16	N	2680	mg/kg	1.0	< 1.0								
Aromatic TPH >C16-C21	N	2680	mg/kg	1.0	< 1.0								
Aromatic TPH >C21-C35	N	2680	mg/kg	1.0	< 1.0								
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0								
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0								
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10								
Naphthalene	U	2700	mg/kg	0.10	0.24								
Acenaphthylene	U	2700	mg/kg	0.10	0.32								
Acenaphthene	U	2700	mg/kg	0.10	0.70								
Fluorene	U	2700	mg/kg	0.10	0.48								
Phenanthrene	U	2700	mg/kg	0.10	5.4								
Anthracene	U	2700	mg/kg	0.10	0.87								
Fluoranthene	U	2700	mg/kg	0.10	12								
Pyrene	U	2700	mg/kg	0.10	12								
Benzo[a]anthracene	U	2700	mg/kg	0.10	5.2								
Chrysene	U	2700	mg/kg	0.10	7.1								

Results - Soil

Project: Heyford Phase 10 Heyford (Dorchester URL) R1742b

Client: Smith Grant LLP				**Chemtest Job No.:**	23-08277	23-08277	23-08277	23-08277	23-08277	23-08277	23-08277	23-08277	23-08277
Quotation No.: Q15-02887				**Chemtest Sample ID.:**	1605419	1605420	1605421	1605422	1605423	1605424	1605425	1605426	1605427
				Sample Location:	TSSP5-S3	NHS-SS19	NHS-SS20	NHS-SS21	NHS-SS22	NHS-SS23	NHS-SS24	NHS-SS25	NHS-SS26
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		1.2	1.2	1.2	1.2	1.2	1.1	1.1	
				Bottom Depth (m):		1.9	1.9	1.8	1.8	1.9	1.7	1.6	1.7
				Date Sampled:	08-Mar-2023	06-Mar-2023	06-Mar-2023	07-Mar-2023	07-Mar-2023	07-Mar-2023	07-Mar-2023	07-Mar-2023	07-Mar-2023
				Asbestos Lab:	DURHAM								
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	7.9								
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	3.1								
Benzo[a]pyrene	U	2700	mg/kg	0.10	5.7								
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	4.2								
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	1.2								
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	4.3								
Total Of 16 PAH's	U	2700	mg/kg	2.0	71								
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: Heyford Phase 10 Heyford (Dorchester URL) R1742b

Client: Smith Grant LLP	Chemtest Job No.:				23-08277	23-08277	23-08277	23-08277	23-08277	23-08277	23-08277	23-08277	23-08277
Quotation No.: Q15-02887	Chemtest Sample ID.:				1605428	1605429	1605430	1605431	1605432	1605433	1605434	1605435	1605436
	Sample Location:				NHS-SS27	NHS-SS28	NHS-SS29	NHS-SS30	NHS-SS31	NHS-SS32	NHS-SS33	NHS-SS34	NHS-SS35
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				1.1	1.1	1.1		1.1	1.2	1.1	1.1	
	Bottom Depth (m):				1.6	1.6	1.6	1.6	1.6	1.9	2.1	2.1	2.1
	Date Sampled:				07-Mar-2023	07-Mar-2023	07-Mar-2023	07-Mar-2023	07-Mar-2023	07-Mar-2023	07-Mar-2023	08-Mar-2023	08-Mar-2023
	Asbestos Lab:												
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
ACM Type	U	2192		N/A									
Asbestos Identification	U	2192		N/A									
Moisture	N	2030	%	0.020	14	14	14	16	14	10	16	14	14
pH	U	2010		4.0									
Arsenic	U	2455	mg/kg	0.5									
Cadmium	U	2455	mg/kg	0.10									
Chromium	U	2455	mg/kg	0.5									
Copper	U	2455	mg/kg	0.50									
Mercury	U	2455	mg/kg	0.05									
Nickel	U	2455	mg/kg	0.50									
Lead	U	2455	mg/kg	0.50									
Selenium	U	2455	mg/kg	0.25									
Vanadium	U	2455	mg/kg	0.5									
Zinc	U	2455	mg/kg	0.50									
Chromium (Hexavalent)	N	2490	mg/kg	0.50									
Aliphatic VPH >C5-C6	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	0.13	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12	U	2690	mg/kg	2.00	< 2.0	2.3	5.3	2.1	< 2.0	< 2.0	2.2	< 2.0	< 2.0
Aliphatic EPH >C12-C16	U	2690	mg/kg	1.00	2.1	2.4	6.7	3.1	2.3	5.6	2.3	2.6	< 1.0
Aliphatic EPH >C16-C21	U	2690	mg/kg	2.00	< 2.0	2.3	2.6	3.0	2.3	4.8	< 2.0	2.7	< 2.0
Aliphatic EPH >C21-C35	U	2690	mg/kg	3.00	4.0	4.0	3.9	5.0	5.0	13	4.1	8.9	4.3
Aliphatic EPH >C35-C40	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Total Aliphatic EPH >C10-C35	U	2690	mg/kg	5.00	9.5	11	18	13	11	26	10	15	6.0
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10.00	< 10	11	18	13	11	26	10	15	< 10
Aromatic VPH >C5-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	U	2690	mg/kg	1.00	12	12	12	11	12	11	12	1.8	1.5
Aromatic EPH >C12-C16	U	2690	mg/kg	1.00	17	17	19	16	15	18	18	1.4	2.1
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	19	17	18	18	17	97	17	4.0	3.0
Aromatic EPH >C21-C35	U	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	3.5	3.3	160	< 2.0	6.1	< 2.0

Results - Soil

Project: Heyford Phase 10 Heyford (Dorchester URL) R1742b

Client: Smith Grant LLP	**Chemtest Job No.:**				23-08277	23-08277	23-08277	23-08277	23-08277	23-08277	23-08277	23-08277	23-08277
Quotation No.: Q15-02887	**Chemtest Sample ID.:**				1605428	1605429	1605430	1605431	1605432	1605433	1605434	1605435	1605436
	Sample Location:				NHS-SS27	NHS-SS28	NHS-SS29	NHS-SS30	NHS-SS31	NHS-SS32	NHS-SS33	NHS-SS34	NHS-SS35
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				1.1	1.1	1.1		1.1	1.2	1.1	1.1	
	Bottom Depth (m):				1.6	1.6	1.6	1.6	1.6	1.9	2.1	2.1	2.1
	Date Sampled:				07-Mar-2023	07-Mar-2023	07-Mar-2023	07-Mar-2023	07-Mar-2023	07-Mar-2023	07-Mar-2023	08-Mar-2023	08-Mar-2023
	Asbestos Lab:												
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	9.4	8.6	8.2	6.1	6.6	16	7.7	3.8	3.6
Total Aromatic EPH >C10-C35	U	2690	mg/kg	5.00	49	47	49	47	48	290	48	13	8.2
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10.00	59	55	57	53	54	300	56	17	12
Total VPH >C5-C10	U	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35	U	2690	mg/kg	10.00	59	58	67	60	59	310	59	28	14
Total EPH >C10-C40	N	2690	mg/kg	10.00	68	66	76	67	65	330	66	32	18
Organic Matter	U	2625	%	0.40									
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0									
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0									
Aliphatic TPH >C8-C10	N	2680	mg/kg	1.0									
Aliphatic TPH >C10-C12	N	2680	mg/kg	1.0									
Aliphatic TPH >C12-C16	N	2680	mg/kg	1.0									
Aliphatic TPH >C16-C21	N	2680	mg/kg	1.0									
Aliphatic TPH >C21-C35	N	2680	mg/kg	1.0									
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0									
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0									
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0									
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0									
Aromatic TPH >C8-C10	N	2680	mg/kg	1.0									
Aromatic TPH >C10-C12	N	2680	mg/kg	1.0									
Aromatic TPH >C12-C16	N	2680	mg/kg	1.0									
Aromatic TPH >C16-C21	N	2680	mg/kg	1.0									
Aromatic TPH >C21-C35	N	2680	mg/kg	1.0									
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0									
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0									
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0									
Naphthalene	U	2700	mg/kg	0.10									
Acenaphthylene	U	2700	mg/kg	0.10									
Acenaphthene	U	2700	mg/kg	0.10									
Fluorene	U	2700	mg/kg	0.10									
Phenanthrene	U	2700	mg/kg	0.10									
Anthracene	U	2700	mg/kg	0.10									
Fluoranthene	U	2700	mg/kg	0.10									
Pyrene	U	2700	mg/kg	0.10									
Benzo[a]anthracene	U	2700	mg/kg	0.10									
Chrysene	U	2700	mg/kg	0.10									

Results - Soil

Project: Heyford Phase 10 Heyford (Dorchester URL) R1742b

Client: Smith Grant LLP				**Chemtest Job No.:**	23-08277	23-08277	23-08277	23-08277	23-08277	23-08277	23-08277	23-08277	23-08277
Quotation No.: Q15-02887				**Chemtest Sample ID.:**	1605428	1605429	1605430	1605431	1605432	1605433	1605434	1605435	1605436
				Sample Location:	NHS-SS27	NHS-SS28	NHS-SS29	NHS-SS30	NHS-SS31	NHS-SS32	NHS-SS33	NHS-SS34	NHS-SS35
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	1.1	1.1	1.1		1.1	1.2	1.1	1.1	
				Bottom Depth (m):	1.6	1.6	1.6	1.6	1.6	1.9	2.1	2.1	2.1
				Date Sampled:	07-Mar-2023	07-Mar-2023	07-Mar-2023	07-Mar-2023	07-Mar-2023	07-Mar-2023	07-Mar-2023	08-Mar-2023	08-Mar-2023
				Asbestos Lab:									
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Benzo[b]fluoranthene	U	2700	mg/kg	0.10									
Benzo[k]fluoranthene	U	2700	mg/kg	0.10									
Benzo[a]pyrene	U	2700	mg/kg	0.10									
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10									
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10									
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10									
Total Of 16 PAH's	U	2700	mg/kg	2.0									
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: Heyford Phase 10 Heyford (Dorchester URL) R1742b

Client: Smith Grant LLP				**Chemtest Job No.:**	23-08277	23-08277	23-08277	23-08277	23-08277	23-08277
Quotation No.: Q15-02887				**Chemtest Sample ID.:**	1605437	1605438	1605439	1605440	1605441	1605442
				Sample Location:	NHS-SS36	NHS-SS37	NHS-SS38	NHS-SS39	NHS-SS40	NHS-SS41
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	1.2	1.1	1.2	1.1	1.1	1.2
				Bottom Depth (m):	1.8	2.0	1.7	1.8	1.7	1.7
				Date Sampled:	08-Mar-2023	08-Mar-2023	08-Mar-2023	08-Mar-2023	08-Mar-2023	08-Mar-2023
				Asbestos Lab:						
Determinand	**Accred.**	**SOP**	**Units**	**LOD**						
ACM Type	U	2192		N/A						
Asbestos Identification	U	2192		N/A						
Moisture	N	2030	%	0.020	11	12	12	12	13	15
pH	U	2010		4.0						
Arsenic	U	2455	mg/kg	0.5						
Cadmium	U	2455	mg/kg	0.10						
Chromium	U	2455	mg/kg	0.5						
Copper	U	2455	mg/kg	0.50						
Mercury	U	2455	mg/kg	0.05						
Nickel	U	2455	mg/kg	0.50						
Lead	U	2455	mg/kg	0.50						
Selenium	U	2455	mg/kg	0.25						
Vanadium	U	2455	mg/kg	0.5						
Zinc	U	2455	mg/kg	0.50						
Chromium (Hexavalent)	N	2490	mg/kg	0.50						
Aliphatic VPH >C5-C6	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	0.49	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	0.15	3.5	1.2	0.34	< 0.05
Total Aliphatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	0.15	4.0	1.2	0.34	< 0.25
Aliphatic EPH >C10-C12	U	2690	mg/kg	2.00	< 2.0	< 2.0	34	27	< 2.0	< 2.0
Aliphatic EPH >C12-C16	U	2690	mg/kg	1.00	< 1.0	< 1.0	13	23	1.7	1.3
Aliphatic EPH >C16-C21	U	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C21-C35	U	2690	mg/kg	3.00	4.6	4.1	6.2	< 3.0	6.2	5.9
Aliphatic EPH >C35-C40	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10	< 10	< 10
Total Aliphatic EPH >C10-C35	U	2690	mg/kg	5.00	6.4	6.0	55	54	11	9.7
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10.00	< 10	< 10	55	54	11	< 10
Aromatic VPH >C5-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	< 0.05	0.45	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	U	2690	mg/kg	1.00	1.8	1.8	9.4	4.5	1.1	1.5
Aromatic EPH >C12-C16	U	2690	mg/kg	1.00	1.5	2.1	4.0	2.0	2.8	1.3
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	4.5	4.4	3.9	5.1	5.5	2.6
Aromatic EPH >C21-C35	U	2690	mg/kg	2.00	28	< 2.0	2.1	< 2.0	2.7	2.7

Results - Soil

Project: Heyford Phase 10 Heyford (Dorchester URL) R1742b

Client: Smith Grant LLP				**Chemtest Job No.:**	23-08277	23-08277	23-08277	23-08277	23-08277	23-08277
Quotation No.: Q15-02887				**Chemtest Sample ID.:**	1605437	1605438	1605439	1605440	1605441	1605442
				Sample Location:	NHS-SS36	NHS-SS37	NHS-SS38	NHS-SS39	NHS-SS40	NHS-SS41
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	1.2	1.1	1.2	1.1	1.1	1.2
				Bottom Depth (m):	1.8	2.0	1.7	1.8	1.7	1.7
				Date Sampled:	08-Mar-2023	08-Mar-2023	08-Mar-2023	08-Mar-2023	08-Mar-2023	08-Mar-2023
				Asbestos Lab:						
Determinand	**Accred.**	**SOP**	**Units**	**LOD**						
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	3.6	4.2	4.0	3.5	3.6	54
Total Aromatic EPH >C10-C35	U	2690	mg/kg	5.00	36	10	19	13	12	8.2
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10.00	40	14	23	16	16	63
Total VPH >C5-C10	U	2780	mg/kg	0.50	< 0.50	< 0.50	4.0	1.2	< 0.50	< 0.50
Total EPH >C10-C35	U	2690	mg/kg	10.00	43	16	74	66	23	18
Total EPH >C10-C40	N	2690	mg/kg	10.00	46	20	78	70	27	72
Organic Matter	U	2625	%	0.40						
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0						
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0						
Aliphatic TPH >C8-C10	N	2680	mg/kg	1.0						
Aliphatic TPH >C10-C12	N	2680	mg/kg	1.0						
Aliphatic TPH >C12-C16	N	2680	mg/kg	1.0						
Aliphatic TPH >C16-C21	N	2680	mg/kg	1.0						
Aliphatic TPH >C21-C35	N	2680	mg/kg	1.0						
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0						
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0						
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0						
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0						
Aromatic TPH >C8-C10	N	2680	mg/kg	1.0						
Aromatic TPH >C10-C12	N	2680	mg/kg	1.0						
Aromatic TPH >C12-C16	N	2680	mg/kg	1.0						
Aromatic TPH >C16-C21	N	2680	mg/kg	1.0						
Aromatic TPH >C21-C35	N	2680	mg/kg	1.0						
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0						
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0						
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0						
Naphthalene	U	2700	mg/kg	0.10						
Acenaphthylene	U	2700	mg/kg	0.10						
Acenaphthene	U	2700	mg/kg	0.10						
Fluorene	U	2700	mg/kg	0.10						
Phenanthrene	U	2700	mg/kg	0.10						
Anthracene	U	2700	mg/kg	0.10						
Fluoranthene	U	2700	mg/kg	0.10						
Pyrene	U	2700	mg/kg	0.10						
Benzo[a]anthracene	U	2700	mg/kg	0.10						
Chrysene	U	2700	mg/kg	0.10						

Results - Soil

Project: Heyford Phase 10 Heyford (Dorchester URL) R1742b

Client: Smith Grant LLP				**Chemtest Job No.:**	23-08277	23-08277	23-08277	23-08277	23-08277	23-08277
Quotation No.: Q15-02887				**Chemtest Sample ID.:**	1605437	1605438	1605439	1605440	1605441	1605442
				Sample Location:	NHS-SS36	NHS-SS37	NHS-SS38	NHS-SS39	NHS-SS40	NHS-SS41
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	1.2	1.1	1.2	1.1	1.1	1.2
				Bottom Depth (m):	1.8	2.0	1.7	1.8	1.7	1.7
				Date Sampled:	08-Mar-2023	08-Mar-2023	08-Mar-2023	08-Mar-2023	08-Mar-2023	08-Mar-2023
				Asbestos Lab:						
Determinand	**Accred.**	**SOP**	**Units**	**LOD**						
Benzo[b]fluoranthene	U	2700	mg/kg	0.10						
Benzo[k]fluoranthene	U	2700	mg/kg	0.10						
Benzo[a]pyrene	U	2700	mg/kg	0.10						
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10						
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10						
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10						
Total Of 16 PAH's	U	2700	mg/kg	2.0						
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35–C40	Acetone/Heptane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

UKAS TESTING 2183

eurofins | Chemtest

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	23-09442-1		
Initial Date of Issue:	05-Apr-2023		
Client	Smith Grant LLP		
Client Address:	Bryn Estyn Business Centre Bryn Estyn Road Wrexham LL13 9TY		
Contact(s):	Scott Miller		
Project	R1742b Heyford Phase 10		
Quotation No.:	Q15-02887	**Date Received:**	21-Mar-2023
Order No.:		**Date Instructed:**	21-Mar-2023
No. of Samples:	10		
Turnaround (Wkdays):	7	**Results Due:**	29-Mar-2023
Date Approved:	05-Apr-2023		
Approved By:			

[redacted]

Details:	Stuart Henderson, Technical Manager

Results - Soil

Project: R1742b Heyford Phase 10

Client: Smith Grant LLP				**Chemtest Job No.:**	23-09442	23-09442	23-09442	23-09442	23-09442	23-09442	23-09442	23-09442	23-09442
Quotation No.: Q15-02887				**Chemtest Sample ID.:**	1610593	1610594	1610595	1610596	1610597	1610598	1610599	1610600	1610601
				Sample Location:	HS-Cell9-SS1	HS-Cell9-SS2	HS-Cell9-SS3	HS-Cell9-SS4	HS-Cell9-SS5	HS-Cell9-SS6	HS-Cell9-SS7	HS-Cell9-SS8	HS-Cell9-S1
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Bottom Depth (m):	1.7	2.5	2.6	2.0	2.2	2.2	2.5	2.8	
				Date Sampled:	14-Mar-2023	14-Mar-2023	14-Mar-2023	16-Mar-2023	16-Mar-2023	16-Mar-2023	16-Mar-2023	16-Mar-2023	16-Mar-2023
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Moisture	N	2030	%	0.020	12	14	12	7.5	9.3	11	6.6	9.7	9.5
Aliphatic VPH >C5-C6	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.14
Aliphatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	0.12	< 0.05	< 0.05	0.16	< 0.05	< 0.05	0.41
Aliphatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	< 0.05	0.53	0.12	0.11	0.19	< 0.05	< 0.05	2.3
Total Aliphatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25	0.65	< 0.25	< 0.25	0.35	< 0.25	< 0.25	2.9
Aliphatic EPH >C10-C12	U	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	2.4	< 2.0	91
Aliphatic EPH >C12-C16	U	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	2.6	2.5	82
Aliphatic EPH >C16-C21	U	2690	mg/kg	2.00	20	3.3	< 2.0	< 2.0	< 2.0	< 2.0	2.4	< 2.0	2.4
Aliphatic EPH >C21-C35	U	2690	mg/kg	3.00	12	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	3.9	4.5	4.9
Aliphatic EPH >C35-C40	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Total Aliphatic EPH >C10-C35	U	2690	mg/kg	5.00	34	7.0	< 5.0	< 5.0	< 5.0	< 5.0	11	9.2	180
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10.00	34	< 10	< 10	< 10	< 10	< 10	11	< 10	180
Aromatic VPH >C5-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.80
Total Aromatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	0.80
Aromatic EPH >C10-C12	U	2690	mg/kg	1.00	1.0	1.1	1.1	1.1	< 1.0	1.0	11	10	20
Aromatic EPH >C12-C16	U	2690	mg/kg	1.00	1.2	< 1.0	1.1	< 1.0	< 1.0	1.2	22	19	26
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	210	3.1	2.3	< 2.0	< 2.0	< 2.0	22	20	21
Aromatic EPH >C21-C35	U	2690	mg/kg	2.00	4.6	2.3	< 2.0	< 2.0	< 2.0	< 2.0	6.1	5.0	6.1
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	8.7	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	13	12	13
Total Aromatic EPH >C10-C35	U	2690	mg/kg	5.00	220	7.5	5.1	< 5.0	< 5.0	< 5.0	61	54	74
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10.00	230	< 10	< 10	< 10	< 10	< 10	74	66	87
Total VPH >C5-C10	U	2780	mg/kg	0.50	< 0.50	< 0.50	0.65	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	3.7
Total EPH >C10-C35	U	2690	mg/kg	10.00	250	14	< 10	< 10	< 10	< 10	72	64	250
Total EPH >C10-C40	N	2690	mg/kg	10.00	260	14	< 10	< 10	< 10	< 10	85	76	270
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	81
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	130
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	340
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	690

Results - Soil

Project: R1742b Heyford Phase 10

Client: Smith Grant LLP				**Chemtest Job No.:**	23-09442
Quotation No.: Q15-02887				**Chemtest Sample ID.:**	1610602
				Sample Location:	HS-Cell9-S2
				Sample Type:	SOIL
				Bottom Depth (m):	
				Date Sampled:	16-Mar-2023
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Moisture	N	2030	%	0.020	12
Aliphatic VPH >C5-C6	U	2780	mg/kg	0.05	< 0.05
Aliphatic VPH >C6-C7	U	2780	mg/kg	0.05	< 0.05
Aliphatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05
Aliphatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05
Total Aliphatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25
Aliphatic EPH >C10-C12	U	2690	mg/kg	2.00	< 2.0
Aliphatic EPH >C12-C16	U	2690	mg/kg	1.00	2.4
Aliphatic EPH >C16-C21	U	2690	mg/kg	2.00	3.1
Aliphatic EPH >C21-C35	U	2690	mg/kg	3.00	4.2
Aliphatic EPH >C35-C40	N	2690	mg/kg	10.00	< 10
Total Aliphatic EPH >C10-C35	U	2690	mg/kg	5.00	12
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10.00	12
Aromatic VPH >C5-C7	U	2780	mg/kg	0.05	< 0.05
Aromatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05
Aromatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05
Total Aromatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25
Aromatic EPH >C10-C12	U	2690	mg/kg	1.00	13
Aromatic EPH >C12-C16	U	2690	mg/kg	1.00	20
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	22
Aromatic EPH >C21-C35	U	2690	mg/kg	2.00	5.8
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	11
Total Aromatic EPH >C10-C35	U	2690	mg/kg	5.00	61
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10.00	71
Total VPH >C5-C10	U	2780	mg/kg	0.50	< 0.50
Total EPH >C10-C35	U	2690	mg/kg	10.00	72
Total EPH >C10-C40	N	2690	mg/kg	10.00	83
Benzene	U	2760	µg/kg	1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0

Test Methods

SOP	Title	Parameters included	Method summary
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

UKAS TESTING 2183

Amended Report

Report No.:	23-09958-3		
Initial Date of Issue:	05-Apr-2023	**Date of Re-Issue:**	11-Apr-2023
Client	Smith Grant LLP		
Client Address:	Bryn Estyn Business Centre Bryn Estyn Road Wrexham LL13 9TY		
Contact(s):	Dan Wayland		
Project	R1742b Heyford Dorchester Ph10		
Quotation No.:		**Date Received:**	24-Mar-2023
Order No.:		**Date Instructed:**	24-Mar-2023
No. of Samples:	17		
Turnaround (Wkdays):	7	**Results Due:**	03-Apr-2023
Date Approved:	05-Apr-2023		
Approved By:			

[redacted]

Details:	Stuart Henderson, Technical Manager

Results - Soil

Project: R1742b Heyford Dorchester Ph10

Client: Smith Grant LLP				**Chemtest Job No.:**	23-09958	23-09958	23-09958	23-09958	23-09958	23-09958	23-09958	23-09958	23-09958
Quotation No.:				**Chemtest Sample ID.:**	1612974	1612975	1612976	1612977	1612978	1612979	1612980	1612981	1612982
				Sample Location:	HS-CELL10-SS1	HS-CELL10-SS2	HS-CELL10-SS3	HS-CELL10-SS4	HS-CELL10-SS5	HS-CELL10-SS6	HS-CELL10-SS7	HS-CELL10-SS8	HS-CELL10-SS9
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	1.95	1.95	1.95	1.95	1.95	1.95	1.50	1.50	2.20
				Bottom Depth (m):							2.20	2.20	
				Date Sampled:	20-Mar-2023	20-Mar-2023	20-Mar-2023	20-Mar-2023	20-Mar-2023	20-Mar-2023	20-Mar-2023	20-Mar-2023	20-Mar-2023
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Moisture	N	2030	%	0.020	24	21	20	21	20	18	15	14	16
Aliphatic VPH >C5-C6	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.14	0.14	0.12
Aliphatic VPH >C6-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.29	0.25	< 0.05
Aliphatic VPH >C7-C8	U	2780	mg/kg	0.05	0.20	< 0.05	< 0.05	0.36	< 0.05	0.18	1.6	1.2	< 0.05
Aliphatic VPH >C8-C10	U	2780	mg/kg	0.05	1.6	< 0.05	< 0.05	2.0	0.14	0.54	3.6	1.8	< 0.05
Total Aliphatic VPH >C5-C10	U	2780	mg/kg	0.25	1.8	< 0.25	< 0.25	2.3	< 0.25	0.73	5.6	3.4	< 0.25
Aliphatic EPH >C10-C12	U	2690	mg/kg	2.00	3.5	2.9	2.7	33	3.0	5.7	36	34	2.5
Aliphatic EPH >C12-C16	U	2690	mg/kg	1.00	2.7	2.0	1.7	36	2.8	5.9	75	59	1.3
Aliphatic EPH >C16-C21	U	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	3.5	2.4	< 2.0
Aliphatic EPH >C21-C35	U	2690	mg/kg	3.00	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	3.9	< 3.0	< 3.0	< 3.0
Aliphatic EPH >C35-C40	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Total Aliphatic EPH >C10-C35	U	2690	mg/kg	5.00	9.2	8.0	6.1	73	9.1	17	120	97	5.7
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10.00	< 10	< 10	< 10	73	< 10	17	120	97	< 10
Aromatic VPH >C5-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	0.51	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	0.51	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	U	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	4.3	< 1.0	2.9	21	17	< 1.0
Aromatic EPH >C12-C16	U	2690	mg/kg	1.00	3.9	< 1.0	< 1.0	6.2	< 1.0	7.6	88	65	< 1.0
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	10	4.0	5.3	5.2	4.3	5.0	4.8	3.8	4.6
Aromatic EPH >C21-C35	U	2690	mg/kg	2.00	8.1	< 2.0	< 2.0	< 2.0	< 2.0	4.2	< 2.0	< 2.0	< 2.0
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic EPH >C10-C35	U	2690	mg/kg	5.00	23	< 5.0	6.1	16	5.8	20	110	87	5.2
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10.00	23	< 10	< 10	16	< 10	20	110	87	< 10
Total VPH >C5-C10	U	2780	mg/kg	0.50	1.8	< 0.50	< 0.50	2.9	< 0.50	0.73	5.6	3.4	< 0.50
Total EPH >C10-C35	U	2690	mg/kg	10.00	32	13	12	89	15	37	230	180	11
Total EPH >C10-C40	N	2690	mg/kg	10.00	32	13	12	89	15	37	230	180	11
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	9.2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	43	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	200	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	150	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: R1742b Heyford Dorchester Ph10

Client: Smith Grant LLP				**Chemtest Job No.:**	23-09958	23-09958	23-09958	23-09958	23-09958	23-09958	23-09958	23-09958
Quotation No.:				**Chemtest Sample ID.:**	1612983	1612984	1612985	1612986	1612987	1612988	1612989	1612990
				Sample Location:	HS-CELL10-SS10	HS-CELL10-SS11	HS-CELL11-SS1	HS-CELL11-SS2	HS-CELL11-SS3	HS-CELL11-SS4	HS-CELL11-SS5	HS-CELL11-SS6
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	1.90	1.90	1.60	1.80	1.60	2.20	1.50	1.60
				Bottom Depth (m):	2.30	2.30	1.80		1.80		2.20	1.80
				Date Sampled:	20-Mar-2023	20-Mar-2023	21-Mar-2023	21-Mar-2023	21-Mar-2023	21-Mar-2023	21-Mar-2023	21-Mar-2023
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
Moisture	N	2030	%	0.020	14	15	16	15	14	13	12	13
Aliphatic VPH >C5-C6	U	2780	mg/kg	0.05	< 0.05	0.12	0.12	< 0.05	0.12	0.12	0.26	0.12
Aliphatic VPH >C6-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	3.4	< 0.05
Aliphatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	21	< 0.05
Aliphatic VPH >C8-C10	U	2780	mg/kg	0.05	0.13	0.30	0.13	< 0.05	0.22	< 0.05	83	0.14
Total Aliphatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	0.42	0.25	< 0.25	0.34	< 0.25	110	0.26
Aliphatic EPH >C10-C12	U	2690	mg/kg	2.00	5.8	14	8.0	2.3	4.1	2.6	690	2.8
Aliphatic EPH >C12-C16	U	2690	mg/kg	1.00	22	39	5.9	1.7	4.9	1.4	360	1.8
Aliphatic EPH >C16-C21	U	2690	mg/kg	2.00	< 2.0	2.4	< 2.0	< 2.0	< 2.0	< 2.0	5.6	< 2.0
Aliphatic EPH >C21-C35	U	2690	mg/kg	3.00	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Aliphatic EPH >C35-C40	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Total Aliphatic EPH >C10-C35	U	2690	mg/kg	5.00	30	57	16	5.6	11	6.2	1000	5.7
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10.00	30	57	16	< 10	11	< 10	1000	< 10
Aromatic VPH >C5-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	0.18	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	0.13	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	0.16	< 0.05	< 0.05	0.17	< 0.05
Total Aromatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	0.47	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	U	2690	mg/kg	1.00	4.3	11	< 1.0	< 1.0	< 1.0	< 1.0	270	< 1.0
Aromatic EPH >C12-C16	U	2690	mg/kg	1.00	22	60	1.1	< 1.0	< 1.0	< 1.0	210	< 1.0
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	4.8	4.4	3.6	3.8	4.0	4.0	4.8	3.7
Aromatic EPH >C21-C35	U	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic EPH >C10-C35	U	2690	mg/kg	5.00	32	76	5.7	< 5.0	5.4	< 5.0	490	< 5.0
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10.00	32	76	< 10	< 10	< 10	< 10	490	< 10
Total VPH >C5-C10	U	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	110	< 0.50
Total EPH >C10-C35	U	2690	mg/kg	10.00	62	130	22	10	16	11	1500	10
Total EPH >C10-C40	N	2690	mg/kg	10.00	62	130	22	10	16	11	1500	10
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Test Methods

SOP	Title	Parameters included	Method summary
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35–C40	Acetone/Heptane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection

Report Information

Key

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N	Unaccredited
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T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com

eurofins Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

UKAS TESTING 2183

Amended Report

Report No.:	23-10270-2		
Initial Date of Issue:	18-Apr-2023	**Date of Re-Issue:**	20-Apr-2023
Client	Smith Grant LLP		
Client Address:	Bryn Estyn Business Centre Bryn Estyn Road Wrexham LL13 9TY		
Contact(s):	Dan Wayland Scott Miller		
Project	R1742B Heyford - Phase 10		
Quotation No.:		**Date Received:**	28-Mar-2023
Order No.:		**Date Instructed:**	28-Mar-2023
No. of Samples:	35		
Turnaround (Wkdays):	7	**Results Due:**	05-Apr-2023
Date Approved:	18-Apr-2023		
Approved By:			

[redacted]

Details:	Stuart Henderson, Technical Manager

Results - Soil

Project: R1742B Heyford - Phase 10

Client: Smith Grant LLP				**Chemtest Job No.:**	23-10270	23-10270	23-10270	23-10270	23-10270	23-10270	23-10270	23-10270	23-10270
Quotation No.:				**Chemtest Sample ID.:**	1614397	1614398	1614399	1614400	1614401	1614402	1614403	1614404	1614405
				Sample Location:	Cell12-SS1	Cell12-SS2	Cell12-SS3	Cell12-SS4	Cell12-SS5	Cell12-SS6	Cell12-SS7	Cell12-SS8	Cell12-SS9
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	1.1	1.1	2.2	1.2	2.3	1.1	2.1	0.8	2.4
				Bottom Depth (m):	2.2	2.2		2.3		2.1		2.4	
				Date Sampled:	22-Mar-2023	22-Mar-2023	22-Mar-2023	22-Mar-2023	22-Mar-2023	22-Mar-2023	22-Mar-2023	22-Mar-2023	22-Mar-2023
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Moisture	N	2030	%	0.020	15	13	16	11	13	11	12	18	15
Aliphatic VPH >C5-C6	U	2780	mg/kg	0.05	< 0.05	0.18	0.12	1.03	0.12	0.25	0.12	0.13	0.12
Aliphatic VPH >C6-C7	U	2780	mg/kg	0.05	< 0.05	1.4	< 0.05	9.6	< 0.05	3.5	< 0.05	0.32	< 0.05
Aliphatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	10	< 0.05	57	0.17	34	< 0.05	2.1	0.14
Aliphatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	35	0.14	120	0.41	120	0.23	6.6	0.22
Total Aliphatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	47	0.27	190	0.69	160	0.34	9.2	0.48
Aliphatic EPH >C10-C12	U	2690	mg/kg	2.00	< 2.0	120	3.2	210	3.1	190	2.9	42	2.9
Aliphatic EPH >C12-C16	U	2690	mg/kg	1.00	< 1.0	220	3.7	650	3.2	460	3.1	110	2.8
Aliphatic EPH >C16-C21	U	2690	mg/kg	2.00	< 2.0	3.4	< 2.0	3.9	< 2.0	2.1	< 2.0	4.8	< 2.0
Aliphatic EPH >C21-C35	U	2690	mg/kg	3.00	< 3.0	< 3.0	4.2	< 3.0	3.7	3.1	3.2	3.2	3.1
Aliphatic EPH >C35-C40	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Total Aliphatic EPH >C10-C35	U	2690	mg/kg	5.00	< 5.0	340	13	870	11	650	10	160	10
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10.00	< 10	340	13	870	11	650	10	160	10
Aromatic VPH >C5-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	0.47	< 0.05	0.49	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	0.47	< 0.25	0.49	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	U	2690	mg/kg	1.00	< 1.0	49	12	390	13	240	11	51	11
Aromatic EPH >C12-C16	U	2690	mg/kg	1.00	< 1.0	380	14	1200	14	780	10	160	10
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	5.4	5.9	13	16	12	14	13	12	10
Aromatic EPH >C21-C35	U	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	< 1.0	< 1.0	6.6	7.0	5.9	6.4	6.3	6.8	5.9
Total Aromatic EPH >C10-C35	U	2690	mg/kg	5.00	5.4	440	39	1600	39	1000	34	220	32
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10.00	< 10	440	46	1600	45	1000	41	230	38
Total VPH >C5-C10	U	2780	mg/kg	0.50	< 0.50	47	< 0.50	190	0.69	160	< 0.50	9.2	< 0.50
Total EPH >C10-C35	U	2690	mg/kg	10.00	< 10	770	52	2500	50	1700	45	380	43
Total EPH >C10-C40	N	2690	mg/kg	10.00	< 10	770	58	2500	56	1700	51	390	48
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: R1742B Heyford - Phase 10

Client: Smith Grant LLP	**Chemtest Job No.:**				23-10270	23-10270	23-10270	23-10270	23-10270	23-10270	23-10270	23-10270	23-10270
Quotation No.:	**Chemtest Sample ID.:**				1614406	1614407	1614408	1614409	1614410	1614411	1614412	1614413	1614414
	Sample Location:				Cell12-SS10	Cell12-SS11	Cell12-SS12	Cell12-SS13	Cell12-SS14	Cell12-SS15	Cell12-SS16	Cell12-SS17	Cell12-SS18
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				1.1	2.5	1.5	3.0	2.0	2.8	2.2	2.9	2.2
	Bottom Depth (m):				2.5		3.0		2.8		2.8		2.9
	Date Sampled:				22-Mar-2023	22-Mar-2023	22-Mar-2023	22-Mar-2023	23-Mar-2023	23-Mar-2023	23-Mar-2023	23-Mar-2023	23-Mar-2023
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Moisture	N	2030	%	0.020	17	14	13	9.6	9.4	13	11	15	14
Aliphatic VPH >C5-C6	U	2780	mg/kg	0.05	0.13	0.12	0.14	0.11	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	U	2780	mg/kg	0.05	0.34	< 0.05	1.1	< 0.05	0.62	< 0.05	< 0.05	< 0.05	0.16
Aliphatic VPH >C7-C8	U	2780	mg/kg	0.05	2.5	0.20	13	< 0.05	9.3	< 0.05	< 0.05	< 0.05	1.6
Aliphatic VPH >C8-C10	U	2780	mg/kg	0.05	7.0	0.28	49	0.12	40	< 0.05	0.16	< 0.05	6.9
Total Aliphatic VPH >C5-C10	U	2780	mg/kg	0.25	10	0.60	63	< 0.25	50	< 0.25	< 0.25	< 0.25	8.6
Aliphatic EPH >C10-C12	U	2690	mg/kg	2.00	8.0	4.0	160	3.1	110	3.2	4.5	2.0	54
Aliphatic EPH >C12-C16	U	2690	mg/kg	1.00	17	5.6	450	2.1	280	2.5	11	1.7	130
Aliphatic EPH >C16-C21	U	2690	mg/kg	2.00	< 2.0	6.4	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	2.4
Aliphatic EPH >C21-C35	U	2690	mg/kg	3.00	< 3.0	9.6	< 3.0	3.1	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Aliphatic EPH >C35-C40	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Total Aliphatic EPH >C10-C35	U	2690	mg/kg	5.00	29	26	620	9.3	390	9.2	18	6.9	190
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10.00	29	26	620	< 10	390	< 10	18	< 10	190
Aromatic VPH >C5-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	U	2780	mg/kg	0.05	0.13	< 0.05	0.57	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25	0.57	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	U	2690	mg/kg	1.00	19	12	290	9.9	150	10	11	9.2	100
Aromatic EPH >C12-C16	U	2690	mg/kg	1.00	40	12	790	11	440	7.2	35	9.0	240
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	11	11	14	11	10	9.6	9.8	9.3	11
Aromatic EPH >C21-C35	U	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	6.7	5.7	6.7	5.9	5.8	5.9	6.3	6.9	8.9
Total Aromatic EPH >C10-C35	U	2690	mg/kg	5.00	70	34	1100	32	610	28	56	28	360
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10.00	76	40	1100	38	610	34	63	35	370
Total VPH >C5-C10	U	2780	mg/kg	0.50	10	0.60	64	< 0.50	50	< 0.50	< 0.50	< 0.50	8.6
Total EPH >C10-C35	U	2690	mg/kg	10.00	99	60	1700	41	1000	37	74	35	550
Total EPH >C10-C40	N	2690	mg/kg	10.00	110	66	1700	47	1000	43	80	42	560
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: R1742B Heyford - Phase 10

Client: Smith Grant LLP				**Chemtest Job No.:**	23-10270	23-10270	23-10270	23-10270	23-10270	23-10270	23-10270	23-10270	23-10270
Quotation No.:				**Chemtest Sample ID.:**	1614415	1614416	1614417	1614418	1614419	1614420	1614421	1614422	1614423
				Sample Location:	Cell12-SS19	Cell12-SS20	Cell12-S1	Cell12-s2	Cell10-SS12	Cell10-SS13	Cell13-SS1	Cell13-SS2	Cell13-SS3
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	2.2	2.2			2.4	2.4	1.5	2.0	1.5
				Bottom Depth (m):	2.9	2.8					2.0		2.0
				Date Sampled:	23-Mar-2023	23-Mar-2023	23-Mar-2023	23-Mar-2023	23-Mar-2023	23-Mar-2023	23-Mar-2023	23-Mar-2023	23-Mar-2023
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Moisture	N	2030	%	0.020	9.8	9.5	16	14	17	16	14	18	13
Aliphatic VPH >C5-C6	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.12	0.12	< 0.05	< 0.05
Aliphatic VPH >C6-C7	U	2780	mg/kg	0.05	0.14	0.23	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	U	2780	mg/kg	0.05	1.4	3.4	< 0.05	< 0.05	< 0.05	< 0.05	0.29	< 0.05	0.29
Aliphatic VPH >C8-C10	U	2780	mg/kg	0.05	6.4	19	0.14	< 0.05	< 0.05	< 0.05	0.74	< 0.05	0.45
Total Aliphatic VPH >C5-C10	U	2780	mg/kg	0.25	8.0	22	< 0.25	< 0.25	< 0.25	< 0.25	1.1	< 0.25	0.74
Aliphatic EPH >C10-C12	U	2690	mg/kg	2.00	4.1	87	2.1	< 2.0	2.1	2.1	13	2.2	2.7
Aliphatic EPH >C12-C16	U	2690	mg/kg	1.00	6.1	240	< 1.0	2.0	2.5	2.0	46	1.8	3.1
Aliphatic EPH >C16-C21	U	2690	mg/kg	2.00	2.3	2.5	< 2.0	2.3	< 2.0	< 2.0	4.6	< 2.0	< 2.0
Aliphatic EPH >C21-C35	U	2690	mg/kg	3.00	< 3.0	< 3.0	< 3.0	5.3	4.2	4.8	3.5	4.2	3.5
Aliphatic EPH >C35-C40	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Total Aliphatic EPH >C10-C35	U	2690	mg/kg	5.00	15	330	< 5.0	11	11	10	67	10	10
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10.00	15	330	< 10	11	11	10	67	10	10
Aromatic VPH >C5-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	U	2690	mg/kg	1.00	23	120	< 1.0	5.2	7.4	7.4	31	7.4	6.7
Aromatic EPH >C12-C16	U	2690	mg/kg	1.00	25	380	< 1.0	13	12	13	67	14	16
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	20	12	4.9	15	16	15	15	14	15
Aromatic EPH >C21-C35	U	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	2.1	< 2.0	2.3	< 2.0	< 2.0	< 2.0
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	9.7	5.6	< 1.0	8.2	8.9	8.7	8.4	9.0	7.1
Total Aromatic EPH >C10-C35	U	2690	mg/kg	5.00	68	510	5.2	35	37	37	110	35	38
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10.00	78	510	< 10	43	46	46	120	44	45
Total VPH >C5-C10	U	2780	mg/kg	0.50	8.0	22	< 0.50	< 0.50	< 0.50	< 0.50	1.1	< 0.50	0.74
Total EPH >C10-C35	U	2690	mg/kg	10.00	84	840	10	46	47	47	180	46	49
Total EPH >C10-C40	N	2690	mg/kg	10.00	93	850	10	54	56	56	190	55	56
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: R1742B Heyford - Phase 10

Client: Smith Grant LLP				**Chemtest Job No.:**	23-10270	23-10270	23-10270	23-10270	23-10270	23-10270	23-10270	23-10270
Quotation No.:				**Chemtest Sample ID.:**	1614424	1614425	1614426	1614427	1614428	1614429	1614430	1614431
				Sample Location:	Cell13-SS4	Cell13-SS5	Cell13-SS6	Cell13-S1	Inter-SS16	Inter - SS17	Inter - SS18	Inter - S1
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	2.2	1.7	1.7		1.2	1.2	1.2	
				Bottom Depth (m):		2.2	2.2		1.6	1.6	1.6	
				Date Sampled:	23-Mar-2023	23-Mar-2023	23-Mar-2023	23-Mar-2023	24-Mar-2023	24-Mar-2023	24-Mar-2023	24-Mar-2023
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
Moisture	N	2030	%	0.020	11	13	10	14	14	15	15	10
Aliphatic VPH >C5-C6	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.13	< 0.05
Aliphatic VPH >C6-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.26	< 0.05	< 0.05
Aliphatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	0.20	1.5	< 0.05	0.26	14	1.4	0.13
Total Aliphatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25	1.5	< 0.25	0.26	15	1.5	< 0.25
Aliphatic EPH >C10-C12	U	2690	mg/kg	2.00	< 2.0	2.8	15	2.9	3.5	59	11	< 2.0
Aliphatic EPH >C12-C16	U	2690	mg/kg	1.00	2.3	2.4	83	2.9	3.1	56	5.8	1.7
Aliphatic EPH >C16-C21	U	2690	mg/kg	2.00	2.4	< 2.0	6.0	2.3	< 2.0	29	4.1	< 2.0
Aliphatic EPH >C21-C35	U	2690	mg/kg	3.00	3.9	3.8	< 3.0	5.1	4.3	79	7.1	3.8
Aliphatic EPH >C35-C40	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10	< 10	20	< 10	< 10
Total Aliphatic EPH >C10-C35	U	2690	mg/kg	5.00	10	10	110	13	12	220	28	8.6
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10.00	10	10	110	13	12	240	28	< 10
Aromatic VPH >C5-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	U	2690	mg/kg	1.00	5.2	7.0	34	6.0	7.7	20	9.2	8.2
Aromatic EPH >C12-C16	U	2690	mg/kg	1.00	12	14	110	12	12	34	15	11
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	14	15	15	18	17	85	22	15
Aromatic EPH >C21-C35	U	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	4.7	5.1	58	13	< 2.0
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	8.1	7.4	7.0	8.6	8.9	9.1	8.2	9.0
Total Aromatic EPH >C10-C35	U	2690	mg/kg	5.00	32	38	160	41	41	200	59	35
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10.00	40	45	160	50	50	210	67	44
Total VPH >C5-C10	U	2780	mg/kg	0.50	< 0.50	< 0.50	1.5	< 0.50	< 0.50	15	1.5	< 0.50
Total EPH >C10-C35	U	2690	mg/kg	10.00	42	48	260	54	54	420	87	43
Total EPH >C10-C40	N	2690	mg/kg	10.00	50	55	270	63	63	450	96	52
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Test Methods

SOP	Title	Parameters included	Method summary
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35–C40	Acetone/Heptane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

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The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
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Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	23-11439-1
Initial Date of Issue:	13-Apr-2023
Client	Smith Grant LLP
Client Address:	Bryn Estyn Business Centre Bryn Estyn Road Wrexham LL13 9TY
Contact(s):	Dan Wayland
Project	R17426 Heyford- Phase 10

Quotation No.:		**Date Received:**	06-Apr-2023
Order No.:		**Date Instructed:**	06-Apr-2023
No. of Samples:	14		
Turnaround (Wkdays):	5	**Results Due:**	14-Apr-2023
Date Approved:	13-Apr-2023		

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Soil

Project: R17426 Heyford- Phase 10

Client: Smith Grant LLP				Chemtest Job No.:	23-11439	23-11439	23-11439	23-11439	23-11439	23-11439	23-11439	23-11439	23-11439
Quotation No.:				Chemtest Sample ID.:	1619528	1619529	1619530	1619531	1619532	1619533	1619534	1619535	1619536
				Sample Location:	PH10-MGPIT-S1	PH10-MGPIT-S2	PH10-MGPIT-SS1	PH10-MGPIT-SS2	PH10-MGPIT-SS3	PH10-MGPIT-SS4	PH10-MGPIT-SS5	PH10-MGPIT-SS6	PH10-MGPIT-SS7
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):			0.65	0.65	0.65	0.65	0.65	0.65	0.65
				Bottom Depth (m):			1.3	1.3	1.3	1.3	1.3	1.3	1.3
				Date Sampled:	03-Apr-2023	03-Apr-2023	03-Apr-2023	03-Apr-2023	03-Apr-2023	03-Apr-2023	03-Apr-2023	03-Apr-2023	03-Apr-2023
				Asbestos Lab:	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
ACM Type	U	2192		N/A	-	-	-	-	-	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected

Results - Soil

Project: R17426 Heyford- Phase 10

Client: Smith Grant LLP	**Chemtest Job No.:**				23-11439	23-11439	23-11439	23-11439	23-11439
Quotation No.:	**Chemtest Sample ID.:**				1619537	1619538	1619539	1619540	1619541
	Sample Location:				PH10-MGPIT-SS8	PH10-MGPIT-SS9	PH10-MGPIT-SS10	PH10-MGPIT-SS11	PH10-MGPIT-SS12
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.65				
	Bottom Depth (m):				1.3	1.3	1.3	1.3	1.3
	Date Sampled:				03-Apr-2023	03-Apr-2023	03-Apr-2023	03-Apr-2023	03-Apr-2023
	Asbestos Lab:				NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**Accred.**	**SOP**	**Units**	**LOD**					
ACM Type	U	2192		N/A	-	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected

Test Methods

SOP	Title	Parameters included	Method summary
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry

Report Information

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tel.: 01962 860331 fax: 01962 841339 e-mail:diffusion@gradko.co.uk

2187

LABORATORY ANALYSIS REPORT

Report Number	**R01620R**
Customer	**Smith Grant LLP** **Bryn Estyn Business Centre** **Suite 16** **Wrexham** **LL13 9TY**
Booking In Reference	**Q0183**
Despatch Note Number	**99175**
Date Samples Received	**20/02/2023**
Diffusion Tube Type	**Tenax**
Job Reference	**R17426**

Quantitative Analysis of BTEX
Identification and estimation of ng on tube in accordance with ISO16000-6

Tube Number	**005000**
Gradko Lab Reference	**08R0395**
Exposure Time (mins)*	**30267**
Sample ID	**VP1**

BTEX	ng on tube	ppb in air*	µgm^{-3}*
Benzene	6.1	0.3	0.9
Toluene	<5	<0.2	<0.6
Ethylbenzene	<5	<0.1	<0.5
m/p-Xylene	20.7	0.5	2.0
o-Xylene	<5	<0.1	<0.5

EC5-EC6 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Pentane, 3-methyl-	68	<5	<0.1	<0.3
Pentane	43	<5	<0.1	<0.2
Hexane	53	<5	<0.1	<0.3
Total**		**<15**	**<0.2**	**0.8**

EC>6-EC8 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Cyclohexane, 1,2-dimethyl-, trans-	95	517	8.5	38
Cyclohexane, 1,3-dimethyl-, cis-	91	146	2.4	11
Cyclohexane, methyl-	94	125	2.1	8.1
Cyclohexane, 1,4-dimethyl-, trans-	94	121	2.0	9.0
Cyclopentane, 1,2,4-trimethyl-	91	109	1.8	8.1
Cyclopentane, 1-ethyl-2-methyl-	94	104	1.7	7.7
Heptane, 3-methyl-	94	79	1.3	6.0
Cyclohexane, 1,3-dimethyl-, trans-	96	78	1.3	5.8

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L. Gates, Laboratory Manager

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LABORATORY ANALYSIS REPORT

	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Hexane, 3,4-dimethyl-	90	62	1.0	4.7
Hexane, 2,5-dimethyl-	95	57	0.9	4.3
Pentane, 3-ethyl-2-methyl-	94	39	0.6	2.9
Cyclopentane, 1-ethyl-2-methyl-, cis-	64	33	0.5	2.4
Hexane, 2,4-dimethyl-	94	24	0.4	1.8
Hexane, 3-methyl-	80	17	0.3	1.1
Hexane, 2,3-dimethyl-	86	16	0.3	1.2
Pentane, 2,3-dimethyl-	90	13	0.2	0.9
Pentane, 2,3,3-trimethyl-	78	13	0.2	1.0
Cyclopentane, 1,2-dimethyl-	94	11	0.2	0.7
Cyclopentane, ethyl-	93	11	0.2	0.7
Pentane, 2,4-dimethyl-	93	<5	<0.1	<0.3
Cyclopentane, methyl-	81	<5	<0.1	<0.3
Heptane	76	<5	<0.1	<0.3
Total**		**1590**	**26**	**116**

EC>8-EC10 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Cyclohexane, butyl-	49	2980	49	276
Octane, 2,6-dimethyl-	86	2501	41	235
Cyclohexane, 1,3,5-trimethyl- (sum of isomers)		2131	35	177
Cyclohexane, 1-ethyl-2-methyl-, trans-	87	1655	27	138
Heptane, 2,6-dimethyl-	94	807	13	68
Cyclohexane, 1,2,4-trimethyl- (sum of isomers)		679	11	57
Cyclohexane, ethyl-	94	525	8.7	39
1-Ethyl-3-methylcyclohexane (c,t)	94	509	8.4	42
Nonane, 4-methyl-	74	414	6.8	39
Cyclohexane, 1,1,3-trimethyl-	94	387	6.4	32
Octane, 3-methyl-	87	310	5.1	26
Cyclohexane, 1-ethyl-4-methyl-, trans-	72	224	3.7	19
Octane, 4-methyl-	91	196	3.2	17
Hexane, 2,3,5-trimethyl-	83	71	1.2	6.0
Heptane, 2,4-dimethyl-	64	57	0.9	4.8
Total**		**13447**	**222**	**1175**

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>10-EC12 Aliphatic Hydrocarbons**		<5	<0.1

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L. Gates, Laboratory Manager

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LABORATORY ANALYSIS REPORT

EC>12-EC16 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
Undecane, 2,6-dimethyl-	74	628	10	76

EC5-EC7 Aromatic Hydrocarbons** (Benzenze)

EC>7-EC8 Aromatic Hydrocarbons** (Toluene)

EC>8-EC10 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
Ethylbenzene		<5	<0.1	<0.5
m/p-Xylene		20.7	0.5	2.0
o-Xylene		<5	<0.1	<0.5
Total**		**31**	**0.7**	**2.9**

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>10-EC12 Aromatic Hydrocarbons**		<5	<0.1

EC>12-EC16 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
Naphthalene, 2-methyl-	91	74	1.2	6.9
Naphthalene, 1-methyl-	96	36	0.6	3.4
Naphthalene, 1,3-dimethyl-	83	<5	<0.1	<0.5
Total**		**115**	**1.9**	**11**

Tube Number	**003703**
Gradko Lab Reference	**08R0396**
Exposure Time (mins)*	**30266**
Sample ID	**VP2**

BTEX	ng on tube	ppb in air*	µgm-3*
Benzene	8.7	0.4	1.3
Toluene	6.6	0.2	0.8
Ethylbenzene	<5	<0.1	<0.5
m/p-Xylene	<5	<0.1	<0.5
o-Xylene	<5	<0.1	<0.5

EC5-EC6 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
Pentane	49	<5	<0.1	<0.2

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EC>6-EC8 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
Pentane, 2,3,4-trimethyl-	50	<5	<0.1	<0.4
Hexane, 2,2-dimethyl-	43	<5	<0.1	<0.4
Total**		**<10**	**<0.2**	**<0.8**

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>8-EC10 Aliphatic Hydrocarbons**		<5	<0.1

EC>10-EC12 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
Undecane	70	<5	<0.1	<0.5
Dodecane	55	<5	<0.1	<0.6
Total**		**<10**	**<0.2**	**<1.1**

EC>12-EC16 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
Tridecane	90	<5	<0.1	<0.6

EC5-EC7 Aromatic Hydrocarbons** (Benzenze)

EC>7-EC8 Aromatic Hydrocarbons** (Toluene)

EC>8-EC10 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
Benzene, 1,2,4-trimethyl-	91	5	0.1	0.4
Ethylbenzene		<5	<0.1	<0.5
m/p-Xylene		<5	<0.1	<0.5
o-Xylene		<5	<0.1	<0.5
Total**		**<20**	**<0.4**	**<1.9**

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>10-EC12 Aromatic Hydrocarbons**		<5	<0.1

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>12-EC16 Aromatic Hydrocarbons**		<5	<0.1

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LABORATORY ANALYSIS REPORT

Tube Number	**004512**
Gradko Lab Reference	**08R0397**
Exposure Time (mins)*	**30267**
Sample ID	**VP3**

BTEX		ng on tube	ppb in air*	μgm^{-3*}
Benzene		7.5	0.4	1.1
Toluene		<5	<0.2	<0.6
Ethylbenzene		<5	<0.1	<0.5
m/p-Xylene		<5	<0.1	<0.5
o-Xylene		<5	<0.1	<0.5

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC5-EC6 Aliphatic Hydrocarbons**		<5	<0.1

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>6-EC8 Aliphatic Hydrocarbons**		<5	<0.1

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>8-EC10 Aliphatic Hydrocarbons**		<5	<0.1

EC>10-EC12 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3*}
Undecane	50	<5	<0.1	<0.5

EC>12-EC16 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3*}
Tridecane	90	6	0.1	0.7
Pentadecane	70	<5	<0.1	<0.7
Total**		**11**	**0.2**	**1.4**

EC5-EC7 Aromatic Hydrocarbons**	(Benzenze)
EC>7-EC8 Aromatic Hydrocarbons**	(Toluene)

EC>8-EC10 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3*}
Benzene, 1,2,4-trimethyl-	93	<5	<0.1	<0.4
Benzene, 1-ethyl-2-methyl-	38	<5	<0.1	<0.4
Styrene	60	<5	<0.1	<0.3
Ethylbenzene		<5	<0.1	<0.5
m/p-Xylene		<5	<0.1	<0.5
o-Xylene		<5	<0.1	<0.5
Total**		**<30**	**<0.6**	**<2.6**

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LABORATORY ANALYSIS REPORT

EC>10-EC12 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Benzene, 1,2,3-trimethyl-	55	6	0.1	0.5
Naphthalene, 1,2,3,4-tetrahydro-5-methyl-	93	5	0.1	0.5
Benzene, 1,2,3,5-tetramethyl-	50	<5	<0.1	<0.4
Total**		**16**	**0.3**	**1.4**

EC>12-EC16 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Naphthalene, 2-methyl-	62	<5	<0.1	<0.5

Tube Number	**006029**
Gradko Lab Reference	**08R0398**
Exposure Time (mins)*	**30266**
Sample ID	**VP4**

BTEX	ng on tube	ppb in air*	µgm^{-3}*
Benzene	27.5	1.3	4.1
Toluene	<5	<0.2	<0.6
Ethylbenzene	<5	<0.1	<0.5
m/p-Xylene	<5	<0.1	<0.5
o-Xylene	<5	<0.1	<0.5

EC5-EC6 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Pentane	38	<5	<0.1	<0.2

EC>6-EC8 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Cyclopentane, 1,2,3-trimethyl-	80	<5	<0.1	<0.4

EC>8-EC10 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Decane	90	<5	<0.1	<0.5

EC>10-EC12 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Dodecane	41	<5	<0.1	<0.6
Undecane	42	<5	<0.1	<0.5
Total**		**<10**	**<0.2**	**<1.1**

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LABORATORY ANALYSIS REPORT

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>12-EC16 Aliphatic Hydrocarbons**		<5	<0.1

EC5-EC7 Aromatic Hydrocarbons** (Benzenze)

EC>7-EC8 Aromatic Hydrocarbons** (Toluene)

EC>8-EC10 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Ethylbenzene		<5	<0.1	<0.5
m/p-Xylene		<5	<0.1	<0.5
o-Xylene		<5	<0.1	<0.5
Total**		**<15**	**<0.3**	**<1.4**

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>10-EC12 Aromatic Hydrocarbons**		<5	<0.1

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>12-EC16 Aromatic Hydrocarbons**		<5	<0.1

Tube Number	**006020**			
Gradko Lab Reference	**08R0399**			
Exposure Time (mins)*	**30267**			
Sample ID	**VP5**			
BTEX		ng on tube	ppb in air*	µgm^{-3}*
Benzene		8.5	0.4	1.3
Toluene		<5	<0.2	<0.6
Ethylbenzene		<5	<0.1	<0.5
m/p-Xylene		<5	<0.1	<0.5
o-Xylene		<5	<0.1	<0.5

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC5-EC6 Aliphatic Hydrocarbons**		<5	<0.1

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>6-EC8 Aliphatic Hydrocarbons**		<5	<0.1

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LABORATORY ANALYSIS REPORT

	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
EC>8-EC10 Aliphatic Hydrocarbons**		<5	<0.1	

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>10-EC12 Aliphatic Hydrocarbons**		<5	<0.1

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>12-EC16 Aliphatic Hydrocarbons**		<5	<0.1

EC5-EC7 Aromatic Hydrocarbons** (Benzenze)

EC>7-EC8 Aromatic Hydrocarbons** (Toluene)

EC>8-EC10 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
Ethylbenzene		<5	<0.1	<0.5
m/p-Xylene		<5	<0.1	<0.5
o-Xylene		<5	<0.1	<0.5
Total**		**<15**	**<0.3**	**<1.4**

EC>10-EC12 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
Benzene, 1,2,3,5-tetramethyl-	43	<5	<0.1	<0.4

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>12-EC16 Aromatic Hydrocarbons**		<5	<0.1

Tube Number	**003344**
Gradko Lab Reference	**08R0400**
Exposure Time (mins)*	**30266**
Sample ID	**VP6**

BTEX	ng on tube	ppb in air*	µgm-3*
Benzene	64.4	3.0	9.5
Toluene	15.3	0.5	1.8
Ethylbenzene	<5	<0.1	<0.5
m/p-Xylene	<5	<0.1	<0.5
o-Xylene	<5	<0.1	<0.5

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EC5-EC6 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
Pentane	43	<5	<0.1	<0.2

EC>6-EC8 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
Cyclohexane, 1,2-dimethyl-, cis-	72	<5	<0.1	<0.4

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>8-EC10 Aliphatic Hydrocarbons**		<5	<0.1

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>10-EC12 Aliphatic Hydrocarbons**		<5	<0.1

EC>12-EC16 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
Tetradecane	42	<5	<0.1	<0.7

EC5-EC7 Aromatic Hydrocarbons** (Benzenze)

EC>7-EC8 Aromatic Hydrocarbons** (Toluene)

EC>8-EC10 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
Ethylbenzene		<5	<0.1	<0.5
m/p-Xylene		<5	<0.1	<0.5
o-Xylene		<5	<0.1	<0.5
Total**		**<15**	**<0.3**	**<1.4**

EC>10-EC12 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
Benzene, 1-methyl-4-(1-methylethyl)-	97	46	0.8	4.1
Naphthalene	90	8	0.1	0.7
Total**		**54**	**0.9**	**4.7**

EC>12-EC16 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
Biphenyl	90	<5	<0.1	<0.5
Naphthalene, 2-methyl-	30	<5	<0.1	<0.5
Total**		**<10**	**<0.2**	**<1.0**

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Tube Number	**GRA09897**
Gradko Lab Reference	**08R0401**
Exposure Time (mins)*	**30267**
Sample ID	**VP7**

BTEX		ng on tube	ppb in air*	µgm^{-3*}
Benzene		<5	<0.2	<0.7
Toluene		<5	<0.2	<0.6
Ethylbenzene		<5	<0.1	<0.5
m/p-Xylene		<5	<0.1	<0.5
o-Xylene		<5	<0.1	<0.5

EC5-EC6 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3*}
Pentane	30	<5	<0.1	<0.2

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>6-EC8 Aliphatic Hydrocarbons**		<5	<0.1

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>8-EC10 Aliphatic Hydrocarbons**		<5	<0.1

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>10-EC12 Aliphatic Hydrocarbons**		<5	<0.1

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>12-EC16 Aliphatic Hydrocarbons**		<5	<0.1

EC5-EC7 Aromatic Hydrocarbons**	(Benzenze)
EC>7-EC8 Aromatic Hydrocarbons**	(Toluene)

EC>8-EC10 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3*}
Benzene, 1,2,4-trimethyl-	97	10	0.2	0.8
Benzene, 1,3,5-trimethyl-	95	<5	<0.1	<0.4
Ethylbenzene		<5	<0.1	<0.5
m/p-Xylene		<5	<0.1	<0.5
o-Xylene		<5	<0.1	<0.5
Total**		**<30**	**<0.6**	**<2.6**

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EC>10-EC12 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
Benzene, 1,2,3-trimethyl-	76	15	0.3	1.2
Benzene, 1-ethyl-3,5-dimethyl-	95	6	0.1	0.6
Benzene, 1,2,3,5-tetramethyl-	95	<5	<0.1	<0.4
Benzene, 1-methyl-3-propyl-	93	<5	<0.1	<0.4
Benzene, 4-ethyl-1,2-dimethyl-	94	<5	<0.1	<0.4
Benzene, 1,2,4,5-tetramethyl-	89	<5	<0.1	<0.4
Indane	64	<5	<0.1	<0.4
Benzene, 2-ethyl-1,4-dimethyl-	92	<5	<0.1	<0.4
Total**		**<52**	**<0.9**	**<4.4**

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>12-EC16 Aromatic Hydrocarbons**		<5	<0.1

Tube Number	**006069**
Gradko Lab Reference	**08R0402**
Exposure Time (mins)*	**30267**
Sample ID	**VP8**

BTEX	ng on tube	ppb in air*	µgm-3*
Benzene	6.2	0.3	0.9
Toluene	5.1	0.2	0.6
Ethylbenzene	<5	<0.1	<0.5
m/p-Xylene	<5	<0.1	<0.5
o-Xylene	<5	<0.1	<0.5

EC5-EC6 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
Pentane	43	<5	<0.1	<0.2

EC>6-EC8 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
Cyclohexane, 1,3-dimethyl-, trans-	43	<5	<0.1	<0.4
Heptane	47	<5	<0.1	<0.3
Total**		**<10**	**<0.2**	**<0.7**

EC>8-EC10 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
Octane, 2,6-dimethyl-	83	7	0.1	0.6
Cyclohexane, 1,1,3-trimethyl-	64	6	0.1	0.5
Cyclohexane, 1-ethyl-2-methyl-	70	<5	<0.1	<0.4
Cyclohexane, 1,3,5-trimethyl-	81	<5	<0.1	<0.4
Total**		**23**	**0.4**	**2.0**

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	NIST Library Quality Match	Estimated ng on tube	ppb in air*	
EC>10-EC12 Aliphatic Hydrocarbons**		<5	<0.1	

	NIST Library Quality Match	Estimated ng on tube	ppb in air*	
EC>12-EC16 Aliphatic Hydrocarbons**		<5	<0.1	

EC5-EC7 Aromatic Hydrocarbons** (Benzenze)

EC>7-EC8 Aromatic Hydrocarbons** (Toluene)

EC>8-EC10 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Benzene, 1,2,4-trimethyl-	94	8	0.1	0.6
Ethylbenzene		<5	<0.1	<0.5
m/p-Xylene		<5	<0.1	<0.5
o-Xylene		<5	<0.1	<0.5
Total**		**<23**	**<0.5**	**<2.0**

EC>10-EC12 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Benzene, 1,2,3,5-tetramethyl-	70	9	0.1	0.8
Benzene, 2-ethyl-1,3-dimethyl-	38	8	0.1	0.7
Benzene, 4-ethyl-1,2-dimethyl-	91	6	0.1	0.5
Benzene, 1-methyl-3-(1-methylethyl)-	46	<5	<0.1	<0.4
Benzene, 2-ethyl-1,4-dimethyl-	55	<5	<0.1	<0.4
Total**		**32**	**0.5**	**2.9**

	NIST Library Quality Match	Estimated ng on tube	ppb in air*	
EC>12-EC16 Aromatic Hydrocarbons**		<5	<0.1	

Tube Number	**GRA04932**
Gradko Lab Reference	**08R0403**
Exposure Time (mins)*	**30265**
Sample ID	**VP9**

BTEX	ng on tube	ppb in air*	μgm^{-3}*
Benzene	8.9	0.4	1.3
Toluene	<5	<0.2	<0.6
Ethylbenzene	<5	<0.1	<0.5
m/p-Xylene	<5	<0.1	<0.5
o-Xylene	<5	<0.1	<0.5

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EC5-EC6 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Pentane	74	7	0.1	0.3
Pentane, 3-methyl-	53	<5	<0.1	<0.3
Hexane	58	<5	<0.1	<0.3
Total**		**<17**	**<0.3**	**<0.9**

EC>6-EC8 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Cyclohexane, methyl-	94	15	0.2	1.0
Butane, 2,2,3,3-tetramethyl-	72	14	0.2	1.0
Pentane, 2,3,4-trimethyl-	87	12	0.2	0.9
Pentane, 2,3,3-trimethyl-	80	10	0.2	0.7
Cyclohexane, 1,3-dimethyl-, cis-	83	5	0.1	0.4
Hexane, 2,4-dimethyl-	81	<5	<0.1	<0.4
Cyclopentane, 1-ethyl-3-methyl-, trans-	80	<5	<0.1	<0.4
Pentane, 2,3-dimethyl-	76	<5	<0.1	<0.3
Hexane, 2,5-dimethyl-	91	<5	<0.1	<0.4
Hexane, 3-methyl-	47	<5	<0.1	<0.3
Cyclopentane, 1,2,4-trimethyl-, (1.alpha.,2.beta.,4.alpha.)-	53	<5	<0.1	<0.4
Cyclopentane, methyl-	62	<5	<0.1	<0.3
Hexane, 2,3-dimethyl-	59	<5	<0.1	<0.4
Pentane, 2,4-dimethyl-	50	<5	<0.1	<0.3
Total**		**100**	**1.7**	**7.1**

EC>8-EC10 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Cyclohexane, 1,1,3-trimethyl-	91	8	0.1	0.7
Cyclohexane, ethyl-	90	7	0.1	0.5
Cyclohexane, 1,3,5-trimethyl-	96	<5	<0.1	<0.4
Heptane, 2,3-dimethyl-	72	<5	<0.1	<0.4
cis-1-Ethyl-3-methyl-cyclohexane	72	<5	<0.1	<0.4
Total**		**30**	**0.5**	**2.5**

EC>10-EC12 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Undecane	55	<5	<0.1	<0.5

EC>12-EC16 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Pentadecane	60	<5	<0.1	<0.7

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EC5-EC7 Aromatic Hydrocarbons** (Benzenze)

EC>7-EC8 Aromatic Hydrocarbons** (Toluene)

EC>8-EC10 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Benzene, 1,2,4-trimethyl-	94	<5	<0.1	<0.4
Ethylbenzene		<5	<0.1	<0.5
m/p-Xylene		<5	<0.1	<0.5
o-Xylene		<5	<0.1	<0.5
Total**		**<20**	**<0.4**	**<1.8**

EC>10-EC12 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Naphthalene	70	6	0.1	0.5
Benzene, 1,2,3-trimethyl-	35	<5	<0.1	<0.4
Benzene, 1,2,3,5-tetramethyl-	70	<5	<0.1	<0.4
Total**		**<16**	**<0.3**	**<1**

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>12-EC16 Aromatic Hydrocarbons**		<5	<0.1

Tube Number	**GRA11850**
Gradko Lab Reference	**08R0404**
Exposure Time (mins)*	**30259**
Sample ID	**External**

BTEX	ng on tube	ppb in air*	µgm^{-3}*
Benzene	63.4	3.0	9.3
Toluene	12.2	0.4	1.4
Ethylbenzene	<5	<0.1	<0.5
m/p-Xylene	6.6	0.2	0.6
o-Xylene	<5	<0.1	<0.5

EC5-EC6 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Pentane	50	<5	<0.1	<0.2

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EC>6-EC8 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
Butane, 2,2,3,3-tetramethyl-	64	14	0.2	1.0
Heptane, 4-methyl-	78	9	0.1	0.6
Hexane, 2,2,4-trimethyl-	59	8	0.1	0.7
Pentane, 2,3,3-trimethyl-	83	7	0.1	0.5
Cyclohexane, methyl-	93	7	0.1	0.4
Cyclopentane, 1,2,4-trimethyl-, (1.alpha.,2.beta.,4.alpha.)-	87	<5	<0.1	<0.4
Hexane, 2,5-dimethyl-	50	<5	<0.1	<0.4
Pentane, 2,3-dimethyl-	76	<5	<0.1	<0.3
Heptane	62	<5	<0.1	<0.3
Hexane, 2,3-dimethyl-	87	<5	<0.1	<0.4
Total**		**69**	**1.1**	**5.1**

EC>8-EC10 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
Nonane, 3-methyl-	91	6	0.1	0.6
Cyclohexane, 1-ethyl-2-methyl-	55	<5	<0.1	<0.4
Heptane, 2,6-dimethyl-	58	<5	<0.1	<0.4
Cyclohexane, 1,3,5-trimethyl-	45	<5	<0.1	<0.4
Cyclohexane, 1,1,3-trimethyl-	94	<5	<0.1	<0.4
Cyclohexane, ethyl-	93	<5	<0.1	<0.4
Nonane	76	<5	<0.1	<0.4
Heptane, 3,5-dimethyl-	53	<5	<0.1	<0.4
cis-1-Ethyl-3-methyl-cyclohexane	93	<5	<0.1	<0.4
Total**		**<46**	**<0.8**	**<3.9**

EC>10-EC12 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
Undecane	70	<5	<0.1	<0.5
Dodecane	64	<5	<0.1	<0.6
Total**		**<10**	**<0.2**	**<1.1**

EC>12-EC16 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
Pentadecane	94	<5	<0.1	<0.7

EC5-EC7 Aromatic Hydrocarbons** (Benzenze)

EC>7-EC8 Aromatic Hydrocarbons** (Toluene)

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EC>8-EC10 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
m/p-Xylene		7	0.2	0.6
Benzene, 1,2,4-trimethyl-	50	6	0.1	0.5
Benzene, propyl-	62	<5	<0.1	<0.4
Ethylbenzene		<5	<0.1	<0.5
o-Xylene		<5	<0.1	<0.5
Total**		**<27**	**<0.6**	**<2.4**

EC>10-EC12 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
Naphthalene	91	6	0.1	0.5

EC>12-EC16 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
Biphenyl	64	<5	<0.1	<0.5

Tube Number	**Mi040316**	
Gradko Lab Reference	**08R0405**	
Sample ID	**Blank**	
BTEX		**ng on tube**
Benzene		10.8
Toluene		8.3
Ethylbenzene		<5
m/p-Xylene		6.2
o-Xylene		<5

	NIST Library Quality Match	Estimated ng on tube
EC5-EC6 Aliphatic Hydrocarbons**		<5

	NIST Library Quality Match	Estimated ng on tube
EC>6-EC8 Aliphatic Hydrocarbons**		<5

	NIST Library Quality Match	Estimated ng on tube
EC>8-EC10 Aliphatic Hydrocarbons**		<5

	NIST Library Quality Match	Estimated ng on tube
EC>10-EC12 Aliphatic Hydrocarbons**		<5

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	NIST Library Quality Match	Estimated ng on tube
EC>12-EC16 Aliphatic Hydrocarbons**		<5

EC5-EC7 Aromatic Hydrocarbons**		(Benzenze)
EC>7-EC8 Aromatic Hydrocarbons**		(Toluene)

EC>8-EC10 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube
m/p-Xylene		6
Ethylbenzene		<5
o-Xylene		<5
Total**		**<16**

	NIST Library Quality Match	Estimated ng on tube
EC>10-EC12 Aromatic Hydrocarbons**		<5

	NIST Library Quality Match	Estimated ng on tube
EC>12-EC16 Aromatic Hydrocarbons**		<5

Tube Number	**005638**	
Gradko Lab Reference	**230221_TXTABLANK_29**	
Sample ID	**Laboratory Blank**	
BTEX		**ng on tube**
Benzene		<5
Toluene		<5
Ethylbenzene		<5
m/p-Xylene		<5
o-Xylene		<5

	NIST Library Quality Match	Estimated ng on tube
EC5-EC6 Aliphatic Hydrocarbons**		<5

	NIST Library Quality Match	Estimated ng on tube
EC>6-EC8 Aliphatic Hydrocarbons**		<5

	NIST Library Quality Match	Estimated ng on tube
EC>8-EC10 Aliphatic Hydrocarbons**		<5

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	NIST Library Quality Match	Estimated ng on tube
EC>10-EC12 Aliphatic Hydrocarbons**		<5

	NIST Library Quality Match	Estimated ng on tube
EC>12-EC16 Aliphatic Hydrocarbons**		<5

EC5-EC7 Aromatic Hydrocarbons**		(Benzenze)
EC>7-EC8 Aromatic Hydrocarbons**		(Toluene)

EC>8-EC10 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube
Ethylbenzene		<5
m/p-Xylene		<5
o-Xylene		<5
Total**		**<15**

	NIST Library Quality Match	Estimated ng on tube
EC>10-EC12 Aromatic Hydrocarbons**		<5

	NIST Library Quality Match	Estimated ng on tube
EC>12-EC16 Aromatic Hydrocarbons**		<5

Uptake rates:
Benzene 0.70 ng.ppm^{-1}.min^{-1}.
Toluene 1.03 ng.ppm^{-1}.min^{-1}.
Ethylbenzene 1.46 ng.ppm^{-1}.min^{-1}.
m/p Xylene 1.46 ng.ppm^{-1}.min^{-1}.
o-Xylene 1.46 ng.ppm^{-1}.min^{-1}.
All other compounds: 2.00 ng.ppm^{-1}.min^{-1}.

Results are not Blank corrected.
The laboratory blank is a system check and will not be from the same batch of tubes analysed.

Tenax is recommended for compounds in the range C6 to C28 and may not retain Pentane effectively.

Trimethylcyclohexanes reported as sum of isomers because individual identification were not possible.

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Results greater than 500ng are outside of our UKAS accredited calibration range.

Reporting Limit 5ng on tube

Results reported as <5ng on tube are below the reporting limit.
Estimated results reported as <5ng on tube are below the reporting limit for the non-specific standard toluene.

Uncertainty of Measurement

Benzene	±15%
Toluene	±10%
Ethylbenzene	±11%
m/p-Xylene	±11%
o-Xylene	±11%

The reported expanded uncertainty is based on a standard uncertainty multiplied by a factor of *k*=2, providing a level of confidence of approximately 95%. Uncertainty of measurement has not been applied to the reported results.

Estimated results as ng on tube are calculated by reference to toluene in accordance with ISO 16000-6

Compounds reported may not be the most abundant detected in these samples.
**The classification and grouping of TPH compounds to CWG guidelines is not covered by our UKAS accreditation.

Identification of compounds is carried out by comparison of the mass spectra to the NIST 17 mass spectral library. Compounds with a quality match below 85% are noted as a tentative identity and shown in italics. These compounds are outside of the scope of our UKAS accreditation.

Where a result is shown as less than the reporting limit the reporting limit concentration is included in the total TPH result.
If the sum of results below the reporting limit is greater than the sum of results above the reporting limit total TPH will be reported as less than the value reported.

Analysts Name	Katya Paldamova	**Date of Analysis**	21/02/2023
Report Checked By	Mariella Angelova	**Date of Report**	23/02/2023

Analysis has been carried out in accordance with in-house method GLM 13

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LABORATORY ANALYSIS REPORT

Report Number	**R02902R**
Customer	**Smith Grant LLP** **Bryn Estyn Business Centre** **Suite 16, Bryn Estyn Road** **Wrexham** **LL13 9TY**
Booking In Reference	**Q0392**
Despatch Note Number	**99579**
Date Samples Received	**12/04/2023**
Diffusion Tube Type	**Tenax**
Job Reference	**R1742b/ Dorchester, Heyford**

Quantitative Analysis of BTEX
Identification and estimation of ng on tube in accordance with ISO16000-6

Tube Number	**003574**
Gradko Lab Reference	**02R0267**
Exposure Time (mins)*	**30276**
Sample ID	**VP1**

BTEX	**ng on tube**	**ppb in air***	**µgm^{-3}***
Benzene	14	0.7	2.1
Toluene	12.5	0.4	1.5
Ethylbenzene	<5	<0.1	<0.5
m/p-Xylene	<5	<0.1	<0.5
o-Xylene	<5	<0.1	<0.5

EC5-EC6 Aliphatic Hydrocarbons**	NIST Library Quality Match	**Estimated ng on tube**	**ppb in air***	**µgm^{-3}***
Pentane	64	44	0.7	2.1
1-Pentene, 2-methyl-	91	29	0.5	1.6
Pentane, 2-methyl-	62	26	0.4	1.5
Hexane	90	25	0.4	1.4
Pentane, 3-methyl-	72	13	0.2	0.7
Total**		**136**	**2.2**	**7.3**

EC>6-EC8 Aliphatic Hydrocarbons**	NIST Library Quality Match	**Estimated ng on tube**	**ppb in air***	**µgm^{-3}***
Butane, 2,2,3,3-tetramethyl-	72	104	1.7	7.8
Octane	91	42	0.7	3.2
Pentane, 2,3,3-trimethyl-	90	37	0.6	2.8
Pentane, 3-ethyl-	91	37	0.6	2.4
Cyclohexane, methyl-	91	30	0.5	1.9
Cyclohexane, 1,3-dimethyl-, cis-	91	25	0.4	1.9
Heptane	86	17	0.3	1.1

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	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Heptane, 3-methyl-	93	13	0.2	1.0
Cyclohexane, 1,3-dimethyl-, trans-	91	11	0.2	0.8
Pentane, 2,4-dimethyl-	53	11	0.2	0.7
Pentane, 2,3-dimethyl-	72	10	0.2	0.7
Hexane, 3-methyl-	91	9	0.1	0.6
Hexane, 2,4-dimethyl-	86	7	0.1	0.6
Hexane, 2,5-dimethyl-	90	7	0.1	0.5
Hexane, 2,3-dimethyl-	78	5	0.1	0.4
Total**		**367**	**6.1**	**27**

EC>8-EC10 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Cyclohexane, 1,2,4-trimethyl- (sum of isomers)		30	0.5	2.5
Cyclohexane, 1,3,5-trimethyl- (sum of isomers)		19	0.3	1.6
Octane, 2-methyl-	58	14	0.2	1.2
Cyclohexane, ethyl-	83	14	0.2	1.0
Octane, 3-methyl-	72	12	0.2	1.0
1-Ethyl-3-methylcyclohexane (c,t)	86	10	0.2	0.9
Cyclohexane, 1-ethyl-2-methyl-	80	9	0.1	0.7
Cyclohexane, propyl-	52	6	0.1	0.5
Cyclohexane, 1-ethyl-4-methyl-, trans-	80	<5	<0.1	<0.4
Nonane	53	<5	<0.1	<0.4
Total**		**124**	**2.1**	**10**

EC>10-EC12 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Dodecane	91	<5	<0.1	<0.6

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>12-EC16 Aliphatic Hydrocarbons**		<5	<0.1

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>16-EC25 Aliphatic Hydrocarbons**		<5	<0.1

EC5-EC7 Aromatic Hydrocarbons** (Benzenze)

EC>7-EC8 Aromatic Hydrocarbons** (Toluene)

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EC>8-EC10 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Benzene, 1,2,4-trimethyl-	93	5	0.1	0.4
Ethylbenzene		<5	<0.1	<0.5
m/p-Xylene		<5	<0.1	<0.5
o-Xylene		<5	<0.1	<0.5
Total**		**<20**	**<0.4**	**<1.9**

EC>10-EC12 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Benzene, 1-methyl-4-(1-methylethyl)-	76	<5	<0.1	<0.4

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>12-EC16 Aromatic Hydrocarbons**		<5	<0.1

Tube Number	**005067**
Gradko Lab Reference	**02R0268**
Exposure Time (mins)*	**30276**
Sample ID	**VP2**

BTEX	ng on tube	ppb in air*	µgm^{-3}*
Benzene	6.0	0.3	0.9
Toluene	<5	<0.2	<0.6
Ethylbenzene	<5	<0.1	<0.5
m/p-Xylene	<5	<0.1	<0.5
o-Xylene	<5	<0.1	<0.5

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC5-EC6 Aliphatic Hydrocarbons**		<5	<0.1

EC>6-EC8 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Cyclohexane, methyl-	91	8	0.1	0.5

EC>8-EC10 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Decane	90	9	0.2	0.9
Octane, 2,6-dimethyl-	74	<5	<0.1	<0.5
Total**		**14**	**0.2**	**1.3**

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EC>10-EC12 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Undecane	91	7	0.1	0.8

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>12-EC16 Aliphatic Hydrocarbons**		<5	<0.1

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>16-EC25 Aliphatic Hydrocarbons**		<5	<0.1

EC5-EC7 Aromatic Hydrocarbons** (Benzenze)

EC>7-EC8 Aromatic Hydrocarbons** (Toluene)

EC>8-EC10 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Ethylbenzene		<5	<0.1	<0.5
m/p-Xylene		<5	<0.1	<0.5
o-Xylene		<5	<0.1	<0.5
Total**		**<15**	**<0.3**	**<1.4**

EC>10-EC12 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Benzene, 1,2,3-trimethyl-	58	<5	<0.1	<0.4

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>12-EC16 Aromatic Hydrocarbons**		<5	<0.1

Tube Number	**GRA03613**
Gradko Lab Reference	**02R0269**
Exposure Time (mins)*	**30273**
Sample ID	**VP3**

BTEX	ng on tube	ppb in air*	μgm^{-3}*
Benzene	6.6	0.3	1.0
Toluene	<5	<0.2	<0.6
Ethylbenzene	<5	<0.1	<0.5
m/p-Xylene	<5	<0.1	<0.5
o-Xylene	<5	<0.1	<0.5

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	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC5-EC6 Aliphatic Hydrocarbons**		<5	<0.1

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>6-EC8 Aliphatic Hydrocarbons**		<5	<0.1

EC>8-EC10 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Decane	94	7	0.1	0.6

EC>10-EC12 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Dodecane	93	19	0.3	2.2
Undecane	53	<5	<0.1	<0.5
Total**		**24**	**0.4**	**2.7**

EC>12-EC16 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Tetradecane	87	<5	<0.1	<0.7

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>16-EC25 Aliphatic Hydrocarbons**		<5	<0.1

EC5-EC7 Aromatic Hydrocarbons**		(Benzenze)
EC>7-EC8 Aromatic Hydrocarbons**		(Toluene)

EC>8-EC10 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Ethylbenzene		<5	<0.1	<0.5
m/p-Xylene		<5	<0.1	<0.5
o-Xylene		<5	<0.1	<0.5
Total**		**<15**	**<0.3**	**<1.4**

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>10-EC12 Aromatic Hydrocarbons**		<5	<0.1

EC>12-EC16 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Naphthalene, 2-methyl-	91	<5	<0.1	<0.5

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Tube Number	**GRA09890**
Gradko Lab Reference	**02R0270**
Exposure Time (mins)*	**30271**
Sample ID	**VP4**

BTEX	ng on tube	ppb in air*	μgm^{-3}*
Benzene	5.7	0.3	0.8
Toluene	<5	<0.2	<0.6
Ethylbenzene	<5	<0.1	<0.5
m/p-Xylene	<5	<0.1	<0.5
o-Xylene	<5	<0.1	<0.5

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC5-EC6 Aliphatic Hydrocarbons**		<5	<0.1

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>6-EC8 Aliphatic Hydrocarbons**		<5	<0.1

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>8-EC10 Aliphatic Hydrocarbons**		<5	<0.1

EC>10-EC12 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Undecane	94	41	0.7	4.2
Dodecane	96	28	0.5	3.1
Total**		**68**	**1.1**	**7.3**

EC>12-EC16 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Pentadecane	90	7	0.1	0.9
Hexadecane	87	<5	<0.1	<0.7
Tetradecane	91	<5	<0.1	<0.7
Tridecane	87	<5	<0.1	<0.6
Total**		**<22**	**<0.4**	**<2.9**

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>16-EC25 Aliphatic Hydrocarbons**		<5	<0.1

EC5-EC7 Aromatic Hydrocarbons**	(Benzenze)
EC>7-EC8 Aromatic Hydrocarbons**	(Toluene)

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EC>8-EC10 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Benzene, 1,2,4-trimethyl-	97	26	0.4	2.1
Benzene, 1,3,5-trimethyl-	93	7	0.1	0.6
Benzene, propyl-	30	<5	<0.1	<0.4
Ethylbenzene		<5	<0.1	<0.5
m/p-Xylene		<5	<0.1	<0.5
o-Xylene		<5	<0.1	<0.5
Total**		**53**	**1.0**	**4.4**

EC>10-EC12 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Naphthalene	64	23	0.4	2.0
Benzene, 1,2,3-trimethyl-	95	22	0.4	1.7
Benzene, 4-ethyl-1,2-dimethyl-	94	18	0.3	1.6
Benzene, 1,2,3,5-tetramethyl-	95	16	0.3	1.4
Benzene, 1,2,4,5-tetramethyl-	97	16	0.3	1.4
Benzene, 1,2,3,4-tetramethyl-	70	14	0.2	1.3
Benzene, 1-ethyl-3,5-dimethyl-	95	14	0.2	1.2
Benzene, 1-methyl-2-(1-methylethyl)-	95	12	0.2	1.1
Benzene, 1-methyl-3-(1-methylethyl)-	90	9	0.1	0.8
Benzene, 1-methyl-3-propyl-	72	6	0.1	0.6
Benzene, 2-ethyl-1,4-dimethyl-	90	6	0.1	0.5
Benzene, 1,3-diethyl-	94	5	0.1	0.5
Total**		**161**	**2.7**	**14**

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>12-EC16 Aromatic Hydrocarbons**		<5	<0.1

Tube Number	**GRA10352**
Gradko Lab Reference	**02R0271**
Exposure Time (mins)*	**30271**
Sample ID	**VP5**

BTEX	ng on tube	ppb in air*	µgm^{-3}*
Benzene	6.9	0.3	1.0
Toluene	<5	<0.2	<0.6
Ethylbenzene	<5	<0.1	<0.5
m/p-Xylene	<5	<0.1	<0.5
o-Xylene	<5	<0.1	<0.5

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EC5-EC6 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*
		<5	<0.1

EC>6-EC8 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Cyclohexane, 1,3-dimethyl-, cis-	90	8	0.1	0.6
Cyclohexane, 1,3-dimethyl-, trans-	94	6	0.1	0.4
Total**		**13**	**0.2**	**1.0**

EC>8-EC10 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Cyclohexane, butyl-	70	61	1.0	5.7
Decane	91	56	0.9	5.2
Cyclohexane, 1,3,5-trimethyl- (sum of isomers)		39	0.6	3.2
Cyclohexane, 1-ethyl-2-methyl-	87	28	0.5	2.4
Cyclohexane, propyl-	68	28	0.5	2.3
Cyclohexane, 1,2,4-trimethyl- (sum of isomers)		24	0.4	2.0
Nonane, 3-methyl-	91	14	0.2	1.3
Octane, 4-methyl-	64	12	0.2	1.0
Octane, 2,6-dimethyl-	87	12	0.2	1.1
Nonane, 4-methyl-	64	11	0.2	1.0
Octane, 3-methyl-	90	11	0.2	0.9
Cyclohexane, 1-ethyl-4-methyl-, trans-	94	8	0.1	0.7
Cyclohexane, 1-ethyl-4-methyl-, cis-	90	8	0.1	0.6
Cyclohexane, ethyl-	78	7	0.1	0.5
Nonane	76	6	0.1	0.5
Total**		**325**	**5.4**	**29**

EC>10-EC12 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Dodecane	94	43	0.7	4.8
Undecane	72	43	0.7	4.4
Total**		**86**	**1.4**	**9.2**

EC>12-EC16 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Tridecane	64	<5	<0.1	<0.6
Tetradecane	91	<5	<0.1	<0.7
Total**		**<10**	**<0.2**	**<1.3**

EC>16-EC25 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*
		<5	<0.1

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EC5-EC7 Aromatic Hydrocarbons**		(Benzenze)		
EC>7-EC8 Aromatic Hydrocarbons**		(Toluene)		

EC>8-EC10 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Ethylbenzene		<5	<0.1	<0.5
m/p-Xylene		<5	<0.1	<0.5
o-Xylene		<5	<0.1	<0.5
Total**		**<15**	**<0.3**	**<1.4**

EC>10-EC12 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Naphthalene	60	14	0.2	1.2
Benzene, 1,4-diethyl-	58	8	0.1	0.7
Total**		**22**	**0.4**	**1.9**

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>12-EC16 Aromatic Hydrocarbons**		<5	<0.1

Tube Number	**GRA06972**
Gradko Lab Reference	**02R0272**
Exposure Time (mins)*	**30271**
Sample ID	**VP6**

BTEX	ng on tube	ppb in air*	μgm^{-3}*
Benzene	<5	<0.2	<0.7
Toluene	<5	<0.2	<0.6
Ethylbenzene	<5	<0.1	<0.5
m/p-Xylene	<5	<0.1	<0.5
o-Xylene	<5	<0.1	<0.5

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC5-EC6 Aliphatic Hydrocarbons**		<5	<0.1

EC>6-EC8 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Cyclohexane, 1,3-dimethyl-, cis-	90	15	0.2	1.1
Cyclohexane, 1,4-dimethyl-	91	9	0.2	0.7
Cyclohexane, methyl-	78	<5	<0.1	<0.3
Total**		**29**	**0.5**	**2.1**

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EC>8-EC10 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Cyclohexane, 1,2,4-trimethyl- (sum of isomers)		82	1.3	6.8
Cyclohexane, 1,3,5-trimethyl- (sum of isomers)		58	1.0	4.9
Cyclohexane, 1-ethyl-2-methyl-	91	27	0.4	2.3
Cyclohexane, propyl-	53	20	0.3	1.6
Octane, 4-methyl-	83	19	0.3	1.6
Octane, 3-methyl-	86	18	0.3	1.6
Cyclohexane, 1-ethyl-4-methyl-, trans-	64	14	0.2	1.2
Cyclohexane, ethyl-	86	13	0.2	0.9
Octane, 2,6-dimethyl-	78	8	0.1	0.8
1-Ethyl-4-methylcyclohexane	91	8	0.1	0.7
Nonane, 3-methyl-	64	7	0.1	0.6
Nonane, 4-methyl-	43	6	0.1	0.6
Cyclohexane, 1,1,3-trimethyl-	86	5	0.1	0.5
Heptane, 2,6-dimethyl-	62	<5	<0.1	<0.4
Total**		**291**	**4.8**	**24**

EC>10-EC12 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Dodecane	96	69	1.1	7.8
Undecane	93	20	0.3	2.1
Total**		**90**	**1.5**	**9.9**

EC>12-EC16 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Tridecane	93	11	0.2	1.3
Tetradecane	94	7	0.1	1.0
Hexadecane	95	7	0.1	1.1
Total**		**25**	**0.4**	**3.3**

EC>16-EC25 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Heptadecane	83	9	0.1	1.4

EC5-EC7 Aromatic Hydrocarbons** (Benzenze)

EC>7-EC8 Aromatic Hydrocarbons** (Toluene)

EC>8-EC10 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Ethylbenzene		<5	<0.1	<0.5
m/p-Xylene		<5	<0.1	<0.5
o-Xylene		<5	<0.1	<0.5
Total**		**<15**	**<0.3**	**<1.4**

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EC>10-EC12 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Benzene, 1,2,4,5-tetramethyl-	60	6	0.1	0.5

EC>12-EC16 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Naphthalene, 2-methyl-	90	<5	<0.1	<0.5
Naphthalene, 1-methyl-	70	<5	<0.1	<0.5
Total**		**<10**	**<0.2**	**<0.9**

Tube Number	**GRA11342**
Gradko Lab Reference	**02R0273**
Exposure Time (mins)*	**30269**
Sample ID	**VP7**

BTEX	ng on tube	ppb in air*	µgm^{-3}*
Benzene	<5	<0.2	<0.7
Toluene	<5	<0.2	<0.6
Ethylbenzene	<5	<0.1	<0.5
m/p-Xylene	<5	<0.1	<0.5
o-Xylene	<5	<0.1	<0.5

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC5-EC6 Aliphatic Hydrocarbons**		<5	<0.1

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>6-EC8 Aliphatic Hydrocarbons**		<5	<0.1

EC>8-EC10 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Decane	95	68	1.1	6.3
Cyclohexane, butyl-	70	66	1.1	6.1
Nonane, 3-methyl-	91	23	0.4	2.1
Cyclohexane, 1,2,4-trimethyl- (sum of isomers)		22	0.4	1.8
Cyclohexane, propyl-	62	20	0.3	1.7
Cyclohexane, 1-ethyl-2-methyl-	87	18	0.3	1.5
Nonane, 4-methyl-	83	16	0.3	1.5
1-Ethyl-3-methylcyclohexane (c,t)	91	13	0.2	1.1
Octane, 2,6-dimethyl-	83	13	0.2	1.2
Octane, 3-methyl-	64	9	0.1	0.7
Octane, 2-methyl-	70	7	0.1	0.6

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	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Cyclohexane, 1,3,5-trimethyl-	70	5	0.1	0.5
1-Ethyl-4-methylcyclohexane	90	5	0.1	0.4
Cyclohexane, 1-ethyl-4-methyl-, trans-	87	5	0.1	0.4
Total**		**290**	**4.8**	**26**

EC>10-EC12 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Undecane	94	113	1.9	12
Dodecane	93	70	1.2	7.9
Decane, 4-methyl-	86	55	0.9	5.7
Decane, 2-methyl-	95	47	0.8	4.9
Total**		**285**	**4.7**	**30**

EC>12-EC16 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Hexadecane	90	7	0.1	1.1
Pentadecane	92	<5	<0.1	<0.7
Tridecane	60	<5	<0.1	<0.6
Total**		**<17**	**<0.3**	**<2.4**

EC>16-EC25 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Eicosane	97	58	1.0	11
Heneicosane	95	55	0.9	11
Nonadecane	98	41	0.7	7.2
Octadecane	98	31	0.5	5.2
Heptadecane	95	15	0.2	2.3
Total**		**200**	**3.3**	**36**

EC5-EC7 Aromatic Hydrocarbons** (Benzenze)

EC>7-EC8 Aromatic Hydrocarbons** (Toluene)

EC>8-EC10 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Ethylbenzene		<5	<0.1	<0.5
m/p-Xylene		<5	<0.1	<0.5
o-Xylene		<5	<0.1	<0.5
Total**		**<15**	**<0.3**	**<1.4**

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	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>10-EC12 Aromatic Hydrocarbons**		<5	<0.1

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>12-EC16 Aromatic Hydrocarbons**		<5	<0.1

Tube Number	**GRA10505**
Gradko Lab Reference	**02R0274**
Exposure Time (mins)*	**30268**
Sample ID	**VP8**

BTEX	ng on tube	ppb in air*	μgm^{-3}*
Benzene	9.4	0.4	1.4
Toluene	<5	<0.2	<0.6
Ethylbenzene	<5	<0.1	<0.5
m/p-Xylene	<5	<0.1	<0.5
o-Xylene	<5	<0.1	<0.5

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC5-EC6 Aliphatic Hydrocarbons**		<5	<0.1

EC>6-EC8 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Cyclopentane, 1-ethyl-3-methyl-	68	6	0.1	0.5
Cyclohexane, methyl-	68	6	0.1	0.4
Heptane, 3-methyl-	58	5	0.1	0.4
Cyclohexane, 1,3-dimethyl-, cis-	70	<5	<0.1	<0.4
Total**		**22**	**0.4**	**1.6**

EC>8-EC10 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Decane	95	33	0.5	3.1
Cyclohexane, 1-ethyl-2-methyl-	83	16	0.3	1.3
Cyclohexane, 1,1,3-trimethyl-	90	13	0.2	1.1
Cyclohexane, 1,2,4-trimethyl-	92	12	0.2	1.0
Cyclohexane, 1,3,5-trimethyl-	72	12	0.2	1.0
1-Ethyl-4-methylcyclohexane	93	10	0.2	0.9
Octane, 2-methyl-	64	10	0.2	0.9
Nonane, 4-methyl-	49	10	0.2	0.9
Nonane, 3-methyl-	81	10	0.2	0.9

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	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
1-Ethyl-3-methylcyclohexane (c,t)	60	10	0.2	0.8
Cyclohexane, ethyl-	70	6	0.1	0.5
Heptane, 2,3-dimethyl-	43	6	0.1	0.5
Cyclohexane, 1-ethyl-4-methyl-, trans-	76	<5	<0.1	<0.4
Total**		**153**	**2.5**	**13**

EC>10-EC12 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Undecane	93	28	0.5	2.9
Decane, 2-methyl-	93	18	0.3	1.9
Decane, 4-methyl-	60	16	0.3	1.7
Total**		**62**	**1.0**	**6.4**

EC>12-EC16 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Pentadecane	74	<5	<0.1	<0.7
Tetradecane	83	<5	<0.1	<0.7
Tridecane	81	<5	<0.1	<0.6
Total**		**<15**	**<0.2**	**<2.0**

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>16-EC25 Aliphatic Hydrocarbons**		<5	<0.1

EC5-EC7 Aromatic Hydrocarbons**	(Benzenze)
EC>7-EC8 Aromatic Hydrocarbons**	(Toluene)

EC>8-EC10 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Ethylbenzene		<5	<0.1	<0.5
m/p-Xylene		<5	<0.1	<0.5
o-Xylene		<5	<0.1	<0.5
Total**		**<15**	**<0.3**	**<1.4**

EC>10-EC12 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Naphthalene	94	48	0.8	4.1
Benzene, 1,2,3-trimethyl-	86	13	0.2	1.0
Benzene, 4-ethyl-1,2-dimethyl-	86	11	0.2	1.0
Benzene, 1,2,3,5-tetramethyl-	91	6	0.1	0.6
Benzene, 1-methyl-3-(1-methylethyl)-	50	<5	<0.1	<0.4
Benzene, 2-ethyl-1,4-dimethyl-	70	<5	<0.1	<0.4
Total**		**89**	**1.5**	**7.6**

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EC>12-EC16 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
Naphthalene, 2-methyl-	64	6	0.1	0.6

Tube Number	**003387**
Gradko Lab Reference	**02R0275**
Exposure Time (mins)*	**30265**
Sample ID	**VP9**

BTEX	ng on tube	ppb in air*	µgm-3*
Benzene	6.5	0.3	1.0
Toluene	5.6	0.2	0.7
Ethylbenzene	<5	<0.1	<0.5
m/p-Xylene	<5	<0.1	<0.5
o-Xylene	<5	<0.1	<0.5

EC5-EC6 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
Hexane	81	13	0.2	0.7
Pentane	59	11	0.2	0.5
Pentane, 3-methyl-	64	7	0.1	0.4
Total**		**31**	**0.5**	**1.7**

EC>6-EC8 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
Heptane	91	19	0.3	1.3
Heptane, 3-methyl-	87	16	0.3	1.2
Cyclohexane, 1,3-dimethyl-, cis-	90	14	0.2	1.0
Hexane, 3-methyl-	81	11	0.2	0.7
Pentane, 2,3,4-trimethyl-	49	11	0.2	0.8
Cyclohexane, methyl-	87	9	0.2	0.6
Cyclohexane, 1,4-dimethyl-	52	8	0.1	0.6
Cyclohexane, 1,4-dimethyl-, trans-	94	7	0.1	0.5
Hexane, 2,2-dimethyl-	50	7	0.1	0.5
Cyclopentane, 1-ethyl-2-methyl-, cis-	70	6	0.1	0.5
Hexane, 2,3-dimethyl-	64	<5	<0.1	<0.4
Total**		**113**	**1.9**	**8.1**

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EC>8-EC10 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Cyclohexane, 1,2,4-trimethyl- (sum of isomers)		109	1.8	9.1
Decane	95	91	1.5	8.6
1-Ethyl-3-methylcyclohexane (c,t)	91	61	1.0	5.1
Cyclohexane, 1-ethyl-2-methyl-	87	61	1.0	5.1
Cyclohexane, propyl-	68	61	1.0	5.1
Nonane	95	56	0.9	4.7
Cyclohexane, 1,3,5-trimethyl- (sum of isomers)		54	0.9	4.5
Octane, 2-methyl-	90	49	0.8	4.2
Octane, 3-methyl-	91	42	0.7	3.5
Nonane, 3-methyl-	91	38	0.6	3.5
Octane, 2,6-dimethyl-	93	36	0.6	3.4
Nonane, 4-methyl-	90	33	0.5	3.1
Cyclohexane, ethyl-	91	20	0.3	1.5
Cyclohexane, 1-ethyl-4-methyl-, trans-	87	18	0.3	1.5
Heptane, 2,4,6-trimethyl-	81	16	0.3	1.5
Cyclohexane, 1,1,3-trimethyl-	91	11	0.2	1.0
Heptane, 2,6-dimethyl-	87	9	0.1	0.7
Heptane, 2,4-dimethyl-	91	<5	<0.1	<0.4
Total**		**771**	**13**	**67**

EC>10-EC12 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Decane, 4-methyl-	46	60	1.0	6.2
Decane, 2-methyl-	94	35	0.6	3.6
Dodecane	92	34	0.6	3.8
Total**		**129**	**2.1**	**13.6**

EC>12-EC16 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Pentadecane	89	9	0.1	1.2
Hexadecane	78	7	0.1	1.0
Tridecane	92	5	0.1	0.7
Tetradecane	70	5	0.1	0.7
Total**		**26**	**0.4**	**3.6**

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>16-EC25 Aliphatic Hydrocarbons**		<5	<0.1

EC5-EC7 Aromatic Hydrocarbons**	(Benzenze)
EC>7-EC8 Aromatic Hydrocarbons**	(Toluene)

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EC>8-EC10 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Ethylbenzene		<5	<0.1	<0.5
m/p-Xylene		<5	<0.1	<0.5
o-Xylene		<5	<0.1	<0.5
Total**		**<15**	**<0.3**	**<1.4**

EC>10-EC12 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Benzene, 1,2,3,4-tetramethyl-	43	25	0.4	2.2
Benzene, 1,2,4,5-tetramethyl-	83	17	0.3	1.5
Total**		**41**	**0.7**	**3.7**

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>12-EC16 Aromatic Hydrocarbons**		<5	<0.1

Tube Number	**003396**
Gradko Lab Reference	**02R0276**
Exposure Time (mins)*	**30265**
Sample ID	**VP10**

BTEX	ng on tube	ppb in air*	μgm^{-3}*
Benzene	10.7	0.5	1.6
Toluene	<5	<0.2	<0.6
Ethylbenzene	<5	<0.1	<0.5
m/p-Xylene	12.1	0.3	1.2
o-Xylene	7.5	0.2	0.7

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC5-EC6 Aliphatic Hydrocarbons**		<5	<0.1

EC>6-EC8 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Octane	91	18	0.3	1.3
Cyclohexane, methyl-	91	16	0.3	1.0
Pentane, 2,3,4-trimethyl-	64	13	0.2	1.0
Heptane, 3-methyl-	87	11	0.2	0.8
Cyclohexane, 1,3-dimethyl-, cis-	90	10	0.2	0.7
Heptane	87	7	0.1	0.5
Cyclohexane, 1,2-dimethyl-, trans-	91	6	0.1	0.5
Pentane, 2,3,3-trimethyl-	72	6	0.1	0.4
Cyclohexane, 1,4-dimethyl-, trans-	94	<5	<0.1	<0.4
Cyclopentane, methyl-	46	<5	<0.1	<0.3
Total**		**97**	**1.6**	**6.9**

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EC>8-EC10 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Cyclohexane, 1,1,3-trimethyl-	91	13	0.2	1.1
Decane	91	11	0.2	1.0
Cyclohexane, 1,2,4-trimethyl-	47	10	0.2	0.8
Cyclohexane, ethyl-	90	9	0.2	0.7
Heptane, 2,5-dimethyl-	64	9	0.1	0.8
Nonane	93	9	0.1	0.8
Cyclohexane, 1-ethyl-2-methyl-	81	9	0.1	0.7
Cyclohexane, propyl-	58	6	0.1	0.5
1-Ethyl-4-methylcyclohexane	87	6	0.1	0.5
Cyclohexane, 1,3,5-trimethyl-	86	6	0.1	0.5
Octane, 2-methyl-	76	5	0.1	0.4
Octane, 2,6-dimethyl-	87	<5	<0.1	<0.5
Heptane, 2,3-dimethyl-	64	<5	<0.1	<0.4
1-Ethyl-3-methylcyclohexane (c,t)	81	<5	<0.1	<0.4
Total**		**109**	**1.8**	**9.2**

EC>10-EC12 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Undecane	76	14	0.2	1.5

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>12-EC16 Aliphatic Hydrocarbons**		<5	<0.1

EC>16-EC25 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Eicosane	91	<5	<0.1	<0.9

EC5-EC7 Aromatic Hydrocarbons** (Benzenze)

EC>7-EC8 Aromatic Hydrocarbons** (Toluene)

EC>8-EC10 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
m/p-Xylene		12	0.3	1.2
o-Xylene		7	0.2	0.7
Ethylbenzene		<5	<0.1	0.5
Total**		**25**	**0.6**	**2.4**

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Signed.......................................
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LABORATORY ANALYSIS REPORT

EC>10-EC12 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Naphthalene	92	18	0.3	1.5
Benzene, 1,2,3,4-tetramethyl-	50	12	0.2	1.1
Benzene, 1,2,3,5-tetramethyl-	60	11	0.2	0.9
Benzene, 1,2,3-trimethyl-	50	7	0.1	0.6
Benzene, 4-ethyl-1,2-dimethyl-	76	<5	<0.1	<0.4
Indane	46	<5	<0.1	<0.4
Benzene, 1-methyl-3-(1-methylethyl)-	50	<5	<0.1	<0.4
Total**		**62**	**1.0**	**5.3**

EC>12-EC16 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Naphthalene, 2-methyl-	70	<5	<0.1	<0.5

Tube Number	**Mi074033**
Gradko Lab Reference	**02R0277**
Exposure Time (mins)*	**30263**
Sample ID	**VP11**

BTEX	ng on tube	ppb in air*	µgm^{-3}*
Benzene	5.1	0.2	0.7
Toluene	<5	<0.2	<0.6
Ethylbenzene	<5	<0.1	<0.5
m/p-Xylene	7.5	0.2	0.7
o-Xylene	<5	<0.1	<0.5

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC5-EC6 Aliphatic Hydrocarbons**		<5	<0.1

EC>6-EC8 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Cyclohexane, 1,3-dimethyl-, cis-	91	91	1.5	6.8
Cyclohexane, 1,2-dimethyl-, trans-	95	89	1.5	6.6
Heptane, 3-methyl-	91	41	0.7	3.1
Cyclohexane, methyl-	93	38	0.6	2.5
Cyclopentane, 1,2,3-trimethyl-, (1.alpha.,2.alpha.,3.beta.)-	91	34	0.6	2.5
Cyclohexane, 1,3-dimethyl-, trans-	94	28	0.5	2.1
Cyclopentane, 1-ethyl-2-methyl-	94	27	0.4	2.0
Cyclopentane, 1,2,4-trimethyl-	91	24	0.4	1.8
Hexane, 3-ethyl-	87	15	0.3	1.2
Hexane, 2,3-dimethyl-	74	14	0.2	1.1

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LABORATORY ANALYSIS REPORT

	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Hexane, 2,4-dimethyl-	93	14	0.2	1.1
Hexane, 3-methyl-	94	13	0.2	0.9
Pentane, 3-ethyl-2-methyl-	93	12	0.2	0.9
Hexane, 3,4-dimethyl-	87	11	0.2	0.9
Hexane, 2,5-dimethyl-	74	7	0.1	0.5
Cyclopentane, 1,2-dimethyl-	90	7	0.1	0.4
Pentane, 2,3-dimethyl-	81	6	0.1	0.4
Cyclopentane, 1,2-dimethyl-, trans-	46	6	0.1	0.4
Heptane	81	<5	<0.1	<0.3
Total**		**484**	**8.0**	**35**

EC>8-EC10 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Decane	95	736	12	69
Cyclohexane, propyl-	53	496	8.2	41
Cyclohexane, 1,1,3-trimethyl-	92	464	7.7	39
Nonane	95	383	6.3	32
Octane, 2,6-dimethyl-	91	366	6.1	34
Cyclohexane, 1-ethyl-2-methyl-, trans-	81	250	4.1	21
Nonane, 4-methyl-	81	239	3.9	22
Cyclohexane, 1,3,5-trimethyl-	94	219	3.6	18
Nonane, 3-methyl-	80	207	3.4	19
Octane, 3-methyl-	74	188	3.1	16
1-Ethyl-3-methylcyclohexane (c,t)	91	174	2.9	14
Octane, 4-methyl-	90	146	2.4	12
Heptane, 2,5-dimethyl-	81	125	2.1	11
Cyclohexane, 1-ethyl-4-methyl-, trans-	91	122	2.0	10
Cyclohexane, ethyl-	91	105	1.7	7.8
Heptane, 2,6-dimethyl-	91	80	1.3	6.8
Heptane, 4-ethyl-	58	80	1.3	6.8
Cyclohexane, 1,2,4-trimethyl-	93	47	0.8	4.0
Heptane, 2,4-dimethyl-	94	28	0.5	2.4
Hexane, 3-ethyl-2-methyl-	91	27	0.4	2.3
Heptane, 2,3-dimethyl-	81	13	0.2	1.1
Total**		**4496**	**74**	**391**

EC>10-EC12 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Dodecane	95	1075	18	121
Undecane	95	769	13	79
Decane, 2-methyl-	90	410	6.8	42
Decane, 4-methyl-	81	154	2.5	16
Total**		**2408**	**40**	**258**

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EC>12-EC16 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Undecane, 2,6-dimethyl-	64	426	7.0	52
Tetradecane	95	12	0.2	1.5
Pentadecane	96	9	0.1	1.2
Hexadecane	91	7	0.1	1.0
Total**		**453**	**7.5**	**56**

EC>16-EC25 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Heptadecane	95	6	0.1	1.0

EC5-EC7 Aromatic Hydrocarbons** (Benzenze)

EC>7-EC8 Aromatic Hydrocarbons** (Toluene)

EC>8-EC10 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Benzene, 1,3,5-trimethyl-	92	201	3.3	16
Benzene, 1-ethyl-2-methyl-	89	182	3.0	14
m/p-Xylene		8	0.2	0.7
Ethylbenzene		<5	<0.1	<0.5
o-Xylene		<5	<0.1	<0.5
Total**		**401**	**6.7**	**32**

EC>10-EC12 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Benzene, 1,2,4,5-tetramethyl-	74	497	8.2	44
Benzene, 1,2,3,5-tetramethyl-	95	387	6.4	34
Benzene, 1-methyl-2-propyl-	86	323	5.3	29
Benzene, 4-ethyl-1,2-dimethyl-	95	305	5.0	27
Benzene, 1,2,3-trimethyl-	42	231	3.8	18
Benzene, 1-methyl-3-(1-methylethyl)-	91	198	3.3	18
Benzene, 2-ethyl-1,4-dimethyl-	89	196	3.2	17
Naphthalene, 1,2,3,4-tetrahydro-	56	190	3.1	17
Naphthalene, 1,2,3,4-tetrahydro-5-methyl-	38	94	1.5	9.0
Total**		**2420**	**40**	**213**

EC>12-EC16 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Naphthalene, 2-methyl-	89	78	1.3	7.4
Naphthalene, 1-methyl-	86	67	1.1	6.3
Total**		**145**	**2.4**	**14**

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LABORATORY ANALYSIS REPORT

Tube Number	**GRA08442**			
Gradko Lab Reference	**02R0278**			
Exposure Time (mins)*	**30261**			
Sample ID	**VP12**			
BTEX		**ng on tube**	**ppb in air***	**μgm^{-3}***
Benzene		6.1	0.3	0.9
Toluene		5.0	0.2	0.6
Ethylbenzene		<5	<0.1	<0.5
m/p-Xylene		6.5	0.1	0.6
o-Xylene		<5	<0.1	<0.5
EC5-EC6 Aliphatic Hydrocarbons**	NIST Library Quality Match	**Estimated ng on tube**	**ppb in air***	**μgm^{-3}***
Pentane	47	<5	<0.1	<0.2
EC>6-EC8 Aliphatic Hydrocarbons**	NIST Library Quality Match	**Estimated ng on tube**	**ppb in air***	**μgm^{-3}***
Cyclohexane, 1,3-dimethyl-, cis-	91	21	0.3	1.5
Cyclohexane, 1,3-dimethyl-, trans-	94	11	0.2	0.8
Cyclohexane, methyl-	81	5	0.1	0.4
Cyclopentane, 1-ethyl-2-methyl-, cis-	72	<5	<0.1	<0.4
Total**		**43**	**0.7**	**3.1**
EC>8-EC10 Aliphatic Hydrocarbons**	NIST Library Quality Match	**Estimated ng on tube**	**ppb in air***	**μgm^{-3}***
Cyclohexane, 1,2,4-trimethyl- (sum of isomers)		126	2.1	10
Cyclohexane, 1,3,5-trimethyl- (sum of isomers)		107	1.8	8.9
Nonane, 2-methyl-	50	83	1.4	7.8
1-Ethyl-3-methylcyclohexane (c,t)	91	74	1.2	6.2
Cyclohexane, 1-ethyl-2-methyl-	83	74	1.2	6.1
Decane	93	71	1.2	6.6
Nonane	95	60	1.0	5.0
Octane, 2-methyl-	94	54	0.9	4.5
Octane, 2,6-dimethyl-	93	53	0.9	5.0
Octane, 3-methyl-	91	50	0.8	4.3
Nonane, 3-methyl-	91	50	0.8	4.7
Nonane, 4-methyl-	74	44	0.7	4.1
Cyclohexane, 1-ethyl-4-methyl-, cis-	91	36	0.6	3.0
Cyclohexane, butyl-	72	35	0.6	3.3
Cyclohexane, 1-ethyl-4-methyl-, trans-	91	25	0.4	2.1
Cyclohexane, ethyl-	91	17	0.3	1.2
Cyclohexane, 1,1,3-trimethyl-	92	11	0.2	0.9
Heptane, 2,4-dimethyl-	87	<5	<0.1	<0.4
Total**		**973**	**16**	**85**

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LABORATORY ANALYSIS REPORT

EC>10-EC12 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
Undecane	46	10	0.2	1.1

EC>12-EC16 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
Hexadecane	62	<5	<0.1	<0.7

EC>16-EC25 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
Heptadecane	91	<5	<0.1	<0.8

EC5-EC7 Aromatic Hydrocarbons** (Benzenze)

EC>7-EC8 Aromatic Hydrocarbons** (Toluene)

EC>8-EC10 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
m/p-Xylene		6.5	0.1	0.6
Ethylbenzene		<5	<0.1	<0.5
o-Xylene		<5	<0.1	<0.5
Total**		**<17**	**<0.4**	**<1.6**

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>10-EC12 Aromatic Hydrocarbons**		<5	<0.1

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>12-EC16 Aromatic Hydrocarbons**		<5	<0.1

Tube Number	**GRA10561**	
Gradko Lab Reference	**14_230426_tenax_blank**	
Sample ID	**Laboratory Blank**	
BTEX		**ng on tube**
Benzene		<5
Toluene		<5
Ethylbenzene		<5
m/p-Xylene		<5
o-Xylene		<5

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	NIST Library Quality Match	Estimated ng on tube
EC5-EC6 Aliphatic Hydrocarbons**		<5

	NIST Library Quality Match	Estimated ng on tube
EC>6-EC8 Aliphatic Hydrocarbons**		<5

	NIST Library Quality Match	Estimated ng on tube
EC>8-EC10 Aliphatic Hydrocarbons**		<5

	NIST Library Quality Match	Estimated ng on tube
EC>10-EC12 Aliphatic Hydrocarbons**		<5

	NIST Library Quality Match	Estimated ng on tube
EC>12-EC16 Aliphatic Hydrocarbons**		<5

	NIST Library Quality Match	Estimated ng on tube
EC>16-EC25 Aliphatic Hydrocarbons**		<5

EC5-EC7 Aromatic Hydrocarbons** (Benzenze)

EC>7-EC8 Aromatic Hydrocarbons** (Toluene)

EC>8-EC10 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube
Ethylbenzene		<5
m/p-Xylene		<5
o-Xylene		<5
Total**		**<15**

	NIST Library Quality Match	Estimated ng on tube
EC>10-EC12 Aromatic Hydrocarbons**		<5

	NIST Library Quality Match	Estimated ng on tube
EC>12-EC16 Aromatic Hydrocarbons**		<5

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LABORATORY ANALYSIS REPORT

Uptake rates:

Benzene 0.70 $ng.ppm^{-1}.min^{-1}$.

Toluene 1.03 $ng.ppm^{-1}.min^{-1}$.

Ethylbenzene 1.46 $ng.ppm^{-1}.min^{-1}$.

m/p Xylene 1.46 $ng.ppm^{-1}.min^{-1}$.

o-Xylene 1.46 $ng.ppm^{-1}.min^{-1}$.

All other compounds: 2.00 $ng.ppm^{-1}.min^{-1}$.

Results are not Blank corrected.
The laboratory blank is a system check and will not be from the same batch of tubes analysed.

Tenax is recommended for compounds in the range C6 to C28 and may not retain Pentane effectively.

Trimethylcyclohexanes reported as sum of isomers because individual identification were not possible.

Results greater than 500ng are outside of our UKAS accredited calibration range.

Reporting Limit 5ng on tube
Results reported as <5ng on tube are below the reporting limit.
Estimated results reported as <5ng on tube are below the reporting limit for the non-specific standard toluene.

Uncertainty of Measurement

Benzene	±15%
Toluene	±13%
Ethylbenzene	±13%
m/p-Xylene	±13%
o-Xylene	±13%

The reported expanded uncertainty is based on a standard uncertainty multiplied by a factor of *k*=2, providing a level of confidence of approximately 95%. Uncertainty of measurement has not been applied to the reported results.

Estimated results as ng on tube are calculated by reference to toluene in accordance with ISO 16000-6

Compounds reported may not be the most abundant detected in these samples.
**The classification and grouping of TPH compounds to CWG guidelines is not covered by our UKAS accreditation.

Identification of compounds is carried out by comparison of the mass spectra to the NIST 17 mass spectral library. Compounds with a quality match below 85% are noted as a tentative identity and shown in italics. These compounds are outside of the scope of our UKAS accreditation.

Where a result is shown as less than the reporting limit the reporting limit concentration is included in the total TPH result.

If the sum of results below the reporting limit is greater than the sum of results above the reporting limit total TPH will be reported as less than the value reported.

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LABORATORY ANALYSIS REPORT

Analysts Name	Katya Paldamova	**Date of Analysis**	26/04/2023
Report Checked By	Mariella Angelova	**Date of Report**	02/05/2023

Analysis has been carried out in accordance with in-house method GLM 13

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LABORATORY ANALYSIS REPORT

Report Number	**R02905R**
Customer	**Smith Grant LLP** **Bryn Estyn Business Centre** **Suite 16, Bryn Estyn Road** **Wrexham** **LL13 9TY**
Booking In Reference	**Q0393**
Despatch Note Number	**100532**
Date Samples Received	**12/04/2023**
Diffusion Tube Type	**Tenax**
Job Reference	**R1742b/ Dorchester, Heyford**

Quantitative Analysis of BTEX and TCE
Identification and estimation of ng on tube in accordance with ISO16000-6

Tube Number	**004160*** **
Gradko Lab Reference	**08R0775**
Exposure Time (mins)*	**30259**
Sample ID	**VP13**

Quantitative Compounds	**ng on tube**	**ppb in air***	**µgm^{-3}***
Benzene	9.2	0.4	1.4
Toluene	19.1	0.6	2.2
Ethylbenzene	5.9	0.1	0.6
m/p-Xylene	13.2	0.3	1.3
o-Xylene	5.6	0.1	0.5

EC5-EC6 Aliphatic Hydrocarbons**	NIST Library Quality Match	**Estimated ng on tube**	**ppb in air***	**µgm^{-3}***
Pentane	72	11	0.2	0.5
Hexane	86	6	0.1	0.3
Total**		**<17**	**<0.3**	**0.9**

EC>6-EC8 Aliphatic Hydrocarbons**	NIST Library Quality Match	**Estimated ng on tube**	**ppb in air***	**µgm^{-3}***
Cyclohexane, 1,3-dimethyl-, cis-	91	54	0.9	4.0
Butane, 2,2,3,3-tetramethyl-	78	46	0.8	3.5
Cyclohexane, 1,4-dimethyl-	94	41	0.7	3.0
Hexane, 2,2,5-trimethyl-	45	32	0.5	2.7
Pentane, 2,3,3-trimethyl-	90	32	0.5	2.4
Cyclopentane, 1-ethyl-3-methyl-	91	27	0.4	2.0
Pentane, 2,3,4-trimethyl-	91	26	0.4	2.0
Heptane, 3-methyl-	91	22	0.4	1.7

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	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Cyclohexane, methyl-	94	14	0.2	0.9
Hexane, 3-ethyl-	72	10	0.2	0.7
Hexane, 2,3-dimethyl-	58	9	0.2	0.7
Hexane, 2,4-dimethyl-	68	8	0.1	0.6
Cyclopentane, 1,2,4-trimethyl-	74	8	0.1	0.6
Heptane	87	5	0.1	0.3
Hexane, 2,5-dimethyl-	80	<5	<0.1	<0.4
Cyclopentane, methyl-	78	<5	<0.1	<0.3
Total**		**344**	**5.7**	**26**

EC>8-EC10 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Cyclohexane, 1,3,5-trimethyl- (sum of isomers)		317	5.2	26
Nonane	91	236	3.9	20
Cyclohexane, 1,2,4-trimethyl- (sum of isomers)		235	3.9	20
Cyclohexane, propyl-	76	188	3.1	16
Octane, 2-methyl-	90	179	3.0	15
Octane, 3-methyl-	91	137	2.3	12
Cyclohexane, 1-ethyl-2-methyl-	90	125	2.1	10
Nonane, 2-methyl-	46	104	1.7	9.7
Decane	94	83	1.4	7.8
Cyclohexane, 1-ethyl-4-methyl-, trans-	91	67	1.1	5.6
Nonane, 3-methyl-	94	60	1.0	5.6
Cyclohexane, ethyl-	90	59	1.0	4.3
Nonane, 4-methyl-	78	54	0.9	5.0
Heptane, 2,6-dimethyl-	78	40	0.7	3.4
1-Ethyl-3-methylcyclohexane (c,t)	86	37	0.6	3.1
Cyclohexane, butyl-	58	35	0.6	3.3
Cyclohexane, 1,1,3-trimethyl-	92	31	0.5	2.6
Heptane, 2,4-dimethyl-	91	17	0.3	1.4
Total**		**2004**	**33**	**171**

EC>10-EC12 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Undecane	93	18	0.3	1.8
Decane, 2-methyl-	81	16	0.3	1.6
Total**		**33**	**0.6**	**3.5**

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EC>12-EC16 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Pentadecane	87	5	0.1	0.7
Hexadecane	96	<5	<0.1	<0.7
Tridecane	89	<5	<0.1	<0.6
Tetradecane	97	<5	<0.1	<0.7
Total**		**<20**	**<0.3**	**<2.7**

EC>16-EC25 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Heptadecane	96	<5	<0.1	<0.8

EC5-EC7 Aromatic Hydrocarbons** (Benzenze)

EC>7-EC8 Aromatic Hydrocarbons** (Toluene)

EC>8-EC10 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
m/p-Xylene		13	0.3	1.3
Ethylbenzene		6	0.1	0.6
o-Xylene		6	0.1	0.5
Total**		**25**	**0.6**	**2.4**

EC>10-EC12 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Benzene, 1,2,3-trimethyl-	25	8	0.1	0.6
Benzene, 2-ethyl-1,4-dimethyl-	46	7	0.1	0.6
Total**		**15**	**0.2**	**1.2**

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>12-EC16 Aromatic Hydrocarbons**		<5	<0.1

Tube Number	**005036**
Gradko Lab Reference	**08R0776**
Exposure Time (mins)*	**30256**
Sample ID	**VP14**

Quantitative Compounds	ng on tube	ppb in air*	µgm^{-3}*
Benzene	7.6	0.4	1.1
Toluene	9.3	0.3	1.1
Ethylbenzene	<5	<0.1	<0.5
m/p-Xylene	10.6	0.2	1.0
o-Xylene	6.0	0.1	0.6

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EC5-EC6 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Pentane, 3-methyl-	86	5	0.1	0.3
Pentane	72	<5	<0.1	<0.2
Total**		**10**	**0.2**	**0.5**

EC>6-EC8 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Cyclohexane, methyl-	94	104	1.7	6.8
Heptane, 3-methyl-	96	94	1.6	7.1
Cyclohexane, 1,3-dimethyl-, cis-	91	88	1.5	6.5
Pentane, 2,3,4-trimethyl-	80	68	1.1	5.1
Cyclohexane, 1,3-dimethyl-, trans-	86	63	1.0	4.6
Cyclohexane, 1,2-dimethyl-, trans-	70	51	0.9	3.8
Butane, 2,2,3,3-tetramethyl-	78	49	0.8	3.7
Hexane, 2,2,5-trimethyl-	45	47	0.8	4.0
Hexane, 2,4-dimethyl-	68	46	0.8	3.5
Cyclopentane, 1,2,4-trimethyl-	83	44	0.7	3.2
Hexane, 3-methyl-	91	35	0.6	2.3
Pentane, 2,3,3-trimethyl-	90	32	0.5	2.4
Cyclohexane, 1,4-dimethyl-	94	31	0.5	2.3
Hexane, 2,3-dimethyl-	83	30	0.5	2.3
Hexane, 3,4-dimethyl-	58	29	0.5	2.2
Cyclopentane, 1-ethyl-2-methyl-	91	28	0.5	2.1
Pentane, 3-ethyl-2-methyl-	59	24	0.4	1.8
Pentane, 2,3-dimethyl-	91	24	0.4	1.6
Hexane, 2,5-dimethyl-	91	23	0.4	1.7
Cyclopentane, 1,2-dimethyl-	91	22	0.4	1.4
Pentane, 2,4-dimethyl-	86	9	0.1	0.6
Pentane, 3,3-dimethyl-	59	8	0.1	0.5
Cyclopentane, ethyl-	80	7	0.1	0.5
Pentane, 2,2,4-trimethyl-	72	7	0.1	0.5
Heptane	72	6	0.1	0.4
Cyclopentane, methyl-	64	<5	<0.1	<0.3
Total**		**975**	**16**	**71**

EC>8-EC10 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Cyclohexane, 1,1,3-trimethyl-	91	83	1.4	6.9
Decane	93	65	1.1	6.1
Heptane, 2,5-dimethyl-	90	63	1.0	5.3
Cyclohexane, ethyl-	90	59	1.0	4.4
Octane, 3-methyl-	81	47	0.8	4.0
Cyclohexane, propyl-	94	47	0.8	3.9

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	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
Cyclohexane, 1-ethyl-2-methyl-	93	40	0.7	3.4
Cyclohexane, 1,3,5-trimethyl-	95	40	0.7	3.3
Octane, 4-methyl-	87	39	0.6	3.3
Nonane	64	38	0.6	3.2
Heptane, 4-ethyl-	76	31	0.5	2.6
1-Ethyl-4-methylcyclohexane	91	29	0.5	2.4
Heptane, 2,4-dimethyl-	91	22	0.4	1.9
Heptane, 2,3-dimethyl-	78	22	0.4	1.8
Cyclohexane, 1-ethyl-4-methyl-, cis-	38	18	0.3	1.5
cis-1-Ethyl-3-methyl-cyclohexane	83	16	0.3	1.4
Hexane, 2,3,5-trimethyl-	90	15	0.2	1.2
Hexane, 3-ethyl-2-methyl-	86	10	0.2	0.8
Total**		**684**	**11**	**57**

EC>10-EC12 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
Undecane	92	37	0.6	3.8

EC>12-EC16 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
Tridecane	86	18	0.3	2.2
Tetradecane	90	<5	<0.1	<0.7
Total**		**23**	**0.4**	**2.8**

EC>16-EC25 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
Heptadecane	81	<5	<0.1	<0.8

EC5-EC7 Aromatic Hydrocarbons** (Benzenze)

EC>7-EC8 Aromatic Hydrocarbons** (Toluene)

EC>8-EC10 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
Benzene, 1-ethyl-2-methyl-	94	27	0.4	2.2
Benzene, (1-methylpropyl)-	46	22	0.4	2.0
m/p-Xylene		11	0.2	1.0
o-Xylene		6	0.1	0.6
Benzene, (1-methylethyl)-	49	6	0.1	0.5
Ethylbenzene		<5	<0.1	<0.5
Total**		**77**	**1.4**	**6.7**

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EC>10-EC12 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
Naphthalene	92	70	1.2	5.9
Benzene, 1-methyl-2-propyl-	90	36	0.6	3.2
Benzene, 1-ethyl-2,3-dimethyl-	89	34	0.6	3.0
Benzene, 1-ethyl-3,5-dimethyl-	91	30	0.5	2.7
Benzene, 1,2,3,4-tetramethyl-	94	30	0.5	2.6
Benzene, 1,2,4,5-tetramethyl-	86	29	0.5	2.6
Benzene, 1,2,3-trimethyl-	93	24	0.4	1.9
Benzene, 4-ethyl-1,2-dimethyl-	90	23	0.4	2.0
Benzene, 1,2,3,5-tetramethyl-	97	19	0.3	1.7
Benzene, 1-methyl-3-(1-methylethyl)-	58	15	0.2	1.3
Benzene, 2-ethyl-1,4-dimethyl-	95	13	0.2	1.1
Total**		**321**	**5.3**	**28**

EC>12-EC16 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
Naphthalene, 2-methyl-	93	11	0.2	1.0

Tube Number	**004309**
Gradko Lab Reference	**08R0777**
Exposure Time (mins)*	**30254**
Sample ID	**VP15**

Quantitative Compounds	ng on tube	ppb in air*	µgm-3*
Benzene	5.8	0.3	0.9
Toluene	19.6	0.6	2.3
Ethylbenzene	5.7	0.1	0.5
m/p-Xylene	14.8	0.3	1.4
o-Xylene	7.0	0.2	0.7

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC5-EC6 Aliphatic Hydrocarbons**		<5	<0.1

EC>6-EC8 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm-3*
Cyclopentane, 1,2,4-trimethyl-	64	11	0.2	0.8
Cyclohexane, 1,3-dimethyl-	76	<5	<0.1	<0.4
Total**		**16**	**0.3**	**1.2**

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EC>8-EC10 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Decane	94	104	1.7	9.8
Cyclohexane, butyl-	76	68	1.1	6.3
Cyclohexane, propyl-	70	38	0.6	3.1
Nonane, 3-methyl-	91	30	0.5	2.8
Nonane, 4-methyl-	64	22	0.4	2.0
Cyclohexane, 1-ethyl-2-methyl-	81	17	0.3	1.4
Cyclohexane, 1-ethyl-4-methyl-, trans-	87	15	0.2	1.2
1-Ethyl-3-methylcyclohexane (c,t)	53	10	0.2	0.8
Cyclohexane, 1,3,5-trimethyl-	81	8	0.1	0.6
Cyclohexane, 1,2,4-trimethyl-	90	6	0.1	0.5
Cyclohexane, ethyl-	64	<5	<0.1	<0.4
Total**		**321**	**5.3**	**29**

EC>10-EC12 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Undecane	95	85	1.4	8.7
Decane, 4-methyl-	80	63	1.0	6.5
Decane, 2-methyl-	95	49	0.8	5.0
Undecane, 3-methyl-	38	28	0.5	3.1
Undecane, 2-methyl-	92	24	0.4	2.6
Total**		**248**	**4.1**	**26**

EC>12-EC16 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Tridecane	93	10	0.2	1.2
Pentadecane	90	7	0.1	1.0
Hexadecane	96	<5	<0.1	<0.7
Tetradecane	97	<5	<0.1	<0.7
Total**		**27**	**0.5**	**3.6**

EC>16-EC25 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Heptadecane	93	<5	<0.1	<0.8

EC5-EC7 Aromatic Hydrocarbons** (Benzenze)

EC>7-EC8 Aromatic Hydrocarbons** (Toluene)

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EC>8-EC10 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Benzene, 1-ethyl-2-methyl-	56	27	0.5	2.2
m/p-Xylene		15	0.3	1.4
o-Xylene		7	0.2	0.7
Ethylbenzene		6	0.1	0.5
Total**		**55**	**1.1**	**4.8**

EC>10-EC12 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Benzene, 4-ethyl-1,2-dimethyl-	91	36	0.6	3.2
Benzene, 2-ethyl-1,4-dimethyl-	91	21	0.4	1.9
Benzene, 1,2,3,4-tetramethyl-	53	18	0.3	1.6
Benzene, 1,2,3,5-tetramethyl-	90	17	0.3	1.5
Benzene, 1-methyl-3-(1-methylethyl)-	49	16	0.3	1.5
Benzene, 1,2,3-trimethyl-	94	16	0.3	1.2
Total**		**124**	**2.1**	**11**

EC>12-EC16 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Naphthalene, 2-methyl-	83	<5	<0.1	<0.5

Tube Number	**003371**
Gradko Lab Reference	**08R0783**
Exposure Time (mins)*	**30254**
Sample ID	**VP16**

Quantitative Compounds	ng on tube	ppb in air*	µgm^{-3}*
Benzene	8.8	0.4	1.3
Toluene	13.2	0.4	1.6
Ethylbenzene	<5	<0.1	<0.5
m/p-Xylene	7.2	0.2	0.7
o-Xylene	<5	<0.1	<0.5

EC5-EC6 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Pentane	53	6	0.1	0.3

EC>6-EC8 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Heptane	78	<5	<0.1	<0.3

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EC>8-EC10 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Decane	93	22	0.4	2.1

EC>10-EC12 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Undecane	83	8	0.1	0.9

EC>12-EC16 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Pentadecane	94	<5	<0.1	<0.7
Tetradecane	93	<5	<0.1	<0.7
Tridecane	89	<5	<0.1	<0.6
Total**		**<15**	**<0.2**	**<2.0**

EC>16-EC25 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Heptadecane	90	<5	<0.1	<0.8

EC5-EC7 Aromatic Hydrocarbons** (Benzenze)

EC>7-EC8 Aromatic Hydrocarbons** (Toluene)

EC>8-EC10 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
m/p-Xylene		7	0.2	0.7
Styrene	60	7	0.1	0.5
Ethylbenzene		<5	<0.1	<0.5
o-Xylene		<5	<0.1	<0.5
Total**		**24**	**0.5**	**2.1**

EC>10-EC12 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Benzene, 1,2,3-trimethyl-	53	6	0.1	0.5
Benzene, 1,2,3,5-tetramethyl-	87	<5	<0.1	<0.4
Total**		**11**	**0.2**	**1.0**

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>12-EC16 Aromatic Hydrocarbons**		<5	<0.1

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LABORATORY ANALYSIS REPORT

Tube Number	**005074**
Gradko Lab Reference	**08R0779**
Exposure Time (mins)*	**30253**
Sample ID	**VP17**

Quantitative Compounds	ng on tube	ppb in air*	µgm^{-3}*
Benzene	6.3	0.3	0.9
Toluene	20.6	0.7	2.4
Ethylbenzene	81.6	1.8	7.8
m/p-Xylene	89.8	2.0	8.6
o-Xylene	59.4	1.3	5.7

EC5-EC6 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Hexane	47	15	0.2	0.8
Pentane	86	14	0.2	0.7
Total**		**29**	**0.5**	**1.5**

EC>6-EC8 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Pentane, 2,2,4-trimethyl-	78	417	6.9	31
Pentane, 2,3,3-trimethyl-	90	390	6.4	29
Hexane, 2,2,5-trimethyl-	78	329	5.4	28
Pentane, 2,3,4-trimethyl-	91	238	3.9	18
Heptane, 3-methyl-	91	51	0.8	3.8
Cyclohexane, methyl-	94	37	0.6	2.4
Cyclohexane, 1,4-dimethyl-, cis-	76	32	0.5	2.4
Hexane, 2,4-dimethyl-	78	28	0.5	2.1
Hexane, 2,5-dimethyl-	94	22	0.4	1.7
Cyclopentane, 1,2,4-trimethyl-	80	18	0.3	1.3
Pentane, 2,3-dimethyl-	91	18	0.3	1.2
Hexane, 3-methyl-	91	17	0.3	1.1
Cyclopentane, 1-ethyl-2-methyl-	87	16	0.3	1.2
Pentane, 2,4-dimethyl-	78	11	0.2	0.7
Heptane	91	9	0.1	0.6
Butane, 2,2,3-trimethyl-	72	<5	<0.1	<0.3
Hexane, 2,2-dimethyl-	53	<5	<0.1	<0.4
Total**		**1641**	**27**	**126**

EC>8-EC10 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Nonane	87	506	8.4	43
Decane	93	399	6.6	37
Octane, 2,6-dimethyl-	91	389	6.4	37

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	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Cyclohexane, butyl-	50	142	2.3	13
Cyclohexane, 1,1,3-trimethyl-	91	138	2.3	11
Nonane, 3-methyl-	91	132	2.2	12
1-Ethyl-4-methylcyclohexane	86	126	2.1	10
Cyclohexane, 1,2,4-trimethyl-, (1.alpha.,2.beta.,4.beta.)-	91	96	1.6	8.0
Heptane, 2,5-dimethyl-	83	91	1.5	7.7
1-Ethyl-3-methylcyclohexane (c,t)	74	70	1.2	5.9
Cyclohexane, ethyl-	83	67	1.1	4.9
Heptane, 2,6-dimethyl-	58	43	0.7	3.6
Heptane, 2,3-dimethyl-	64	40	0.7	3.4
Hexane, 2,3,5-trimethyl-	91	39	0.6	3.3
Hexane, 3-ethyl-2-methyl-	80	22	0.4	1.9
Heptane, 2,4-dimethyl-	91	20	0.3	1.7
Total**		**2321**	**38**	**205**

EC>10-EC12 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Undecane	95	37	0.6	3.8

EC>12-EC16 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Hexadecane	93	<5	<0.1	<0.7
Pentadecane	70	<5	<0.1	<0.7
Tetradecane	91	<5	<0.1	<0.7
Tridecane	81	<5	<0.1	<0.6
Total**		**<20**	**<0.3**	**<2.7**

EC>16-EC25 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Octadecane	95	5	0.1	0.9
Heptadecane	89	<5	<0.1	<0.8
Total**		**10**	**0.2**	**1.7**

EC5-EC7 Aromatic Hydrocarbons** (Benzenze)

EC>7-EC8 Aromatic Hydrocarbons** (Toluene)

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EC>8-EC10 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Benzene, 1-ethyl-3-methyl-	64	268	4.4	21
Benzene, 1-ethyl-2-methyl-	95	161	2.7	13
Benzene, (1-methylpropyl)-	50	159	2.6	14
Benzene, 1,3,5-trimethyl-	95	116	1.9	9.2
m/p-Xylene		90	2.0	8.6
Ethylbenzene		82	1.8	7.8
o-Xylene		59	1.3	5.7
Total**		**936**	**17**	**80**

EC>10-EC12 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Benzene, 1,2,3-trimethyl-	93	96	1.6	7.7
Benzene, 1-methyl-2-propyl-	81	63	1.0	5.6
Benzene, 1-ethyl-3,5-dimethyl-	50	60	1.0	5.3
Benzene, 4-ethyl-1,2-dimethyl-	81	26	0.4	2.3
Benzene, 1-methyl-2-(1-methylethyl)-	42	21	0.3	1.8
Benzene, 2-ethyl-1,4-dimethyl-	93	19	0.3	1.7
Benzene, 1,2,3,5-tetramethyl-	93	8	0.1	0.7
Total**		**293**	**4.8**	**25**

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>12-EC16 Aromatic Hydrocarbons**		<5	<0.1

Tube Number	**005688*** **
Gradko Lab Reference	**08R0780**
Exposure Time (mins)*	**30251**
Sample ID	**VP18**

Quantitative Compounds	ng on tube	ppb in air*	µgm^{-3}*
Benzene	<5	<0.2	<0.7
Toluene	<5	<0.2	<0.6
Ethylbenzene	<5	<0.1	<0.5
m/p-Xylene	<5	<0.1	<0.5
o-Xylene	<5	<0.1	<0.5

EC5-EC6 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Pentane, 2-methyl-	91	11	0.2	0.6
Pentane, 3-methyl-	80	<5	<0.1	<0.3
1-Pentene, 2-methyl-	43	<5	<0.1	<0.3
Total**		**21**	**0.3**	**1.2**

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EC>6-EC8 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Butane, 2,2,3,3-tetramethyl-	83	305	5.0	23
Pentane, 2,3,3-trimethyl-	90	193	3.2	15
Pentane, 2,3,4-trimethyl-	91	167	2.8	13
Hexane, 2,2,5-trimethyl-	78	101	1.7	8.6
Cyclohexane, 1,4-dimethyl-, cis-	80	34	0.6	2.5
Pentane, 2,3-dimethyl-	91	27	0.4	1.8
Cyclohexane, methyl-	90	26	0.4	1.7
Hexane, 2,4-dimethyl-	90	21	0.3	1.6
Hexane, 2,5-dimethyl-	97	18	0.3	1.4
Hexane, 2,3-dimethyl-	83	15	0.2	1.1
Cyclopentane, 1,2,4-trimethyl-	91	13	0.2	1.0
Cyclohexane, 1,4-dimethyl-	95	12	0.2	0.9
Hexane, 3,4-dimethyl-	46	10	0.2	0.8
Hexane, 3-methyl-	90	9	0.1	0.6
Heptane, 3-methyl-	93	6	0.1	0.5
Heptane	87	<5	<0.1	<0.3
Total**		**964**	**16**	**73**

EC>8-EC10 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Cyclohexane, 1,2,4-trimethyl- (sum of isomers)		73	1.2	6.1
Cyclohexane, 1,1,3-trimethyl-	91	59	1.0	4.9
Decane	90	42	0.7	4.0
Cyclohexane, 1,3,5-trimethyl-, (1.alpha.,3.alpha.,5.beta.)-	91	38	0.6	3.2
Cyclohexane, 1-ethyl-2-methyl-, trans-	64	31	0.5	2.5
Nonane	81	26	0.4	2.2
1-Ethyl-4-methylcyclohexane	91	22	0.4	1.8
Octane, 3-methyl-	62	21	0.3	1.8
Nonane, 3-methyl-	53	16	0.3	1.5
Octane, 4-methyl-	68	16	0.3	1.4
Hexane, 2,3,5-trimethyl-	78	12	0.2	1.0
Cyclohexane, 1-ethyl-4-methyl-, cis-	78	11	0.2	1.0
Cyclohexane, ethyl-	72	10	0.2	0.7
Heptane, 2,3-dimethyl-	64	6	0.1	0.5
Heptane, 2,4-dimethyl-	83	<5	<0.1	<0.4
Total**		**389**	**6.4**	**33**

EC>10-EC12 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Dodecane	60	76	1.3	8.6
Undecane	95	47	0.8	4.8
Total**		**123**	**2.0**	**13**

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EC>12-EC16 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Undecane, 2,6-dimethyl-	94	60	1.0	7.3
Hexadecane	70	<5	<0.1	<0.7
Tetradecane	83	<5	<0.1	<0.7
Total**		**70**	**1.2**	**8.7**

EC>16-EC25 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Heptadecane	89	<5	<0.1	<0.8

EC5-EC7 Aromatic Hydrocarbons** (Benzenze)

EC>7-EC8 Aromatic Hydrocarbons** (Toluene)

EC>8-EC10 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Ethylbenzene		<5	<0.1	<0.5
m/p-Xylene		<5	<0.1	<0.5
o-Xylene		<5	<0.1	<0.5
Total**		**<15**	**<0.3**	**<1.4**

EC>10-EC12 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm^{-3}*
Benzene, 1,2,3,4-tetramethyl-	62	38	0.6	3.4
Benzene, 4-ethyl-1,2-dimethyl-	42	35	0.6	3.1
Benzene, 2-ethyl-1,4-dimethyl-	59	23	0.4	2.0
Benzene, 1-ethyl-3,5-dimethyl-	91	22	0.4	1.9
Benzene, 1,2,3,5-tetramethyl-	76	18	0.3	1.6
Total**		**136**	**2.2**	**12**

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>12-EC16 Aromatic Hydrocarbons**		<5	<0.1

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LABORATORY ANALYSIS REPORT

Tube Number	**005181**
Gradko Lab Reference	**08R0781**
Exposure Time (mins)*	**30249**
Sample ID	**VP19**

Quantitative Compounds	ng on tube	ppb in air*	µgm^{-3}*
Benzene	5.6	0.3	0.8
Toluene	6.3	0.2	0.7
Ethylbenzene	<5	<0.1	<0.5
m/p-Xylene	7.5	0.2	0.7
o-Xylene	<5	<0.1	<0.5
Trichloroethene	2.1	0.04	0.2

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC5-EC6 Aliphatic Hydrocarbons**		<5	<0.1

EC>6-EC8 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Pentane, 2,3,3-trimethyl-	78	33	0.5	2.5
Pentane, 2,3,4-trimethyl-	91	31	0.5	2.3
Butane, 2,2,3,3-tetramethyl-	72	23	0.4	1.7
Hexane, 2,2,5-trimethyl-	72	21	0.3	1.8
Hexane, 2,3-dimethyl-	83	<5	<0.1	<0.4
Cyclohexane, methyl-	83	<5	<0.1	<0.3
Cyclohexane, 1,3-dimethyl-, trans-	76	<5	<0.1	<0.4
Hexane, 2,4-dimethyl-	87	<5	<0.1	<0.4
Total**		**127**	**2.1**	**10**

EC>8-EC10 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Cyclohexane, 1,1,3-trimethyl-	91	21	0.4	1.8
Cyclohexane, 1,2,4-trimethyl-, (1.alpha.,2.beta.,4.beta.)-	90	15	0.2	1.2
Heptane, 2,2,4-trimethyl-	53	10	0.2	0.9
1-Ethyl-4-methylcyclohexane	87	8	0.1	0.7
Cyclohexane, 1,3,5-trimethyl-	90	6	0.1	0.5
Cyclohexane, ethyl-	72	<5	<0.1	<0.4
Hexane, 2,3,5-trimethyl-	83	<5	<0.1	<0.4
Heptane, 2,3-dimethyl-	58	<5	<0.1	<0.4
Total**		**75**	**1.2**	**6.3**

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EC>10-EC12 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Dodecane	90	37	0.6	4.1
Undecane	64	<5	<0.1	<0.5
Total**		**42**	**0.7**	**4.6**

EC>12-EC16 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Hexadecane	90	<5	<0.1	<0.7
Tridecane	90	<5	<0.1	<0.6
Total**		**<10**	**<0.2**	**<1.4**

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>16-EC25 Aliphatic Hydrocarbons**		<5	<0.1
EC5-EC7 Aromatic Hydrocarbons**		(Benzenze)	
EC>7-EC8 Aromatic Hydrocarbons**		(Toluene)	

EC>8-EC10 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Benzene, 1-ethyl-2-methyl-	18	25	0.4	2.0
m/p-Xylene		7	0.2	0.7
Ethylbenzene		<5	<0.1	<0.5
o-Xylene		<5	<0.1	<0.5
Total**		**42**	**0.8**	**3.6**

EC>10-EC12 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Benzene, 1,2,3,4-tetramethyl-	38	39	0.6	3.4
Naphthalene	93	20	0.3	1.7
Total**		**58**	**1.0**	**5.1**

EC>12-EC16 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Naphthalene, 2-methyl-	91	<5	<0.1	<0.5
Naphthalene, 1-methyl-	90	<5	<0.1	<0.5
Total**		**<10**	**<0.2**	**<0.9**

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LABORATORY ANALYSIS REPORT

Tube Number	**005198**
Gradko Lab Reference	**08R0782**
Exposure Time (mins)*	**30247**
Sample ID	**External**

Quantitative Compounds	ng on tube	ppb in air*	μgm-3*
Benzene	7.6	0.4	1.1
Toluene	<5	<0.2	<0.6
Ethylbenzene	<5	<0.1	<0.5
m/p-Xylene	<5	<0.1	<0.5
o-Xylene	<5	<0.1	<0.5

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC5-EC6 Aliphatic Hydrocarbons**		<5	<0.1

EC>6-EC8 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm-3*
Hexane, 3-ethyl-	58	8	0.1	0.6

EC>8-EC10 Aliphatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	μgm-3*
Decane	93	<5	<0.1	<0.5
Nonane	86	<5	<0.1	<0.4
Total**		**<10**	**<0.2**	**<0.9**

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>10-EC12 Aliphatic Hydrocarbons**		<5	<0.1

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>12-EC16 Aliphatic Hydrocarbons**		<5	<0.1

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>16-EC25 Aliphatic Hydrocarbons**		<5	<0.1

EC5-EC7 Aromatic Hydrocarbons**	(Benzenze)
EC>7-EC8 Aromatic Hydrocarbons**	(Toluene)

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EC>8-EC10 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube	ppb in air*	µgm^{-3}*
Ethylbenzene		<5	<0.1	<0.5
m/p-Xylene		<5	<0.1	<0.5
o-Xylene		<5	<0.1	<0.5
Total**		**<15**	**<0.3**	**<1.4**

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>10-EC12 Aromatic Hydrocarbons**		<5	<0.1

	NIST Library Quality Match	Estimated ng on tube	ppb in air*
EC>12-EC16 Aromatic Hydrocarbons**		<5	<0.1

Tube Number	**003321**
Gradko Lab Reference	**08R0778**
Sample ID	**Blank**

Quantitative Compounds	ng on tube
Benzene	33.4
Toluene	<5
Ethylbenzene	<5
m/p-Xylene	<5
o-Xylene	<5

	NIST Library Quality Match	Estimated ng on tube
EC5-EC6 Aliphatic Hydrocarbons**		<5

	NIST Library Quality Match	Estimated ng on tube
EC>6-EC8 Aliphatic Hydrocarbons**		<5

	NIST Library Quality Match	Estimated ng on tube
EC>8-EC10 Aliphatic Hydrocarbons**		<5

	NIST Library Quality Match	Estimated ng on tube
EC>10-EC12 Aliphatic Hydrocarbons**		<5

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	NIST Library Quality Match	Estimated ng on tube
EC>12-EC16 Aliphatic Hydrocarbons**		<5

	NIST Library Quality Match	Estimated ng on tube
EC>16-EC25 Aliphatic Hydrocarbons**		<5

EC5-EC7 Aromatic Hydrocarbons**		(Benzenze)
EC>7-EC8 Aromatic Hydrocarbons**		(Toluene)

EC>8-EC10 Aromatic Hydrocarbons**	NIST Library Quality Match	Estimated ng on tube
m/p-Xylene		<5
Ethylbenzene		<5
o-Xylene		<5
Total**		**<15**

	NIST Library Quality Match	Estimated ng on tube
EC>10-EC12 Aromatic Hydrocarbons**		<5

	NIST Library Quality Match	Estimated ng on tube
EC>12-EC16 Aromatic Hydrocarbons**		<5

Tube Number	**003349**
Gradko Lab Reference	**230418_TXTABLANK_65**
Sample ID	**Laboratory Blank**

Quantitative Compounds	**ng on tube**
Benzene	<5
Toluene	<5
Ethylbenzene	<5
m/p-Xylene	<5
o-Xylene	<5
Trichloroethene	

	NIST Library Quality Match	Estimated ng on tube
EC5-EC6 Aliphatic Hydrocarbons**		<5

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	NIST Library Quality Match	Estimated ng on tube
EC>6-EC8 Aliphatic Hydrocarbons**		<5

	NIST Library Quality Match	Estimated ng on tube
EC>8-EC10 Aliphatic Hydrocarbons**		<5

	NIST Library Quality Match	Estimated ng on tube
EC>10-EC12 Aliphatic Hydrocarbons**		<5

	NIST Library Quality Match	Estimated ng on tube
EC>12-EC16 Aliphatic Hydrocarbons**		<5

	NIST Library Quality Match	Estimated ng on tube
EC>16-EC25 Aliphatic Hydrocarbons**		<5

EC5-EC7 Aromatic Hydrocarbons**		(Benzenze)
EC>7-EC8 Aromatic Hydrocarbons**		(Toluene)

	NIST Library Quality Match	Estimated ng on tube
EC>8-EC10 Aromatic Hydrocarbons**		
Ethylbenzene		<5
m/p-Xylene		<5
o-Xylene		<5
Total**		**<15**

	NIST Library Quality Match	Estimated ng on tube
EC>10-EC12 Aromatic Hydrocarbons**		<5

	NIST Library Quality Match	Estimated ng on tube
EC>12-EC16 Aromatic Hydrocarbons**		<5

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Uptake rates:

Benzene 0.70 ng.ppm^{-1}.min^{-1}.

Toluene 1.03 ng.ppm^{-1}.min^{-1}.

Ethylbenzene 1.46 ng.ppm^{-1}.min^{-1}.

m/p Xylene 1.46 ng.ppm^{-1}.min^{-1}.

o-Xylene 1.46 ng.ppm^{-1}.min^{-1}.

All other compounds: 2.00 ng.ppm^{-1}.min^{-1}.

Results are not Blank corrected.
The laboratory blank is a system check and will not be from the same batch of tubes analysed.

Tenax is recommended for compounds in the range C6 to C28 and may not retain Pentane effectively.

***Trimethylcyclohexanes reported as sum of isomers because individual identification were not possible.

Chromatogram for tube 005688 from location VP18 was not typical. Toluene D8 internal standard was not fully absorbed due to sample. Results were calculated without internal standard and may be compromised.

Results greater than 500ng are outside of our UKAS accredited calibration range.

Reporting Limit	5ng on tube

Results reported as <5ng on tube are below the reporting limit.
Estimated results reported as <5ng on tube are below the reporting limit for the non-specific standard toluene.

Uncertainty of Measurement

Benzene	±15%
Toluene	±10%
Ethylbenzene	±11%
m/p-Xylene	±11%
o-Xylene	±11%

The reported expanded uncertainty is based on a standard uncertainty multiplied by a factor of *k*=2, providing a level of confidence of approximately 95%. Uncertainty of measurement has not been applied to the reported results.

Estimated results as ng on tube are calculated by reference to toluene in accordance with ISO 16000-6

Compounds reported may not be the most abundant detected in these samples.
**The classification and grouping of TPH compounds to CWG guidelines is not covered by our UKAS accreditation.

Identification of compounds is carried out by comparison of the mass spectra to the NIST 17 mass spectral library. Compounds with a quality match below 85% are noted as a tentative identity and shown in italics. These compounds are outside of the scope of our UKAS accreditation.

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Where a result is shown as less than the reporting limit the reporting limit concentration is included in the total TPH result.

If the sum of results below the reporting limit is greater than the sum of results above the reporting limit total TPH will be reported as less than the value reported.

Analysts Name	Katya Paldamova	**Date of Analysis**	18/04/2023
Report Checked By	Mariella Angelova	**Date of Report**	26/04/2023

Analysis has been carried out in accordance with in-house method GLM 13 and GLM 13-2

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TEST CERTIFICATE

DETERMINATION OF PARTICLE
SIZE DISTRIBUTION - SIEVING METHOD
Tested in Accordance with: BS 1377-2: 1990

UKAS TESTING
4041

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

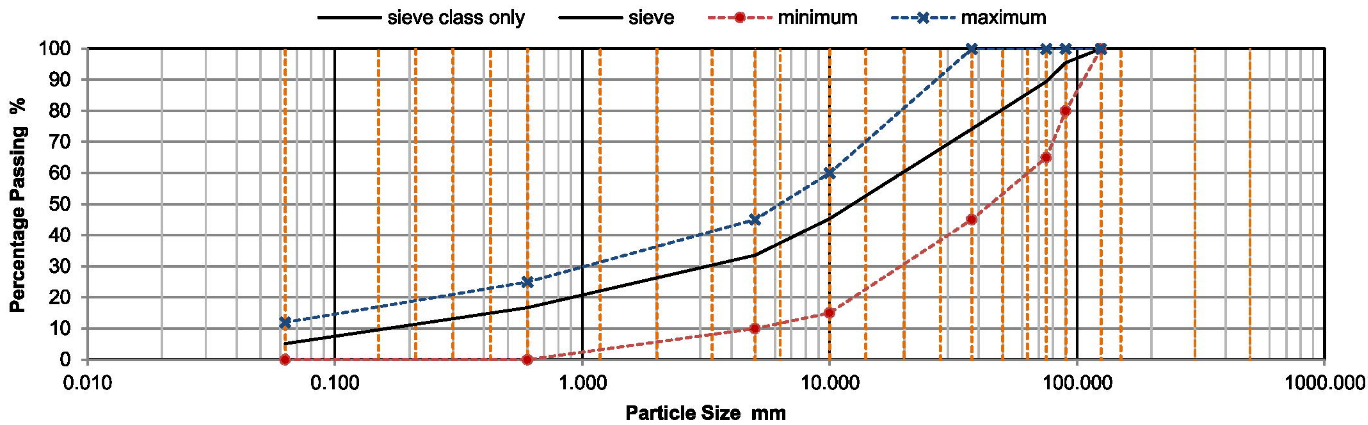
Environmental Science

Client:	Smith Grant LLP	Client Reference:	1180
Client Address:	Station House Station Road Ruabon Wrexham LL146DL	Job Number:	23-33873
		Date Sampled:	16/05/2023
		Date Received:	16/05/2023
Contact:	Daniel Wayland	Date Tested:	16/05/2023
Site Address:	Camp Rd, Upper Heyford , Bicester OX255HA	Sampled By:	i2 Analytical

Testing carried out at i2 Analytical Limited, Unit 8 Harrowden Road,Brackmills Industrial Estate,Northampton NN4 7EB

Test Results:

Laboratory Reference:	2679774	Depth Top [m]:	Not given
Sample Reference:	SP01 Stockpile	Depth Base [m]:	Not given
Sample Description:	Brown silty sandy cobbley GRAVEL with crushed concrete and brick and glass fragments	Sample Type:	D
Sample Preparation:	Sample broken down by hand, quartered and oven dried at 107˚C		



Sieving		Material Type 6F2 Selected granular material			
Particle Size mm	Passing %	Material Specification			Pass or Fail
500	100				
300	100				
150	100				
125	100	100	-	100	Pass
90	96	80	-	100	Pass
75	89	65	-	100	Pass
63	81				
50	78				
37.5	74	45	-	100	Pass
28	69				
20	61				
14	52				
10	45	15	-	60	Pass
6.3	37				
5	34	10	-	45	Pass
3.35	28				
2	24				
1.18	21				
0.6	17	0	-	25	Pass
0.425	15				
0.3	12				
0.212	10				
0.15	8				
0.063	5	0	-	12	Pass

Uniformity Coefficient [Cu]		95.5
D60	mm	19.37
D10	mm	0.202

Uniformity Coefficient calculated in accordance with BS EN ISO 14688-2:2018*

Selected granular material for Earthworks

Specification for Highway Works (2016) Table 6/2 Earthworks Materials - Class 6F2

*Note: Uniformity Coefficient falls outside the scope of accreditation.

Remarks:

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Signed: [redacted]

Jacob Brock
Laboratory Supervisor
for and on behalf of i2 Analytical Ltd

Date Reported: 23/05/2023

GF527.13

TEST CERTIFICATE

DETERMINATION OF PARTICLE
SIZE DISTRIBUTION - SIEVING METHOD
Tested in Accordance with: BS 1377-2: 1990

UKAS TESTING 4041

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

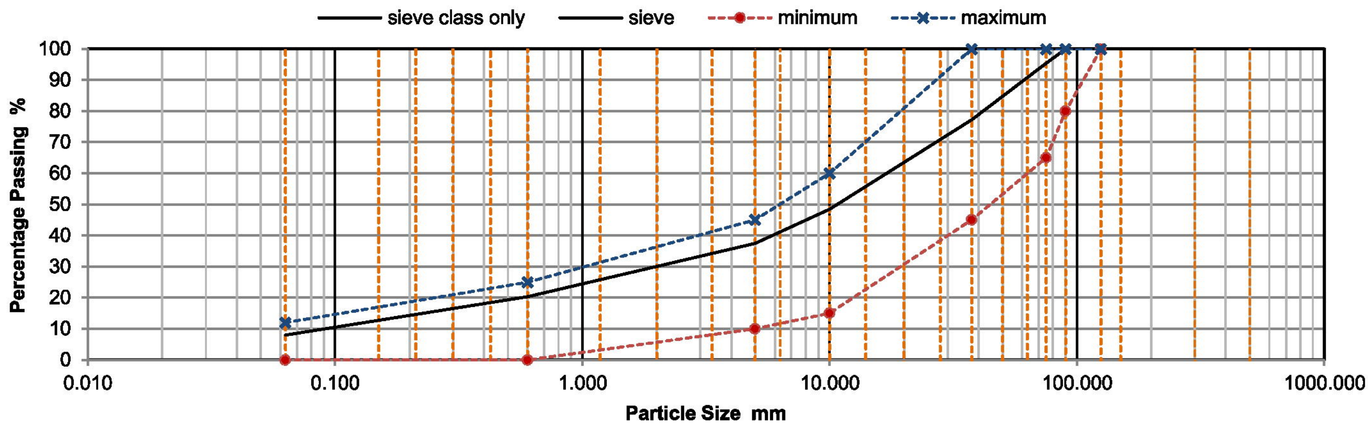
i2 Analytical Environmental Science

Client:	Smith Grant LLP	Client Reference:	1180
Client Address:	Station House Station Road Ruabon Wrexham LL146DL	Job Number: Date Sampled: Date Received:	23-33873 16/05/2023 16/05/2023
Contact:	Daniel Wayland	Date Tested:	16/05/2023
Site Address:	Camp Rd, Upper Heyford , Bicester OX255HA	Sampled By:	i2 Analytical

Testing carried out at i2 Analytical Limited, Unit 8 Harrowden Road,Brackmills Industrial Estate,Northampton NN4 7EB

Test Results:

Laboratory Reference:	2679775	Depth Top [m]:	Not given
Sample Reference:	SP02 Stockpile	Depth Base [m]:	Not given
Sample Description:	Brown silty cobbley sandy GRAVEL with crushed concrete and brick and glass fragments	Sample Type:	D
Sample Preparation:	Sample broken down by hand, quartered and oven dried at 107˚C		



Sieving		Material Type 6F2 Selected granular material			
Particle Size mm	Passing %	Material Specification			Pass or Fail
500	100				
300	100				
150	100				
125	100	100	-	100	Pass
90	100	80	-	100	Pass
75	95	65	-	100	Pass
63	90				
50	83				
37.5	77	45	-	100	Pass
28	70				
20	61				
14	55				
10	48	15	-	60	Pass
6.3	40				
5	37	10	-	45	Pass
3.35	32				
2	27				
1.18	24				
0.6	20	0	-	25	Pass
0.425	18				
0.3	16				
0.212	14				
0.15	12				
0.063	8	0	-	12	Pass

Uniformity Coefficient [Cu]		162.5
D60	mm	18.64
D10	mm	0.114

Uniformity Coefficient calculated in accordance with BS EN ISO 14688-2:2018*

Selected granular material for Earthworks

Specification for Highway Works (2016) Table 6/2 Earthworks Materials - Class 6F2

*Note: Uniformity Coefficient falls outside the scope of accreditation.

Remarks:

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Signed: [redacted]

Jacob Brock
Laboratory Supervisor
for and on behalf of i2 Analytical Ltd

Date Reported: 23/05/2023

GF527.13

4041

TEST CERTIFICATE

DETERMINATION OF PARTICLE
SIZE DISTRIBUTION - SIEVING METHOD
Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

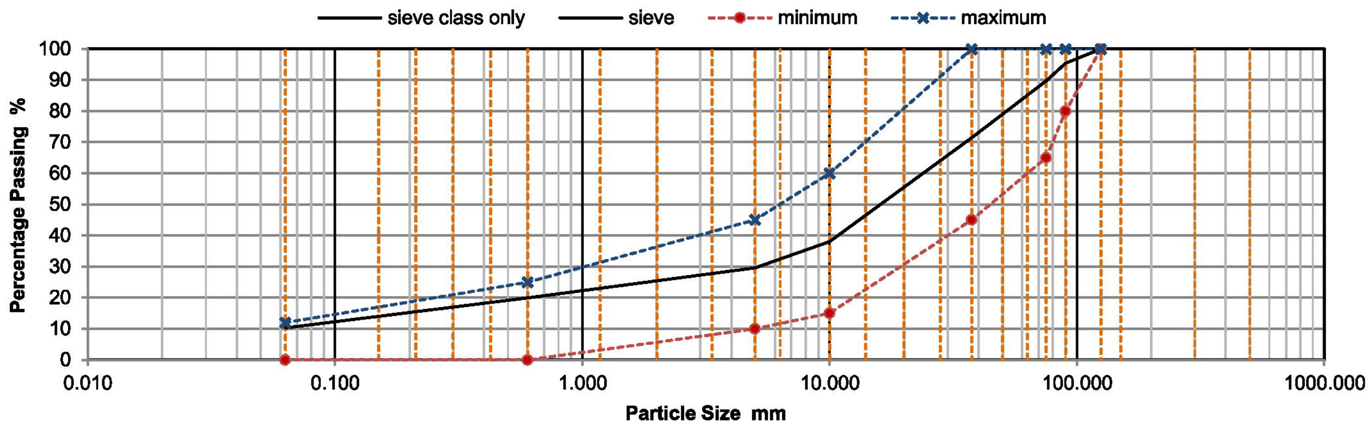
Environmental Science

Client:	Smith Grant LLP	Client Reference:	1180
Client Address:	Station House Station Road Ruabon Wrexham LL146DL	Job Number:	23-33873
		Date Sampled:	16/05/2023
		Date Received:	16/05/2023
Contact:	Daniel Wayland	Date Tested:	16/05/2023
Site Address:	Camp Rd, Upper Heyford , Bicester OX255HA	Sampled By:	i2 Analytical

Testing carried out at i2 Analytical Limited, Unit 8 Harrowden Road,Brackmills Industrial Estate,Northampton NN4 7EB

Test Results:

Laboratory Reference:	2679776	Depth Top [m]:	Not given
Sample Reference:	SP03 Stockpile	Depth Base [m]:	Not given
Sample Description:	Dark grey and grey mottled silty cobbley sandy GRAVEL with crushed concrete and brick and glass fragments	Sample Type:	D
Sample Preparation:	Sample broken down by hand, quartered and oven dried at 107˚C		



Sieving: Particle Size mm	Passing %	Material Type 6F2 Selected granular material: Material Specification			Pass or Fail
500	100				
300	100				
150	100				
125	100	100	-	100	Pass
90	95	80	-	100	Pass
75	90	65	-	100	Pass
63	88				
50	79				
37.5	71	45	-	100	Pass
28	64				
20	53				
14	45				
10	38	15	-	60	Pass
6.3	32				
5	30	10	-	45	Pass
3.35	27				
2	24				
1.18	22				
0.6	20	0	-	25	Pass
0.425	19				
0.3	17				
0.212	15				
0.15	14				
0.063	10	0	-	12	Pass

Uniformity Coefficient [Cu]		>399.04
D60	mm	25.14
D10	mm	< 0.063

Uniformity Coefficient calculated in accordance with BS EN ISO 14688-2:2018*

Selected granular material for Earthworks

Specification for Highway Works (2016) Table 6/2 Earthworks Materials - Class 6F2

*Note: Uniformity Coefficient falls outside the scope of accreditation.

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Signed: [redacted]

Jacob Brock
Laboratory Supervisor
for and on behalf of i2 Analytical Ltd

Date Reported: 23/05/2023

GF527.13

TEST CERTIFICATE

4041

DETERMINATION OF PARTICLE
SIZE DISTRIBUTION - SIEVING METHOD
Tested in Accordance with: BS 1377-2: 1990

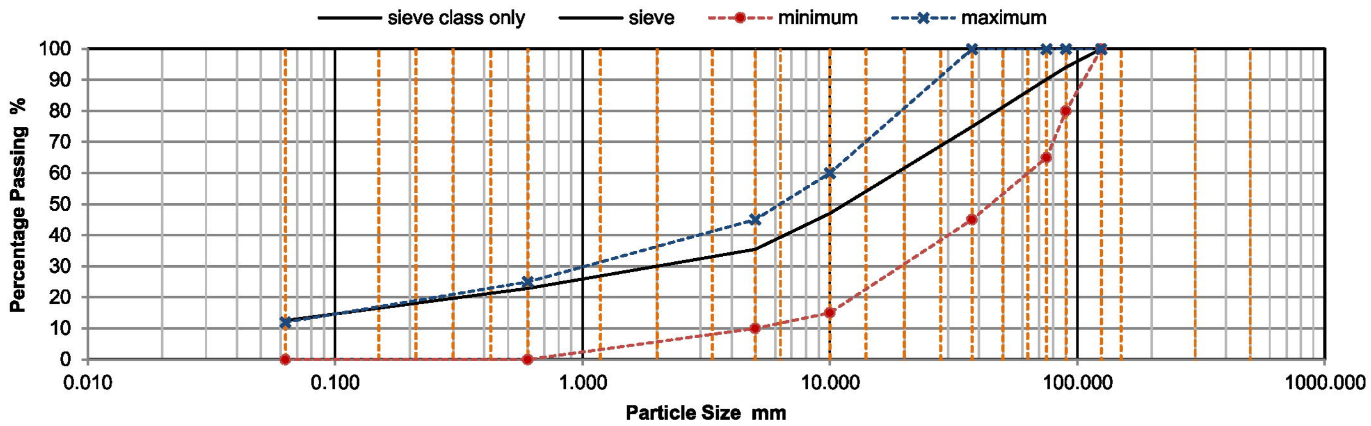
i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client:	Smith Grant LLP	Client Reference:	1180
Client Address:	Station House Station Road Ruabon Wrexham LL146DL	Job Number:	23-33873
		Date Sampled:	16/05/2023
		Date Received:	16/05/2023
Contact:	Daniel Wayland	Date Tested:	16/05/2023
Site Address:	Camp Rd, Upper Heyford , Bicester OX255HA	Sampled By:	i2 Analytical

Testing carried out at i2 Analytical Limited, Unit 8 Harrowden Road,Brackmills Industrial Estate,Northampton NN4 7EB

Test Results:

Laboratory Reference:	2679777	Depth Top [m]:	Not given
Sample Reference:	SP04 Stockpile	Depth Base [m]:	Not given
Sample Description:	Dark grey and grey mottled cobbley silty sandy GRAVEL with crushed concrete and brick and glass fragments	Sample Type:	D
Sample Preparation:	Sample broken down by hand, quartered and oven dried at 107˚C		



Sieving		Material Type 6F2 Selected granular material			
Particle Size mm	Passing %	Material Specification			Pass or Fail
500	100				
300	100				
150	100				
125	100	100	-	100	Pass
90	94	80	-	100	Pass
75	90	65	-	100	Pass
63	88				
50	82				
37.5	75	45	-	100	Pass
28	68				
20	60				
14	54				
10	47	15	-	60	Pass
6.3	40				
5	35	10	-	45	Pass
3.35	32				
2	28				
1.18	26				
0.6	23	0	-	25	Pass
0.425	21				
0.3	20				
0.212	18				
0.15	16				
0.063	13	0	-	12	Fail

Uniformity Coefficient [Cu]		>323.04
D60	mm	20.35
D10	mm	< 0.063

Uniformity Coefficient calculated in accordance with BS EN ISO 14688-2:2018*

Selected granular material for Earthworks

Specification for Highway Works (2016) Table 6/2 Earthworks Materials - Class 6F2

*Note: Uniformity Coefficient falls outside the scope of accreditation.

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Signed: [redacted]

Jacob Brock
Laboratory Supervisor
for and on behalf of i2 Analytical Ltd

Date Reported: 23/05/2023

GF527.13

UKAS TESTING
4041

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

i2 Analytical Environmental Science

TEST CERTIFICATE

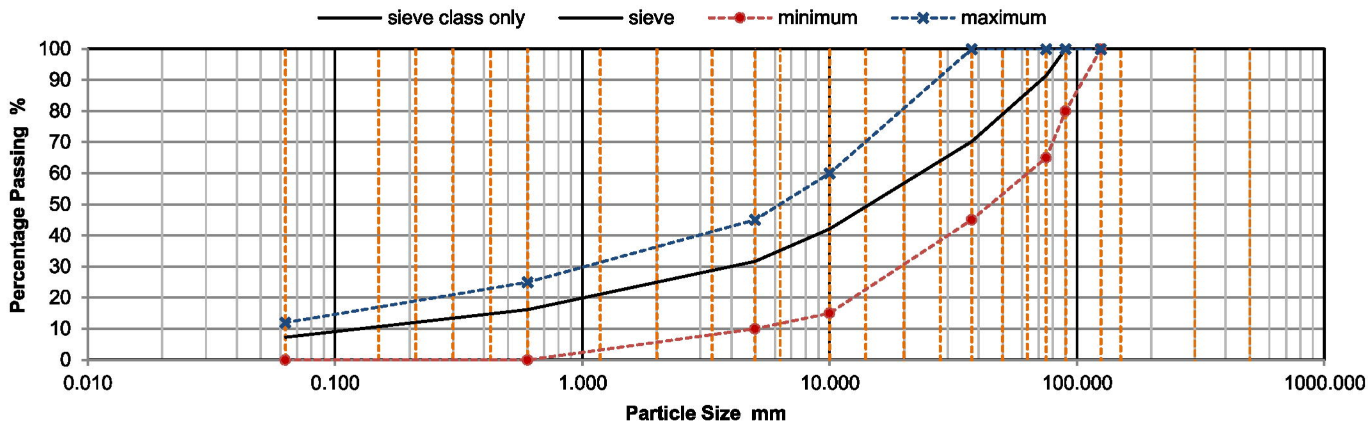
DETERMINATION OF PARTICLE
SIZE DISTRIBUTION - SIEVING METHOD
Tested in Accordance with: BS 1377-2: 1990

Client:	Smith Grant LLP	Client Reference:	1180
Client Address:	Station House Station Road Ruabon Wrexham LL146DL	Job Number:	23-33873
		Date Sampled:	16/05/2023
		Date Received:	16/05/2023
Contact:	Daniel Wayland	Date Tested:	16/05/2023
Site Address:	Camp Rd, Upper Heyford , Bicester OX255HA	Sampled By:	i2 Analytical

Testing carried out at i2 Analytical Limited, Unit 8 Harrowden Road,Brackmills Industrial Estate,Northampton NN4 7EB

Test Results:

Laboratory Reference:	2679778	Depth Top [m]:	Not given
Sample Reference:	SP05 Stockpile	Depth Base [m]:	Not given
Sample Description:	Dark grey and grey mottled silty cobbley sandy GRAVEL with crushed concrete and brick and glass fragments	Sample Type:	D
Sample Preparation:	Sample broken down by hand, quartered and oven dried at 107˚C		



Sieving		Material Type 6F2 Selected granular material			
Particle Size mm	Passing %	Material Specification			Pass or Fail
500	100				
300	100				
150	100				
125	100	100	-	100	Pass
90	100	80	-	100	Pass
75	91	65	-	100	Pass
63	86				
50	77				
37.5	70	45	-	100	Pass
28	62				
20	53				
14	48				
10	42	15	-	60	Pass
6.3	35				
5	32	10	-	45	Pass
3.35	27				
2	23				
1.18	20				
0.6	16	0	-	25	Pass
0.425	15				
0.3	13				
0.212	12				
0.15	10				
0.063	7	0	-	12	Pass

Uniformity Coefficient [Cu]		180.3
D60	mm	26.39
D10	mm	0.146

Uniformity Coefficient calculated in accordance with BS EN ISO 14688-2:2018*

Selected granular material for Earthworks

Specification for Highway Works (2016) Table 6/2 Earthworks Materials - Class 6F2

*Note: Uniformity Coefficient falls outside the scope of accreditation.

Remarks:

Signed: [redacted]

Jacob Brock
Laboratory Supervisor
for and on behalf of i2 Analytical Ltd

Date Reported: 23/05/2023

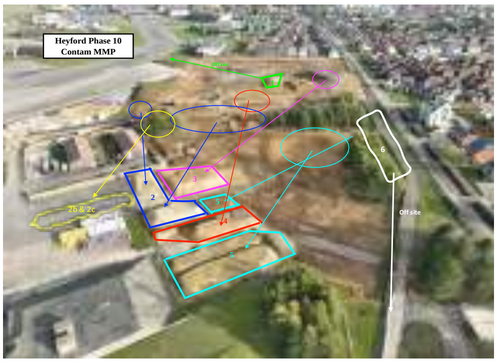
GF527.13

APPENDIX E

URL Contaminated Soils Tracking Record

Stokpile Ref #	Initial Excavation Location	Date of Initial Excavation From	Date of Initial Excavation To	Quantity m3	Relocation Date From	Relocation Date To
1	POL21	21.02.23	21.02.23	628	21.02.23	21.02.23
2	West of POL2	26.01.23	21.02.23	2517	21.02.23	27.02.23
2a	Pipeline south POL2	01.03.23	01.03.23		Direct to airfield (7 loads covered in dayworks)	
2b	North of POL2	01.03.23	02.03.23	204	06.03.23	06.03.23
2c	North of POL2	06.03.23	08.03.23	594	09.03.23	10.03.23
3	POL21	31.10.22	02.12.22	1635	27.02.23	01.03.23
4	POL2 (South)	12.12.22	05.01.23	702	01.03.23	02.03.23
5a	Area 1 West (Interceptor #1)	28.11.22	29.11.22	171	01.03.23	01.03.23
5b	Area 1 West	29.11.22	14.12.22	1107	02.03.23	06.03.23
	Area 1 West (Interceptor #2)	25.01.23	26.01.23	193	incl. above	incl. above
6	Existing road / trees	13.03.23	03.04.23		Direct to airfield	

Airfield Stockpile #	Original Stockpile Ref. #
1	(1 & 3)
2	2
3	5
4	4
5	(2b & 2c)
6	6



APPENDIX F

CLEA Input Values

Ali C8-10

Parameters: Aliphatic C8-10 Hydrocarbons		
Parameter	**Input Value**	**Notes/Source**
Oral HCV (ug kg BW day)	1.00E+02	LQM/CIEH S4UL (2015) - TDI
Inhal HCV (ug kg BW day)	2.90E+02	LQM/CIEH S4UL (2015) - TDI
Oral MDI (ug day)	9.99E+99	LQM/CIEH S4UL (2015)
Inhalation MDI (ug day)	9.99E+99	LQM/CIEH S4UL (2015)
Air-Water Partition Coefficient (K_{aw})	4.15E+01	LQM/CIEH S4UL (2015)
Diffusion Coefficient in Air (m^2s)	1.00E-05	LQM/CIEH S4UL (2015)
Diffusion Coefficient in Water (m^2s)	1.00E-09	LQM/CIEH S4UL (2015)
Relative Molecular Mass (g mol)	130	LQM/CIEH S4UL (2015)
Vapour Pressure (Pa)	3.20E+02	LQM/CIEH S4UL (2015)
Water Solubility (mg/l)	4.27E-01	LQM/CIEH S4UL (2015)
Log Organic Carbon - Water Partition Coefficient (K_{oc})	4.48	LQM/CIEH S4UL (2015)
Log Octanol-Water Partition Coefficient (K_{ow})	5.22	LQM/CIEH S4UL (2015)
Dermal Absorption Fraction	1.00E-01	LQM/CIEH S4UL (2015)
Soil to dust transport factor (g g dry weight)	0.5	LQM/CIEH S4UL (2015)
sub-surface soil to indoor air correction factor	10	LQM/CIEH S4UL (2015)

Aro C10-12

Parameters: Aromatic C10-12 Hydrocarbons		
Parameter	**Input Value**	**Notes/Source**
Oral HCV (ug kg BW day)	4.00E+01	LQM/CIEH S4UL (2015) - TDI
Inhal HCV (ug kg BW day)	6.00E+01	LQM/CIEH S4UL (2015) - TDI
Oral MDI (ug day)	9.99E+99	LQM/CIEH S4UL (2015)
Inhalation MDI (ug day)	9.99E+99	LQM/CIEH S4UL (2015)
Air-Water Partition Coefficient (K_{aw})	7.22E-02	LQM/CIEH S4UL (2015)
Diffusion Coefficient in Air (m^2s)	1.00E-05	LQM/CIEH S4UL (2015)
Diffusion Coefficient in Water (m^2s)	1.00E-09	LQM/CIEH S4UL (2015)
Relative Molecular Mass (g mol)	130	LQM/CIEH S4UL (2015)
Vapour Pressure (Pa)	3.20E+02	LQM/CIEH S4UL (2015)
Water Solubility (mg/l)	2.45E+01	LQM/CIEH S4UL (2015)
Log Organic Carbon - Water Partition Coefficient (K_{oc})	3.4	LQM/CIEH S4UL (2015)
Log Octanol-Water Partition Coefficient (K_{ow})	3.93	LQM/CIEH S4UL (2015)
Dermal Absorption Fraction	1.00E-01	LQM/CIEH S4UL (2015)
Soil to dust transport factor (g g dry weight)	0.5	LQM/CIEH S4UL (2015)
sub-surface soil to indoor air correction factor	10	LQM/CIEH S4UL (2015)

Benzene

Parameters: Benzene		
Parameter	**Input Value**	**Notes/Source**
Oral HCV (ug kg BW day)	2.90E-01	LQM/CIEH S4UL (2015) - Index Dose
Inhal HCV (ug kg BW day)	1.40E+00	LQM/CIEH S4UL (2015) - Index Dose
Oral MDI (ug day)	NR	Not Required as Index Dose used
Inhalation MDI (ug day)	NR	Not Required as Index Dose used
Air-Water Partition Coefficient (K_{aw})	1.16E-01	LQM/CIEH S4UL (2015)
Diffusion Coefficient in Air (m^2s)	8.77E-06	LQM/CIEH S4UL (2015)
Diffusion Coefficient in Water (m^2s)	6.64E-10	LQM/CIEH S4UL (2015)
Relative Molecular Mass (g mol)	78.11	LQM/CIEH S4UL (2015)
Vapour Pressure (Pa)	6.34E+03	LQM/CIEH S4UL (2015)
Water Solubility (mg/l)	1.78E+03	LQM/CIEH S4UL (2015)
Log Organic Carbon - Water Partition Coefficient (K_{oc})	1.83	LQM/CIEH S4UL (2015)
Log Octanol-Water Partition Coefficient (K_{ow})	2.13	LQM/CIEH S4UL (2015)
Dermal Absorption Fraction	1.00E-01	LQM/CIEH S4UL (2015)
Soil to dust transport factor (g g dry weight)	0.5	LQM/CIEH S4UL (2015)
sub-surface soil to indoor air correction factor	10	LQM/CIEH S4UL (2015)

Building		
Building Footprint (m^2)	50.8	Building footprint of the smallest house type within development (Plot 101) - information provided by Dorchester Living
Living space air exchange rate (hr)	0.5	CLEA SR3 Default Building Parameters (residential)
Living space height above ground (m)	2.32	Living space height of Phase 10 ground floor apartments - information provided by Dorchester Living
Living space height below ground (m)	0	No cellars/underground rooms
Pressure difference (Pa)	3.1	CLEA SR3 Default Building Parameters (all residential other than bungalow; used in absence of data for apartments)
Foundation thickness (m)	0.15	Minimum specified thickness of concrete topping overlying block and beam foundation construction - information provided by Dorchester Living
Floor Crack Area (cm^2)	706.5	CLEA SR3 Default Building Parameters for bungalow (largest floor crack area of all default residential scenarios; used in absence of data for apartments)
Dust loading factor (ug m^3)	60	CLEA SR3
Default soil gas ingress rate (cm^3 s)	25	CLEA SR3
Soil		
Soil type	Sand	Assumption of sand as a worst case granular constituent
SOM Content	2.4	Site derived value (average of formation soils dataset from Phase 10 area)
pH	8.4	Site derived value (average of formation soils dataset from Phase 10 area)
Receptor (Future Site Resident)		
Critical Receptor (yrs)	0-6	CLEA SR3 Default Residential Land Use (Age Cass 1-6)
Body Mass (kg)	13.3	CLEA SR3 Default Residential Land Use (Age Cass 1-6 averaged)
Exposure Duration (yrs)	6	CLEA SR3 Default Residential Land Use Exposure Duration
Exposure Frequency (days)	2190	CLEA SR3 Default Residential Land Use Exposure Frequency
Inhalation Rate Indoors (m^3/d)	11.85	CLEA SR3 Default Residential Land Use (Age Cass 1-6 averaged)
Time indoors (hrs)	21.6	CLEA SR3 Default Site Occupancy for age class of one to six averaged
Inhalation Rate Outdoors (m^3/d)	1.3	CLEA SR3 assumes high intensive activity over age class 1-6 averarged, assuming 1 hour outdoors per day
Time Outdoors (hrs)	1	CLEA SR3 Default Residential Land Use (Age Cass 1-6 averaged)

CLEA Software Version 1.071

Report generated	13/02/2015
Report title	R1742b-R25
Created by	Scott Miller at Smith Grant LLP

BASIC SETTINGS

Land Use	Residential with produce						
Building	DL Ph10 Apartment 101						
Receptor	Female (res)	Start age class	1	End age class	6	Exposure Duration	6 years
Soil	Sand						

Exposure Pathways

Direct soil and dust ingestion	✗	Dermal contact with indoor dust	✗	Inhalation of indoor dust	✗
Consumption of homegrown produce	✗	Dermal contact with soil	✗	Inhalation of soil dust	✗
Soil attached to homegrown produce	✗			Inhalation of indoor vapour	✓
				Inhalation of outdoor vapour	✓

Land Use Residential with produce **Receptor** Female (res)

Age Class	Exposure Frequencies (days yr^{-1}): Direct soil ingestion	Consumption of homegrown produce	Dermal contact with indoor dust	Dermal contact with soil	Inhalation of dust and vapour, indoor	Inhalation of dust and vapour, outdoor	Occupation Periods (hr day^{-1}): Indoors	Outdoors	Soil to skin adherence factors (mg cm^{2}): Indoor	Outdoor	Direct soil ingestion rate (g day^{-1})	Body weight (kg)	Body height (m)	Inhalation rate (m^3 day^{-1})	Max exposed skin factor: Indoor (m^2 m^{-2})	Outdoor (m^2 m^{-2})	Total skin area (m^2)
1	180	180	180	180	365	365	23.0	1.0	0.06	1.00	0.10	5.60	0.7	8.5	0.32	0.26	3.43E-01
2	365	365	365	365	365	365	23.0	1.0	0.06	1.00	0.10	9.80	0.8	13.3	0.33	0.26	4.84E-01
3	365	365	365	365	365	365	23.0	1.0	0.06	1.00	0.10	12.70	0.9	12.7	0.32	0.25	5.82E-01
4	365	365	365	365	365	365	23.0	1.0	0.06	1.00	0.10	15.10	0.9	12.2	0.35	0.28	6.36E-01
5	365	365	365	365	365	365	19.0	1.0	0.06	1.00	0.10	16.90	1.0	12.2	0.35	0.28	7.04E-01
6	365	365	365	365	365	365	19.0	1.0	0.06	1.00	0.10	19.70	1.1	12.2	0.33	0.26	7.94E-01
7	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	22.10	1.2	12.4	0.22	0.15	8.73E-01
8	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	25.30	1.2	12.4	0.22	0.15	9.36E-01
9	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	27.50	1.3	12.4	0.22	0.15	1.01E+00
10	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	31.40	1.3	12.4	0.22	0.15	1.08E+00
11	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	35.70	1.4	12.4	0.22	0.14	1.19E+00
12	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	41.30	1.4	13.4	0.22	0.14	1.29E+00
13	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	47.20	1.5	13.4	0.22	0.14	1.42E+00
14	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	51.20	1.6	13.4	0.22	0.14	1.52E+00
15	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	56.70	1.6	13.4	0.21	0.14	1.60E+00
16	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	59.00	1.6	13.4	0.21	0.14	1.63E+00
17	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	70.00	1.6	14.8	0.33	0.27	1.78E+00
18	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	70.90	1.6	12.0	0.33	0.27	1.80E+00

Consumption Rates

Consumption rates (g FW kg^{-1} bodyweight day^{-1}) by Produce Group

Age Class	MEAN RATES						90TH PERCENTILE RATES					
	Green veg	Root veg	Tuber veg	Herb. Fruit	Shrub fruit	Tree fruit	Green veg	Root veg	Tuber veg	Herb. Fruit	Shrub fruit	Tree fruit
1							7.12E+00	1.07E+01	1.60E+01	1.83E+00	2.23E+00	3.82E+00
2							6.85E+00	3.30E+00	5.46E+00	3.96E+00	5.40E-01	1.20E+01
3							6.85E+00	3.30E+00	5.46E+00	3.96E+00	5.40E-01	1.20E+01
4							6.85E+00	3.30E+00	5.46E+00	3.96E+00	5.40E-01	1.20E+01
5							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
6							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
7							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
8							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
9							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
10							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
11							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
12							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
13							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
14							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
15							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
16							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
17							2.94E+00	1.40E+00	1.79E+00	1.61E+00	2.20E-01	2.97E+00
18							2.94E+00	1.40E+00	1.79E+00	1.61E+00	2.20E-01	2.97E+00

Top 2 applied? No

Where top 2 method is applied, two produce categories use 90th percentile rates, while the remainder use the mean. Produce categories vary on a chemical-by-chemical basis. Where top 2 method is not used, all produce categories for all chemicals assume 90th percentile rates.

Building DL Ph10 Apartment 101

Building footprint (m^2)	5.10E+01
Living space air exchange rate (hr^{-1})	5.00E-01
Living space height (above ground, m)	2.32E+00
Living space height (below ground, m)	0.00E+00
Pressure difference (soil to enclosed space, Pa)	3.10E+00
Foundation thickness (m)	1.50E-01
Floor crack area (cm^2)	7.07E+02
Dust loading factor (μg m^{-3})	6.00E+01

Soil Sand

Porosity, Total (cm^3 cm^{-3})	5.40E-01
Porosity, Air-Filled (cm^3 cm^{-3})	3.00E-01
Porosity, Water-Filled (cm^3 cm^{-3})	2.40E-01
Residual soil water content (cm^3 cm^{-3})	7.00E-02
Saturated hydraulic conductivity (cm s^{-1})	7.36E-03
van Genuchten shape parameter *m* (dimensionless)	3.51E-01
Bulk density (g cm^{-3})	1.18E+00
Threshold value of wind speed at 10m (m s^{-1})	7.20E+00
Empirical function (F_x) for dust model (dimensionless)	1.22E+00
Ambient soil temperature (K)	2.83E+02

Soil pH	8.40E+00
Soil Organic Matter content (%)	2.40E+00
Fraction of organic carbon (g g^{-1})	1.39E-02

Effective total fluid saturation (unitless)	3.62E-01
Intrinsic soil permeability (cm^2)	9.83E-08
Relative soil air permeability (unitless)	7.68E-01
Effective air permeability (cm^2)	7.54E-08

Soil - Vapour Model

Depth to top of source (no building) (cm)	0
Depth to top of source (beneath building) (cm)	65
Default soil gas ingress rate?	Yes
Soil gas ingress rate ($cm^3\ s^{-1}$)	2.50E+01
Building ventilation rate ($cm^3\ s^{-1}$)	1.64E+04
Averaging time surface emissions (yr)	6
Finite vapour source model?	No
Thickness of contaminated layer (cm)	200

Air Dispersion Model

Mean annual windspeed at 10m ($m\ s^{-1}$)	5.00
Air dispersion factor at height of 0.8m *	2400.00
Air dispersion factor at height of 1.6m *	0.00
Fraction of site cover ($m^2\ m^{-2}$)	0.75

* Air dispersion factor in $g\ m^{-2}\ s^{-1}$ per $kg\ m^{-3}$

Soil - Plant Model

	Dry weight conversion factor	Homegrown fraction Average	Homegrown fraction High	Soil loading factor	Preparation correction factor
	$g\ DW\ g^{-1}\ FW$	dimensionless		$g\ g^{-1}\ DW$	dimensionless
Green vegetables	0.096	0.05	0.33	1.00E-03	2.00E-01
Root vegetables	0.103	0.06	0.40	1.00E-03	1.00E+00
Tuber vegetables	0.210	0.02	0.13	1.00E-03	1.00E+00
Herbaceous fruit	0.058	0.06	0.40	1.00E-03	6.00E-01
Shrub fruit	0.166	0.09	0.60	1.00E-03	6.00E-01
Tree fruit	0.157	0.04	0.27	1.00E-03	6.00E-01

Gardener type Average

APPENDIX G

CLEA Derived Indoor Vapour Concentrations

CLEA Software Version 1.071

Report generated	13-Feb-15
Report title	R1742b-R25
Created by	Scott Miller at Smith Grant LLP

Environment Agency

RESULTS

Environment Agency

		Assessment Criterion (mg kg^{-1})			Ratio of ADE to HCV			Saturation Limit (mg kg^{-1})	50% rule?		Top Two applied?	Apply Top 2 Approach to Produce Group					
		oral	inhalation	combined	oral	inhalation	combined		Oral	Inhal		Green vegetables	Root vegetables	Tuber vegetables	Herbaceous fruit	Shrub fruit	Tree fruit
1	Benzene	0.00E+00	0.00E+00	0.00E+00	0.00	#VALUE!	#VALUE!	2.09E+03 (sol)	No	No	No	No	No	No	No	No	No
2	Ali C8-C10	0.00E+00	0.00E+00	0.00E+00	0.00	#VALUE!	#VALUE!	1.84E+02 (vap)	Yes	Yes	No	0	0	0	0	0	0
3	Aro C10-C12	0.00E+00	0.00E+00	0.00E+00	0.00	#VALUE!	#VALUE!	8.62E+02 (sol)	Yes	Yes	No	0	0	0	0	0	0
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	Assessment Criterion (mg kg^{-1})			Ratio of ADE to HCV			Saturation Limit (mg kg^{-1})	50% rule?		Top Two applied?	Apply Top 2 Approach to Produce Group					
	oral	inhalation	combined	oral	inhalation	combined		Oral	Inhal		Green vegetables	Root vegetables	Tuber vegetables	Herbaceous fruit	Shrub fruit	Tree fruit
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		Soil Distribution				Media Concentrations													
		Sorbed	Dissolved	Vapour	Total	Soil	Soil gas	Indoor Dust	Outdoor dust at 0.8m	Outdoor dust at 1.6m	Indoor Vapour	Outdoor vapour at 0.8m	Outdoor vapour at 1.6m	Green vegetables	Root vegetables	Tuber vegetables	Herbaceous fruit	Shrub fruit	Tree fruit
		%	%	%	%	mg kg^{-1}	mg m^{-3}	mg kg^{-1}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW
1	Benzene	0.0	0.0	0.0	0.0	0.00E+00	**9.50E-03**	NA	NA	NA	9.97E-07	Error	0.00E+00	NA	NA	NA	NA	NA	NA
2	Ali C8-C10	0.0	0.0	0.0	0.0	0.00E+00	**1.18E+00**	NA	NA	NA	1.28E-04	Error	0.00E+00	NA	NA	NA	NA	NA	NA
3	Aro C10-C12	0.0	0.0	0.0	0.0	0.00E+00	**2.13E-01**	NA	NA	NA	2.33E-05	Error	0.00E+00	NA	NA	NA	NA	NA	NA
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	Soil Distribution				Media Concentrations													
	Sorbed	Dissolved	Vapour	Total	Soil	Soil gas	Indoor Dust	Outdoor dust at 0.8m	Outdoor dust at 1.6m	Indoor Vapour	Outdoor vapour at 0.8m	Outdoor vapour at 1.6m	Green vegetables	Root vegetables	Tuber vegetables	Herbaceous fruit	Shrub fruit	Tree fruit
	%	%	%	%	mg kg^{-1}	mg m^{-3}	mg kg^{-1}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW
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		Average Daily Exposure (mg kg^{-1} bw day^{-1})							Distribution by Pathway (%)							
		Direct soil ingestion	Consumption of homegrown produce and attached soil	Dermal contact with soil and dust	Inhalation of dust	Inhalation of vapour	Background (oral)	Background (inhalation)	Direct soil ingestion	Consumption of homegrown produce and attached soil	Dermal contact with soil and dust	Inhalation of dust	Inhalation of vapour (indoor)	Inhalation of vapour (outdoor)	Background (oral)	Background (inhalation)
1	Benzene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	#VALUE!	0.00E+00	0.00E+00	#######	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
2	Ali C8-C10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	#VALUE!	5.62E+95	6.06E+95	#######	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
3	Aro C10-C12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	#VALUE!	5.62E+95	6.06E+95	#######	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
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Environment Agency

	Average Daily Exposure (mg kg^{-1} bw day^{-1})							Distribution by Pathway (%)							
	Direct soil ingestion	Consumption of homegrown produce and attached soil	Dermal contact with soil and dust	Inhalation of dust	Inhalation of vapour	Background (oral)	Background (inhalation)	Direct soil ingestion	Consumption of homegrown produce	Dermal contact with soil and dust	Inhalation of dust	Inhalation of vapour (indoor)	Inhalation of vapour (outdoor)	Background (oral)	Background (inhalation)
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			Oral Health Criteria Value ($\mu g\ kg^{-1}$ BW day^{-1})		Inhalation Health Criteria Value ($\mu g\ kg^{-1}$ BW day^{-1})	Oral Mean Daily Intake ($\mu g\ day^{-1}$)	Inhalation Mean Daily Intake ($\mu g\ day^{-1}$)	Air-water partition coefficient (K_{aw}) ($cm^3\ cm^{-3}$)	Coefficient of Diffusion in Air ($m^2\ s^{-1}$)	Coefficient of Diffusion in Water ($m^2\ s^{-1}$)	log K_{oc} ($cm^3\ g^{-1}$)	log K_{ow} (dimensionless)	Dermal Absorption Fraction (dimensionless)	Soil-to-dust transport factor ($g\ g^{-1}$ DW)	Sub-surface soil to indoor air correction factor (dimensionless)	Relative bioavailability via soil ingestion (unitless)	Relative bioavailability via dust inhalation (unitless)
1	Benzene	ID	0.29	ID	1.4	NR	NR	1.16E-01	8.77E-06	6.64E-10	1.83	2.13	0.1	0.5	10	1	1
2	Ali C8-C10	TDI	100	TDI	290	9.99E+99	9.99E+99	4.15E+01	1.00E-05	1.00E-09	4.48	5.22	0.1	0.5	10	1	1
3	Aro C10-C12	TDI	40	TDI	60	9.99E+99	9.99E+99	7.22E-02	1.00E-05	1.00E-09	3.4	3.93	0.1	0.5	10	1	1
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		Oral Health Criteria Value ($\mu g\ kg^{-1}$ BW day^{-1})		Inhalation Health Criteria Value ($\mu g\ kg^{-1}$ BW day^{-1})	Oral Mean Daily Intake ($\mu g\ day^{-1}$)	Inhalation Mean Daily Intake ($\mu g\ day^{-1}$)	Air-water partition coefficient (K_{aw}) ($cm^3\ cm^{-3}$)	Coefficient of Diffusion in Air ($m^2\ s^{-1}$)	Coefficient of Diffusion in Water ($m^2\ s^{-1}$)	log K_{oc} ($cm^3\ g^{-1}$)	log K_{ow} (dimensionless)	Dermal Absorption Fraction (dimensionless)	Soil-to-dust transport factor ($g\ g^{-1}$ DW)	Sub-surface soil to indoor air correction factor (dimensionless)	Relative bioavailability via soil ingestion (unitless)	Relative bioavailability via dust inhalation (unitless)
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		Soil-to-water partition coefficient (cm^3 g^{-1})	Vapour pressure (Pa)	Water solubility (mg L^{-1})	Soil-to-plant concentration factor for green vegetables (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for root vegetables (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for tuber vegetables (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for herbaceous fruit (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for shrub fruit (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for tree fruit (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)
1	Benzene	9.41E-01	6.24E+03	1.78E+03	model	model	model	0.00E+00	0.00E+00	model
2	Ali C8-C10	4.20E+02	3.20E+02	4.27E-01	model	model	model	model	model	model
3	Aro C10-C12	3.50E+01	3.21E+01	2.45E+01	model	model	model	model	model	model
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	Soil-to-water partition coefficient ($cm^3 g^{-1}$)	Vapour pressure (Pa)	Water solubility (mg L^{-1})	Soil-to-plant concentration factor for green vegetables (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for root vegetables (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for tuber vegetables (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for herbaceous fruit (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for shrub fruit (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for tree fruit (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)
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