REMEDIATION METHOD STATEMENT
PHASE 1A AND 1B - ST ANN'S NEW NEIGHBOURHOOD
LONDON
HILL RESIDENTIAL LTD, CATALYST HOUSING AND CATALYST BY DESIGN
RMS-21912J-23-166
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Authors

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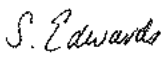
Approved by



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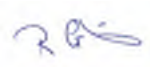

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REMEDIATION SUMMARY

Remediation is required to render the site suitable for use. In order to minimise the disposal of soils and enhance the suitable reuse of materials the strategy focused upon the retention of soils based upon the proposed uses of the site. Site investigation has been undertaken and a site-specific conceptual model established. The Detailed Remediation Strategy for the site is set out in Section 6 of this report and includes the following measures:

- Decommissioning of the relict heating system;
- Removal of concrete slabs, sub surface structures and relict infrastructure;
- Removal of localised grossly impacted soils;
- Dewatering of contaminated pockets of perched water (if encountered) – shallow groundwater was encountered in the south of the site;
- Provision of suitable soils in areas of soft landscaping over a deter to dig barrier – to be installed as part of the final development; and,
- Provision of upgraded water pipes.

Works will be undertaken in the following order:

1. Vegetation scrape: an initial vegetation scrape is required to remove grass turf and shallow rooted plants. This material will be removed from site.
2. Excavation of soils for reuse: soils will be excavated based upon the zoning exercise (See Section 4 and the plans in Appendix 3) and stockpiled for reuse. Soils must be carefully managed and will be sorted into the following categories based upon their physical and chemical properties.
    a. Subsoil suitable for use in the extension of the Peace Garden.
    b. Subsoil suitable for retention in communal landscaped areas.
    c. Subsoil suitable for use beneath private gardens.
    d. General fill (to be used below roads, buildings, hardstanding and as backfill to remedial excavations).
    e. Unsuitable soils.

    A plan showing these areas is included a Figure 3.
3. Site won soils will not be suitable for use as topsoil and suitable material must be imported. Site won soils will be placed into small stockpiles to prevent cross contamination or losses and subject to laboratory testing to confirm suitability for use. Careful excavation and management of soils will be key to ensuring the maximum potential for reuse and minimising disposal.
4. The remedial strategy requires clean cover in all newly formed areas of soft landscaping to comprise 600 mm suitable soil over a deter to dig barrier in private gardens and 300 mm in

communal landscaping. This can include site won subsoil.

5. Once the existing soils have been excavated and stockpiled demolition works can commence. Specialist Contractors will undertake the following tasks:

    - Removal of concrete slabs, sub surface structures and relict infrastructure;
    - Removal of localised grossly impacted soils; and
    - Dewatering of contaminated pockets of perched water (if encountered) – shallow groundwater was encountered in the south of the site.

6. Excavations will be reinstated and compacted in accordance with the criteria set out in Section 6.11.
7. Upgraded water pipes and the clean cover system will be incorporated as part of the development works and on a phased basis.
8. All works must be Validated and approved by the Local Environmental Health Officer and the Environment Agency.

SECTION 1 INTRODUCTION

1.1 Hill Residential Ltd, Catalyst Housing Ltd and Catalyst by Design Ltd proposes to develop an area of land located at the former St Ann's Hospital, London for residential development purposes.

1.2 Description of the development:

The change of use, conversion and alteration of seven existing hospital buildings within Phase 1A for a flexible range of uses (Use Class E, F1 / F2);

The demolition of some existing buildings (in accordance with the demolition plan);

The erection of new buildings for residential uses (Use Class C3); and

Alterations to the existing access road and installation of new vehicular, pedestrian and cycle accesses; landscaping including enlargement of the Peace Garden, associated car and cycle parking spaces and servicing spaces.

The demolition of existing buildings and structures in Phases 1B, 2 and 3 (in accordance with the demolition plan);

Outline planning (all matters reserved except access) for Phases 1B, 2 and 3 for:

The erection of new buildings for residential development (Use Class C3), commercial business and service (Use Class E), and local community and learning (Use Class F1/F2); and

Associated pedestrian and cycle accesses; landscaping including enhancements to the St Ann's Hospital Wood and Tottenham Railsides Site of Importance for Nature Conservation (SINC) car and cycle parking spaces and servicing spaces.

1.3 This report relates only to Phases 1A and 1B.

1.4 Ground investigation, contamination risk assessment and an initial remedial appraisal have been undertaken, as listed below:

CAPITA; St Ann's Hospital, London – Due Diligence Report: Ground Conditions (ref: CS/094972), dated February 2018;

RSK; St Ann's Hospital, London: Preliminary Risk Assessment (ref: 29356-R02 (00), dated October 2017.

IDOM Merebrook Ltd.: Contaminated Land Assessment, St Ann's New Neighbourhood. Ref: CLA-21914J-22-151. Dated: May 2022.

1.5 The previous reports, specifically the IDOM Merebrook Ltd Contaminated Land Assessment also incorporate a Phase 1 Desk Study.

1.6 This *Remedial Method Statement* provides a summary of the earlier data and sets out details regarding the remediation methods, validation techniques / requirements and environmental controls to be applied during the development works in Phase 1A and Phase 1B.

1.7 In addition, this report sets out an inspection and sampling strategy to be adhered to following demolition of the existing buildings in Phases 1A and 1B.

1.8 The objectives of this report are therefore to:

Summarise the contamination present at the site and the associated risks;

Provide a method statement for a supplementary site inspection following demolition;

Present the details of a remedial strategy for the site;

Set out the validation procedures and techniques to be employed to ensure that the remedial works are effective;

Set out the required acceptance criteria for site-derived soils and imported soils;

Identify soil resources and suitable future uses within the proposed development;

Set out soil waste identification and disposal protocols; and

Summarise the environmental controls to be implemented during the works to manage contamination issues.

1.9 This report has been prepared for Hill Residential Ltd, Catalyst Housing Ltd and Catalyst by Design Ltd for the sole purpose described above and no extended duty of care to any third party is implied or offered. Third parties making reference to the report should consult Hill Residential Ltd, Catalyst Housing Ltd and Catalyst by Design Ltd and IDOM as to the extent to which the findings may be appropriate for their use.

SECTION 2 BACKGROUND

2.1 SITE LOCATION

2.1.1 The site is located at National Grid Reference 532589, 188605 and indicated on drawing 21914J-304-001, presented in the Contaminated Land Assessment, which is included as Appendix 1 of this report.

2.1.2 The site is located within the administrative boundary of the London Borough of Haringey and occupies a 7.2-hectare parcel, formerly part of the St Ann's Hospital complex. The buildings, the majority of which are no longer in active use, vary in styles from pre-war to refurbished post-war buildings. Building heights across the site range from 2-3 storeys.

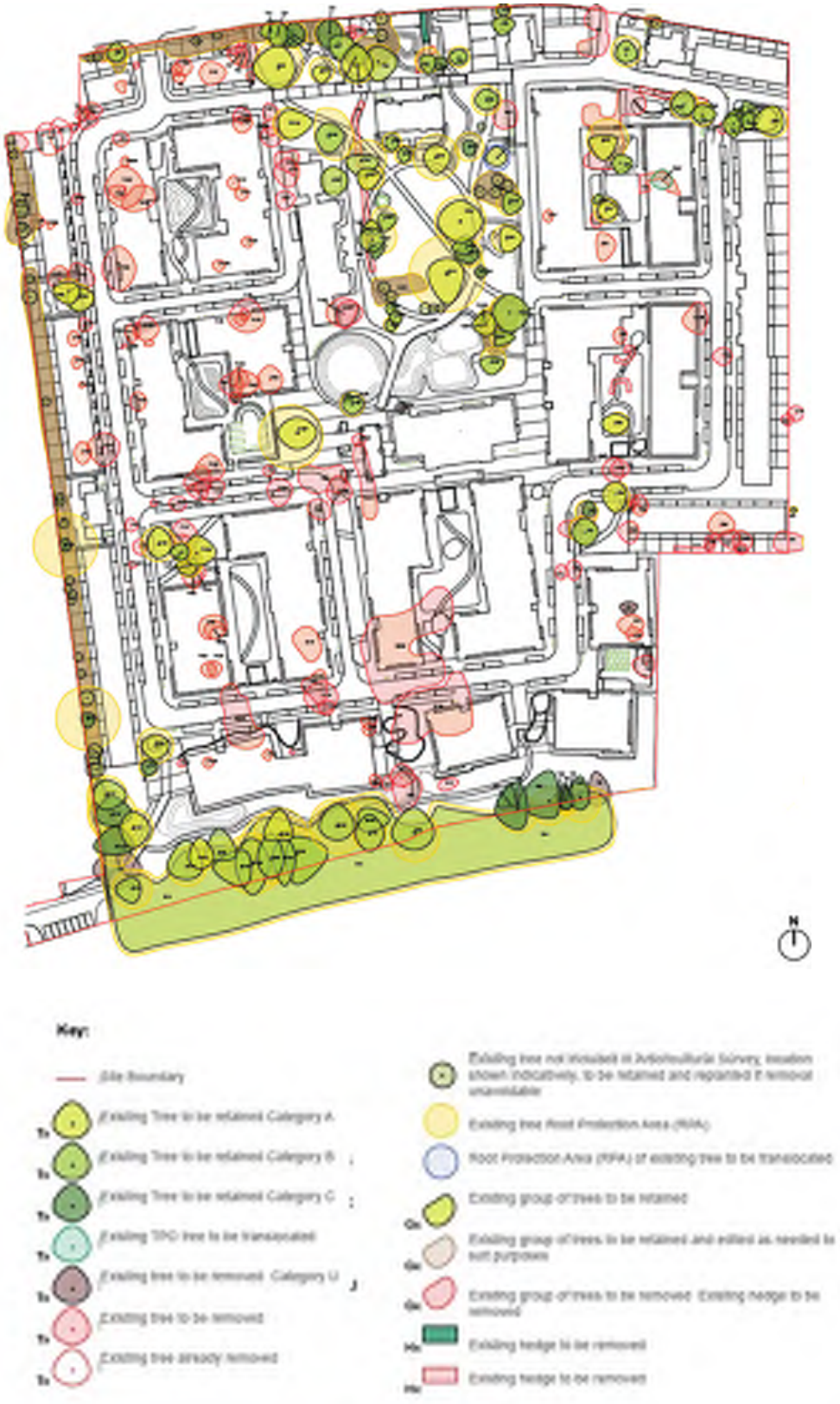
2.1.3 Vehicular and pedestrian access to the site is via St Ann's Road (N15 3TH).

2.1.4 The Phase 1A and 1B development area include an area of public open space/parkland known as the Peace Garden as well as low-rise hospital buildings and related infrastructure. There are also other areas of soft landscaping (and a wooded area to the south) which incorporates trees with Tree Protection Orders (TPOs).

2.1.5 Phases 1A and 1B of the development are illustrated by Figure 1. Figure 2 presents a plan showing the trees to be retained on site.

Figure 1: Development Phases:

Figure 2: Retained Trees



2.1.6 A tank farm containing three above ground tanks (within a brick/concrete bund) was located in the south it is understood that fuel lines run from the tank farm to the boiler room. An engineer's workshop was also located in the south of Phase 1b. Two electricity substations were located towards the middle of the area.

2.1.7 The site was predominantly flat with a general slope from west to east and north to south.

2.1.8 The site is bound by St Ann's Road to the north with Chestnuts Park and residential properties beyond. To the east is a further parcel of St Ann's Hospital which is undergoing redevelopment and hospital buildings that are still in use. To the south is an overground railway line with residential housing and the Arena Design Centre beyond. To the west the site is bounded by Warwick Gardens with residential housing beyond.

2.1.9 Tunnels, ducts and basements constructed as part of the hospitals service network are known to contain asbestos.

SECTION 3 GEO-ENVIRONMENTAL ASSESSMENT SUMMARY

3.1 INTRODUCTION

3.1.1 This section provides a brief summary of the various stages of geo-environmental assessment which have been undertaken for the site.

3.2 SITE HISTORY

3.2.1 The site was predominately farmland (with only a few buildings in the north) until the 1890s when a hospital was built on the site. The site has remained as a hospital with the addition of extensions and new buildings.

3.2.2 Permanent buildings within Phase 1A and 1B included an administrative block and water tower. A boiler house was added in 1907. The above ground fuel storage tanks in the south of the site were installed in the 1960s. An electricity substation was noted by the 1970s and a second from the 1980s (both were noted towards the middle of the site).

3.3 GEO-ENVIRONMENTAL SITE SETTING

3.3.1 The published geological map indicates that the site is underlain by the solid geology consists of the London Clay Formation.

3.3.2 The London Clay Formation is classified by the Environment Agency as an Unproductive Stratum.

3.3.3 The nearest surface water feature is the New River, located approximately 500 m to the south of site.

3.3.4 The site is within Flood Zone 1 as defined by the Environment Agency. This means it has a low probability of flooding from rivers and the sea.

3.4 GROUND CONDITIONS

3.4.1 A copy of the existing reports are included as Appendix 1.

3.4.2 The encountered ground conditions were made ground over London Clay which is consistent with the published geology.

3.4.3 A summary of the ground conditions encountered is presented in Table 1, whilst a more detailed assessment of the strata is contained in the following sections of the report.

Table 1: Summary of Sub-surface Ground Conditions

STRATA	DEPTH TO TOP RANGE (m bgl)	THICKNESS RANGE (m)
Topsoil	0.0	0.1 – 0.4
Made Ground: Bituminous surfacing	0.0	0.15
Made Ground: Total	0.0 – 0.4	0.1 – 1.4
London Clay	0.1 – 1.4	2.0+

3.4.4 Topsoil

3.4.4.1 Topsoil generally comprised soft brown slightly sandy clay with rootlets.

3.4.5 Made Ground

3.4.5.1 Made ground was encountered at each investigation location and generally comprised sandy clay to gravelly sand/sandy gravel with inclusions of concrete, brick, flint, glass, clinker, ceramic fragments, ash mudstone and sandstone.

3.4.5.2 Locally fragments of potentially asbestos containing materials, as well as ash and clinker.

3.4.5.3 Hydrocarbon odours were reported in soils close the boiler tanks.

3.4.5.4 Concrete obstructions were identified at a number of locations.

3.4.6 Natural Ground

3.4.6.1 The London Clay generally comprised firm to stiff light brown silty sandy clay to greyish brown silty clay.

3.5 CONTAMINATION AND DISTRIBUTION

3.5.1 The investigations demonstrate that the former uses of the site have resulted in contamination (principally within made ground) by metals, PAH compounds and asbestos. PAH contamination was also encountered in samples of topsoil and a sample of natural clay was impacted by heavy metals (lead and arsenic).

3.5.2 The heating network across the site included tunnels and ducts that connected to the boiler house. A demolition survey carried out by Eton Environmental (a copy of which is appended to the Contaminated Land Assessment included as Appendix 1) of the heating system identified asbestos including hard set lagging in the tunnels, ducts and basements across the site.

3.5.3 Given the age of the buildings at the site it is likely that asbestos would be present in these structures. It is unclear if an asbestos survey (other than the heating system) has been carried out. Asbestos surveys of all onsite structures prior to demolition is recommended.

3.5.4 Slightly elevated PID readings were also recorded in the vicinity of the boiler house. In addition, perched groundwater within the London Clay in the vicinity of the boiler house was contaminated by PAH compounds.

3.5.4.1 Ground gas monitoring indicates that gas and vapour protection measures are not required.

3.6 CONTAMINATION RISKS/CONCEPTUAL MODEL

3.6.1 Following completion of phases 1 and 2 of the investigation and a qualitative risk assessment, the conceptual model for the site, with relation to pollutant linkages, has been updated. The conceptual model is presented in Table 2 below.

Table 2: Conceptual Model

POSSIBLE POLLUTANT LINKAGE			RISK CHARACTERISATION
POTENTIAL SOURCES	**PATHWAYS**	**RECEPTORS**	
Heavy metals and hydrocarbons (made ground)	Contact with contaminated soil	Human health (current users)	**Low risk identified** Made ground is impacted by several forms of contamination. However, the site has few current site users.
	Ingestion and inhalation of contaminated soil and dust	Human health (current users)	
Heavy metals and hydrocarbons (made ground)	Contact with contaminated soil	Human health (future residents and construction workers)	**Moderate risk identified** Contamination of made ground soils metals, PAH and asbestos. Mitigation measures will be required in the limited areas of soft landscaping. Outside of these areas buildings and hardstanding will sever potential pathways.
	Ingestion and inhalation of contaminated soil and dust	Human health (future residents and construction workers)	
Asbestos (made ground and structures)	Ingestion and inhalation of contaminated soil and dust	Human health (future residents and construction workers)	**Moderate to high risk identified** A significant number of asbestos detections (fibres and fragments) were reported across the site. Asbestos lagging is present in the subsurface heating system and probably in onsite buildings.
Radiation (medical sources)	Contacted with source or contaminated material	Human health (future residents and construction workers)	**Low risk** The radiation used represents a closed source - this will have been removed from site.
Contamination (all forms)	Vertical migration to aquifer	Controlled waters	**Low risk identified** Limited shallow groundwater has been encountered and a significant thickness of London Clay acts as an aquitard to the aquifer at depth.
Contamination (all forms)	Horizontal migration to surface water	Controlled waters	**Low risk identified** Nearest surface water feature is significantly distant.
Hydrocarbons	Direct contact	Plastic water pipes	**Moderate risk identified** Significant PAH contamination presents a risk to permeable services.
Hazardous Gas/Vapours In soil	Ingress into buildings and voids	Human health (future residents and construction workers)	**Low risk identified** Based on the available data, the ground gas regime is considered to be Green (low risk).

POSSIBLE POLLUTANT LINKAGE			RISK CHARACTERISATION
POTENTIAL SOURCES	PATHWAYS	RECEPTORS	
Phytotoxic metals	Direct contact/root uptake	Ornamental planting	**Low risk identified** Concentrations of zinc were encountered above the applicable criteria in four samples. However, healthy plant growth was noted, indicating that the contamination is of limited bio-accessibility. The provision of clean cover will provide a proficient growth medium.
Adjacent Land	Horizontal migration of groundwater/gas.	Neighbouring properties	**Low risk identified** The available data indicates a low risk.

SECTION 4 ZONING OF SOILS FOR REUSE

4.1.1 Based upon the remedial requirements and chemical data it was considered possible that soils could be retained on site for reuse. Specific consideration was given to the Peace Garden, which is to be retained and expanded.

4.1.2 Remedial measures must be sensitive to the existing Peace Garden and trees to be retained. As a result, a contamination zoning exercise was undertaken to identify the risks from shallow soils.

4.1.3 The zoning exercise was required to satisfy three principal requirements:

i. The Planning Conditions require a “Circular Economy” with minimal wastes going off site. The zoning will enable an understanding of suitable soils that can be reused and the circumstances under which it can be reused.

ii. Secondly, the zoning will inform the remediation strategy and reuse of soils on site. Simply excavating all of the soils and placing into one stockpile for treatment could result in a significant volume of unsuitable material. The zoning exercise has the potential to make significant cost savings and enable targeted excavation with soils placed into three categories: soils that can be reused without treatment; soils that require processing and unsuitable material.

iii. To satisfy the requirements of the Landscape Architects to demonstrate that only minimal remediation is required in areas of retained landscaping and trees.

4.1.4 The zoning exercise included the following scope of work within the Phase 1a and Phase 1b:

i. Excavation of 73 hand-dug investigation pits to approximately 600 mm below ground level (bgl);

ii. Laboratory chemical soil testing of 98 soil samples; and

iii. Analysis of fragments of potentially asbestos containing material encountered during the investigation.

4.1.5 Hand-pits were excavated using hand tools. Logs and data are included as Appendix 2. Plans showing the site investigation locations are included as Appendix 3.

4.1.6 Ground conditions generally comprised varying thickness of topsoil underlain by made ground, which in turn overlay the London Clay Formation. Exploratory hole logs are enclosed with this letter and contain full details of the observed conditions.

4.1.7 Where encountered, topsoil was identified to depths of between 0.05 and 0.2 m bgl, but was generally less than 0.1 metres thick. The topsoil typically comprised grass

covered, dark brown silt or clay with gravel inclusions of rootlets, flint, brick, and chalk. Occasional fragments of slate, wood, coal, and bark were also observed in some locations. No organoleptic evidence of contamination was recorded in the topsoil.

4.1.8 Made ground was encountered in all investigated locations and was variable in appearance. Made ground was typically encountered as brown or dark brown clay or silt. Inclusions of brick, flint, concrete, coal, clinker, roots, slate, porcelain, plastic and polystyrene were recorded throughout the made ground.

4.1.9 The made ground at two locations, MHP130 and MHP142 were noted to contain a high proportion of coal.

4.1.10 Reworked London Clay containing fragments of coal, flint and brick was also noted within a number of site investigation locations.

4.1.11 Slow water ingress was recorded at MHP127 and MHP165 in the west of the site.

4.1.12 Potentially Asbestos Containing Material (ACM) was identified during the investigation within MHP123 (0.1 m) and MHP161 (0.1 m).

4.1.13 Visual or olfactory evidence of hydrocarbon contamination was not observed within the made ground.

4.1.14 Weathered London Clay Formation was typically encountered at depths ranging from 0.4 – 0.6 m bgl. However, across parts of the site, typically in the north, the made ground extended to depths of greater than 0.6 m. The weathered London Clay was encountered as a soft to stiff, brown, slightly mottled orange, silty clay. No visual or olfactory evidence of contamination was recorded in the London Clay.

4.2 CHEMICAL DATA

4.2.1 A total of 98 soil samples were submitted to the laboratory for chemical analysis, including two samples from natural ground, twelve from topsoil and 84 samples from made ground. The laboratory chemical analysis certificates are enclosed with this letter.

4.2.2 An initial screening exercise has been undertaken whereby contaminant concentrations recorded in soils have been assessed against Suitable for Use Levels (S4ULs) published in 2015 by LQM/CIEH. These precautionary screening levels are designed to be representative of minimal risk to human health in a number of land use scenarios.

4.2.3 As part of the proposed development, three land use scenarios have been identified:

i. Residential Properties with Private Gardens.

ii. Residential Properties with Communal Gardens.

iii. Areas of Public Open Space.

4.2.4 To understand where soils can be reused on site the entire data set was screened against screening values for each of these land-use scenarios. It should also be noted that the Peace Garden in the northern portion of the site will remain in its current use.

4.2.5 Public open space, specifically the Peace Garden will be maintained and managed to be used by the general public and not just residents of the proposed development. It will be used as a place of reflection and significant tree planting is proposed. As such the potential for contamination track-back is considered to be negligible and screening values for POS Park are considered appropriate. Other areas of open space around the development offer amenity to the associated properties and will be compared to the screening values relevant to residential properties.

4.2.6 It should also be noted that for much of the site, once the vegetation and root zone has been removed, there will be little or no residual topsoil.

4.2.7 Soil chemical results were processed and compared with each of the above screening levels to determine the suitability for use in each area.

4.3 **PUBLIC OPEN SPACE:**

4.3.1 Samples with contaminant concentrations in excess of the screening criteria are set out in Table 3 below.

Table 3: Exceedances of POS Park screening levels within the analysed soil samples.

Determinand	Number of exceedances	Soil sample in exceedance of POS Park screening levels
Asbestos	3	MHP112 (0.5 m), MHP123 (0.15 m), MHP161 (0.1 m).
Lead	2	MHP104 (0.5 m), MHP146 (0.2 m).
Benzo(a)anthracene	4	MHP126 (0.1 m), MHP130 (0.15 m), MHP145 (0.1 m), MHP152 (0.4 m).
Chrysene	2	MHP145 (0.1 m), MHP152 (0.4 m).
Benzo(b)fluoranthene	6	MHP126 (0.1 m), MHP130 (0.15 m), MHP145 (0.1 m), MHP152 (0.4 m), MHP155 (0.4 m), MHP162 (0.2 m).
Benzo(a)pyrene	6	MHP126 (0.1 m), MHP130 (0.15 m), MHP145 (0.1 m), MHP152 (0.4 m), MHP155 (0.4 m), MHP162 (0.2 m).
Dibenzo(a,h)anthracene	9	MHP126 (0.1 m), MHP130 (0.15 m), MHP144 (0.5 m), MHP145 (0.1 m), MHP145 (0.6 m), MHP152 (0.4 m), MHP155 (0.4 m), MHP167 (0.1 m), MHP167 (0.3 m).

4.3.2 Asbestos fibres were identified within three soil samples, bulk asbestos was also present in one of these locations, MHP123.

4.3.3 Lead was detected within two soil samples; MHP104 is located in the north of the site and MHP146 is located in the centre-south.

4.3.4 PAH compounds were detected above POS Park screening levels at seven site investigation locations. These were typically associated with soils containing coal, ash and clinker.

4.3.5 Of the soils in the existing Peace Garden topsoil and subsoil at MHP167 were not compliant with the screening criteria protective of human health and localised remediation will be required. This area is close to the root protection zone of trees to be retained and any remediation will have to be sensitive to this.

4.3.6 A plan showing compliant and non-compliant soils screened against criteria for reuse in areas of public open space in included in in Appendix 3.

4.4 **COMMUNAL GARDENS:**

4.4.1 Samples with contaminant concentrations in excess of the screening criteria are set out in Table 4 below.

Table 4: Exceedances of residential without plant uptake screening levels within the analysed soil samples.

Determinand	Number of exceedances	Soil sample in exceedance of residential without plant uptake screening levels
Asbestos	3	MHP112 (0.5 m), MHP123 (0.15 m), MHP161 (0.1 m).
Arsenic	7	MHP104 (0.5 m), MHP107 (0.2 m), MHP114 (0.5 m), MHP146 (0.2 m), MHP159 (0.3 m), MHP162 (0.2 m), MHP171 (0.3 m).
Lead	28	MHP104 (0.5 m), MHP107 (0.2 m), MHP108 (0.1 m), MHP109 (0.15 m), MHP110 (0.1 m), MHP114 (0.5 m), MHP116 (0.5 m), MHP123 (0.5 m), MHP127 (0.05 m), MHP128 (0.4 m), MHP130 (0.3 m), MHP133 (0.2 m), MHP135 (0.3 m), MHP137 (0.2 m), MHP140 (0.1 m), MHP142 (0.1 m), MHP146 (0.2 m), MHP153 (0.4 m), MHP156 (0.2 m), MHP159 (0.3 m), MHP160 (0.05 m), MHP165 (0.3 m), MHP166 (0.5 m), MHP167 (0.1 m), MHP167 (0.3 m),

Determinand	Number of exceedances	Soil sample in exceedance of residential without plant uptake screening levels
		MHP169 (0.15 m), MHP170 (0.1 m), MHP173 (0.2 m).
Aromatic C16-C21	1	MHP145 (0.1 m).
Aromatic C21-C35	1	MHP145 (0.1 m).
Naphthalene	1	MHP145 (0.1 m).
Benzo(a)anthracene	6	MHP126 (0.1 m), MHP130 (0.15 m), MHP145 (0.1 m), MHP152 (0.4 m), MHP155 (0.4 m), MHP162 (0.2 m).
Chrysene	5	MHP126 (0.1 m), MHP130 (0.15 m), MHP145 (0.1 m), MHP152 (0.4 m), MHP155 (0.4 m).
Benzo(b)fluoranthene	25	MHP105 (0.7 m), MHP108 (0.1 m), MHP123 (0.15 m), MHP125 (0.2 m), MHP126 (0.1 m), MHP130 (0.15 m), MHP130 (0.3 m), MHP133 (0.2 m), MHP135 (0.3 m), MHP140 (0.1 m), MHP142 (0.1 m), MHP144 (0.5 m), MHP145 (0.1 m), MHP145 (0.6 m), MHP152 (0.3 m), MHP152 (0.4 m), MHP153 (0.4 m), MHP155 (0.4 m), MHP156 (0.2 m), MHP159 (0.3 m), MHP160 (0.05 m), MHP162 (0.2 m), MHP167 (0.1 m), MHP167 (0.3 m), MHP173 (0.2 m).
Benzo(k)fluoranthene	1	MHP145 (0.1 m).
Benzo(a)pyrene	26	MHP105 (0.7 m), MHP108 (0.1 m), MHP117 (0.1 m), MHP123 (0.15 m), MHP125 (0.2 m), MHP126 (0.1 m), MHP129 (0.4 m), MHP130 (0.15 m), MHP130 (0.3 m), MHP133 (0.2 m), MHP135 (0.3 m), MHP140 (0.1 m), MHP142 (0.1 m), MHP144 (0.5 m), MHP145 (0.1 m), MHP145 (0.6 m), MHP152 (0.3 m), MHP152 (0.4 m), MHP153 (0.4 m), MHP155 (0.4 m), MHP156 (0.2 m), MHP159 (0.3 m), MHP160 (0.05 m), MHP162 (0.2 m), MHP167 (0.1 m), MHP167 (0.3 m).
Indeno(1,2,3-c,d)pyrene	2	MHP145 (0.1 m), MHP152 (0.4 m).
Dibenzo(a,h)anthracene	25	MHP105 (0.7 m), MHP106 (0.2 m), MHP108 (0.1 m), MHP123 (0.15 m), MHP126 (0.1 m),

Determinand	Number of exceedances	Soil sample in exceedance of residential without plant uptake screening levels
		MHP129 (0.4 m), MHP130 (0.15 m), MHP130 (0.3 m), MHP133 (0.2 m), MHP135 (0.3 m), MHP140 (0.1 m), MHP142 (0.1 m), MHP144 (0.5 m), MHP145 (0.1 m), MHP145 (0.6 m), MHP152 (0.3 m), MHP152 (0.4 m), MHP153 (0.4 m), MHP155 (0.4 m), MHP167 (0.1 m), MHP167 (0.3 m), MHP168 (0.15 m), MHP169 (0.15 m), MHP172 (0.4 m), MHP173 (0.2 m).

4.4.2 Asbestos was detected in three samples.

4.4.3 Arsenic, a zootoxic metal, was detected above residential without plant uptake screening levels in seven locations.

4.4.4 Relevant screening levels for lead were exceeded within 28 samples across the site.

4.4.5 Eight PAH compounds were detected above residential without plant uptake screening levels.

4.4.6 A plan showing the distribution of contamination is included as Appendix 3.

4.5 **PRIVATE GARDENS:**

4.5.1 Samples with contaminant concentrations in excess of the screening criteria are set out in Table 5 below.

Table 5: Exceedances of residential with plant uptake screening levels within the analysed soil samples.

Determinand	Number of exceedances	Soil sample in exceedance of residential with plant uptake screening levels
Asbestos	3	MHP112 (0.5 m), MHP123 (0.15 m), MHP161 (0.1 m).
Arsenic	10	MHP104 (0.5 m), MHP107 (0.2 m), MHP108 (0.1 m), MHP114 (0.5 m), MHP133 (0.2 m), MHP140 (0.1 m), MHP146 (0.2 m), MHP159 (0.3 m), MHP162 (0.2 m), MHP171 (0.3 m).
Cadmium	4	MHP110 (0.1 m), MHP112 (0.1 m), MHP152 (0.3 m), MHP158 (0.3 m).
Lead	58	MHP103 (0.05 m), MHP103 (0.5 m), MHP104 (0.5 m), MHP106 (0.2 m), MHP107 (0.2 m),

Determinand	Number of exceedances	Soil sample in exceedance of residential with plant uptake screening levels
		MHP108 (0.1 m), MHP109 (0.15 m), MHP109 (0.4 m), MHP110 (0.1 m), MHP114 (0.1 m) MHP114 (0.5 m), MHP115 (0.3 m), MHP116 (0.5 m), MHP117 (0.1 m), MHP123 (0.15 m), MHP123 (0.5 m), MHP124 (0.1 m), MHP127 (0.05 m), MHP127 (0.3 m), MHP128 (0.4 m), MHP129 (0.4 m), MHP130 (0.3 m), MHP131 (0.1 m), MHP132 (0.2 m), MHP133 (0.2 m), MHP134 (0.4 m), MHP135 (0.3 m), MHP137 (0.2 m), MHP139 (0.2 m), MHP139 (0.5 m), MHP140 (0.1 m), MHP140 (0.35 m), MHP142 (0.1 m), MHP143 (0.5 m), MHP145 (0.1 m), MHP146 (0.2 m), MHP150 (0.5 m), MHP152 (0.3 m), MHP152 (0.4 m), MHP153 (0.4 m), MHP154 (0.6 m), MHP155 (0.4 m), MHP156 (0.2 m), MHP157 (0.4 m), MHP158 (0.3 m), MHP159 (0.3 m), MHP159 (0.6 m), MHP160 (0.05 m), MHP161 (0.1 m), MHP161 (0.3 m), MHP165 (0.3 m), MHP166 (0.5 m), MHP167 (0.1 m), MHP167 (0.3 m), MHP169 (0.15 m), MHP170 (0.1 m), MHP172 (0.4 m) MHP173 (0.2 m).
Aromatic C12-C16	1	MHP145 (0.1 m).
Aromatic C16-C21	2	MHP145 (0.1 m), MHP152 (0.2 m).
Aromatic C21-C35	1	MHP145 (0.1 m).
Naphthalene	1	MHP145 (0.1 m).
Phenanthrene	2	MHP145 (0.1 m), MHP152 (0.4 m).
Fluoranthene	1	MHP145 (0.1 m).
Benzo(a)anthracene	9	MHP126 (0.1 m), MHP130 (0.15 m), MHP133 (0.2 m), MHP144 (0.5 m), MHP145 (0.1 m), MHP145 (0.6 m), MHP152 (0.4 m), MHP155 (0.4 m), MHP162 (0.2 m).
Chrysene	5	MHP126 (0.1 m), MHP130 (0.15 m), MHP145 (0.1 m), MHP152 (0.4 m), MHP155 (0.4 m).

Determinand	Number of exceedances	Soil sample in exceedance of residential with plant uptake screening levels
Benzo(b)fluoranthene	28	MHP105 (0.7 m), MHP108 (0.1 m), MHP114 (0.5 m), MHP117 (0.1 m), MHP123 (0.15 m), MHP125 (0.2 m), MHP126 (0.1 m), MHP129 (0.4 m), MHP130 (0.15 m), MHP130 (0.3 m), MHP133 (0.2 m), MHP135 (0.3 m), MHP140 (0.1 m), MHP142 (0.1 m), MHP144 (0.5 m), MHP145 (0.1 m), MHP145 (0.6 m), MHP152 (0.3 m), MHP152 (0.4 m), MHP153 (0.4 m), MHP155 (0.4 m), MHP156 (0.2 m), MHP159 (0.3 m), MHP160 (0.05 m), MHP162 (0.2 m), MHP167 (0.1 m), MHP167 (0.3 m), MHP173 (0.2 m).
Benzo(k)fluoranthene	1	MHP145 (0.1 m).
Benzo(a)pyrene	28	MHP105 (0.7 m), MHP108 (0.1 m), MHP116 (0.5 m), MHP117 (0.1 m), MHP123 (0.15 m), MHP125 (0.2 m), MHP126 (0.1 m), MHP129 (0.4 m), MHP130 (0.15 m), MHP130 (0.3 m), MHP133 (0.2 m), MHP135 (0.3 m), MHP140 (0.1 m), MHP142 (0.1 m), MHP144 (0.5 m), MHP145 (0.1 m), MHP145 (0.6 m), MHP152 (0.3 m), MHP152 (0.4 m), MHP153 (0.4 m), MHP155 (0.4 m), MHP156 (0.2 m), MHP159 (0.3 m), MHP160 (0.05 m), MHP162 (0.2 m), MHP167 (0.1 m), MHP167 (0.3 m), MHP173 (0.2 m).
Indeno(1,2,3-c,d)pyrene	4	MHP126 (0.1 m), MHP130 (0.15 m), MHP145 (0.1 m), MHP152 (0.4 m).
Dibenzo(a,h)anthracene	27	MHP105 (0.7 m), MHP106 (0.2 m), MHP108 (0.1 m), MHP112 (0.5 m), MHP115 (0.3 m), MHP123 (0.15 m), MHP126 (0.1 m), MHP129 (0.4 m), MHP130 (0.15 m), MHP130 (0.3 m), MHP133 (0.2 m), MHP135 (0.3 m), MHP140 (0.1 m), MHP142 (0.1 m), MHP144 (0.5 m), MHP145 (0.1 m), MHP145 (0.6 m), MHP152 (0.3 m), MHP152 (0.4 m), MHP153 (0.4 m), MHP155 (0.4 m), MHP167 (0.1 m), MHP167 (0.3 m), MHP168

Determinand	Number of exceedances	Soil sample in exceedance of residential with plant uptake screening levels
		(0.15 m), MHP169 (0.15 m), MHP172 (0.4 m), MHP173 (0.2 m).

4.5.2 Asbestos was identified in three soil samples.

4.5.3 Arsenic was detected above these screening criteria in a total of 10 soil samples, distributed across the site.

4.5.4 Cadmium was detected above screening criteria within four soil samples.

4.5.5 Lead contamination was recorded above relevant screening values within 58 of the 98 samples tested for.

4.5.6 Mid to long-chain aromatic TPH was recorded above screening levels within MHP145 (0.1 m) and MHP152 (0.2 m).

4.5.7 Ten PAH compounds were detected above residential with plant uptake screening values.

4.5.8 A plan showing the distribution of contamination is included in Appendix 3.

4.6 ZONING EXERCISE

4.6.1 Due to the very limited thickness of topsoil, the contamination within both the shallow made ground and topsoil have been considered together. It should also be noted that the made ground is likely to be of limited amenity value and may not represent a suitable growing medium for new areas of planting. This should be discussed with the landscape architect and its reuse would be subject to approval by the Local Planning Authority.

4.6.2 As a minimum replacement topsoil will be required and the existing material could only be used as subsoil, but subject to the following:

i. **Peace Garden**: Other than a small area in the south-eastern corner soils within the Peace Garden, soils can be retained without the requirement for remediation. A localised area of mitigation will be required, but this should be undertaken in such a manner as not to disturb the adjacent trees.

ii. **Outside of the Peace Garden:** chemically, very little of the soil would be suitable for retention below areas of private gardens. However, it may be possible to retain materials won from the areas shown on the Drawings in Appendix 3.

iii. Similarly, it will be possible to retain site won soils from the areas illustrated by the Drawings in Appendix 3 for reuse in areas of communal gardens as subsoil.

iv. Site won soils could be retained as a general fill for use below 600 mm in new private areas and 300 mm in communal areas without further testing or segregation. General fill can also be used below buildings, roads and in backfilling remedial excavations.

4.6.3 If it is decided to try to selectively excavate soils, there will be three classes of material:

i. Subsoil suitable for use in the extension of the Peace Garden.

ii. Subsoil suitable for retention in communal landscaped areas.

iii. Subsoil suitable for use beneath private gardens.

4.6.4 It is also considered that soils containing asbestos, cannot be used as a subsoil, but could be retained as a general fill.

4.6.5 Based upon the zoning exercise, the conceptual model for the site for shallow soils has been revised:

Table 6: Revised Conceptual Model

POSSIBLE POLLUTANT LINKAGE			RISK CHARACTERISATION
POTENTIAL SOURCES	**PATHWAYS**	**RECEPTORS**	
Heavy metals and hydrocarbons (made ground)	Contact with contaminated soil	Human health (current users)	**Low risk identified** Made ground is impacted by several forms of contamination. However, the site has few current site users.
	Ingestion and inhalation of contaminated soil and dust	Human health (current users)	
Heavy metals and hydrocarbons (made ground)	Contact with contaminated soil	Human health (future residents and construction workers)	**Low to moderate risk identified** Contamination of made ground soils metals, PAH and asbestos. However, site won soils can be reused depending upon the proposed land use.
	Ingestion and inhalation of contaminated soil and dust	Human health (future residents and construction workers)	
Asbestos (made ground and structures)	Ingestion and inhalation of contaminated soil and dust	Human health (future residents and construction workers)	**Varying – Low risk I areas where no asbestos encountered. Locally moderate to high risk identified** A significant number of asbestos detections (fibres and fragments) were reported across the site, typically in the made ground. Asbestos lagging is present in the subsurface heating system and probably in onsite buildings. However, site won soils can be reused depending upon the proposed land use.

POSSIBLE POLLUTANT LINKAGE			RISK CHARACTERISATION
POTENTIAL SOURCES	PATHWAYS	RECEPTORS	
Radiation (medical sources)	Contacted with source or contaminated material	Human health (future residents and construction workers)	**Low risk** The radiation used represents a closed source - this will have been removed from site.
Contamination (all forms)	Vertical migration to aquifer	Controlled waters	**Low risk identified** Limited shallow groundwater has been encountered and a significant thickness of London Clay acts as an aquitard to the aquifer at depth.
Contamination (all forms)	Horizontal migration to surface water	Controlled waters	**Low risk identified** Nearest surface water feature is significantly distant.
Hydrocarbons	Direct contact	Plastic water pipes	**Moderate risk identified** Significant PAH contamination presents a risk to permeable services.
Hazardous Gas/Vapours In soil	Ingress into buildings and voids	Human health (future residents and construction workers)	**Low risk identified** Based on the available data, the ground gas regime is considered to be Green (low risk).
Phytotoxic metals	Direct contact/root uptake	Ornamental planting	**Low risk identified** Concentrations of zinc were encountered above the applicable criteria in four samples. However, healthy plant growth was noted, indicating that the contamination is of limited bio-accessibility. The provision of clean cover will provide a proficient growth medium.
Adjacent Land	Horizontal migration of groundwater/gas.	Neighbouring properties	**Low risk identified** The available data indicates a low risk.

4.6.6 Contamination that requires remediation or management are limited to the following:

i. Risk to future residents from asbestos in soils;

ii. Risks of asbestos fibre release during construction, which will require management controls;

iii. Risks to future residents from metals and PAH in shallow made ground soils;

iv. Management of heating ducts;

v. Remediation of gross hydrocarbon contamination associated with the former boiler house;

vi. Risk to plastic water pipes from contamination of soils.

4.6.7 Remedial actions are considered necessary to mitigate these risks. This could include the reuse of site-won soils as appropriate and in consultation with the landscape architect.

4.6.8 Remedial requirements within the Peace Garden are limited to the south-eastern corner. Due to the presence of trees to be retained, the extent of remediation will be limited.

SECTION 5 OPTIONS APPRAISAL

5.1 Localised gross hydrocarbon contamination has been identified in the vicinity of the boiler house. This will require remediation, with soils likely to be treated on site to facilitate reuse. The most efficient and cost-effective remedial solution is likely to include a combination of bioremediation and stabilisation. A degree of post-demolition site investigation and declination following the removal of the boiler house is required to confirm the extent of impacted soils and the final remedial solution.

5.2 Where the heating ducts are located beneath the proposed buildings and infrastructure removal will be required to facilitate the development. Because these represent a physical constraint, excavation and processing is likely to represent to only viable solution. However, where the ducts remain at depths below areas of public open space or infrastructure and buildings to be retained, their complete removal is not necessary. In clean areas of clean cover, the ducts and clean soils will effectively encapsulate any residual material. Within buildings an asbestos management plan must be adopted.

5.3 With these exceptions, contamination is limited to the made ground and shallow soils beneath the site. In these areas the level of risk is governed by the proposed end-use. Here, the potential risks could be mitigated through either removal of the source or management of the potential pathways. Given the extent of made ground and nature of the development, removal or treatment of the contamination is not considered practical or viable. As a result, the most appropriate remedial solution will be through the management of potential pathways.

5.4 This will be achieved through the provision of suitable soils in areas of soft landscaping and upgraded water pipes. Buildings and hardstanding will break residual pathways and no further action is required.

5.5 Due to the limited contamination and remedial option, a full Remedial Options Appraisal is not considered appropriate.

SECTION 6 DETAILED REMEDIATION STRATEGY

6.1 SCOPE

6.1.1 Based upon the site investigation data, contamination on site can be managed through the implementation of the measures set out below. As a result, a detailed options appraisal is not considered appropriate.

6.1.2 Based upon the site investigation data obtained, potential risks to future site users, construction workers and infrastructure have been identified. As a result, remediation will be required.

6.1.3 Remediation activities will be limited to the following:

i. Decommissioning of the relict heating system;

ii. Removal of concrete slabs, sub surface structures and relict infrastructure;

iii. Removal of localised grossly impacted soils;

iv. Dewatering of contaminated pockets of perched water (if encountered) – shallow groundwater was encountered in the south of the site;

v. Provision of suitable soils in areas of soft landscaping over a deter to dig barrier – to be installed as part of the final development; and,

vi. Provision of upgraded water pipes.

6.1.4 Upon completion of the works a validation report will be prepared to include an account of the works undertaken, the results of any associated validation testing and the conclusions from environmental monitoring. Waste transfer tickets will also be provided.

6.2 DECOMMISSIONING OF THE RELICT HEATING SYSTEM

6.2.1 The heating network across the site includes tunnels and ducts radiating out from the boiler house. A demolition survey carried out by Eton Environmental of the heating system identified asbestos including hard set lagging in the tunnels, ducts and basements across the site. Where it coincides with the construction proposals the heating system will require decommissioning by a licenced asbestos removal contractor with all necessary controls in place. However, where the heating system is not interfering with the build, it could be left in *situ*.

6.3 CONCRETE SLAB AND SUB SURFACE STRUCTURE REMOVAL

6.3.1 Where concrete slabs have been encountered, they should be thoroughly inspected prior to being broken by mechanical means under a watching brief. Any visible asbestos (including bonded asbestos) should be removed in a controlled manner for off-site disposal. It is recommended that following slab removal/clearance, inspection of the ground surface is carried out and analysis of any suspect debris

encountered should be undertaken. Site personnel should be aware of the potential for encountering asbestos during the construction phase and should report any should it be encountered or suspected during the works so it may be dealt with appropriately. Measures should also be taken to damp down soils during excavation/groundworks.

6.4 **EXCAVATION OF SOILS**

6.4.1 It is anticipated that, subject to careful excavation and further testing, some site won soils could be retained on site for reuse as subsoil (there is not sufficient site won topsoil for this to provide a viable resource). To maximise the potential for reuse in areas of landscaping soils must be carefully excavated in the presence of a suitably qualified and experienced banksman.

6.4.2 Following an initial vegetation scrape, soils will be excavated and stockpiled for reuse. Stockpiles must be segregated based upon material types and their proposed reuse. The following types of material are anticipated:

i. Subsoil suitable for use in the extension of the Peace Garden.

ii. Subsoil suitable for retention in communal landscaped areas.

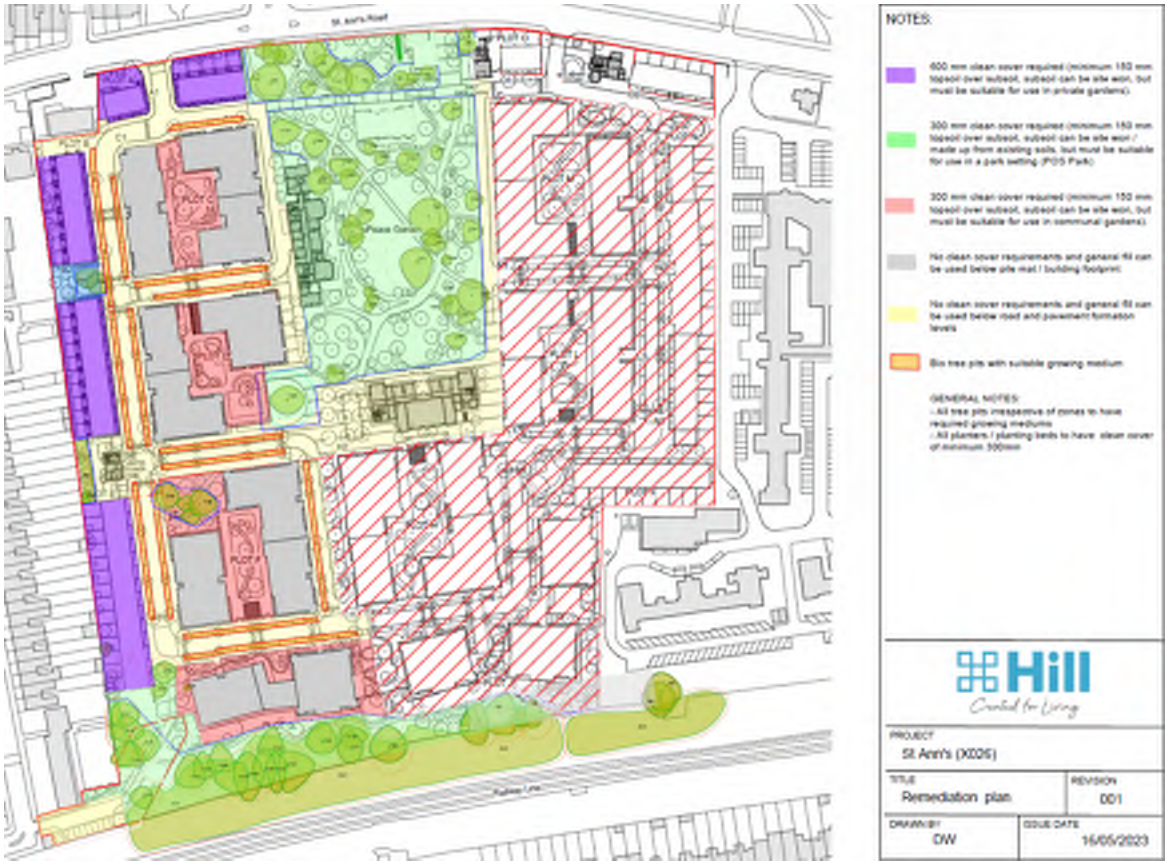
iii. Subsoil suitable for use beneath private gardens.

iv. General fill.

v. Unsuitable soils.

6.4.3 Unsuitable soils are those containing visible fragments of asbestos, or high portions of material such as brick, concrete, or glass that would render them unsuitable for use as a subsoil or adversely affect their amenity value. The reuse of soils is illustrated by Figure 3.

Figure 3: Reuse of Soils:



6.4.4 The excavation and stockpiling of soils shall be informed by the Drawings included as Appendix 3. However, this must be supplemented by supervision, inspection and testing.

6.4.5 Soils to be reused as general fill beneath capping layers do not require inspection or further testing.

6.5 GROSS CONTAMINATION

6.5.1 The site includes a tank farm comprising three above-ground tanks, it is also believed that fuel lines run from the tank farm to the boiler house. To date organoleptic evidence of contamination in this area has been limited to a strong hydrocarbon odour at MTP04. Tanks and related infrastructure should be removed in a controlled manner with method statements in place as appropriate to avoid the release of contaminated material.

6.5.2 Further intrusive investigation will be required following removal of the boiler house and tanks. This will consist of the excavation of machine-dug trial pits, supplemented by laboratory chemical analysis of soils to delineate areas of gross hydrocarbon contamination.

6.5.3 Should grossly impacted soils be encountered, they should be excavated or treated and disposed of in an appropriate manner. If free-product is encountered on groundwater it should be removed using absorbent pads or by skimming. Once the free-product has been removed the excavation shall be left open for a period of 24 hours to ensure that there is no contamination rebound. If this is the case, the process shall be repeated, and the pit left open for a further 24 hours.

6.5.4 Any areas of gross hydrocarbon contamination identified should be treated or removed off site. Verification of the removal of gross contamination will be through visual inspection.

6.6 PEACE GARDEN

6.6.1 Soils in trial pit MHP167 were found to be contaminated above the thresholds suitable for this land use. Contamination was identified in soils from 0.1 m. This area site within or adjacent to the root protection zone of a tree that is to be retained.

6.6.2 A plan showing the affected area is included in Appendix 3. Within this area soils will be carefully excavated to a maximum depth of 150 mm or to the top of the root ball. A permeable geotextile marker layer will be placed as a marker layer, with clean imported soils placed over the marker layer. The thickness of the soils will be feathered to minimise loading of the root zone.

6.6.3 The chemical quality of the soils must meet the criteria set out in Table 7. Validation of the chemical quality of clean cover shall be obtained at a rate of one sample per 250 cubic metres (a minimum of three samples per source).

6.6.4 Excavated soils shall be removed from site.

6.6.5 The extent of the remedial excavation in this area shall be validated through visual inspection only to ensure that replacement soils have been adequately placed.

6.7 RETAINED TREES

6.7.1 Contamination was also encountered in hand pits (MHP015 and MHP17) advanced around a TPO tree. It is therefore unlikely that sufficient made ground could be removed or apply caping applied in this area. Therefore, it is likely that a limited thickness is removed in a feathered manner and replaced with a geotextile and clean imported soil.

6.7.2 The same approach will apply to any trees to be retained.

6.8 NEW TREES

6.8.1 New trees must be planted in clean imported soil. The planting specification for these will be determined by the landscape architect. It is understood that some of the proposed trees will be fruit-bearing. In such instances, the soils within the proposed root zone must meet the criteria set out in Table 7.

6.8.2 In this instance, the root zone shall include the anticipated extent of root growth.

6.8.3 Validation of the chemical quality of clean cover shall be obtained at a rate of one sample per 250 cubic metres (a minimum of three samples per source).

6.9 SUITABLE SOILS

6.9.1 Clean capping is required in soft landscaped areas. This activity will require the use of suitably validated materials over a deter to gig barrier. The deter to dig barrier is not required in instances where natural uncontaminated soils are exposed. Furthermore, in these instances, the thickness of clean cover can be reduced to the top of the clean natural soils.

6.9.2 The remedial strategy requires in all newly formed areas of soft landscaping to comprise:

i. 600 mm suitable soil over a deter to dig barrier in private gardens and 300 mm in communal landscaping.

6.9.3 Clean capping may be formed of either site-won or imported materials according to the validation criteria set out in the following sections. Site won soil will, however, only be suitable for use as a sub-soil.

6.9.4 Material imported for the formation of landscaped areas should be obtained from a validated source. The validation should incorporate an assessment of the provenance of the material and chemical analysis.

6.9.5 In addition to information provided by the topsoil/subsoil supplier, validation testing shall be carried out by IDOM as set out below.

6.9.6 Once placed, the depth of placed the thickness of the clean capping shall be verified by hand-dug pit.

6.9.7 Validation of the chemical quality of clean cover shall be obtained at a rate of one sample per 250 cubic metres (a minimum of three samples per source/material type). Acceptance criteria for soil is presented in Table 7 for imported soil and Table 8 for site won soils. Site won soil may only be used a subsoil.

6.9.8 A validation report will present the above data for clean cover placed in private and communal garden areas including provenance, chemical quality and depths placed. The validation report will be provided to the Local Authority and the Environment Agency (EA) upon completion of the development.

6.9.9 The reuse of site won soils should be under a Material's Management Plan to be produced in accordance with the CLA:IRE Code of Practice.

6.10 SPECIFICATIONS FOR SOIL

6.10.1 These specifications will be additional requirements to the terms of appointment for suppliers and groundwork contractors.

6.10.2 Acceptance criteria for imported will be applied as per Table 7 below. The criteria for the reuse as site won soils as subsoil will be as per Table 8. These are based on Suitable for Use Levels (S4ULs) published in 2015 by LQM/CIEH and are subject to the proposed land use in each portion of the site. These precautionary screening levels are designed to be representative of minimal risk to human health in a residential setting (with active update). For lead the DEFRA Category 4 Screening Level has been used as this is based on updated toxicological data and a low risk to human health.

Table 7: Acceptance Criteria for Imported Topsoil and Subsoil

CONTAMINANT	UNITS	Acceptance Criteria ALL AREAS
Asbestos in soil	-	none
Anthropogenic inclusions	-	none
pH	-	6 – 9
Arsenic	$mg.kg^{-1}$	37
Cadmium	$mg.kg^{-1}$	11
Chromium (total)	$mg.kg^{-1}$	910
Hexavalent Chromium	$mg.kg^{-1}$	6
Lead	$mg.kg^{-1}$	200
Mercury	$mg.kg^{-1}$	40
Nickel	$mg.kg^{-1}$	130
Selenium	$mg.kg^{-1}$	250
TPH Aliphatic >EC_5 - EC_6	$mg.kg^{-1}$	42
TPH Aliphatic >EC_6 - EC_8	$mg.kg^{-1}$	100
TPH Aliphatic >EC_8 - EC_{10}	$mg.kg^{-1}$	27
TPH Aliphatic >EC_{10} - EC_{12}	$mg.kg^{-1}$	130
TPH Aliphatic >EC_{12} - EC_{16}	$mg.kg^{-1}$	1000*
TPH Aliphatic > EC_{16} – EC_{21}	$mg.kg^{-1}$	1000*
TPH Aliphatic > EC_{21}	$mg.kg^{-1}$	1000*
TPH Aromatic >EC_5 - EC_7	$mg.kg^{-1}$	70
TPH Aromatic >EC_7 - EC_8	$mg.kg^{-1}$	130
TPH Aromatic >EC_8 - EC_{10}	$mg.kg^{-1}$	34
TPH Aromatic >EC_{10} - EC_{12}	$mg.kg^{-1}$	74
TPH Aromatic >EC_{12} - EC_{16}	$mg.kg^{-1}$	140
TPH Aromatic >EC_{16} - EC_{21}	$mg.kg^{-1}$	260
TPH Aromatic >EC_{21}	$mg.kg^{-1}$	1000*
Benzene	$mg.kg^{-1}$	0.087
Toluene	$mg.kg^{-1}$	130
Ethylbenzene	$mg.kg^{-1}$	47
Xylene	$mg.kg^{-1}$	56
Acenaphthene	$mg.kg^{-1}$	210
Acenaphthylene	$mg.kg^{-1}$	170
Anthracene	$mg.kg^{-1}$	1000*

CONTAMINANT	UNITS	Acceptance Criteria ALL AREAS
Benz(a)anthracene	$mg.kg^{-1}$	7.2
Benzo(a)pyrene	$mg.kg^{-1}$	2.2
Benzo(b)fluoranthene	$mg.kg^{-1}$	2.6
Benzo(ghi)perylene	$mg.kg^{-1}$	320
Benzo(k)fluoranthene	$mg.kg^{-1}$	77
Chrysene	$mg.kg^{-1}$	15
Dibenz(ah)anthracene	$mg.kg^{-1}$	0.24
Fluoranthene	$mg.kg^{-1}$	280
Fluorene	$mg.kg^{-1}$	170
Indeno(123-cd)pyrene	$mg.kg^{-1}$	27
Naphthalene	$mg.kg^{-1}$	2.3
Phenanthrene	$mg.kg^{-1}$	95
Pyrene	$mg.kg^{-1}$	620
Phenol	$mg.kg^{-1}$	120
Phytotoxins	**Units**	
Copper	$mg.kg^{-1}$	200
Nickel	$mg.kg^{-1}$	110
Zinc	$mg.kg^{-1}$	300

Note: *Screening levels capped to protect amenity

Table 8: Criteria for Reuse od Site Won Material as Subsoil:

Determinand	Units	Residential with homegrown produce	Residential without homegrown produce	POSpark (Peace Garden Only)
Arsenic	$mg.kg^{-1}$	37	40	170
Cadmium	$mg.kg^{-1}$	11	85	532

Chromium (III)	$mg.kg^{-1}$	910	910	33000
Chromium (VI)	$mg.kg^{-1}$	6	6	220
Lead	$mg.kg^{-1}$	200	310	1300
Inorganic Mercury	$mg.kg^{-1}$	40	56	240
Nickel	$mg.kg^{-1}$	180	180	3400
Selenium	$mg.kg^{-1}$	250	430	1800
Aliphatic C5-6	$mg.kg^{-1}$	42	42	95000
Aliphatic C>6-8	$mg.kg^{-1}$	100	100	150000
Aliphatic C>8-10	$mg.kg^{-1}$	27	27	14000
Aliphatic C>10-12	$mg.kg^{-1}$	130	130	21000
Aliphatic C>12-16	$mg.kg^{-1}$	1100	1100	25000
Aliphatic C>16-35	$mg.kg^{-1}$	65000	65000	450000
Aliphatic C>35-44	$mg.kg^{-1}$	65000	65000	450000
Aromatic C5-7	$mg.kg^{-1}$	70	370	76000
Aromatic C>7-8	$mg.kg^{-1}$	130	860	87000
Aromatic C>8-10	$mg.kg^{-1}$	34	47	7200
Aromatic C>10-12	$mg.kg^{-1}$	74	250	9200
Aromatic C>12-16	$mg.kg^{-1}$	140	1800	10000
Aromatic C>16-21	$mg.kg^{-1}$	260	1900	7600
Aromatic C>21-35	$mg.kg^{-1}$	1100	1900	7800
Aromatic C>34-44	$mg.kg^{-1}$	1100	1900	7800
Phenol	$mg.kg^{-1}$	280	750	760
Benzene	$mg.kg^{-1}$	0.087	0.38	90
Toluene	$mg.kg^{-1}$	130	880	87000
Ethylbenzene	$mg.kg^{-1}$	47	83	17000
Xylene	$mg.kg^{-1}$	26	79	17000
Acenaphthene	$mg.kg^{-1}$	210	3000	29000
Acenaphthylene	$mg.kg^{-1}$	170	2900	29000
Anthracene	$mg.kg^{-1}$	2400	31000	150000
Benzo(a)anthracene	$mg.kg^{-1}$	7.2	11	49
Benzo(a)pyrene	$mg.kg^{-1}$	2.2	3.2	11
Benzo(b)fluoranthene	$mg.kg^{-1}$	2.6	3.9	13
Benzo(k)fluoranthene	$mg.kg^{-1}$	320	360	1400
Benzo(g,h,i)perylene	$mg.kg^{-1}$	77	110	370
Chrysene	$mg.kg^{-1}$	15	30	93
Dibenzo(a,h)anthracene	$mg.kg^{-1}$	0.24	0.31	1.1
Fluoranthene	$mg.kg^{-1}$	280	1500	6300
Fluorene	$mg.kg^{-1}$	170	2800	20000
Indeno(1,2,3-c,d)pyrene	$mg.kg^{-1}$	27	45	150
Naphthalene	$mg.kg^{-1}$	2.3	2.3	1200
Phenanthrene	$mg.kg^{-1}$	95	1300	6200
Pyrene	$mg.kg^{-1}$	620	3700	15000
Phytotoxins				
Copper	$mg.kg^{-1}$	200	200	200
Nickel	$mg.kg^{-1}$	110	110	110
Zinc	$mg.kg^{-1}$	300	300	300

6.11 COMPACTION

6.11.1 Site won or imported fill can be used to backfill remedial excavations, excavations resulting form demolition or the removal of heating ducts.

6.11.2 Material will be backfilled in 200 mm layers, stabilised and compacted to the Specification for Highways Works: Series 600 Earthworks. Compaction will be

carried out using a dozer-towed roller with a minimum of four passes. This may be increased subject to on site geotechnical testing. A banksman will ensure the correct number of passes is carried out to achieve the desired design specification.

6.12 **BOREHOLE DECOMMISSIONING**

6.12.1 If boreholes need to be removed, they should be decommissioned in accordance with Environment Agency guidance on decommissioning of redundant wells.

6.13 **DISCOVERY STRATEGY**

6.13.1 Whilst the investigation undertaken on the site is considered to be thorough, it remains possible that unexpected soil conditions may be encountered during the process of site demolition and remediation.

6.13.2 Examples may include oily pockets within the soil, pockets of cement boarding on fibrous materials within the soil, ACM, black ashy materials, soils exhibiting strong odours and underground structures.

6.13.3 Where such unexpected conditions are encountered the following approach will be taken:

i. All discoveries are to be reported to the Site Manager immediately and works at that location are to halt until further notice;

ii. The Site Manager is to report any such discoveries to the Employer's Representative who will also act as the Environmental Consultant;

6.13.4 Following notification from the Site Manager, the Environmental Consultant will discuss the discovery with the Local Authority and if considered necessary, arrange to meet an Officer on site to further assess the discovery.

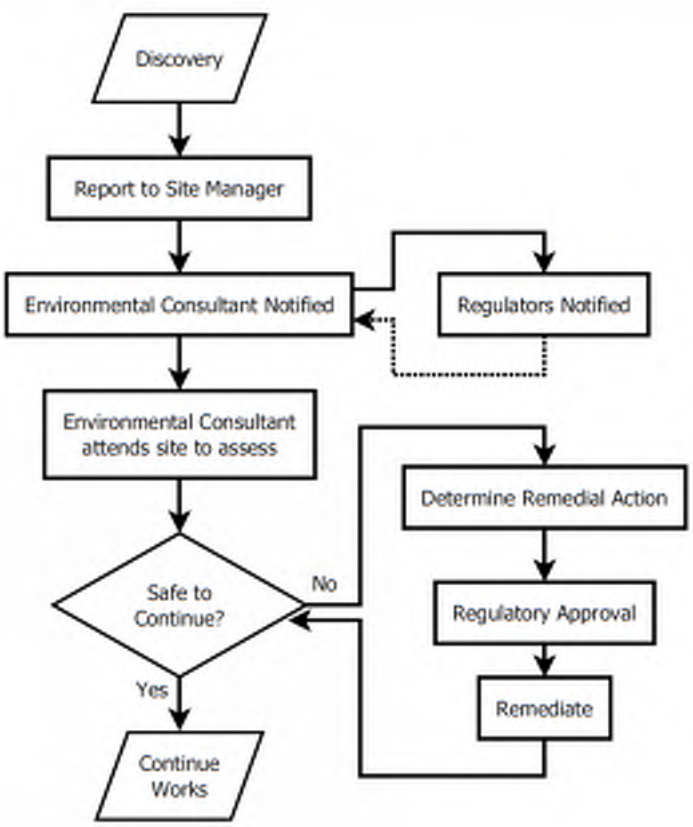
6.13.5 The Environmental Consultant will attend the site to record the location, extent and nature of the discovery and implement an appropriate sampling and analysis regime, taking due account of the type and nature of the discovery as well as known and probable land uses in that area of the site.

6.13.6 Where remedial action is required, regulatory consultation and approval will be sought.

6.13.7 A record will be produced by the Environmental Consultant or his delegates and held on site (with copies held by the Environmental Consultant, Employer's Representative and Local Authority), detailing the discovery, assessment works undertaken, findings thereof, confirmation either of no action required or detailing the remedial action taken and validation thereof.

6.13.8 A discovery strategy flow diagram is presented in Figure 4 below.

Figure 4: Discovery strategy for unforeseen contamination



6.13.9 During excavation large boulders of concrete will be segregated using mechanical excavator for subsequent processing/treatment. Segregated made ground materials will be passed through a screener to recover oversized material (>63 mm) for subsequent treatment. A proportion of this oversize material may need to be subjected to a wet screening treatment to remove surface contaminants prior to further processing/crushing to ensure that the fill criteria are met.

6.13.10 To avoid cross contamination of the ground surface, hydrocarbon contaminated materials to be stockpiled or treated will be situated upon a soil handling/treatment area with engineered leachate containment to be constructed within the site. All stockpiles will be managed and appropriately labelled with unique identification numbers.

6.14 MANAGEMENT OF POTENTIAL ASBESTOS-CONTAINING MATERIALS

6.14.1 Asbestos present has been detected in several samples as fibres and fragments of ACM have also been encountered. The principal mitigation measures are to manage the potential risks to workers and the fugitive release of fibres from the site.

6.14.2 The heating system would require decommissioning by a licenced asbestos removal contractor with all necessary controls in place. Measures will need to be taken to assess the potential for asbestos materials which have become spread beyond the ducts.

6.14.3 Should any notifiable ACMs be encountered during the works, the impacted materials area will be quarantined until additional precautions are in place to comply with an ASB5 Notification to the HSE, unless a 'blanket' notification for the works can be discussed and agreed with the HSE due to potential for unforeseen materials. ACM impacted soils will be carefully excavated under close supervision by an experienced asbestos supervisor and transferred to a quarantine area for further hand-picking treatment by trained asbestos operatives. Recovered fragments of ACM will be hand-picked and placed in appropriate containment by competent, trained asbestos operatives as a primary treatment.

6.14.4 The Environmental Consultant will direct any additional precautions that need to be taken, such as water suppression and application of soil bonding agents during excavation works. The use of fine mist water spraying combined with bonding agents would not only reduce the risk of airborne fibre release but also reduce the potential for liberation of fibres from ACMs into the soil matrix during excavation and screening operations.

6.14.5 Areas of concrete/brick materials showing evidence of asbestos contamination must be dealt with in a controlled manner in accordance with the approved codes of practice for working with asbestos containing materials. When asbestos contamination is evident in a particular area, work should not proceed until the situation has been assessed in order that the workforce is adequately protected.

6.14.6 The presence of cement-bonded asbestos materials poses a lower risk to workers and often these materials may be easily handpicked from the area. Fibrous asbestos waste poses a high risk to workers, especially when it is dry and friable. It cannot be easily separated from other materials and any work carried out must be notified to the HSE.

6.14.7 Loose fibres of asbestos have been identified in the Made Ground. Measures will be put in place to ensure working areas are kept damp and personal and site boundary fibre monitoring will be carried out to ensure loose fibres do not present a risk to the workforce or neighbouring sites.

6.14.8 During all works involving the removal and treatment of ACMs, specialist air monitoring is performed using a UKAS accredited laboratory service at an appropriate frequency for reassurance purposes to confirm that the residual asbestos fibre concentrations are below the lower limit of detection. Reassurance air sampling will be undertaken at regular intervals at boundary and workplace/personal monitoring locations.

6.14.9 The method for carrying out asbestos air monitoring and evaluation will be undertaken in accordance with HSG248 '*The Analysts Guide'*, and is by phase contrast microscopy under The Control of Asbestos Regulations (2012).

6.14.10 Reassurance air sampling will be undertaken along the perimeter of the asbestos work zones, and task-specific personal monitoring will be undertaken as deemed

necessary during risk assessment. A trigger <0.01 fibres.ml^{-1} will be the level that is not to be exceeded and will cause cessation of work until the source of the elevation is identified and rectified. This trigger level represents the lowest quantification limit using standard methodologies as set out by HSG248 and MDHS39/4. An appropriate period of baseline monitoring will be undertaken prior to commencement of any works in the ARA work zone.

6.14.11 For air monitoring a temporary site laboratory will be setup so air test results can be obtained within an hour of the test being undertaken.

6.14.12 Dust control will be achieved using deployment of fine mist suppression at the excavation point and frequent damping down/covering of any ACM stockpiles.

6.14.13 Copies of all waste consignment notices, and a completed Duty of Care Schedule will be compiled.

6.15 WASTE MANAGEMENT

6.15.1 The remediation contractor will be responsible for obtaining all necessary licences, consents and approvals relating to the processing and/or re-deposition of waste materials at the site to ensure compliance with relevant legislation.

6.15.2 Materials which cannot be re-used on site, or which are surplus to requirements, will be disposed of to suitably licensed facilities, either for recycling or for final disposal. Materials, including waste soils which are not to be retained on site, should be removed and disposed of using appropriately licensed hauliers and in accordance with all relevant statues including the *Environmental Protection Act 1990* as amended, *The Controlled Waste Regulations 2012* as amended, *The Waste Regulations 2011* as amended, *The Hazardous Waste Regulations 2005* as amended, *The Waste Management Regulations 2006, The Environmental Permitting Regulations 2010* as amended and *The Hazardous Waste (Miscellaneous Amendments) Regulations 2015*.

6.15.3 All waste transfer notes and weighbridge receipts will be made available by the contractor to the Client.

6.15.4 By careful sorting, segregation and management of arisings the contractor will seek to minimise the volume of hazardous waste which requires disposal (*e.g.* asbestos contaminated arisings will not be added to stockpiles containing other wastes).

6.15.5 Stockpiles will be managed under the guidance of a Qualified Person in accordance with the guidance provided in The Definition of Waste: Development Industry Code of Practice v2, CL:AIRE, March 2011. To comply with this guidance, a Materials Management Plan (MMP) will need to be compiled for independent review by a Qualified Person (QP) prior to declaration to the EA. Verification that the declared MMP has been adhered to will need to be included within the Site Verification Report.

6.16 ENVIRONMENTAL MONITORING, HEALTH AND SAFETY

6.16.1 A monitoring programme should be adhered to throughout the duration of the works to prevent harm to primary receptors adjacent to the site. This will include asbestos monitoring and dust monitoring along the perimeters of the site (all monitoring will have approval from the Environment Agency permitting team).

6.16.2 The remediation contractor will be responsible for ensuring appropriate health and safety measures are adhered to. The presence of asbestos and hydrocarbon contaminated soils has been highlighted. Both of these materials are hazardous by inhalation, and hydrocarbons can also be hazardous by contact. The site will be managed to provide segregation of "clean" and "dirty" areas with decontamination facilities for personnel and plant. All site works will be carried out in accordance with relevant guidance and approved codes of practice (ACOPs) in particular HSE guidance document "*Protection of Workers and the General Public during the Development of Contaminated Land"* to prevent pollution from associated works.

6.16.3 A site induction and appropriate PPE will be mandatory to protect the health and safety of all site visitors and employees.

6.16.4 The remedial works (as required) will involve the excavation, removal and replacement of soils. As with any construction project, heavy machinery will be employed during the remediation and vehicle movements to and from site will increase. It is intended to keep traffic to and from the site to a minimum by retaining as much material on site as possible.

6.16.5 Working hours will be restricted to those imposed by the local Planning Department to minimise the nuisance to local residents.

6.16.6 Every precaution will be taken to avoid interference with, or damage to public utilities, buildings and other services, in or near the site and also prevent the interruption or pollution of any adjoining watercourses, drains and ditches.

6.16.7 The remediation contractor shall comply with all relevant Planning Conditions with respect to the execution of the works. These conditions are expected to relate mainly to environmental control issues and may take the form of, but not be limited to the following :-

6.16.8 Nuisance from Noise

6.16.9 Every precaution deemed sensible and practical to prevent nuisance to neighbouring properties due to noise will be undertaken. Such precaution shall include the fitting of efficient silencers suitable for residential areas to the exhausts of the engines of all mechanical plant employed on the site. Operations shall also be limited to Mon – Fri 7.30 am to 6 pm and Sat 8 am to 1 pm.

6.16.10 Noise will be regularly monitored by the contractor. All noise monitoring records shall be kept on site for inspection by regulatory authorities.

6.16.11 Nuisance from Dust

6.16.12 During the Works, all reasonable measures (including, inter alia, the use of water bowsers as necessary) will be taken to suppress dust arising from the works, in order to prevent a nuisance to neighbouring properties. A scheme for monitoring and/or suppressing dust arising from the works will be agreed with the Local Authority in writing. The primary control of dust once the structures are removed is damping and/or sheeting as appropriate.

6.16.13 Dust should be regularly monitored during the works. This should include the use of 'Frisbee' dust collectors. Collected dust will be sent away to the laboratory for weighing and particle sizing. Monitoring results for dust deposition will be compared to the guideline values set out in '*Suggested guidelines for deposited ambient dust*', Vallack HW and Shillito DE, Atmospheric Environment Vol 32 No. 16, pp 2732-2744, 1998. Specifically, the 'complaints possible' guideline for residential areas of 150 mg m^{-2} day^{-1} and the 'complaints likely' guideline of 200 mg m^{-2} day^{-1} are referenced. If results are consistently in excess of 150 mg m^{-2} day^{-1} this will trigger a review of procedures to further minimise dust generation. If results are consistently in excess of 200 mg m^{-2} day^{-1} this will trigger a temporary cessation of works and redesign of mitigation measures to ensure dust is properly controlled.

6.16.14 Nuisance from Vapours/Odours

6.16.15 All reasonable measures for controlling vapours and odours arising from the works in order to prevent a nuisance to neighbouring properties will be employed as necessary. Where necessary odour suppression will used and odorous materials shall be covered with clean materials if necessary. Stockpiles of odorous contaminated soils will be kept as far away from external properties as possible during the works.

6.16.16 The contractor will not dispose of any materials on site by burning. Disposal of such materials shall be off site.

6.16.17 Fitting of Suppressors

6.16.18 All vehicles, excavators and other plant which operate on or near the site will be fitted with adequate electrical suppressors so that no interference is caused by them to television or radio reception in the neighbourhood.

6.16.19 Wheel Cleansing/Public Highways

6.16.20 It is not anticipated that large volumes of traffic shall be generated during the works. However, for the duration of the works, a barrier will be provided at the site entrance which prevents vehicles entering the public highway until all mud and debris is removed from the undercarriage and wheels. A mechanical sweeper will be employed as necessary to maintain clean highways in the area of the site.

6.16.21 No machinery used on site during the execution of the works shall be operated outside the limits of the site other than when travelling on public roads.

6.16.22 All vehicles carrying materials from site shall be fully sheeted before leaving the site and shall be loaded in such a way that no loose material can fall onto any highway.

6.16.23 Public highways shall not be used for the storage of materials or plant.

6.16.24 Controlled Waters

6.16.25 Existing borehole installations will be protected from damage during the works as far as possible.

6.16.26 Vehicle fuel and other potentially polluting substances shall be stored in suitable bunded secure storage areas.

6.16.27 Should the principal contractor or IDOM discover contaminated ground / groundwater conditions atypical of those found to date and which are suspected to pose a risk to any receptor, then further analysis and environmental monitoring will be instigated to quantify the risk (see Section 6.12 Discovery Strategy).

6.16.28 Surface water will be controlled by utilising the existing systems until the ground is disturbed. Once the surface has been disrupted all waters and trade effluent (excluding discharge from site accommodation) will be collected and guided to the treatment plant on site. Once treated these will be disposed of under a discharge licence. Discharge from site welfare will be disposed of in existing systems or collected by specialist carriers and transferred to handling facilities.

SECTION 7 VALIDATION REPORTING

7.1 This report sets out the appropriate stages of remediation to be adhered to during the development of the St Ann's Hospital Site. Upon completion of the groundworks, a validation report will be provided for approval and discharge of planning conditions. In summary, this will provide the following details of the remedial works undertaken:

i. Laboratory data relating to the chemical quality of imported soils, as well as details of placed thicknesses, sample locations and material provenance.

ii. Details of previously unidentified contamination and measures implemented to mitigate potential risks; Copies of analysis and monitoring records;

iii. Details of verification samples taken;

iv. Details of contamination left *in situ*;

v. A photographic record of key stages of works;

vi. Regulatory consents and permits;

vii. Details of waste disposal, including examples of tip tickets;

viii. Records of materials re-use; and

ix. Records of on-site testing.

SECTION 8 CONCLUSIONS

8.1 The site has been subject to phased investigation and a remedial strategy has been designed to ensure a safe development.

8.2 This document sets out the principles for the remediation and soil movement and also specifies how the works will be validated to demonstrate that the site is suitable for its intended use and that there are no significant adverse effects during the works.

8.3 It is necessary that this report is submitted to the Local Planning Authority (who will consult the Environmental Health Officer) and that approval of the strategy is obtained prior to commencement of development.

APPENDIX 1 ▪ Site Investigation Reports

CONTAMINATED LAND ASSESSMENT
ST ANN'S NEW NEIGHBOURHOOD
LONDON
HILL RESIDENTIAL LTD, CATALYST HOUSING LTD AND CATALYST BY DESIGN LTD
CLA-21914J-22-151
MAY 2022

CONTAMINATED LAND ASSESSMENT
ST ANN'S NEW NEIGHBOURHOOD
LONDON
HILL RESIDENTIAL LTD, CATALYST HOUSING LTD AND CATALYST BY DESIGN LTD
CLA-21914J-22-151
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EXECUTIVE SUMMARY

A Contaminated Land Assessment was requested by Hill Residential Ltd, Catalyst Housing Ltd and Catalyst by Design Ltd. The purpose of the assessment was to identify any contaminative issues associated with former land use at *St Ann's Hospital, London* which might impact on the site's redevelopment.

SITE DETAILS	
Approximate site area	7.2 ha
Current use / historic use	Former hospital
Proposed use	A mixed use development – a full description of the development is contained in Section 1.2.

PHASE 1 NON-INTRUSIVE INVESTIGATION	
Expected geology	Made ground over the London Clay Formation.
Groundwater	The London Clay is classed by the Environment Agency as an Unproductive Stratum. At the time of the RSK desk study, five licenced potable groundwater abstractions were located within 1 km. The site is within an Environment Agency defined Source Protection Zone (SPZ). The whole site is within a Zone II SPZ (Outer Protection Zone) and the extreme southeast of the site is also within a Zone I SPZ (Inner Protection Zone).
Surface water	The nearest surface water feature to site is the New River, located approximately 500 m to the south of site.

PHASE 2 EXPLORATORY INVESTIGATION	
Ground Conditions	Made Ground/topsoil was encountered up to 1.4 m bgl. Underlying the Made Ground was natural clay.
Contamination	The Made Ground was noted to contain clinker and brick and is subject to widespread contamination with respect to future site users by lead, arsenic, pH, PAH compounds and asbestos (fibres and fragments). PAH contamination was also encountered in samples of topsoil and a sample of natural clay was impacted by heavy metals (lead and arsenic). The type and nature of contamination is generally consistent with previous phases of site investigation.

RECOMMENDATIONS	
Remediation	Remedial recommendations would be limited to the decommissioning of the subsurface heating ducts (by a licenced contractor). Investigation and remediation of gross contamination associated with the tanks and boiler room. Removal of any gross contamination and relict infrastructure. Provision of clean cover in areas of soft landscaping.

Waste classification	Three samples of made ground would be classed as a hazardous waste for disposal. The remaining made ground is likely to be classed as a non-hazardous waste for disposal. Natural arisings are likely to be considered Inert waste, but contamination was encountered in some shallow samples.

SECTION 1 INTRODUCTION

1.1 Hill Residential Ltd, Catalyst Housing Ltd and Catalyst by Design Ltd proposes to develop an area of land located at the former St Ann's Hospital, London for residential development purposes. IDOM Merebrook Limited (IDOM) has been commissioned to undertake preliminary site investigation works and to advise on the geo-environmental implications of the redevelopment of the site for the proposed end use.

1.2 Description of the development

1.2.1 Hybrid Planning Application seeking permission for:

1.2.1.1 Detailed planning for Phase 1A, for:

i. The change of use, conversion and alteration of seven existing hospital buildings within Phase 1A for a flexible range of uses (Use Class E, F1 / F2);

ii. The demolition of some existing buildings (in accordance with the demolition plan);

iii. The erection of new buildings for residential uses (Use Class C3); and

iv. Alterations to the existing access road and installation of new vehicular, pedestrian and cycle accesses; landscaping including enlargement of the Peace Garden, associated car and cycle parking spaces and servicing spaces.

1.2.1.2 The demolition of existing buildings and structures in Phases 1B, 2 and 3 (in accordance with the demolition plan);

1.2.1.3 Outline planning (all matters reserved except access) for Phases 1B, 2 and 3 for:

i. The erection of new buildings for residential development (Use Class C3), commercial business and service (Use Class E), and local community and learning (Use Class F1/F2); and

ii. Associated pedestrian and cycle accesses; landscaping including enhancements to the St Ann's Hospital Wood and Tottenham Railsides Site of Importance for Nature Conservation (SINC) car and cycle parking spaces and servicing spaces.

1.3 IDOM Merebrook Limited (IDOM) has been commissioned by Hill Residential Limited, Catalyst Housing Limited and Catalyst by Design Limited to undertake preliminary site investigation works and to advise on the geo-environmental implications of the redevelopment of the site for the proposed end use.

1.4 The objectives of the investigation are to:

i. Assess surface and sub-surface ground conditions present at the site;

ii. Delineation of hotspots identified by RSK;

iii. Examination of existing below ground service ducts;

iv. Identify hazards associated with ground contamination which may place constraints on the site and the proposed development;

v. Evaluate the risks associated with any identified hazards; and

vi. Provide preliminary recommendations for the mitigation of any significant risks identified.

1.5 A Phase 1 (Non-intrusive Investigation) and a Phase 2a (Preliminary Exploratory Investigation) have been undertaken for the subject site.

1.6 The following reports have been completed for the site and were available to IDOM:

i. CAPITA; St Ann's Hospital, London – Due Diligence Report: Ground Conditions (ref: CS/094972), dated February 2018;

ii. RSK; St Ann's Hospital, London: Preliminary Risk Assessment (ref: 29356-R02 (00), dated October 2017.

1.7 The Phase 1 contained in this report summarises the findings of the reports detailed above. Borehole logs were not included in the reports above.

1.8 The contaminative status of the site and the implications with respect to development have been interpreted in accordance with the current government guidance on source-pathway-receptor risk assessment. This report uses a Tier 1 risk assessment to ascribe a conservative qualitative appraisal of the hazards associated with the site.

1.9 This report has been prepared for Hill Residential Ltd, Catalyst Housing Ltd and Catalyst by Design Ltd for the sole purpose described above and no extended duty of care to any third party is implied or offered. Third parties making reference to the report should consult Hill Residential Ltd, Catalyst Housing Ltd and Catalyst by Design Ltd and IDOM as to the extent to which the findings may be appropriate for their use.

SECTION 2 PHASE 1 (NON-INTRUSIVE INVESTIGATION)

2.1 INTRODUCTION

2.1.1 The Phase 1 investigation has been written with reference to the previous reports by RSK and CAPITA detailed Section 1.

2.2 SITE LOCATION AND SETTING

2.2.1 The site is located at National Grid Reference 532589, 188605 and indicated on drawing 21914J-304-001, presented in Appendix 1 of this report.

2.2.2 The site is located within the administrative boundary of the London Borough of Haringey and occupies a 7.2-hectare parcel, formerly part of the St Ann's Hospital complex. The buildings, the majority of which are no longer in active use, vary in styles from pre-war to refurbished post war buildings. Building heights across the site range from 2-3 storeys.

2.2.3 Vehicular and pedestrian access to the site is via St Ann's Road (N15 3TH).

2.2.4 The site comprises typically low-rise hospital buildings and related infrastructure. The site also includes soft landscaping (and a wooded area to the south) which incorporates trees with Tree Protection Orders (TPOs). A tank farm containing three above ground tanks (within a brick/concrete bund) was located in the south it is understood that fuel lines run from the tank farm to the boiler room. An engineer's workshop was also located in the south. Two electricity substations were located towards the middle of the site.

2.2.5 The site was predominantly flat with a general slope from west to east and north to south.

2.2.6 The site is bound by St Ann's Road to the north with Chestnuts Park and residential properties beyond. To the east is a further parcel of St Ann's Hospital which is undergoing redevelopment and hospital buildings that are still in use. To the south is an overground railway line with residential housing and the Arena Design Centre beyond. To the west the site is bounded by Warwick Gardens with residential housing beyond.

2.2.7 Tunnels, ducts and basements constructed as part of the hospitals service network are known to contain asbestos. A demolition asbestos survey was conducted by Eton Environmental Group and is contained in Appendix 2.

2.3 SITE HISTORY

2.3.1 The site was predominately farmland (with only a few buildings in the north) until the 1890s when a hospital was built on the site. The site has remained as a hospital with the addition of extensions and new buildings. Permanent buildings included an administrative block and water tower. A boiler house was added in 1907. A pond identified in the earliest available plan (1864) in the northwest of the site was later

infilled (by the early 1900s). The above ground fuel storage tanks in the south of the site were installed in the 1960s. An electricity substation was noted by the 1970s and a second from the 1980s (both were noted towards the middle of the site).

2.3.2 Potential contaminative land uses within 250 m of the site have included: a burial ground (120 m to the east), laundry (100 m to the northeast), bedstead factory (120 m to the northeast), St Ann's Works – plastic moulding (beyond the site boundary to the west), electricity substation (beyond the site boundary to the west), furniture works (100 m to the south), garage (150 m to the east), petrol station (130 m to the east) and an industrial estate (to the south beyond the railway line). Infilled ponds were noted 167 and 248 m to the southeast.

2.4 GEOLOGY, HYDROGEOLOGY & HYDROLOGY

2.4.1 The published geological map indicates that the site is underlain directly by London Clay (up to 150 m thick).

2.4.2 Seven boreholes were identified on site by BGS records all of which were advanced in November 1964. These are summarised as follows (logs are contained in Appendix 3):

i. TQ38NW555 (BH1): 0.15 m of topsoil over London Clay to the maximum depth drilled (18.29 m);

ii. TQ38NW556 (BH2): 0.15 m of topsoil over London Clay to the maximum depth drilled (18.29 m);

iii. TQ38NW557 (BH3): 0.15 m of topsoil over London Clay to the maximum depth drilled (9.15 m);

iv. TQ38NW558 (BH4): 0.15 m of topsoil over London Clay to the maximum depth drilled (3.05 m);

v. TQ38NW559 (BH5): 0.15 m of topsoil over London Clay to the maximum depth drilled (3.05 m);

vi. TQ38NW561 (BH7): 0.3 m of topsoil over London Clay to the maximum depth drilled (3.35 m). The borehole was repositioned three times due to obstructions close to the surface; and

vii. TQ38NW573 (BH20): 0.23 m of topsoil over London Clay to the maximum depth drilled (18.29 m)

2.4.3 The London Clay is classed by the Environment Agency as an Unproductive Stratum. At the time of the RSK desk study, five licenced potable groundwater abstractions were located within 1 km. The site is within an Environment Agency defined Source Protection Zone (SPZ). The whole site is within a Zone II SPZ (Outer Protection Zone) and the extreme southeast of the site is also within a Zone I SPZ (Inner Protection Zone).

2.4.4 The nearest surface water feature is the New River, located approximately 500 m to the south of site.

2.4.5 The site is within flood Zone 1 as defined by the Environment Agency. This means it has a low probability of flooding from rivers and the sea.

2.5 CURRENT SITE ISSUES

2.5.1 Potentially significant environmental issues have been investigated within relevant distances of the site, based on the database of records supplied by Groundsure and contained in the RSK report.

i. Water discharge or pollution incidents within 250 m of the site;

ii. Waste management sites within 250 m of the site;

iii. Statutory authorisations within 50 m of the site;

iv. Trade directory entries of possible contaminative use within 50 m of the site;

v. Special protection or conservation areas within 50 m of the site; and

vi. Any other relevant issues.

2.5.2 Potentially significant environmental issues identified by the above searches are summarised in Table 1 below.

Table 1: Potentially significant environmental issues

ENVIRONMENTAL CATEGORY	DESCRIPTION
Water discharge or pollution incidents within 250 m	A discharge consent was recorded 226 m to the west of site. The consent was for a sewer storm overflow into Tonebridge Brook. A pollution incident was recorded 92 m to the southeast in 2003. The incident was recorded as Category 4 (no impact) and involved oils and fuels.
Waste management sites within 250 m	No waste management sites were identified within 250 m (active or historic).
Statutory authorisations within 50 m	None within 50 m. St Ann's Hospital had a Category 3 or 4 radiative substances licence which was revoked in 2015.
Trade directory entries of possible contaminative use within 50 m	An ambulance station (6 m to the north), electricity substation (19 m to the north and 32 m to the west) and a construction supply company (49 m to the south) were located within 50 m of the site.

ENVIRONMENTAL CATEGORY	DESCRIPTION
	Two former fuel stations were noted with 150 m of the site (127 m east and 150 m south). Two electricity substations and three tanks (in the same area) were identified on site.
Special protection or conservation areas within 50 m	TPOs were in place for a number of mature trees on site. RSK identify the woodland to the south of the site as being covered by a TPO and a site of Important Nature Conservation (SNIC) – of local importance. The northern extent of the site is within St Ann's Conservation Area. Two locally listed buildings are present on site (Mayfield House and Orchard House).
Other relevant issues	RSK indicated that the London Fire and Emergency Planning Authority (LFEPA) had no records of current or former below ground tanks at the site.

2.6 RADON GAS

2.6.1 The site does not lie within a Radon Affected Area as defined by the former Health Protection Agency, now Public Health England (<1% of houses are above the action level). Guidance issued by the Buildings Research Establishment (BRE-211) indicates that radon protection measures would not be required in new buildings.

2.7 PREVIOUS INVESTIGATIONS

2.7.1 A site investigation was produced by RSK in 2017. The report was reviewed by CAPITA in 2018.

2.7.1.1 The RSK investigation report was not available to IDOM, reference is made to the 2018 CAPITA report.

2.7.1.2 The RSK comprised the following scope of works:

i. 20 boreholes (eight boreholes to 25 m bgl and 12 boreholes to 15 m bgl);

ii. 16 window sample boreholes to a maximum depth of 5 m bgl;

iii. Three machine dug trial pits to a maximum depth of 3.0 m bgl;

iv. Four hand pits to a maximum depth of 0.7 m bgl; and

v. Six rounds of gas monitoring of the installed wells.

2.7.1.3 Thirty-two soil samples were recovered by RSK and submitted for analysis.

2.7.1.4 A screening exercise was undertaken by CAPITA whereby contaminant concentrations recorded in soils have been assessed against Suitable for Use Levels (S4ULs) published in 2015 by LQM/CIEH . These precautionary screening levels are designed to be representative of minimal risk to human health in a number of

land use scenarios. S4ULs were selected for a residential land use where the possibility of consumption of homegrown produce exists and assuming a soil organic matter of 1 %. For lead the DEFRA Category 4 Screening Level was used.

Table 2: Summary of soil chemical exceedances

CONTAMINANT	No of Tests	SCREENING LEVEL (SL) ($mg.kg^{-1}$)	No > SL*	Location/depth	Concentration (mg/kg)
HUMAN HEALTH RISK ASSESSMENT					
Asbestos in soil	15	Detected	3	BH8 (0.5 m)	Chrysotile loose fibres
				WS9 (0.5 m)	Chrysotile loose fibres
				WS16 (1.0 m)	Chrysotile & amosite loose fibres
Arsenic	25	37	1	WS18 (0.5 m)	75
Lead	25	200	5	BH1 (0.3 m)	265
				BH12 (0.4 m)	263
				BH15 (0.5 m)	215
				WS16 (2.5 m)	269
				WS18 (0.5 m)	350
Benzo(a)anthracene	18	7.2	2	BH4 (0.3 m)	17.8
				WS10 (0.1 m)	104
Chrysene	18	15	2	BH4 (0.3 m)	16.5
				WS10 (0.1 m)	91.8
Benzo(b)fluoranthene	18	2.6	3	BH4 (0.3 m)	16.9
				WS10 (0.1 m)	126
				WS18 (0.5 m)	3.69
Benzo(a)pyrene	18	2.2	3	BH4 (0.3 m)	16.1
				WS10 (0.1 m)	112
				WS18 (0.5 m)	2.92
Dibenzo(a,h)anthracene	18	0.24	3	BH4 (0.3 m)	1.46
				WS10 (0.1 m)	8.99
				WS18 (0.5 m)	0.4
Indeno(1,2,3-c,d)pyrene	18	27	1	WS10 (0.1 m)	61

2.7.1.5 The majority of exceedances were encountered in samples of made ground, but the lead exceedance at BH12 (0.4 m) was associated with the London Clay. Heavy metal exceedances appear to be scattered across the site while PAH exceedances were limited to the southern portion of the site.

2.7.1.6 It was also noted by IDOM that the phytotoxic criteria for zinc (300 mg/kg) was exceeded (491 mg/kg) at on one location (BH6 at 0.5 m) within shallow made ground. But it does not appear to have effected plant growth in the area.

2.7.1.7 Six rounds of gas monitoring were undertaken at five locations (WS2, WS4, WS16, WS17 and BH17). The monitoring locations included potential gassing areas – the infilled pond (WS2) and above ground tanks/boiler house (WS17 and BH17). The monitoring rounds were undertaken at barometric pressures ranging from 1001 to 1025mb. Flow was recorded in the range 0.0 to 0.6 l/hr. Over the six monitoring rounds methane (CH4) was not detected, carbon dioxide (CO2) was detected to a maximum of 3.1 % v/v with a corresponding depleted oxygen concentration of 19.0 % v/v. It was unclear if VOC monitoring had been carried out by RSK.

2.7.1.8 Groundwater level data indicated that WS2, WS4, WS5 and WS16 were dry during each monitoring round (it is not known how deep the wells were or the response zones). Groundwater/perched water was encountered at WS17 and BH17 (advanced in the south of the site, close to the tank farm), groundwater levels ranged from 1.08 to 1.75 m bgl.

2.8 PRELIMINARY CONCEPTUAL SITE MODEL AND RISK ASSESSMENT

2.8.1 From the Phase 1 assessment a preliminary site conceptual model and risk assessment have been produced using the framework established in Part IIA of the *Environmental Protection Act 1990* and detailed in Environment Agency guidance *Land Contamination Risk Management* published on gov.uk.

2.8.2 Risk from contamination has been assessed using the source-pathway-receptor and pollutant linkage methodology, whereby a risk can only exist if all elements of: source, pathway and receptor, are present.

2.8.3 The highlighted contaminant sources have been identified as follows;

i. Asbestos in Made Ground due to demolition of former buildings and subsurface ducts;

ii. Heavy metals in made ground;

iii. PCBs related to the two electrical substations;

iv. Radiation from medical sources;

v. Local TPH due to spills related to the tank farm and related structures (boiler house/fuel lines, workshops); and

vi. Hazardous ground gas – in particular relating to the tank farm/associated infrastructure and infilled pond).

2.8.4 Potential pathways include the following;

i. Asbestos and TPH contamination pathways include all inhalation, ingestion, and dermal contact. Significant TPH may also present a vapour risk and a risk to infrastructure such as polymeric services; and

ii. Heavy meatal contamination include ingestion, and dermal contact;

iii. Radiation contamination pathways include ingestion, and dermal contact.

iv. Inhalation and air displacement from ground gas accumulation in the proposed development.

2.8.5 Potential receptors are identified below;

i. Human health receptors including current and future site users are subject to risk from the selected contaminants including ground gases; and

ii. Environmental receptors such as sensitive groundwater are subject to risk from TPH contamination.

2.8.6 From the Phase 1 assessment a preliminary site conceptual model has been produced as Table 3 which identifies the potential pollutant linkages. These have been used to inform the Phase 2 intrusive investigation presented in the subsequent sections.

Table 3: Preliminary Conceptual Model

POSSIBLE POLLUTANT LINKAGE			RISK CHARACTERISATION
POTENTIAL SOURCES	**PATHWAYS**	**RECEPTORS**	
Heavy metals and hydrocarbons (made ground)	Contact with contaminated soil	Human health (current users)	**Low risk identified** Very few current site users, the majority of the site is capped with buildings or hardstanding.
	Ingestion and inhalation of contaminated soil and dust	Human health (current users)	
Heavy metals and hydrocarbons (made ground)	Contact with contaminated soil	Human health (future residents and construction workers)	**Moderate risk identified** PAH contaminations was encountered in made ground by RSK. A potential PCB risk exists due to the two electricity substations onsite.
	Ingestion and inhalation of contaminated soil and dust	Human health (future residents and construction workers)	
Asbestos (made ground)	Ingestion and inhalation of contaminated soil and dust	Human health (future residents and construction workers)	**Moderate to high risk** Asbestos was encountered in made ground by RSK and subsurface ducts are known to contain asbestos lagging. It is likely buildings containing asbestos and demolition surveys should be undertaken for all structures prior to demolition.
Radiation (medical sources)	Contacted with source or contaminated material	Human health (future residents and construction workers)	**Low risk** The radiation used represents a closed source - this will have been removed from site and is unlikely to be persistent or significantly impacted upon soils.
Contamination (all forms)	Vertical migration to aquifer	Controlled waters	**Low to moderate risk identified** Cannot rule out local hydrocarbon contamination at this stage, but shallow ground/perched water was limited to the south of the site. A significant thickness of London Clay will protect the deep aquifer used for potable supply.

POSSIBLE POLLUTANT LINKAGE			RISK CHARACTERISATION
POTENTIAL SOURCES	PATHWAYS	RECEPTORS	
Contamination (all forms)	Horizontal migration to surface water	Controlled waters	**Low risk identified** No surface waters in close vicinity.
Hydrocarbons	Direct contact	Plastic water pipes	**Moderate risk identified** PAH contamination previously encountered in made ground by RSK would be a risk to services.
Hazardous Gas/Vapours In soil	Ingress into buildings and voids	Human health (future residents and construction workers)	**Low to moderate risk identified** Potential for made ground which could act as source of hazardous gas. Cannot rule out fuel spillages as source of vapours. RSK did not encounter a significant gassing regime during six rounds of monitoring.

SECTION 3 SITE INVESTIGATION RATIONALE

3.1 INTRODUCTION

3.1.1 A site investigation rationale has been devised in accordance with the findings of the Phase 1 investigation and the resultant preliminary conceptual site model and risk assessment. Priority contaminants were identified as asbestos, PAH, and heavy metals.

3.1.2 Intrusive sampling locations were targeted as detailed below.

Table 4: Summary of features targeted

FEATURE	INVESTIGATION LOCATIONS
BH8 (loose chrysotile fibres) hotspot	MTP01, MTP02 & MTP03
BH12 (lead) hotspot	MHP01
BH4 (benzo(a)pyrene) hotspot	MHP12, MHP13 & MHP14
WS9 (loose chrysotile fibres) & BH15 (lead) hotspot	MHP03 & MHP04
Fuel farm, WS16 (chrysotile and amosite insulation)	MTP04
WS18 (benzo(a)pyrene, arsenic & lead)	MTP05
General coverage	MHP02
General coverage	MHP05
WS18 hotspot	MHP06

FEATURE	INVESTIGATION LOCATIONS
BH1/TP3 hotspot	MHP07, MHP08 & MHP09
General coverage	MHP10 & MHP11
Tree protection area	MHP15, MHP16 & MHP17
Shallow ducts	MHP03, MHP04, MHP10 and MHP11

3.2 SITE INVESTIGATION METHODS

3.2.1 An intrusive investigation was carried out by IDOM 21 March to 25 March 2022 and comprised the following scope of work:

i. Five machine-dug trial holes (MTP1 to MTP5) to a depth of 3.0 m bgl (these were targeted in areas of previously identified contamination, in the vicinity of ducts and the tank farm/boiler house);

ii. 17 hand-dug trial pits (MHP1 to MHP17) to a maximum depth of 1.3 m bgl (these were also targeted in areas of previously identified contamination, in the vicinity of ducts and the tank farm/boiler house); and

iii. Six concrete cores (MC01 to MC06) to a maximum thickness of 0.3 m (targeted beneath the buildings to understand the potential for contamination in these areas).

iv. Chemical testing for a wide variety of contaminants including the contaminants of concern; and

v. Gas and groundwater monitoring at serviceable RSK boreholes.

3.2.2 Exploratory hole locations are indicated on drawing 21914J-304-001 in Appendix 1. Logging of exploratory holes was undertaken by a IDOM officer. Exploratory hole logs are contained in Appendix 3.

3.2.3 Free access was not possible across the site, only five machine dug trial pits were possible as a result hand dug trial pits were excavated to prove the thickness of the made ground and enable the collection of samples for chemical analysis. It is considered that the constraints encountered during the current phase of investigation will be rectified during the post-demo phase of investigation.

3.2.4 Representative soil samples were taken from various depths and strata to assess the contaminative status of the site. Soil samples were submitted to an MCERTS/ UKAS accredited laboratory for chemical analysis of a broad suite of potential contaminants. Samples recovered close to the tank farm were also analysed for VOCs. The results are provided in Appendix 4.

SECTION 4 GROUND CONDITIONS

4.1 SURFACE GROUND CONDITIONS

4.1.1 The majority of the site is covered with hardstanding (concrete, bituminous surfacing and buildings), but significant areas of soft landscaping are located across the site (particularly along the southern boundary).

4.1.2 Trial pits MTP01, MTP02, MTP03, MHP01, MHP02, MHP03, MHP04, MHP05, MHP06, MHP07, MHP08, MHP09 and MHP10 were advanced in areas of soft landscaping.

4.1.3 Trial pits MTP04, MTP05, MHP11, MHP12, MHP13 were advanced in areas of bituminous surfacing.

4.2 SUB-SURFACE GROUND CONDITIONS

4.2.1 The encountered ground conditions were made ground over London Clay which is consistent with the published geology. No ducts were encountered.

4.2.2 A summary of the ground conditions encountered is presented in Table 5, whilst a more detailed assessment of the strata is contained in the following sections of the report.

Table 5: Summary of Sub-surface Ground Conditions

STRATA	DEPTH TO TOP RANGE (m bgl)	THICKNESS RANGE (m)
Topsoil	0.0	0.2 – 0.4
Made Ground: Bituminous surfacing	0.0	0.15
Made Ground: Total	0.0 – 0.4	0.1 – 1.4
London Clay	0.1 – 1.4	2.0+

4.2.3 Topsoil

4.2.3.1 Topsoil was encountered at four locations (MHP14 to MHP17) and generally comprised soft brown slightly sandy clay with rootlets.

4.2.4 Made Ground

4.2.4.1 Made ground was encountered at each investigation location and generally comprised sandy clay to gravelly sand/sandy gravel with inclusions of concrete, brick, flint, glass, clinker, ceramic fragments, ash mudstone and sandstone. Plastic geogrid was recorded at MTP02 (0.2 to 0.3 m bgl).

4.2.4.2 A fragment of asbestos cement (chrysotile) was observed at MTP05 (0.15 to 0.6 m bgl). Suspected asbestos containing material was encountered in the form of

frequent fragments of cement sheeting (MTP01 from 0.3 m bgl) and a large felt/textile fragment (MTP02 at 0.4 to 1.0 m bgl). MTP01 was terminated at 0.4 m to prevent disturbance of asbestos within the pit.

4.2.4.3 A layer of ash and clinker was encountered at MTP03 (0.6 to 0.65 m bgl) and MHP03 (0.5 to 0.7 m bgl). A strong hydrocarbon odour was reported at MTP04 within made ground.

4.2.4.4 A concrete beam was encountered at MTP02 (0.3 to 0.4 m bgl) and a concrete obstruction was encountered between 1.0 and 1.6 m bgl in the same location. A concrete slab was recorded at MTP03 (0.65 to 1.1 m bgl). Concrete cobbles were reported at MHP02 (0.7 to 0.75 m bgl).

4.2.4.5 Concrete cores were conducted at six locations (MC01 to MC06) to determine the thickness of the concrete slab beneath buildings and enable sampling of the underlying soils. Thicknesses ranged from 0.15 to 0.3 m as indicated in the table below.

Table 6: Concrete core thicknesses

ID	CORE THICKNESS (m)
MC01	0.3
MC02	0.2
MC03	0.3
MC04	0.15
MC05	0.2
MC06	0.2

4.2.5 Natural Ground

4.2.5.1 London Clay was encountered at MTP03, MTP04, MTP05, MHP01 to MHP09, MHP11 to MHP14.

4.2.5.2 London Clay generally comprised firm to stiff light brown silty sandy clay to greyish brown silty clay.

4.2.5.3 Groundwater/perched water was encountered at MTP04 (1.5 m bgl).

SECTION 5 ENVIRONMENTAL ASSESSMENT

5.1 SOIL QUALITY

5.1.1 A total of 29 soil samples were submitted to the laboratory for chemical analysis, including six samples from natural ground, two from topsoil and 21 samples from

made ground. The laboratory chemical analysis certificates are contained in Appendix 4. The results of the analysis are summarised in Table 7.

5.1.2 An initial screening exercise has been undertaken whereby contaminant concentrations recorded in soils have been assessed against *Suitable for Use Levels* (S4ULs) published in 2015 by LQM/CIEH[1]. These precautionary screening levels are designed to be representative of minimal risk to human health in a number of land use scenarios. In this report S4ULs have been selected for a residential land use where the possibility of consumption of homegrown produce exists and assuming a soil organic matter of 2.5 %. For lead the DEFRA Category 4 Screening Level[2] has been used as this is based on updated toxicological data and a low risk to human health.

5.1.3 An additional set of phytotoxin screening levels have been adopted from 'The Code of Agricultural Practice for the Protection of Soil' Ministry of Agriculture, Fisheries and Food (MAFF), 1993, which are protective of healthy plant growth.

Table 7: Summary of Soils Chemical Analysis Results

CONTAMINANT	No of Tests	MAX ($mg.kg^{-1}$)	MEAN ($mg.kg^{-1}$)	SCREENING LEVEL (SL) ($mg.kg^{-1}$)	No > SL*
HUMAN HEALTH RISK ASSESSMENT					
Asbestos in soil	17	detected	-	Detected	3
pH	28	9.5	8.2	5 – 9	6
Arsenic	28	72.0	27.1	37	8
Cadmium	28	4.1	0.6	11	0
Chromium (total)	28	60.0	36.6	910	0
Hexavalent Chromium	28	4.0	4.0	6	0
Lead	28	760.0	226.9	200	14
Mercury	28	6.6	0.8	40	0
Nickel	28	60.0	31.5	130	0
Selenium	28	1.0	1.0	250	0
TPH Aliphatic >EC_5 - EC_6	28	0.001	0.001	78	0
TPH Aliphatic >EC_6 - EC_8	28	0.001	0.001	230	0
TPH Aliphatic >EC_8 - EC_{10}	28	0.001	0.001	65	0
TPH Aliphatic >EC_{10} - EC_{12}	28	1.20	1.01	330	0
TPH Aliphatic >EC_{12} - EC_{16}	28	7.50	2.83	2400	0
TPH Aliphatic >EC_{16} - EC_{21}	28	37.00	10.24	92000	0
TPH Aliphatic >EC_{21} - EC_{35}	28	110.00	24.43	92000	0

[1] Nathanail, C. P., McCaffrey, C., Gillett, A. G., Ogden, R. C. and Nathanail, J. F. 2015. *The LQM/CIEH S4ULs for Human Health Risk Assessment*. Land Quality Press, Nottingham. Copyright Land Quality Management Limited reproduced with permission; Publication Number S4UL3100. All rights reserved. Including August 2015 nickel update.

[2] SP1010 *Development of Category 4 Screening Levels Main Report* (Dec 2013) and SP1010 *Policy Companion Document* (Mar 2014).

CONTAMINANT	No of Tests	MAX ($mg.kg^{-1}$)	MEAN ($mg.kg^{-1}$)	SCREENING LEVEL (SL) ($mg.kg^{-1}$)	No > SL*
TPH Aromatic >EC_5 - EC_7	28	0.001	0.001	140	0
TPH Aromatic >EC_7 - EC_8	28	0.001	0.001	290	0
TPH Aromatic >EC_8 - EC_{10}	28	0.001	0.001	83	0
TPH Aromatic >EC_{10} - EC_{12}	28	2.10	1.15	180	0
TPH Aromatic >EC_{12} - EC_{16}	28	30.00	5.21	330	0
TPH Aromatic >EC_{16} - EC_{21}	28	350.00	40.04	540	0
TPH Aromatic >EC_{21} - EC_{35}	28	470.00	83.46	1500	0
Benzene	28	0.001	0.001	0.17	0
Toluene	28	0.001	0.001	290	0
Ethylbenzene	28	0.001	0.001	110	0
Xylene	28	0.002	0.002	130	0
Naphthalene	28	0.60	0.10	5.6	0
Acenaphthylene	28	8.20	0.56	420	0
Acenaphthene	28	2.50	0.27	510	0
Fluorene	28	7.10	0.57	400	0
Phenanthrene	28	73.00	6.20	220	0
Anthracene	28	24.00	1.64	5400	0
Fluoranthene	28	120.00	9.96	560	0
Pyrene	28	98.00	8.32	1200	0
Benzo(a)anthracene	28	53.00	4.84	11	2
Chrysene	28	42.00	3.85	22	1
Benzo(b)fluoranthene	28	49.00	4.44	3.3	8
Benzo(k)fluoranthene	28	15.00	2.08	93	0
Benzo(a)pyrene	28	42.00	4.32	2.7	11
Indeno(1,2,3-c,d)pyrene	28	19.00	2.04	36	0
Dibenzo(a,h)anthracene	28	6.40	0.60	0.28	13
Benzo(g,h,i)perylene	28	18.00	2.18	340	0
Phenol	28	1.0	1.0	200	0
PHYTOTOXICITY RISK ASSESSMENT					
Copper	28	110.0	52.9	200	0
Nickel	28	60.0	31.5	110	0
Zinc	28	1200.0	187.2	300	4

Notes: * Number of samples exceeding screening level nd = not detected

5.1.4 Zootoxic Metals (harmful to human health)

5.1.4.1 Several zootoxic metals are above the screening level for harmful to human health:

i. Arsenic was detected at concentrations in excess of the screening criteria in eight samples. This included seven samples (MTP04 at 0.5 m, MHP05 at

0.2 m, MHP05 at 0.5 m, MHP07 at 0.2 m, MHP08 at 0.3 m, MHP13 at 0.4 m and MHP15 at 0.3 m) of made ground and one sample of natural ground (MHP06 at 0.3 m). The majority of samples of made ground were associated with inclusions of clinker and brick; and

ii. Lead was detected at concentrations in excess of the screening criteria in fourteen Samples. This included twelve samples (MTP01 at 0.2 m, MTP02 at 0.4 m, MTP03 at 0.6 m, MHP02 at 0.45 m, MHP03 at 0.5 m, MHP04 at 0.3 m, MHP05 at 0.2 m, MHP07 at 0.2 m, MHP08 at 0.3 m, MHP09 at 0.15 m, MHP10 at 0.3 m, MHP15 at 0.3 m) of made ground, one sample of natural ground (MHP06 at 0.3 m) and one sample of topsoil/made ground (MHP17 at 0.2 m). The majority of samples of made ground were associated with inclusions of clinker and brick. The sample from MHP03 comprised ash and clinker.

5.1.5 **Phytotoxic Metals (harmful to plant health)**

5.1.5.1 Four exceedances (MTP03 at 0.6 m, MHP02 at 0.45 m, MHP04 at 0.3 m and MHP05 at 0.2 m) of the phytotoxic screening level for zinc were encountered in samples of made ground. Each sample was associated with inclusions of brick and clinker.

5.1.6 **Organic Contaminants**

5.1.6.1 Several polyaromatic hydrocarbons (PAHs) compounds were recorded at concentrations above the applicable human health criteria:

i. Benzo(a)anthracene was detected at concentrations in excess of the screening criteria in two samples of made ground (MTP01 at 0.2 m and MTP03 at 0.6 m). The sample from MTP01 was associated with inclusions of brick and the sample from MTP03 comprised ash and clinker.

ii. Chrysene was detected at a concentration in excess of the screening criteria in a sample of made ground from MTP03 (0.6 m). The sample comprised ash and clinker.

iii. Benzo(b)fluoranthene was detected at concentrations in excess of the screening criteria in eight samples of made ground (MTP01 at 0.2 m, MTP02 at 0.4 m, MHP02 at 0.45 m, MHP05 at 0.2 m, MHP07 at 0.2 m, MHP08 at 0.3 m, MHP11 at 0.3 m and MHP12 at 0.2 m). The majority of samples of made ground were associated with inclusions of clinker and brick;

iv. Benzo(a)pyrene was detected at concentrations in excess of the screening criteria in eleven samples. This included ten samples (MTP01 at 0.2 m, MTP02 at 0.4 m, MTP03 at 0.6 m, MTP05 at 0.7 m, MHP02 at 0.45 m, MHP05 at 0.2 m, MHP07 at 0.2 m, MHP08 at 0.3 m, MHP11 at 0.3 m and MHP12 at 0.2 m,) of made ground and one sample of topsoil (HP14 at 0.3 m). The majority of samples of made ground were associated with inclusions of clinker and brick. The sample from MTP03 comprised ash and clinker.

v. Dibenzo(a,h)anthracene was detected at concentrations in excess of the screening criteria in thirteen samples. This included twelve samples (MTP01 at 0.2 m, MTP02 at 0.4 m, MTP03 at 0.6 m, MTP05 at 0.3 m, MHP02 at 0.45 m, MHP03 at 0.5 m, MHP04 at 0.3 m, MHP05 at 0.2 m, MHP07 at 0.2 m, MHP08 at 0.3 m, MHP11 at 0.3 m and MHP12 at 0.2 m) of made ground and one sample of topsoil (MHP14 at 0.3 m). The majority of samples of made ground were associated with inclusions of clinker and brick. The samples recovered from MTP03 and MHP03 comprised ash and clinker. The sample recovered from MTP04 was recovered in close proximity to the above ground tanks in the south of the site. A strong hydrocarbon odour was also noted.

5.1.6.2 VOCs and BTEX concentrations in the made ground and underlying London Clay at MTP04 (where a strong hydrocarbon odour was encountered) were recorded at concentrations less than the laboratory level of detection. Furthermore, TPH or PAH were not significantly elevated.

5.1.6.3 Access issues due to the operation al nature of parts of the site prevented investigation locations being advanced in close proximity to the two known electricity substations. A post demolition investigation will include the analysis of samples for PCBs beneath the electricity substations.

5.1.7 **Inorganic Contaminants**

5.1.7.1 Elevated pH was recorded in six samples (MTP02 at 0.4 m, MTP04 at 0.5 m, at 0.3 m, MHP12 at 0.2 m, MHP13 at 0.4 m and MHP15 at 0.3 m). This is considered likely to relate to concrete and brick/mortar fragments.

5.1.7.2 Asbestos was detected in three of the seventeen samples screened (this included six samples of the underlying material beneath concrete cores). Asbestos was detected in sample MHP04 (0.3 m) as loose chrysotile and amosite fibres at a concentration of 0.001%. Sample MHP05 (0.2 m) contained chrysotile rope at a concentration of 9.459 %. Of the six samples recovered beneath the cored concrete slab, asbestos was encountered at one location (Core 2) in the form of chrysotile fibres at a concentration of <0.001%. Core 2 was recovered beneath a building constructed in the 1980s/1990s following the demolition of earlier structures. It is considered that asbestos contamination is likely beneath the newer buildings across the site (built following the demolition of earlier structures).

A fragment of asbestos cement (chrysotile) was encountered at MTP05 (0.15 to 0.6 m bgl). Suspected asbestos containing material was encountered in the form of frequent fragments of cement sheeting (MTP01 from 0.3 m bgl) and a large felt/textile fragment (MTP02 at 0.4 to 1.0 m bgl). MTP01 was terminated at 0.4 m to prevent disturbance of asbestos within the pit.

5.1.8 **Summary**

5.1.8.1 The Made Ground was noted to contain clinker and brick is subject to widespread contamination by lead, arsenic, pH, PAH compounds and asbestos. PAH

contamination was also encountered in samples of topsoil and a sample of natural clay was impacted by heavy metals (lead and arsenic).

5.2 GROUNDWATER

5.2.1 Groundwater level monitoring and sampling was undertaken on one occasion (13 April 2022) at serviceable RSK monitoring installations (BH17 and WS16). A water strike was recorded at 1.5 m bgl at MTP04 during the IDOM investigation. Resting water levels were recorded between 0.85 and 2.11 m bgl (comparable to RSKs monitoring), given the proximity between the two locations (east of the tank farm) this would appear to be isolated pockets of perched water rather than a continuous groundwater body. IDOM trial pits in the area (MTP04 and MTP05) indicate that that the made ground in this area was predominantly sandy gravel/gravelly sand. Furthermore, it is not clear if the borehole installation (BH17) was deeper and has become blocked (logs were not available to IDOM).

5.2.2 Groundwater samples were recovered from BH17 and WS16 and submitted to the laboratory for analysis of a typical contamination suite (with the addition of VOCs). Screening levels for groundwater have been derived from the maximum concentrations set out in the Water Supply (Water Quality) Regulations 2016 (England) where prescribed, or for those determinands not included, the 1989 regulations. The laboratory chemical analysis certificate is contained in Appendix 5 and groundwater level data is contained in Appendix 6. A summary of groundwater contaminant concentrations is contained in Table 8.

Table 8: Summary of Groundwater Chemical Analysis Results

CONTAMINANT	UNITS	MAX	MEAN	SCREEN LEVEL (SL)	>SL*
pH	-	7.6	7.4	6.5**	0
Arsenic	µg.l^{-1}	0.87	0.75	10	0
Cadmium	µg.l^{-1}	0.09	0.055	5	0
Chromium (total)	µg.l^{-1}	0.3	0.25	50	0
Chromium (hexavalent)	µg.l^{-1}	<5.0	<5.0	50	0
Copper	µg.l^{-1}	2.6	2.1	2000	0
Lead	µg.l^{-1}	0.4	0.3	10	0
Mercury	µg.l^{-1}	<0.05	<0.05	1	0
Nickel	µg.l^{-1}	5.3	3.05	20	0
Selenium	µg.l^{-1}	2.4	1.7	10	0
Zinc	µg.l^{-1}	17	8.75	5000	0
Cyanide	µg.l^{-1}	<10	<10	50	0
Sulphate	mg.l^{-1}	727	421	250	**1**
Sulphide	µg.l^{-1}	<5.0	<5.0	50	0
TPH	µg.l^{-1}	<20	<20	10	**0**[b]
Benzene	µg.l-1	<1.0	<1.0	1	0
Toluene	µg.l-1	<1.0	<1.0	700[a]	0

CONTAMINANT	UNITS	MAX	MEAN	SCREEN LEVEL (SL)	>SL*
Ethylbenzene	µg.l-1	<1.0	<1.0	300[a]	0
Xylene	µg.l^{-1}	<2.0	<2.0	500[a]	0
PAH (total)	µg.l^{-1}	7.43	3.795	-	-
PAH****	µg.l^{-1}	2.47	1.255	0.1	**1**
Benzo(a)pyrene	µg.l^{-1}	0.91	0.46	0.01	**1**
Naphthalene	µg.l^{-1}	<0.01	<0.01	-	-
Phenols	µg.l^{-1}	<10	<10	0.5	0

Notes: * Samples exceeding screen level
** Minimum value applies (i.e. most acid)
*** Not detected above screening level
*** sum of benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(ghi)perylene & indeno(1,2,3-cd)pyrene
[a] Guidelines for drinking water quality - 4th ed. Incorporating first addendum WHO 2017
[b] Level of detection above the screening level.

5.2.3 Exceedances of applicable criteria were limited to PAH compounds at WS16 and sulphate at BH17. The information available to IDOM does not indicate that corresponding PAH concentrations were encountered in soil samples during the RSK investigation. However, the concentrations reported in soils are not sufficient to represent a viable ongoing source of groundwater contamination.

5.2.4 It was noted that TPH, BTEX, VOCs and PAH (BH17) was recorded at concentrations below the laboratory limit of detection.

5.3 HAZARDOUS GAS

5.3.1 Gas monitoring has been undertaken by IDOM on one occasion – 13 April 2022. Boreholes installed by others were monitored, but only BH17 and WS16 could be found. Levels of methane, carbon dioxide and oxygen were recorded in each standpipe, together with associated parameters including borehole flow and ambient air pressure. A photoionization detector (PID) was also used to monitor VOC levels. The results of these gas monitoring rounds are contained in Appendix 6.

5.3.2 The monitoring rounds were undertaken at barometric pressures ranging from 1013 to 1018 mb. Positive flow was not recorded. Over the monitoring round methane (CH_4) was not detected and carbon dioxide (CO_2) was detected to a maximum of 0.1%.

5.3.3 A positive PID reading was recorded at BH17 (0.9 ppm) and hexane concentrations were also slightly elevated (0.180% at BH17 and 0.013 at WS16).

5.3.4 Borehole logs were not available, it is therefore not known if the response zone at BH17 was flooded (depth to water was 0.85 m bgl).

5.4 WASTE CLASSIFICATION, OFF-SITE DISPOSAL OR RE-USE

5.4.1 Waste Considerations

5.4.1.1 The IDOM data was assessed according to the Environment Agency WM3 Guidance using HazWaste Online. One sample of made ground (MTP03 at 0.6 m) comprising ash and clinker would be classified as hazardous. The HazWaste Online assessment is contained in Appendix 8.

5.4.1.2 Two samples of made ground (TP04 at 0.5 m and TP05 at 0.3 m) were analysed for a WAC suite. While the results indicate the material would be suitable for disposal at an inert landfill, receiving sites would be unlikely to via made ground as inert.

5.4.1.3 Asbestos was detected in three samples, during the IDOM investigation this was generally at trace concentrations. Sample MHP05 (0.2 m) contained chrysotile rope at a concentration of 9.459 % which would be classed as hazardous waste for disposal purposes. A fragment of asbestos cement (chrysotile) was encountered at MTP05 (0.15 to 0.6 m bgl). Suspected asbestos containing material was encountered in the form of frequent fragments of cement sheeting (MTP01 from 0.3 m bgl) and a large felt/textile fragment (MTP02 at 0.4 to 1.0 m bgl). Fragments of asbestos would automatically mean a hazardous classification for waste disposal purposes.

5.4.1.4 Asbestos was also encountered in three samples during the RSK investigation it was noted that the highest concentrations were around the boiler room in the south (loose insulation lagging) – details of quantification were not available.

5.4.1.5 Natural as-dug arisings (excluding topsoil) are likely to comprise inert waste without the requirement for WAC testing. It was noted that contamination was encountered in some samples of natural soils at shallow depth.

5.4.1.6 WAC testing may be required for soils destined for landfill.

5.4.1.7 Materials, including waste soils which are not to be retained on site, should be removed and disposed of in accordance with all relevant statues including the *Environmental Protection Act 1990* (as amended), *The Controlled Waste Regulations 2012* (as amended), *The Waste (England and Wales) Regulations 2011* (as amended) , *The Hazardous Waste (England and Wales), Regulations 2005* as amended, *The Waste Management (England and Wales) Regulations 2006*, and *The Environmental Permitting (England and Wales) Regulations 2016* (as amended).

5.4.1.8 It is a requirement of these regulations that waste sent to landfill should have been subject to measures to reduce the amount of waste, reduce harmful or hazardous properties and facilitate recycling. These requirements may be satisfied by measures such as segregation and screening of wastes to recover suitable fill and material for crushing, segregation of inert materials and putrescible wastes.

5.4.2 **Re-use Considerations**

5.4.2.1 As a sustainable alternative to off-site disposal, it may be possible to re-use site-won soils provided the following criteria are met:

i. Use of the material will not create an unacceptable risk of pollution to the environment or harm to human health;

ii. The material must be chemically and geotechnically suitable without further treatment;

iii. There must be certainty of use within the scheme;

iv. Material should only be used in the quantity necessary for that use.

5.4.2.2 Provided these criteria are met, the re-use of site-won materials is unlikely to be deemed a waste activity. Production of a *Materials Management Plan* under the industry *CL:AIRE Code of Practice on the Definition of Waste* represents a robust method of demonstrating that the proposed re-use of material meets the criteria and is not liable for landfill tax.

SECTION 6 RISK ASSESSMENT

6.1 The potential sources of contamination at the site and the implications with respect to development have been interpreted in accordance with the current government guidance on source-pathway-receptor risk assessment.

6.2 The investigations demonstrate that the former uses of the site have resulted in contamination (principally within made ground) by lead, arsenic, pH, PAH compounds and asbestos. PAH contamination was also encountered in samples of topsoil and a sample of natural clay was impacted by heavy metals (lead and arsenic). The type and nature of contamination is generally consistent with previous phases of site investigation. Slightly elevated PID readings were also recorded in the vicinity of the boiler house.

6.3 These materials are considered for their potential to act as sources for a number of pollutant linkages.

6.4 The potential impacts of contamination sources have been considered with respect to the following receptors:

i. The general public and present site users,

ii. Residents of future development,

iii. Groundwater,

iv. Surface water,

v. Construction workers,

vi. Adjacent land, and

vii. Infrastructure.

6.5 In each case the existence of a pollutant linkage requires a pathway by which the receptor could be exposed to the source. A qualitative assessment of risk is thus considered in the first instance with respect to the site in its current condition and is summarised in the sections below.

6.5.1.1 A further phase of investigation will be carried out following the demolition of buildings. The risk assessment will be reviewed following the completion of the investigation.

6.6 **The general public and present site users**

6.6.1 The site is currently unused, largely surfaced with hardstanding and hoarded off. The general public is considered to be at a very low risk of exposure to the contaminants encountered.

6.7 **Residents of future development**

6.7.1 Soil contamination (chemical)

6.7.1.1 Contamination was encountered in soil, principally within made ground. The proposed development includes residential homes with private gardens.

6.7.1.2 In the absence of mitigation measures there is the potential for direct contact, accidental ingestion and the inhalation of contaminated dusts. As a result. the risk to future site users is considered to be moderate.

6.7.2 Asbestos

6.7.2.1 Asbestos was detected in several samples generally at trace concentrations, but sample MHP05 (0.2 m) contained chrysotile rope at a concentration of 9.459 %. The pathways that may be present for future site users may be considered broken where hardstanding confines the contaminated soils.

6.7.2.2 A fragment of asbestos cement (chrysotile) was encountered at MTP05 (0.15 to 0.6 m bgl). Suspected asbestos containing material was encountered in the form of frequent fragments of cement sheeting (MTP01 from 0.3 m bgl) and a large felt/textile fragment (MTP02 at 0.4 to 1.0 m bgl).

6.7.2.3 Concrete coring was carried through the concrete slabs beneath buildings at six locations. Asbestos was encountered (at trace concentrations) in one of the samples recovered beneath the slab. It is considered that asbestos contamination is likely beneath the newer buildings across the site (built following the demolition of earlier structures).

6.7.2.4 The heating network across the site includes tunnels and ducts that carry heating from the boiler house. A demolition survey carried out by Eton Environmental of the

heating system identified asbestos including hard set lagging in the tunnels, ducts and basements across the site. The heating system would require decommissioning by a licenced asbestos removal contractor as part of the remediation at the site.

6.7.2.5 During IDOMs investigation, hand pits (MHP03, MHP04, MHP10 and MHP11) were dug (to a maximum depth of 1.3 m bgl) to enable the existing service ducts to be examined (width and depth). Live services had been installed over the ducts preventing confirmation of depths during the IDOM investigation. Where it was possible to advance the pits the presence of the ducts could not be confirmed.

6.7.2.6 Given the age of the buildings at the site it is likely that asbestos would be present in these structures. It is unclear if an asbestos survey (other than the heating system) has been carried out. Asbestos surveys would be recommended of all onsite structures prior to demolition.

6.7.2.7 Based on the widespread nature of the asbestos contamination the risk level is concluded as moderate to high.

6.7.3 Radiation

6.7.3.1 Ionising radiation is used in medicine in three ways:

i. Diagnostic radiology, which uses x-ray machines to obtain images of the inside of the patient's body;

ii. Nuclear medicine, which uses radioactive substances introduced into the patient for diagnosis or treatment; and

iii. Radiotherapy, which uses many types and sources of ionising radiation to cure or relieve symptoms of cancer and other diseases.

6.7.3.2 It is unclear which of the above were used in St Ann's Hospital, but it is considered that the radiation used would represent a closed source (which have now been removed from the site as the permit was revoked in 2015). The risk to future site users is therefore considered to be low.

6.7.4 Hazardous Soil Gas

6.7.5 Vapours (including hydrocarbon vapours/radon)

6.7.5.1 CIRIA and NHBC guidance has been followed to assess the recorded soil gas and flow conditions (over seven rounds). Calculations are presented in Appendix 7, which suggest that that the site would be classified as green (low risk) under the NHBC Traffic Light Classification. The Modified Wilson & Card Classification has also been considered (developments other than low rise residential), under this classification the site would be Characteristic Situation 1 (very low risk). Gas protection measures would therefore not be required in new buildings.

6.7.5.2 IDOM also conducted PID monitoring at BH17 and WS16 in close proximity to the above ground fuel tanks. VOCs were slightly elevated (0.9 ppm) at BH17, but this is not expected to represent a significant vapour risk.

6.7.5.3 The groundwater analysis (BH17 and WS16) conducted by IDOM encountered PAH contamination at WS16 – but the concentrations encountered are not considered to present a vapour risk. Furthermore, TPH, BTEX, VOCs and PAH (BH17) were recorded at concentrations below the laboratory limit of detection.

6.7.5.4 It should be noted that the monitoring locations included WS2 at the infilled pond (northwest) and locations around the above ground tanks.

6.7.5.5 While monitoring was generally conducted at fairly high pressure, RSK conducted a round at 1001 mb. It is expected that monitoring conducted under a low-pressure event would not affect the classification given above.

6.7.5.6 It should be noted that remedial works will include the removal of any gross contamination and associated infrastructure. Therefore, an ongoing source of ground gas or vapour would not be considered to remain.

6.7.5.7 Gas risk at the site is considered to be low.

6.8 Controlled waters

6.8.1 The groundwater analysis (BH17 and WS16) conducted by IDOM encountered PAH contamination at WS16. TPH, BTEX, VOCs and PAH (BH17) concentrations were below the laboratory limit of detection.

6.8.2 Groundwater appears to be shallow limited to pockets in the south rather than across the site. It is expected that a significant thickness of London Clay will act as an aquitard to the vertical migration of contamination to the deeper aquifer.

6.8.3 The site is in a groundwater Source Protection Zone due to several potable abstractions from the underlying chalk aquifer in close proximity to the site. However migration and potential impact will be prohibited by the London Clay Formation.

6.8.4 It is not considered that contamination at the site represents a risk to surface waters given the distance from site.

6.8.5 Therefore, the risk to controlled waters from the subject site is concluded as low.

6.9 Construction workers

6.9.1 Potentially, construction workers are initially at the greatest risk from exposure to hazardous contamination due to excavation works and during the handling of materials including imported soils. Exposure could occur due to inhalation and ingestion of dust, direct or dermal contact with soils.

6.9.2 Providing dust levels are kept within statutory limits, appropriate PPE is worn at all times and appropriate health and safety procedures are adhered to during the

construction phase, the levels of chemical contamination recorded to date presents a moderate risk to construction workers.

6.9.3 The relict heating system has been found to containing asbestos including lagging. The decommissioning of the tunnels, ducts and basements associated with the heating system should only be undertaken by a licenced contractor with all the necessary asbestos controls in place.

6.10 **Adjacent land**

6.11 No pathways have been assessed to be likely to present a risk to the adjacent land. Therefore, the risk to adjacent land is considered negligible.

6.12 **Infrastructure**

6.12.1 Phytotoxic heavy metal concentrations were recorded in the Made Ground and shallow natural soils at one location. A suitable growing medium will be required in areas of soft landscaping.

6.12.2 PAH contamination with the potential to permeate polymeric services has been identified by this investigation, however it is recommended that the utility provider is consulted with respect to their requirements for water supply pipes.

6.12.3 Utility companies apply strict guideline levels on use of polymeric pipes and may consider all made ground unsuitable for typical plastic pipe materials to be used.

SECTION 7 UPDATED CONCEPTUAL MODEL

7.1 Following completion of phases 1 and 2 of the investigation and a qualitative risk assessment, the conceptual model for the site, with relation to pollutant linkages, has been updated. The revised model is presented in Table 9 below.

Table 9: Revised Conceptual Model

POSSIBLE POLLUTANT LINKAGE			RISK CHARACTERISATION
POTENTIAL SOURCES	PATHWAYS	RECEPTORS	
Heavy metals and hydrocarbons (made ground)	Contact with contaminated soil	Human health (current users)	**Low risk identified** Made ground is impacted by several forms of contamination. However, the site has few current site users.
	Ingestion and inhalation of contaminated soil and dust	Human health (current users)	
Heavy metals and hydrocarbons (made ground)	Contact with contaminated soil	Human health (future residents and construction workers)	**Moderate risk identified** Contamination of made ground soils metals, PAH and asbestos. Mitigation measures will be required in the limited areas of soft landscaping. Outside of these areas buildings and hardstanding will sever potential pathways.
	Ingestion and inhalation of contaminated soil and dust	Human health (future residents and construction workers)	

POSSIBLE POLLUTANT LINKAGE			RISK CHARACTERISATION
POTENTIAL SOURCES	PATHWAYS	RECEPTORS	
Asbestos (made ground and structures)	Ingestion and inhalation of contaminated soil and dust	Human health (future residents and construction workers)	**Moderate to high risk identified** A significant number of asbestos detections (fibres and fragments) were reported across the site. Asbestos lagging is present in the subsurface heating system and probably in onsite buildings.
Radiation (medical sources)	Contacted with source or contaminated material	Human health (future residents and construction workers)	**Low risk** The radiation used represents a closed source - this will have been removed from site.
Contamination (all forms)	Vertical migration to aquifer	Controlled waters	**Low risk identified** Limited shallow groundwater has been encountered and a significant thickness of London Clay acts as an aquitard to the aquifer at depth.
Contamination (all forms)	Horizontal migration to surface water	Controlled waters	**Low risk identified** Nearest surface water feature is significantly distant.
Hydrocarbons	Direct contact	Plastic water pipes	**Moderate risk identified** Significant PAH contamination presents a risk to permeable services.
Hazardous Gas/Vapours In soil	Ingress into buildings and voids	Human health (future residents and construction workers)	**Low risk identified** Based on the available data, the ground gas regime is considered to be Green (low risk).
Phytotoxic metals	Direct contact/root uptake	Ornamental planting	**Low risk identified** Concentrations of zinc were encountered above the applicable criteria in four samples. However, healthy plant growth was noted, indicating that the contamination is of limited bio-accessibility. The provision of clean cover will provide a proficient growth medium.
Adjacent Land	Horizontal migration of groundwater/gas.	Neighbouring properties	**Low risk identified** The available data indicates a low risk.

SECTION 8 DETAILED REMEDIATION STRATEGY

8.1 SCOPE

8.1.1 Based upon the site investigation data, contamination on site can be managed through the implementation of the measures set out below. As a result, a detailed options appraisal is not considered appropriate.

8.1.2 Based upon the site investigation data obtained, potential risks to future site users, construction workers and infrastructure have been identified. As a result, remediation will be required.

8.1.3 Remediation activities will be limited to the following:

i. Decommissioning of the relict heating system;

ii. Removal of concrete slabs, sub surface structures and relict infrastructure;

iii. Removal of localised grossly impacted soils;

iv. Dewatering of contaminated pockets of perched water (if encountered) – shallow groundwater was encountered in the south of the site;

v. Provision of clean cover over a deter to dig barrier – to be installed as part of the final development; and,

vi. The provision of upgraded water pipes.

8.1.4 Upon completion of the works a validation report will be prepared to include an account of the works undertaken, the results of any associated validation testing and the conclusions from environmental monitoring. Waste transfer tickets will also be provided.

8.2 DECOMMISSIONING OF THE RELICT HEATING SYSTEM

8.2.1 The heating network across the site includes tunnels and ducts radiating out from the boiler house. A demolition survey carried out by Eton Environmental of the heating system identified asbestos including hard set lagging in the tunnels, ducts and basements across the site. The heating system would require decommissioning by a licenced asbestos removal contractor with all necessary controls in place. However, where the heating system is not interfering with the build, it could be left in situ.

8.3 CONCRETE SLAB AND SUB SURFACE STRUCTURE REMOVAL

8.3.1 Where concrete slabs have been encountered, they should be thoroughly inspected using a watching brief prior to being broken by mechanical means. Any visible asbestos (including bonded asbestos) should be removed in a controlled manner for off-site disposal. It is recommended that following slab removal/clearance, inspection of the ground surface is carried out and analysis of any suspect debris encountered should be undertaken. Site personnel should be aware of the potential for encountering asbestos during the construction phase and should report any should it be encountered or suspected during the works so it may be dealt with appropriately. Measures should also be taken to damp down soils during excavation/groundworks.

8.4 GROSS CONTAMINATION

8.4.1 The site includes a tank farm comprising three above ground tanks, it is also believed that fuel lines run from the tank farm to the boiler house. To date organoleptic evidence of contamination in this area has been limited to a strong hydrocarbon odour at MTP04. Tanks and related infrastructure should be removed in a controlled

manner with method statements in place as appropriate to avoid the release of contaminated material.

8.4.2 Should grossly impacted soils be encountered, they should be excavated or treated and disposed of in an appropriate manner. If free product is encountered on groundwater it should be removed using absorbent pads or by skimming. Once the free product has been removed the excavation shall be left open for a period of 24 hours to ensure that there is no contamination rebound. If this is the case, the process shall be repeated, and the pit left open for a further 24 hours.

8.4.3 Any areas of gross hydrocarbon contamination identified should be treated or removed off site.

8.5 CLEAN CAPPING

8.5.1 Clean capping is required in soft landscaped areas. This activity will require the use of suitably validated materials

8.5.2 The remedial strategy requires in all newly formed areas of soft landscaping to comprise:

i. 600 mm of clean validated soil over a deter to dig barrier in private gardens and 300 mm in communal landscaping.

8.5.3 Should made ground remain then a high visibility geotextile will also be required.

8.5.4 Contamination was also encountered in hand pits (MHP015 and MHP17) advanced around a TPO tree. It is therefore unlikely that sufficient made ground could be removed or apply caping applied in this area. Therefore, it is likely that a limited thickness is removed in a feathered manner and replaced with a geotextile and clean imported soil.

8.5.5 Clean capping may be formed of either site-won or imported materials according to the validation criteria set out in the following sections.

8.5.6 Material imported for the formation of landscaped areas should be obtained from a validated source. The validation should incorporate an assessment of the provenance of the material and chemical analysis.

8.5.7 In addition to information provided by the topsoil/subsoil supplier, validation testing shall be carried out by IDOM as set out below.

8.5.8 Once placed, the depth of placed the thickness of the clean capping shall be verified by hand-dug pit.

8.5.9 Validation of the chemical quality of clean cover shall be obtained at a rate of one sample per 250 cubic metres (a minimum of three samples per source). Acceptance criteria for soil is presented in Table 10 below.

8.5.10 A validation report will present the above data for clean cover placed in private and communal garden areas including provenance, chemical quality and depths placed. The validation report will be provided to the Local Authority and the Environment Agency (EA) upon completion of the development.

8.6 SPECIFICATIONS FOR CLEAN CAPPING MATERIALS

8.6.1 These specifications will be additional requirements to the terms of appointment for suppliers and groundwork contractors.

8.6.2 Acceptance criteria for clean capping (both site-won and imported) will be applied as per Table 10 below. These are based on Suitable for Use Levels (S4ULs) published in 2015 by LQM/CIEH. These precautionary screening levels are designed to be representative of minimal risk to human health in a residential setting (with active update). For lead the DEFRA Category 4 Screening Level has been used as this is based on updated toxicological data and a low risk to human health.

Table 10: Acceptance Criteria for Site-won and Imported Topsoil and Subsoil

CONTAMINANT	UNITS	Acceptance Criteria ALL AREAS
Asbestos in soil	-	none
Anthropogenic inclusions	-	none
pH	-	6 – 9
Arsenic	$mg.kg^{-1}$	37
Cadmium	$mg.kg^{-1}$	11
Chromium (total)	$mg.kg^{-1}$	910
Hexavalent Chromium	$mg.kg^{-1}$	6
Lead	$mg.kg^{-1}$	200
Mercury	$mg.kg^{-1}$	40
Nickel	$mg.kg^{-1}$	130
Selenium	$mg.kg^{-1}$	250
TPH Aliphatic >EC_5 - EC_6	$mg.kg^{-1}$	42
TPH Aliphatic >EC_6 - EC_8	$mg.kg^{-1}$	100
TPH Aliphatic >EC_8 - EC_{10}	$mg.kg^{-1}$	27
TPH Aliphatic >EC_{10} - EC_{12}	$mg.kg^{-1}$	130
TPH Aliphatic >EC_{12} - EC_{16}	$mg.kg^{-1}$	1000*
TPH Aliphatic > EC_{16} – EC_{21}	$mg.kg^{-1}$	1000*
TPH Aliphatic > EC_{21}	$mg.kg^{-1}$	1000*
TPH Aromatic >EC_5 - EC_7	$mg.kg^{-1}$	70
TPH Aromatic >EC_7 - EC_8	$mg.kg^{-1}$	130
TPH Aromatic >EC_8 - EC_{10}	$mg.kg^{-1}$	34
TPH Aromatic >EC_{10} - EC_{12}	$mg.kg^{-1}$	74
TPH Aromatic >EC_{12} - EC_{16}	$mg.kg^{-1}$	140
TPH Aromatic >EC_{16} - EC_{21}	$mg.kg^{-1}$	260
TPH Aromatic >EC_{21}	$mg.kg^{-1}$	1000*

CONTAMINANT	UNITS	Acceptance Criteria ALL AREAS
Benzene	$mg.kg^{-1}$	0.087
Toluene	$mg.kg^{-1}$	130
Ethylbenzene	$mg.kg^{-1}$	47
Xylene	$mg.kg^{-1}$	56
Acenaphthene	$mg.kg^{-1}$	210
Acenaphthylene	$mg.kg^{-1}$	170
Anthracene	$mg.kg^{-1}$	1000*
Benz(a)anthracene	$mg.kg^{-1}$	7.2
Benzo(a)pyrene	$mg.kg^{-1}$	2.2
Benzo(b)fluoranthene	$mg.kg^{-1}$	2.6
Benzo(ghi)perylene	$mg.kg^{-1}$	320
Benzo(k)fluoranthene	$mg.kg^{-1}$	77
Chrysene	$mg.kg^{-1}$	15
Dibenz(ah)anthracene	$mg.kg^{-1}$	0.24
Fluoranthene	$mg.kg^{-1}$	280
Fluorene	$mg.kg^{-1}$	170
Indeno(123-cd)pyrene	$mg.kg^{-1}$	27
Naphthalene	$mg.kg^{-1}$	2.3
Phenanthrene	$mg.kg^{-1}$	95
Pyrene	$mg.kg^{-1}$	620
Phenol	$mg.kg^{-1}$	120
Phytotoxins	**Units**	
Copper	$mg.kg^{-1}$	200
Nickel	$mg.kg^{-1}$	110
Zinc	$mg.kg^{-1}$	300

Note: *Screening levels capped to protect amenity

8.7 BOREHOLE DECOMMISSIONING

8.7.1 If boreholes need to be removed, they should be decommissioned in accordance with Environment Agency guidance on decommissioning of redundant wells.

8.8 DISCOVERY STRATEGY

8.8.1 Whilst the investigation undertaken on the site is considered to be thorough, it remains possible that unexpected soil conditions may be encountered during the process of site demolition and remediation.

8.8.2 Examples may include oily pockets within the soil, pockets of cement boarding on fibrous materials within the soil, asbestos containing materials, black ashy materials, soils exhibiting strong odours and underground structures.

8.8.3 Where such unexpected conditions are encountered the following approach will be taken:

i. All discoveries are to be reported to the Site Manager immediately and works at that location are to halt until further notice;

ii. The Site Manager is to report any such discoveries to the Employer's Representative who will also act as the Environmental Consultant;

iii. Following notification from the Site Manager, the Environmental Consultant will discuss the discovery with the Local Authority and if considered necessary, arrange to meet an Officer on site to further assess the discovery.

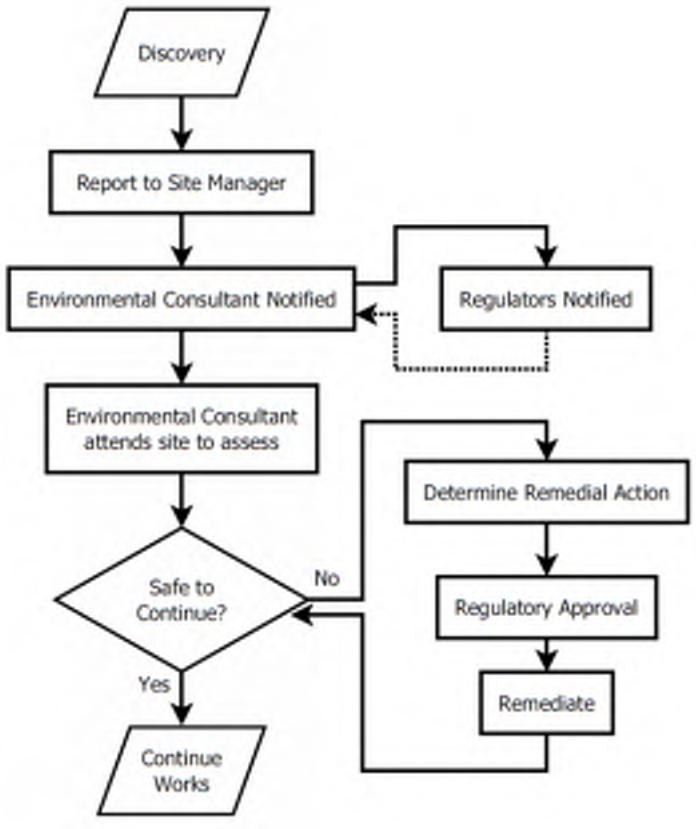
iv. The Environmental Consultant will attend the site to record the location, extent and nature of the discovery and implement an appropriate sampling and analysis regime, taking due account of the type and nature of the discovery as well as known and probable land uses in that area of the site.

v. Where remedial action is required, regulatory consultation and approval will be sought.

vi. A record will be produced by the Environmental Consultant or his delegates and held on site (with copies held by the Environmental Consultant, Employer's Representative and Local Authority), detailing the discovery, assessment works undertaken, findings thereof, confirmation either of no action required or detailing the remedial action taken and validation thereof.

8.8.4 A discovery strategy flow diagram is presented in Figure 1 below.

Figure 1: Discovery strategy for unforeseen contamination



8.8.5 During excavation large boulders of concrete will be segregated using mechanical excavator for subsequent processing/treatment. Segregated made ground materials will be passed through a screener to recover oversized material (>63 mm) for subsequent treatment. A proportion of this oversize material may need to be subjected to a wet screening treatment to remove surface contaminants prior to further processing/crushing to ensure that the fill criteria are met.

8.8.6 To avoid cross contamination of the ground surface, hydrocarbon contaminated materials to be stockpiled or treated will be situated upon a soil handling/treatment area with engineered leachate containment to be constructed within the site. All stockpiles will be managed and appropriately labelled with unique identification numbers.

8.9 MANAGEMENT OF POTENTIAL ASBESTOS-CONTAINING MATERIALS

8.9.1 Asbestos present has been detected in several samples (fragments have also been encountered). The principal mitigation measures are to manage the potential risks to workers and the fugitive release of fibres from the site.

8.9.2 The heating system would require decommissioning by a licenced asbestos removal contractor with all necessary controls in place.

8.9.3 Should any notifiable ACMs be encountered during the works, the impacted materials area will be quarantined until additional precautions are in place to comply with an ASB05 Notification to the HSE, unless a 'blanket' notification for the works can be discussed and agreed with the HSE due to potential for unforeseen materials. ACM impacted soils will be carefully excavated under close supervision by an experienced asbestos supervisor and transferred to a quarantine area for further hand-picking treatment by trained asbestos operatives. Recovered fragments of ACM will be hand-picked and placed in appropriate containment by competent, trained asbestos operatives as a primary treatment.

8.9.4 The Environmental Consultant will direct any additional precautions that need to be taken, such as water suppression and application of soil bonding agents during excavation works. The use of fine mist water spraying combined with bonding agents would not only reduce the risk of airborne fibre release but also reduce the potential for liberation of fibres from ACMs into the soil matrix during excavation and screening operations.

8.9.5 Areas of concrete/brick materials showing evidence of asbestos contamination must be dealt with in a controlled manner in accordance with the approved codes of practice for working with asbestos containing materials. When asbestos contamination is evident in a particular area, work should not proceed until the situation has been assessed in order that the workforce is adequately protected.

8.9.6 The presence of cement-bonded asbestos materials poses a lower risk to workers and often these materials may be easily handpicked from the area. Fibrous asbestos waste poses a high risk to workers, especially when it is dry and friable. It cannot be

easily separated from other materials and any work carried out must be notified to the HSE.

8.9.7 Loose fibres of asbestos have been identified in the Made Ground. Measures will be put in place to ensure working areas are kept damp and personal and site boundary fibre monitoring will be carried out to ensure loose fibres do not present a risk to the workforce or neighbouring sites.

8.9.8 During all works involving the removal and treatment of ACMs, specialist air monitoring is performed using a UKAS accredited laboratory service at an appropriate frequency for reassurance purposes to confirm that the residual asbestos fibre concentrations are below the lower limit of detection. Reassurance air sampling will be undertaken at regular intervals at boundary and workplace/personal monitoring locations.

8.9.9 The method for carrying out asbestos air monitoring and evaluation will be undertaken in accordance with HSG248 'The Analysts Guide', and is by phase contrast microscopy under The Control of Asbestos Regulations (2012).

8.9.10 Reassurance air sampling will be undertaken along the perimeter of the asbestos work zones, and task-specific personal monitoring will be undertaken as deemed necessary during risk assessment. A trigger <0.01 fibres.ml-1 will be the level that is not to be exceeded and will cause cessation of work until the source of the elevation is identified and rectified. This trigger level represents the lowest quantification limit using standard methodologies as set out by HSG248 and MDHS39/4. An appropriate period of baseline monitoring will be undertaken prior to commencement of any works in the ARA work zone.

8.9.11 For air monitoring a temporary site laboratory will be setup so air test results can be obtained within an hour of the test being undertaken.

8.9.12 Dust control will be achieved using deployment of fine mist suppression at the excavation point and frequent damping down/covering of any ACM stockpiles.

8.9.13 Copies of all waste consignment notices, and a completed Duty of Care Schedule will be compiled.

8.10 WASTE MANAGEMENT

8.10.1 The remediation contractor shall be responsible for obtaining all necessary licences, consents and approvals relating to the processing and/or re-deposition of waste materials at the site to ensure compliance with relevant legislation.

8.10.2 Materials which cannot be re-used on site, or which are surplus to requirements, will be disposed of to suitably licensed facilities, either for recycling or for final disposal. Materials, including waste soils which are not to be retained on site, should be removed and disposed of using appropriately licensed hauliers and in accordance with all relevant statues including the *Environmental Protection Act 1990* as

amended, *The Controlled Waste Regulations 2012* as amended, *The Waste Regulations 2011* as amended, *The Hazardous Waste Regulations 2005* as amended, *The Waste Management Regulations 2006, The Environmental Permitting Regulations 2010* as amended and *The Hazardous Waste (Miscellaneous Amendments) Regulations 2015*.

8.10.3 All waste transfer notes and weighbridge receipts will be made available by the contractor to the Client.

8.10.4 By careful sorting, segregation and management of arisings the contractor will seek to minimise the volume of hazardous waste which requires disposal (e.g. significant asbestos contaminated arisings will not be added to stockpiles containing other wastes).

8.10.5 Stockpiles will be managed under the guidance of a Qualified Person in accordance with the guidance provided in The Definition of Waste: Development Industry Code of Practice v2, CL:AIRE, March 2011. To comply with this guidance, a Materials Management Plan (MMP) will need to be compiled for independent review by a Qualified Person (QP) prior to declaration to the EA. Verification that the declared MMP has been adhered to will need to be included within the Site Verification Report.

8.11 ENVIRONMENTAL MONITORING, HEALTH AND SAFETY

8.11.1 A monitoring program should be adhered to throughout the duration of the works to prevent harm to primary receptors adjacent to the site. This will include asbestos monitoring and dust monitoring along the perimeters of the site (all monitoring will have approval from the Environment Agency permitting team).

8.11.2 The remediation contractor will be responsible for ensuring appropriate health and safety measures are adhered to. The presence of asbestos and hydrocarbon contaminated soils has been highlighted. Both of these materials are hazardous by inhalation, and hydrocarbons can also be hazardous by contact. The site will be managed to provide segregation of “clean” and “dirty” areas with decontamination facilities for personnel and plant. All site works will be carried out in accordance with relevant guidance and approved codes of practice (ACOPs) in particular HSE guidance document “*Protection of Workers and the General Public during the Development of Contaminated Land”* to prevent pollution from associated works.

8.11.3 A site induction and appropriate PPE will be mandatory to protect the health and safety of all site visitors and employees.

8.11.4 The remedial works (as required) will involve the excavation, removal and replacement of soils. As with any construction project, heavy machinery will be employed during the remediation and vehicle movements to and from site will increase. It is intended to keep traffic to and from the site to a minimum by retaining as much material on site as possible.

8.11.5 Working hours will be restricted to those imposed by the local Planning Department to minimise the nuisance to local residents.

8.11.6 Every precaution will be taken to avoid interference with, or damage to public utilities, buildings and other services, in or near the site and also prevent the interruption or pollution of any adjoining watercourses, drains and ditches.

8.11.7 The remediation contractor shall comply with all relevant Planning Conditions with respect to the execution of the works. These conditions are expected to relate mainly to environmental control issues and may take the form of, but not be limited to the following :-

8.11.8 Nuisance from Noise

8.11.8.1 Every precaution deemed sensible and practical to prevent nuisance to neighbouring properties due to noise will be undertaken. Such precaution shall include the fitting of efficient silencers suitable for residential areas to the exhausts of the engines of all mechanical plant employed on the site. Operations shall also be limited to Mon – Fri 7.30 am to 6 pm and Sat 8 am to 1 pm.

8.11.8.2 Noise will be regularly monitored by the contractor. All noise monitoring records shall be kept on site for inspection by regulatory authorities.

8.11.9 Nuisance from Dust

8.11.9.1 During the Works, all reasonable measures (including, inter alia, the use of water bowsers as necessary) will be taken to suppress dust arising from the works, in order to prevent a nuisance to neighbouring properties. A scheme for monitoring and/or suppressing dust arising from the works will be agreed with the Local Authority in writing. The primary control of dust once the structures are removed is damping and/or sheeting as appropriate.

8.11.9.2 Dust should be regularly monitored during the works. This should include the use of 'Frisbee' dust collectors. Collected dust will be sent away to the laboratory for weighing and particle sizing. Monitoring results for dust deposition will be compared to the guideline values set out in '*Suggested guidelines for deposited ambient dust*', Vallack HW and Shillito DE, Atmospheric Environment Vol 32 No. 16, pp 2732-2744, 1998. Specifically, the 'complaints possible' guideline for residential areas of 150 mg m^{-2} day^{-1} and the 'complaints likely' guideline of 200 mg m^{-2} day^{-1} are referenced. If results are consistently in excess of 150 mg m^{-2} day^{-1} this will trigger a review of procedures to further minimise dust generation. If results are consistently in excess of 200 mg m^{-2} day^{-1} this will trigger a temporary cessation of works and redesign of mitigation measures to ensure dust is properly controlled.

8.11.10 Nuisance from Vapours/Odours

8.11.10.1 All reasonable measures for controlling vapours and odours arising from the works in order to prevent a nuisance to neighbouring properties will be employed as

necessary. Where necessary odour suppression will used and odorous materials shall be covered with clean materials if necessary. Stockpiles of odorous contaminated soils will be kept as far away from external properties as possible during the works.

8.11.10.2 The contractor will not dispose of any materials on site by burning. Disposal of such materials shall be off site.

8.11.11 Fitting of Suppressors

8.11.11.1 All vehicles, excavators and other plant which operate on or near the site will be fitted with adequate electrical suppressors so that no interference is caused by them to television or radio reception in the neighbourhood.

8.11.12 Wheel Cleansing/Public Highways

8.11.12.1 It is not anticipated that large volumes of traffic shall be generated during the works. However, for the duration of the works, a barrier will be provided at the site entrance which prevents vehicles entering the public highway until all mud and debris is removed from the undercarriage and wheels. A mechanical sweeper will be employed as necessary to maintain clean highways in the area of the site.

8.11.12.2 No machinery used on site during the execution of the works shall be operated outside the limits of the site other than when travelling on public roads.

8.11.12.3 All vehicles carrying materials from site shall be fully sheeted before leaving the site and shall be loaded in such a way that no loose material can fall onto any highway.

8.11.12.4 Public highways shall not be used for the storage of materials or plant.

8.11.13 Controlled Waters

8.11.13.1 Existing borehole installations will be protected from damage during the works as far as possible.

8.11.13.2 Vehicle fuel and other potentially polluting substances shall be stored in suitable bunded secure storage areas.

8.11.13.3 Should the principal contractor or IDOM discover contaminated ground / groundwater conditions atypical of those found to date and which are suspected to pose a risk to construction workers, then further analysis and environmental monitoring will be instigated to quantify the risk (see Section 8.8 Discovery Strategy).

8.11.13.4 Surface water will be controlled by utilising the existing systems until the ground is disturbed. Once the surface has been disrupted all waters and trade effluent (excluding discharge from site accommodation) will be collected and guided to the treatment plant on site. Once treated these will be disposed of under a discharge licence. Discharge from site welfare will be disposed of in existing systems or collected by specialist carriers and transferred to handling facilities.

SECTION 9 VALIDATION REPORTING

9.1 This report sets out the appropriate stages of remediation to be adhered to during the development of the St Ann's Hospital Site. Upon completion of the groundworks, a validation report will be provided for approval and discharge of planning conditions. In summary, this will provide the following details of the remedial works undertaken:

i. Laboratory data relating to the chemical quality of imported soils, as well as details of placed thicknesses, sample locations and material provenance;

ii. Details of previously unidentified contamination and measures implemented to mitigate potential risks; Copies of analysis and monitoring records;

iii. Details of verification samples taken;

iv. Details of contamination left in situ;

v. A photographic record of key stages of works;

vi. Regulatory consents and permits;

vii. Details of waste disposal, including examples of tip tickets;

viii. Records of materials re-use; and

ix. Records of on-site testing.

SECTION 10 CONCLUSIONS

10.1 The investigations to date demonstrate that the former uses of the site has resulted in contamination (principally within made ground) by lead, arsenic, pH, PAH compounds and asbestos. PAH contamination was also encountered in samples of topsoil and a sample of natural clay was impacted by heavy metals (lead and arsenic).

10.2 Given the access issues and the need to replace machine dug trial pits with hand pits, post demolition investigation is recommended. The risk assessment and remedial recommendations will be updated once this is completed.

10.3 The site is within an Environment Agency defined Source Protection Zone (SPZ). The whole site is within a Zone II SPZ (Outer Protection Zone) and the extreme southeast of the site is also within a Zone I SPZ (Inner Protection Zone). London Clay is present the made ground and it is considered that this will prevent the vertical migration of contamination. It is recommended that RSK monitoring wells are decommissioned in line with Environment Agency requirements.

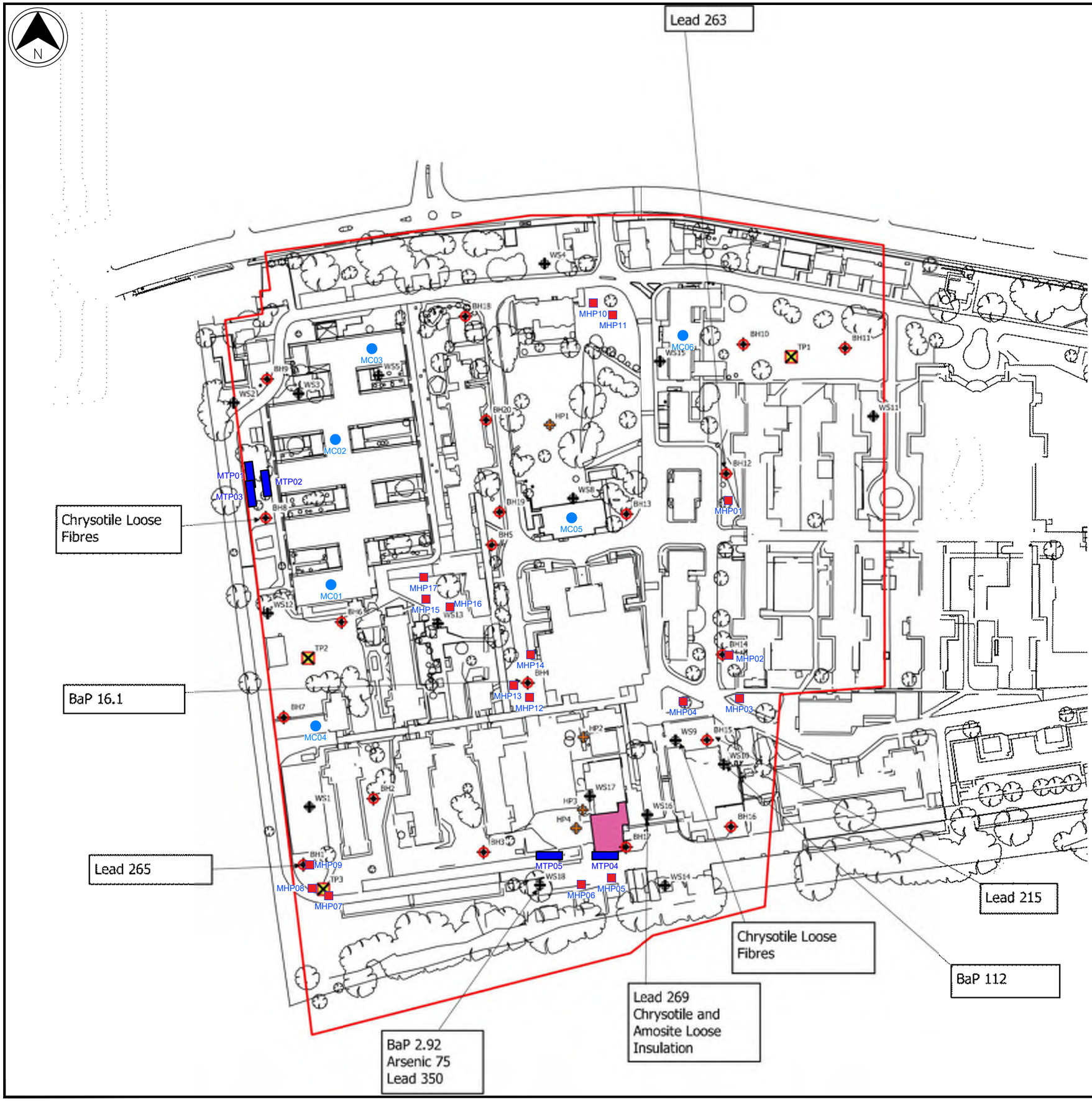
10.4 IDOM consider that the use of hotspots by RSK and CAPITA does not reflect the poor quality made ground seen across the site. Furthermore, it is not considered practicable or sustainable to remove all the made ground across the site. The final development will require the provision of clean cover over a deter-to-dig barrier to be installed in gardens and landscaped areas. Gas monitoring to date indicates that gas protection would not be required.

10.5 Remediation would also comprise the decommissioning of subsurface tunnels/ducts and related infrastructure contains asbestos. This should be undertaken by a licenced contractor and should be done prior to demolition. The tank farm and relict infrastructure should be removed along with any areas of gross contamination.

10.6 It is recommended that this report is submitted to the regulators (Local Authority EHO and Planners, Environment Agency Planning Liaison and NHBC) for approval prior to commencement of the works.

10.7 Any observations of ground conditions atypical of those already described should be reported to IDOM immediately so that an assessment of appropriate action can be made.

APPENDIX 1 ▪ Drawings



Legend

- Site boundary
- MCref — Merebrook core inside building with location reference
- MHPref — Merebrook hand-dug trial pit with location reference
- MTPef — Merebrook machine dug trial pit with location reference

2017 RSK Investigation Locations

- Borehole
- Hand Pit
- Trial Pit
- Window Sample

note: Locations where RSK encountered significant contamination are indicated on the drawing (concentrations are in mg/kg)

First Issue	14-04-22		-
	FDO	LNW	LNW
	DWN	CHD	APP'D

ISSUE PURPOSE: PRELIMINARY

CLIENT: Hill Partnership

PROJECT: St. Ann's Hospital
St Ann's Road, London

DWG TITLE: Undertaken Site Investigation Location

DWG NO.		REVISION
21914j-304-001		-
SCALE: N.T.S	DATE: April 2022	FRAM DIMENSIONS (mm): (A3) 400 x 280
DRAWN: FDO	CHECKED: LNW	APPROVED: NTD

London
Kent
Derbyshire
Manchester
Stirling

IDOM

1 Leonard Place, Westerham Road, Keston, Kent. BR2 6HQ
t: +44(0)1689 889980 e: info.kent@idom.com

APPENDIX 2

- Duct Report (Eton Environmental)

DEMOLITION SURVEY FOR ASBESTOS-CONTAINING MATERIALS

CLIENT: Vinci Construction UK

SITE: Duct Inspection, St Ann's Hospital, St Ann's Road, London,N15 3TH

Job number	J016190
Number of high risk materials	24
Number of medium risk materials	0
Number of low/ very low risk materials	2

Issue	Date	Status
Version 1	12/01/2018	Issued

Eton Environmental Group Ltd Unit 1, Trinity Court, Faverdale, Darlington, DL3 0PH tel: 01325 366886 Fax: 01325 366914
info@etongroup.co.uk

Registered office: Eton Environmental Group Ltd, 135 Slough Road, Datchet, SL3 9AE No. 05145774

SECTION 1 - EXECUTIVE SUMMARY

TYPE OF SURVEY: Demolition

SCOPE & EXTENT OF SURVEY: Tunnels 1 - 6

Locations of asbestos containing materials (ACMs) and actions

Action	Floor/ room
Manage	None recorded
Encapsulate	None recorded
Enclose	None recorded
Remove	Duct / Basement 1 / Tunnel 1 - Residue, Duct / Basement 1 / Tunnel 2 - Residue, Duct / Basement 1 / Tunnel 3 - Gaskets, Duct / Basement 1 / Tunnel 3 - Residue, Duct / Basement 1 / Tunnel 4 - Gaskets, Duct / Basement 1 / Tunnel 4 - Residue, Duct / Basement 1 / Tunnel 5 - Residue, Duct / Basement 1 / Tunnel 6 - Residue
Restrict Access	None recorded
Inspect Prior to Disturbance	None recorded
Restrict access and remove	None recorded

Areas where no access recorded

Floor/ room
All areas were accessed

SECTION 2 - INTRODUCTION

The purpose of the survey is to assist duty holders in managing asbestos within premises. The survey is to provide sufficient information for an asbestos register and allow for the planning of removal of all ACMs as far as reasonably practicable from the premises prior to demolition.

In most cases the survey will have two main aims:

- it must as far as reasonably practicable locate and record the location, extent and product type of any presumed or known ACMs;
- it should determine and record the asbestos type, either by collecting representative samples of suspect materials for laboratory identification, or by making a presumption based on the product type and its appearance etc.

SITE DETAILS

Site description, age and construction
The site is a Hospital. Tunnels are constructed of solid block with metal hatches. They are estimated to have been constructed in the 1900s.
Use and occupation of site
The site was used as a hospital service tunnel but is now derelict.
Scope of survey
This survey report covers those areas controlled by client only. These areas are those shown on the attached plans. The areas surveyed were at the direction of the client and their representatives on site.

SECTION 3 - GENERAL SITE INFORMATION

Survey information	
Client	Vinci Construction UK
Client address	Building 2030, Cambourne Business Park, Cambourne, Cambridgeshire,CB23 6DW
Client Contact	Craig Learoyd
Site address	Duct Inspection, St Ann's Hospital, St Ann's Road, London,N15 3TH
Type of Survey	Demolition Survey
Survey Start Date	8 Dec 2017
Survey End Date	4 Jan 2018
Surveyor/s	Wojciech Przytulski
Job number	J016190

Report index	
Section 1	Executive summary
Section 2	Introduction
Section 3	General site information
Section 4	Survey results table
Section 5	Conclusions and actions
Section 6	Limitations of survey
Appendix A	Non-asbestos samples and assessments
Appendix B	Material assessment records & photographs
Appendix C	Certificates of bulk sample analysis
Appendix D	Sample/ assessment location plans
Appendix E	General observations

Report prepared by			
Wojciech Przytulski	Surveyor		12 Jan 2018

Report verified by			
Michael Stewart	Technical Reviewer		12 Jan 2018

Eton Environmental Group Ltd were instructed to undertake a survey for asbestos containing materials at these premises in accordance with the instructions received from the client. The scope of the survey is summarised below, and is in accordance with HSE document HSG264 “Asbestos: The survey guide” and our documented in-house quality system as accredited by UKAS to ISO17020.

SURVEY INSTRUCTIONS

Survey type instructed	Demolition Survey
Included areas	Hospital service tunnels only
Excluded areas	All other areas
Agreed exclusions, inaccessible areas and any variations from the method	
The survey was conducted to facilitate upcoming Demolition works planned throughout the site. Due to the restrictions of confined spaces on demolition survey in an part ; at the specific request of the client, and in agreement prior to the survey, survey covers six access point and representative samples was taken in each access point. Locations of access point are shown on the plans.	

It is strongly recommended that this report is used as a whole document. Use of individual sections e.g. plans or survey results table alone may lead to misinterpretation for which Eton Environmental Group Ltd cannot be held responsible. This report is a technical document in line with current legislation and guidance. Should clarification be required contact Eton Environmental Group Ltd.

Material & Priority Risk Assessments

Material Risk Assessment:

HSE document HSG264 states that a material assessment score for asbestos containing materials (ACMs) should be calculated and recorded as part of the survey. The material risk is determined by four parameters, which will assess the risk of fibre release from an ACM when subject to normal disturbance; product type, extent of damage or deterioration, surface treatment and asbestos type.
Each parameter is given a risk score: 3 = high, 2 = medium, 1 = low and 0 = very low.
The total material risk score is the sum total with materials with a score of 10 or more are regarded as having a high fibre release potential, between 7 and 9 a medium fibre release potential, 5 and 6 as a low fibre release potential. Scores of 4 or less are regarded as having a very low fibre release potential. Non-asbestos containing materials are not scored.
Based upon the material risk score, recommendations for control actions and management actions are derived to ensure areas of concern are made safe and remaining ACMs are suitably managed.

Priority Risk Assessment:

Priority risk scoring is outside of the scope of Eton Environmental Group Ltd accreditation to ISO17020. The Control of Asbestos Regulations (CAR) 2012 requires the duty holder to assess the risks associated with the activities on the premises, additional to those considered within the material risk. Although the duty holder has a responsibility for the priority score, Eton Environmental Group Ltd may collect this information with assistance from the client.

Scores will be between 0 and 12 (10-12 high, 6-9 moderate, 3-5 low and 1-2 very low). Where the priority assessment has not been undertaken, these fields will be left blank for the duty holder to complete. Non-asbestos containing materials are not scored and the priority assessment fields do not appear for these materials.

Total Risk Scores:

The total risk scores are calculated by addition of the material & priority risk scores to give an indication of the relative risk of each ACM, total risk scores between 19-24 are high risk, scores between 13-18 are moderate risk, scores between 9-12 are low risk and scores below 9 are considered as very low risk. Where the priority assessment has not been undertaken, this field will be left blank for the duty holder to complete.

Recommendations:

Recommendations are made to the client based upon all factors including risk scoring. These recommendations fall into two categories, management actions and control actions. Control actions are used to describe actions that will have to be undertaken to the ACM directly and may require specialist treatment or works e.g. encapsulation, repair or removal. In a demolition survey report control actions will recommend removal of all materials unless removal is not reasonably practicable. Where removal is time consuming and resource-intensive and only involves removal of lower risk materials such as textured coatings containing asbestos, then removal may not be reasonably practicable.
Management actions are used to describe actions that should be undertaken that do not necessarily involve direct treatment to the ACM e.g. labelling of ACMs, regular inspection for damage/ deterioration, informing tenants/ staff/ contractors or isolation.

SECTION 4 - SURVEY RESULTS TABLE

The data contained within this table shows the known asbestos containing materials (ACMs) for this site as identified at the time of the survey.

The results were compiled by Eton Environmental Group Ltd in accordance with the Health and Safety Executive document HSG264, the Control of Asbestos Regulations (CAR) 2012 and our documented in-house quality procedures as accredited by UKAS to ISO17020.

The data shown may refer to historical data and information provided by the client. Eton Environmental Group Ltd cannot be held responsible for the accuracy of the data included where it is supplied by the client (including the interpretation of any supplied information).

The information in this survey report should be used to form the asbestos register which is a key component of the management plan. The survey report itself will generally not be the asbestos register. The asbestos register will be a simpler document and will not contain most of the information in the survey report, e.g. the bulk analysis results or survey site information.

Regulation 4 of the Control of Asbestos Regulations 2012 dictates that the duty holder should make a written record of the location and condition of known and presumed ACMs and keep the record up to date. This should include regular inspections of the known ACMs and the records updated accordingly. This information must be given to any persons liable to disturb ACMs (e.g. maintenance operatives).

Regulation 11 of the Control of Asbestos Regulations 2012 requires all employers to prevent the exposure of employees and contractors to asbestos as far as reasonably practicable.

The information within this register/ report is provided to the client and Eton Environmental Group Ltd cannot accept any responsibility for the interpretation or use of this data by any third party. Prior to any works in areas that may contain or conceal ACMs, professional advice from a competent organisation or person should be sought. It is strongly recommended that any remedial works to be undertaken to ACMs identified should be based upon a written specification, site visit and other relevant documentation of works and not solely on this report.

Actions listed in the table and MARs in appendix B indicate the following recommendations:

Action	Recommendation
Manage	Inform staff/ contractors, label, re-inspect on a regular basis as per asbestos management plan
Encapsulate	Paint with a suitable proprietary sealant by competent persons and manage as above
Enclose	Box in/ surround with rigid material e.g. timber board and manage as above
Remove	Removal to be undertaken by competent persons
Restrict Access	Take immediate steps to prevent exposure e.g. warning signs, locking rooms, informing staff/ contractors

The table below shows the known ACMs for this site as identified at the time of the survey. Areas of no access should be presumed to contain asbestos until proven otherwise. If this table is blank then no ACMs have been detected within the scope of the survey. Further details of actions recommended are in section 5.

Building	Floor/ Room	Assessment Number	Location/ position	Product type	Surface treatment	Condition	Extent	Accessibility	Level of identification	Asbestos type	Material risk	Priority risk	Action
Duct	Basement 1 / Tunnel 1	001	Residue to wall	Hard Set Lagging	Unsealed lagging and sprays	High Damage	100m²	Usually inaccessible or unlikely to be disturbed	Identified	Chrysotile	(10) High		Remove
Duct	Basement 1 / Tunnel 1	002	Residue to wall	Hard Set Lagging	Unsealed lagging and sprays	High Damage	100m²	Occasionally likely to be disturbed	Identified	Chrysotile	(10) High		Remove
Duct	Basement 1 / Tunnel 1	003	Residue to ceiling	Hard Set Lagging	Unsealed lagging and sprays	High Damage	100m²	Occasionally likely to be disturbed	Identified	Chrysotile	(10) High		Remove
Duct	Basement 1 / Tunnel 1	004	Residue to pipework	Hard Set Lagging	Unsealed lagging and sprays	High Damage	100lm	Occasionally likely to be disturbed	Identified	Chrysotile	(10) High		Remove
Duct	Basement 1 / Tunnel 1	005	Residue to pipework	Hard Set Lagging	Unsealed lagging and sprays	High Damage	100lm	Occasionally likely to be disturbed	Identified	Chrysotile	(10) High		Remove
Duct	Basement 1 / Tunnel 2	006	Residue to wall	Hard Set Lagging	Unsealed lagging and sprays	High Damage	100m²	Usually inaccessible or unlikely to be disturbed	Identified	Amo + Chrys + Croc	(12) High		Remove
Duct	Basement 1 / Tunnel 2	007	Residue to wall	Hard Set Lagging	Unsealed lagging and sprays	High Damage	100m²	Occasionally likely to be disturbed	Identified	Amo + Chrys + Croc	(12) High		Remove
Duct	Basement 1 / Tunnel 2	008	Residue to ceiling	Hard Set Lagging	Unsealed lagging and sprays	High Damage	100m²	Occasionally likely to be disturbed	Identified	Chrysotile + Amosite	(11) High		Remove
Duct	Basement 1 / Tunnel 2	009	Residue to pipework	Hard Set Lagging	Unsealed lagging and sprays	High Damage	100m²	Occasionally likely to be disturbed	Identified	Chrysotile + Amosite	(11) High		Remove
Duct	Basement 1 / Tunnel 2	010	Residue to pipework	Hard Set Lagging	Unsealed lagging and sprays	High Damage	100m²	Occasionally likely to be disturbed	Identified	Amo + Chrys + Croc	(12) High		Remove

Building	Floor/ Room	Assessment Number	Location/ position	Product type	Surface treatment	Condition	Extent	Accessibility	Level of identification	Asbestos type	Material risk	Priority risk	Action
Duct	Basement 1 / Tunnel 3	011	Residue to wall	Hard Set Lagging	Unsealed lagging and sprays	High Damage	50m²	Usually inaccessible or unlikely to be disturbed	Identified	Amo + Chrys + Croc	(12) High		Remove
Duct	Basement 1 / Tunnel 3	012	Residue to wall	Hard Set Lagging	Unsealed lagging and sprays	High Damage	50m²	Occasionally likely to be disturbed	Identified	Amo + Chrys + Croc	(12) High		Remove
Duct	Basement 1 / Tunnel 3	013	Residue to ceiling	Hard Set Lagging	Unsealed lagging and sprays	High Damage	50m²	Occasionally likely to be disturbed	Identified	Amo + Chrys + Croc	(12) High		Remove
Duct	Basement 1 / Tunnel 3	014	Residue to pipework	Hard Set Lagging	Unsealed lagging and sprays	High Damage	50lm	Occasionally likely to be disturbed	Identified	Amo + Chrys + Croc	(12) High		Remove
Duct	Basement 1 / Tunnel 3	015	Residue to pipework	Hard Set Lagging	Unsealed lagging and sprays	High Damage	50lm	Occasionally likely to be disturbed	Identified	Amo + Chrys + Croc	(12) High		Remove
Duct	Basement 1 / Tunnel 3	016	Gaskets to pipework	Gaskets	Surface Sealed	Low Damage	100no.	Occasionally likely to be disturbed	Identified	Chrysotile	(5) Low		Remove
Duct	Basement 1 / Tunnel 4	017	Residue to wall	Hard Set Lagging	Unsealed lagging and sprays	High Damage	50m²	Usually inaccessible or unlikely to be disturbed	Identified	Amo + Chrys + Croc	(12) High		Remove
Duct	Basement 1 / Tunnel 4	018	Residue to wall	Hard Set Lagging	Unsealed lagging and sprays	High Damage	50m²	Occasionally likely to be disturbed	Identified	Chrysotile + Amosite	(11) High		Remove
Duct	Basement 1 / Tunnel 4	022	Gaskets to pipework	Gaskets	Surface Sealed	Low Damage	20no.	Occasionally likely to be disturbed	Identified	Chrysotile	(5) Low		Remove
Duct	Basement 1 / Tunnel 5	023	Residue to wall	Hard Set Lagging	Unsealed lagging and sprays	High Damage	50m²	Usually inaccessible or unlikely to be disturbed	Identified	Amosite	(11) High		Remove

Building	Floor/ Room	Assessment Number	Location/ position	Product type	Surface treatment	Condition	Extent	Accessibility	Level of identification	Asbestos type	Material risk	Priority risk	Action
Duct	Basement 1 / Tunnel 5	024	Residue to wall	Hard Set Lagging	Unsealed lagging and sprays	High Damage	50m²	Occasionally likely to be disturbed	Identified	Chrysotile + Amosite	(11) High		Remove
Duct	Basement 1 / Tunnel 6	029	Residue to wall	Hard Set Lagging	Unsealed lagging and sprays	High Damage	50m²	Usually inaccessible or unlikely to be disturbed	Identified	Amo + Chrys + Croc	(12) High		Remove
Duct	Basement 1 / Tunnel 6	030	Residue to wall	Hard Set Lagging	Unsealed lagging and sprays	High Damage	50m²	Occasionally likely to be disturbed	Identified	Chrysotile + Amosite	(11) High		Remove
Duct	Basement 1 / Tunnel 6	031	Residue to ceiling	Hard Set Lagging	Unsealed lagging and sprays	High Damage	50m²	Occasionally likely to be disturbed	Identified	Chrysotile + Amosite	(11) High		Remove
Duct	Basement 1 / Tunnel 6	032	Residue to pipework	Hard Set Lagging	Unsealed lagging and sprays	High Damage	50lm	Occasionally likely to be disturbed	Identified	Chrysotile + Crocidolite	(12) High		Remove
Duct	Basement 1 / Tunnel 6	033	Residue to pipework	Hard Set Lagging	Unsealed lagging and sprays	High Damage	50lm	Occasionally likely to be disturbed	Identified	Chrysotile + Crocidolite	(12) High		Remove

SECTION 5 - CONCLUSIONS AND ACTIONS

Asbestos Containing Materials and Specific Recommendations:

Thirty-four samples were taken in total within the site, twenty six of which were confirmed to contain asbestos.

General Recommendations:

As the survey was undertaken with regard to demolition of the survey site area, the recommendation is that all asbestos containing materials are removed from site prior to demolition in compliance with the Control of Asbestos Regulations 2012.

The asbestos hard set lagging is a licensed asbestos product and its removal will require the services of a licensed asbestos contractor.

Due to the contamination identified in the tunnel 1-6 it is recommended that the entire tunnel is decontaminated as part of the remediation works.

Removal of licensed asbestos materials may require a fourteen day notification period to the relevant enforcing authority prior to works being carried out.

Although the other asbestos materials are non-licensed asbestos products any work upon, or removal of, these materials will need to be done by competent persons and items removed disposing of as asbestos waste. Removal of non-licensed asbestos materials may require notification to the relevant enforcing authority prior to works being carried out.

If, for whatever reason, the removal work does not proceed immediately with respect to refurbishment of the site it may be necessary to prepare management and control actions to enable the remaining asbestos to be safely managed whilst the long-term future of the site is determined. The duty holder shall ensure that where asbestos is, or is liable to be, present that a determination of the risk from that asbestos is made and measures which are to be taken for managing the risks are specified in a written plan and implemented. This would be in line with Regulation 4 of The Control of Asbestos Regulations 2012.

It should be noted that as this survey was location specific ACMs could remain in the site in areas that were outside the scope of this survey. Prior to further refurbishment or demolition further investigations may be required.

It should be noted that this report only forms part of an asbestos management plan and does not necessarily provide full compliance with regulation 4 of CAR 2012.

Further information can be obtained from the following asbestos related publications:

Regulations:

The Control of Asbestos Regulations 2012.

Approved Codes of Practice:

“Managing and working with asbestos” (L143) 2013

Guidance:

“Asbestos: The survey guide” (HSG264) 2012

“Asbestos: The analysts' guide for sampling, analysis and clearance procedures” (HSG248) 2005

“Asbestos: The licensed contractors' guide” (HSG247) 2006

“A comprehensive guide to managing asbestos in premises” (HSG227) 2004

“A short guide to managing asbestos in premises” (revision 3) (INDG223) 2004

“Asbestos Essentials Task Manual” (HSG210) 2012

The above documents are published by the Health and Safety Executive and are available from HSE Books, PO Box 1999, Sudbury, Suffolk CO10 2WA
And;
www.books.hse.gov.uk

The above list should not be considered exhaustive.

SECTION 6 - LIMITATIONS OF SURVEY

This asbestos survey was undertaken in accordance with the requirements of HSE documents HSG264 “Asbestos: The survey guide” and HSG248 “Asbestos: The analysts guide for sampling, analysis and clearance procedures” and also Eton Environmental Group Ltd documented in house quality procedures as accredited by UKAS to ISO17020.

Part of the scope of a survey is to collect bulk samples from suspect ACMs found for analysis by a UKAS accredited laboratory to confirm or refute the surveyor’s judgement. If a material is found to contain asbestos other similar homogenous materials used in the same way within the building may be strongly presumed to contain asbestos. The number of samples taken is dependent on the homogeneity of the material but the number should be sufficient for the surveyor to make an assessment of whether asbestos is present or not.

When a sample cannot be taken but the surveyor suspects that asbestos is present within the material, two levels of presumption can be made: one where there is a strong presumption that the material does contain asbestos but a laboratory identification has not been undertaken to confirm this; and a default situation where it must be presumed to contain asbestos because there is insufficient evidence to suggest it is not an ACM.

It should be noted that whilst the surveyor makes every effort to locate all suspect ACMs as far as is reasonably practicable, it cannot be guaranteed that all ACMs have been located. Even with 'complete' access demolition surveys, all ACMs may not be identified and this only becomes apparent during demolition itself.

Where suspect ACMs are located during the survey it is not the policy of Eton Environmental Group Ltd to disturb this material in any way except to take a representative sample. Therefore, no responsibility can be accepted for the presence of further ACMs behind a suspect ACM.

Asbestos cement is a non-licensed asbestos material. Asbestos insulating board (AIB) is a licensed asbestos material. A competent, experienced surveyor will normally be able to visually identify most asbestos cement products. But, if visual identification is inconclusive, analysis will be needed to establish the asbestos type(s). If, after analysis of the asbestos types, there is still doubt about whether a material is an asbestos cement product, a water absorption measurement will be needed, following the methodology set out at www.hse.gov.uk/asbestos/essentials/cement.htm to decide whether the material is asbestos cement.

All material extent figures are as accurate as reasonably practicable and therefore not necessarily definitive for the purpose of tendering for removal without further conformation if required. Plans/ drawings within this report are not to scale.

If, at the time of the survey, access was not possible to certain areas, these are noted on the assessment reports. Until such time that these areas are inspected they should be presumed to have asbestos containing materials for the purposes of the proposed

demolition.

All reasonable efforts are made to locate ducts, cavities, voids, under-crofts etc as part of the survey. However, some of these areas may not come to light until after the survey has been completed e.g. because the information was not supplied prior to the survey.

This is a building survey only and does not include for any ground investigation outside of the footprint of the structure or structures surveyed or below the lowest level slab before the ground/ ground-bearing slab.

APPENDIX A - TABLE OF NON-ASBESTOS SAMPLES AND ASSESSMENTS

Building	Floor/ Room	Assessment Number	Location/ position	Product type	Surface treatment	Condition	Extent	Accessibility	Level of identification	Asbestos type	Comments
Duct	Basement 1 / Tunnel 4	019	Residue to ceiling	Hard Set Lagging			50m²		Identified	No Asbestos Detected	
Duct	Basement 1 / Tunnel 4	020	Residue to pipework	Hard Set Lagging			50lm		Identified	No Asbestos Detected	
Duct	Basement 1 / Tunnel 4	021	Residue to pipework	Hard Set Lagging			50lm		Identified	No Asbestos Detected	
Duct	Basement 1 / Tunnel 5	025	Residue to ceiling	Hard Set Lagging			50m²		Identified	No Asbestos Detected	
Duct	Basement 1 / Tunnel 5	026	Residue to pipework	Hard Set Lagging			50lm		Identified	No Asbestos Detected	
Duct	Basement 1 / Tunnel 5	027	Residue to pipework	Hard Set Lagging			50lm		Identified	No Asbestos Detected	
Duct	Basement 1 / Tunnel 5	028	Gaskets to pipework	Gaskets			20no.		Identified	No Asbestos Detected	
Duct	Basement 1 / Tunnel 6	034	Gaskets to pipework	Gaskets			20no.		Strongly Presumed	No Asbestos Detected	all gaskets

APPENDIX B - MATERIAL ASSESSMENT RECORDS

Assessment details				Comments	Photograph
Building	Duct	**Floor/ room**	Basement 1 / Tunnel 1		
Assessment no.	001	**Accessibility**	Usually inaccessible or unlikely to be disturbed		
Material Risk					
Identification	Identified	**Condition**	High Damage		
Extent	100m²	**Asbestos Type**	Chrysotile		
Location/ position	Residue to wall				
Surface treatment	Unsealed lagging and sprays				
Product type	Hard Set Lagging				
Material risk	High	**Material risk score**	10		
Action	Remove				

Priority Risk					
Normal occupant activity			**No. occupants**		
			Frequency of use		
Location			**Average time each use**		
Accessibility			**Mean score**		
Extent/amount					
Mean score			**Priority risk score**		
Type of maintenance activity			**Total risk score**		
Frequency of maintenance activity					
Mean score					

Assessment details				Comments	Photograph
Building	Duct	**Floor/ room**	Basement 1 / Tunnel 1		
Assessment no.	002	**Accessibility**	Occasionally likely to be disturbed		
Material Risk					
Identification	Identified	**Condition**	High Damage		
Extent	100m²	**Asbestos Type**	Chrysotile		
Location/ position	Residue to wall				
Surface treatment	Unsealed lagging and sprays				
Product type	Hard Set Lagging				
Material risk	High	**Material risk score**	10		
Action	Remove				

Priority Risk					
Normal occupant activity			**No. occupants**		
			Frequency of use		
Location			**Average time each use**		
Accessibility			**Mean score**		
Extent/amount					
Mean score			**Priority risk score**		
Type of maintenance activity			**Total risk score**		
Frequency of maintenance activity					
Mean score					

Assessment details				Comments	Photograph
Building	Duct	**Floor/ room**	Basement 1 / Tunnel 1		
Assessment no.	003	**Accessibility**	Occasionally likely to be disturbed		
Material Risk					
Identification	Identified	**Condition**	High Damage		
Extent	100m²	**Asbestos Type**	Chrysotile		
Location/ position	Residue to ceiling				
Surface treatment	Unsealed lagging and sprays				
Product type	Hard Set Lagging				
Material risk	High	**Material risk score**	10		
Action	Remove				

Priority Risk					
Normal occupant activity			**No. occupants**		
			Frequency of use		
Location			**Average time each use**		
Accessibility			**Mean score**		
Extent/amount					
Mean score			**Priority risk score**		
Type of maintenance activity			**Total risk score**		
Frequency of maintenance activity					
Mean score					

Assessment details				Comments	Photograph
Building	Duct	Floor/ room	Basement 1 / Tunnel 1		
Assessment no.	004	Accessibility	Occasionally likely to be disturbed		
Material Risk					
Identification	Identified	Condition	High Damage		
Extent	100lm	Asbestos Type	Chrysotile		
Location/ position	Residue to pipework				
Surface treatment	Unsealed lagging and sprays				
Product type	Hard Set Lagging				
Material risk	High	Material risk score	10		
Action	Remove				

Priority Risk					
Normal occupant activity			No. occupants		
			Frequency of use		
Location			Average time each use		
Accessibility			Mean score		
Extent/amount					
Mean score			Priority risk score		
Type of maintenance activity			Total risk score		
Frequency of maintenance activity					
Mean score					

Assessment details				Comments	Photograph
Building	Duct	Floor/ room	Basement 1 / Tunnel 1		
Assessment no.	005	Accessibility	Occasionally likely to be disturbed		
Material Risk					
Identification	Identified	Condition	High Damage		
Extent	100lm	Asbestos Type	Chrysotile		
Location/ position	Residue to pipework				
Surface treatment	Unsealed lagging and sprays				
Product type	Hard Set Lagging				
Material risk	High	Material risk score	10		
Action	Remove				

Priority Risk					
Normal occupant activity			No. occupants		
			Frequency of use		
Location			Average time each use		
Accessibility			Mean score		
Extent/amount					
Mean score			Priority risk score		
Type of maintenance activity			Total risk score		
Frequency of maintenance activity					
Mean score					

Assessment details				Comments	Photograph
Building	Duct	**Floor/ room**	Basement 1 / Tunnel 2		
Assessment no.	006	**Accessibility**	Usually inaccessible or unlikely to be disturbed		
Material Risk					
Identification	Identified	**Condition**	High Damage		
Extent	100m²	**Asbestos Type**	Amo + Chrys + Croc		
Location/ position	Residue to wall				
Surface treatment	Unsealed lagging and sprays				
Product type	Hard Set Lagging				
Material risk	High	**Material risk score**	12		
Action	Remove				

Priority Risk					
Normal occupant activity			**No. occupants**		
			Frequency of use		
Location			**Average time each use**		
Accessibility			**Mean score**		
Extent/amount					
Mean score			**Priority risk score**		
Type of maintenance activity			**Total risk score**		
Frequency of maintenance activity					
Mean score					

Assessment details				Comments	Photograph
Building	Duct	**Floor/ room**	Basement 1 / Tunnel 2		
Assessment no.	007	**Accessibility**	Occasionally likely to be disturbed		
Material Risk					
Identification	Identified	**Condition**	High Damage		
Extent	100m²	**Asbestos Type**	Amo + Chrys + Croc		
Location/ position	Residue to wall				
Surface treatment	Unsealed lagging and sprays				
Product type	Hard Set Lagging				
Material risk	High	**Material risk score**	12		
Action	Remove				

Priority Risk				
Normal occupant activity		**No. occupants**		
		Frequency of use		
Location		**Average time each use**		
Accessibility		**Mean score**		
Extent/amount				
Mean score		**Priority risk score**		
Type of maintenance activity		**Total risk score**		
Frequency of maintenance activity				
Mean score				

Assessment details				Comments	Photograph
Building	Duct	**Floor/ room**	Basement 1 / Tunnel 2		
Assessment no.	008	**Accessibility**	Occasionally likely to be disturbed		
Material Risk					
Identification	Identified	**Condition**	High Damage		
Extent	100m²	**Asbestos Type**	Chrysotile + Amosite		
Location/ position	Residue to ceiling				
Surface treatment	Unsealed lagging and sprays				
Product type	Hard Set Lagging				
Material risk	High	**Material risk score**	11		
Action	Remove				

Priority Risk					
Normal occupant activity			**No. occupants**		
			Frequency of use		
Location			**Average time each use**		
Accessibility			**Mean score**		
Extent/amount					
Mean score			**Priority risk score**		
Type of maintenance activity			**Total risk score**		
Frequency of maintenance activity					
Mean score					

Assessment details				Comments	Photograph
Building	Duct	**Floor/ room**	Basement 1 / Tunnel 2		
Assessment no.	009	**Accessibility**	Occasionally likely to be disturbed		
Material Risk					
Identification	Identified	**Condition**	High Damage		
Extent	100m²	**Asbestos Type**	Chrysotile + Amosite		
Location/ position	Residue to pipework				
Surface treatment	Unsealed lagging and sprays				
Product type	Hard Set Lagging				
Material risk	High	**Material risk score**	11		
Action	Remove				

Priority Risk					
Normal occupant activity			**No. occupants**		
			Frequency of use		
Location			**Average time each use**		
Accessibility			**Mean score**		
Extent/amount					
Mean score			**Priority risk score**		
Type of maintenance activity			**Total risk score**		
Frequency of maintenance activity					
Mean score					

Assessment details				Comments	Photograph
Building	Duct	**Floor/ room**	Basement 1 / Tunnel 2		
Assessment no.	010	**Accessibility**	Occasionally likely to be disturbed		
Material Risk					
Identification	Identified	**Condition**	High Damage		
Extent	100m²	**Asbestos Type**	Amo + Chrys + Croc		
Location/ position	Residue to pipework				
Surface treatment	Unsealed lagging and sprays				
Product type	Hard Set Lagging				
Material risk	High	**Material risk score**	12		
Action	Remove				

Priority Risk					
Normal occupant activity			**No. occupants**		
			Frequency of use		
Location			**Average time each use**		
Accessibility			**Mean score**		
Extent/amount					
Mean score			**Priority risk score**		
Type of maintenance activity			**Total risk score**		
Frequency of maintenance activity					
Mean score					

Assessment details				Comments	Photograph
Building	Duct	Floor/ room	Basement 1 / Tunnel 3		
Assessment no.	011	Accessibility	Usually inaccessible or unlikely to be disturbed		
Material Risk					
Identification	Identified	Condition	High Damage		
Extent	50m²	Asbestos Type	Amo + Chrys + Croc		
Location/ position	Residue to wall				
Surface treatment	Unsealed lagging and sprays				
Product type	Hard Set Lagging				
Material risk	High	Material risk score	12		
Action	Remove				

Priority Risk					
Normal occupant activity			No. occupants		
			Frequency of use		
Location			Average time each use		
Accessibility			Mean score		
Extent/amount					
Mean score			Priority risk score		
Type of maintenance activity			Total risk score		
Frequency of maintenance activity					
Mean score					

Assessment details				Comments	Photograph
Building	Duct	**Floor/ room**	Basement 1 / Tunnel 3		
Assessment no.	012	**Accessibility**	Occasionally likely to be disturbed		
Material Risk					
Identification	Identified	**Condition**	High Damage		
Extent	50m²	**Asbestos Type**	Amo + Chrys + Croc		
Location/ position	Residue to wall				
Surface treatment	Unsealed lagging and sprays				
Product type	Hard Set Lagging				
Material risk	High	**Material risk score**	12		
Action	Remove				

Priority Risk					
Normal occupant activity			**No. occupants**		
			Frequency of use		
Location			**Average time each use**		
Accessibility			**Mean score**		
Extent/amount					
Mean score			**Priority risk score**		
Type of maintenance activity			**Total risk score**		
Frequency of maintenance activity					
Mean score					

Assessment details				Comments	Photograph
Building	Duct	**Floor/ room**	Basement 1 / Tunnel 3		
Assessment no.	013	**Accessibility**	Occasionally likely to be disturbed		
Material Risk					
Identification	Identified	**Condition**	High Damage		
Extent	50m²	**Asbestos Type**	Amo + Chrys + Croc		
Location/ position	Residue to ceiling				
Surface treatment	Unsealed lagging and sprays				
Product type	Hard Set Lagging				
Material risk	High	**Material risk score**	12		
Action	Remove				

Priority Risk					
Normal occupant activity			**No. occupants**		
			Frequency of use		
Location			**Average time each use**		
Accessibility			**Mean score**		
Extent/amount					
Mean score			**Priority risk score**		
Type of maintenance activity			**Total risk score**		
Frequency of maintenance activity					
Mean score					

Assessment details				Comments	Photograph
Building	Duct	Floor/ room	Basement 1 / Tunnel 3		
Assessment no.	014	Accessibility	Occasionally likely to be disturbed		
Material Risk					
Identification	Identified	Condition	High Damage		
Extent	50lm	Asbestos Type	Amo + Chrys + Croc		
Location/ position	Residue to pipework				
Surface treatment	Unsealed lagging and sprays				
Product type	Hard Set Lagging				
Material risk	High	Material risk score	12		
Action	Remove				

Priority Risk					
Normal occupant activity			No. occupants		
			Frequency of use		
Location			Average time each use		
Accessibility			Mean score		
Extent/amount					
Mean score			Priority risk score		
Type of maintenance activity			Total risk score		
Frequency of maintenance activity					
Mean score					

Assessment details				Comments	Photograph
Building	Duct	Floor/ room	Basement 1 / Tunnel 3		
Assessment no.	015	Accessibility	Occasionally likely to be disturbed		
Material Risk					
Identification	Identified	Condition	High Damage		
Extent	50lm	Asbestos Type	Amo + Chrys + Croc		
Location/ position	Residue to pipework				
Surface treatment	Unsealed lagging and sprays				
Product type	Hard Set Lagging				
Material risk	High	Material risk score	12		
Action	Remove				

Priority Risk					
Normal occupant activity			No. occupants		
			Frequency of use		
Location			Average time each use		
Accessibility			Mean score		
Extent/amount					
Mean score			Priority risk score		
Type of maintenance activity			Total risk score		
Frequency of maintenance activity					
Mean score					

Assessment details				Comments	Photograph
Building	Duct	Floor/ room	Basement 1 / Tunnel 3		
Assessment no.	016	Accessibility	Occasionally likely to be disturbed		
Material Risk					
Identification	Identified	Condition	Low Damage		
Extent	100no.	Asbestos Type	Chrysotile		
Location/ position	Gaskets to pipework				
Surface treatment	Surface Sealed				
Product type	Gaskets				
Material risk	Low	Material risk score	5		
Action	Remove				

Priority Risk					
Normal occupant activity			No. occupants		
			Frequency of use		
Location			Average time each use		
Accessibility			Mean score		
Extent/amount					
Mean score			Priority risk score		
Type of maintenance activity			Total risk score		
Frequency of maintenance activity					
Mean score					

Assessment details				Comments	Photograph
Building	Duct	Floor/ room	Basement 1 / Tunnel 4		
Assessment no.	017	Accessibility	Usually inaccessible or unlikely to be disturbed		
Material Risk					
Identification	Identified	Condition	High Damage		
Extent	50m²	Asbestos Type	Amo + Chrys + Croc		
Location/ position	Residue to wall				
Surface treatment	Unsealed lagging and sprays				
Product type	Hard Set Lagging				
Material risk	High	Material risk score	12		
Action	Remove				

Priority Risk					
Normal occupant activity			No. occupants		
			Frequency of use		
Location			Average time each use		
Accessibility			Mean score		
Extent/amount					
Mean score			Priority risk score		
Type of maintenance activity			Total risk score		
Frequency of maintenance activity					
Mean score					

Assessment details				Comments	Photograph
Building	Duct	Floor/ room	Basement 1 / Tunnel 4		
Assessment no.	018	Accessibility	Occasionally likely to be disturbed		
Material Risk					
Identification	Identified	Condition	High Damage		
Extent	50m²	Asbestos Type	Chrysotile + Amosite		
Location/ position	Residue to wall				
Surface treatment	Unsealed lagging and sprays				
Product type	Hard Set Lagging				
Material risk	High	Material risk score	11		
Action	Remove				

Priority Risk					
Normal occupant activity			No. occupants		
			Frequency of use		
Location			Average time each use		
Accessibility			Mean score		
Extent/amount					
Mean score			Priority risk score		
Type of maintenance activity			Total risk score		
Frequency of maintenance activity					
Mean score					

Assessment details				Comments	Photograph
Building	Duct	**Floor/ room**	Basement 1 / Tunnel 4		
Assessment no.	019	**Accessibility**			
Material Risk					
Identification	Identified	**Condition**			
Extent		**Asbestos Type**	No Asbestos Detected		
Location/ position	Residue to ceiling				
Surface treatment					
Product type	n/a				
Material risk		**Material risk score**			
Action	No further action required				

Assessment details				Comments	Photograph
Building	Duct	**Floor/ room**	Basement 1 / Tunnel 4		
Assessment no.	020	**Accessibility**			
Material Risk					
Identification	Identified	**Condition**			
Extent		**Asbestos Type**	No Asbestos Detected		
Location/ position	Residue to pipework				
Surface treatment					
Product type	n/a				
Material risk		**Material risk score**			
Action	No further action required				

Assessment details				Comments	Photograph
Building	Duct	**Floor/ room**	Basement 1 / Tunnel 4		
Assessment no.	021	**Accessibility**			
Material Risk					
Identification	Identified	**Condition**			
Extent		**Asbestos Type**	No Asbestos Detected		
Location/ position	Residue to pipework				
Surface treatment					
Product type	n/a				
Material risk		**Material risk score**			
Action	No further action required				

Assessment details				Comments	Photograph
Building	Duct	Floor/ room	Basement 1 / Tunnel 4		
Assessment no.	022	Accessibility	Occasionally likely to be disturbed		
Material Risk					
Identification	Identified	Condition	Low Damage		
Extent	20no.	Asbestos Type	Chrysotile		
Location/ position	Gaskets to pipework				
Surface treatment	Surface Sealed				
Product type	Gaskets				
Material risk	Low	Material risk score	5		
Action	Remove				

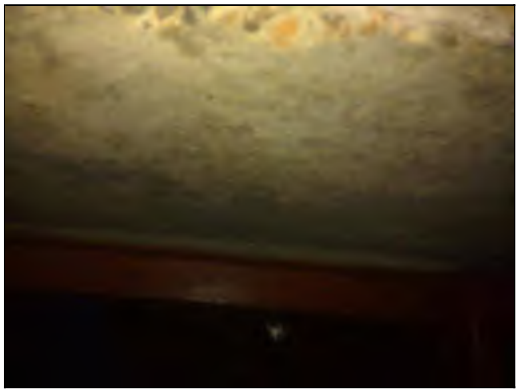
Priority Risk					
Normal occupant activity			No. occupants		
			Frequency of use		
Location			Average time each use		
Accessibility			Mean score		
Extent/amount					
Mean score			Priority risk score		
Type of maintenance activity			Total risk score		
Frequency of maintenance activity					
Mean score					

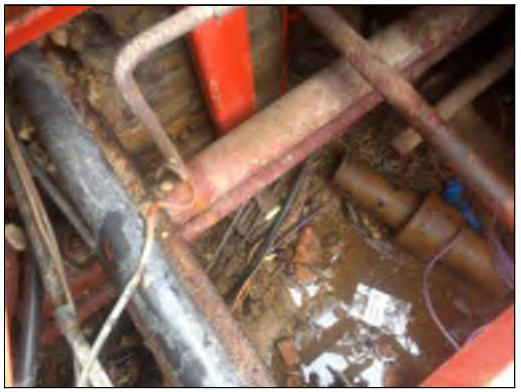
Assessment details				Comments	Photograph
Building	Duct	Floor/ room	Basement 1 / Tunnel 5		
Assessment no.	023	Accessibility	Usually inaccessible or unlikely to be disturbed		
Material Risk					
Identification	Identified	Condition	High Damage		
Extent	50m²	Asbestos Type	Amosite		
Location/ position	Residue to wall				
Surface treatment	Unsealed lagging and sprays				
Product type	Hard Set Lagging				
Material risk	High	Material risk score	11		
Action	Remove				

Priority Risk					
Normal occupant activity			No. occupants		
			Frequency of use		
Location			Average time each use		
Accessibility			Mean score		
Extent/amount					
Mean score			Priority risk score		
Type of maintenance activity			Total risk score		
Frequency of maintenance activity					
Mean score					

Assessment details				Comments	Photograph
Building	Duct	Floor/ room	Basement 1 / Tunnel 5		
Assessment no.	024	Accessibility	Occasionally likely to be disturbed		
Material Risk					
Identification	Identified	Condition	High Damage		
Extent	50m²	Asbestos Type	Chrysotile + Amosite		
Location/ position	Residue to wall				
Surface treatment	Unsealed lagging and sprays				
Product type	Hard Set Lagging				
Material risk	High	Material risk score	11		
Action	Remove				

Priority Risk					
Normal occupant activity			No. occupants		
			Frequency of use		
Location			Average time each use		
Accessibility			Mean score		
Extent/amount					
Mean score			Priority risk score		
Type of maintenance activity			Total risk score		
Frequency of maintenance activity					
Mean score					

Assessment details				Comments	Photograph
Building	Duct	**Floor/ room**	Basement 1 / Tunnel 5		
Assessment no.	025	**Accessibility**			
Material Risk					
Identification	Identified	**Condition**			
Extent		**Asbestos Type**	No Asbestos Detected		
Location/ position	Residue to ceiling				
Surface treatment					
Product type	n/a				
Material risk		**Material risk score**			
Action	No further action required				

Assessment details				Comments	Photograph
Building	Duct	**Floor/ room**	Basement 1 / Tunnel 5		
Assessment no.	026	**Accessibility**			
Material Risk					
Identification	Identified	**Condition**			
Extent		**Asbestos Type**	No Asbestos Detected		
Location/ position	Residue to pipework				
Surface treatment					
Product type	n/a				
Material risk		**Material risk score**			
Action	No further action required				

Assessment details				Comments	Photograph
Building	Duct	**Floor/ room**	Basement 1 / Tunnel 5		
Assessment no.	027	**Accessibility**			
Material Risk					
Identification	Identified	**Condition**			
Extent		**Asbestos Type**	No Asbestos Detected		
Location/ position	Residue to pipework				
Surface treatment					
Product type	n/a				
Material risk		**Material risk score**			
Action	No further action required				

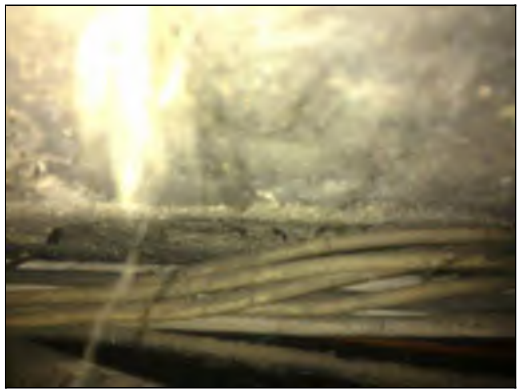
Assessment details				Comments	Photograph
Building	Duct	**Floor/ room**	Basement 1 / Tunnel 5		
Assessment no.	028	**Accessibility**			
Material Risk					
Identification	Identified	**Condition**			
Extent		**Asbestos Type**	No Asbestos Detected		
Location/ position	Gaskets to pipework				
Surface treatment					
Product type	n/a				
Material risk		**Material risk score**			
Action	No further action required				

Assessment details				Comments	Photograph
Building	Duct	**Floor/ room**	Basement 1 / Tunnel 6		
Assessment no.	029	**Accessibility**	Usually inaccessible or unlikely to be disturbed		
Material Risk					
Identification	Identified	**Condition**	High Damage		
Extent	50m²	**Asbestos Type**	Amo + Chrys + Croc		
Location/ position	Residue to wall				
Surface treatment	Unsealed lagging and sprays				
Product type	Hard Set Lagging				
Material risk	High	**Material risk score**	12		
Action	Remove				

Priority Risk					
Normal occupant activity			**No. occupants**		
			Frequency of use		
Location			**Average time each use**		
Accessibility			**Mean score**		
Extent/amount					
Mean score			**Priority risk score**		
Type of maintenance activity			**Total risk score**		
Frequency of maintenance activity					
Mean score					

Assessment details				Comments	Photograph
Building	Duct	Floor/ room	Basement 1 / Tunnel 6		
Assessment no.	030	Accessibility	Occasionally likely to be disturbed		
Material Risk					
Identification	Identified	Condition	High Damage		
Extent	50m²	Asbestos Type	Chrysotile + Amosite		
Location/ position	Residue to wall				
Surface treatment	Unsealed lagging and sprays				
Product type	Hard Set Lagging				
Material risk	High	Material risk score	11		
Action	Remove				

Priority Risk					
Normal occupant activity			No. occupants		
			Frequency of use		
Location			Average time each use		
Accessibility			Mean score		
Extent/amount					
Mean score			Priority risk score		
Type of maintenance activity			Total risk score		
Frequency of maintenance activity					
Mean score					

Assessment details				Comments	Photograph
Building	Duct	Floor/ room	Basement 1 / Tunnel 6		
Assessment no.	031	Accessibility	Occasionally likely to be disturbed		
Material Risk					
Identification	Identified	Condition	High Damage		
Extent	50m²	Asbestos Type	Chrysotile + Amosite		
Location/ position	Residue to ceiling				
Surface treatment	Unsealed lagging and sprays				
Product type	Hard Set Lagging				
Material risk	High	Material risk score	11		
Action	Remove				

Priority Risk					
Normal occupant activity			No. occupants		
			Frequency of use		
Location			Average time each use		
Accessibility			Mean score		
Extent/amount					
Mean score			Priority risk score		
Type of maintenance activity			Total risk score		
Frequency of maintenance activity					
Mean score					

Assessment details				Comments	Photograph
Building	Duct	Floor/ room	Basement 1 / Tunnel 6		
Assessment no.	032	Accessibility	Occasionally likely to be disturbed		
Material Risk					
Identification	Identified	Condition	High Damage		
Extent	50lm	Asbestos Type	Chrysotile + Crocidolite		
Location/ position	Residue to pipework				
Surface treatment	Unsealed lagging and sprays				
Product type	Hard Set Lagging				
Material risk	High	Material risk score	12		
Action	Remove				

Priority Risk					
Normal occupant activity			No. occupants		
			Frequency of use		
Location			Average time each use		
Accessibility			Mean score		
Extent/amount					
Mean score			Priority risk score		
Type of maintenance activity			Total risk score		
Frequency of maintenance activity					
Mean score					

Assessment details				Comments	Photograph
Building	Duct	Floor/ room	Basement 1 / Tunnel 6		
Assessment no.	033	Accessibility	Occasionally likely to be disturbed		
Material Risk					
Identification	Identified	Condition	High Damage		
Extent	50lm	Asbestos Type	Chrysotile + Crocidolite		
Location/ position	Residue to pipework				
Surface treatment	Unsealed lagging and sprays				
Product type	Hard Set Lagging				
Material risk	High	Material risk score	12		
Action	Remove				

Priority Risk					
Normal occupant activity			No. occupants		
			Frequency of use		
Location			Average time each use		
Accessibility			Mean score		
Extent/amount					
Mean score			Priority risk score		
Type of maintenance activity			Total risk score		
Frequency of maintenance activity					
Mean score					

Assessment details				Comments	Photograph
Building	Duct	**Floor/ room**	Basement 1 / Tunnel 6	all gaskets	
Assessment no.	034	**Accessibility**			
Material Risk					
Identification	Strongly Presumed	**Condition**			
Extent		**Asbestos Type**	No Asbestos Detected		
Location/ position	Gaskets to pipework				
Surface treatment					
Product type	n/a				
Material risk		**Material risk score**			
Action	No further action required				

APPENDIX C - CERTIFICATES OF BULK SAMPLE ANALYSIS

ETON
ENVIRONMENTAL GROUP LTD

Analysis Report

Report Number: **J016190**

Issue Date: 11/01/2018

Private & Confidential:
Building 2030
Cambourne Business Park
Cambourne
Cambridgeshire
CB23 6DW

Premises of Sample Origin:
Duct Inspection
St Ann's Hospital
St Ann's Road
London
N15 3TH

Analyst: Amie Sowerby, Zoe Alderson

Sampled by: Wojciech Przytulski

Date of Sample Receipt: 10/01/2018

Date of Analysis: 18/12/2017 - 11/01/2018

Item No.	Lab Ref No.	SAMPLE LOCATION & DESCRIPTION	ASBESTOS FIBRE TYPE
1	AR003110	Residue to wall	Chrysotile
2	AR003111	Residue to wall	Chrysotile
3	AR003112	Residue to ceiling	Chrysotile
4	AR003113	Residue to pipework	Chrysotile

Notes:
Method Statement: Testing was performed in accordance with the Quality Control Manual in-house method of Eton Environmental Group Ltd, based on the published method HSG248. These results only apply to the sample analysed. Eton Environmental Group Ltd cannot accept responsibility for any discrepancy or inaccuracy arising from collection, labelling or description of samples by a third party.

NAD = No Asbestos Detected In Sample

Authorised Signatory:
Andrew Graham
Quality Manager

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Sampled by: Wojciech Przytulski

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Item No.	Lab Ref No.	SAMPLE LOCATION & DESCRIPTION	ASBESTOS FIBRE TYPE
5	AR003114	Residue to pipework	Chrysotile
6	AR003115	Residue to wall	Amosite + Chrysotile + Crocidolite
7	AR003116	Residue to wall	Amosite + Chrysotile + Crocidolite
8	AR003117	Residue to ceiling	Chrysotile + Amosite

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Sampled by: Wojciech Przytulski

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Item No.	Lab Ref No.	SAMPLE LOCATION & DESCRIPTION	ASBESTOS FIBRE TYPE
9	AR003118	Residue to pipework	Chrysotile + Amosite
10	AR003119	Residue to pipework	Amosite + Chrysotile + Crocidolite
11	AR003264	Residue to wall	Amosite + Chrysotile + Crocidolite
12	AR003265	Residue to wall	Amosite + Chrysotile + Crocidolite

Notes:
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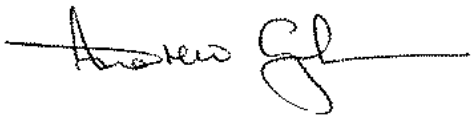

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Analyst: Amie Sowerby, Zoe Alderson

Sampled by: Wojciech Przytulski

Date of Sample Receipt: 10/01/2018

Date of Analysis: 18/12/2017 - 11/01/2018

Item No.	Lab Ref No.	SAMPLE LOCATION & DESCRIPTION	ASBESTOS FIBRE TYPE
13	AR003266	Residue to ceiling	Amosite + Chrysotile + Crocidolite
16	AR003267	Gaskets to pipework	Chrysotile
14	AR003268	Residue to pipework	Amosite + Chrysotile + Crocidolite
15	AR003269	Residue to pipework	Amosite + Chrysotile + Crocidolite

Notes:
Method Statement: Testing was performed in accordance with the Quality Control Manual in-house method of Eton Environmental Group Ltd, based on the published method HSG248. These results only apply to the sample analysed. Eton Environmental Group Ltd cannot accept responsibility for any discrepancy or inaccuracy arising from collection, labelling or description of samples by a third party.

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Sampled by: Wojciech Przytulski

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Item No.	Lab Ref No.	SAMPLE LOCATION & DESCRIPTION	ASBESTOS FIBRE TYPE
17	AR003270	Residue to wall	Amosite + Chrysotile + Crocidolite
18	AR003271	Residue to wall	Chrysotile + Amosite
19	AR003272	Residue to ceiling	NAD
20	AR003273	Residue to pipework	NAD

Notes:
Method Statement: Testing was performed in accordance with the Quality Control Manual in-house method of Eton Environmental Group Ltd, based on the published method HSG248. These results only apply to the sample analysed. Eton Environmental Group Ltd cannot accept responsibility for any discrepancy or inaccuracy arising from collection, labelling or description of samples by a third party.

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Analyst: Amie Sowerby, Zoe Alderson

Sampled by: Wojciech Przytulski

Date of Sample Receipt: 10/01/2018

Date of Analysis: 18/12/2017 - 11/01/2018

Item No.	Lab Ref No.	SAMPLE LOCATION & DESCRIPTION	ASBESTOS FIBRE TYPE
21	AR003274	Residue to pipework	NAD
22	AR003275	Gaskets to pipework	Chrysotile
23	AR003276	Residue to wall	Amosite
24	AR003277	Residue to wall	Chrysotile + Amosite

Notes:
Method Statement: Testing was performed in accordance with the Quality Control Manual in-house method of Eton Environmental Group Ltd, based on the published method HSG248. These results only apply to the sample analysed. Eton Environmental Group Ltd cannot accept responsibility for any discrepancy or inaccuracy arising from collection, labelling or description of samples by a third party.

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Analyst: Amie Sowerby, Zoe Alderson

Sampled by: Wojciech Przytulski

Date of Sample Receipt: 10/01/2018

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Item No.	Lab Ref No.	SAMPLE LOCATION & DESCRIPTION	ASBESTOS FIBRE TYPE
25	AR003278	Residue to ceiling	NAD
26	AR003279	Residue to pipework	NAD
27	AR003280	Residue to pipework	NAD
28	AR003281	Gaskets to pipework	NAD

Notes:
Method Statement: Testing was performed in accordance with the Quality Control Manual in-house method of Eton Environmental Group Ltd, based on the published method HSG248. These results only apply to the sample analysed. Eton Environmental Group Ltd cannot accept responsibility for any discrepancy or inaccuracy arising from collection, labelling or description of samples by a third party.

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Analyst: Amie Sowerby, Zoe Alderson

Sampled by: Wojciech Przytulski

Date of Sample Receipt: 10/01/2018

Date of Analysis: 18/12/2017 - 11/01/2018

Item No.	Lab Ref No.	SAMPLE LOCATION & DESCRIPTION	ASBESTOS FIBRE TYPE
29	AR003282	Residue to wall	Amosite + Chrysotile + Crocidolite
30	AR003283	Residue to wall	Chrysotile + Amosite
31	AR003284	Residue to ceiling	Chrysotile + Amosite
32	AR003285	Residue to pipework	Chrysotile + Crocidolite

Notes:
Method Statement: Testing was performed in accordance with the Quality Control Manual in-house method of Eton Environmental Group Ltd, based on the published method HSG248. These results only apply to the sample analysed. Eton Environmental Group Ltd cannot accept responsibility for any discrepancy or inaccuracy arising from collection, labelling or description of samples by a third party.

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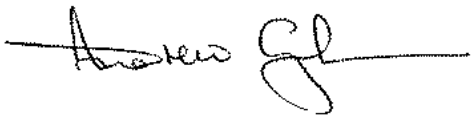

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CB23 6DW

Premises of Sample Origin:
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St Ann's Hospital
St Ann's Road
London
N15 3TH

Analyst: Amie Sowerby, Zoe Alderson

Sampled by: Wojciech Przytulski

Date of Sample Receipt: 10/01/2018

Date of Analysis: 18/12/2017 - 11/01/2018

Item No.	Lab Ref No.	SAMPLE LOCATION & DESCRIPTION	ASBESTOS FIBRE TYPE
33	AR003286	Residue to pipework	Chrysotile + Crocidolite

Notes:
Method Statement: Testing was performed in accordance with the Quality Control Manual in-house method of Eton Environmental Group Ltd, based on the published method HSG248. These results only apply to the sample analysed. Eton Environmental Group Ltd cannot accept responsibility for any discrepancy or inaccuracy arising from collection, labelling or description of samples by a third party.

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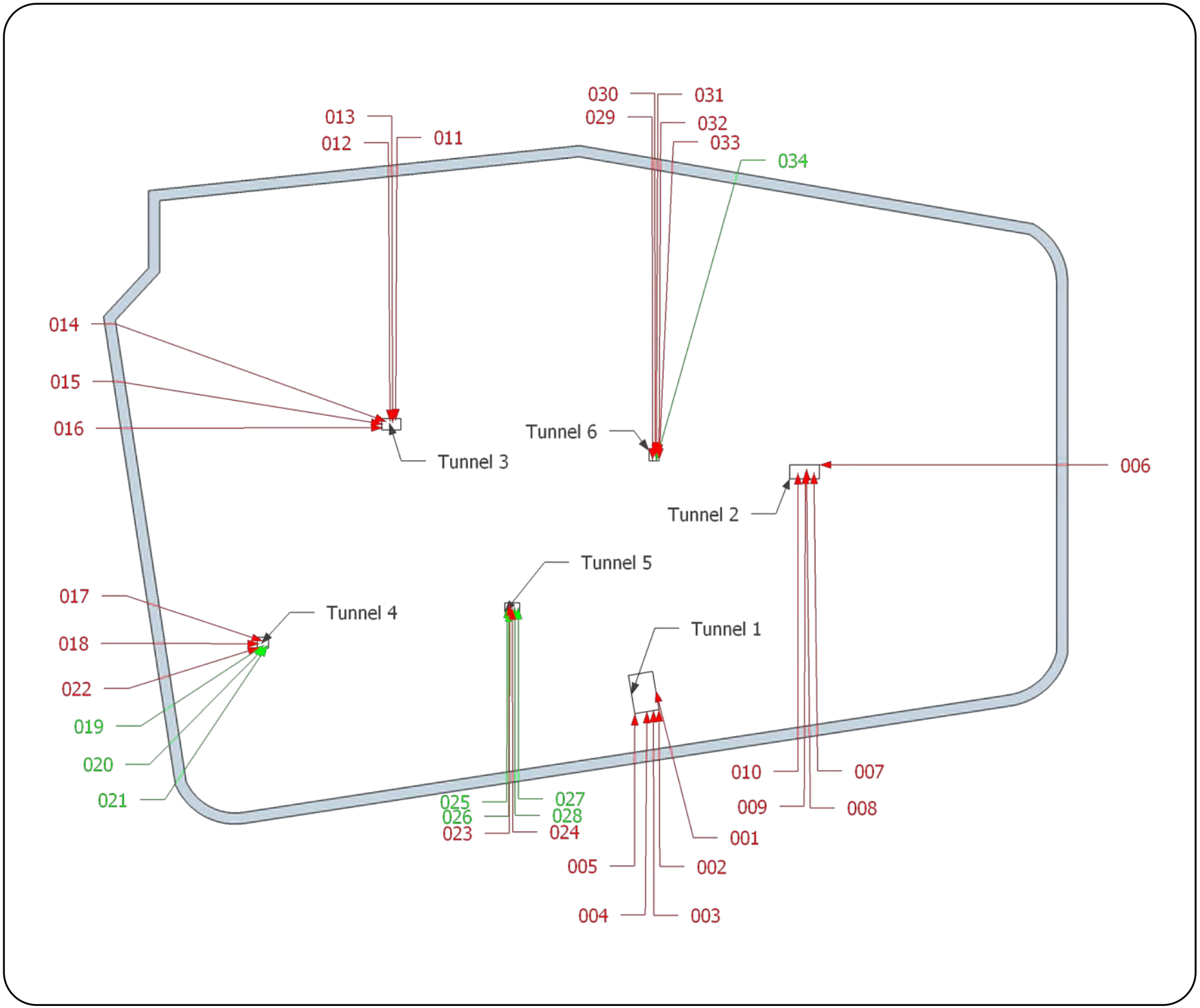
APPENDIX D - GENERAL OBSERVATIONS

Building	Room no.	Description	Comments
Duct	Tunnel 1	Basement 1 – Tunnel 1	Concrete ceiling, walls, floor, MMMF to pipe, mixed age of electric
Duct	Tunnel 2	Basement 1 – Tunnel 2	Concrete ceiling, walls, floor, MMMF to pipe, mixed age of electric
Duct	Tunnel 3	Basement 1 – Tunnel 3	Concrete ceiling, walls, floor, MMMF to pipe, mixed age of electric
Duct	Tunnel 4	Basement 1 – Tunnel 4	Concrete ceiling, walls, floor, MMMF to pipe, mixed age of electric
Duct	Tunnel 5	Basement 1 – Tunnel 5	Concrete ceiling, walls, floor, MMMF to pipe, mixed age of electric
Duct	Tunnel 6	Basement 1 – Tunnel 6	Concrete ceiling, walls, floor, MMMF to pipe, mixed age of electric



Eton Environmental Group Ltd
163 Grange Road
Darlington
DL1 5NT
Tel: 01325 366886

Legend:

Asbestos positive assessment

Asbestos negative assessment

No access assessment

General observation

Area contains asbestos

Area not accessed

Area out of survey scope

Reference points shown on plan indicate point of assessment, observation or no access only. For full extents see register/ assessment tables within this report.

Drawing not to scale

Survey reference:
J16190

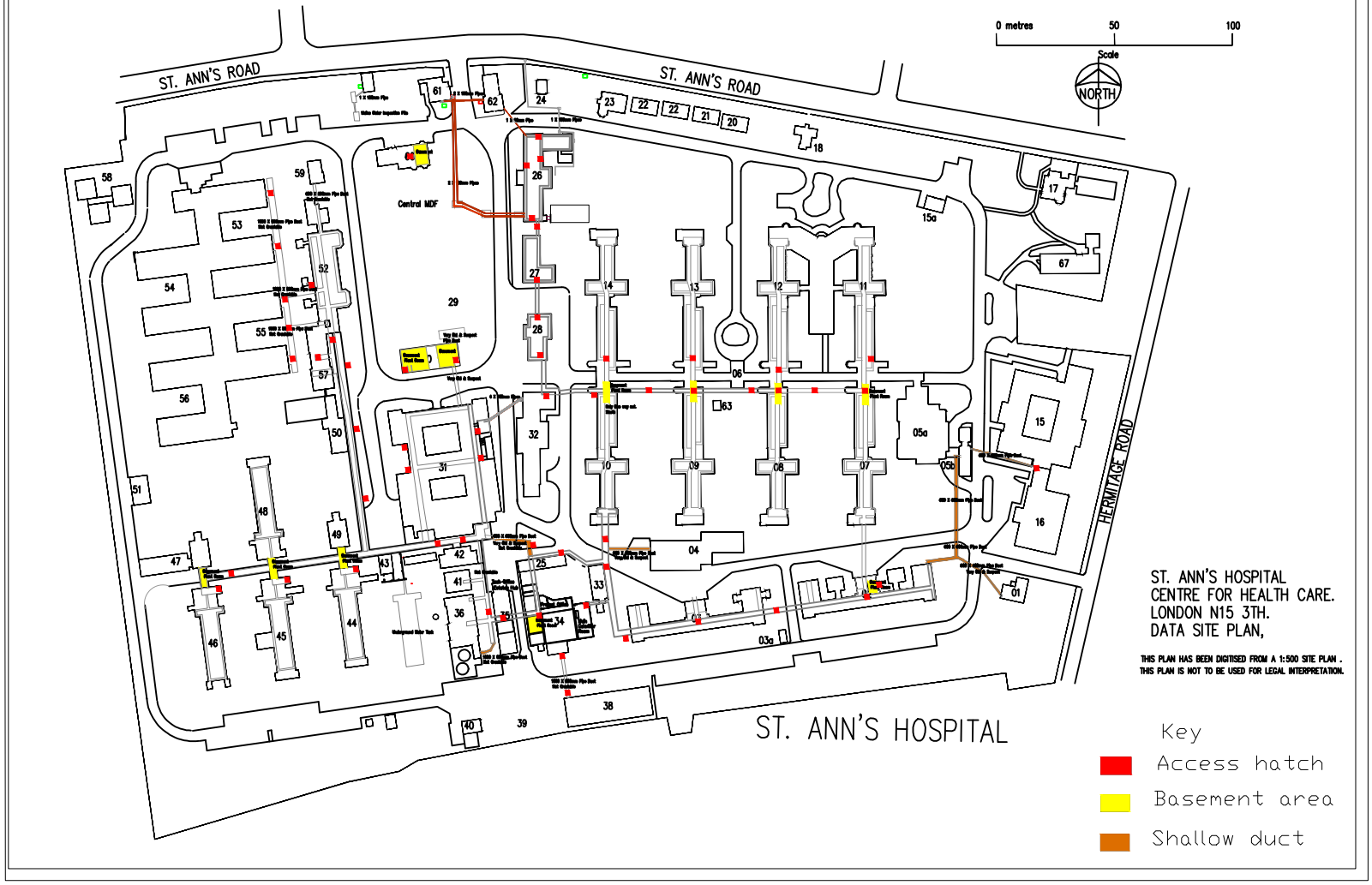
Survey date:
January 2018

Building:
Main

Floor:
Sub-surface

Site address:
Duct Inspection,
St Ann's Hospital,
St Ann's Road,
London,
N15 3TH

End of report


ST. ANN'S ROAD
ST. ANN'S ROAD
HERMITAGE ROAD
0 metres
50
100
Scale
NORTH
Central MDF
ST. ANN'S HOSPITAL
ST. ANN'S HOSPITAL
CENTRE FOR HEALTH CARE.
LONDON N15 3TH.
DATA SITE PLAN,
THIS PLAN HAS BEEN DIGITISED FROM A 1:500 SITE PLAN .
THIS PLAN IS NOT TO BE USED FOR LEGAL INTERPRETATION.
Key
Access hatch
Basement area
Shallow duct

APPENDIX 3

- Exploratory Hole Logs
- BGS Borehole Logs

TRIAL PIT LOG

TrialPit No: MTP01
Sheet 1 of 1

Project Name: St.Ann's	Project No. 21914J	Co-ords: - Level: 0.00	Date 21/03/2022
Location: St.Anns Road, London		Dimensions (m): 0.80 x 0.60 Depth 0.40	Scale 1:25
Equipment: JCB 360			Logged LW / Checked NTD

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.20 0.20	D D,J,V		0.30 0.40	-0.30 -0.40		Grass over loose light brown slightly gravelly sandy clay. Gravel is fine-coarse sub-angular to rounded including concrete, red brick, ceramic and mixed lithologies. Common rootlets <3cm (MADE GROUND). Brown slightly gravelly sandy clay. Gravel is fine-coarse angular to rounded including concrete, red brick, ceramic, mixed lithologies and suspected ACM (MADE GROUND). End of Pit at 0.400m

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D = small disturbed sample (tub)
J = organic sample (amber glass jar)
V = volatile sample (amber glass vial)
B = bulk bag sample
HSV = hand shear vane (kPa)
PP = pocket penetrometer (kg.cm2)
PID = photoionisation detector (ppm)

Stability

Remarks

Coordinates and levels, where indicated, must not be used for design purposes. The user is responsible for verifying all site and setting out dimensions.

TRIAL PIT LOG

TrialPit No: MTP02
Sheet 1 of 1

Project Name: St.Ann's	Project No. 21914J	Co-ords: - Level: 0.00	Date 22/03/2022
Location: St.Anns Road, London		Dimensions (m): 0.80 x 0.60 Depth 1.50	Scale 1:25
Equipment: JCB 360			Logged LW Checked NTD

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.20	-0.20		Grass over loose light brown slightly gravelly sandy clay. Gravel is fine-coarse sub-angular to rounded including concrete, red brick, ceramic, glass, clinker and mixed lithologies (MADE GROUND).
				0.30	-0.30		Plastic geogrid matting (MADE GROUND).
	0.40	D,J,V		0.40	-0.40		Concrete beam (MADE GROUND).
							Brown slightly gravelly sandy clay. Gravel is fine-coarse angular to rounded including concrete, red brick, ceramic, mixed lithologies and suspected ACM (MADE GROUND).
				1.50	-1.50		Concrete obstruction (MADE GROUND).
				1.60	-1.60		End of Pit at 1.500m

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D = small disturbed sample (tub)
J = organic sample (amber glass jar)
V = volatile sample (amber glass vial)
B = bulk bag sample
HSV = hand shear vane (kPa)
PP = pocket penetrometer (kg.cm2)
PID = photoionisation detector (ppm)

Stability

Remarks

Coordinates and levels, where indicated, must not be used for design purposes. The user is responsible for verifying all site and setting out dimensions.

IDOM

TRIAL PIT LOG

TrialPit No
MTP03
Sheet 1 of 1

Project Name: St.Ann's	Project No. 21914J	Co-ords: - Level: 0.00	Date 23/03/2022
Location: St.Anns Road, London		Dimensions (m): 0.80 x 0.60 Depth 2.40	Scale 1:25
Equipment: JCB 360			Logged LW / Checked NTD

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
							Grass over loose light brown slightly gravelly sandy clay. Gravel is fine-coarse sub-angular to rounded including concrete, red brick, ceramic and mixed lithologies. Common rootlets <3cm (MADE GROUND).
	0.60	D,J,V		0.60	-0.60		
				0.65	-0.65		Black iridescent ash and clinker (MADE GROUND). Concrete slab (MADE GROUND).
				1.10	-1.10		Stiff light brown silty sandy CLAY.
	1.20	D,J,V					
				2.40	-2.40		End of Pit at 2.400m

1 2 3 4 5

D = small disturbed sample (tub)
J = organic sample (amber glass jar)
V = volatile sample (amber glass vial)
B = bulk bag sample
HSV = hand shear vane (kPa)
PP = pocket penetrometer (kg.cm2)
PID = photoionisation detector (ppm)

Stability

Remarks

Coordinates and levels, where indicated, must not be used for design purposes. The user is responsible for verifying all site and setting out dimensions.

TRIAL PIT LOG

TrialPit No: MTP04
Sheet 1 of 1

Project Name: St.Ann's	Project No. 21914J	Co-ords: - Level: 0.00	Date 24/03/2022
Location: St.Anns Road, London		Dimensions (m): 0.80 x 0.60 Depth 3.00	Scale 1:25
Equipment: JCB 360			Logged LW Checked NTD

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.15	-0.15		Tarmacadam (MADE GROUND).
	0.60	D,J,V					Loose yellowish brown gravelly sand. Gravel is sub-rounded- rounded including mudstone and sandstone. Strong hydrocarbon odour (MADE GROUND).
▼	1.50	D,J,V		1.40	-1.40		Firm greyish brown silty CLAY.
				3.00	-3.00		End of Pit at 3.000m

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D = small disturbed sample (tub)
J = organic sample (amber glass jar)
V = volatile sample (amber glass vial)
B = bulk bag sample
HSV = hand shear vane (kPa)
PP = pocket penetrometer (kg.cm2)
PID = photoionisation detector (ppm)

Stability

Remarks

Coordinates and levels, where indicated, must not be used for design purposes. The user is responsible for verifying all site and setting out dimensions.

TRIAL PIT LOG

TrialPit No: MTP05

Sheet 1 of 1

Project Name: St.Ann's	Project No. 21914J	Co-ords: - Level: 0.00	Date 25/03/2022
Location: St.Anns Road, London		Dimensions (m): 0.80 x 0.60 Depth 3.00	Scale 1:25
Equipment: JCB 360			Logged LW Checked NTD

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.15	-0.15		Tarmacadam (MADE GROUND).
	0.20	D					Loose reddish brown slightly gravelly sandy clay. Gravel is fine-coarse sub-rounded to angular including red brick, tarmac, concrete, mixed lithologies and suspected ACM (MADE GROUND).
	0.30	D,J,V					*Common rootles <5mm diameter*
				0.60	-0.60		
	0.70	D,J,V		0.70	-0.70		Loose reddish brown sandy gravel. Gravel is fine-coarse sub-rounded to angular including red brick (MADE GROUND).
				1.00	-1.00		Loose reddish brown sandy gravel. Gravel is fine-coarse sub-rounded to angular including red brick and ash (MADE GROUND).
	1.10	D,J,V					*Suspected ACM felt* Stiff light brown silty sandy CLAY.
				3.00	-3.00		End of Pit at 3.000m

1 2 3 4 5

D = small disturbed sample (tub)
J = organic sample (amber glass jar)
V = volatile sample (amber glass vial)
B = bulk bag sample
HSV = hand shear vane (kPa)
PP = pocket penetrometer (kg.cm2)
PID = photoionisation detector (ppm)

Stability

Remarks

Coordinates and levels, where indicated, must not be used for design purposes. The user is responsible for verifying all site and setting out dimensions.

TRIAL PIT LOG

TrialPit No: MHP01
Sheet 1 of 1

Project Name: St.Ann's	Project No. 21914J	Co-ords: 532446.00 - 188574.00 Level: 0.00	Date 22/03/2022
Location: St. Ann's Road, London		Dimensions (m):	Scale 1:25
Equipment:		Depth 1.20	Logged LW / Checked NTD

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.20	D,J,V					Grass over dark brown slightly gravelly sandy CLAY. Gravel is sub-rounded to angular fine-coarse including redbrick, clinker, ceramic and mixed lithologies (MADE GROUND).
	0.70	D,J,V		0.65	-0.65		Firm light brown silty CLAY.
				1.20	-1.20		End of Pit at 1.200m

D = small disturbed sample (tub)
J = organic sample (amber glass jar)
V = volatile sample (amber glass vial)
B = bulk bag sample
HSV = hand shear vane (kPa)
PP = pocket penetrometer (kg.cm2)
PID = photoionisation detector (ppm)

Stability

Remarks

Coordinates and levels, where indicated, must not be used for design purposes. The user is responsible for verifying all site and setting out dimensions.

TRIAL PIT LOG

TrialPit No: MHP17
Sheet 1 of 1

Project Name: St.Ann's	Project No. 21914J	Co-ords: 532323.00 - 188546.00 Level: 0.00	Date 25/03/2022
Location: St. Ann's Road, London		Dimensions (m):	Scale 1:25
Equipment:		Depth 0.40	Logged LW / Checked NTD

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.20	D,J,V		0.20	-0.20		Grass over soft brown slightly sandy clay including common rootlets (TOPSOIL)
				0.40	-0.40		Light brown slightly gravelly sandy clay. Gravel is sub-rounded to angular fine-coarse including ceramic, concrete and mixed lithologies (MADE GROUND).
							End of Pit at 0.400m

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D = small disturbed sample (tub)
J = organic sample (amber glass jar)
V = volatile sample (amber glass vial)
B = bulk bag sample
HSV = hand shear vane (kPa)
PP = pocket penetrometer (kg.cm2)
PID = photoionisation detector (ppm)

Stability

Remarks

Coordinates and levels, where indicated, must not be used for design purposes. The user is responsible for verifying all site and setting out dimensions.

TRIAL PIT LOG

TrialPit No: MHP16
Sheet 1 of 1

Project Name: St.Ann's	Project No. 21914J	Co-ords: 532331.00 - 188537.00 Level: 0.00	Date 25/03/2022
Location: St. Ann's Road, London		Dimensions (m):	Scale 1:25
Equipment:		Depth 0.60	Logged LW / Checked NTD

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.20	-0.20		Grass over soft brown slightly sandy clay including common rootlets (TOPSOIL)
	0.40	D,J,V					Light brown slightly gravelly sandy clay. Gravel is sub-rounded to angular fine-coarse including redbrick, clinker, ceramic and mixed lithologies (MADE GROUND).
				0.60	-0.60		End of Pit at 0.600m

1
2
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D = small disturbed sample (tub)
J = organic sample (amber glass jar)
V = volatile sample (amber glass vial)
B = bulk bag sample
HSV = hand shear vane (kPa)
PP = pocket penetrometer (kg.cm2)
PID = photoionisation detector (ppm)

Stability

Remarks

Coordinates and levels, where indicated, must not be used for design purposes. The user is responsible for verifying all site and setting out dimensions.

IDOM

TRIAL PIT LOG

TrialPit No
MHP15
Sheet 1 of 1

Project Name: St.Ann's	Project No. 21914J	Co-ords: 532324.00 - 188539.00 Level: 0.00	Date 25/03/2022
Location: St. Ann's Road, London		Dimensions (m):	Scale 1:25
Equipment:		Depth 0.45	Logged LW / Checked NTD

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.30	D,J,V		0.20	-0.20		Grass over soft brown slightly sandy clay including common rootlets (TOPSOIL)
				0.45	-0.45		Firm brown slightly gravelly sandy clay. Gravel is sub-angular fine-medium redbrick, and mixed lithologies (MADE GROUND).
							End of Pit at 0.450m

1
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D = small disturbed sample (tub)
J = organic sample (amber glass jar)
V = volatile sample (amber glass vial)
B = bulk bag sample
HSV = hand shear vane (kPa)
PP = pocket penetrometer (kg.cm2)
PID = photoionisation detector (ppm)

Stability

Remarks

Coordinates and levels, where indicated, must not be used for design purposes. The user is responsible for verifying all site and setting out dimensions.

IDOM

TRIAL PIT LOG

TrialPit No
MHP14
Sheet 1 of 1

Project Name: St.Ann's	Project No. 21914J	Co-ords: 532364.00 - 188514.00 Level: 0.00	Date 24/03/2022
Location: St. Ann's Road, London		Dimensions (m):	Scale 1:25
Equipment:		Depth 1.20	Logged LW / Checked NTD

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.30	D,J,V		0.40	-0.40		Grass over soft brown slightly sandy clay including common rootlets (TOPSOIL)
				0.50	-0.50		Firm brown slightly gravelly sandy clay. Gravel is sub-angular fine-medium redbrick and clinker (MADE GROUND).
							Firm light brown silty CLAY.
				1.20	-1.20		End of Pit at 1.200m

1
2
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D = small disturbed sample (tub)
J = organic sample (amber glass jar)
V = volatile sample (amber glass vial)
B = bulk bag sample
HSV = hand shear vane (kPa)
PP = pocket penetrometer (kg.cm2)
PID = photoionisation detector (ppm)

Stability

Remarks

Coordinates and levels, where indicated, must not be used for design purposes. The user is responsible for verifying all site and setting out dimensions.

IDOM

TRIAL PIT LOG

TrialPit No
MHP12
Sheet 1 of 1

Project Name: St.Ann's	Project No. 21914J	Co-ords: 532364.00 - 188495.00 Level: 0.00	Date 24/03/2022
Location: St. Ann's Road, London		Dimensions (m):	Scale 1:25
Equipment:		Depth 1.10	Logged LW / Checked NTD

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.20	D,J,V		0.15	-0.15		Tarmacadam (MADE GROUND)
				0.30	-0.30		Loose grey-brown sandy gravel. Gravel is sub-angular fine-coarse including flint, concrete and mudstone (MADE GROUND).
				0.50	-0.50		Loose red sand and gravel. Gravel is subangular fine-coarse including redbrick, flint and mudstone (MADE GROUND).
							Firm light brown silty CLAY.
				1.10	-1.10		End of Pit at 1.100m

1
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D = small disturbed sample (tub)
J = organic sample (amber glass jar)
V = volatile sample (amber glass vial)
B = bulk bag sample
HSV = hand shear vane (kPa)
PP = pocket penetrometer (kg.cm2)
PID = photoionisation detector (ppm)

Stability

Remarks

Coordinates and levels, where indicated, must not be used for design purposes. The user is responsible for verifying all site and setting out dimensions.

IDOM

TRIAL PIT LOG

TrialPit No
MHP10
Sheet 1 of 1

Project Name: St.Ann's	Project No. 21914J	Co-ords: 532392.00 - 188657.00 Level: 0.00	Date 22/03/2022
Location: St. Ann's Road, London		Dimensions (m):	Scale 1:25
Equipment:		Depth 0.70	Logged LW / Checked NTD

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.30	D,J,V		0.70	-0.70		Grass over dark brown slightly gravelly sandy clay. Gravel is sub-rounded to angular fine-coarse including redbrick, clinker, ceramic and mixed lithologies (MADE GROUND).
							End of Pit at 0.700m

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D = small disturbed sample (tub)
J = organic sample (amber glass jar)
V = volatile sample (amber glass vial)
B = bulk bag sample
HSV = hand shear vane (kPa)
PP = pocket penetrometer (kg.cm2)
PID = photoionisation detector (ppm)

Stability

Remarks

Coordinates and levels, where indicated, must not be used for design purposes. The user is responsible for verifying all site and setting out dimensions.

TRIAL PIT LOG

TrialPit No: MHP11

Sheet 1 of 1

Project Name: St.Ann's	Project No. 21914J	Co-ords: 532398.00 - 188651.00 Level: 0.00	Date 24/03/2022
Location: St. Ann's Road, London		Dimensions (m):	Scale 1:25
Equipment:		Depth 1.20	Logged LW / Checked NTD

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.15	-0.15		Tarmacadam (MADE GROUND)
	0.30	D,J,V					Loose red sand and gravel. Gravel is subangular fine-coarse including redbrick, flint and mudstone (MADE GROUND).
				0.70	-0.70		Firm light brown silty CLAY.
	0.90	D,J,V					
				1.20	-1.20		End of Pit at 1.200m

D = small disturbed sample (tub)
J = organic sample (amber glass jar)
V = volatile sample (amber glass vial)
B = bulk bag sample
HSV = hand shear vane (kPa)
PP = pocket penetrometer (kg.cm2)
PID = photoionisation detector (ppm)

Stability

Remarks

Coordinates and levels, where indicated, must not be used for design purposes. The user is responsible for verifying all site and setting out dimensions.

TRIAL PIT LOG

TrialPit No: MHP09
Sheet 1 of 1

Project Name: St.Ann's	Project No. 21914J	Co-ords: 532268.00 - 188427.00 Level: 0.00	Date 22/03/2022
Location: St. Ann's Road, London		Dimensions (m):	Scale 1:25
Equipment:		Depth 1.20	Logged LW / Checked NTD

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.15	D,J,V					Grass over dark brown slightly gravelly sandy clay. Gravel is sub-rounded to angular fine-coarse including redbrick, clinker, ceramic and mixed lithologies (MADE GROUND).
				0.80	-0.80		Firm light brown silty CLAY.
				1.20	-1.20		End of Pit at 1.200m

D = small disturbed sample (tub)
J = organic sample (amber glass jar)
V = volatile sample (amber glass vial)
B = bulk bag sample
HSV = hand shear vane (kPa)
PP = pocket penetrometer (kg.cm2)
PID = photoionisation detector (ppm)

Stability

Remarks

Coordinates and levels, where indicated, must not be used for design purposes. The user is responsible for verifying all site and setting out dimensions.

IDOM

TRIAL PIT LOG

TrialPit No
MHP02
Sheet 1 of 1

Project Name: St.Ann's	Project No. 21914J	Co-ords: 532445.00 - 188510.00 Level: 0.00	Date 22/03/2022
Location: St. Ann's Road, London		Dimensions (m):	Scale 1:25
Equipment:		Depth 1.30	Logged LW / Checked NTD

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
							Grass over dark brown slightly gravelly sandy clay. Gravel is sub-rounded to angular fine-coarse including redbrick, clinker, ceramic and mixed lithologies (MADE GROUND).
	0.45	D,J,V		0.45	-0.45		Brown slightly gravelly sandy clay. Gravel is sub-angular to angular including framents of ceramic and redbrick (MADE GROUND).
				0.70	-0.70		Light grey sub-rounded cobbles of concrete (MADE GROUND).
				0.75	-0.75		Firm light brown silty CLAY.
	1.00	D,J,V					
				1.30	-1.30		End of Pit at 1.300m

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D = small disturbed sample (tub)
J = organic sample (amber glass jar)
V = volatile sample (amber glass vial)
B = bulk bag sample
HSV = hand shear vane (kPa)
PP = pocket penetrometer (kg.cm2)
PID = photoionisation detector (ppm)

Stability

Remarks

Coordinates and levels, where indicated, must not be used for design purposes. The user is responsible for verifying all site and setting out dimensions.

IDOM

TRIAL PIT LOG

TrialPit No
MHP03
Sheet 1 of 1

Project Name: St.Ann's	Project No. 21914J	Co-ords: 532451.00 - 188493.00 Level: 0.00	Date 22/03/2022
Location: St. Ann's Road, London		Dimensions (m):	Scale 1:25
Equipment:		Depth 1.10	Logged LW / Checked NTD

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.50	D,J,V		0.50	-0.50		Grass over dark brown slightly gravelly sandy clay. Gravel is sub-rounded to angular including redbrick, clinker, ceramic and mixed lithologies (MADE GROUND).
				0.70	-0.70		Dark black sub-angular fine-coarse gravel of clinker and ash (MADE GROUND).
				1.10	-1.10		Firm light brown silty CLAY.
							End of Pit at 1.100m

1 2 3 4 5

D = small disturbed sample (tub)
J = organic sample (amber glass jar)
V = volatile sample (amber glass vial)
B = bulk bag sample
HSV = hand shear vane (kPa)
PP = pocket penetrometer (kg.cm2)
PID = photoionisation detector (ppm)

Stability

Remarks

Coordinates and levels, where indicated, must not be used for design purposes. The user is responsible for verifying all site and setting out dimensions.

IDOM

TRIAL PIT LOG

TrialPit No
MHP04
Sheet 1 of 1

Project Name: St.Ann's	Project No. 21914J	Co-ords: 532426.00 - 188492.00 Level: 0.00	Date 22/03/2022
Location: St. Ann's Road, London		Dimensions (m):	Scale 1:25
Equipment:		Depth 1.30	Logged LW / Checked NTD

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.30	D,J,V		0.65	-0.65		Grass over dark brown slightly gravelly sandy clay. Gravel is sub-rounded to angular fine-coarse including redbrick, clinker, ceramic and mixed lithologies (MADE GROUND).
				1.30	-1.30		Firm light brown silty CLAY.
							End of Pit at 1.300m

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D = small disturbed sample (tub)
J = organic sample (amber glass jar)
V = volatile sample (amber glass vial)
B = bulk bag sample
HSV = hand shear vane (kPa)
PP = pocket penetrometer (kg.cm2)
PID = photoionisation detector (ppm)

Stability

Remarks

Coordinates and levels, where indicated, must not be used for design purposes. The user is responsible for verifying all site and setting out dimensions.

TRIAL PIT LOG

TrialPit No: MHP05

Sheet 1 of 1

Project Name: St.Ann's	Project No. 21914J	Co-ords: 532406.00 - 188419.00 Level: 0.00	Date 22/03/2022
Location: St. Ann's Road, London		Dimensions (m):	Scale 1:25
Equipment:		Depth 1.30	Logged LW / Checked NTD

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.20	D,J,V					Grass over dark brown slightly gravelly sandy clay. Gravel is sub-rounded to angular fine-coarse including redbrick, clinker, ceramic and mixed lithologies (MADE GROUND).
				0.40	-0.40		
	0.50	D,J,V		0.50	-0.50		Loose redbrick recovered as sub-angular fine-coarse gravel (MADE GROUND).
							Brown slightly gravelly sandy clay. Gravel is sub-angular to angular fine-medium including framents of ceramic, redbrick and clinker (MADE GROUND).
							Occasional rootlets <5mm diameter.
				1.10	-1.10		Firm light brown silty CLAY.
				1.30	-1.30		End of Pit at 1.300m

1 2 3 4 5

D = small disturbed sample (tub)
J = organic sample (amber glass jar)
V = volatile sample (amber glass vial)
B = bulk bag sample
HSV = hand shear vane (kPa)
PP = pocket penetrometer (kg.cm2)
PID = photoionisation detector (ppm)

Stability

Remarks

Coordinates and levels, where indicated, must not be used for design purposes. The user is responsible for verifying all site and setting out dimensions.

IDOM

TRIAL PIT LOG

TrialPit No
MHP06
Sheet 1 of 1

Project Name: St.Ann's	Project No. 21914J	Co-ords: 532392.00 - 188413.00 Level: 0.00	Date 22/03/2022
Location: St. Ann's Road, London		Dimensions (m):	Scale 1:25
Equipment:		Depth 1.20	Logged LW / Checked NTD

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.30	D,J,V		0.10	-0.10		Grass over dark brown slightly gravelly sandy clay. Gravel is sub-rounded to angular fine-coarse including redbrick, clinker, ceramic and mixed lithologies (MADE GROUND).
							Firm light brown silty CLAY.
				1.20	-1.20		End of Pit at 1.200m

1
2
3
4
5

D = small disturbed sample (tub)
J = organic sample (amber glass jar)
V = volatile sample (amber glass vial)
B = bulk bag sample
HSV = hand shear vane (kPa)
PP = pocket penetrometer (kg.cm2)
PID = photoionisation detector (ppm)

Stability

Remarks

Coordinates and levels, where indicated, must not be used for design purposes. The user is responsible for verifying all site and setting out dimensions.

TRIAL PIT LOG

TrialPit No: MHP07

Sheet 1 of 1

Project Name: St.Ann's	Project No. 21914J	Co-ords: 532279.00 - 188415.00 Level: 0.00	Date 22/03/2022
Location: St. Ann's Road, London		Dimensions (m):	Scale 1:25
Equipment:		Depth 1.20	Logged LW / Checked NTD

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.20	D,J,V					Grass over dark brown slightly gravelly sandy clay. Gravel is sub-rounded to angular fine-coarse including redbrick, clinker, ceramic and mixed lithologies (MADE GROUND).
				0.90	-0.90		Firm light brown silty CLAY.
				1.20	-1.20		End of Pit at 1.200m

D = small disturbed sample (tub)
J = organic sample (amber glass jar)
V = volatile sample (amber glass vial)
B = bulk bag sample
HSV = hand shear vane (kPa)
PP = pocket penetrometer (kg.cm2)
PID = photoionisation detector (ppm)

Stability

Remarks

Coordinates and levels, where indicated, must not be used for design purposes. The user is responsible for verifying all site and setting out dimensions.

TRIAL PIT LOG

TrialPit No: MHP08
Sheet 1 of 1

Project Name: St.Ann's	Project No. 21914J	Co-ords: 532273.00 - 188416.00 Level: 0.00	Date 22/03/2022
Location: St. Ann's Road, London		Dimensions (m):	Scale 1:25
Equipment:		Depth 1.20	Logged LW / Checked NTD

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.30	D,J,V					Grass over dark brown slightly gravelly sandy clay. Gravel is sub-rounded to angular fine-coarse including redbrick, clinker, ceramic and mixed lithologies (MADE GROUND).
				0.90	-0.90		Firm light brown silty CLAY.
				1.20	-1.20		End of Pit at 1.200m

D = small disturbed sample (tub)
J = organic sample (amber glass jar)
V = volatile sample (amber glass vial)
B = bulk bag sample
HSV = hand shear vane (kPa)
PP = pocket penetrometer (kg.cm2)
PID = photoionisation detector (ppm)

Stability

Remarks

Coordinates and levels, where indicated, must not be used for design purposes. The user is responsible for verifying all site and setting out dimensions.

IDOM

TRIAL PIT LOG

TrialPit No
MHP13
Sheet 1 of 1

Project Name: St.Ann's	Project No. 21914J	Co-ords: 532358.00 - 188500.00 Level: 0.00	Date 24/03/2022
Location: St. Ann's Road, London		Dimensions (m):	Scale 1:25
Equipment:		Depth 1.10	Logged LW / Checked NTD

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.15	-0.15		Tarmacadam (MADE GROUND)
				0.30	-0.30		Loose grey-brown sandy gravel. Gravel is sub-angular fine-coarse including flint, concrete and mudstone (MADE GROUND).
	0.40	D,J,V		0.50	-0.50		Loose red sand and gravel. Gravel is subangular fine-coarse including redbrick, flint and mudstone (MADE GROUND).
							Firm light brown silty CLAY.
				1.10	-1.10		End of Pit at 1.100m

1
2
3
4
5

D = small disturbed sample (tub)
J = organic sample (amber glass jar)
V = volatile sample (amber glass vial)
B = bulk bag sample
HSV = hand shear vane (kPa)
PP = pocket penetrometer (kg.cm2)
PID = photoionisation detector (ppm)

Stability

Remarks

Coordinates and levels, where indicated, must not be used for design purposes. The user is responsible for verifying all site and setting out dimensions.

TERRESEARCH LIMITED

BOREHOLE NO. 1 TQ 38 NW - 555

Contract Name Tottenham Hospital Report No. S. 744/14 3245 5555

Client North East Metropolitan Regional Hospital Board, Eastbourne Terrace, LONDON, W. 2. Site Address St. Ann's Hospital St. Ann's Road, Tottenham

Standing Water Level 6' 0" O.D. (final) Diameter 8"

Water Struck Not seen Method of Boring Shell/Auger

Ground Level ~~47.73~~ 47.76 O.D. Start 28.11.64 Finish 28.11.64

Remarks: 30' of water level observation tubing inserted in the borehole.

Description of Strata	Thickness	Depth	Disturbed Samples	'U' Cores and 'N' P. Test
Top soil	0'6"	0'6"	J0743 0'6"	
Stiff brown clay	6'6"	7'0"	J0744 2'0" J0745 4'0"	U0746 5'0"
Hard brown clay with sulphate crystals	15'0"	22'0"	J0747 8'0" J0749 13'0" J0751 18'0"	U0748 10'0" U0750 15'0" U0752 20'0"
Stiff to hard blue clay with a little silt in places	38'0"	60'0"	J0753 23'0" J0755 28'0" J0757 33'0" J0759 38'0" J0761 43'0" J0762 45'0" J0763 48'0" J0765 53'0" J0766 55'0" J0767 58'0"	U0754 25'0" U0756 30'0" U0758 35'0" U0760 40'0" U0764 50'0" U0768 58'6"
			W0769	
TOTALS	60'0"	60'0"		

Notes: 1. Descriptions are given in accordance with the B.S. Civil Engineering Code of Practice C.P.2001 "Site Investigations"
2. J indicates Jar Samples.

TERRESEARCH LIMITED

TQ 38 NW 556

3242 8801

BOREHOLE NO. 2

Contract Name Tottenham Hospital — Report No. S. 764/14

Client North East Metropolitan Regional Hospital Board, Eastbourne Terrace, LONDON, W. 2. — Site Address St. Ann's Hospital, St. Ann's Road, Tottenham

Standing Water Level 6'4" O.D. (final) — Diameter 8"

Water Struck Not seen — Method of Boring Shell/Auger

Ground Level + 50.30' O.D. — Start 27.11.64 — Finish 27.11.64

Remarks:

Description of Strata	Thickness	Depth	Disturbed Samples	'U' Cores and 'N' P. Test
Top soil	0'6"	0'6"	J0716 0'6"	
Stiff brown clay	6'6"	7'0"	J0717 2'0" J0718 4'0"	U0719 5'0"
Brown mottled clay	18'0"	25'0"	J0720 8'0" J0722 13'0" J0724 18'0" J0726 23'0"	U0721 10'0" U0723 15'0" U0725 20'0"
Hard blue clay with some fissures and sulphate crystals in places	35'0"	60'0"	J0728 28'0" J0730 33'0" J0732 38'0" J0734 43'0" J0735 45'0" J0736 48'0" J0738 53'0" J0739 55'0" J0740 48'0"	U0727 25'0" U0729 30'0" U0731 35'0" U0733 40'0" U0737 50'0" U0741 58'6"
			W0742	
TOTALS	60'0"	60'0"		

Notes: 1. Descriptions are given in accordance with the B.S. Code of Practice C P 2001 "Site Investigations"
2. J indicates Jar Samples.
B " Bulk Samples.

TERRESEARCH LIMITED

TQ 38 NW - 557
3241 8557

BOREHOLE NO. 3

Contract Name: Tottenham Hospital
Report No. S. 744/14
Client: North East Metropolitan Regional Hospital Board, Eastbourne Terrace, LONDON, W. 2.
Site Address: St. Ann's Hospital, St. Ann's Road, Tottenham

Standing Water Level + 33' 0.D. (final)
Diameter 8"
Water Struck Not seen.
Method of Boring Shell/Auger
Ground Level + 51.25 ' O.D.
Start 27.11.64 Finish 27.11.64
Remarks:

Description of Strata	Thickness	Depth	Disturbed Samples	'U' Cores and 'N' P. Test
Top soil	0'6"	0'6"	J0701 0'6"	
Hard brown fissured clay	5'6"	6'0"	J0702 2'0" J0703 4'0"	U0704 5'0"
Hard brown mottled clay	19'0"	25'0"	J0705 8'0" J0707 13'0" J0709 18'0" J0711 23'0"	U0706 10'0" U0708 15'0" U0710 20'0"
Blue clay	5'0"	30'0"	J0713 28'0"	U0712 25'0" U0714 28'6"
			W0715	
TOTALS	30'0"	30'0"		

Notes: 1. Descriptions are given in accordance with the B.S. Code of Practice C.P.2001 "Site Investigations"
2. J indicates Jar Samples.
B " Bulk Samples.

TERRESEARCH LIMITED

TQ38 NW 558

3246 8858

BOREHOLE NO. 4

Contract Name Tottenham Hospital

Report No. S. 744/14

Client North East Metropolitan Regional Hospital Board, Eastbourne Terrace, LONDON, W. 2.

Site Address St. Ann's Hospital, St. Ann's Road, Tottenham

Standing Water Level + 42' O.D.(final)

Diameter 8"

Water Struck Not seen

Method of Boring Shell/Auger

Ground Level + 51.75' O.D.

Start 25.11.64 Finish 25.11.64

Remarks:

Description of Strata	Thickness	Depth	Disturbed Samples	'U' Cores and 'N' P. Test
Top soil	0'6"	0'6"	J464 0'6"	
Stiff brown clay	4'0"	4'6"	J465 2'0" J466 4'0"	
Brown mottled clay	5'6"	10'0"	J468 8'0"	U467 5'0" U469 8'6"
TOTALS	10'0"	10'0"		

Notes: 1. Descriptions are given in accordance with the B.S. Code of Practice C.P.2001 "Site Investigations"
2. J indicates Jar Samples.
B " Bulk Samples.

TERRESEARCH LIMITED

TQ 38 NW - 559
3249 937

BOREHOLE NO. 5

Contract Name Tottenham Hospital
Client North East Metropolitan Regional Hospital Board, Fanthourne Terrace, London, W. 2.
Report No. S. 744/14
Site Address St. Ann's Hospital, St. Ann's Road, Tottenham

Standing Water Level None
Water Struck None
Ground Level +53.24 ' O.D.
Diameter 8"
Method of Boring Shell/Auger
Start 25.11.64 Finish 25.11.64
Remarks:

Description of Strata	Thickness	Depth	Disturbed Samples	'U' Cores and 'N' P. Test
Top soil	0'6"	0'6"	J470 0'6"	
Stiff brown clay	5'0"	5'6"	J471 2'0" J472 4'0"	
Brown mottled clay	4'6"	10'0"	J474 8'0"	U473 5'0" U475 8'6"
TOTALS	10'0"	10'0"		

Notes: 1. Descriptions are given in accordance with the B.S. ... Code of Practice C.P.2001 "Site Investigations"
2. J indicates Jar Samples.
B " Bulk Samples.

TERRESEARCH LIMITED

TQ 38 NW - 561

BOREHOLE NO. 7

SQ.G 8890

Contract Name Tottenham Hospital

Report No. S. 744/14

Client North East Metropolitan Regional Hospital Board, Eastbourne Terrace, LONDON, W. 2.

Site Address St. Ann's Hospital, St. Ann's Road, Tottenham

Standing Water Level None

Diameter 8"

Water Struck None

Method of Boring Shell/Auger

Ground Level +52.60' O.D.

Start 29.11.64 Finish 30.11.64

Remarks: Borehole repositioned three times due to presence of obstruction close to the surface. = 2 hours.

Description of Strata	Thickness	Depth	Disturbed Samples	'U' Cores and 'N' P. Test
Top soil	1'0"	1'0"	J2944 0'6"	
Stiff brown mottled clay	10'6"	11'6"	J2945 2'6" J2947 7'6"	U2946 5'0" U2948 10'0"
TOTALS	11'6"	11'6"		

1. Descriptions are given in accordance with the B.S. [redacted] Code of Practice C.P.2001 "Site Investigations"
2. J indicates Jar Samples.
B .. Bulk Samples.

TERRESEARCH LIMITED

TQ 38 NW - 573
3211.0 8235

BOREHOLE NO. 20

Contract Name Tottenham Hospital
Client North East Metropolitan Regional Hospital Board,
Address Eastbourne Terrace,
London, W. 2.

Report No. S. 744/16
Site Address St. Ann's Hospital
St. Ann's Road,
Tottenham

Standing Water Level None
Water Struck None
Ground Level + 51.41 O.D.

Diameter 8"
Method of Boring Shell/Auger
Start 28.11.64 Finish 28.11.64

Remarks:

Description of Strata	Thickness	Depth	Disturbed Samples	'U' Cores and 'N' P. Test
Topsoil	0'9"	0'9"	J2920 0'6"	
Hard brown fissured clay, mottled and silty in parts with sulphate crystals	16'9"	17'6"	J2921 2'6" J2925 7'6" J2925 12'6"	U2922 5'0" U2924 10'0" U2926 15'0"
Stiff to hard dark brown fissured clay with some sulphate crystals	7'6"	25'0"	J2927 17'6" J2929 22'6"	U2928 20'0"
Stiff to hard blue clay, fissured and silty in parts	33'6"	60'0"	J2931 27'6" J2933 32'6" J2935 37'6" J2937 45'0" J2939 55'0"	U2930 25'0" U2932 30'0" U2934 35'0" U2936 40'0" U2938 50'0" U2940 58'6"
TOTALS	60'0"	60'0"		

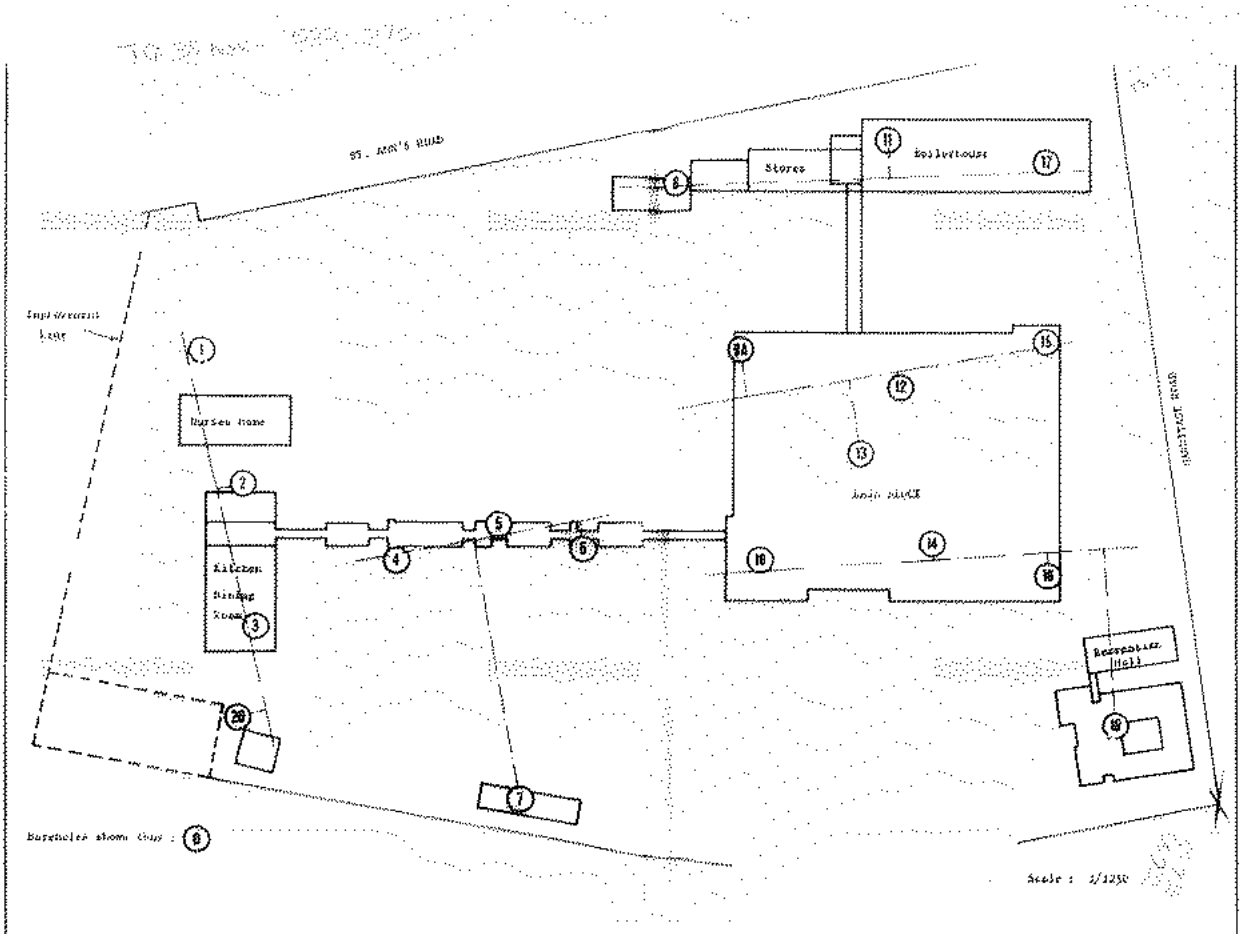
1. Descriptions are given in accordance with the B.S. Code of Practice C.P.2001 "Site Investigations"
2. J indicates Jar Samples.
B .. Bulk Samples.

British Geological Survey

Version 2.0.6.6

BGS ID: 846347 : BGS Reference: TQ38NW573
British National Grid (27700) : 532400,188550

Report an issue with this borehole



Site Plan showing location of Boreholes

APPENDIX 4

- Soil Chemistry
- Laboratory Analysis Certificates

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Analytical Report Number : 22-48037

Project / Site name:	St. Annes	**Samples received on:**	24/03/2022
Your job number:		**Samples instructed on/ Analysis started on:**	28/03/2022
Your order number:	21-2-FDO-LABS	**Analysis completed by:**	01/04/2022
Report Issue Number:	1	**Report issued on:**	01/04/2022
Samples Analysed:	1 bulk sample - 31 soil samples		

Signed: Izabela Wójcik

Izabela Wójcik
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 22-48037
Project / Site name: St. Annes
Your Order No: 21-2-FDO-LABS

Lab Sample Number				2217770	2217771	2217772	2217773	2217774
Sample Reference				TP01	TP02	TP03	TP03	TP04
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	0.40	0.60	1.20	0.50
Date Sampled				21/03/2022	21/03/2022	21/03/2022	21/03/2022	21/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	39
Moisture Content	%	0.01	NONE	13	11	9.8	14	7.3
Total mass of sample received	kg	0.001	NONE	1.2	1.2	1.2	1.2	1.2
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	-	Not-detected	-	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A			MDB		MDB
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	8.5	9.4	8.1	7.7	9.5
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.066	0.21	0.039	0.066	0.23
Sulphide	mg/kg	1	MCERTS	6.3	23	7.9	< 1.0	< 1.0
Organic Matter (automated)	%	0.1	MCERTS	3.2	2.1	6.4	0.6	0.3
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	0.6	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	2.1	< 0.05	8.2	0.24	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	1.5	< 0.05	2.5	0.24	0.29
Fluorene	mg/kg	0.05	MCERTS	2.9	< 0.05	7.1	0.41	0.23
Phenanthrene	mg/kg	0.05	MCERTS	29	3.3	73	4.1	0.6
Anthracene	mg/kg	0.05	MCERTS	6.6	0.72	24	0.98	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	33	5.4	120	4.1	0.54
Pyrene	mg/kg	0.05	MCERTS	25	4.6	98	3.3	0.43
Benzo(a)anthracene	mg/kg	0.05	MCERTS	16	3.7	53	2	< 0.05
Chrysene	mg/kg	0.05	MCERTS	11	2.4	42	1.4	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	12	2.7	49	1.4	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	7.8	2.1	15	0.92	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	13	3.1	42	1.6	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	6.1	1.6	19	0.66	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	1.8	0.48	6.4	0.21	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	6.7	1.8	18	0.75	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	174	32	578	22.2	2.09
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	17	19	26	15	50
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	4.1	2.1	1.6	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	NONE	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	39	34	23	51	29
Copper (aqua regia extractable)	mg/kg	1	MCERTS	96	86	65	28	24
Lead (aqua regia extractable)	mg/kg	1	MCERTS	340	320	390	26	25
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	1.7	0.7	6.6	0.6	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	24	24	34	41	54
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	230	190	1200	120	99
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 22-48037
Project / Site name: St. Annes
Your Order No: 21-2-FDO-LABS

Lab Sample Number				2217770	2217771	2217772	2217773	2217774
Sample Reference				TP01	TP02	TP03	TP03	TP04
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	0.40	0.60	1.20	0.50
Date Sampled				21/03/2022	21/03/2022	21/03/2022	21/03/2022	21/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS_1D_AL}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS_1D_AL}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS_1D_AL}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH_CU_1D_AL}$	mg/kg	1	MCERTS	< 1.0	1.2	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH_CU_1D_AL}$	mg/kg	2	MCERTS	7.5	5.6	3.4	< 2.0	3
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	37	22	< 8.0	< 8.0	9.6
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	68	86	19	< 8.0	24
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH_CU+HS_1D_AL}$	mg/kg	10	MCERTS	110	110	29	< 10	37
TPH-CWG - Aromatic >EC5 - EC7 $_{HS_1D_AR}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 $_{HS_1D_AR}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 $_{HS_1D_AR}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 $_{EH_CU_1D_AR}$	mg/kg	1	MCERTS	1.5	< 1.0	2	< 1.0	1.6
TPH-CWG - Aromatic >EC12 - EC16 $_{EH_CU_1D_AR}$	mg/kg	2	MCERTS	12	4.1	30	5.9	5.9
TPH-CWG - Aromatic >EC16 - EC21 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	110	35	350	16	< 10
TPH-CWG - Aromatic >EC21 - EC35 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	140	110	470	20	< 10
TPH-CWG - Aromatic (EC5 - EC35) $_{EH_CU+HS_1D_AR}$	mg/kg	10	MCERTS	250	150	850	43	25
VOCs								
Chloromethane	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
Chloroethane	µg/kg	1	NONE	-	-	-	-	< 1.0
Bromomethane	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
Vinyl Chloride	µg/kg	1	NONE	-	-	-	-	< 1.0
Trichlorofluoromethane	µg/kg	1	NONE	-	-	-	-	< 1.0
1,1-Dichloroethene	µg/kg	1	NONE	-	-	-	-	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,1-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
2,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Trichloromethane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,2-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,1-Dichloropropene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	-	-	< 1.0
Benzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Tetrachloromethane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Trichloroethene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Dibromomethane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Bromodichloromethane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
Toluene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
Tetrachloroethene	µg/kg	1	NONE	-	-	-	-	< 1.0
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	-	-	< 1.0

Analytical Report Number: 22-48037
Project / Site name: St. Annes
Your Order No: 21-2-FDO-LABS

Lab Sample Number				2217770	2217771	2217772	2217773	2217774
Sample Reference				TP01	TP02	TP03	TP03	TP04
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	0.40	0.60	1.20	0.50
Date Sampled				21/03/2022	21/03/2022	21/03/2022	21/03/2022	21/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Chlorobenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
p & m-Xylene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Styrene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Tribromomethane	µg/kg	1	NONE	-	-	-	-	< 1.0
o-Xylene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Isopropylbenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Bromobenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
n-Propylbenzene	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
2-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
4-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
tert-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
sec-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Hexachlorobutadiene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	< 1.0

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001

Total PCBs by GC-MS

Total PCBs	mg/kg	0.007	MCERTS	-	-	-	-	< 0.007

U/S = Unsuitable Sample I/S = Insufficient Sample

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 22-48037
Project / Site name: St. Annes
Your Order No: 21-2-FDO-LABS

Lab Sample Number				2217775	2217776	2217777	2217778	2217779
Sample Reference				TP04	TP05	TP05	HP01	HP01
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.50	0.30	0.70	0.20	0.80
Date Sampled				21/03/2022	21/03/2022	21/03/2022	22/03/2022	23/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	53	43	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	18	3.1	5.1	17	18
Total mass of sample received	kg	0.001	NONE	1.2	1.2	1.2	1.2	1.2
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	Not-detected	-	Not-detected	-
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A		MDB		MDB	
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	8.6	9	8.2	7.2	7.8
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.13	0.033	0.1	0.018	0.033
Sulphide	mg/kg	1	MCERTS	< 1.0	89	69	2.3	< 1.0
Organic Matter (automated)	%	0.1	MCERTS	0.4	1.7	3.6	3.7	0.7
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.26	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	0.33	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	0.38	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	3.1	1.2	1.5	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	1	0.55	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	3.9	5.4	2.3	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	3.3	5.5	2	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	2	3.4	1	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	1.6	2.5	0.87	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	1.8	3.3	0.95	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	0.84	2.2	0.43	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	1.9	3.1	0.9	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.89	1.7	0.43	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.29	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	0.93	1.9	0.43	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	22.2	31	10.8	< 0.80
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	16	12	13	16	15
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	0.7	0.6	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	NONE	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	53	11	17	34	54
Copper (aqua regia extractable)	mg/kg	1	MCERTS	29	12	23	52	26
Lead (aqua regia extractable)	mg/kg	1	MCERTS	16	40	60	200	22
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	1.1	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	42	10	15	21	43
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	72	70	100	140	69
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 22-48037
Project / Site name: St. Annes
Your Order No: 21-2-FDO-LABS

Lab Sample Number				2217775	2217776	2217777	2217778	2217779
Sample Reference				TP04	TP05	TP05	HP01	HP01
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.50	0.30	0.70	0.20	0.80
Date Sampled				21/03/2022	21/03/2022	21/03/2022	22/03/2022	23/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS_1D_AL}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS_1D_AL}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS_1D_AL}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH_CU_1D_AL}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH_CU_1D_AL}$	mg/kg	2	MCERTS	< 2.0	3.7	3.6	2.5	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0	12	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	< 8.0	51	110	24	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH_CU+HS_1D_AL}$	mg/kg	10	MCERTS	< 10	63	120	34	< 10
TPH-CWG - Aromatic >EC5 - EC7 $_{HS_1D_AR}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 $_{HS_1D_AR}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 $_{HS_1D_AR}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 $_{EH_CU_1D_AR}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 $_{EH_CU_1D_AR}$	mg/kg	2	MCERTS	< 2.0	3.9	3.8	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	< 10	30	44	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	< 10	130	290	18	< 10
TPH-CWG - Aromatic (EC5 - EC35) $_{EH_CU+HS_1D_AR}$	mg/kg	10	MCERTS	< 10	160	340	25	< 10
VOCs								
Chloromethane	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
Chloroethane	µg/kg	1	NONE	< 1.0	-	-	-	-
Bromomethane	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
Vinyl Chloride	µg/kg	1	NONE	< 1.0	-	-	-	-
Trichlorofluoromethane	µg/kg	1	NONE	< 1.0	-	-	-	-
1,1-Dichloroethene	µg/kg	1	NONE	< 1.0	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
2,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Trichloromethane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,1-Dichloropropene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	-	-	-	-
Benzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Tetrachloromethane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Trichloroethene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Dibromomethane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Bromodichloromethane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
Toluene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
Tetrachloroethene	µg/kg	1	NONE	< 1.0	-	-	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1.0	-	-	-	-

Analytical Report Number: 22-48037
Project / Site name: St. Annes
Your Order No: 21-2-FDO-LABS

Lab Sample Number				2217775	2217776	2217777	2217778	2217779
Sample Reference				TP04	TP05	TP05	HP01	HP01
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.50	0.30	0.70	0.20	0.80
Date Sampled				21/03/2022	21/03/2022	21/03/2022	22/03/2022	23/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Chlorobenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
p & m-Xylene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Styrene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Tribromomethane	µg/kg	1	NONE	< 1.0	-	-	-	-
o-Xylene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Isopropylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Bromobenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
n-Propylbenzene	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
2-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
4-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
tert-Butylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
sec-Butylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Butylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Hexachlorobutadiene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	< 1.0	-	-	-	-

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	< 0.001	-	-	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	< 0.001	-	-	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	< 0.001	-	-	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	< 0.001	-	-	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	< 0.001	-	-	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	< 0.001	-	-	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	< 0.001	-	-	-	-

Total PCBs by GC-MS

Total PCBs	mg/kg	0.007	MCERTS	< 0.007	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 22-48037
Project / Site name: St. Annes
Your Order No: 21-2-FDO-LABS

Lab Sample Number				2217780	2217781	2217782	2217783	2217784
Sample Reference				HP02	HP02	HP03	HP04	HP05
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.45	1.00	0.50	0.30	0.20
Date Sampled				23/03/2022	23/03/2022	23/03/2022	23/03/2022	23/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	9.9	< 0.1
Moisture Content	%	0.01	NONE	18	18	14	16	14
Total mass of sample received	kg	0.001	NONE	1.2	1.2	1.2	1.2	1.2
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	Chrysotile & Amosite	Chrysotile
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	-	Not-detected	Detected	Detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	0.001	9.459
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	0.001	9.46
Asbestos Analyst ID	N/A	N/A	N/A	MDB		MDB	MDB	MDB
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	8	8	7.9	7.9	8.2
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.032	0.047	0.078	0.019	0.027
Sulphide	mg/kg	1	MCERTS	5.2	2	11	5.9	2.9
Organic Matter (automated)	%	0.1	MCERTS	3.4	0.6	1.9	4.3	4.9
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	0.23	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	0.35	< 0.05	< 0.05	< 0.05	0.36
Acenaphthene	mg/kg	0.05	MCERTS	0.3	< 0.05	< 0.05	< 0.05	0.21
Fluorene	mg/kg	0.05	MCERTS	0.3	< 0.05	< 0.05	< 0.05	0.28
Phenanthrene	mg/kg	0.05	MCERTS	4.9	< 0.05	1.8	1.7	6.6
Anthracene	mg/kg	0.05	MCERTS	0.8	< 0.05	0.3	0.21	1
Fluoranthene	mg/kg	0.05	MCERTS	7.7	< 0.05	3.5	4	13
Pyrene	mg/kg	0.05	MCERTS	6.6	< 0.05	2.9	3.6	11
Benzo(a)anthracene	mg/kg	0.05	MCERTS	4.4	< 0.05	1.7	2.1	5.7
Chrysene	mg/kg	0.05	MCERTS	3.1	< 0.05	1.7	2.3	5.6
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	3.8	< 0.05	1.7	2.8	5.7
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	2.3	< 0.05	1.3	1	3.3
Benzo(a)pyrene	mg/kg	0.05	MCERTS	3.8	< 0.05	1.9	2.3	6.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	2.1	< 0.05	0.95	1.3	3
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.64	< 0.05	0.3	0.36	0.8
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	2.4	< 0.05	1.1	1.5	3.4
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	43.7	< 0.80	19.1	23.1	66.4
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	20	16	15	23	53
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	NONE	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	41	60	40	37	37
Copper (aqua regia extractable)	mg/kg	1	MCERTS	74	37	86	87	110
Lead (aqua regia extractable)	mg/kg	1	MCERTS	620	30	250	550	760
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	0.6	< 0.3	1
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	33	60	46	30	35
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	400	87	250	330	340
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

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Analytical Report Number: 22-48037
Project / Site name: St. Annes
Your Order No: 21-2-FDO-LABS

Lab Sample Number				2217780	2217781	2217782	2217783	2217784
Sample Reference				HP02	HP02	HP03	HP04	HP05
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.45	1.00	0.50	0.30	0.20
Date Sampled				23/03/2022	23/03/2022	23/03/2022	23/03/2022	23/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS_1D_AL}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS_1D_AL}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS_1D_AL}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH_CU_1D_AL}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH_CU_1D_AL}$	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH_CU+HS_1D_AL}$	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC5 - EC7 $_{HS_1D_AR}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 $_{HS_1D_AR}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 $_{HS_1D_AR}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 $_{EH_CU_1D_AR}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 $_{EH_CU_1D_AR}$	mg/kg	2	MCERTS	3.5	< 2.0	< 2.0	4.7	2.2
TPH-CWG - Aromatic >EC16 - EC21 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	20	< 10	< 10	27	40
TPH-CWG - Aromatic >EC21 - EC35 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	39	< 10	15	70	110
TPH-CWG - Aromatic (EC5 - EC35) $_{EH_CU+HS_1D_AR}$	mg/kg	10	MCERTS	63	< 10	25	100	150
VOCs								
Chloromethane	µg/kg	1	ISO 17025	-	-	-	-	-
Chloroethane	µg/kg	1	NONE	-	-	-	-	-
Bromomethane	µg/kg	1	ISO 17025	-	-	-	-	-
Vinyl Chloride	µg/kg	1	NONE	-	-	-	-	-
Trichlorofluoromethane	µg/kg	1	NONE	-	-	-	-	-
1,1-Dichloroethene	µg/kg	1	NONE	-	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	-
1,1-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
2,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	-
Trichloromethane	µg/kg	1	MCERTS	-	-	-	-	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,1-Dichloropropene	µg/kg	1	MCERTS	-	-	-	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	-	-	-
Benzene	µg/kg	1	MCERTS	-	-	-	-	-
Tetrachloromethane	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	-
Trichloroethene	µg/kg	1	MCERTS	-	-	-	-	-
Dibromomethane	µg/kg	1	MCERTS	-	-	-	-	-
Bromodichloromethane	µg/kg	1	MCERTS	-	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	-	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	-	-	-
Tetrachloroethene	µg/kg	1	NONE	-	-	-	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	-	-	-

Analytical Report Number: 22-48037
Project / Site name: St. Annes
Your Order No: 21-2-FDO-LABS

Lab Sample Number				2217780	2217781	2217782	2217783	2217784
Sample Reference				HP02	HP02	HP03	HP04	HP05
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.45	1.00	0.50	0.30	0.20
Date Sampled				23/03/2022	23/03/2022	23/03/2022	23/03/2022	23/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Chlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
p & m-Xylene	µg/kg	1	MCERTS	-	-	-	-	-
Styrene	µg/kg	1	MCERTS	-	-	-	-	-
Tribromomethane	µg/kg	1	NONE	-	-	-	-	-
o-Xylene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	-
Isopropylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
Bromobenzene	µg/kg	1	MCERTS	-	-	-	-	-
n-Propylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
2-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	-
4-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
tert-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
sec-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	-	-	-	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
Hexachlorobutadiene	µg/kg	1	MCERTS	-	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	-

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	-	-	-

Total PCBs by GC-MS

Total PCBs	mg/kg	0.007	MCERTS	-	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 22-48037
Project / Site name: St. Annes
Your Order No: 21-2-FDO-LABS

Lab Sample Number				2217785	2217786	2217787	2217788	2217789
Sample Reference				HP05	HP06	HP07	HP08	HP09
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.30	0.20	0.30	0.15
Date Sampled				23/03/2022	23/03/2022	23/03/2022	23/03/2022	23/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	45	< 0.1	44	< 0.1
Moisture Content	%	0.01	NONE	13	16	19	14	19
Total mass of sample received	kg	0.001	NONE	1.2	1.2	1.2	1.2	1.2
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A					
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	8.3	7.6	7.6	7.8	5.8
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.21	0.03	0.039	0.046	0.016
Sulphide	mg/kg	1	MCERTS	1.3	3.8	9.2	120	2.9
Organic Matter (automated)	%	0.1	MCERTS	0.5	3.2	4.2	3.9	4.1
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.21	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.53	0.86	2.3	4.8	0.22
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.74	1.3	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	1.5	1.4	9	12	0.4
Pyrene	mg/kg	0.05	MCERTS	1.3	1.2	8.3	11	0.37
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.91	0.76	6	6.5	< 0.05
Chrysene	mg/kg	0.05	MCERTS	0.68	0.63	4.6	5.2	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.82	0.65	6.2	5.5	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.56	0.5	2.7	3.2	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.92	0.74	6	5.6	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.45	0.39	2.8	2.6	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.82	0.67	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.51	0.45	3.2	2.8	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	8.16	7.53	52.7	60.7	0.99
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	43	43	71	43	17
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	NONE	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	31	40	41	31	39
Copper (aqua regia extractable)	mg/kg	1	MCERTS	21	76	72	60	57
Lead (aqua regia extractable)	mg/kg	1	MCERTS	29	720	220	230	250
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	1.6	0.9	0.5	0.7
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	26	32	31	22	24
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	32	220	170	210	110
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

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Analytical Report Number: 22-48037
Project / Site name: St. Annes
Your Order No: 21-2-FDO-LABS

Lab Sample Number				2217785	2217786	2217787	2217788	2217789
Sample Reference				HP05	HP06	HP07	HP08	HP09
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.30	0.20	0.30	0.15
Date Sampled				23/03/2022	23/03/2022	23/03/2022	23/03/2022	23/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS_1D_AL}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS_1D_AL}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS_1D_AL}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH_CU_1D_AL}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH_CU_1D_AL}$	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH_CU+HS_1D_AL}$	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC5 - EC7 $_{HS_1D_AR}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 $_{HS_1D_AR}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 $_{HS_1D_AR}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 $_{EH_CU_1D_AR}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 $_{EH_CU_1D_AR}$	mg/kg	2	MCERTS	< 2.0	< 2.0	2.4	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	< 10	20	25	32	< 10
TPH-CWG - Aromatic >EC21 - EC35 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	21	38	50	57	< 10
TPH-CWG - Aromatic (EC5 - EC35) $_{EH_CU+HS_1D_AR}$	mg/kg	10	MCERTS	27	60	77	92	< 10
VOCs								
Chloromethane	µg/kg	1	ISO 17025	-	-	-	-	-
Chloroethane	µg/kg	1	NONE	-	-	-	-	-
Bromomethane	µg/kg	1	ISO 17025	-	-	-	-	-
Vinyl Chloride	µg/kg	1	NONE	-	-	-	-	-
Trichlorofluoromethane	µg/kg	1	NONE	-	-	-	-	-
1,1-Dichloroethene	µg/kg	1	NONE	-	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	-
1,1-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
2,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	-
Trichloromethane	µg/kg	1	MCERTS	-	-	-	-	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,1-Dichloropropene	µg/kg	1	MCERTS	-	-	-	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	-	-	-
Benzene	µg/kg	1	MCERTS	-	-	-	-	-
Tetrachloromethane	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	-
Trichloroethene	µg/kg	1	MCERTS	-	-	-	-	-
Dibromomethane	µg/kg	1	MCERTS	-	-	-	-	-
Bromodichloromethane	µg/kg	1	MCERTS	-	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	-	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	-	-	-
Tetrachloroethene	µg/kg	1	NONE	-	-	-	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	-	-	-

Analytical Report Number: 22-48037
Project / Site name: St. Annes
Your Order No: 21-2-FDO-LABS

Lab Sample Number				2217785	2217786	2217787	2217788	2217789
Sample Reference				HP05	HP06	HP07	HP08	HP09
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.30	0.20	0.30	0.15
Date Sampled				23/03/2022	23/03/2022	23/03/2022	23/03/2022	23/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Chlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
p & m-Xylene	µg/kg	1	MCERTS	-	-	-	-	-
Styrene	µg/kg	1	MCERTS	-	-	-	-	-
Tribromomethane	µg/kg	1	NONE	-	-	-	-	-
o-Xylene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	-
Isopropylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
Bromobenzene	µg/kg	1	MCERTS	-	-	-	-	-
n-Propylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
2-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	-
4-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
tert-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
sec-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	-	-	-	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
Hexachlorobutadiene	µg/kg	1	MCERTS	-	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	-

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	-	-	-

Total PCBs by GC-MS

Total PCBs	mg/kg	0.007	MCERTS	-	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 22-48037
Project / Site name: St. Annes
Your Order No: 21-2-FDO-LABS

Lab Sample Number				2217790	2217791	2217792	2217793	2217794
Sample Reference				HP10	HP11	HP11	HP12	HP13
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.30	0.90	0.20	0.40
Date Sampled				23/03/2022	24/03/2022	24/03/2022	24/03/2022	24/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	44	< 0.1	< 0.1	45	< 0.1
Moisture Content	%	0.01	NONE	9.9	11	16	4.7	11
Total mass of sample received	kg	0.001	NONE	1.2	1.2	1.2	1.2	1.2
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	-	Not-detected	-
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A	MDB	JMA		JMA	
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	8.2	9.4	8.1	9.4	9.3
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.015	0.1	0.42	0.06	0.067
Sulphide	mg/kg	1	MCERTS	1.6	< 1.0	1.4	7.4	1.8
Organic Matter (automated)	%	0.1	MCERTS	4.4	1.1	0.6	1.7	0.6
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	0.43	0.22	< 0.05	0.23	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	1.1	< 0.05	2	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	0.53	< 0.05	0.65	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	1.6	< 0.05	1.7	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	2.8	13	0.4	12	1.9
Anthracene	mg/kg	0.05	MCERTS	0.32	3.1	< 0.05	2.9	0.4
Fluoranthene	mg/kg	0.05	MCERTS	3.1	18	0.46	20	1.7
Pyrene	mg/kg	0.05	MCERTS	2.4	15	0.37	18	1.4
Benzo(a)anthracene	mg/kg	0.05	MCERTS	1.6	8.2	< 0.05	11	0.76
Chrysene	mg/kg	0.05	MCERTS	1.5	6.5	< 0.05	9.1	0.54
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	1.3	7.5	< 0.05	12	0.59
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.79	3.1	< 0.05	6	0.4
Benzo(a)pyrene	mg/kg	0.05	MCERTS	1.3	7.7	< 0.05	13	0.68
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.55	3.3	< 0.05	6.1	0.31
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.21	0.93	< 0.05	1.7	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.66	3.8	< 0.05	7	0.36
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	16.9	92.6	1.23	124	9.14
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	14	18	14	8.6	49
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	0.8	< 0.2
Chromium (hexavalent)	mg/kg	4	NONE	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	21	28	59	14	40
Copper (aqua regia extractable)	mg/kg	1	MCERTS	62	21	32	15	21
Lead (aqua regia extractable)	mg/kg	1	MCERTS	380	44	19	42	160
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	1	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	20	21	51	15	29
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	120	35	78	120	45
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 22-48037
Project / Site name: St. Annes
Your Order No: 21-2-FDO-LABS

Lab Sample Number				2217790	2217791	2217792	2217793	2217794
Sample Reference				HP10	HP11	HP11	HP12	HP13
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.30	0.90	0.20	0.40
Date Sampled				23/03/2022	24/03/2022	24/03/2022	24/03/2022	24/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS_1D_AL}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS_1D_AL}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS_1D_AL}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH_CU_1D_AL}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH_CU_1D_AL}$	mg/kg	2	MCERTS	< 2.0	5.7	< 2.0	6.2	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	< 8.0	14	< 8.0	16	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	< 8.0	59	< 8.0	91	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH_CU+HS_1D_AL}$	mg/kg	10	MCERTS	< 10	80	< 10	110	< 10
TPH-CWG - Aromatic >EC5 - EC7 $_{HS_1D_AR}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 $_{HS_1D_AR}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 $_{HS_1D_AR}$	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 $_{EH_CU_1D_AR}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	2.1	2
TPH-CWG - Aromatic >EC12 - EC16 $_{EH_CU_1D_AR}$	mg/kg	2	MCERTS	4.8	9.7	< 2.0	16	3.9
TPH-CWG - Aromatic >EC16 - EC21 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	17	85	< 10	120	11
TPH-CWG - Aromatic >EC21 - EC35 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	28	210	11	330	25
TPH-CWG - Aromatic (EC5 - EC35) $_{EH_CU+HS_1D_AR}$	mg/kg	10	MCERTS	50	300	14	470	43
VOCs								
Chloromethane	µg/kg	1	ISO 17025	-	-	-	-	-
Chloroethane	µg/kg	1	NONE	-	-	-	-	-
Bromomethane	µg/kg	1	ISO 17025	-	-	-	-	-
Vinyl Chloride	µg/kg	1	NONE	-	-	-	-	-
Trichlorofluoromethane	µg/kg	1	NONE	-	-	-	-	-
1,1-Dichloroethene	µg/kg	1	NONE	-	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	-
1,1-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
2,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	-
Trichloromethane	µg/kg	1	MCERTS	-	-	-	-	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,1-Dichloropropene	µg/kg	1	MCERTS	-	-	-	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	-	-	-
Benzene	µg/kg	1	MCERTS	-	-	-	-	-
Tetrachloromethane	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	-
Trichloroethene	µg/kg	1	MCERTS	-	-	-	-	-
Dibromomethane	µg/kg	1	MCERTS	-	-	-	-	-
Bromodichloromethane	µg/kg	1	MCERTS	-	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	-	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	-	-	-
Tetrachloroethene	µg/kg	1	NONE	-	-	-	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	-	-	-

Analytical Report Number: 22-48037
Project / Site name: St. Annes
Your Order No: 21-2-FDO-LABS

Lab Sample Number				2217790	2217791	2217792	2217793	2217794
Sample Reference				HP10	HP11	HP11	HP12	HP13
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.30	0.90	0.20	0.40
Date Sampled				23/03/2022	24/03/2022	24/03/2022	24/03/2022	24/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Chlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
p & m-Xylene	µg/kg	1	MCERTS	-	-	-	-	-
Styrene	µg/kg	1	MCERTS	-	-	-	-	-
Tribromomethane	µg/kg	1	NONE	-	-	-	-	-
o-Xylene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	-
Isopropylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
Bromobenzene	µg/kg	1	MCERTS	-	-	-	-	-
n-Propylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
2-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	-
4-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
tert-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
sec-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	-	-	-	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
Hexachlorobutadiene	µg/kg	1	MCERTS	-	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	-

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	-	-	-

Total PCBs by GC-MS

Total PCBs	mg/kg	0.007	MCERTS	-	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 22-48037
Project / Site name: St. Annes
Your Order No: 21-2-FDO-LABS

Lab Sample Number				2217795	2217796	2217797	2217798	2217799
Sample Reference				HP14	Core 1	Core 2	Core 3	Core 5
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				24/03/2022	24/03/2022	24/03/2022	24/03/2022	24/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	-	-	-	-
Moisture Content	%	0.01	NONE	20	-	-	-	-
Total mass of sample received	kg	0.001	NONE	1.2	-	-	-	-
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	Chrysotile & Amosite	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	Not-detected	Detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	< 0.001	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	< 0.001	-	-
Asbestos Analyst ID	N/A	N/A	N/A		JMA	JMA	JMA	JMA
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	8	-	-	-	-
Total Cyanide	mg/kg	1	MCERTS	< 1.0	-	-	-	-
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.022	-	-	-	-
Sulphide	mg/kg	1	MCERTS	4.9	-	-	-	-
Organic Matter (automated)	%	0.1	MCERTS	3.7	-	-	-	-
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	-	-	-	-
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	2.8	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	0.44	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	5.3	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	4.3	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	2.7	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	2.4	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	2.5	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	2	-	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	2.8	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	1.5	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.43	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.7	-	-	-	-
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	28.9	-	-	-	-
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	24	-	-	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	-	-	-	-
Chromium (hexavalent)	mg/kg	4	NONE	< 4.0	-	-	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	43	-	-	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	60	-	-	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	150	-	-	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.6	-	-	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	32	-	-	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	-	-	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	120	-	-	-	-
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-

Analytical Report Number: 22-48037
Project / Site name: St. Annes
Your Order No: 21-2-FDO-LABS

Lab Sample Number				2217795	2217796	2217797	2217798	2217799
Sample Reference				HP14	Core 1	Core 2	Core 3	Core 5
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				24/03/2022	24/03/2022	24/03/2022	24/03/2022	24/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Toluene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
p & m-xylene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
o-xylene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS_1D_AL}$	mg/kg	0.001	MCERTS	< 0.001	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS_1D_AL}$	mg/kg	0.001	MCERTS	< 0.001	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS_1D_AL}$	mg/kg	0.001	MCERTS	< 0.001	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH_CU_1D_AL}$	mg/kg	1	MCERTS	< 1.0	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH_CU_1D_AL}$	mg/kg	2	MCERTS	< 2.0	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	< 8.0	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	< 8.0	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH_CU+HS_1D_AL}$	mg/kg	10	MCERTS	< 10	-	-	-	-
TPH-CWG - Aromatic >EC5 - EC7 $_{HS_1D_AR}$	mg/kg	0.001	MCERTS	< 0.001	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8 $_{HS_1D_AR}$	mg/kg	0.001	MCERTS	< 0.001	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10 $_{HS_1D_AR}$	mg/kg	0.001	MCERTS	< 0.001	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12 $_{EH_CU_1D_AR}$	mg/kg	1	MCERTS	< 1.0	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16 $_{EH_CU_1D_AR}$	mg/kg	2	MCERTS	3.8	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	22	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	50	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35) $_{EH_CU+HS_1D_AR}$	mg/kg	10	MCERTS	75	-	-	-	-
VOCs								
Chloromethane	µg/kg	1	ISO 17025	-	-	-	-	-
Chloroethane	µg/kg	1	NONE	-	-	-	-	-
Bromomethane	µg/kg	1	ISO 17025	-	-	-	-	-
Vinyl Chloride	µg/kg	1	NONE	-	-	-	-	-
Trichlorofluoromethane	µg/kg	1	NONE	-	-	-	-	-
1,1-Dichloroethene	µg/kg	1	NONE	-	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	-
1,1-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
2,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	-
Trichloromethane	µg/kg	1	MCERTS	-	-	-	-	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,1-Dichloropropene	µg/kg	1	MCERTS	-	-	-	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	-	-	-
Benzene	µg/kg	1	MCERTS	-	-	-	-	-
Tetrachloromethane	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	-
Trichloroethene	µg/kg	1	MCERTS	-	-	-	-	-
Dibromomethane	µg/kg	1	MCERTS	-	-	-	-	-
Bromodichloromethane	µg/kg	1	MCERTS	-	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	-	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	-	-	-
Tetrachloroethene	µg/kg	1	NONE	-	-	-	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	-	-	-

Analytical Report Number: 22-48037
Project / Site name: St. Annes
Your Order No: 21-2-FDO-LABS

Lab Sample Number				2217795	2217796	2217797	2217798	2217799
Sample Reference				HP14	Core 1	Core 2	Core 3	Core 5
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				24/03/2022	24/03/2022	24/03/2022	24/03/2022	24/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Chlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
p & m-Xylene	µg/kg	1	MCERTS	-	-	-	-	-
Styrene	µg/kg	1	MCERTS	-	-	-	-	-
Tribromomethane	µg/kg	1	NONE	-	-	-	-	-
o-Xylene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	-
Isopropylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
Bromobenzene	µg/kg	1	MCERTS	-	-	-	-	-
n-Propylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
2-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	-
4-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
tert-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
sec-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	-	-	-	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
Hexachlorobutadiene	µg/kg	1	MCERTS	-	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	-

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	-	-	-

Total PCBs by GC-MS

Total PCBs	mg/kg	0.007	MCERTS	-	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 22-48037
Project / Site name: St. Annes
Your Order No: 21-2-FDO-LABS

Lab Sample Number				2217800
Sample Reference				Core 6
Sample Number				None Supplied
Depth (m)				None Supplied
Date Sampled				24/03/2022
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
Stone Content	%	0.1	NONE	-
Moisture Content	%	0.01	NONE	-
Total mass of sample received	kg	0.001	NONE	-
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-
Asbestos Quantification Total	%	0.001	ISO 17025	-
Asbestos Analyst ID	N/A	N/A	N/A	JMA
General Inorganics				
pH - Automated	pH Units	N/A	MCERTS	-
Total Cyanide	mg/kg	1	MCERTS	-
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-
Sulphide	mg/kg	1	MCERTS	-
Organic Matter (automated)	%	0.1	MCERTS	-
Total Phenols				
Total Phenols (monohydric)	mg/kg	1	MCERTS	-
Speciated PAHs				
Naphthalene	mg/kg	0.05	MCERTS	-
Acenaphthylene	mg/kg	0.05	MCERTS	-
Acenaphthene	mg/kg	0.05	MCERTS	-
Fluorene	mg/kg	0.05	MCERTS	-
Phenanthrene	mg/kg	0.05	MCERTS	-
Anthracene	mg/kg	0.05	MCERTS	-
Fluoranthene	mg/kg	0.05	MCERTS	-
Pyrene	mg/kg	0.05	MCERTS	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-
Chrysene	mg/kg	0.05	MCERTS	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-
Total PAH				
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	-
Heavy Metals / Metalloids				
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-
Chromium (hexavalent)	mg/kg	4	NONE	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-
Monoaromatics & Oxygenates				
Benzene	µg/kg	1	MCERTS	-

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 22-48037
Project / Site name: St. Annes
Your Order No: 21-2-FDO-LABS

Lab Sample Number				2217800
Sample Reference				Core 6
Sample Number				None Supplied
Depth (m)				None Supplied
Date Sampled				24/03/2022
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
Toluene	µg/kg	1	MCERTS	-
Ethylbenzene	µg/kg	1	MCERTS	-
p & m-xylene	µg/kg	1	MCERTS	-
o-xylene	µg/kg	1	MCERTS	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 $_{HS_1D_AL}$	mg/kg	0.001	MCERTS	-
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS_1D_AL}$	mg/kg	0.001	MCERTS	-
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS_1D_AL}$	mg/kg	0.001	MCERTS	-
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH_CU_1D_AL}$	mg/kg	1	MCERTS	-
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH_CU_1D_AL}$	mg/kg	2	MCERTS	-
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	-
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	-
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH_CU+HS_1D_AL}$	mg/kg	10	MCERTS	-

TPH-CWG - Aromatic >EC5 - EC7 $_{HS_1D_AR}$	mg/kg	0.001	MCERTS	-
TPH-CWG - Aromatic >EC7 - EC8 $_{HS_1D_AR}$	mg/kg	0.001	MCERTS	-
TPH-CWG - Aromatic >EC8 - EC10 $_{HS_1D_AR}$	mg/kg	0.001	MCERTS	-
TPH-CWG - Aromatic >EC10 - EC12 $_{EH_CU_1D_AR}$	mg/kg	1	MCERTS	-
TPH-CWG - Aromatic >EC12 - EC16 $_{EH_CU_1D_AR}$	mg/kg	2	MCERTS	-
TPH-CWG - Aromatic >EC16 - EC21 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	-
TPH-CWG - Aromatic >EC21 - EC35 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	-
TPH-CWG - Aromatic (EC5 - EC35) $_{EH_CU+HS_1D_AR}$	mg/kg	10	MCERTS	-

VOCs

Chloromethane	µg/kg	1	ISO 17025	-
Chloroethane	µg/kg	1	NONE	-
Bromomethane	µg/kg	1	ISO 17025	-
Vinyl Chloride	µg/kg	1	NONE	-
Trichlorofluoromethane	µg/kg	1	NONE	-
1,1-Dichloroethene	µg/kg	1	NONE	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-
1,1-Dichloroethane	µg/kg	1	MCERTS	-
2,2-Dichloropropane	µg/kg	1	MCERTS	-
Trichloromethane	µg/kg	1	MCERTS	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-
1,2-Dichloroethane	µg/kg	1	MCERTS	-
1,1-Dichloropropene	µg/kg	1	MCERTS	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-
Benzene	µg/kg	1	MCERTS	-
Tetrachloromethane	µg/kg	1	MCERTS	-
1,2-Dichloropropane	µg/kg	1	MCERTS	-
Trichloroethene	µg/kg	1	MCERTS	-
Dibromomethane	µg/kg	1	MCERTS	-
Bromodichloromethane	µg/kg	1	MCERTS	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-
Toluene	µg/kg	1	MCERTS	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-
Dibromochloromethane	µg/kg	1	ISO 17025	-
Tetrachloroethene	µg/kg	1	NONE	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-

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Analytical Report Number: 22-48037
Project / Site name: St. Annes
Your Order No: 21-2-FDO-LABS

Lab Sample Number	2217800
Sample Reference	Core 6
Sample Number	None Supplied
Depth (m)	None Supplied
Date Sampled	24/03/2022
Time Taken	None Supplied

Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
Chlorobenzene	µg/kg	1	MCERTS	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-
Ethylbenzene	µg/kg	1	MCERTS	-
p & m-Xylene	µg/kg	1	MCERTS	-
Styrene	µg/kg	1	MCERTS	-
Tribromomethane	µg/kg	1	NONE	-
o-Xylene	µg/kg	1	MCERTS	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-
Isopropylbenzene	µg/kg	1	MCERTS	-
Bromobenzene	µg/kg	1	MCERTS	-
n-Propylbenzene	µg/kg	1	ISO 17025	-
2-Chlorotoluene	µg/kg	1	MCERTS	-
4-Chlorotoluene	µg/kg	1	MCERTS	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-
tert-Butylbenzene	µg/kg	1	MCERTS	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-
sec-Butylbenzene	µg/kg	1	MCERTS	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-
Butylbenzene	µg/kg	1	MCERTS	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-
Hexachlorobutadiene	µg/kg	1	MCERTS	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	-
PCB Congener 52	mg/kg	0.001	MCERTS	-
PCB Congener 101	mg/kg	0.001	MCERTS	-
PCB Congener 118	mg/kg	0.001	MCERTS	-
PCB Congener 138	mg/kg	0.001	MCERTS	-
PCB Congener 153	mg/kg	0.001	MCERTS	-
PCB Congener 180	mg/kg	0.001	MCERTS	-

Total PCBs by GC-MS

Total PCBs	mg/kg	0.007	MCERTS	-

U/S = Unsuitable Sample I/S = Insufficient Sample

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Analytical Report Number: **22-48037**
Project / Site name: **St. Annes**
Your Order No: **21-2-FDO-LABS**

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

The analysis was carried out using our documented in-house method A006-PL based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
2217783	HP04	0.30	123	Loose Fibrous Debris	**Chrysotile & Amosite**	0.001	**0.001**
2217784	HP05	0.20	131	Rope	**Chrysotile**	9.459	**9.46**
2217797	Core 2		161	Loose Fibres	**Chrysotile & Amosite**	< 0.001	**< 0.001**

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

Analytical Report Number: 22-48037
Project / Site name: St. Annes

Your Order No: 21-2-FDO-LABS

Lab Sample Number				2217769
Sample Reference				A|B Sample
Sample Number				None Supplied
Depth (m)				None Supplied
Date Sampled				21/03/2022
Time Taken				None Supplied
Analytical Parameter (Bulk Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
Asbestos Identification	Type	N/A	ISO 17025	No Asbestos Detected

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 22-48037
Project / Site name: St. Annes

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2217770	TP01	None Supplied	0.2	Brown loam and clay with gravel and vegetation.
2217771	TP02	None Supplied	0.4	Brown clay and sand with brick and rubble.
2217772	TP03	None Supplied	0.6	Brown clay and sand with gravel and vegetation.
2217773	TP03	None Supplied	1.2	Brown clay and sand with gravel.
2217774	TP04	None Supplied	0.5	Brown clay and sand with gravel and stones.
2217775	TP04	None Supplied	1.5	Brown clay and loam.
2217776	TP05	None Supplied	0.3	Brown clay and sand with gravel and stones.
2217777	TP05	None Supplied	0.7	Brown clay and sand with gravel and stones.
2217778	HP01	None Supplied	0.2	Brown loam and clay with gravel and vegetation.
2217779	HP01	None Supplied	0.8	Brown clay with gravel and vegetation.
2217780	HP02	None Supplied	0.45	Brown loam and clay with gravel and vegetation.
2217781	HP02	None Supplied	1	Brown clay.
2217782	HP03	None Supplied	0.5	Brown loam and clay with gravel and vegetation.
2217783	HP04	None Supplied	0.3	Brown loam and clay with stones and vegetation.
2217784	HP05	None Supplied	0.2	Brown loam and clay with gravel and brick.
2217785	HP05	None Supplied	0.5	Brown clay and sand with gravel.
2217786	HP06	None Supplied	0.3	Brown loam and clay with stones and brick.
2217787	HP07	None Supplied	0.2	Brown loam and clay with brick and vegetation.
2217788	HP08	None Supplied	0.3	Brown loam and clay with vegetation and stones.
2217789	HP09	None Supplied	0.15	Brown loam and clay with gravel and vegetation.
2217790	HP10	None Supplied	0.3	Brown loam and clay with gravel and stones.
2217791	HP11	None Supplied	0.3	Brown clay and sand with gravel.
2217792	HP11	None Supplied	0.9	Brown clay with gravel.
2217793	HP12	None Supplied	0.2	Brown sand with gravel and stones.
2217794	HP13	None Supplied	0.4	Brown clay and sand with gravel.
2217795	HP14	None Supplied	0.3	Brown loam and clay with gravel and vegetation.

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Analytical Report Number : 22-48037
Project / Site name: St. Annes

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Asbestos identification in Bulks	Asbestos Identification in bulk material with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	W	ISO 17025
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	NONE
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
PCB's By GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS
Asbestos Quantification - Gravimetric	Asbestos quantification by gravimetric method - in house method based on references.	HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).	A006-PL	D	ISO 17025

Analytical Report Number : 22-48037
Project / Site name: St. Annes

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
D.O. for Gravimetric Quant if Screen/ID positive	Dependent option for Gravimetric Quant if Screen/ID positive scheduled.	In house asbestos methods A001 & A006.	A006-PL	D	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

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Analytical Report Number : 22-48041

Project / Site name:	St. Annes	**Samples received on:**	24/03/2022
Your job number:		**Samples instructed on/ Analysis started on:**	28/03/2022
Your order number:	21-2-FDO-LABS	**Analysis completed by:**	05/04/2022
Report Issue Number:	1	**Report issued on:**	05/04/2022
Samples Analysed:	2 10:1 WAC samples		

Izabela Wójcik

Signed:

Izabela Wójcik
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

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Waste Acceptance Criteria Analytical Results

Report No:	**22-48041**						
					Client:	**MEREBROOK**	
Location	**St. Annes**						
Lab Reference (Sample Number)	2217848 / 2217849				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	21/03/2022				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TP04						
Depth (m)	0.50						
Solid Waste Analysis							
TOC (%)**	0.2				3%	5%	6%
Loss on Ignition (%) **	2.7				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg) EH_1D_CU_AL	150				500	--	--
Total PAH (WAC-17) (mg/kg)	2.19				100	--	--
pH (units)**	10.2				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	100				--	To be evaluated	To be evaluated
Eluate Analysis	10:1			10:1	Limit values for compliance leaching test		
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)	mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	< 0.0010			< 0.0100	0.5	2	25
Barium *	0.0072			0.0659	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0055			0.050	0.5	10	70
Copper *	0.0008			0.0071	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0191			0.176	0.5	10	30
Nickel *	0.0033			0.030	0.4	10	40
Lead *	0.0035			0.033	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	0.0053			0.049	0.1	0.5	7
Zinc *	0.0025			0.023	4	50	200
Chloride *	16			140	800	15000	25000
Fluoride	0.079			0.73	10	150	500
Sulphate *	17			160	1000	20000	50000
TDS*	99			910	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	4.40			40.5	500	800	1000
Leach Test Information							
Stone Content (%)	39						
Sample Mass (kg)	1.2						
Dry Matter (%)	93						
Moisture (%)	7.3						

Results are expressed on a dry weight basis, after correction for moisture content where applicable.
*= UKAS accredited (liquid eluate analysis only)
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation
** = MCERTS accredited

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

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Waste Acceptance Criteria Analytical Results

Report No:	**22-48041**						
					Client:	**MEREBROOK**	
Location	**St. Annes**						
Lab Reference (Sample Number)	2217850 / 2217851				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	21/03/2022				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TP05						
Depth (m)	0.30						
Solid Waste Analysis							
TOC (%)**	1.0				3%	5%	6%
Loss on Ignition (%) **	1.9				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg) EH_1D_CU_AL	220				500	--	--
Total PAH (WAC-17) (mg/kg)	24.7				100	--	--
pH (units)**	9.0				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	18				--	To be evaluated	To be evaluated
Eluate Analysis (BS EN 12457 - 2 preparation utilising end over end leaching procedure)	10:1 mg/l			10:1 mg/kg	Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	< 0.0010			< 0.0100	0.5	2	25
Barium *	0.0307			0.291	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0017			0.016	0.5	10	70
Copper *	0.0059			0.056	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0018			0.0170	0.5	10	30
Nickel *	0.0038			0.036	0.4	10	40
Lead *	0.0060			0.057	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	0.0054			0.051	0.1	0.5	7
Zinc *	0.011			0.10	4	50	200
Chloride *	1.5			14	800	15000	25000
Fluoride	0.13			1.2	10	150	500
Sulphate *	4.1			39	1000	20000	50000
TDS*	48			450	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	16.0			152	500	800	1000
Leach Test Information							
Stone Content (%)	53						
Sample Mass (kg)	1.2						
Dry Matter (%)	97						
Moisture (%)	3.1						

Results are expressed on a dry weight basis, after correction for moisture content where applicable.
*= UKAS accredited (liquid eluate analysis only)
Stated limits are for guidance only and i2 cannot be held responsible for any discrepencies with current legislation
** = MCERTS accredited

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

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Analytical Report Number : 22-48041
Project / Site name: St. Annes

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2217848	TP04	None Supplied	0.5	Brown clay and sand with gravel and stones.
2217850	TP05	None Supplied	0.3	Brown clay and sand with gravel and stones.

Analytical Report Number : 22-48041
Project / Site name: St. Annes

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
BS EN 12457-2 (10:1) Leachate Prep	10:1 (as recieved, moisture adjusted) end over end extraction with water for 24 hours. Eluate filtered prior to analysis.	In-house method based on BSEN12457-2.	L043-PL	W	NONE
Acid neutralisation capacity of soil	Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe.	In-house method based on Guidance an Sampling and Testing of Wastes to Meet Landfill Waste Acceptance""	L046-PL	W	NONE
Loss on ignition of soil @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace.	In house method.	L047-PL	D	MCERTS
Mineral Oil (Soil) C10 - C40	Determination of mineral oil fraction extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L076-PL	D	NONE
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Speciated WAC-17 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270. MCERTS accredited except Coronene.	L064-PL	D	MCERTS
PCB's By GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS
pH at 20oC in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In house method.	L005-PL	W	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
BTEX in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Total BTEX in soil (Poland)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073-PL	W	MCERTS
Metals in leachate by ICP-OES	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
Chloride 10:1 WAC	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
Fluoride 10:1 WAC	Determination of fluoride in leachate by 1:1ratio with a buffer solution followed by Ion Selective Electrode.	In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination"	L033B-PL	W	ISO 17025
Sulphate 10:1 WAC	Determination of sulphate in leachate by ICP-OES	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
Total dissolved solids 10:1 WAC	Determination of total dissolved solids in water by EC probe using a factor of 0.6.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L004-PL	W	ISO 17025

Analytical Report Number : 22-48041
Project / Site name: St. Annes

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Monohydric phenols 10:1 WAC	Determination of phenols in leachate by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	ISO 17025
Dissolved organic carbon 10:1 WAC	Determination of dissolved inorganic carbon in leachate by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

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Analytical Report Number : 22-48987

Project / Site name:	St Annes	**Samples received on:**	29/03/2022
Your job number:		**Samples instructed on/ Analysis started on:**	31/03/2022
Your order number:	22-2-FDO-LABS	**Analysis completed by:**	07/04/2022
Report Issue Number:	1	**Report issued on:**	07/04/2022
Samples Analysed:	1 bulk sample - 3 soil samples		

Martyna Langer

Signed:

Martyna Langer
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 22-48987
Project / Site name: St Annes
Your Order No: 22-2-FDO-LABS

Lab Sample Number				2223009	2223010	2223011
Sample Reference				HP15	HP16	HP17
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				25/03/2022	25/03/2022	25/03/2022
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**			
Stone Content	%	0.1	NONE	< 0.1	-	< 0.1
Moisture Content	%	0.01	NONE	15	-	23
Total mass of sample received	kg	0.001	NONE	1.5	-	1.5

Asbestos in Soil	Type	N/A	ISO 17025	-	Not-detected	-
Asbestos Analyst ID	N/A	N/A	N/A	N/A	SCA	N/A

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	9.3	-	7.3
Total Cyanide	mg/kg	1	MCERTS	< 1.0	-	< 1.0
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.061	-	0.02
Sulphide	mg/kg	1	MCERTS	7.3	-	< 1.0
Organic Matter (automated)	%	0.1	MCERTS	3.9	-	4.4

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	-	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.7	-	0.42
Anthracene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	2	-	1.1
Pyrene	mg/kg	0.05	MCERTS	1.9	-	0.98
Benzo(a)anthracene	mg/kg	0.05	MCERTS	1.3	-	0.52
Chrysene	mg/kg	0.05	MCERTS	1.3	-	0.65
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	1.4	-	0.48
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.96	-	0.43
Benzo(a)pyrene	mg/kg	0.05	MCERTS	1.6	-	0.58
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.88	-	0.2
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.24	-	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.96	-	0.36

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	13.2	-	5.72

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	72	-	16
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	3.4	-	< 0.2
Chromium (hexavalent)	mg/kg	4	NONE	< 4.0	-	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	39	-	38
Copper (aqua regia extractable)	mg/kg	1	MCERTS	100	-	48
Lead (aqua regia extractable)	mg/kg	1	MCERTS	220	-	240
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.6	-	0.5
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	42	-	26
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	-	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	190	-	95

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Analytical Report Number: 22-48987
Project / Site name: St Annes
Your Order No: 22-2-FDO-LABS

Lab Sample Number				2223009	2223010	2223011
Sample Reference				HP15	HP16	HP17
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				25/03/2022	25/03/2022	25/03/2022
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**			
Monoaromatics & Oxygenates						
Benzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	-	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	-	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	< 1.0
Petroleum Hydrocarbons						
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS_1D_AL}$	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS_1D_AL}$	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS_1D_AL}$	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH_CU_1D_AL}$	mg/kg	1	MCERTS	< 1.0	-	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH_CU_1D_AL}$	mg/kg	2	MCERTS	< 2.0	-	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	< 8.0	-	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	< 8.0	-	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH_CU+HS_1D_AL}$	mg/kg	10	MCERTS	< 10	-	< 10
TPH-CWG - Aromatic >EC5 - EC7 $_{HS_1D_AR}$	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 $_{HS_1D_AR}$	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 $_{HS_1D_AR}$	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 $_{EH_CU_1D_AR}$	mg/kg	1	MCERTS	< 1.0	-	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 $_{EH_CU_1D_AR}$	mg/kg	2	MCERTS	< 2.0	-	7.3
TPH-CWG - Aromatic >EC16 - EC21 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	< 10	-	17
TPH-CWG - Aromatic >EC21 - EC35 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	21	-	34
TPH-CWG - Aromatic (EC5 - EC35) $_{EH_CU+HS_1D_AR}$	mg/kg	10	MCERTS	31	-	59

U/S = Unsuitable Sample I/S = Insufficient Sample

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Analytical Report Number: 22-48987
Project / Site name: St Annes

Your Order No: 22-2-FDO-LABS

Lab Sample Number				2223008
Sample Reference				TP05
Sample Number				None Supplied
Depth (m)				None Supplied
Date Sampled				24/03/2022
Time Taken				None Supplied
Analytical Parameter (Bulk Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
Asbestos Identification	Type	N/A	ISO 17025	Chrysotile - Hard/Cement Type Material
Asbestos Analyst ID	N/A	N/A	N/A	SCA

U/S = Unsuitable Sample I/S = Insufficient Sample

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Analytical Report Number : 22-48987
Project / Site name: St Annes

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2223009	HP15	None Supplied	None Supplied	Brown clay and loam with gravel and vegetation.
2223011	HP17	None Supplied	None Supplied	Brown clay and loam with gravel and vegetation.

Analytical Report Number : 22-48987
Project / Site name: St Annes

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in Bulks	Asbestos Identification in bulk material with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	W	ISO 17025
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	NONE
D.O. for Gravimetric Quant if Screen/ID positive	Dependent option for Gravimetric Quant if Screen/ID positive scheduled.	In house asbestos methods A001 & A006.	A006-PL	D	NONE

Analytical Report Number : 22-48987
Project / Site name: St Annes

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

APPENDIX 5 ▪ Groundwater Laboratory Analysis Certificates

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Analytical Report Number : 22-52761

Replaces Analytical Report Number: 22-52761, issue no. 1
Client references/information amended.

Project / Site name:	St Anns	**Samples received on:**	14/04/2022
Your job number:	21914J	**Samples instructed on/ Analysis started on:**	20/04/2022
Your order number:		**Analysis completed by:**	29/04/2022
Report Issue Number:	2	**Report issued on:**	29/04/2022
Samples Analysed:	2 water samples		

Signed:

Adam Fenwick
Technical Reviewer
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 22-52761
Project / Site name: St Anns

Lab Sample Number				2244762	2244763
Sample Reference				WS16	BH17
Sample Number				None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied
Date Sampled				13/04/2022	13/04/2022
Time Taken				None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**		
General Inorganics					
pH	pH Units	N/A	ISO 17025	7.6	7.2
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10
Sulphate as SO4	µg/l	45	ISO 17025	115000	727000
Sulphide	µg/l	5	NONE	< 5.0	< 5.0
Total Organic Carbon (TOC)	mg/l	0.1	ISO 17025	7.88	13.1
Total Phenols					
Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10
Speciated PAHs					
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	1.18	< 0.01
Pyrene	µg/l	0.01	ISO 17025	1.21	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	0.85	< 0.01
Chrysene	µg/l	0.01	ISO 17025	0.81	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	1.13	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	0.52	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	0.91	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	0.38	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	0.44	< 0.01
Total PAH					
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	7.43	< 0.16
Heavy Metals / Metalloids					
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0
Arsenic (dissolved)	µg/l	0.15	ISO 17025	0.87	0.63
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	0.09
Chromium (dissolved)	µg/l	0.2	ISO 17025	0.3	< 0.2
Copper (dissolved)	µg/l	0.5	ISO 17025	1.6	2.6
Lead (dissolved)	µg/l	0.2	ISO 17025	0.2	0.4
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	0.8	5.3
Selenium (dissolved)	µg/l	0.6	ISO 17025	2.4	1
Zinc (dissolved)	µg/l	0.5	ISO 17025	< 0.5	17

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 22-52761
Project / Site name: St Anns

Lab Sample Number				2244762	2244763
Sample Reference				WS16	BH17
Sample Number				None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied
Date Sampled				13/04/2022	13/04/2022
Time Taken				None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**		
Monoaromatics & Oxygenates					
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0
Petroleum Hydrocarbons					
TPH-CWG - Aliphatic >C5 - C6 $_{HS_1D_AL}$	µg/l	1	ISO 17025	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8 $_{HS_1D_AL}$	µg/l	1	ISO 17025	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10 $_{HS_1D_AL}$	µg/l	1	ISO 17025	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12 $_{EH_1D_AL_\#1_\#2_MS}$	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16 $_{EH_1D_AL_\#1_\#2_MS}$	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21 $_{EH_1D_AL_\#1_\#2_MS}$	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35 $_{EH_1D_AL_\#1_\#2_MS}$	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35) $_{HS+EH_1D_AL_\#1_\#2_MS}$	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aromatic >C5 - C7 $_{HS_1D_AR}$	µg/l	1	ISO 17025	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8 $_{HS_1D_AR}$	µg/l	1	ISO 17025	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10 $_{HS_1D_AR}$	µg/l	1	ISO 17025	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12 $_{EH_1D_AR_\#1_\#2_MS}$	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aromatic >C12 - C16 $_{EH_1D_AR_\#1_\#2_MS}$	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aromatic >C16 - C21 $_{EH_1D_AR_\#1_\#2_MS}$	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aromatic >C21 - C35 $_{EH_1D_AR_\#1_\#2_MS}$	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aromatic (C5 - C35) $_{HS+EH_1D_AR_\#1_\#2_MS}$	µg/l	10	NONE	< 10	< 10

Analytical Report Number: 22-52761
Project / Site name: St Anns

Lab Sample Number				2244762	2244763
Sample Reference				WS16	BH17
Sample Number				None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied
Date Sampled				13/04/2022	13/04/2022
Time Taken				None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**		
VOCs					
Chloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0
Chloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0
Bromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0
Vinyl Chloride	µg/l	1	NONE	< 1.0	< 1.0
Trichlorofluoromethane	µg/l	1	NONE	< 1.0	< 1.0
1,1-Dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	1	ISO 17025	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0
1,1-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0
2,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0
Trichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0
1,2-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0
1,1-Dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0
Tetrachloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0
1,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0
Trichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0
Dibromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0
Bromodichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0
1,3-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0
Dibromochloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0
Tetrachloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,2-Dibromoethane	µg/l	1	ISO 17025	< 1.0	< 1.0
Chlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
p & m-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0
Styrene	µg/l	1	ISO 17025	< 1.0	< 1.0
Tribromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0
o-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0
Isopropylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
Bromobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
n-Propylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
2-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0
4-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
tert-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
sec-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
p-Isopropyltoluene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,2-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
Hexachlorobutadiene	µg/l	1	ISO 17025	< 1.0	< 1.0

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 22-52761
Project / Site name: St Anns

Lab Sample Number				2244762	2244763
Sample Reference				WS16	BH17
Sample Number				None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied
Date Sampled				13/04/2022	13/04/2022
Time Taken				None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**		
1,2,3-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 22-52761
Project / Site name: St Anns

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Hexavalent chromium in water	Determination of hexavalent chromium in water by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method by continuous flow analyser. Accredited Matrices SW, GW, PW.	L080-PL	W	ISO 17025
Monohydric phenols in water	Determination of phenols in water by continuous flow analyser. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method	L029-PL	W	NONE
Sulphate in water	Determination of sulphate in water after filtration by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	ISO 17025
Total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Total organic carbon in water	Determination of dissolved organic carbon in water by TOC/DOC NDIR analyser. Accredited matrices: SW PW GW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	ISO 17025
Volatile organic compounds in water	Determination of volatile organic compounds in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L099-PL	W	ISO 17025

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number : 22-52761
Project / Site name: St Anns

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

Analytical Report Number : 22-52761
Project / Site name: St Anns

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis.Please note that the associated result(s) may be unreliable and should be interpreted with care.

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH17	None Supplied	W	2244763	c	BTEX and MTBE in water (Monoaromatics)	L073B-PL	c
BH17	None Supplied	W	2244763	c	Hexavalent chromium in water	L080-PL	c
BH17	None Supplied	W	2244763	c	Metals in water by ICP-MS (dissolved)	L012-PL	c
BH17	None Supplied	W	2244763	c	Sulphate in water	L039-PL	c
BH17	None Supplied	W	2244763	c	Sulphide in water	L029-PL	c
BH17	None Supplied	W	2244763	c	Total cyanide in water	L080-PL	c
BH17	None Supplied	W	2244763	c	Volatile organic compounds in water	L073B-PL	c
BH17	None Supplied	W	2244763	c	pH at 20oC in water (automated)	L099-PL	c
WS16	None Supplied	W	2244762	c	BTEX and MTBE in water (Monoaromatics)	L073B-PL	c
WS16	None Supplied	W	2244762	c	Hexavalent chromium in water	L080-PL	c
WS16	None Supplied	W	2244762	c	Metals in water by ICP-MS (dissolved)	L012-PL	c
WS16	None Supplied	W	2244762	c	Sulphate in water	L039-PL	c
WS16	None Supplied	W	2244762	c	Sulphide in water	L029-PL	c
WS16	None Supplied	W	2244762	c	Total cyanide in water	L080-PL	c
WS16	None Supplied	W	2244762	c	Volatile organic compounds in water	L073B-PL	c
WS16	None Supplied	W	2244762	c	pH at 20oC in water (automated)	L099-PL	c

APPENDIX 6

- Field Monitoring Records
- Groundwater Level Data
- Hazardous Soil Gas Data

GAS MONITORING RECORD ROUND 1

Location Reference	Time	Flow and Pressure Measurements				Gas Measurements						VOC Measurements		Dip Measurements		Comments
		Flow		Atmospheric Pressure	Differential Pressure	Methane	Methane LEL	Carbon Dioxide	Oxygen	Carbon Monoxide	Hydrogen Sulphide	Hexane	PID	Depth to Water	Depth to Base	
		max	steady													
		l hr^{-1}		mb	Pa	%	%	%	%	ppm	ppm	%	ppm	m	m	
BH17	13:00	0	0	1013	0	0	0	0	20.4	0	0	0.180	nr	0.85	3.85	-
WS16	13:20	0	0	1018	0	0	0	0.1	20.6	0	0	0.013	nr	2.11	2.97	-
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Weather:	Sunny, atmospheric pressure raising over the previous 24 hours.	nr = not recorded	**Gas Analyser**	**PID**	**Site:** St Ann's
		Model:	GFM 436-1	MiniRae 3000	**Project Number:** 21914j
		Serial Number:	12228	592-920925	**Monitored By:** Joe Bertram
		Date of Last Calibration:	30/09/2021	28/10/2021	**Date:** 13/04/2022

APPENDIX 7 ▪ Gas Risk Assessment

MODIFIED WILSON AND CARD GAS CHARACTERISTIC SITUATION

SITE: St Ann's JOB NUMBER: 21914j 22/04/2022

Carbon Dioxide			Methane		
Maximum Gas Concentration	0.10 %		Maximum Gas Concentration	0.10 %	
Maximum Measured Steady Flow	0.10 L hr^{-1}		Maximum Measured Peak Flow	0.10 L hr^{-1}	
Gas Screening Value	0.00 L hr^{-1}		Gas Screening Value	0.00 L hr^{-1}	
Characteristic Situation	1		Characteristic Situation	1	

if measured values are zero then resolution limit of instrument is used for calculation of GSV
worst case carbon dioxide or methane characteristic situation value defines overall characterstic situation for the site

Modified Wilson and Card Classification

					BS 8485:2015+A1:2019 Gas Protection Scores - refer to standard for full guidance			
					Minimum Gas Protection Score Required			
Characteristic Situation	Risk Classification	Gas Screening Value Threshold (L hr^{-1})	Additional Factors	Typical Source of Generation	Type A Building	Type B Building	Type C Building	Type D Building
1	very low risk	<0.07	typically methane not to exceed 1% and/or carbon dioxide 5% otherwise consider increase to situation 2	natural soils with low organic content; 'typical' made ground	0	0	0	0
2	low risk	0.07 to <0.7	borehole air flow rate not to exceed 70 L hr^{-1} otherwise consider increase to situation 3	natural soils with high peat/organic content; 'typical' made ground	3.5	3.5	2.5	1.5
3	moderate risk	0.7 to <3.5		old landfill, inert waste, mineworking flooded	4.5	4	3	2.5
4	moderate to high risk	3.5 to <15	quantitative risk assessment required to evaluate scope of protective measures	mineworking susceptible to flooding, completed landfill	6.5 A)	5.5 A)	4.5	3.5
5	high risk	15 to <70		mineworking unflooded inactive with shallow workings near surface	hazard too high for this method to define protection measures	6 A)	5.5	4.5
6	very high risk	>70		recent landfill site	hazard too high for this method to define protection measures	hazard too high for this method to define protection measures	hazard too high for this method to define protection measures	6

BS 8485:2015+A1:2019 Gas Protection Measures - refer to standard for full guidance
Select two or more elements from the following three types of protection to achieve score (only one element per type permitted)

Structural Barrier	Score A)	Ventilation Measures		Score	Gas Resistant Membrane	Score
Precast suspended segmental subfloor (i.e. beam and block)	0	Pressure relief pathway (usually formed of low fines gravel or with a thin geocomposite blanket or strips terminating in a gravel trench external to the building)		0.5	Gas resistant membrane meeting all of the following criteria: 1. sufficiently impervious, both in the sheet material and in the sealing of sheets and sealing around sheet penetrations, to prevent any significant passage of methane and/or carbon dioxide through the membrane. *A membrane with a methane gas transmission rate <40.0 ml/day/m2/atm (average) for sheets and joints (tested in accordance with BS ISO 15105-1:2007 manometric method) is regarded as sufficiently impervious.* 2. sufficiently durable to remain serviceable for the anticipated life of the building and duration of gas emissions 3. sufficiently strong* to withstand the installation process and following trades until covered (e.g. penetration from steel fibres in fibre reinforced concrete, penetration of reinforcement ties, tearing due to working above it, dropping tools, etc) and to withstand in-service stresses (e.g. settlement if placed below a floor slab) 5. capable, after installation, of providing a complete barrier to the entry of the relevant gas 6. verified in accordance with CIRIA C735 * For example, reinforced LDPE (virgin polymer) membranes having a minimum mass per unit area of 370 g/m2 and not significantly less than 0.4 mm thickness between the reinforcement scrim (tested in accordance with Procedure D (2 mm diameter tip) of BS EN ISO 9863-1:2016) installed above floor slabs are considered sufficiently strong to meet the performance criteria (see also C.3). Thicker and more robust membranes or an additional membrane protection layer should be installed directly beneath cast-in-situ floor slabs	2
Cast in situ ground-bearing floor slab (with only nominal mesh reinforcement)	0.5	Passive sub floor dispersal layer	Very good performance E)	2.5		
			Good performance E)	1.5		
Cast in situ monolithic reinforced ground bearing raft or reinforced cast in situ suspended floor slab with minimal penetrations	1 or 1.5 B)	Active dispersal layer, usually comprising fans with active abstraction (suction) from a subfloor dilution layer, with roof level vents. The dilution layer may comprise a clear void or be formed of geocomposite or polystyrene void formers E)		1.5 to 2.5		
Basement floor and walls conforming to BS 8102:2009, Grade 2 waterproofing C) D)	2	Active positive pressurization by the creation of a blanket of external fresh air beneath the building floor slab by pumps supplying air to points across the central footprint of the building into a permeable layer, usually formed of a thin geocomposite blanket E)		1.5 to 2.5		
Basement floor and walls conforming to BS 8102:2009, Grade 3 waterproofing C) D)	2.5	Ventilated car park (floor slab of occupied part of the building under consideration is underlain by a basement or undercroft car park) F)		4		

Notes

A) The scores are conditional on breaches of floor slabs, etc., being effectively sealed

B) To achieve a score of 1.5 the raft or suspended slab should be well reinforced to control cracking and have minimal penetrations cast in

C) The score is conditional on the waterproofing being provided by a suitable structural barrier with the design and detailing of the walls and floor meeting the requirements for Type B protection. The score cannot be assigned for Type A (waterproof membrane) or Type C (drained cavity wall).

D) If a membrane is installed beneath and around the basement to provide Type A waterproofing (BS 8102:2009), it can be assigned a gas protection score in accordance with Table 7, if it meets all the criteria for a gas resistant membrane in that table

E) Refer to BS 8485:2015 Annex B to determine performance and assign score

F) Assumes that the car park is vented to deal with car exhaust fumes, designed to Buildings Regulations 2000, Approved Document F

Building Types

Type A
Private ownership with no building management controls on alterations to the internal structure, the use of rooms, the ventilation of rooms or the structural fabric of the building. Some small rooms present. Probably conventional building construction (rather than civil engineering). Examples include private housing and some retail premises.

FOR TYPE A BUILDINGS ACTIVE VENTILATION MEASURES ARE INAPPROPRIATE

Type B
Private or commercial property with central building management control of any alterations to the building or its uses but limited or no central building management control of the maintenance of the building, including the gas protection measures. Multiple occupancy. Small to medium size rooms with passive ventilation of rooms and other internal spaces throughout ground floor and basement areas. May be conventional building or civil engineering construction. Examples include managed apartments, multiple occupancy offices, some retail premises and parts of some public buildings (such as schools, hospitals, leisure centres) and parts of hotels.

Type C
Commercial building with central building management control of any alterations to the building or its uses and central building management control of the maintenance of the building, including the gas protection measures. Single occupancy of ground floor and basement areas. Small to large size rooms with active ventilation or good passive ventilation of all rooms and other internal spaces throughout ground floor and basement areas. Probably civil engineering construction. Examples include offices, some retail premises, and parts of some public buildings (such as schools, hospitals, leisure centres and parts of hotels).

Type D
Industrial style building having large volume internal space(s) that are well ventilated. Corporate ownership with building management controls on alterations to the ground floor and basement areas of the building and on maintenance of ground gas protective measures. Probably civil engineering construction. Examples are retail park sales buildings, factory shop floor areas, warehouses. (Small rooms within these style buildings should be separately categorized as Type B or Type C).

NHBC TRAFFIC LIGHT GAS CHARACTERISTIC SITUATION

SITE: St Ann's JOB NUMBER: 21914j 22/04/2022

Carbon Dioxide			Methane		
Maximum Gas Concentration	0.10	%	Maximum Gas Concentration	0.10	%
Maximum Measured Steady Flow	0.10	L hr^{-1}	Maximum Measured Peak Flow	0.10	L hr^{-1}
Gas Screening Value	0.00	L hr^{-1}	Gas Screening Value	0.00	L hr^{-1}
Characteristic Situation	Green		Characteristic Situation	Green	

if measured values are zero then resolution limit of instrument is used for calculation of GSV
worst case carbon dioxide or methane characteristic situation value defines overall characterstic situation for the site

NHBC Classification **Protection Measures**

Characteristic Situation	Carbon Dioxide		Methane		Identified Gas Regime		Protection Measures Required
	Typical Maximum Concentration (%v/v)	Gas Screening Value (L hr^{-1})	Typical Maximum Concentration (%v/v)	Gas Screening Value (L hr^{-1})			
Green						negligible	Ground gas protection measures are not required
	5	0.78	1	0.16			
Amber 1						low to intermediate	Low-level ground gas protection measures are required, using a membrane and ventilated sub-floor void that creates a permeability contrast to limit the ingress of gas into buildings. Gas protection measures are to be installed as prescribed in BRE 414. Ventilation of the sub-floor void should be designed to provide a minimum of one complete volume change per 24 hours
	10	1.56	5	0.63			
Amber 2						intermediate to high	High-level ground gas protection measures are required, creating a permeability contrast to prevent ingress of gas into buildings. Gas protection measures are to be installed as prescribed in BRE 414. Membranes used should always be fitted by a specialist contractor and should be fully certified (see Appendix E). As with Amber 1, ventilation of the sub-floor void should be designed to provide a minimum of one complete volume change per 24 hours.
	30	3.10	20	1.56			
Red						high	Standard residential housing is not normally acceptable without further Ground Gas Risk Assessment and/or possible remedial mitigation measures to reduce/remove the source of the ground gases. In certain circumstances, active protection methods could be applied, but only when there is a legal agreement assuring the management and maintenance of the system for the life of the property.

APPENDIX 8

- HazWasteOnline Assessment

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

a) understand the origin of the waste
b) select the correct List of Waste code(s)
c) confirm that the list of determinands, results and sampling plan are fit for purpose
d) select and justify the chosen metal species (Appendix B)
e) correctly apply moisture correction and other available corrections
f) add the meta data for their user-defined substances (Appendix A)
g) check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in pale yellow.

7KM80-NCJM5-SQDK1

Job name

St Ann's Hospital 21914J

Description/Comments

Project

Site

Classified by

Name:
Keith Paramor
Date:
22 Apr 2022 11:42 GMT
Telephone:
01773 829988

Company:
Idom Merebrook Ltd
Cromford Mills, Mill Lane
Matlock
DE4 3RQ

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification: -

Course	Date
Hazardous Waste Classification	26 Mar 2015
3 year Refresher overdue	-

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	MMTP01	0.2	Non Hazardous		3
2	MMTP02	0.4	Non Hazardous		6
3	MTP03	0.6	Hazardous	HP 14	9
4	MTP03[2]	1.2	Non Hazardous		12
5	MTP04	0.5	Non Hazardous		15
6	MTP04[2]	1.5	Non Hazardous		18
7	MTP05	0.3	Non Hazardous		21
8	MTP05[2]	0.7	Non Hazardous		24
9	MHP01	0.2	Non Hazardous		27
10	MHP01[2]	0.8	Non Hazardous		30
11	MHP02	0.45	Non Hazardous		32
12	MHP02[2]	1	Non Hazardous		35
13	MHP03	0.5	Non Hazardous		37
14	MHP04	0.3	Non Hazardous		40
15	MHP05	0.2	Non Hazardous		43
16	MHP05[2]	0.5	Non Hazardous		46
17	MHP06	0.3	Non Hazardous		49
18	MHP07	0.2	Non Hazardous		52
19	MHP08	0.3	Non Hazardous		55
20	MHP09	0.15	Non Hazardous		58
21	MHP10	0.3	Non Hazardous		60
22	MHP11	0.3	Non Hazardous		63
23	MHP11[2]	0.9	Non Hazardous		66
24	MHP12	0.2	Non Hazardous		69
25	MHP13	0.4	Non Hazardous		72
26	MHP14	0.3	Non Hazardous		75
27	MHP15	0.3	Non Hazardous		78
28	MHP17	0.2	Non Hazardous		81
29	MMTP01[2]	0.2	Non Hazardous		84

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
30	MMTP02[2]	0.4	Non Hazardous		87
31	MTP03[3]	0.6	Hazardous	HP 14	90
32	MTP03[4]	1.2	Non Hazardous		93
33	MTP04[3]	0.5	Non Hazardous		96
34	MTP04[4]	1.5	Non Hazardous		99
35	MTP05[3]	0.3	Non Hazardous		101
36	MTP05[4]	0.7	Non Hazardous		104
37	MHP01[3]	0.2	Non Hazardous		107
38	MHP01[4]	0.8	Non Hazardous		110
39	MHP02[3]	0.45	Non Hazardous		112
40	MHP02[4]	1	Non Hazardous		115
41	MHP03[2]	0.5	Non Hazardous		117
42	MHP04[2]	0.3	Non Hazardous		120
43	MHP05[3]	0.2	Non Hazardous		123
44	MHP05[4]	0.5	Non Hazardous		126
45	MHP06[2]	0.3	Non Hazardous		129
46	MHP07[2]	0.2	Non Hazardous		132
47	MHP08[2]	0.3	Non Hazardous		135
48	MHP09[2]	0.15	Non Hazardous		138
49	MHP10[2]	0.3	Non Hazardous		140
50	MHP11[3]	0.3	Non Hazardous		143
51	MHP11[4]	0.9	Non Hazardous		146
52	MHP12[2]	0.2	Non Hazardous		149
53	MHP13[2]	0.4	Non Hazardous		152
54	MHP14[2]	0.3	Non Hazardous		155
55	MHP15[2]	0.3	Non Hazardous		158
56	MHP17[2]	0.2	Non Hazardous		161

Related documents

#	Name	Description
1	Example waste stream template for contaminated soils	waste stream template used to create this Job

Report

Created by: Keith Paramor

Created date: 22 Apr 2022 11:42 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	164
Appendix B: Rationale for selection of metal species	165
Appendix C: Version	166

Classification of sample: MMTP01

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
MMTP01
Sample Depth:
0.2 m
Moisture content:
13%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 13% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		17	mg/kg	1.32	22.446	mg/kg	0.00224 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		4.1	mg/kg	1.142	4.684	mg/kg	0.000468 %		
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		4.1	mg/kg	1.462	5.992	mg/kg	0.000599 %		
4	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<4	mg/kg	2.27	<9.08	mg/kg	<0.000908 %		<**LOD**
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		96	mg/kg	1.126	108.085	mg/kg	0.0108 %		
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	340	mg/kg		340	mg/kg	0.034 %		
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		1.7	mg/kg	1.353	2.301	mg/kg	0.00023 %		
8	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		24	mg/kg	2.637	63.28	mg/kg	0.00633 %		
9	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
10	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		230	mg/kg	2.469	567.938	mg/kg	0.0568 %		
11	TPH (C6 to C40) petroleum group			TPH		360	mg/kg		360	mg/kg	0.036 %		
12	confirm TPH has NOT arisen from diesel or petrol					☑							
13	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
14	benzene	601-020-00-8	200-753-7	71-43-2		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
15	toluene	601-021-00-3	203-625-9	108-88-3		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
17		xylene				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
18		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
		006-007-00-5											
19		pH				8.5	pH		8.5	pH	8.5 pH		
				PH									
20		naphthalene				0.6	mg/kg		0.6	mg/kg	0.00006 %		
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				2.1	mg/kg		2.1	mg/kg	0.00021 %		
			205-917-1	208-96-8									
22		acenaphthene				1.5	mg/kg		1.5	mg/kg	0.00015 %		
			201-469-6	83-32-9									
23		fluorene				2.9	mg/kg		2.9	mg/kg	0.00029 %		
			201-695-5	86-73-7									
24		phenanthrene				29	mg/kg		29	mg/kg	0.0029 %		
			201-581-5	85-01-8									
25		anthracene				6.6	mg/kg		6.6	mg/kg	0.00066 %		
			204-371-1	120-12-7									
26		fluoranthene				33	mg/kg		33	mg/kg	0.0033 %		
			205-912-4	206-44-0									
27		pyrene				25	mg/kg		25	mg/kg	0.0025 %		
			204-927-3	129-00-0									
28		benzo[a]anthracene				16	mg/kg		16	mg/kg	0.0016 %		
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				11	mg/kg		11	mg/kg	0.0011 %		
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				12	mg/kg		12	mg/kg	0.0012 %		
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				7.8	mg/kg		7.8	mg/kg	0.00078 %		
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				13	mg/kg		13	mg/kg	0.0013 %		
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				6.1	mg/kg		6.1	mg/kg	0.00061 %		
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				1.8	mg/kg		1.8	mg/kg	0.00018 %		
		601-041-00-2	200-181-8	53-70-3									
35		benzo[ghi]perylene				6.7	mg/kg		6.7	mg/kg	0.00067 %		
			205-883-8	191-24-2									
36		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.166 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because no free phase or liquid petroleum. TPH as heavy end aromatic, unlikely to be flammable in soil mixtures at these concenyrations

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.036%)

Classification of sample: MMTP02

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
MMTP02
Sample Depth:
0.4 m
Moisture content:
11%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 11% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		19 mg/kg	1.32	25.086 mg/kg	0.00251 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		2.1 mg/kg	1.142	2.399 mg/kg	0.00024 %		
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		2.1 mg/kg	1.462	3.069 mg/kg	0.000307 %		
4	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<4 mg/kg	2.27	<9.08 mg/kg	<0.000908 %		<LOD
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		86 mg/kg	1.126	96.826 mg/kg	0.00968 %		
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	320 mg/kg		320 mg/kg	0.032 %		
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.7 mg/kg	1.353	0.947 mg/kg	0.0000947 %		
8	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		24 mg/kg	2.637	63.28 mg/kg	0.00633 %		
9	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
10	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		190 mg/kg	2.469	469.166 mg/kg	0.0469 %		
11	TPH (C6 to C40) petroleum group			TPH		260 mg/kg		260 mg/kg	0.026 %		
12	confirm TPH has NOT arisen from diesel or petrol					☑					
13	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
14	benzene	601-020-00-8	200-753-7	71-43-2		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
15	toluene	601-021-00-3	203-625-9	108-88-3		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
17		xylene				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
18		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
		006-007-00-5											
19		pH				9.4	pH		9.4	pH	9.4 pH		
				PH									
20		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-917-1	208-96-8									
22		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
23		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-695-5	86-73-7									
24		phenanthrene				3.3	mg/kg		3.3	mg/kg	0.00033 %		
			201-581-5	85-01-8									
25		anthracene				0.72	mg/kg		0.72	mg/kg	0.000072 %		
			204-371-1	120-12-7									
26		fluoranthene				5.4	mg/kg		5.4	mg/kg	0.00054 %		
			205-912-4	206-44-0									
27		pyrene				4.6	mg/kg		4.6	mg/kg	0.00046 %		
			204-927-3	129-00-0									
28		benzo[a]anthracene				3.7	mg/kg		3.7	mg/kg	0.00037 %		
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				2.4	mg/kg		2.4	mg/kg	0.00024 %		
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				2.7	mg/kg		2.7	mg/kg	0.00027 %		
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				2.1	mg/kg		2.1	mg/kg	0.00021 %		
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				3.1	mg/kg		3.1	mg/kg	0.00031 %		
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				1.6	mg/kg		1.6	mg/kg	0.00016 %		
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				0.48	mg/kg		0.48	mg/kg	0.000048 %		
		601-041-00-2	200-181-8	53-70-3									
35		benzo[ghi]perylene				1.8	mg/kg		1.8	mg/kg	0.00018 %		
			205-883-8	191-24-2									
36		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.129 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"
Force this Hazardous property to non hazardous because no free phase or liquid petroleum. TPH as heavy end aromatic, unlikely to be flammable in soil mixtures at these concenyrations

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.026%)

Classification of sample: MTP03

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:
MTP03
Sample Depth:
0.6 m
Moisture content:
9.8%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 14: Ecotoxic "waste which presents or may present immediate or delayed risks for one or more sectors of the environment"

Hazard Statements hit:

Aquatic Chronic 1; H410 "Very toxic to aquatic life with long lasting effects."

Because of determinand:

zinc sulphate: (compound conc.: 0.296%)

Determinands

Moisture content: 9.8% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		26 mg/kg	1.32	34.328 mg/kg	0.00343 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.6 mg/kg	1.142	1.828 mg/kg	0.000183 %		
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		1.6 mg/kg	1.462	2.338 mg/kg	0.000234 %		
4	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<4 mg/kg	2.27	<9.08 mg/kg	<0.000908 %		<**LOD**
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		65 mg/kg	1.126	73.183 mg/kg	0.00732 %		
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	390 mg/kg		390 mg/kg	0.039 %		
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		6.6 mg/kg	1.353	8.933 mg/kg	0.000893 %		
8	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		34 mg/kg	2.637	89.647 mg/kg	0.00896 %		
9	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
10	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		1200 mg/kg	2.469	2963.156 mg/kg	0.296 %		
11	TPH (C6 to C40) petroleum group			TPH		879 mg/kg		879 mg/kg	0.0879 %		
12	confirm TPH has NOT arisen from diesel or petrol					☑					

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
13		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
14		benzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
15		toluene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
16		ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
17		xylene				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
18		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
		006-007-00-5											
19		pH				8.1	pH		8.1	pH	8.1 pH		
				PH									
20		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				8.2	mg/kg		8.2	mg/kg	0.00082 %		
			205-917-1	208-96-8									
22		acenaphthene				2.5	mg/kg		2.5	mg/kg	0.00025 %		
			201-469-6	83-32-9									
23		fluorene				7.1	mg/kg		7.1	mg/kg	0.00071 %		
			201-695-5	86-73-7									
24		phenanthrene				73	mg/kg		73	mg/kg	0.0073 %		
			201-581-5	85-01-8									
25		anthracene				24	mg/kg		24	mg/kg	0.0024 %		
			204-371-1	120-12-7									
26		fluoranthene				120	mg/kg		120	mg/kg	0.012 %		
			205-912-4	206-44-0									
27		pyrene				98	mg/kg		98	mg/kg	0.0098 %		
			204-927-3	129-00-0									
28		benzo[a]anthracene				53	mg/kg		53	mg/kg	0.0053 %		
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				42	mg/kg		42	mg/kg	0.0042 %		
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				49	mg/kg		49	mg/kg	0.0049 %		
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				15	mg/kg		15	mg/kg	0.0015 %		
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				42	mg/kg		42	mg/kg	0.0042 %		
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				19	mg/kg		19	mg/kg	0.0019 %		
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				6.4	mg/kg		6.4	mg/kg	0.00064 %		
		601-041-00-2	200-181-8	53-70-3									
35		benzo[ghi]perylene				18	mg/kg		18	mg/kg	0.0018 %		
			205-883-8	191-24-2									
36		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.503 %		

Key	
	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because no free phase or liquid petroleum. TPH as heavy end aromatic, unlikely to be flammable in soil mixtures at these concenyrations

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0879%)

Classification of sample: MTP03[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
MTP03[2]
Sample Depth:
1.2 m
Moisture content:
14%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 14% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		15 mg/kg	1.32	19.805 mg/kg	0.00198 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<**LOD**
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		<0.2 mg/kg	1.462	<0.292 mg/kg	<0.0000292 %		<**LOD**
4	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<4 mg/kg	2.27	<9.08 mg/kg	<0.000908 %		<**LOD**
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		28 mg/kg	1.126	31.525 mg/kg	0.00315 %		
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	26 mg/kg		26 mg/kg	0.0026 %		
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.6 mg/kg	1.353	0.812 mg/kg	0.0000812 %		
8	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		41 mg/kg	2.637	108.104 mg/kg	0.0108 %		
9	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
10	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		120 mg/kg	2.469	296.316 mg/kg	0.0296 %		
11	TPH (C6 to C40) petroleum group			TPH		53 mg/kg		53 mg/kg	0.0053 %		
12	confirm TPH has NOT arisen from diesel or petrol					☑					
13	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**
14	benzene	601-020-00-8	200-753-7	71-43-2		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**
15	toluene	601-021-00-3	203-625-9	108-88-3		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
17		xylene				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
18		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<**LOD**
		006-007-00-5											
19		pH				7.7	pH		7.7	pH	7.7 pH		
				PH									
20		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				0.24	mg/kg		0.24	mg/kg	0.000024 %		
			205-917-1	208-96-8									
22		acenaphthene				0.24	mg/kg		0.24	mg/kg	0.000024 %		
			201-469-6	83-32-9									
23		fluorene				0.41	mg/kg		0.41	mg/kg	0.000041 %		
			201-695-5	86-73-7									
24		phenanthrene				4.1	mg/kg		4.1	mg/kg	0.00041 %		
			201-581-5	85-01-8									
25		anthracene				0.98	mg/kg		0.98	mg/kg	0.000098 %		
			204-371-1	120-12-7									
26		fluoranthene				4.1	mg/kg		4.1	mg/kg	0.00041 %		
			205-912-4	206-44-0									
27		pyrene				3.3	mg/kg		3.3	mg/kg	0.00033 %		
			204-927-3	129-00-0									
28		benzo[a]anthracene				2	mg/kg		2	mg/kg	0.0002 %		
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				1.4	mg/kg		1.4	mg/kg	0.00014 %		
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				1.4	mg/kg		1.4	mg/kg	0.00014 %		
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				0.92	mg/kg		0.92	mg/kg	0.000092 %		
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				1.6	mg/kg		1.6	mg/kg	0.00016 %		
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				0.66	mg/kg		0.66	mg/kg	0.000066 %		
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				0.21	mg/kg		0.21	mg/kg	0.000021 %		
		601-041-00-2	200-181-8	53-70-3									
35		benzo[ghi]perylene				0.75	mg/kg		0.75	mg/kg	0.000075 %		
			205-883-8	191-24-2									
36		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0573 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"
Force this Hazardous property to non hazardous because no free phase or liquid petroleum. TPH as heavy end aromatic, unlikely to be flammable in soil mixtures at these concenyrations

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0053%)

Classification of sample: MTP04

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
MTP04
Sample Depth:
0.5 m
Moisture content:
7.3%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 7.3% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		50 mg/kg	1.32	66.016 mg/kg	0.0066 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<**LOD**
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		<0.2 mg/kg	1.462	<0.292 mg/kg	<0.0000292 %		<**LOD**
4	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<4 mg/kg	2.27	<9.08 mg/kg	<0.000908 %		<**LOD**
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		24 mg/kg	1.126	27.021 mg/kg	0.0027 %		
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	25 mg/kg		25 mg/kg	0.0025 %		
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<**LOD**
8	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		54 mg/kg	2.637	142.381 mg/kg	0.0142 %		
9	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
10	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		99 mg/kg	2.469	244.46 mg/kg	0.0244 %		
11	TPH (C6 to C40) petroleum group			TPH		62 mg/kg		62 mg/kg	0.0062 %		
12	confirm TPH has NOT arisen from diesel or petrol					☑					
13	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**
14	benzene	601-020-00-8	200-753-7	71-43-2		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**
15	toluene	601-021-00-3	203-625-9	108-88-3		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
17		xylene				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
18		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
		006-007-00-5											
19		pH				9.5	pH		9.5	pH	9.5 pH		
				PH									
20		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-917-1	208-96-8									
22		acenaphthene				0.29	mg/kg		0.29	mg/kg	0.000029 %		
			201-469-6	83-32-9									
23		fluorene				0.23	mg/kg		0.23	mg/kg	0.000023 %		
			201-695-5	86-73-7									
24		phenanthrene				0.6	mg/kg		0.6	mg/kg	0.00006 %		
			201-581-5	85-01-8									
25		anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			204-371-1	120-12-7									
26		fluoranthene				0.54	mg/kg		0.54	mg/kg	0.000054 %		
			205-912-4	206-44-0									
27		pyrene				0.43	mg/kg		0.43	mg/kg	0.000043 %		
			204-927-3	129-00-0									
28		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
35		benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-883-8	191-24-2									
36		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
37		1,1-dichloroethane and 1,2-dichloroethane (combined)				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<LOD
			203-458-1, 200-863-5	107-06-2, 75-34-3									
38		tetrachloroethylene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		602-028-00-4	204-825-9	127-18-4									
39		carbon tetrachloride; tetrachloromethane				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		602-008-00-5	200-262-8	56-23-5									
40		trichloroethylene; trichloroethene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		602-027-00-9	201-167-4	79-01-6									
41		vinyl chloride; chloroethylene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		602-023-00-7	200-831-0	75-01-4									

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
42		polychlorobiphenyls; PCB				<0.007 mg/kg		<0.007 mg/kg	<0.0000007 %		<**LOD**
		602-039-00-4	215-648-1	1336-36-3							
								Total:	0.0585 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because no free phase or liquid petroleum. TPH as heavy end aromatic, unlikely to be flammable in soil mixtures at these concenyrations

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0062%)

Classification of sample: MTP04[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
MTP04[2]
Sample Depth:
1.5 m
Moisture content:
18%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 18% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		16 mg/kg	1.32	21.125 mg/kg	0.00211 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		<0.2 mg/kg	1.462	<0.292 mg/kg	<0.0000292 %		<LOD
4	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<4 mg/kg	2.27	<9.08 mg/kg	<0.000908 %		<LOD
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		29 mg/kg	1.126	32.651 mg/kg	0.00327 %		
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	16 mg/kg		16 mg/kg	0.0016 %		
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD
8	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		42 mg/kg	2.637	110.741 mg/kg	0.0111 %		
9	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
10	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		72 mg/kg	2.469	177.789 mg/kg	0.0178 %		
11	TPH (C6 to C40) petroleum group			TPH		<20 mg/kg		<20 mg/kg	<0.002 %		<LOD
12	confirm TPH has NOT arisen from diesel or petrol					☑					
13	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
14	benzene	601-020-00-8	200-753-7	71-43-2		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
15	toluene	601-021-00-3	203-625-9	108-88-3		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
17		xylene				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
18		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
		006-007-00-5											
19		pH				8.6	pH		8.6	pH	8.6 pH		
				PH									
20		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-917-1	208-96-8									
22		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
23		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-695-5	86-73-7									
24		phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-581-5	85-01-8									
25		anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			204-371-1	120-12-7									
26		fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-912-4	206-44-0									
27		pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			204-927-3	129-00-0									
28		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
35		benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-883-8	191-24-2									
36		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
37		1,1-dichloroethane and 1,2-dichloroethane (combined)				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<LOD
			203-458-1, 200-863-5	107-06-2, 75-34-3									
38		tetrachloroethylene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		602-028-00-4	204-825-9	127-18-4									
39		carbon tetrachloride; tetrachloromethane				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		602-008-00-5	200-262-8	56-23-5									
40		trichloroethylene; trichloroethene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		602-027-00-9	201-167-4	79-01-6									
41		vinyl chloride; chloroethylene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		602-023-00-7	200-831-0	75-01-4									

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
42		polychlorobiphenyls; PCB				<0.007	mg/kg		<0.007	mg/kg	<0.0000007 %		<**LOD**
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.0395 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: MTP05

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
MTP05
Sample Depth:
0.3 m
Moisture content:
3.1%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 3.1% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		12 mg/kg	1.32	15.844 mg/kg	0.00158 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.7 mg/kg	1.142	0.8 mg/kg	0.00008 %		
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		0.7 mg/kg	1.462	1.023 mg/kg	0.000102 %		
4	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<4 mg/kg	2.27	<9.08 mg/kg	<0.000908 %		<**LOD**
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		12 mg/kg	1.126	13.511 mg/kg	0.00135 %		
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	40 mg/kg		40 mg/kg	0.004 %		
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<**LOD**
8	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		10 mg/kg	2.637	26.367 mg/kg	0.00264 %		
9	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
10	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		70 mg/kg	2.469	172.851 mg/kg	0.0173 %		
11	TPH (C6 to C40) petroleum group			TPH		223 mg/kg		223 mg/kg	0.0223 %		
12	confirm TPH has NOT arisen from diesel or petrol					☑					
13	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**
14	benzene	601-020-00-8	200-753-7	71-43-2		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**
15	toluene	601-021-00-3	203-625-9	108-88-3		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
17		xylene				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
18		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
		006-007-00-5											
19		pH				9	pH		9	pH	9pH		
				PH									
20		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-917-1	208-96-8									
22		acenaphthene				0.33	mg/kg		0.33	mg/kg	0.000033 %		
			201-469-6	83-32-9									
23		fluorene				0.38	mg/kg		0.38	mg/kg	0.000038 %		
			201-695-5	86-73-7									
24		phenanthrene				3.1	mg/kg		3.1	mg/kg	0.00031 %		
			201-581-5	85-01-8									
25		anthracene				1	mg/kg		1	mg/kg	0.0001 %		
			204-371-1	120-12-7									
26		fluoranthene				3.9	mg/kg		3.9	mg/kg	0.00039 %		
			205-912-4	206-44-0									
27		pyrene				3.3	mg/kg		3.3	mg/kg	0.00033 %		
			204-927-3	129-00-0									
28		benzo[a]anthracene				2	mg/kg		2	mg/kg	0.0002 %		
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				1.6	mg/kg		1.6	mg/kg	0.00016 %		
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				1.8	mg/kg		1.8	mg/kg	0.00018 %		
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				0.84	mg/kg		0.84	mg/kg	0.000084 %		
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				1.9	mg/kg		1.9	mg/kg	0.00019 %		
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				0.89	mg/kg		0.89	mg/kg	0.000089 %		
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				0.29	mg/kg		0.29	mg/kg	0.000029 %		
		601-041-00-2	200-181-8	53-70-3									
35		benzo[ghi]perylene				0.93	mg/kg		0.93	mg/kg	0.000093 %		
			205-883-8	191-24-2									
36		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0531 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because no free phase or liquid petroleum. TPH as heavy end aromatic, unlikely to be flammable in soil mixtures at these concenyrations

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0223%)

Classification of sample: MTP05[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
MTP05[2]
Sample Depth:
0.7 m
Moisture content:
5.1%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 5.1% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		13 mg/kg	1.32	17.164 mg/kg	0.00172 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.6 mg/kg	1.142	0.685 mg/kg	0.0000685 %		
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		0.6 mg/kg	1.462	0.877 mg/kg	0.0000877 %		
4	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<4 mg/kg	2.27	<9.08 mg/kg	<0.000908 %		<LOD
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		23 mg/kg	1.126	25.895 mg/kg	0.00259 %		
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	60 mg/kg		60 mg/kg	0.006 %		
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD
8	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		15 mg/kg	2.637	39.55 mg/kg	0.00396 %		
9	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
10	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		100 mg/kg	2.469	246.93 mg/kg	0.0247 %		
11	TPH (C6 to C40) petroleum group			TPH		460 mg/kg		460 mg/kg	0.046 %		
12	confirm TPH has NOT arisen from diesel or petrol					☑					
13	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
14	benzene	601-020-00-8	200-753-7	71-43-2		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
15	toluene	601-021-00-3	203-625-9	108-88-3		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
17		xylene				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
18		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
		006-007-00-5											
19		pH				8.2	pH		8.2	pH	8.2 pH		
				PH									
20		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				0.26	mg/kg		0.26	mg/kg	0.000026 %		
			205-917-1	208-96-8									
22		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
23		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-695-5	86-73-7									
24		phenanthrene				1.2	mg/kg		1.2	mg/kg	0.00012 %		
			201-581-5	85-01-8									
25		anthracene				0.55	mg/kg		0.55	mg/kg	0.000055 %		
			204-371-1	120-12-7									
26		fluoranthene				5.4	mg/kg		5.4	mg/kg	0.00054 %		
			205-912-4	206-44-0									
27		pyrene				5.5	mg/kg		5.5	mg/kg	0.00055 %		
			204-927-3	129-00-0									
28		benzo[a]anthracene				3.4	mg/kg		3.4	mg/kg	0.00034 %		
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				2.5	mg/kg		2.5	mg/kg	0.00025 %		
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				3.3	mg/kg		3.3	mg/kg	0.00033 %		
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				2.2	mg/kg		2.2	mg/kg	0.00022 %		
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				3.1	mg/kg		3.1	mg/kg	0.00031 %		
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				1.7	mg/kg		1.7	mg/kg	0.00017 %		
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
35		benzo[ghi]perylene				1.9	mg/kg		1.9	mg/kg	0.00019 %		
			205-883-8	191-24-2									
36		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0897 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"
Force this Hazardous property to non hazardous because no free phase or liquid petroleum. TPH as heavy end aromatic, unlikely to be flammable in soil mixtures at these concenyrations

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.046%)

Classification of sample: MHP01

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
MHP01
Sample Depth:
0.2 m
Moisture content:
17%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 17% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		16	mg/kg	1.32	21.125	mg/kg	0.00211 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2	mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<**LOD**
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		<0.2	mg/kg	1.462	<0.292	mg/kg	<0.0000292 %		<**LOD**
4	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<4	mg/kg	2.27	<9.08	mg/kg	<0.000908 %		<**LOD**
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		52	mg/kg	1.126	58.546	mg/kg	0.00585 %		
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	200	mg/kg		200	mg/kg	0.02 %		
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		1.1	mg/kg	1.353	1.489	mg/kg	0.000149 %		
8	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		21	mg/kg	2.637	55.37	mg/kg	0.00554 %		
9	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
10	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		140	mg/kg	2.469	345.701	mg/kg	0.0346 %		
11	TPH (C6 to C40) petroleum group			TPH		59	mg/kg		59	mg/kg	0.0059 %		
12	confirm TPH has NOT arisen from diesel or petrol					☑							
13	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
14	benzene	601-020-00-8	200-753-7	71-43-2		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
15	toluene	601-021-00-3	203-625-9	108-88-3		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
17		xylene				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
18		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
		006-007-00-5											
19		pH				7.2	pH		7.2	pH	7.2 pH		
				PH									
20		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-917-1	208-96-8									
22		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
23		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-695-5	86-73-7									
24		phenanthrene				1.5	mg/kg		1.5	mg/kg	0.00015 %		
			201-581-5	85-01-8									
25		anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			204-371-1	120-12-7									
26		fluoranthene				2.3	mg/kg		2.3	mg/kg	0.00023 %		
			205-912-4	206-44-0									
27		pyrene				2	mg/kg		2	mg/kg	0.0002 %		
			204-927-3	129-00-0									
28		benzo[a]anthracene				1	mg/kg		1	mg/kg	0.0001 %		
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				0.87	mg/kg		0.87	mg/kg	0.000087 %		
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				0.95	mg/kg		0.95	mg/kg	0.000095 %		
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				0.43	mg/kg		0.43	mg/kg	0.000043 %		
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				0.9	mg/kg		0.9	mg/kg	0.00009 %		
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				0.43	mg/kg		0.43	mg/kg	0.000043 %		
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
35		benzo[ghi]perylene				0.43	mg/kg		0.43	mg/kg	0.000043 %		
			205-883-8	191-24-2									
36		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0767 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"
Force this Hazardous property to non hazardous because no free phase or liquid petroleum. TPH as heavy end aromatic, unlikely to be flammable in soil mixtures at these concenyrations

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0059%)

Classification of sample: MHP01[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
MHP01[2]
Sample Depth:
0.8 m
Moisture content:
18%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 18% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		15 mg/kg	1.32	19.805 mg/kg	0.00198 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		<0.2 mg/kg	1.462	<0.292 mg/kg	<0.0000292 %		<LOD
4	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<4 mg/kg	2.27	<9.08 mg/kg	<0.000908 %		<LOD
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		26 mg/kg	1.126	29.273 mg/kg	0.00293 %		
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	22 mg/kg		22 mg/kg	0.0022 %		
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD
8	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		43 mg/kg	2.637	113.377 mg/kg	0.0113 %		
9	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
10	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		69 mg/kg	2.469	170.381 mg/kg	0.017 %		
11	TPH (C6 to C40) petroleum group			TPH		<20 mg/kg		<20 mg/kg	<0.002 %		<LOD
12	confirm TPH has NOT arisen from diesel or petrol					☑					
13	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
14	benzene	601-020-00-8	200-753-7	71-43-2		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
15	toluene	601-021-00-3	203-625-9	108-88-3		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
17		xylene				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
18		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
		006-007-00-5											
19		pH				7.8	pH		7.8	pH	7.8 pH		
				PH									
20		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-917-1	208-96-8									
22		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
23		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-695-5	86-73-7									
24		phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-581-5	85-01-8									
25		anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			204-371-1	120-12-7									
26		fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-912-4	206-44-0									
27		pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			204-927-3	129-00-0									
28		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
35		benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-883-8	191-24-2									
36		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0391 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: MHP02

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
MHP02
Sample Depth:
0.45 m
Moisture content:
18%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 18% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		20 mg/kg	1.32	26.407 mg/kg	0.00264 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<**LOD**
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		<0.2 mg/kg	1.462	<0.292 mg/kg	<0.0000292 %		<**LOD**
4	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<4 mg/kg	2.27	<9.08 mg/kg	<0.000908 %		<**LOD**
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		74 mg/kg	1.126	83.316 mg/kg	0.00833 %		
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	620 mg/kg		620 mg/kg	0.062 %		
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<**LOD**
8	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		33 mg/kg	2.637	87.011 mg/kg	0.0087 %		
9	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
10	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		400 mg/kg	2.469	987.719 mg/kg	0.0988 %		
11	TPH (C6 to C40) petroleum group			TPH		73 mg/kg		73 mg/kg	0.0073 %		
12	confirm TPH has NOT arisen from diesel or petrol					☑					
13	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**
14	benzene	601-020-00-8	200-753-7	71-43-2		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**
15	toluene	601-021-00-3	203-625-9	108-88-3		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
17		xylene				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
18		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<**LOD**
		006-007-00-5											
19		pH				8	pH		8	pH	8pH		
				PH									
20		naphthalene				0.23	mg/kg		0.23	mg/kg	0.000023 %		
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				0.35	mg/kg		0.35	mg/kg	0.000035 %		
			205-917-1	208-96-8									
22		acenaphthene				0.3	mg/kg		0.3	mg/kg	0.00003 %		
			201-469-6	83-32-9									
23		fluorene				0.3	mg/kg		0.3	mg/kg	0.00003 %		
			201-695-5	86-73-7									
24		phenanthrene				4.9	mg/kg		4.9	mg/kg	0.00049 %		
			201-581-5	85-01-8									
25		anthracene				0.8	mg/kg		0.8	mg/kg	0.00008 %		
			204-371-1	120-12-7									
26		fluoranthene				7.7	mg/kg		7.7	mg/kg	0.00077 %		
			205-912-4	206-44-0									
27		pyrene				6.6	mg/kg		6.6	mg/kg	0.00066 %		
			204-927-3	129-00-0									
28		benzo[a]anthracene				4.4	mg/kg		4.4	mg/kg	0.00044 %		
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				3.1	mg/kg		3.1	mg/kg	0.00031 %		
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				3.8	mg/kg		3.8	mg/kg	0.00038 %		
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				2.3	mg/kg		2.3	mg/kg	0.00023 %		
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				3.8	mg/kg		3.8	mg/kg	0.00038 %		
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				2.1	mg/kg		2.1	mg/kg	0.00021 %		
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				0.64	mg/kg		0.64	mg/kg	0.000064 %		
		601-041-00-2	200-181-8	53-70-3									
35		benzo[ghi]perylene				2.4	mg/kg		2.4	mg/kg	0.00024 %		
			205-883-8	191-24-2									
36		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.194 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"
Force this Hazardous property to non hazardous because no free phase or liquid petroleum. TPH as heavy end aromatic, unlikely to be flammable in soil mixtures at these concenyrations

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0073%)

Classification of sample: MHP02[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
MHP02[2]
Sample Depth:
1 m
Moisture content:
18%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 18% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		16	mg/kg	1.32	21.125	mg/kg	0.00211 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2	mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<**LOD**
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		<0.2	mg/kg	1.462	<0.292	mg/kg	<0.0000292 %		<**LOD**
4	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<4	mg/kg	2.27	<9.08	mg/kg	<0.000908 %		<**LOD**
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		37	mg/kg	1.126	41.658	mg/kg	0.00417 %		
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	30	mg/kg		30	mg/kg	0.003 %		
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<**LOD**
8	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		60	mg/kg	2.637	158.201	mg/kg	0.0158 %		
9	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
10	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		87	mg/kg	2.469	214.829	mg/kg	0.0215 %		
11	TPH (C6 to C40) petroleum group			TPH		<20	mg/kg		<20	mg/kg	<0.002 %		<**LOD**
12	confirm TPH has NOT arisen from diesel or petrol					☑							
13	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
14	benzene	601-020-00-8	200-753-7	71-43-2		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
15	toluene	601-021-00-3	203-625-9	108-88-3		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
17		xylene				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
18		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
		006-007-00-5											
19		pH				8	pH		8	pH	8pH		
				PH									
20		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-917-1	208-96-8									
22		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
23		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-695-5	86-73-7									
24		phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-581-5	85-01-8									
25		anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			204-371-1	120-12-7									
26		fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-912-4	206-44-0									
27		pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			204-927-3	129-00-0									
28		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
35		benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-883-8	191-24-2									
36		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0502 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: MHP03

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
MHP03
Sample Depth:
0.5 m
Moisture content:
14%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 14% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		15	mg/kg	1.32	19.805	mg/kg	0.00198 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2	mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<**LOD**
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		<0.2	mg/kg	1.462	<0.292	mg/kg	<0.0000292 %		<**LOD**
4	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<4	mg/kg	2.27	<9.08	mg/kg	<0.000908 %		<**LOD**
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		86	mg/kg	1.126	96.826	mg/kg	0.00968 %		
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	250	mg/kg		250	mg/kg	0.025 %		
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.6	mg/kg	1.353	0.812	mg/kg	0.0000812 %		
8	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		46	mg/kg	2.637	121.288	mg/kg	0.0121 %		
9	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
10	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		250	mg/kg	2.469	617.324	mg/kg	0.0617 %		
11	TPH (C6 to C40) petroleum group			TPH		35	mg/kg		35	mg/kg	0.0035 %		
12	confirm TPH has NOT arisen from diesel or petrol					☑							
13	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
14	benzene	601-020-00-8	200-753-7	71-43-2		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
15	toluene	601-021-00-3	203-625-9	108-88-3		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
17		xylene				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
18		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
		006-007-00-5											
19		pH				7.9	pH		7.9	pH	7.9 pH		
				PH									
20		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-917-1	208-96-8									
22		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
23		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-695-5	86-73-7									
24		phenanthrene				1.8	mg/kg		1.8	mg/kg	0.00018 %		
			201-581-5	85-01-8									
25		anthracene				0.3	mg/kg		0.3	mg/kg	0.00003 %		
			204-371-1	120-12-7									
26		fluoranthene				3.5	mg/kg		3.5	mg/kg	0.00035 %		
			205-912-4	206-44-0									
27		pyrene				2.9	mg/kg		2.9	mg/kg	0.00029 %		
			204-927-3	129-00-0									
28		benzo[a]anthracene				1.7	mg/kg		1.7	mg/kg	0.00017 %		
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				1.7	mg/kg		1.7	mg/kg	0.00017 %		
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				1.7	mg/kg		1.7	mg/kg	0.00017 %		
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				1.3	mg/kg		1.3	mg/kg	0.00013 %		
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				1.9	mg/kg		1.9	mg/kg	0.00019 %		
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				0.95	mg/kg		0.95	mg/kg	0.000095 %		
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				0.3	mg/kg		0.3	mg/kg	0.00003 %		
		601-041-00-2	200-181-8	53-70-3									
35		benzo[ghi]perylene				1.1	mg/kg		1.1	mg/kg	0.00011 %		
			205-883-8	191-24-2									
36		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.118 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because no free phase or liquid petroleum. TPH as heavy end aromatic, unlikely to be flammable in soil mixtures at these concenyrations

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0035%)

Classification of sample: MHP04

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
MHP04
Sample Depth:
0.3 m
Moisture content:
16%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 16% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		23 mg/kg	1.32	30.367 mg/kg	0.00304 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<**LOD**
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		<0.2 mg/kg	1.462	<0.292 mg/kg	<0.0000292 %		<**LOD**
4	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<4 mg/kg	2.27	<9.08 mg/kg	<0.000908 %		<**LOD**
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		87 mg/kg	1.126	97.952 mg/kg	0.0098 %		
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	550 mg/kg		550 mg/kg	0.055 %		
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<**LOD**
8	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		30 mg/kg	2.637	79.101 mg/kg	0.00791 %		
9	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
10	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		330 mg/kg	2.469	814.868 mg/kg	0.0815 %		
11	TPH (C6 to C40) petroleum group			TPH		110 mg/kg		110 mg/kg	0.011 %		
12	confirm TPH has NOT arisen from diesel or petrol					☑					
13	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**
14	benzene	601-020-00-8	200-753-7	71-43-2		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**
15	toluene	601-021-00-3	203-625-9	108-88-3		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
17		xylene				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
18		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
		006-007-00-5											
19		pH				7.9	pH		7.9	pH	7.9 pH		
				PH									
20		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-917-1	208-96-8									
22		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
23		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-695-5	86-73-7									
24		phenanthrene				1.7	mg/kg		1.7	mg/kg	0.00017 %		
			201-581-5	85-01-8									
25		anthracene				0.21	mg/kg		0.21	mg/kg	0.000021 %		
			204-371-1	120-12-7									
26		fluoranthene				4	mg/kg		4	mg/kg	0.0004 %		
			205-912-4	206-44-0									
27		pyrene				3.6	mg/kg		3.6	mg/kg	0.00036 %		
			204-927-3	129-00-0									
28		benzo[a]anthracene				2.1	mg/kg		2.1	mg/kg	0.00021 %		
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				2.3	mg/kg		2.3	mg/kg	0.00023 %		
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				2.8	mg/kg		2.8	mg/kg	0.00028 %		
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				1	mg/kg		1	mg/kg	0.0001 %		
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				2.3	mg/kg		2.3	mg/kg	0.00023 %		
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				1.3	mg/kg		1.3	mg/kg	0.00013 %		
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				0.36	mg/kg		0.36	mg/kg	0.000036 %		
		601-041-00-2	200-181-8	53-70-3									
35		benzo[ghi]perylene				1.5	mg/kg		1.5	mg/kg	0.00015 %		
			205-883-8	191-24-2									
36		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.172 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"
Force this Hazardous property to non hazardous because no free phase or liquid petroleum. TPH as heavy end aromatic, unlikely to be flammable in soil mixtures at these concenyrations

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.011%)

Classification of sample: MHP05

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
MHP05
Sample Depth:
0.2 m
Moisture content:
14%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 14% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		53 mg/kg	1.32	69.977 mg/kg	0.007 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<**LOD**
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		<0.2 mg/kg	1.462	<0.292 mg/kg	<0.0000292 %		<**LOD**
4	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<4 mg/kg	2.27	<9.08 mg/kg	<0.000908 %		<**LOD**
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		110 mg/kg	1.126	123.848 mg/kg	0.0124 %		
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	760 mg/kg		760 mg/kg	0.076 %		
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		1 mg/kg	1.353	1.353 mg/kg	0.000135 %		
8	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		35 mg/kg	2.637	92.284 mg/kg	0.00923 %		
9	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
10	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		340 mg/kg	2.469	839.561 mg/kg	0.084 %		
11	TPH (C6 to C40) petroleum group			TPH		160 mg/kg		160 mg/kg	0.016 %		
12	confirm TPH has NOT arisen from diesel or petrol					☑					
13	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**
14	benzene	601-020-00-8	200-753-7	71-43-2		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**
15	toluene	601-021-00-3	203-625-9	108-88-3		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
17		xylene				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
18		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
		006-007-00-5											
19		pH				8.2	pH		8.2	pH	8.2 pH		
				PH									
20		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				0.36	mg/kg		0.36	mg/kg	0.000036 %		
			205-917-1	208-96-8									
22		acenaphthene				0.21	mg/kg		0.21	mg/kg	0.000021 %		
			201-469-6	83-32-9									
23		fluorene				0.28	mg/kg		0.28	mg/kg	0.000028 %		
			201-695-5	86-73-7									
24		phenanthrene				6.6	mg/kg		6.6	mg/kg	0.00066 %		
			201-581-5	85-01-8									
25		anthracene				1	mg/kg		1	mg/kg	0.0001 %		
			204-371-1	120-12-7									
26		fluoranthene				13	mg/kg		13	mg/kg	0.0013 %		
			205-912-4	206-44-0									
27		pyrene				11	mg/kg		11	mg/kg	0.0011 %		
			204-927-3	129-00-0									
28		benzo[a]anthracene				5.7	mg/kg		5.7	mg/kg	0.00057 %		
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				5.6	mg/kg		5.6	mg/kg	0.00056 %		
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				5.7	mg/kg		5.7	mg/kg	0.00057 %		
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				3.3	mg/kg		3.3	mg/kg	0.00033 %		
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				6.1	mg/kg		6.1	mg/kg	0.00061 %		
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				3	mg/kg		3	mg/kg	0.0003 %		
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				0.8	mg/kg		0.8	mg/kg	0.00008 %		
		601-041-00-2	200-181-8	53-70-3									
35		benzo[ghi]perylene				3.4	mg/kg		3.4	mg/kg	0.00034 %		
			205-883-8	191-24-2									
36		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.213 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because no free phase or liquid petroleum. TPH as heavy end aromatic, unlikely to be flammable in soil mixtures at these concenyrations

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.016%)

Classification of sample: MHP05[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
MHP05[2]
Sample Depth:
0.5 m
Moisture content:
13%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 13% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		43 mg/kg	1.32	56.774 mg/kg	0.00568 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<**LOD**
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		<0.2 mg/kg	1.462	<0.292 mg/kg	<0.0000292 %		<**LOD**
4	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<4 mg/kg	2.27	<9.08 mg/kg	<0.000908 %		<**LOD**
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		21 mg/kg	1.126	23.644 mg/kg	0.00236 %		
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	29 mg/kg		29 mg/kg	0.0029 %		
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<**LOD**
8	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		26 mg/kg	2.637	68.554 mg/kg	0.00686 %		
9	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
10	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		32 mg/kg	2.469	79.017 mg/kg	0.0079 %		
11	TPH (C6 to C40) petroleum group			TPH		37 mg/kg		37 mg/kg	0.0037 %		
12	confirm TPH has NOT arisen from diesel or petrol					☑					
13	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**
14	benzene	601-020-00-8	200-753-7	71-43-2		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**
15	toluene	601-021-00-3	203-625-9	108-88-3		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
17		xylene				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
18		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
		006-007-00-5											
19		pH				8.3	pH		8.3	pH	8.3 pH		
				PH									
20		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-917-1	208-96-8									
22		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
23		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-695-5	86-73-7									
24		phenanthrene				0.53	mg/kg		0.53	mg/kg	0.000053 %		
			201-581-5	85-01-8									
25		anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			204-371-1	120-12-7									
26		fluoranthene				1.5	mg/kg		1.5	mg/kg	0.00015 %		
			205-912-4	206-44-0									
27		pyrene				1.3	mg/kg		1.3	mg/kg	0.00013 %		
			204-927-3	129-00-0									
28		benzo[a]anthracene				0.91	mg/kg		0.91	mg/kg	0.000091 %		
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				0.68	mg/kg		0.68	mg/kg	0.000068 %		
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				0.82	mg/kg		0.82	mg/kg	0.000082 %		
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				0.56	mg/kg		0.56	mg/kg	0.000056 %		
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				0.92	mg/kg		0.92	mg/kg	0.000092 %		
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				0.45	mg/kg		0.45	mg/kg	0.000045 %		
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
35		benzo[ghi]perylene				0.51	mg/kg		0.51	mg/kg	0.000051 %		
			205-883-8	191-24-2									
36		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0318 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"
Force this Hazardous property to non hazardous because no free phase or liquid petroleum. TPH as heavy end aromatic, unlikely to be flammable in soil mixtures at these concenyrations

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0037%)

Classification of sample: MHP06

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
MHP06
Sample Depth:
0.3 m
Moisture content:
16%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 16% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		43	mg/kg	1.32	56.774	mg/kg	0.00568 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2	mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<**LOD**
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		<0.2	mg/kg	1.462	<0.292	mg/kg	<0.0000292 %		<**LOD**
4	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<4	mg/kg	2.27	<9.08	mg/kg	<0.000908 %		<**LOD**
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		76	mg/kg	1.126	85.568	mg/kg	0.00856 %		
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	720	mg/kg		720	mg/kg	0.072 %		
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		1.6	mg/kg	1.353	2.166	mg/kg	0.000217 %		
8	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		32	mg/kg	2.637	84.374	mg/kg	0.00844 %		
9	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
10	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		220	mg/kg	2.469	543.245	mg/kg	0.0543 %		
11	TPH (C6 to C40) petroleum group			TPH		70	mg/kg		70	mg/kg	0.007 %		
12	confirm TPH has NOT arisen from diesel or petrol					☑							
13	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
14	benzene	601-020-00-8	200-753-7	71-43-2		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
15	toluene	601-021-00-3	203-625-9	108-88-3		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
17		xylene				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
18		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
		006-007-00-5											
19		pH				7.6	pH		7.6	pH	7.6 pH		
				PH									
20		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-917-1	208-96-8									
22		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
23		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-695-5	86-73-7									
24		phenanthrene				0.86	mg/kg		0.86	mg/kg	0.000086 %		
			201-581-5	85-01-8									
25		anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			204-371-1	120-12-7									
26		fluoranthene				1.4	mg/kg		1.4	mg/kg	0.00014 %		
			205-912-4	206-44-0									
27		pyrene				1.2	mg/kg		1.2	mg/kg	0.00012 %		
			204-927-3	129-00-0									
28		benzo[a]anthracene				0.76	mg/kg		0.76	mg/kg	0.000076 %		
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				0.63	mg/kg		0.63	mg/kg	0.000063 %		
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				0.65	mg/kg		0.65	mg/kg	0.000065 %		
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				0.5	mg/kg		0.5	mg/kg	0.00005 %		
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				0.74	mg/kg		0.74	mg/kg	0.000074 %		
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				0.39	mg/kg		0.39	mg/kg	0.000039 %		
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
35		benzo[ghi]perylene				0.45	mg/kg		0.45	mg/kg	0.000045 %		
			205-883-8	191-24-2									
36		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.159 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because no free phase or liquid petroleum. TPH as heavy end aromatic, unlikely to be flammable in soil mixtures at these concenyrations

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.007%)

Classification of sample: MHP07

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
MHP07
Sample Depth:
0.2 m
Moisture content:
19%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 19% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		71 mg/kg	1.32	93.743 mg/kg	0.00937 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<**LOD**
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		<0.2 mg/kg	1.462	<0.292 mg/kg	<0.0000292 %		<**LOD**
4	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<4 mg/kg	2.27	<9.08 mg/kg	<0.000908 %		<**LOD**
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		72 mg/kg	1.126	81.064 mg/kg	0.00811 %		
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	220 mg/kg		220 mg/kg	0.022 %		
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.9 mg/kg	1.353	1.218 mg/kg	0.000122 %		
8	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		31 mg/kg	2.637	81.737 mg/kg	0.00817 %		
9	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
10	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		170 mg/kg	2.469	419.78 mg/kg	0.042 %		
11	TPH (C6 to C40) petroleum group			TPH		87 mg/kg		87 mg/kg	0.0087 %		
12	confirm TPH has NOT arisen from diesel or petrol					☑					
13	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**
14	benzene	601-020-00-8	200-753-7	71-43-2		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**
15	toluene	601-021-00-3	203-625-9	108-88-3		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
17		xylene				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
18		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
		006-007-00-5											
19		pH				7.6	pH		7.6	pH	7.6 pH		
				PH									
20		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-917-1	208-96-8									
22		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
23		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-695-5	86-73-7									
24		phenanthrene				2.3	mg/kg		2.3	mg/kg	0.00023 %		
			201-581-5	85-01-8									
25		anthracene				0.74	mg/kg		0.74	mg/kg	0.000074 %		
			204-371-1	120-12-7									
26		fluoranthene				9	mg/kg		9	mg/kg	0.0009 %		
			205-912-4	206-44-0									
27		pyrene				8.3	mg/kg		8.3	mg/kg	0.00083 %		
			204-927-3	129-00-0									
28		benzo[a]anthracene				6	mg/kg		6	mg/kg	0.0006 %		
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				4.6	mg/kg		4.6	mg/kg	0.00046 %		
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				6.2	mg/kg		6.2	mg/kg	0.00062 %		
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				2.7	mg/kg		2.7	mg/kg	0.00027 %		
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				6	mg/kg		6	mg/kg	0.0006 %		
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				2.8	mg/kg		2.8	mg/kg	0.00028 %		
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				0.82	mg/kg		0.82	mg/kg	0.000082 %		
		601-041-00-2	200-181-8	53-70-3									
35		benzo[ghi]perylene				3.2	mg/kg		3.2	mg/kg	0.00032 %		
			205-883-8	191-24-2									
36		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.105 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"
Force this Hazardous property to non hazardous because no free phase or liquid petroleum. TPH as heavy end aromatic, unlikely to be flammable in soil mixtures at these concenyrations

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0087%)

Classification of sample: MHP08

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
MHP08
Sample Depth:
0.3 m
Moisture content:
14%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 14% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		43 mg/kg	1.32	56.774 mg/kg	0.00568 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<**LOD**
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		<0.2 mg/kg	1.462	<0.292 mg/kg	<0.0000292 %		<**LOD**
4	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<4 mg/kg	2.27	<9.08 mg/kg	<0.000908 %		<**LOD**
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		60 mg/kg	1.126	67.553 mg/kg	0.00676 %		
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	230 mg/kg		230 mg/kg	0.023 %		
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.5 mg/kg	1.353	0.677 mg/kg	0.0000677 %		
8	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		22 mg/kg	2.637	58.007 mg/kg	0.0058 %		
9	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
10	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		210 mg/kg	2.469	518.552 mg/kg	0.0519 %		
11	TPH (C6 to C40) petroleum group			TPH		102 mg/kg		102 mg/kg	0.0102 %		
12	confirm TPH has NOT arisen from diesel or petrol					☑					
13	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**
14	benzene	601-020-00-8	200-753-7	71-43-2		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**
15	toluene	601-021-00-3	203-625-9	108-88-3		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
17		xylene				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
18		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
		006-007-00-5											
19		pH				7.8	pH		7.8	pH	7.8 pH		
				PH									
20		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				0.21	mg/kg		0.21	mg/kg	0.000021 %		
			205-917-1	208-96-8									
22		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
23		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-695-5	86-73-7									
24		phenanthrene				4.8	mg/kg		4.8	mg/kg	0.00048 %		
			201-581-5	85-01-8									
25		anthracene				1.3	mg/kg		1.3	mg/kg	0.00013 %		
			204-371-1	120-12-7									
26		fluoranthene				12	mg/kg		12	mg/kg	0.0012 %		
			205-912-4	206-44-0									
27		pyrene				11	mg/kg		11	mg/kg	0.0011 %		
			204-927-3	129-00-0									
28		benzo[a]anthracene				6.5	mg/kg		6.5	mg/kg	0.00065 %		
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				5.2	mg/kg		5.2	mg/kg	0.00052 %		
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				5.5	mg/kg		5.5	mg/kg	0.00055 %		
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				3.2	mg/kg		3.2	mg/kg	0.00032 %		
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				5.6	mg/kg		5.6	mg/kg	0.00056 %		
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				2.6	mg/kg		2.6	mg/kg	0.00026 %		
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				0.67	mg/kg		0.67	mg/kg	0.000067 %		
		601-041-00-2	200-181-8	53-70-3									
35		benzo[ghi]perylene				2.8	mg/kg		2.8	mg/kg	0.00028 %		
			205-883-8	191-24-2									
36		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.111 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because no free phase or liquid petroleum. TPH as heavy end aromatic, unlikely to be flammable in soil mixtures at these concenyrations

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0102%)

Classification of sample: MHP09

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
MHP09
Sample Depth:
0.15 m
Moisture content:
19%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 19% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		17 mg/kg	1.32	22.446 mg/kg	0.00224 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<**LOD**
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		<0.2 mg/kg	1.462	<0.292 mg/kg	<0.0000292 %		<**LOD**
4	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<4 mg/kg	2.27	<9.08 mg/kg	<0.000908 %		<**LOD**
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		57 mg/kg	1.126	64.176 mg/kg	0.00642 %		
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	250 mg/kg		250 mg/kg	0.025 %		
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.7 mg/kg	1.353	0.947 mg/kg	0.0000947 %		
8	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		24 mg/kg	2.637	63.28 mg/kg	0.00633 %		
9	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
10	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		110 mg/kg	2.469	271.623 mg/kg	0.0272 %		
11	TPH (C6 to C40) petroleum group			TPH		<20 mg/kg		<20 mg/kg	<0.002 %		<**LOD**
12	confirm TPH has NOT arisen from diesel or petrol					☑					
13	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**
14	benzene	601-020-00-8	200-753-7	71-43-2		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**
15	toluene	601-021-00-3	203-625-9	108-88-3		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**