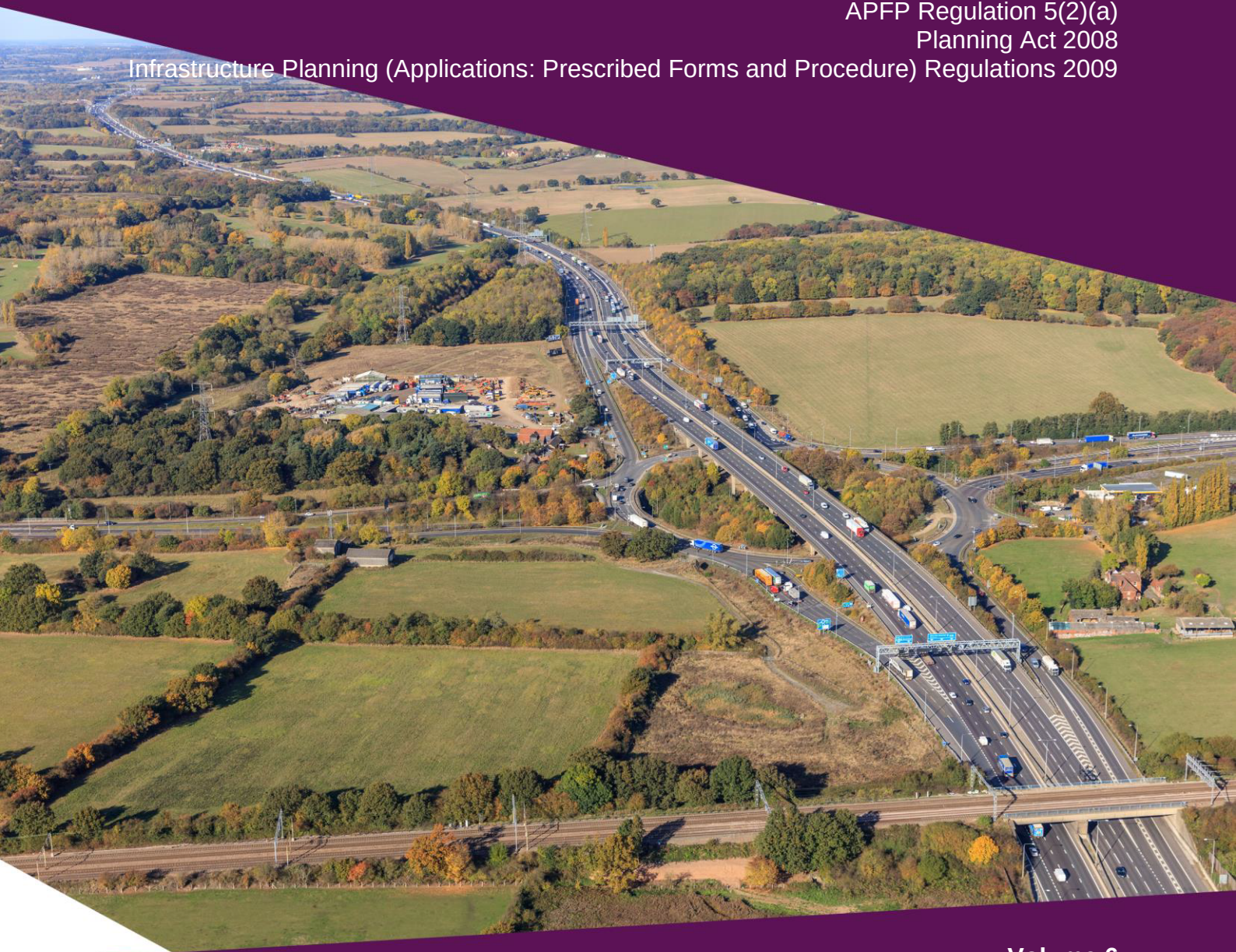
M25 junction 28 improvement scheme
TR010029
6.3 Environmental Statement
Appendix 10.1: Preliminary geo-environmental assessment report

APFP Regulation 5(2)(a)
Planning Act 2008
Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009



Volume 6
May 2020

Infrastructure Planning

Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

M25 junction 28 scheme
Development Consent Order 202[x]

6.3 ENVIRONMENTAL STATEMENT
APPENDIX 10.1: PRELIMINARY GEO-ENVIRONMENTAL ASSESSMENT REPORT

Regulation Number:	Regulation 5(2)(a)
Planning Inspectorate Scheme Reference	TR010029
Application Document Reference	TR010029/APP/6.3
Author:	M25 junction 28 improvement scheme project team, Highways England

Version	Date	Status of Version
1	May 2020	Application issue

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Appendix 10.1 Preliminary geo-environmental assessment report

10. Preliminary geo-environmental assessment report

M25 Junction 28 Improvements

Preliminary Geo-environmental Assessment Report

September 2019

HE551519-ATK-HGN-2-RP-C-
V0.0, September 2019

Registered office Bridge House, 1 Walnut Tree Close, Guildford GU1 4LZ
Highways England Company Limited registered in England and Wales number 09346363

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1 Introduction

1.1 Background

Atkins was commissioned to assess the potential environmental impacts associated with the proposed improvement Scheme for junction 28 on the M25. The Scheme involves constructing a loop road between the M25 anti-clockwise and the A12 eastbound carriageway on land that has historically been subject to landfilling (the historical Brook Street Landfill).

Following site visits undertaken in 2017 and 2018 as part of the assessment, it was identified that waste materials of unknown origin had been deposited on land approximately 300 m north-west from the centre of junction 28. The material comprised demolition waste, including suspected asbestos containing material (ACM). It was identified that the deposited material extended onto the footprint of the historical Brook Street Landfill.

A preliminary ground investigation (GI) has been conducted to provide a preliminary assessment of the recently deposited material. This report presents the findings of the preliminary GI. For the purposes of this report, 'the site' refers to the area where the recent deposition of waste material has occurred and has been investigated during this preliminary GI. The site location and boundaries are provided in section 1.4.

Further GI (the main GI) is currently being carried out across the Scheme, the results of which will be reported at a later stage.

1.2 Scope and objectives of report

This report includes:

- a summary of relevant desk-based information available for the site;
- a summary of the preliminary GI and description of the geological units encountered;
- an assessment of site-specific data obtained during the preliminary GI, to:
    - evaluate the risks associated with deposited material at the site as a potential source of contamination; and
    - the receptors and pathways associated with the site (including potential risks which may be present during the main GI);
- preliminary waste characterisation for future excavation of the deposited material at the site, which may be required as part of construction; and
- recommendations for design and construction mitigation measures / remediation (where required).

1.3 Legislation

This report has been produced in accordance with the following legislation and guidance documents:

- Part 2A of the Environmental Protection Act (UK Parliament, 1990);
- National Planning Policy Framework (Department for Communities and Local Government, 2019);
- Environment Agency Land Contamination: Risk Management (Environment Agency, 2019) (LCRM) and Guiding Principles for Land Contamination (GPLC) (Environment Agency, 2010);
- Contaminated land Statutory Guidance (Department for Food and Rural Affairs, 2012);
- Contaminated land risk assessment CIRIA C552 (CIRIA, 2001);
- Water Framework Directive (EU Parliament, 2015);

- Waste Framework Directive (2018); and
- Water Resources Act (UK Parliament, 1991).

A full list of legislation and guidance documents relevant to the assessment of the potential environmental impacts associated with the proposed improvement Scheme for junction 28 on the M25 is presented in the Environmental Statement (application document TR010029/APP/6.1).

1.4 Site location

The site is situated within the northern section of Grove Farm, which is located adjacent to the M25 and 300 m north-west from the centre of junction 28 in Brentwood, Essex.

A site location plan is provided in Figure 1, reproduced from Google Maps (Google, 2019). The approximate location of the site and the historical Brook Street landfill is highlighted in orange. The site boundary plan and locations of the preliminary GI exploratory holes is provided in Figure 2.

Figure 1 Site location plan (not to scale)



Figure 2 Site boundary and exploratory hole location plan



1.5 Assumptions and limitations

This report has been produced subject to the following assumptions and limitations:

- The preliminary GI and this report were not designed to fully characterise the ground conditions, potential environmental risks or waste across the whole Scheme.
- The preliminary GI and this report were not designed to characterise the historical landfill site.
- No ground gas or groundwater monitoring was completed as part of the preliminary GI. This will be undertaken as part of the main GI.
- Where data supplied by other sources have been used, it has been assumed that the information is correct. No responsibility can be accepted by Atkins for inaccuracies in the data supplied by any other party.
- This report is prepared and written in the context of an agreed scope of work and should not be used in a different context. Furthermore, new information, improved practices and changes in legislation may necessitate a re-interpretation of the report in whole or in part after its original submission.
- The report draws upon data from intrusive investigation of a relatively small proportion of the sub-surface conditions at the site. Inferences drawn from these assessments are subject to the inherent limitations of any such study.

2 Existing information

2.1 Introduction

This section provides a summary of the environmental setting of the site and is based on the information included in the Preliminary Environmental Information Report (PEIR) (Atkins, 2018), unless otherwise stated.

2.2 Site setting

To the east of the site is a drainage ditch, beyond which is the M25. Immediately south of the site RJ Waste Management Recycling and Hydroponic Growth Ltd (garden centre) are industries associated with the wider Grove Farm land area. Further to the south, woodland, a drainage ditch and the A12 carriageway are all observed. The Weald Brook is present to the west of the site and a drainage ditch is present to the north. The main historical use of the site was as the historical Brook Street Landfill.

Within the vicinity of the site (approximately 250 m radius), the land is predominantly woodland, agricultural and Maryland's Golf Course. Areas of development in the vicinity include the A12 carriageway, a service station, a small garden centre, a former aerodrome and active and inactive commercial activities.

2.3 Geology

The general stratigraphy expected beneath the site comprises recently placed materials/ topsoil, underlain by Made Ground (understood to comprise inert material within the historical Brook Street Landfill from the construction of the M25), Head Deposits on the western extent of the site, subsequently underlain by London Clay Formation across the whole site (BGS, 2019). Alluvium is logged beneath the water course to the west of the site within the current channel of the Weald Brook, the surface water feature is located 66m away from the sites north western boundary. The closest historic borehole was drilled off-site, on the outskirts of the historical landfill boundary in 1970. Data from this borehole is in Table 1 (BGS, 2019).

Table 1 BGS historic borehole data

Location	Geology unit	Depth of unit (m below ground level)	Thickness (m)	Description
556420, 192720	Clay	0.2 – 4.5	4.3	Firm to stiff mottled brown and grey fissured clay
	London Clay (Weathered)	4.5 – 8.1	3.6	Stiff mottled brown and grey clay
	London Clay	8.1 – 14	5.9	Stiff dark grey fissured silty clay

2.4 Hydrogeology

The Alluvium is classified as a Secondary A aquifer, the Head Deposits a Secondary Undifferentiated aquifer and the London Clay Formation is an unproductive stratum. Groundwater, if/where present within the superficial deposits, is likely to be in continuity with Weald Brook located to the west of the site.

A zone III total catchment SPZ is present across the north-eastern and south-eastern sections of the Scheme and study area. This SPZ III appears to be associated with an inner zone SPZ I approximately 12.7 km south-south-east of the centre of the junction 28 roundabout (DEFRA, 2020). The SPZ III is centred on Davy Down, where Stifford Pumping

Station is located and is utilised by Essex and Suffolk Water Company to abstract groundwater from the deep chalk aquifer (The Land Trust, 2020). Beneath the Scheme and study area there is understood to be approximately 30 m of London Clay Formation which is considered be a hydraulic barrier resulting isolation of deeper groundwater from shallow groundwater. Groundwater within the Chalk and the associated SPZ III has not been considered a receptor as part of this assessment due to the presence of London Clay Formation beneath the Scheme as well as the proposed depth of development.

During historical GI undertaken, groundwater / perched water strikes / seepages were typically observed between 0.5 m below ground level (bgl) and 5.8 m bgl within Made Ground, superficial deposits or within the upper weathered portion of the London Clay Formation. A deeper groundwater seepage was observed within the London Clay Formation at 9.5 m bgl. However, the three borehole logs available within approximately 50 m of the site suggest conditions were dry to up to 14.0 m bgl (BGS, 2019a; BGS, 2019b; BGS, 2019c). A borehole in close proximity of the Weald Brook encountered groundwater at 3.2 m bgl although this was approximately 40 m west of the site (BGS, 2019d).

2.5 Hydrology

Drainage ditches are located immediately adjacent to the northern and eastern boundaries of the site. The environmental database identifies the Weald Brook is located 65 m to the west on the site and flows in a southernly direction into the River Ingrebourne. Beyond development associated with Grove Farm to the south is another drainage ditch.

The course of the River Ingrebourne has been modified as a consequence of the construction of the A12 and M25 highways. Other surface water features are also present within 250 m of the site, including several other drainage ditches and ponds (Google, 2019).

2.6 Landfill sites

The historical Brook Street Landfill is recorded to have accepted inert waste associated with the construction of the M25 from an unknown date until 1983. There are no other recorded landfill sites (active or historical) within 250 m of the site. However, areas of potentially infilled land (former water features) have been identified within the vicinity (Landmark Information Group, 2016).

2.7 Land contamination

As detailed in Section 2.3, historical logs for exploratory holes drilled in 1970 immediately adjacent to the site do not indicate the presence of Made Ground. The material associated with the historical Brook Street Landfill is considered likely to be inert surplus material associated with the construction of the M25, between 1978 - 1984. Made Ground is thought to have since been deposited at the site in more recent years, (observed during the site walkovers) from an unknown origin.

2.7.1 Historical geo-environmental data

No historical geo-environmental data is available for the site.

3 Initial conceptual model

3.1 Introduction

As per guidance document Land Contamination: Risk Management (LCRM), land contamination is assessed in the UK through the identification and assessment of Source-Pathway-Receptor linkages (SPR) denoting where a potential risk to a receptor is present (Environment Agency, 2019). The approach involves the development of a conceptual model (CM) to describe sources of contamination, in this case, the recently deposited material and the potential migration / exposure pathways and potential receptors that may exist at the site and subsequently identify the SPR linkage. This section provides an initial CM of the site, the identified SPR linkages are risk assessed in Section 7 of this document.

3.2 Potential sources

Potential sources being investigated in relation to this assessment are:

- On-site recently deposited waste material observed to contain demolition waste and potential ACM.

3.3 Potential receptors

The identified potential receptors are:

Human Health:

- On-site workers and members of the general public;
- On-site future workers (Scheme construction workers and operational maintenance workers); and
- Off-site workers / visitors / users at industrial, agricultural and commercial premises including those at Grove Farm, (RJ Waste Management Recycling, skip hire and rubbish clearance and garden centre) and residents at Grove Farm.

As the future ownership of the site is uncertain at present, a worst-case scenario has been assumed with general public access on-site.

Controlled waters:

- Off-site surface water receptors, including Weald Brook; and
- Potential new surface water features including attenuation ponds and drainage features.

No groundwater abstractions have been identified within the Scheme or study area. The identified Source Protection Zones (SPZ) within the Scheme boundary and study area is understood to be associated with the Chalk Group as such is hydraulically separated from the Scheme and earthworks. Groundwater in either the Alluvium or Head Deposits is likely to be in direct hydraulic connection with the surface water bodies and due to the likely lithology of these units, it is considered unlikely that the aquifers will have any resource potential. Therefore, groundwater (and its resource potential) has not been considered as a controlled water receptor for this assessment but is a possible pathway.

Property:

- On-site future property (piles and foundations); and
- Off-site property (industrial and commercial services, agricultural crops and livestock, piles and foundations).

3.4 Potential pathways

Plausible exposure pathways of contamination to the identified receptors are:

- Inhalation, ingestion and dermal contact with contaminants in soil and windblown soil-derived dust;
- Inhalation, ingestion and dermal contact with contaminants within perched water and shallow groundwater;
- Inhalation of vapours from soil and / or groundwater;
- Surface water run-off into drains, culverts and local watercourses;
- Leaching / vertical migration of contaminants in soils into underlying shallow groundwater;
- Lateral migration of contamination in shallow groundwater to surface waters, particularly where services and foundations create preferential pathways for lateral migration;
- Chemical attack from aggressive chemical constituents in soil or groundwater; and
- Migration of ground gases or vapours along preferential pathways including permeable ground, services trenches and service entry points and accumulation in enclosed spaces resulting in inhalation/ignition causing asphyxiation and / or explosion; and
- Migration of contamination in shallow groundwater and uptake by crops.

4 Summary of preliminary GI

4.1 Scope and objectives of preliminary GI

The preliminary GI has been undertaken to characterise the recently deposited materials within the site, collate information to perform a land condition risk assessment and to inform Scheme design. Given the potential for ground disturbance during the construction of the proposed Scheme it is necessary to characterise these materials and allow the CM to be refined. The preliminary GI will also enable appropriate health and safety measures to be considered by the GI contractor during the main GI and allow the preliminary characterisation of waste materials which may be generated from construction works within the site.

4.2 Scope of preliminary GI

Before the preliminary GI, initial investigation works comprised:

- Six shallow pits hand excavated to 1.2m bgl and then backfilled with the arisings (two pits were terminated early due to concrete obstructions); and
- The collection of eighteen geo-environmental soil samples for laboratory studies to evaluate the potential for ACM (identification and quantification, if detected) undertaken on eighteen samples.

A full description of the works is provided in the factual report, provided in Appendix A. The preliminary GI works comprised:

- Ten trial trenches (4m long x 1m wide) excavated to 0.5m below the base of the deposited material where possible (terminated within either the historical Brook Street Landfill or reworked London Clay);
- Two window samples boreholes to 6.0m bgl with the installation of groundwater and ground gas monitoring wells (see Table 2);
- The collection of 37 No. soil samples for laboratory testing for:
    - E1 (general metals, inorganics, pH, electrical conductivity and total organic carbon),
    - E2 (asbestos screen and identification) and
    - E3 (speciated polycyclic aromatic hydrocarbons (EPA 16) and total petroleum hydrocarbons (criteria working group),
    - E4 (semi/volatile organic compounds),
    - E5 (pesticides),
    - E6 (polychlorinated biphenyl congeners) and
    - E7 (chlorinated solvents) depending on hole
- Laboratory testing of 37 No. soil leachability samples for F1 suite only (general metals, inorganics, selected organics, pH, and electrical conductivity) (Appendix A).
- Soil headspace testing for ionisable hydrocarbons using a photoionization detector (PID); and
- The collection of 40 No. composite soil samples for Waste Acceptance Criteria (WAC) suite.

All samples were analysed by a UKAS/MCERT accredited laboratory.

Details of the groundwater and ground gas monitoring wells installed during the preliminary GI are presented in Table 2. Gas and groundwater monitoring was not part of the scope of the preliminary GI but will be undertaken as part of the main GI.

Table 2 Monitoring well installation details

Borehole	Response zone (m bgl)	Stratum
ATK-P-101	1.0 to 4.0	Historic Landfill
ATK-P-102	2.0 to 6.0	Historic Landfill

4.3 Preliminary GI findings

4.3.1 Geology

A summary of the geology encountered during the preliminary GI is presented in Table 3 below. Exploratory hole logs can be found in the factual report, provided in Appendix A (Geotechnical Engineering Ltd, 2019).

Table 3 Site geology

Geology unit	Average depth to unit (m)	Average thickness (m)	Typical description
Made Ground: Recently deposited material	Ground level to 0.4	0.4	Firm dark brown gravelly sandy clay with coarse limestone, flint, brick, quartz, concrete, ceramics, glass, wood, metal, plastic, polystyrene and rare rootlets
Made Ground: Recently deposited Landfill material	0.4 – 1.5	1.1	Firm / firm to stiff dark brown gravelly sandy clay with medium limestone, brick and slag. Rare fragments of ceramic tile, plastic, glass, silicone, wood and metal. Gravel is subangular to rounded fine and coarse flint.
Made Ground: Landfill material (Brook Street Landfill)	1.5 – 5.3* 1.5 – 5.6	3.8 4.1	Stiff brown mottled greyish brown stained black slightly sandy, gravelly clay with pockets of orangish brown silt and rare decomposing plant matter, wood and roots. Gravel is subangular to rounded fine and medium sandstone, flint, brick, concrete, chalk, coal. Rare fragments of wood and ceramic tile.
London Clay	5.3 – 7.0 (base of hole) 5.6 – 8.5 (base of hole)	N/A	Stiff laminated orangish brown clay with thin and thick laminae of light bluish grey clay and rare selenite crystals (up to 5mm)

***Table shows two depths which have been inferred through logs ATK-P-101 + ATK-P-102 situated on the west of the site (Appendix A).**

No Head or Alluvium deposits were encountered in the preliminary GI.

4.3.2 Perched water

Perched water noted during the preliminary GI is presented in Table 4.

Table 4 Water observations

Exploratory hole	Depth of strike (m bgl)	Stratum	Depth after 20 minutes (m bgl)	Comments
ATK-P-101	4.18	Historic Landfill	4.14	Slow inflow
ATK-P-102	3.83	Historic Landfill	3.76	Slow inflow

Exploratory hole	Depth of strike (m bgl)	Stratum	Depth after 20 minutes (m bgl)	Comments
ATK-P-006	2.80	Historic Landfill	N/A	Seepage
ATK-P-007	1.80	Historic Landfill	N/A	Seepage
ATK-P-008	2.80	Historic Landfill	N/A	Seepage

4.3.3 Visual and olfactory evidence of contamination

Visual and olfactory evidence of possible contamination that was noted on the logs during the GI are summarised in Table 5.

Table 5 Visual and olfactory evidence of possible contamination

Borehole	Depth (m)	Stratum and description
ATK-P-101	0.5-2.0	Recently deposited Made Ground: Frequent fragments of concrete, slag, blue plastic, polystyrene, wood and clear glass. Faint hydrocarbon odour.
	2.45-3.05	Historic Landfill: Rare fragments of copper pipe and decomposing wood. 2.70 - 2.80m: Frequent pockets of black clay. Faint hydrocarbon odour.
ATK-P-005	1.6-3.0	Historic Landfill: Frequent black staining
ATK-P-006	2.3-3.0	Historic Landfill: Abundant black staining
ATK-P-007	1.0-1.8	Recently deposited Made Ground: Frequent black staining
	1.8-3.0	Historic Landfill: Frequent black staining

Soil headspace testing using a PID on soils at each exploratory position were <10 ppm which would indicate that concentrations of ionisable volatile organic compounds within the soil are likely to be low.

Faint hydrocarbon odours were noted within two Made Ground samples taken from the same window sample borehole (ATK-P-101). PID readings for these materials were <0.1 ppm and 5.9 ppm suggesting ionisable volatile organic hydrocarbon concentrations were low. Given how infrequent and localised these instances were, the potential for effect on human receptors from hydrocarbon vapours is considered to be limited. Ground gas monitoring at the site will be undertaken as part of the main GI.

The black staining noted in the deeper Made Ground is considered likely to originate from decomposing organic material rather than from hydrocarbon or other contamination.

4.3.4 Chemical analysis results

The results of the chemical analysis are provided within the factual report in Appendix A.

5 Human health Generic Quantitative Risk Assessment

5.1 Introduction

The human health Generic Quantitative Risk Assessment (GQRA) provided in this section has been designed to assess the potential risks to human health receptors using data obtained in the preliminary GI.

5.2 Methodology

The laboratory chemical analysis results from 37 geo-environmental soil samples have been compared with Generic Assessment Criteria (GAC), as detailed below.

Atkins soil screening values (SSVs) are based on the contaminated land exposure assessment (CLEA) model (Environment Agency, 2009). SSVs are available for a variety of standard land uses. Given the nature of the proposed development i.e. road development with no residential properties within 250 m, the public open space (parks) land use SSVs are considered most appropriate. This scenario has been chosen as a worst-case scenario given that the future ownership of the site is uncertain at present.

The public open space (parks) land use SSVs exposure scenario assumes that a female child receptor aged 4 to 9 year is the most sensitive receptor to contamination and that they will be on site for 170 days per year over a six-year period. Exposure to site soils is via direct ingestion, dermal contact, and inhalation of contaminated soil-derived dusts and vapours. As such a level of conservatism has been adopted by using these values.

SSVs for a public open space (parks) land use are available for soil organic matter (SOM) contents of 1 % and 6 %. The 1 % values provide SSVs based on a sandy soil type, whereas the 6 % values are based on a sandy loam soil type. A site-specific SOM has been derived from the SOM values reported in the laboratory soil analysis. The average SOM for the soil samples was 1.70 % therefore the SSVs based on a 1 % SOM have been selected.

Category 4 Screening Levels (C4SL) are modelled using CLEA for standard land uses and are concentrations of contamination in soil (with 6 % SOM) which are considered by the Department for Food and Rural Affairs (DEFRA) to represent a 'low risk' derived from updated exposure assessment parameters and toxicological data based on a 'Low Level of Toxicological Concern' (DEFRA, 2014). As per the accompanying Policy Statement, DEFRA state that:

"A Low Level of Toxicological Concern represents an exposure equivalent to an intake of low concern but that definitely does not approach an intake level that could be defined as causing a Significant Possibility of Significant Harm to human health" (DEFRA, 2014).

Although they consider a different SOM setting to the Atkins SSVs (with the exception of benzene, for which a 1% value is available), C4SLs were derived on the basis of remaining 'strongly precautionary' for the purposes of generic screening. Therefore, where considered appropriate Atkins has adopted C4SLs.

Given the specific risk pathway relevant to asbestos (inhalation of fibres / dust), it is not appropriate to derive an SSV based on the CLEA model. The presence and type of asbestos (where identified) has therefore been subjected to qualitative assessment only.

With relation to the composite soil samples, as these do not target a particular geological unit at a specific depth and were obtained for waste classification purposes rather than land contamination assessment, these have not been included in the human health risk assessment. However, where asbestos has been identified within these samples this has been included for indicative purposes.

5.3 Results

Results of the screening of soil analytical data against GAC for a public open space (parks) end use are presented in Appendix B.

The measured concentrations in the soil samples were below the GAC with the exception of beryllium in Made Ground sampled from ATK-P-007 (2.5 to 3.0 m bgl; Table 6). The average beryllium concentration from the thirty-seven samples tested is 1.01 mg/kg and below the GAC of 2.19 mg/kg. This single beryllium concentration is therefore not considered an unacceptable health risk.

Table 6 Summary of locations of exceedances of human health GAC

Location	Depth (m bgl)	Parameter	Concentration (mg/kg)	GAC (mg/kg)	Description of material
ATK-P-007	2.50-3.00	Beryllium	2.6	2.19	Stiff orangish brown stained black slightly sandy slightly gravelly CLAY with frequent roots (15mm diam) and rootlets. Gravel is subangular to rounded fine and medium flint and brick. (HISTORIC LANDFILL)

Asbestos was detected in one of the 18 soil samples tested from the initial works, two of the 37 geo-environmental soil samples tested from the preliminary GI and one of the 40 composite soil samples tested from the preliminary GI. The identified asbestos comprised amosite loose fibres, chrysotile loose fibres and chrysotile bitumen respectively. The quantification results were less than the laboratory limit of detection of 0.001 %. Asbestos containing material was exclusively encountered within the recently deposited fill material (depths of <0.8 m bgl).

The lower than laboratory detection limits concentrations of asbestos in four of ninety-five samples tested indicates that the risks to health associated with asbestos are acceptable.

The locations of identified asbestos are summarised in Table 7.

Table 7 Summary of asbestos identified

Location	Depth (m bgl)	Type	Quantification result (%)	Description of material
HP01 Initial works	0.2-0.4	Amosite – Loose Fibres	<0.001	Grass over soft dark brown slightly sandy gravelly clay with frequent rootlets. Gravel is angular and subangular fine to coarse limestone, flint, brick, porcelain tile and glass (Made Ground)
ATK-P-003 Preliminary GI Geo-environmental soil sample	0.0-0.2	Chrysotile - loose fibres	<0.001	Firm brown slightly sandy gravelly clay with a low subangular concrete cobble content and rare pockets of orangish brown and white fine sand (up to 20mm). Gravel is angular to rounded fine to coarse sandstone, chalk, flint and brick. Frequent fragments of ceramic tile (up to 50mm) and plastic (up to 60mm). Rare fragments of glass (up to 40mm), wood (up to 40mm) and metal (up to 70mm). Frequent rootlets. (Made Ground)
ATK-P-004 Preliminary GI Composite soil sample	0.5-0.8	Chrysotile - loose fibres	<0.001	orangish brown sandy gravelly clay with low subangular concrete cobble content and frequent pockets of medium light brown sand (up to 20mm) and white fine sand (up to 10mm). Gravel is angular to rounded fine to coarse sandstone, flint, chalk and brick. Abundant black decomposed organic staining. Frequent fragments of ceramic tile (up 30mm), and plastic (50mm). Rare fragments of glass (up 30mm), wood (up to 30mm), metal (100mm), and black ribbon (up to 120mm). Frequent rootlets. (Made Ground)
ATK-P-101 Preliminary GI Geo-environmental soil sample	0.50	Chrysotile-Bitumen	<0.001	Brown slightly clayey gravelly fine to coarse sand with a low angular concrete cobble content. Gravel is angular to rounded fine to coarse brick and flint. Frequent fragments of white ceramic tile (up to 10mm) and plastic (up to 30mm). (Made Ground)

6 Controlled waters Generic Quantitative Risk Assessment

6.1 Introduction

The controlled waters GQRA provided in this section has been designed to assess the potential risks to controlled water receptors identified within Section 3.3 using data obtained in the preliminary GI.

The preliminary GI encountered discontinuous perched water within the Made Ground. A consistent groundwater level was not encountered. The Made Ground was logged as predominantly clay, which is unlikely to have hydraulic properties and could be significantly water bearing. Furthermore, no Alluvium or Head deposits were encountered, with the Made Ground directly underlain by the London Clay Formation.

Soil and soil-derived leachate analytical results are provided in Appendix A.

6.2 Methodology

The potential risks to identified surface water receptors have been assessed by comparison of the 37 geo-environmental soil-derived leachate results against Freshwater Environmental Quality Standards (EQS-f) as set out in the Water Framework Directive (European Parliament, 2000). Exceedances of the EQS-f by the method detection limit have not been acknowledged as they are not considered to represent known exceedances.

With relation to the assessment of risk to the surface water receptor, the Environment Agency Water Framework Directive bioavailability tool (M-BAT) (Environment Agency, 2013) is generally used to derive site specific assessment values for copper, lead, mercury, nickel and zinc based on the EQS-f long term bioavailability freshwater concentrations. These parameters are derived from results of analysis of a surface water sample recovered from the receiving surface water receptor. A surface water sample of the receiving water body has not yet been collected and so bioavailability is not considered within the following assessment. This represents a conservative approach and the assessment shall be updated after the main GI has been completed.

6.3 Results

The results of the screening of 37 soil derived leachability samples against EQS-f are presented in Appendix C. In-line with the Environment Agency remedial targets methodology (Environment Agency, 2006) organic soil-leachate analysis has not been included in the risk assessment.

The concentrations of ten chemical parameters in the soil derived leachate samples exceeded the EQS-f (Environment Agency, 2009). These are detailed in Table 8.

Table 8 Summary of exceedance results against EQS-f

Determinant	Unit	EQS-f (mg/l)	Max. conc. (mg/l)	No. of exceedances	Location and depth (m bgl)
Sulphate as SO4	mg/l	400	2080	18	ATK-P-001, 0.00-0.20m; ATK-P-002, 0.80-0.90m; ATK-P-003, 0.00-0.20m; ATK-P-004, 0.00-0.20m; ATK-P-004, 0.60-0.80m; ATK-P-005, 0.00-0.20m; ATK-P-005, 0.60-0.70m; ATK-P-006, 0.30-0.40m; ATK-P-006, 0.50-0.60m; ATK-P-008, 0.00-0.20m; ATK-P-009, 0.00-0.20m; ATK-P-010, 0.00-0.20m; **ATK-P-010, 0.80-0.90m**; ATK-P-101, 0.20m; ATK-P-101, 0.50m; ATK-P-101, 1.00m; ATK-P-102, 0.20m; ATK-P-102, 1.00m
Ammonium as NH4	mg/l	0.26	2.2	9	ATK-P-001, 0.70-0.80m; ATK-P-006, 0.50-0.60m; ATK-P-009, 0.80-0.90m; ATK-P-010, 0.80-0.90m; ATK-P-102, 1.50-1.70m; **ATK-P-102, 4.20-4.40m**; ATK-P-007, 1.20-1.40m; ATK-P-007, 2.50-3.00m; ATK-P-101, 2.00-2.10m
Chromium (III)	mg/l	0.0047	0.0097	1	**ATK-P-102, 1.50-1.70m**
Copper	mg/l	0.001	0.014	35	ATK-P-001, 0.00-0.20m; ATK-P-001, 0.70-0.80m; ATK-P-002, 0.00-0.20m; ATK-P-002, 0.80-0.90m; ATK-P-003, 0.00-0.20m; ATK-P-003, 0.80-0.90m; ATK-P-004, 0.00-0.20m; ATK-P-004, 0.60-0.80m; ATK-P-005, 0.00-0.20m; ATK-P-005, 0.60-0.70m; ATK-P-006, 0.30-0.40m; ATK-P-006, 0.50-0.60m; ATK-P-006, 1.00-1.20m; ATK-P-008, 0.00-0.20m; ATK-P-008, 0.60-0.80m; ATK-P-009, 0.00-0.20m; ATK-P-009, 0.80-0.90m; ATK-P-010, 0.00-0.20m; ATK-P-010, 0.80-0.90m; ATK-P-102, 1.50-1.70m; ATK-P-102, 2.50-2.70m; **ATK-P-102, 4.20-4.40m**; ATK-P-007, 0.20-0.30m; ATK-P-007, 0.40-0.50m; ATK-P-007, 1.20-1.40m; ATK-P-007, 2.50-3.00m; ATK-P-101, 2.00-2.10m; ATK-P-101, 3.20-3.40m; ATK-P-101, 4.20-4.40m; ATK-P-101, 0.20m; ATK-P-101, 0.50m; ATK-P-101, 1.00m; ATK-P-102, 0.20m; ATK-P-102, 0.50m; ATK-P-102, 1.00m
Iron	mg/l	1	4	4	**ATK-P-002, 0.00-0.20m**; ATK-P-102, 2.50-2.70m; ATK-P-007, 1.20-1.40m; ATK-P-101, 2.00-2.10m
Lead	mg/l	0.0012	0.006	17	ATK-P-001, 0.00-0.20m; ATK-P-001, 0.70-0.80m; ATK-P-002, 0.00-0.20m; ATK-P-003, 0.00-0.20m; ATK-P-003, 0.80-0.90m; ATK-P-004, 0.00-0.20m; ATK-P-004, 0.60-0.80m; ATK-P-005, 0.00-0.20m; ATK-P-008, 0.00-0.20m; ATK-P-009, 0.00-0.20m; ATK-P-010, 0.00-0.20m; **ATK-P-010, 0.80-0.90m**; ATK-P-102, 1.50-1.70m; ATK-P-007, 0.40-0.50m; ATK-P-007, 1.20-1.40m; ATK-P-101, 1.00m; ATK-P-102, 0.20m
Manganese	mg/l	0.123	0.35	16	ATK-P-004, 0.60-0.80m; ATK-P-006, 0.30-0.40m; ATK-P-006, 0.50-0.60m; ATK-P-007, 0.20-0.30m; ATK-P-007, 0.40-0.50m; ATK-P-007, 1.20-1.40m; ATK-P-007, 2.50-3.00m; **ATK-P-101, 2.00-2.10m**; ATK-P-101, 3.20-3.40m; ATK-P-101, 4.20-4.40m; ATK-P-101, 0.20m; ATK-P-101, 0.50m; ATK-P-101, 1.00m; ATK-P-102, 0.20m; ATK-P-102, 0.50m; ATK-P-102, 1.00m
Mercury	mg/l	0.00007	0.001	2	ATK-P-002, 0.80-0.90m; **ATK-P-102, 0.20m**
Nickel	mg/l	0.004	0.0058	2	**ATK-P-010, 0.80-0.90m**; ATK-P-007, 2.50-3.00m
Zinc	mg/l	0.0123	0.027	5	ATK-P-001, 0.00-0.20m; ATK-P-004, 0.60-0.80m; ATK-P-008, 0.60-0.80m; **ATK-P-010, 0.80-0.90m**; ATK-P-101, 1.00m

Note: locations marked in bold represent location of maximum concentration

6.4 Discussion

The EQS-f screening identified exceedances of sulphate, ammonium, chromium (III), copper, iron, lead, manganese, mercury, nickel and zinc in the soil-derived leachate samples at several locations. The exceedances related to Made Ground materials and were distributed across recently deposited Made Ground and Brook Street Landfill. Bioavailability criteria could not be calculated and given the resultant conservative nature of this assessment, it is likely that there are fewer exceedances for copper, lead, mercury, nickel and zinc than are recorded in Table 7. It is anticipated that surface water samples shall be

collected from the Weald Brook during the main GI and this will allow bioavailability of these parameters to be reassessed.

As discussed above, exceedances against EQS-f screening levels were identified in soil derived-leachate samples taken from the recently deposited material and the underlying landfill. However, continuous groundwater was not encountered during the preliminary GI, as such the likelihood of continuity between the Made Ground strata and Weald Brook (and other surface water features) is considered to be low.

On the basis of the above, the on-site Made Ground is not considered to present an unacceptable risk to controlled water receptors. The design of future attenuation ponds should be cognisant of the soil-derived leachate results.

7 Conceptual Model

The potential SPR linkages listed in Section 3 have been risk assessed using information from the preliminary GI and has been displayed in Table 9 below.

Table 9 Conceptual Model

Source	Receptor	Pathway	Consequence of risk	Probability of risk	Classification of risk	Explanation
On-site recently deposited waste material containing demolition waste and limited low-level ACM	On-site workers and members of the general public	Inhalation, ingestion and dermal contact with contaminants in soil and soil-derived dust	Medium	Unlikely	**Low Risk**	Given the distance from feature it is unlikely that receptors will be exposed to dust.
		Inhalation of asbestos fibres	Medium	Unlikely	**Low Risk**	The current site surface is not fully grassed although exposed soil is not anticipated in the finished scheme and therefore it is unlikely that site users may be exposed to the deposited material. Asbestos has been identified within the upper 0.8m, its presence is limited, sporadic and concentrations are less than the limit of detection.
		Inhalation, ingestion and dermal contact with contaminants within perched water and shallow groundwater	Medium	Unlikely	**Low Risk**	No shallow groundwater was encountered and potential for exposure is limited, therefore, unlikely to be exposed.
		Migration and accumulation of ground gases followed by inhalation or ignition causing asphyxiation and/or explosion	Severe	Unlikely	**Moderate/Low Risk**	No buildings or enclosed structures within or close to area of testing
		Inhalation of vapours from contaminated soil and / or water	Medium	Unlikely	**Low Risk**	Results of screening showed low evidence of gross contamination and low PID readings
	On-site future workers (Scheme construction workers and operational maintenance workers)	Inhalation, ingestion and dermal contact with contaminants in soil and soil-derived dust	Medium	Unlikely	**Low Risk**	Results of screening showed few exceedances, on-site workers will be required to wear Personal Protective Equipment (PPE) which will mitigate direct contact with soil and dust.
		Inhalation of asbestos fibres	Medium	Unlikely	**Low Risk**	Although asbestos has been identified within the upper 0.8m, its presence is limited, sporadic and concentrations are less than the limit of detection. Appropriate PPE and working practices will be adopted during construction and maintenance works to mitigate potential risks. The surface covering of the proposed development is considered likely to comprise either landscaping or hardstanding therefore exposure of

Source	Receptor	Pathway	Consequence of risk	Probability of risk	Classification of risk	Explanation
						future site users to soils would be limited.
		Inhalation, ingestion and dermal contact with contaminants within perched water and shallow groundwater	Medium	Unlikely	**Low Risk**	No shallow groundwater was encountered within the holes, PPE will also be worn to prevent direct contact. If perched water encountered during excavations will be appropriately dealt with (see recommendations)
		Migration and accumulation of ground gases followed by inhalation or ignition causing asphyxiation and/or explosion	Severe	Unlikely	**Moderate/Low Risk**	No buildings or enclosed structures within the area. Entry into any confined spaces are low but would be controlled and undertaken with appropriate PPE.
		Inhalation of vapours from contaminated soil and / or water	Medium	Unlikely	**Low Risk**	Results of screening along with low PID readings lead to no evidence of gross contamination on logs. No enclosed spaces are present.
	Off-site workers / visitors / users at industrial, agricultural and commercial premises including those at Grove Farm, (RJ Waste Management Recycling, skip hire and rubbish clearance and garden centre) and residents at Grove Farm.	Inhalation, ingestion and dermal contact with contaminants in windblown soil-derived dust	Medium	Unlikely	**Low Risk**	Appropriate environmental management will be adopted during construction including nuisance dust suppression. Results of screening show low contaminants within the soil.
		Inhalation of asbestos fibres	Medium	Unlikely	**Low Risk**	Although asbestos has been identified within the upper 0.8m, its presence is limited, sporadic and concentrations are less than the limit of detection. Appropriate environmental management practices will be adopted during construction and maintenance works to mitigate potential risks. The surface covering of the proposed development is considered likely to comprise either landscaping or hardstanding therefore exposure of soils would be limited.
		Inhalation, ingestion and dermal contact with contaminants within perched water and shallow groundwater	Medium	Unlikely	**Low Risk**	No shallow groundwater encountered doing ground investigation. Perched water unlikely to migrate off site.

Source	Receptor	Pathway	Consequence of risk	Probability of risk	Classification of risk	Explanation
		Migration and accumulation of ground gases followed by inhalation or ignition causing asphyxiation and/or explosion	Severe	Unlikely	**Moderate/Low Risk**	New holes will be situated away to buildings & enclosed structures. Majority of material being clayey throughout strata reduces potential for migration.
		Inhalation, ingestion and dermal contact with contaminants within surface water	Medium	Unlikely	**Low Risk**	No shallow groundwater and clayey nature of Made Ground reduces potential for migration to surface water.
		Inhalation of vapours from contaminated soil and / or water	Medium	Unlikely	**Low Risk**	Soils show low PID readings, no evidence of gross contamination on logs, no shallow groundwater and clayey nature of Made Ground reduces potential for migration.
	Proposed attenuation pond and drainage features	Lateral migration of contamination in perched groundwater to surface waters, particularly where services and foundations create preferential pathways for lateral migration	Medium	Unlikely	**Low Risk**	Appropriate design to take account of the potential for the features to create preferential pathways.
	Off-site Controlled Waters - surface water receptors, including Weald Brook	Leaching / vertical migration of contaminants in soils to underlying shallow groundwater	Medium	Unlikely	**Low Risk**	No shallow groundwater along with clayey nature of Made Ground reduces potential for migration.
		Lateral migration of contamination in shallow groundwater to surface waters, particularly where services and foundations create preferential pathways for lateral migration	Medium	Unlikely	**Low Risk**	Appropriate design to take account of the potential for the features to create preferential pathways.
		Surface water run-off into drains, culverts, and local watercourses	Medium	Unlikely	**Low Risk**	Appropriate environmental management during construction.
	On-site future property (piles and foundations)	Chemical attack from aggressive chemical constituents in soil or groundwater	Medium	Low l kelihood	**Moderate/Low Risk**	Main GI will include geotechnical testing and allow appropriate concrete design.
		Migration of ground gases or vapours along preferential pathways including permeable ground, services trenches and service entry points and accumulation in enclosed spaces such as services ducts or access points	Severe	Unlikely	**Moderate/Low Risk**	Majority of material at site is impermeable.
	Off-site property (industrial and commercial services,	Chemical attack from aggressive chemical constituents in soil or groundwater	Medium	Low l kelihood	**Moderate/Low Risk**	No shallow groundwater and clayey natural of Made Ground reduces potential for migration.

Source	Receptor	Pathway	Consequence of risk	Probability of risk	Classification of risk	Explanation
	agricultural crops and livestock, piles and foundations)	Migration of ground gases or vapours along preferential pathways including permeable ground, services trenches and service entry points and accumulation in enclosed spaces such as services ducts or access points	Severe	Unlikely	**Moderate/Low Risk**	Clayey nature of Made Ground reduces potential for migration.
		Migration of contamination in shallow groundwater and uptake by crops	Mild	Unlikely	**Very Low Risk**	No shallow groundwater and clayey nature of Made Grounds reduces potential for migration.
		Inhalation, ingestion and dermal contact with contaminants in windblown soil-derived dust	Mild	Unlikely	**Very Low Risk**	Appropriate environmental management during construction reduces windblown nuisance dust.

8 Preliminary waste material classification

8.1 Introduction

Material which is surplus to design and construction requirements, and which is intended or required to be discarded, is classified as waste and should be disposed of in accordance with the Waste Regulations in England and Wales and Duty of Care.

Where the scheme does not include any provisions for the excavated material to be re-used on site, or off-site (through schemes such as CL:AIRE Definition of Waste: Code of Practice (CL:AIRE, 2011), and is destined for landfill, waste classification and Waste Acceptance Criteria (WAC) analysis will be required to demonstrate to the landfill that the material is acceptable for disposal at the specific landfill.

8.2 Methodology

It is anticipated that some surplus materials may be generated during the works. Furthermore, unauthorised waste has been deposited at the site, as detailed in section 1.1.

A sampling strategy (Atkins, 2019) was prepared for the preliminary ground investigation, with the purpose to obtain additional information regarding the deposited materials at the site. The sampling strategy included methodology for composite samples to be taken in order to enable waste classification of materials at the site.

Composite samples were specified in line with the Technical Reference document: Characterisation of waste – Sampling of waste materials, Part 1 (CEN/TR 15310-1:2006). Each composite sample comprised of four increments, with the aim to provide a characterisation of the soil as comprehensive as possible.

The Atkins online waste classification tool CATWaste Soil was used for the assessment of the anticipated waste soils and their classification as either hazardous and non-hazardous waste.

The chemical data obtained from the ground investigation was split based on the type of sample (composite samples or environmental sample) and based on the geological unit of sample (Made Ground and London Clay). It should be noted that the environmental samples were included in the assessment for completeness, however, unlike composite samples, these are point samples and provide a limited characterisation of the soil).

It should be noted that the assessment is based on a limited number of samples, and it is the responsibility of the earthworks contractor as a waste producer to classify, treat, manage and dispose of the waste appropriately, in accordance with the Duty of Care.

8.3 CATWaste soil

The results of the CATWaste soil are presented in Appendix D. With the exception of one sample, the assessment indicates that the material would be classified as non-hazardous based on the available chemical data.

Environmental sample ATK-P-010 at 0.8-0.9 mbgl was assessed as hazardous due to the total petroleum hydrocarbon concentration. However, the corresponding composite sample for the same location and depth indicates the material is non-hazardous. As detailed above, environmental samples are point samples and limited due to the inherent nature of the sampling methodology and as such are not considered to provide an accurate representation of the soil for waste classification purposes.

Asbestos was encountered in four samples, as detailed in Table 7. All results were reported as <0.001%, which is below the hazardous waste limit of 0.1% for asbestos. All samples were collected from the Made Ground, therefore Made Ground soil would be classified as non-hazardous with asbestos.

8.4 Waste Acceptance Criteria

A total of 13 composite samples were scheduled for Waste Acceptance Criteria (WAC) analysis. The full results are provided in Appendix A and a summary is presented in Table 10 below.

Table 10 Waste acceptance criteria summary

Exploratory hole	Depth (m bgl)	Stratum	WAC classification	Compounds*
ATK-P-001	0.00-0.40	Made Ground (recently deposited material)	Non-Haz	Sulphate, Total dissolved solids
ATK-P-002	2.60-3.00	Made Ground (Brook Street landfill)	Inert	
ATK-P-004	0.00-0.30	Made Ground (recently deposited material)	Non-Haz	Sulphate, Total dissolved solids
ATK-P-005	0.00-0.40	Made Ground (recently deposited material)	Non-Haz	Sulphate, Total dissolved solids
ATK-P-005	0.60-1.00	Made Ground (recently deposited landfill material)	Inert	
ATK-P-006	0.00-0.50	Made Ground (recently deposited material)	Non-Haz	Sulphate, Total dissolved solids
ATK-P-006	0.50-1.00	Made Ground (recently deposited landfill material)	Non-Haz	Sulphate, Total dissolved solids
ATK-P-006	1.20-2.00	Made Ground (Brook Street landfill)	Non-Haz	Sulphate, Total dissolved solids
ATK-P-007	0.00-0.30	Made Ground (recently deposited material)	Non-Haz	Sulphate, Total dissolved solids
ATK-P-007	0.30-1.00	Made Ground (recently deposited landfill material)	Non-Haz	Sulphate, Total dissolved solids, fluoride
ATK-P-008	1.50-2.50	Made Ground (Brook Street landfill)	Inert	
ATK-P-009	2.50-3.00	Made Ground (Brook Street landfill)	Non-Haz	Sulphate, Total organic carbon
ATK-P-010	0.50-1.00	Made Ground (recently deposited landfill material)	Non-Haz	Sulphate, Total dissolved solids

*Compounds listed have triggered the non-hazardous classification based on the WAC analysis.

8.5 Discussion

As discussed in section 2 and summarised in Table 2.3, the geology at the site comprises the following:

- Made Ground – recently deposited material;
- Made Ground – recently deposited landfill material;
- Made Ground – historical landfill material (Brook Street landfill); and
- London Clay Formation.

The preliminary waste classification indicates that the recently deposited material (approximately top 0.5 m) would be classified as non-hazardous waste with asbestos.

The remaining Made Ground would be classified as non-hazardous. Chemical testing indicates that localised site areas (ATK-P-002, ATK-P-005, ATK-P-008) contain material that meet the WAC inert waste limits. However, inert classification also requires physical/visual characterisation, and this should be undertaken during the earthworks, to confirm absence of components such as wood, rootlets etc.

Waste segregation and sustainable materials management should be employed by the earthworks contractor during the works, to ensure that waste is classified correctly, and that waste disposed of at landfill is minimised.

9 Conclusions and recommendations

9.1 Conclusions

No superficial deposits were encountered within the area of interest.

Made Ground that was recently deposited was found at depths between 1.2 and 2.0 m bgl. The material included varying amounts of anthropogenic materials such as brick, concrete, metal, ceramic and plastic. Underlying the recently deposited Made Ground is stiff clay with black staining with varying thicknesses between 3.8 m and 4.1 m. This material is considered as landfill in the historical Brook Street Landfill. Below the Made Ground and landfill material is London Clay Formation.

Asbestos was identified in four of 95 soil samples taken across the site. These locations were not concentrated within a particular locality at the site nor were they associated with a single Made Ground unit and therefore the presence of further instances of asbestos within Made Ground at the site cannot be easily predicted. All identified instances of Made Ground were located at less than 0.8 m bgl. The concentrations in the four samples was less than the laboratory limits of detection and therefore represents a low risk to health. However, the possibility of further asbestos containing materials in the Made Ground in un-investigated areas cannot be discounted. Standard codes of construction practices for brownfield development, including PPE and working practices, should mitigate the potential risks. Given the nature of the proposed Scheme it is unlikely that there will be a pathway to human health receptors during the operational phase given the predominance of hard-cover and constructed landscaping.

The risks to human health from contamination within the recently deposited material associated with the proposed development are considered to be moderate or low.

Elevated concentrations of metals and inorganics were identified within soil-derived leachate samples, when compared to EQS-f (although the assessment did not consider bioavailability and so was a conservative approach). No shallow groundwater was identified during the preliminary GI. Furthermore, the Made Ground was logged as predominantly clay. Therefore, there is considered to be limited potential for the migration of contamination to off-site surface water receptors. The design of future site drainage systems should take these soil-derived leachate concentrations into account.

The risks to controlled waters from contamination within the recently deposited material associated with the proposed development are considered to be low.

The CM associated with the deposited material concludes that the overall risk to property receptors is moderate / low to very low.

9.2 Recommendations

The presence of ACM on site was rare, only being encountered in 4 % (four of 95) of samples through various phases of investigation. Further to this, quantified levels of asbestos were generally low (<0.001 %). However, any future contractor undertaking intrusive works should be aware that asbestos containing material may be present within the recently deposited fill material on site. As such, reasonable plans should be implemented during future works to mitigate against the residual asbestos risk.

Vigilance for asbestos and other unexpected contamination should be maintained during all construction works. Should visual or olfactory evidence of potential contamination including asbestos be encountered during construction works, that part of the works should stop and a

contaminated land / asbestos specialist should be consulted so that additional assessment can be undertaken, and appropriate mitigation measures put in place.

Under current health and safety legislation, employers (i.e. the Contractor) are required to carry out their own appropriate health and safety risk assessments and mitigation actions to protect themselves and their employees, other human receptors and the environment from potential contamination. Such risks must be adequately mitigated by law, specifically The Construction (Design and Management) Regulations, 2015 (Health and Safety Executive, 2015) which require that potential risks to human health and the environment from construction activities are appropriately identified and all necessary steps taken to eliminate / manage those risks.

If significant volumes of perched water within the Made Ground is encountered during construction works, it should be handled and disposed of appropriately.

Additional qualitative risk assessments may need to be considered if the main works encounter a greater number of areas of perched water or potential groundwater.

The adoption of appropriate best practice environmental management during construction to mitigate potential risks to environmental receptors (e.g. minimisation of dust generation and migration, and controlled surface water run-off) should be incorporated in future site works.

Suitable controls and monitoring procedures should be adopted for entry into confined spaces, both during construction and post development.

Waste segregation and sustainable materials management should be employed by the earthworks contractor during the works, to ensure that waste is classified correctly and that waste disposed of at landfill is minimised.

The re-use of excavated material on site will require a Materials Management Plan.

Waste characterisation would be needed in the event of earth removal during future construction works. Any material to be removed off-site for disposal must be appropriately classified and agreed with the chosen landfill operator. It is the responsibility of the waste producer to classify, treat, manage and dispose of waste appropriately, and to ensure the chosen landfill is licensed to accept such material. Furthermore, individual landfill sites may have their own soil and soil-derived leachate limits for waste acceptance, reuse or restoration.

Any material imported onto the site for use in backfilling excavations / raising site levels / earthworks should be ‘clean’ and suitable for use from a geo-environmental perspective, with source information and test certificates readily available.

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Appendix A: Factual Report on Ground Investigation (Ref 35403)

M25 JUNCTION 28

FACTUAL REPORT ON GROUND INVESTIGATION

Prepared for OSBORNE

Report Ref: 35403

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M25 JUNCTION 28

FACTUAL REPORT ON GROUND INVESTIGATION

Prepared for OSBORNE

Report Ref: 35403

PROJECT: M25 Junction 28 Improvements - Ground Investigation for works compound.

CONSULTANT: Atkins

VOLUME - VERSION	STATUS	ORIGINATOR	CHECKER	APPROVED	DATE
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ORIGINATOR	APPROVER
[redacted]	[redacted]
[redacted] Senior Geoenvironmental Engineer	[redacted] Geotechnical Consultant

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EXPLORATORY HOLE LOCATION PLAN 1

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1. INTRODUCTION

It is proposed to construct a works compound as part of the wider planned road improvements at M25 Junction 28. Geotechnical Engineering Limited (GEL, this Company) was instructed by Atkins (the Consultant) acting on behalf of Osborne (the Client) to carry out an investigation to determine the ground conditions surrounding the proposed works compound area (the site).

The scope of works and terms and conditions of appointment were specified by the Client and GEL correspondence reference T27239 dated 11th December 2017. The investigation was carried out under the direction and supervision of the Consultant.

This report describes the investigation and presents the findings.

2. SITE LOCATION AND GEOLOGY

The site is situated within Grove Farm, Brentwood, CM14 5NG, to the immediate north-west of Junction 28 of the M25 and is centred upon National Grid Reference Grid co-ordinates TQ ^{5}5645 ^{1}9259.

British Geological Survey (BGS) England and Wales (Sheet No 257, Romford, 1:50,000, 1996) and the BGS online geology (1:50,000) indicate the site is underlain by superficial Head and/or Alluvium Deposits (comprising clay, silt, sand and gravel) over the London Clay Formation.

Made Ground is anticipated across the site associated with potential historical and existing land use.

3. GROUND INVESTIGATION

3.1 Fieldwork

The fieldwork was carried out in general accordance with BS5930:2015 in two phases, on the 24th and 25th June and between 8th to 16th July 2019. The initial phase comprised the hand excavation of six shallow trial pits and the second phase comprised the formation of two boreholes and ten machine excavated trial pits.

The exploratory hole locations were selected by the Client (Phase 1) and Consultant (Phase 2) and set out by this Company and are shown on Figure 1. The ground level and grid co-ordinates at each exploratory hole location were provided by the Client.

Due to the potential for asbestos contamination within shallow soils at the site, all works were carried out under an assumed RED Classification in reference to the British Drilling Association (BDA) guidelines. A decontamination unit was provided, and respiratory apparatus and other personal equipment was utilised accordingly. To mitigate potential airborne release of dust and/or fibres excavations were continuously dampened with water throughout.

Trial pits referenced HP01 to HP06 (Appendix A) were hand excavated to collect representative soil samples and log the materials encountered. Disturbed samples were taken and retained in a combination of plastic tubs (1l) and amber glass jars (250ml and 60ml). Trial pits HP03 and HP04 were terminated due to encountering concrete obstructions. On completion all trial pits were backfilled with arisings.

The boreholes, referenced ATK-P-101 and ATK-P-102 (Appendix A), were formed using a track-mounted Geotechnical Pioneer Rig. Initially, an inspection pit was hand excavated at each borehole location to a depth of 1.20m to check for buried services. Disturbed samples

were taken and retained in a combination of plastic tubs (1l) and amber glass jars (250ml and 60ml). Heavy duty dynamic sampling techniques were then employed to produce a continuous disturbed sample of 112mm nominal diameter reducing to 97mm (and 83mm in ATK-P-102) as the borehole was advanced. The samples were recovered in semi-rigid plastic liner.

The dynamic samples were extracted horizontally from the sampler, the semi-rigid liner was cut to length and caps placed at each end to retain moisture content. All samples and core were retained in sequence in labelled, wooden coreboxes.

Boreholes were monitored for groundwater ingress as dynamic sampling proceeded. Upon encountering water, sampling was temporarily stopped to allow the level to stabilise. Water levels were also recorded at the start and finish of each day's work and are presented on the relevant log.

On completion, gas/water monitoring standpipes were installed in ATK-P-101 and ATK-P-102. Each installation consisted of a 50mm ID HDPE slotted tube set in a filter response zone of non-calcareous pea gravel. The installation was sealed above and below with a bentonite plug and accessed via a valve assembly. The installations were protected at the surface by a lockable stopcock cover set in concrete. Installation details are given on the relevant borehole log.

The trial pits, referenced ATK-P-001 to ATK-P-010 (Appendix A), were formed by a wheeled excavator with a 0.60m wide backactor bucket. Representative disturbed samples were taken and retained in a combination of plastic tubs (1l) and amber glass jars (250ml and 60ml).

In addition, composite samples of selected depth ranges were collected. Material over a defined depth range or distinct stratigraphic unit was collected and mixed, prior to

subdividing to generate the composite sample by two rounds of cone and quartering. The resulting sample was transferred to plastic tubs (1l) and amber glass jars (250ml and 60ml).

Photographs of the trial pit profile and spoil heap were taken and are presented separately.

On completion, all trial pits were backfilled with arisings compacted in suitable layers by the excavator bucket.

On completion of fieldwork, all samples were brought to this Company's laboratory for storage. Samples for chemical analyses were dispatched to i2 Analytical Limited on daily basis under a Chain of Custody. These samples were also monitored on-site for the presence of Volatile Organic Compounds (VOC's) using a MiniRAE 2000 Portable Photo-Ionisation Detector (PID) with a 10.6eV gas discharge lamp prior to being despatched (see below).

3.2 Logging

The logging of soils was carried out by an Engineering Geologist in general accordance with BS5930:2015. A key to the exploratory hole logs is presented in Appendix A.

Detailed descriptions of the dynamic samples are given in the borehole logs (Appendix A), along with details of details of sampling, installations and relevant comments on drilling techniques.

Prior to logging, photographs of the dynamic samples were taken and are presented separately.

The trial pits were logged in situ to a depth of approximately 1.20m and in the case of the machine dug trial pits, thereafter from the surface. Detailed descriptions are given in the

trial pit logs, Appendix A, along with details of sampling and testing, groundwater ingress and relevant comments on stability.

Selected samples were monitored for Volatile Organic Compounds (VOC's) using a MiniRAE 2000 Portable Photo-Ionisation Detector (PID) with a 10.6eV gas discharge lamp. The detector uses an ultraviolet light source to break down the chemicals into positive and negative ions (ionisation). The detector measures the charge of the ionised gas and converts the signal into current. The current is then amplified and displayed as "ppm"; after measurement the ions reform the original gas or vapour allowing it to be sampled. The readings are presented on the exploratory hole logs.

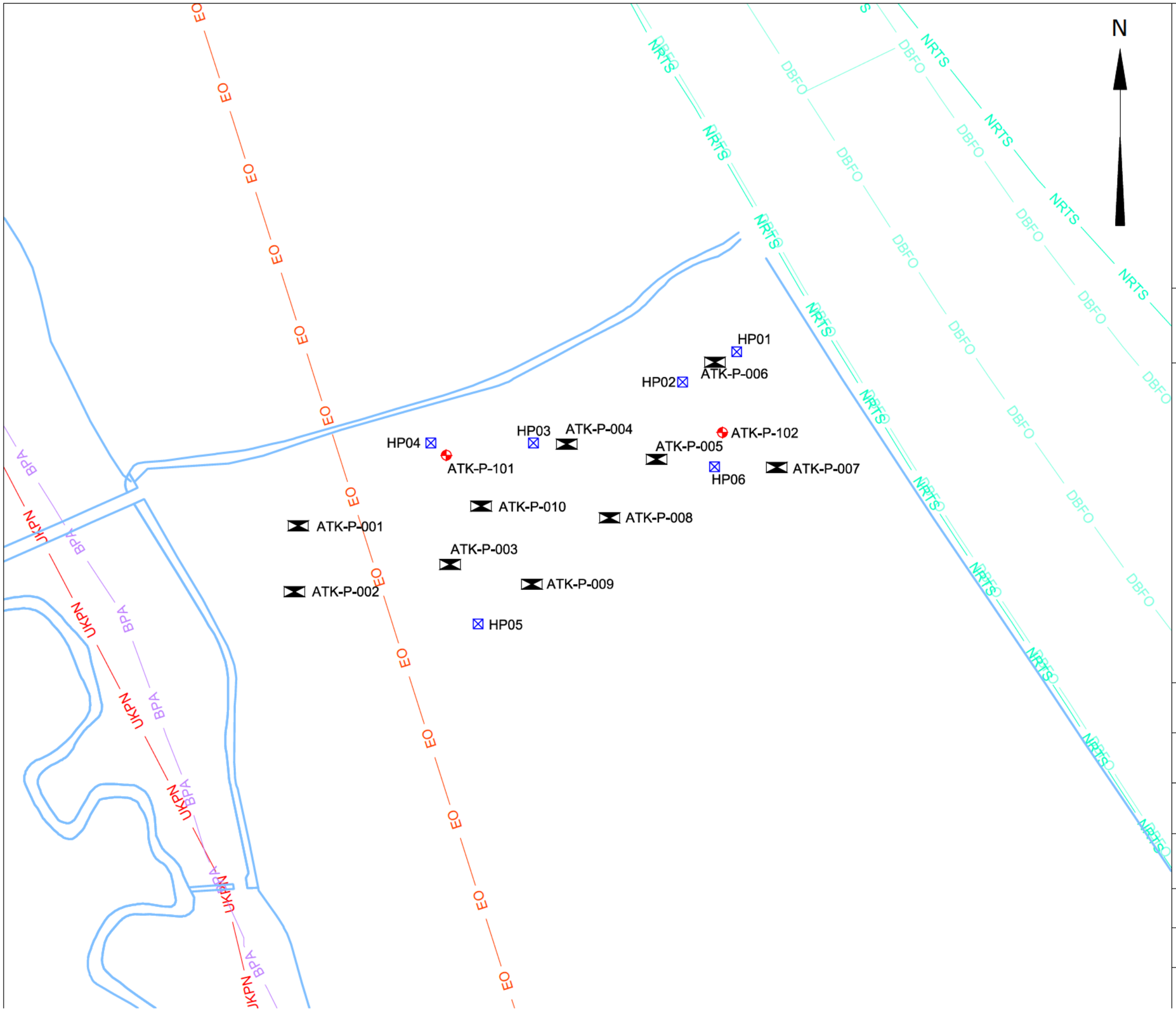
3.3 Chemical Analyses

Selected samples were despatched to i2 Analytical Limited where chemical analyses were carried out to in-house methods for a suite of contaminants specified by the Consultant. Where certain test parameters are deviating due to sample holding times or incorrect soil sample containers, then this is shown on the individual test reports. The results are presented in Appendix B.

GEOTECHNICAL ENGINEERING LIMITED

4. REFERENCES

British Standards Institution (2015): Code of practice for ground investigations. BS 5930:2015.



Key.

- Borehole Location
- Hand Pit Location
- Trial Pit Location

Notes:

Drawing supplied by the Consultant



geotechnical

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Client: OSBORNE		
Consultants: ATKINS		
Site: M25 JUNCTION 28		
Title: EXPLORATORY HOLE LOCATION PLAN		
Drawn By: EL	Checked By: EC	Paper Size: A3
Scale: 1:1,000	Date: Septemebr 2019	
Contract: 35403	Figure: 01	

APPENDIX A

FIELDWORK DATA

Geotechnical Engineering Limited

KEY TO EXPLORATORY HOLE LOGS

Sample type

D Sma d sturbed	U Und sturbed	L Dynam c	ES Env ronmenta so	Cs Core subsamp e (prepared)
B Bu k d sturbed	UT Und sturbed th n wa	C Core	EW Env ronmenta water	Ls Dynam c subsamp e (prepared)
LB Large bu k d sturbed	P P ston	W Water		

Test type

S SPT Sp t spoon samp er fo owed by uncorrected SPT 'N' Va ue
C SPT So d cone fo owed by uncorrected SPT 'N' Va ue
(*250 Where fu test dr ve not comp eted, near y extrapo ated 'N' va ue reported, ** Denotes no effect ve penetrat on)
H Hand vane d rect read ng n kPa not corrected for BS1377 (1990). Re* denotes refusa
M Mack ntosh probe number of b ows to ach eve 100mm penetrat on
Mx Mexe cone average read ng of equ va ent CBR va ue n %
PP Pocket penetrometer d rect read ng n kg/sq.cm
Vo Headspace vapour read ng, uncorrected peak va ues n ppm, us ng a PID (ca brated w th Isobuty ene, us ng a 10.6eV bu b)

Sample/core range/I_f

Dynam c samp e

Und sturbed samp e open dr ve nc ud ng th n wa . Symbo engths ref ects recovery

x x = Tota Core Recovery (TCR) as percentage of core run

y y = So d Core Recovery (SCR) as percentage of core run. Assessment of core s based on fu d ameter.

z z = Rock Qua ty Des gnat on (RQD). The amount of so d core greater than 100mm expressed as percentage of core run.

Where SPT has been carr ed out at beg nn ng of core run, d sturbed sect on of core exc uded from SCR and RQD assessment.

I_f fracture spac ng the moda fracture spac ng (mm) over the nd cated engths of core. Where spac ng var es s gn f cant y, the m n mum, mode and max mum va ues are g ven. NI = non ntact core NA = not app cab e

Instrumentation

Porous t p | Perforated standp pe | Granu ar response zone | Benton te sea | Cement/ benton te grout | So Backf | Concrete

Stratum boundaries

Est mated boundary | Grad ng boundary

Logging

The ogg ng of so s and rocks has been carr ed out n genera accordance w th BS 5930:2015.

Cha k s ogged n genera accordance w th Lord et a (2002) CIRIA C574. Where poss b e, dynam c samp es n cha k have been ogged n accordance w th CIRIA C574; descr pt ons and grad ngs (f presented) shou d be treated w th caut on g ven the potent a for samp e d sturbance.

For rocks the term fracture has been used to dent fy a mechan ca break w th n the core. Where poss b e nc p ent and dr ng nduced fractures have been exc uded from the assessment of fracture state. Where doubt ex sts, a note has been made n the descr pt ons. A fractures are cons dered to be cont nuous un ess otherw se reported.

Made Ground s read y dent f ab e when, w th n the mater a make up, man made const tuents are ev dent. Where Made Ground appears to be reworked natura mater a the d fferent at on between n s tu natura depos ts and Made Ground s much more d ff cu t to ascerta n. The nterpretat on of Made Ground w th n the ogs shou d therefore be treated w th caut on.

The descr ptors "topso " and "tarmacadam" are used as gener c terms and do not mp y conformat on to any part cu ar standard or compos t on.

Root ets are def ned as be ng ess than 2mm n d ameter, roots are def ned as n excess of 2mm d ameter.

General Comments

The process of dr ng and samp ng w nev tab y ead to d sturbance, m x ng or oss of mater a n some so and rocks.

Ind cated water eve s are those recorded dur ng the process of dr ng or excavat ng exp oratory ho es and may not represent stand ng water eve s.

A depths are measured a ong the ax s of the boreho e and are re ated to ground eve at the po nt of entry. A nc nat ons are measured norma to the ax s of the core.

Where prov ded, the strat graph c names/geo og ca rock un ts are for gu dance on y and may not be who y accurate.

Geotechnical Engineering Limited

TRIAL PIT LOG

HP01

CLIENT OSBORNE

SITE M25 JUNCTION 28 IMPROVEMENTS — Sheet 1 of 1

Start Date 25 June 2019 — Easting 556440 — Scale 1 : 25

End Date 25 June 2019 — Northing 192716 — Ground level 43.40mOD — Depth 1.20 m

water record	sample/test no/type	sample/test result	sample/test depth (m)	description	depth (m)	level (m)	legend
	1ES		0 20- 0 40	Grass over soft dark brown slightly sandy gravelly CLAY with frequent rootlets Gravel is angular and subangular fine to coarse limestone flint brick porcelain tile and glass (MADE GROUND) 0 30 - 0 50m Low subangular limestone cobble content	0 40	43 00	
	2ES		0 50- 0 70	Soft dark brown and brown slightly gravelly silty CLAY Gravel is angular and subangular fine and medium limestone and brick (MADE GROUND) 0 50 - 0 60m Slightly sandy	1 00	42 40	
Dry	3ES		1 00- 1 20	Soft light brown gravelly silty CLAY Gravel is subrounded and rounded fine to coarse flint (MADE GROUND) 1 05m Rare angular glass fragments (up to 15mm) Trial pit completed at 1 20m	1 20	42 20	

Notes

Tr a p t excavated us ng hand too s.
Groundwater was not encountered.
Tr a p t d mens ons 0.25x0.25x1.20m
Tr a p t s des rema ned stab e.
On comp et on, the tr a p t was backf ed w th mater a s ar s ng.
Co ord nates and eve s prov ded by the C ent.

Sketch of Foundat on Not to sca e. A d mens ons n metres.

EXPLORA ORY HOLE LOGS SHOULD BE READ N CONJUNC ON W H KEY SHEE S

AGS

CONTRACT	CHECKED
35403	

Geotechnical Engineering Ltd el 01452 527743 35403 PRE G GPJ R ALJH GPJ GEO ECH2 GLB 06/09/2019 15 29 39 KR DM

Geotechnical Engineering Limited

TRIAL PIT LOG

HP02

CLIENT OSBORNE

SITE M25 JUNCTION 28 IMPROVEMENTS — Sheet 1 of 1

Start Date 25 June 2019 — Easting 556426 — Scale 1 : 25

End Date 25 June 2019 — Northing 192708 — Ground level 43.00mOD — Depth 1.20 m

water record	sample/test no/type	sample/test result	sample/test depth (m)	description	depth (m)	level (m)	legend
	1ES		0 20- 0 40	Grass over soft dark brown slightly sandy gravelly CLAY with a low subangular brick and concrete cobble content Gravel is angular and subangular fine to coarse limestone flint brick porcelain tile and glass (MADE GROUND) 0 00 - 0 20m Frequent rootlets			
					0 35	42 65	
	2ES		0 50- 0 70	Soft dark brownish grey slightly sandy slightly gravelly CLAY Gravel is subangular and subrounded fine to coarse limestone and flint (MADE GROUND)			
	3ES		1 00- 1 20	1 00 - 1 20m Frequent black and dark grey partly decomposed wood fragments (up to 15mm diam) 1 10m Pocket (30mm) of orangish brown silty fine and medium sand			
Dry					1 20	41 80	
				Trial pit completed at 1 20m			

Notes

Tra p t excavated us ng hand too s.
Groundwater was not encountered.
Tra p t d mens ons 0.25x0.25x1.20m
Tra p t s des rema ned stab e.
On comp et on, the tra p t was backf ed w th mater a s ar s ng.
Co ord nates and eve s prov ded by the C ent.

Sketch of Foundat on Not to sca e. A d mens ons n metres.

EXPLORA ORY HOLE LOGS SHOULD BE READ N CONJUNC ON W H KEY SHEE S

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Geotechnical Engineering Limited

TRIAL PIT LOG

HP03

CLIENT	OSBORNE						
SITE	M25 JUNCTION 28 IMPROVEMENTS					Sheet	1 of 1
Start Date	25 June 2019	Easting	556387			Scale	1 : 25
End Date	25 June 2019	Northing	192692	Ground level	41.45mOD	Depth	1.05 m

water record	sample/test no/type	sample/test result	sample/test depth (m)	description	depth (m)	level (m)	legend
	1ES		0 20- 0 40	Grass over dark brown slightly sandy clayey angular to subrounded fine to coarse limestone flint glass porcelain tile and brick GRAVEL with rare rootlets (MADE GROUND)	0 50	40 95	
	2ES		0 50- 0 70	Soft dark brown slightly sandy gravelly CLAY Gravel is angular and subangular fine to coarse limestone flint glass porcelain tile and brick (MADE GROUND) 0 55m nsulated wire (3mm diam) 0 60m Wood fragment (20mm)			
	3ES		0 90- 1 00	0 90m Becoming dark grey	1 05	40 40	
Dry				Trial pit completed at 1 05m			

Notes

Tr a p t excavated us ng hand too s.
Groundwater was not encountered.
Tr a p t d mens ons 0.25x0.25x1.05m
Tr a p t s des rema ned stab e.
On comp et on, the tr a p t was backf ed w th mater a s ar s ng.
Tr a p t term nated at 1.05m on the nstruct on of the Consu tant due to a concrete obstruct on.
Co ord nates and eve s prov ded by the C ent.

Sketch of Foundat on Not to sca e. A d mens ons n metres.

EXPLORA ORY HOLE LOGS SHOULD BE READ N CONJUNC ON W H KEY SHEE S

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Geotechnical Engineering Limited

TRIAL PIT LOG

HP04

CLIENT OSBORNE

SITE M25 JUNCTION 28 IMPROVEMENTS — Sheet 1 of 1

Start Date 25 June 2019 — Easting 556361 — Scale 1 : 25

End Date 25 June 2019 — Northing 192691 — Ground level 39.50mOD — Depth 1.00 m

water record	sample/test no/type	sample/test result	sample/test depth (m)	description	depth (m)	level (m)	legend
	1ES		0 20- 0 40	Grass over dark brown slightly sandy clayey angular to subrounded fine to coarse limestone flint glass porcelain tile and brick GRAVEL with rare rootlets (MADE GROUND) 0 10m Subangular brick cobble			
	2ES		0 50- 0 70		0 60	38 90	
				Soft dark brown slightly sandy gravelly CLAY Gravel is angular and subangular fine to coarse limestone flint glass porcelain tile and brick (MADE GROUND)	0 90	38 60	
Dry	3ES		0 90- 1 00	Dark grey clayey angular and subangular fine and medium limestone GRAVEL (MADE GROUND) Trial pit completed at 1 00m	1 00	38 50	

Notes

Tr a p t excavated us ng hand too s.
Groundwater was not encountered.
Tr a p t d mens ons 0.25x0.25x1.00m
Tr a p t s des rema ned stab e.
On comp et on, the tr a p t was backf ed w th mater a s ar s ng.
Tr a p t term nated at 1.00m on the nstruct on of the Consu tant due to concrete obstruct on.
Co ord nates and eve s prov ded by the C ent.

Sketch of Foundat on Not to sca e. A d mens ons n metres.

EXPLORA ORY HOLE LOGS SHOULD BE READ N CONJUNC ON W H KEY SHEE S

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CONTRACT	CHECKED
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Geotechnical Engineering Limited

TRIAL PIT LOG

HP05

CLIENT	OSBORNE						
SITE	M25 JUNCTION 28 IMPROVEMENTS					Sheet	1 of 1
Start Date	25 June 2019	Easting	556373			Scale	1 : 25
End Date	25 June 2019	Northing	192646	Ground level	40.35mOD	Depth	1.20 m

water record	sample/test no/type	sample/test result	sample/test depth (m)	description	depth (m)	level (m)	legend
	1ES		0 20- 0 40	Grass over firm brown slightly sandy gravelly CLAY with abundant rootlets Gravel is subangular to rounded fine to coarse limestone flint brick porcelain tile and glass (MADE GROUND)	0 30	40 05	
	2ES		0 50- 0 70	Soft light brown silty CLAY with frequent pockets (up to 20mm) of orangish brown silty fine and medium sand and rare pockets (up to 15mm) of dark grey silty clay (MADE GROUND) 0 50 - 0 60m Frequent pockets (up to 30mm) of soft dark brownish grey sandy clay			
	3ES		1 00- 1 20	1 10 - 1 15m Black clayey medium and coarse sand	1 20	39 15	
Dry				Trial pit completed at 1 20m			

Notes

Tr a p t excavated us ng hand too s.
Groundwater was not encountered.
Tr a p t d mens ons 0.25x0.25x1.20m
Tr a p t s des rema ned stab e.
On comp et on, the tr a p t was backf ed w th mater a s ar s ng.
Co ord nates and eve s prov ded by the C ent.

Sketch of Foundat on Not to sca e. A d mens ons n metres.

EXPLORA ORY HOLE LOGS SHOULD BE READ N CONJUNC ON W H KEY SHEE S

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Geotechnical Engineering Limited

TRIAL PIT LOG



HP06

CLIENT OSBORNE

SITE M25 JUNCTION 28 IMPROVEMENTS — Sheet 1 of 1

Start Date 25 June 2019 — Easting 556434 — Scale 1 : 25

End Date 25 June 2019 — Northing 192686 — Ground level 43.20mOD — Depth 1.20 m

water record	sample/test no/type	sample/test result	sample/test depth (m)	description	depth (m)	level (m)	legend
	1ES		0 20- 0 40	Grass over soft dark greyish brown and yellowish grey slightly sandy gravelly CLAY with abundant rootlets Gravel is angular and subangular fine to coarse limestone flint and brick (MADE GROUND)	0 40	42 80	
	2ES		0 50- 0 70	Soft light brown silty CLAY with frequent pockets (up to 20mm) of orangish brown silty fine and medium sand (MADE GROUND)			
	3ES		1 00- 1 20	1 00 - 1 20m Rare pockets (up to 15mm) of soft dark grey silty clay	1 20	42 00	
Dry				Trial pit completed at 1 20m			

Notes

Tr a p t excavated us ng hand too s.
Groundwater was not encountered.
Tr a p t d mens ons 0.25x0.25x1.20m
Tr a p t s des rema ned stab e.
On comp et on, the tr a p t was backf ed w th mater a s ar s ng.
Co ord nates and eve s prov ded by the C ent.

Sketch of Foundat on Not to sca e. A d mens ons n metres.

EXPLORA ORY HOLE LOGS SHOULD BE READ N CONJUNC ON W H KEY SHEE S

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CONTRACT	CHECKED
35403	

Geotechnical Engineering Ltd el 01452 527743 35403 PRE G GPJ R ALJH GPJ GEO ECH2 GLB 06/09/2019 15 29 42 KR DM

Geotechnical Engineering Limited

BOREHOLE LOG



ATK-P-101

CLIENT OSBORNE

SITE M25 JUNCTION 28 IMPROVEMENTS — Sheet 1 of 2

Start Date 9 July 2019 — Easting 556365.0 — Scale 1 : 50

End Date 9 July 2019 — Northing 192689.1 — Ground level 39.95mOD — Depth 7.00 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp /core range	instru -ment	description	depth (m)	reduced level (m)	legend
09/07/19 1340hrs	1ES	0 20			Vo 0 0			Light brown slightly sandy slightly gravelly S LT Gravel is angular to subrounded fine to coarse brick quartz and concrete Frequent fragments of white ceramic tile (up to 40mm) clear glass (up to 20mm) and plastic (up to 30mm) (MADE GROUND)	0 10	39 85	
	2ES	0 50			Vo 6 4				0 50	39 45	
	3ES	1 00			Vo 8 5			Brown slightly clayey gravelly fine to coarse SAND with a low angular concrete cobble content Gravel is angular to rounded fine to coarse brick and flint Frequent fragments of white ceramic tile (up to 10mm) and plastic (up to 30mm) (MADE GROUND)			
	1L	1 20 - 2 70		Nil							
	4ES	1 20 - 2 00									
	5ES	2 00 - 2 10			Vo 5 9			Soft black slightly sandy gravelly CLAY with frequent pockets (up to 40mm) of brown clay and rare rootlets Gravel is angular and subangular fine and medium sandstone flint concrete chalk brick and slag Frequent fragments of blue plastic (up to 10mm) polystyrene (up to 15mm) wood (up to 40mm) white ceramic tile (up to 20mm) and clear glass (up to 30mm) Faint hydrocarbon odour (MADE GROUND)	2 00	37 95	
	6ES	2 10 - 3 05							2 45	37 50	
	2L	2 70 - 4 20		Nil	Vo 2 4						
		2 70 - 2 80							3 05	36 90	
	7ES	3 20 - 5 20						Firm brownish grey mottled orangish brown slightly sandy silty CLAY with abundant rootlets and rare roots (up to 3mm diam) (MADE GROUND) 2 00 - 2 10m Slightly gravelly Gravel is subangular fine brick			
	8ES	3 20 - 3 40							3 45	36 50	
	3L	4 20 - 5 70		Nil	Vo 0 0			Firm brownish grey rarely mottled orangish brown slightly gravelly silty CLAY with frequent rootlets and rare roots (up to 3mm) Gravel is subrounded and rounded fine and medium flint quartz and rare chalk and brick Rare fragments of copper pipe (up to 70mm) and decomposing wood (up to 25mm) (MADE GROUND) 2 70 - 2 80m Frequent pockets (up to 30mm) of black clay Faint hydrocarbon odour	4 40	35 55	
	9ES	4 20 - 4 40									
	4L	5 70 - 7 00		Nil				Stiff orangish brown mottled brownish grey slightly gravelly locally very gravelly silty CLAY with rare rootlets Gravel is angular to rounded fine and medium flint quartz and rare chalk and brick Rare fragments (up to 20mm) of wood (MADE GROUND)	5 30	34 65	
								Stiff laminated orangish brown mottled brown silty CLAY with frequent thin and thick laminae of light grey clay and rare fragments of black organic material (up to 5mm) Frequent roots (up to 3mm) and rootlets			
09/07/19 1650hrs Dry								Stiff brown silty CLAY with frequent pockets (up to 50mm) of orangish brown silt and frequent thick laminae of light bluish grey clay and frequent selenite crystals (up to 5mm) Rare roots (up to 3mm) and rootlets 4 50 - 4 70m Rare green staining	7 00	32 95	
								Stiff brown silty CLAY with rare pockets (up to 50mm) of orangish brown silt and rare thin laminae of light bluish grey clay and rare selenite crystals (up to 5mm) Rare roots (up to 3mm)			
								Continued Next Page	{8 00}		

EQU PMENT Geotechnical Pioneer rig

METHOD Hand dug inspection pit 0 00-1 20m Dynamic sampled (128mm) 1 20-4 20m and (113mm) 4 20-7 00m

CAS NG Not installed on the instruction of the Consultant

BACKF LL On completion borehole backfilled with bentonite 7 00-4 00m a slotted standpipe (50mm) was installed to 4 00m granular response zone 4 00-1 00m bentonite seal 1 00-0 30m concrete and stopcock cover 0 30-0 00m

REMARKS Olfactory observations limited by use of RPE Co-ordinates and levels provided by the Client

EXPLORA ORY HOLE LOGS SHOULD BE READ N CONJUNC ON W H KEY SHEE S

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
4 18	Nil	4 14	20	Slow

AGS

CONTRACT 35403

CHECKED

Geotechnical Engineering Ltd el 01452 527743 35403 PRE G GPJ R ALJH GPJ GEO ECH2 GLB 06/09/2019 15 28 26 LH JH

Geotechnical Engineering Limited

BOREHOLE LOG



ATK-P-101

CLIENT OSBORNE

SITE M25 JUNCTION 28 IMPROVEMENTS — Sheet 2 of 2

Start Date 9 July 2019 — Easting 556365.0 — Scale 1 : 50

End Date 9 July 2019 — Northing 192689.1 — Ground level 39.95mOD — Depth 7.00 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp /core range		instru -ment	description	depth (m)	reduced level (m)	legend
									6 20 - 6 35m Angular fine to coarse limestone gravel			
									Borehole completed at 7 00m			
										{18 00}		

water strike (m) casing (m) rose to (m) time to rise (m) remarks

AGS

CONTRACT 35403

CHECKED

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BOREHOLE LOG



ATK-P-102

CLIENT OSBORNE

SITE M25 JUNCTION 28 IMPROVEMENTS — Sheet 1 of 2

Start Date 8 July 2019 — Easting 556436.0 — Scale 1 : 50

End Date 9 July 2019 — Northing 192694.9 — Ground level 43.50mOD — Depth 8.50 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp /core range	instru -ment	description	depth (m)	reduced level (m)	legend
08/07/19 1405hrs 08/07/19 1455hrs Dry	1ES	0 20			Vo 0 0			Light brown slightly sandy slightly gravelly S LT Gravel is angular to subrounded fine to coarse brick quartz and concrete Frequent fragments of white ceramic tile (up to 40mm) clear glass (up to 20mm) and plastic (up to 30mm) (MADE GROUND)	0 25	43 25	
	2ES	0 50			Vo 0 0						
09/07/19 1010hrs Dry	3ES	1 00			Vo 0 0			Firm becoming stiff brown rarely mottled orangish brown and yellowish brown slightly gravelly CLAY with rare rootlets Gravel is subangular to rounded fine to coarse quartz concrete chalk and rare brick Frequent pockets (up to 20mm) of orangish brown silt Rare fragments of glass (up to 20mm) (MADE GROUND)	1 25	42 25	
	1L	1 20	2 50								
	4ES	1 50	1 70	Nil	Vo 1			0 80 - 1 00m Rare pockets (up to 20mm) of orangish brown fine and medium sand	1 90	41 60	
	5ES	2 10	2 20		Vo 0 5			Stiff brown mottled greyish brown stained black slightly sandy CLAY with abundant pockets (up to 20mm) of orangish brown silt and rare decomposing plant material and roots (MADE GROUND)			
	2L	2 50	4 00	Nil	Vo 0 0						
	6ES	2 50	2 70					Stiff greyish brown locally stained black CLAY with frequent pockets (up to 30mm) of orangish brown silt with frequent decomposing plant material and roots (MADE GROUND)	3 30	40 20	
	7ES	3 50	3 70		Vo 1 1			2 05 - 2 20m Soft brown mottled dark grey slightly sandy slightly gravelly clay Gravel is subangular to rounded fine and medium quartz and brick Rare rootlets Malodorous			
	3L	4 00	5 50	Nil				Stiff greyish brown mottled brown slightly gravelly CLAY with frequent pockets (up to 10mm) of black organic material and roots and rare pockets of yellowish brown silt (up to 10mm) and orangish brown silt (up to 5mm) Gravel is subangular fine concrete brick chalk coal and rare flint (MADE GROUND)			
	8ES	4 00	5 80		Vo 2 4						
	9ES	4 20	4 40						5 00	38 50	
	10ES	5 00	5 20		Vo 0 0			Stiff greyish brown mottled brown CLAY with frequent pockets (up to 5mm) of orangish brown silt and rare pockets (up to 5mm) of black organic material Frequent rootlets (MADE GROUND)	5 60	37 90	
	4L	5 50	7 00	5 00				5 50 - 5 60m Pocket of decomposing plant material Subangular fine and medium brick and concrete gravel			
	11ES	5 60	5 80		Vo 0 0						
	12ES	5 80	7 00								
	13ES	6 10	6 30		Vo 0 0			Stiff orangish brown silty CLAY with frequent thin laminae of light bluish grey clay and frequent pockets (up to 20mm) of orangish brown and light brown fine and medium sand Frequent rootlets			
	5L	7 00	8 50	5 50							
	14ES	7 10	7 30		Vo 0 0						
								Continued Next Page	{8 00}		

EQU PMENT Geotechnical Pioneer rig

METHOD Hand dug inspection pit 0 00-1 20m Dynamic sampled (128mm) 1 20-2 50m (113mm) 2 50-7 00m and (98mm) 7 00-8 50m

CAS NG 140mm diam to 5 50m

BACKF LL On completion borehole backfilled with bentonite 8 50-6 00m a slotted standpipe (50mm) was installed to 6 00m granular response zone 6 00-2 00m bentonite seal 2 00-0 50m concrete and stopcock cover 0 50-1 00m

REMARKS Olfactory observations limited by use of RPE Co-ordinates and levels provided by the Client

EXPLORA ORY HOLE LOGS SHOULD BE READ N CONJUNC ON W H KEY SHEE S

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
3 83	Nil	3 76	20	Slow

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Geotechnical Engineering Limited

BOREHOLE LOG



ATK-P-102

CLIENT OSBORNE

SITE M25 JUNCTION 28 IMPROVEMENTS — Sheet 2 of 2

Start Date 8 July 2019 — Easting 556436.0 — Scale 1 : 50

End Date 9 July 2019 — Northing 192694.9 — Ground level 43.50mOD — Depth 8.50 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp /core range		instru -ment	description	depth (m)	reduced level (m)	legend
09/07/19 1320hrs Dry									Stiff orangish brown silty CLAY with frequent pockets (up to 10mm) of orangish brown silt	8 10	35 40	
										8 50	35 00	
									Borehole completed at 8 50m	{18 00}		

water strike (m) casing (m) rose to (m) time to rise (m) remarks

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TRIAL PIT LOG

ATK-P-001

CLIENT	OSBORNE					Sheet	1 of 1
SITE	M25 JUNCTION 28 IMPROVEMENTS					Scale	1 : 25
Start Date	16 July 2019	Easting	556327				
End Date	16 July 2019	Northing	192671	Ground level	37.35mOD	Depth	3.00 m

water record	sample/test no/type	sample/test result	sample/test depth (m)	description	depth (m)	level (m)	legend
	1ES	Vo 0 0	0 00- 0 20	Grass over firm brown slightly sandy gravelly CLAY Gravel is angular to rounded fine to coarse sandstone chalk flint and brick Frequent fragments of ceramic tile (up to 60mm) and plastic (up to 50mm) Rare fragments of glass (up to 50mm) wood (up to 50mm) metal (up to 70mm) and paper (up to 40mm) Frequent rootlets and rare roots (up to 15 mm diam) (MADE GROUND)			
	1COMP		0 00- 0 40		0 40	36 95	
	2ES	Vo 0 0	0 70- 0 80	Firm orangish brown locally mottled grey slightly sandy slightly gravelly CLAY with a low subangular concrete cobble and boulder content Gravel is angular to rounded fine to coarse sandstone flint chalk and brick Rare pockets of of orangish brown fine sand (up to 20mm) Rare fragments of ceramic tile (up to 30mm) plastic (up to 30mm) glass (up to 30mm) silicone (up to 40mm) and wood (up to 60mm) Frequent rootlets and rare roots (up to 10mm diam) (MADE GROUND)			
	2COMP		0 70- 1 00				
	3COMP		1 40- 1 80	Soft becoming firm black slightly sandy gravelly peaty CLAY with rare pockets of orangish brown fine sand (up to 20mm) Gravel is subangular to rounded fine to coarse sandstone and flint Frequent rootlets (MADE GROUND)	1 40	35 95	
					1 80	35 55	
	4COMP		2 70- 3 00	Stiff orangish brown slightly sandy slightly gravelly silty CLAY with rare pockets of light grey silt (up to 10mm) Gravel is subangular to rounded fine sandstone and flint Rare fragments of wood (up to 30mm) Rare rootlets (MADE GROUND)			
Dry				Trial pit completed at 3 00m	3 00	34 35	

Notes

Tr a p t excavated by JCB 3CX mechan ca excavator.
Groundwater not encountered.
Tr a p t s des rema ned stab e and vert ca .
Tr a p t d mens ons 2.60x1.10x3.00m.
On comp et on, the tr a p t was backf ed w th mater a s ar s ng.
O factory observat on m ted by use of RPE.
Co ord nates and eve s prov ded by the C ent.

Sketch of Foundat on Not to sca e. A d mens ons n metres.

EXPLORA ORY HOLE LOGS SHOULD BE READ N CONJUNC ON W H KEY SHEE S

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TRIAL PIT LOG

ATK-P-002

CLIENT	OSBORNE					Sheet	1 of 1
SITE	M25 JUNCTION 28 IMPROVEMENTS					Scale	1 : 25
Start Date	16 July 2019	Easting	556326				
End Date	16 July 2019	Northing	192654	Ground level	37.00mOD	Depth	3.20 m

water record	sample/test no/type	sample/test result	sample/test depth (m)	description	depth (m)	level (m)	legend
	1ES	Vo 0 0	0 00- 0 20	Grass over firm brown slightly sandy gravelly CLAY Gravel is angular to rounded fine to coarse sandstone chalk flint and brick Rare fragments of ceramic tile (up to 30mm) and plastic (up to 20mm) Frequent rootlets and rare roots (up to 5mm diam) (MADE GROUND)	0 25	36 75	
	1COMP		0 00- 0 25				
				Firm becoming stiff orangish brown locally mottled grey slightly sandy slightly gravelly CLAY with frequent pockets of orangish brown fine sand (up to 40mm) Gravel is angular to rounded fine to coarse sandstone flint chalk limestone and brick Rare fragments of plywood (120mm) Rare rootlets (MADE GROUND)			
	2ES	Vo 0 0	0 80- 0 90				
	2COMP		1 20- 1 60				
					1 60	35 40	
				Firm black slightly sandy slightly gravelly peaty CLAY with rare pockets of orangish brown fine sand (up to 20mm) Gravel is subangular to rounded fine and medium flint (MADE GROUND) 1 80m Ceramic field drain			
	3COMP		1 80- 2 10		1 90	35 10	
				Firm becoming stiff orangish brown mottled black very gravelly silty CLAY with frequent pockets of orangish brown fine sand (up to 10mm) Gravel is rounded medium and coarse flint	2 10	34 90	
				Stiff light brown silty CLAY with rare fragments of black organic material Frequent pockets of orangish brown silt (up to 30mm)			
	4COMP		2 60- 3 00				
					3 20	33 80	
Dry				Trial pit completed at 3 20m			

Notes

Tr a p t excavated by JCB 3CX mechan ca excavator.
Groundwater not encountered.
Tr a p t s des rema ned stab e and vert ca .
Tr a p t d mens ons 2.60x1.00x3.20m.
On comp et on, the tr a p t was backf ed w th mater a s ar s ng.
O factory observat on m ted by use of RPE.
Co ord nates and eve s prov ded by the C ent.

Sketch of Foundat on Not to sca e. A d mens ons n metres.

EXPLORA ORY HOLE LOGS SHOULD BE READ N CONJUNC ON W H KEY SHEE S

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TRIAL PIT LOG

ATK-P-003

CLIENT	OSBORNE					Sheet	1 of 1
SITE	M25 JUNCTION 28 IMPROVEMENTS					Scale	1 : 25
Start Date	12 July 2019	Easting	556366				
End Date	12 July 2019	Northing	192661	Ground level	40.25mOD	Depth	2.90 m

water record	sample/test no/type	sample/test result	sample/test depth (m)	description	depth (m)	level (m)	legend
	1ES	Vo 0 0	0 00- 0 20	Grass over firm brown slightly sandy gravelly CLAY with a low subangular concrete cobble content and rare pockets of orangish brown and white fine sand (up to 20mm) Gravel is angular to rounded fine to coarse sandstone chalk flint and brick Frequent fragments of ceramic tile (up to 50mm) and plastic (up to 60mm) Rare fragments of glass (up to 40mm) wood (up to 40mm) and metal (up to 70mm) Frequent rootlets (MADE GROUND)			
	1COMP		0 00- 0 50		0 50	39 75	
				0 50m Thin bed of partially decomposed organic material			
	3ES	Vo 0 0	0 80- 0 90	Firm becoming stiff orangish brown locally mottled grey slightly sandy slightly gravelly CLAY with rare pockets of orangish brown fine sand (up to 40mm) Gravel is angular to rounded fine to coarse sandstone flint chalk and brick Rare rootlets (MADE GROUND)			
	2COMP		0 80- 1 30		1 30	38 95	
				Stiff orangish brown mottled black slightly sandy slightly gravelly CLAY with rare pockets of orangish brown fine sand (up to 30mm) Gravel is subangular to rounded fine and medium sandstone flint and brick Rare fragments of metal (150mm) Rare rootlets (MADE GROUND)			
	3COMP		1 60- 1 90		1 90	38 35	
				Stiff greenish grey mottled orangish brown slightly silty locally sandy slightly gravelly CLAY with rare pockets of light brown medium sand (up to 100mm) Gravel is subangular to rounded fine and medium sandstone flint and brick Frequent fragments of wood (up to 150mm) Rare fragments of ceramic tile (30mm) Frequent rootlets (MADE GROUND)			
	4COMP		2 50- 2 90		2 90	37 35	
Dry				Trial pit completed at 2 90m			

Notes

Tr a p t excavated by JCB 3CX mechan ca excavator.
Groundwater not encountered.
Tr a p t s des rema ned stab e and vert ca .
Tr a p t d mens ons 2.20x1.20x2.90m.
On comp et on, the tr a p t was backf ed w th mater a s ar s ng.
O factory observat on m ted by use of RPE.
Co ord nates and eve s prov ded by the C ent.

Sketch of Foundat on Not to sca e. A d mens ons n metres.

EXPLORA ORY HOLE LOGS SHOULD BE READ N CONJUNC ON W H KEY SHEE S

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TRIAL PIT LOG

ATK-P-004

CLIENT	OSBORNE					Sheet	1 of 1
SITE	M25 JUNCTION 28 IMPROVEMENTS					Scale	1 : 25
Start Date	12 July 2019	Easting	556396				
End Date	12 July 2019	Northing	192692	Ground level	41.80mOD	Depth	3.00 m

water record	sample/test no/type	sample/test result	sample/test depth (m)	description	depth (m)	level (m)	legend
	1ES	Vo 0 0	0 00- 0 20	Grass over firm brown slightly sandy gravelly CLAY with a low subangular concrete cobble content Gravel is angular to rounded fine to coarse sandstone chalk flint and brick Frequent fragments of ceramic tile (up to 40mm) and plastic (up to 60mm) Rare fragments of glass (up to 40mm) and aluminium foil fragments (up to 30mm) Frequent rootlets (MADE GROUND)			
	1COMP		0 00- 0 30	0 20m Blue plastic ribbon (1 4m)	0 30	41 50	
	2COMP		0 50- 0 80	Firm orangish brown sandy gravelly CLAY with low subangular concrete cobble content and frequent pockets of medium light brown sand (up to 20mm) and white fine sand (up to 10mm) Gravel is angular to rounded fine to coarse sandstone flint chalk and brick Abundant black decomposed organic staining Frequent fragments of ceramic tile (up to 30mm) and plastic (50mm) Rare fragments of glass (up to 30mm) wood (up to 30mm) metal (100mm) and black ribbon (up to 120mm) Frequent rootlets (MADE GROUND)			
	2ES	Vo 0 0	0 60- 0 80		1 20	40 60	
	3ES		1 20	Stiff orangish brown mottled black slightly sandy slightly gravelly CLAY with rare rootlets Gravel is subangular to rounded fine sandstone flint chalk and brick (MADE GROUND)			
				1 20m Possible asbestos containing material (3 ES)			
	3COMP		1 70- 2 00		2 20	39 60	
	4COMP		2 50- 3 00	Stiff greenish grey mottled orangish brown slightly silty slightly gravelly CLAY with rare pockets of organic material (up to 60mm) and greenish grey fine sand (up to 80mm) Gravel is subangular to rounded fine and medium sandstone flint and brick Frequent fragments of wood (up to 240mm) Rare fragments of ceramic tile (30mm) Rare rootlets (MADE GROUND)			
Dry				Trial pit completed at 3 00m	3 00	38 80	

Notes

Tr a p t excavated by JCB 3CX mechan ca excavator.
Groundwater not encountered.
Tr a p t s des rema ned stab e and vert ca .
Tr a p t d mens ons 2.90x1.20x3.00m.
On comp et on, the tr a p t was backf ed w th mater a s ar s ng.
O factory observat on m ted by use of RPE.
Co ord nates and eve s prov ded by the C ent.

Sketch of Foundat on Not to sca e. A d mens ons n metres.

EXPLORA ORY HOLE LOGS SHOULD BE READ N CONJUNC ON W H KEY SHEE S

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TRIAL PIT LOG

ATK-P-005

CLIENT	OSBORNE					Sheet	1 of 1
SITE	M25 JUNCTION 28 IMPROVEMENTS					Scale	1 : 25
Start Date	11 July 2019	Easting	556419				
End Date	11 July 2019	Northing	192688	Ground level	42.95mOD	Depth	3.00 m

water record	sample/test no/type	sample/test result	sample/test depth (m)	description	depth (m)	level (m)	legend
	1ES	Vo 0 0	0 00- 0 20	Firm brown sandy gravelly CLAY with a low angular brick cobble content Gravel is subangular to rounded fine to coarse brick concrete chalk and flint Frequent to abundant fragments of multicoloured ceramic tile glass wood plastic and metal (up to 150mm) Frequent rootlets (MADE GROUND)			
	1COMP		0 00- 0 40				
					0 60	42 35	
	2COMP		0 60- 0 70	Firm dark brown slightly sandy slightly gravelly CLAY with frequent rootlets Gravel is subangular to rounded fine to coarse flint (MADE GROUND)			
	2ES	Vo 0 2	0 60- 1 00				
	3COMP		1 20- 1 60	1 20 - 1 30m Layer of brown gravelly sand on eastern side of trial pit only			
					1 60	41 35	
	4COMP		1 60- 2 00	Firm dark brown stained black slightly sandy slightly gravelly CLAY and frequent rootlets Gravel is subangular to rounded fine and medium flint Rare fragments of brick (up to 15mm) (MADE GROUND)			
					3 00	39 95	
Dry				Trial pit completed at 3 00m			

Notes

Tr a p t excavated by JCB 3CX mechan ca excavator.
Groundwater not encountered.
Tr a p t s des rema ned stab e and vert ca .
Tr a p t d mens ons 3.00x1.20x3.00m.
On comp et on, the tr a p t was backf ed w th mater a s ar s ng.
O factory observat on m ted by use of RPE.
Co ord nates and eve s prov ded by the C ent.

Sketch of Foundat on Not to sca e. A d mens ons n metres.

EXPLORA ORY HOLE LOGS SHOULD BE READ N CONJUNC ON W H KEY SHEE S

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TRIAL PIT LOG

ATK-P-006

CLIENT OSBORNE

SITE M25 JUNCTION 28 IMPROVEMENTS — Sheet 1 of 1

Start Date 10 July 2019 — Easting 556434 — Scale 1 : 25

End Date 10 July 2019 — Northing 192713 — Ground level 43.30mOD — Depth 3.00 m

water record	sample/test no/type	result	depth (m)	description	depth (m)	level (m)	legend
	1COMP		0 00- 0 50	Firm dark brown sandy gravelly CLAY with low angular brick cobble content Gravel is subangular to rounded fine to coarse brick concrete chalk and flint Frequent fragments of glass (up to 30mm) ceramic tiles (up to 75mm) and fragments of metal and plastic (up to 200mm) (MADE GROUND)			
	1ES	Vo 0 0	0 10- 0 20				
	2ES	Vo 0 0	0 30- 0 40				
	3ES	Vo 0 0	0 50- 0 60				
					0 60	42 70	
	2COMP		0 50- 1 00	Firm dark brown slightly gravelly slightly sandy CLAY Gravel is subangular to rounded fine to coarse flint Frequent fragments of metal and plastic (up to 150mm) (MADE GROUND)			
					1 00	42 30	
	4ES	Vo 0 2	1 00- 1 20	Firm orangish brown slightly sandy very gravelly becoming gravelly CLAY Gravel is subrounded to rounded fine to coarse flint Frequent fragments of brick and concrete (up to 150mm) Rare fragments of metal and plastic (up to 200mm) (MADE GROUND)			
	3COMP		1 20- 2 00				
				2 20 - 2 50m Frequent layers of black organic material (up to 150mm thick)	2 30	41 00	
	4COMP		2 30- 3 00	Stiff dark brown stained black slightly sandy CLAY with frequent rootlets			
2 80m Seepage							
					3 00	40 30	
Damp				Trial pit completed at 3 00m			

Notes

Tr a p t excavated by JCB 3CX mechan ca excavator.
Groundwater seepage at 2.80m, p t dry on comp et on.
Tr a p t s des rema ned stab e and vert ca .
Tr a p t d mens ons 3.00x1.20x3.00m.
On comp et on, the tr a p t was backf ed w th mater a s ar s ng.
O factory observat on m ted by use of RPE.
Co ord nates and eve s prov ded by the C ent.

Sketch of Foundat on Not to sca e. A d mens ons n metres.

EXPLORA ORY HOLE LOGS SHOULD BE READ N CONJUNC ON W H KEY SHEE S

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TRIAL PIT LOG

ATK-P-007

CLIENT	OSBORNE					Sheet	1 of 1
SITE	M25 JUNCTION 28 IMPROVEMENTS					Scale	1 : 25
Start Date	10 July 2019	Easting	556450				
End Date	10 July 2019	Northing	192686	Ground level	43.75mOD	Depth	3.00 m

water record	sample/test no/type	result	depth (m)	description	depth (m)	level (m)	legend
	1COMP		0 00- 0 30	Firm dark brown sandy gravelly CLAY with a medium angular concrete cobble content and abundant rootlets Gravel is subangular to rounded fine to coarse flint Rare metal fragments (up to 100mm) (MADE GROUND)			
	1ES	Vo 0 0	0 20- 0 30		0 30	43 45	
	2COMP		0 30- 1 00	Stiff dark brown slightly gravelly sandy CLAY Gravel is subangular to rounded fine to coarse flint (MADE GROUND)			
	2ES	Vo 0 0	0 40- 0 50	0 30 - 0 80m Rare rootlets			
					1 00	42 75	
	3COMP		1 00- 1 80	Stiff dark brown stained black slightly sandy gravelly CLAY Gravel is subangular to rounded fine to coarse flint (MADE GROUND)			
	3ES	Vo 0 7	1 20- 1 40				
					1 80	41 95	
1 80m Seepage	4COMP		1 80- 3 00	Stiff orangish brown stained black slightly sandy slightly gravelly CLAY with frequent roots (15mm diam) and rootlets Gravel is subangular to rounded fine and medium flint and brick (MADE GROUND)			
				1 80 - 2 20m Very gravelly Gravel is subangular to rounded fine to coarse flint			
	4ES		2 50- 3 00				
					3 00	40 75	
Dry				Trial pit completed at 3 00m			

Notes

Tr a p t excavated by JCB 3CX mechan ca excavator.
Groundwater seepage at 1.80m, p t dry on comp et on.
Tr a p t s des rema ned stab e and vert ca .
Tr a p t d mens ons 3.00x1.20x3.00m.
On comp et on, the tr a p t was backf ed w th mater a s ar s ng.
O factory observat on m ted by use of RPE.
Co ord nates and eve s prov ded by the C ent.

Sketch of Foundat on Not to sca e. A d mens ons n metres.

EXPLORA ORY HOLE LOGS SHOULD BE READ N CONJUNC ON W H KEY SHEE S

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TRIAL PIT LOG

ATK-P-008

CLIENT	OSBORNE					Sheet	1 of 1
SITE	M25 JUNCTION 28 IMPROVEMENTS					Scale	1 : 25
Start Date	11 July 2019	Easting	556407				
End Date	11 July 2019	Northing	192673	Ground level	42.30mOD	Depth	3.00 m

water record	sample/test no/type	sample/test result	sample/test depth (m)	description	depth (m)	level (m)	legend
	1ES	Vo 0 0	0 00- 0 20	Firm dark brown sandy gravelly CLAY with a low angular concrete cobble content and rootlets Gravel is subangular to rounded fine to coarse brick concrete flint and limestone Frequent ceramic tiles glass wood plastic and metal fragments (up to 100mm) (MADE GROUND)			
	1COMP		0 00- 0 60		0 40	41 90	
				Firm dark brown slightly sandy slightly gravelly CLAY with frequent rootlets Gravel is subangular to rounded fine to coarse flint and limestone (MADE GROUND)			
	2ES	Vo 0 0	0 60- 0 80				
	2COMP		0 60- 1 00		1 10	41 20	
				Firm dark brown stained black slightly gravelly slightly sandy CLAY with frequent rootlets Gravel is subangular to rounded fine to coarse flint and rare ceramic (MADE GROUND)			
	3COMP		1 50- 2 50				
	4COMP		2 50- 3 00				
2 80m Seepage Damp					3 00	39 30	
				Trial pit completed at 3 00m			

Notes

Tr a p t excavated by JCB 3CX mechan ca excavator.
Groundwater seepage at 2.80m, p t dry on comp et on.
Tr a p t s des rema ned stab e and vert ca .
Tr a p t d mens ons 3.00x1.20x3.00m.
On comp et on, the tr a p t was backf ed w th mater a s ar s ng.
O factory observat on m ted by use of RPE.
Co ord nates and eve s prov ded by the C ent.

Sketch of Foundat on Not to sca e. A d mens ons n metres.

EXPLORA ORY HOLE LOGS SHOULD BE READ N CONJUNC ON W H KEY SHEE S

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TRIAL PIT LOG

ATK-P-009

CLIENT	OSBORNE					Sheet	1 of 1
SITE	M25 JUNCTION 28 IMPROVEMENTS					Scale	1 : 25
Start Date	15 July 2019	Easting	556387				
End Date	15 July 2019	Northing	192656	Ground level	41.40mOD	Depth	3.10 m

water record	sample/test no/type	sample/test result	sample/test depth (m)	description	depth (m)	level (m)	legend
	1ES	Vo 0 0	0 00- 0 20	Grass over firm brown slightly sandy gravelly CLAY with a low subangular concrete cobble content Gravel is angular to rounded fine to coarse sandstone chalk flint and brick Frequent fragments of ceramic tile (up to 40mm) Rare fragments of glass (up to 50mm) and plastic (up to 40mm) Frequent rootlets (MADE GROUND)			
	1COMP		0 00- 0 40		0 40	41 00	
	2COMP		0 60- 1 10	Firm orangish brown stained black sandy gravelly locally organic CLAY with a low subangular concrete cobble content Gravel is angular to rounded fine to coarse sandstone flint chalk brick and concrete Frequent fragments of ceramic tile (up 60mm) and plastic (40mm) Rare fragments of wood (up to 200mm) and metal (60mm) Frequent rootlets (MADE GROUND)			
	2ES	Vo 0 0	0 80- 0 90		1 10	40 30	
	3COMP		1 10- 1 60	Stiff orangish brown mottled black slightly sandy slightly gravelly CLAY with rare rootlets Gravel is subangular to rounded fine sandstone flint chalk and brick Rare fragments of wood (up to 250mm) and shell (up to 20mm) (MADE GROUND)			
					2 10	39 30	
	4COMP		2 50- 3 10	Stiff greenish grey mottled orangish brown slightly gravelly CLAY with frequent pockets of soft peaty clay (up to 300mm) and rare pockets of light brown silty clay (up to 30mm) Gravel is subangular to rounded fine and medium sandstone flint and brick Rare fragments of wood (up to 250mm) ceramic tile (30mm) and shell (up to 30mm) Rare rootlets (MADE GROUND)			
Dry				Trial pit completed at 3 10m	3 10	38 30	

Notes

Tr a p t excavated by JCB 3CX mechan ca excavator.
Groundwater not encountered.
Tr a p t s des rema ned stab e and vert ca .
Tr a p t d mens ons 2.40x1.10x3.10m.
On comp et on, the tr a p t was backf ed w th mater a s ar s ng.
O factory observat on m ted by use of RPE.
Co ord nates and eve s prov ded by the C ent.

Sketch of Foundat on Not to sca e. A d mens ons n metres.

EXPLORA ORY HOLE LOGS SHOULD BE READ N CONJUNC ON W H KEY SHEE S

AGS

CONTRACT	CHECKED
35403	

Geotechnical Engineering Ltd el 01452 527743 35403 PRE G GPJ R ALJH GPJ GEO ECH2 GLB 06/09/2019 15 29 04 DP DM

Geotechnical Engineering Limited

TRIAL PIT LOG

ATK-P-010

CLIENT	OSBORNE					Sheet	1 of 1
SITE	M25 JUNCTION 28 IMPROVEMENTS					Scale	1 : 25
Start Date	15 July 2019	Easting	556374				
End Date	15 July 2019	Northing	192676	Ground level	40.85mOD	Depth	3.00 m

water record	sample/test no/type	result	depth (m)	description	depth (m)	level (m)	legend
	1AES		0 00	Grass over firm brown slightly sandy gravelly CLAY with a low subangular concrete cobble content Gravel is angular to rounded fine to coarse sandstone chalk flint and brick Rare pockets of orangish brown fine sand (20mm) Frequent fragments of ceramic tile (up to 60mm) and plastic (up to 50mm) rare fragments of glass (up to 50mm) wood (up to 40mm) and metal (up to 15mm) Frequent rootlets (MADE GROUND) 0 00m Possible ACM (1A ES) 0 20m Rubber mat (200x200mm)			
	1ES	Vo 0 0	0 00- 0 20				
	1COMP		0 00- 0 30		0 30	40 55	
	2COMP		0 50- 1 00				
	2ES	Vo 0 0	0 80- 0 90	Firm orangish brown stained black sandy gravelly locally organic CLAY with a low subangular concrete cobble content Gravel is angular to rounded fine to coarse sandstone flint chalk and brick Frequent pockets of light brown medium sand (up to 30mm) and white fine sand Frequent fragments of ceramic tile (up to 50mm) and plastic (40mm) Rare fragments of glass (up to 30mm) wood (up to 40mm) metal (70mm) Frequent rootlets (MADE GROUND)	1 00	39 85	
	3COMP		1 20- 1 70	Stiff orangish brown mottled black slightly sandy slightly gravelly CLAY with rare pockets of orangish brown fine sand (up to 40mm) Gravel is subangular to rounded fine sandstone flint chalk and brick Rare fragments of glass (up to 40mm) Rare rootlets (MADE GROUND)			
					2 10	38 75	
	4COMP		2 50- 3 00	Stiff greenish grey mottled orangish brown slightly gravelly silty CLAY with rare pockets of orangish brown fine sand (up to 70mm) and white fine sand (up to 10mm) Gravel is subangular to rounded fine and medium sandstone flint and brick Frequent fragments of wood (up to 240mm) Rare fragments of ceramic tile (30mm) Rare rootlets (MADE GROUND)			
					3 00	37 85	
Dry				Trial pit completed at 3 00m			

Notes

Tr a p t excavated by JCB 3CX mechan ca excavator.
Groundwater not encountered.
Tr a p t s des rema ned stab e and vert ca .
Tr a p t d mens ons 2.80x1.10x3.00m.
On comp et on, the tr a p t was backf ed w th mater a s ar s ng.
O factory observat on m ted by use of RPE.
Co ord nates and eve s prov ded by the C ent.

Sketch of Foundat on Not to sca e. A d mens ons n metres.

EXPLORA ORY HOLE LOGS SHOULD BE READ N CONJUNC ON W H KEY SHEE S

AGS

CONTRACT	CHECKED
35403	

Geotechnical Engineering Ltd el 01452 527743 35403 PRE G GPJ R ALJH GPJ GEO ECH2 GLB 06/09/2019 15 29 05 DP DM

APPENDIX B

CHEMICAL ANALYSES

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Analytical Report Number : 19-47599

Project / Site name:	M25 Junction 28	**Samples received on:**	26/06/2019
Your job number:	35403	**Samples instructed on:**	27/06/2019
Your order number:		**Analysis completed by:**	04/07/2019
Report Issue Number:	1	**Report issued on:**	04/07/2019
Samples Analysed:	18 soil samples		

Signed: [redacted]

[redacted]
Senior Quality Specialist
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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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 19-47599

Project / Site name: M25 Junction 28

Lab Sample Number				1255537	1255538	1255539	1255540	1255541
Sample Reference				HP01	HP01	HP01	HP02	HP02
Sample Number				1	2	3	1	2
Depth (m)				0.20-0.40	0.50-0.70	1.00-1.20	0 20-0.40	0.50-0.70
Date Sampled				26/06/2019	26/06/2019	26/06/2019	26/06/2019	26/06/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Amosite	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	< 0.001	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	< 0.001	-	-	-	-

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Analytical Report Number: 19-47599

Project / Site name: M25 Junction 28

Lab Sample Number				1255542	1255543	1255544	1255545	1255546
Sample Reference				HP02	HP03	HP03	HP03	HP04
Sample Number				3	1	2	3	1
Depth (m)				1.00-1.20	0.20-0.40	0.50-0.70	0.90-1.00	0.20-0.40
Date Sampled				26/06/2019	26/06/2019	26/06/2019	26/06/2019	26/06/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
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	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-

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Analytical Report Number: 19-47599

Project / Site name: M25 Junction 28

Lab Sample Number				1255547	1255548	1255549	1255550	1255551
Sample Reference				HP04	HP04	HP05	HP05	HP05
Sample Number				2	3	1	2	3
Depth (m)				0.50-0.70	0.90-1.00	0.20-0.40	0 50-0.70	1.00-1.20
Date Sampled				26/06/2019	26/06/2019	26/06/2019	26/06/2019	26/06/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
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	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-

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Analytical Report Number: 19-47599

Project / Site name: M25 Junction 28

Lab Sample Number				1255552	1255553	1255554		
Sample Reference				HP06	HP06	HP06		
Sample Number				1	1	1		
Depth (m)				0.20-0.40	0.50-0.70	1.00-1.20		
Date Sampled				26/06/2019	26/06/2019	26/06/2019		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
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	-	-	-		

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Analytical Report Number: 19-47599
Project / Site name: M25 Junction 28
Your Order No:

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 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
1255537	HP01	0.20-0.40	132	Loose Fibres	**Amosite**	< 0.001	**< 0.001**

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

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Analytical Report Number : 19-47599

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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
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
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.

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The results included within the report are representative of the samples submitted for analysis.

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Analytical Report Number : 19-49761

Project / Site name:	M25 Junction 28	**Samples received on:**	11/07/2019
Your job number:	35403	**Samples instructed on:**	12/07/2019
Your order number:	35403-DO	**Analysis completed by:**	19/07/2019
Report Issue Number:	1	**Report issued on:**	19/07/2019
Samples Analysed:	3 leachate samples - 7 soil samples		

Signed: [redacted]

[redacted]
Head of Reporting Section
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.

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 19-49761

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

	Lab Sample Number				1266508	1266509	1266510	1266511	1266512
	Sample Reference				ATK-P-006	ATK-P-006	ATK-P-006	ATK-P-006	ATK-P-006
	Sample Number				1	1	2	2	3
	Depth (m)				0.00-0.50	0 30-0.40	0.50-0.60	0.50-1.00	1 00-1 20
	Date Sampled				10/07/2019	10/07/2019	10/07/2019	10/07/2019	10/07/2019
	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	25	< 0.1	< 0.1
#	Moisture Content	%	N/A	NONE	6.4	7.0	14	17	11
#	Total mass of sample received	kg	0.001	NONE	2.0	2.0	2 0	2.0	2.0
#	Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
	General Inorganics								
#	pH - Automated	pH Units	N/A	MCERTS	8.4	9.0	9.1	7.6	7.9
#	Electrical Conductivity	µS/cm	10	ISO 17025	2300	2300	1200	1000	400
#	Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
#	Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
#	Total Sulphate as SO_4	mg/kg	50	MCERTS	25000	18000	6300	2100	410
#	Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0 00125	MCERTS	2.0	2.2	2.1	0 86	0.16
#	Ammonia as NH_3	mg/kg	0.5	MCERTS	< 0.5	< 0.5	6.1	20	< 0.5
#	Ammonium as NH_4	mg/kg	0.5	MCERTS	< 0.5	< 0.5	6 5	22	< 0.5
#	Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	0.019	0.016	0 015	0.022	0.0033
#	Total Organic Carbon (TOC)	%	0.1	MCERTS	1.9	1.6	1 5	2.2	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 05	< 0.05	< 0.05	< 0 05	< 0.05
#	Acenaphthylene	mg/kg	0.05	MCERTS	< 0 05	< 0.05	< 0.05	< 0 05	< 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 51	2.5	< 0.05	< 0 05	< 0.05
#	Anthracene	mg/kg	0.05	MCERTS	0.15	0.67	< 0.05	< 0 05	< 0.05
#	Fluoranthene	mg/kg	0.05	MCERTS	1.0	4.3	0.48	0 31	< 0.05
#	Pyrene	mg/kg	0.05	MCERTS	0.96	3.8	0.45	0 27	< 0.05
#	Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.70	2.5	0.35	< 0 05	< 0.05
#	Chrysene	mg/kg	0.05	MCERTS	0 55	1.9	0.30	< 0 05	< 0.05
#	Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0 64	2.3	0.47	< 0 05	< 0.05
#	Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0 54	1.8	0.21	< 0 05	< 0.05
#	Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.70	2.4	0.43	< 0 05	< 0.05
#	Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.40	1.4	0.26	< 0 05	< 0.05
#	Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0 05	< 0.05	< 0.05	< 0 05	< 0.05
#	Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.47	1.6	0.32	< 0 05	< 0.05
	Total PAH								
#	Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	6 64	25.1	3.27	< 0 80	< 0.80

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 19-49761

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1266508	1266509	1266510	1266511	1266512
Sample Reference				ATK-P-006	ATK-P-006	ATK-P-006	ATK-P-006	ATK-P-006
Sample Number				1	1	2	2	3
Depth (m)				0.00-0.50	0 30-0.40	0.50-0.60	0.50-1.00	1 00-1 20
Date Sampled				10/07/2019	10/07/2019	10/07/2019	10/07/2019	10/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
# Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	12	13	12	8.3	17
# Barium (aqua regia extractable)	mg/kg	1	MCERTS	150	140	78	87	42
# Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0 84	0.82	0.74	0 86	0.90
# Boron (water soluble)	mg/kg	0.2	MCERTS	8.2	3.2	3 5	4.0	1.4
# Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.3	0.3	< 0.2	< 0.2	< 0.2
# Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4 0	< 4.0	< 4.0
# Chromium (aqua regia extractable)	mg/kg	1	MCERTS	29	29	36	43	52
# Copper (aqua regia extractable)	mg/kg	1	MCERTS	86	59	41	44	19
# Lead (aqua regia extractable)	mg/kg	1	MCERTS	98	97	47	32	14
# Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	0.4	0.4	< 0.3	< 0.3
# Nickel (aqua regia extractable)	mg/kg	1	MCERTS	19	18	22	18	22
# Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1 0	< 1.0	< 1.0
# Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	39	40	59	62	67
# Zinc (aqua regia extractable)	mg/kg	1	MCERTS	170	140	85	75	41
Monoaromatics & Oxygenates								
# Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1 0	< 1.0	< 1.0
# 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	mg/kg	0.001	MCERTS	< 0.001	< 0 001	< 0.001	< 0.001	< 0 001
# TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0 001	< 0.001	< 0.001	< 0 001
# TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0 001	< 0.001	< 0.001	< 0 001
# TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1 0	< 1.0	< 1.0
# TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	2.4	< 2 0	5.8	< 2.0
# TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	18	12	< 8.0	20	< 8.0
# TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	100	96	92	140	< 8.0
# **TPH-CWG - Aliphatic (EC5 - EC35)**	mg/kg	10	MCERTS	120	110	97	160	< 10
# TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 0 001	< 0.001	< 0.001	< 0 001
# TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0 001	< 0.001	< 0.001	< 0 001
# TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0 001	< 0.001	< 0.001	< 0 001
# TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1 0	< 1.0	< 1.0
# TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	6.0	< 2 0	3.3	< 2.0
# TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	26	39	17	13	< 10
# TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	120	190	160	72	< 10
# **TPH-CWG - Aromatic (EC5 - EC35)**	mg/kg	10	MCERTS	150	240	180	88	< 10

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Analytical Report Number: 19-49761

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1266508	1266509	1266510	1266511	1266512
Sample Reference				ATK-P-006	ATK-P-006	ATK-P-006	ATK-P-006	ATK-P-006
Sample Number				1	1	2	2	3
Depth (m)				0.00-0.50	0 30-0.40	0.50-0.60	0.50-1.00	1 00-1 20
Date Sampled				10/07/2019	10/07/2019	10/07/2019	10/07/2019	10/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
# Chloromethane	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	< 1.0	-
# Chloroethane	µg/kg	1	NONE	< 1.0	-	< 1.0	< 1.0	-
# Bromomethane	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	< 1.0	-
# Vinyl Chloride	µg/kg	1	NONE	< 1.0	-	< 1.0	< 1.0	-
# Trichlorofluoromethane	µg/kg	1	NONE	< 1.0	-	< 1.0	< 1.0	-
# 1,1-Dichloroethene	µg/kg	1	NONE	< 1.0	-	< 1.0	< 1.0	-
# 1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	< 1.0	-
# Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
# MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
# 1,1-Dichloroethane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
# 2,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
# Trichloromethane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
# 1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
# 1,2-Dichloroethane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
# 1,1-Dichloropropene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
# Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	-	< 1.0	< 1.0	-
# Benzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
# Tetrachloromethane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
# 1,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
# Trichloroethene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
# Dibromomethane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
# Bromodichloromethane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
# Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	< 1.0	-
# Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	< 1.0	-
# Toluene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
# 1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
# 1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	< 1.0	-
# Dibromochloromethane	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	< 1.0	-
# Tetrachloroethene	µg/kg	1	NONE	< 1.0	-	< 1.0	< 1.0	-
# 1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	< 1.0	-
# Chlorobenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
# 1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
# Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
# p & m-Xylene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
# Styrene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
# Tribromomethane	µg/kg	1	NONE	< 1.0	-	< 1.0	< 1.0	-
# o-Xylene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
# 1 1 2 2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
# Isopropylbenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
# Bromobenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
# n-Propylbenzene	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	< 1.0	-
# 2-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
# 4-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
# 1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	< 1.0	-
# tert-Butylbenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
# 1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	< 1.0	-
# sec-Butylbenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
# 1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	< 1.0	-
# p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	< 1.0	-
# 1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
# 1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
# Butylbenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
# 1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	< 1.0	-
# 1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
# Hexachlorobutadiene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
# 1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	< 1.0	-

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Analytical Report Number: 19-49761

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1266508	1266509	1266510	1266511	1266512
Sample Reference				ATK-P-006	ATK-P-006	ATK-P-006	ATK-P-006	ATK-P-006
Sample Number				1	1	2	2	3
Depth (m)				0.00-0.50	0 30-0.40	0.50-0.60	0.50-1.00	1 00-1 20
Date Sampled				10/07/2019	10/07/2019	10/07/2019	10/07/2019	10/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
# Aniline	mg/kg	0.1	NONE	< 0.1	-	< 0.1	< 0.1	-
# Phenol	mg/kg	0.2	ISO 17025	< 0.2	-	< 0.2	< 0.2	-
# 2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	< 0.1	-
# Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	< 0.2	-
# 1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	< 0.2	-
# 1 2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	< 0.1	-
# 1 4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	< 0.2	-
# Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	< 0.1	-
# 2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	< 0.3	-
# Hexachloroethane	mg/kg	0.05	MCERTS	< 0 05	-	< 0.05	< 0 05	-
# Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	< 0.3	-
# 4-Methylphenol	mg/kg	0.2	NONE	< 0.2	-	< 0.2	< 0.2	-
# Isophorone	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	< 0.2	-
# 2-Nitrophenol	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	< 0.3	-
# 2 4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	< 0.3	-
# Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	< 0.3	-
# 1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	< 0.3	-
# Naphthalene	mg/kg	0.05	MCERTS	< 0 05	-	< 0.05	< 0 05	-
# 2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	< 0.3	-
# 4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	-	< 0.1	< 0.1	-
# Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	< 0.1	-
# 4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	-	< 0.1	< 0.1	-
# 2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	< 0.1	-
# 2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	< 0.2	-
# 2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	-	< 0.1	< 0.1	-
# 2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	< 0.1	-
# Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	< 0.1	-
# 2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	< 0.1	-
# Acenaphthylene	mg/kg	0.05	MCERTS	< 0 05	-	< 0.05	< 0 05	-
# Acenaphthene	mg/kg	0.05	MCERTS	< 0 05	-	< 0.05	< 0 05	-
# 2 4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	< 0.2	-
# Dibenzofuran	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	< 0.2	-
# 4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0.3	-	< 0.3	< 0.3	-
# Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	< 0.2	-
# 4-Nitroaniline	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	< 0.2	-
# Fluorene	mg/kg	0.05	MCERTS	< 0 05	-	< 0.05	< 0 05	-
# Azobenzene	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	< 0.3	-
# Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	< 0.2	-
# Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	< 0.3	-
# Phenanthrene	mg/kg	0.05	MCERTS	0 51	-	< 0.05	< 0 05	-
# Anthracene	mg/kg	0.05	MCERTS	0.15	-	< 0.05	< 0 05	-
# Carbazole	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	< 0.3	-
# Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	< 0.2	-
# Anthraquinone	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	< 0.3	-
# Fluoranthene	mg/kg	0.05	MCERTS	1.0	-	0.48	0 31	-
# Pyrene	mg/kg	0.05	MCERTS	0.96	-	0.45	0 27	-
# Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0.3	-	< 0.3	< 0.3	-
# Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.70	-	0.35	< 0 05	-
# Chrysene	mg/kg	0.05	MCERTS	0 55	-	0.30	< 0 05	-
# Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0 64	-	0.47	< 0 05	-
# Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0 54	-	0.21	< 0 05	-
# Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.70	-	0.43	< 0 05	-
# Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.40	-	0.26	< 0 05	-
# Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0 05	-	< 0.05	< 0 05	-
# Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.47	-	0.32	< 0 05	-

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Analytical Report Number: 19-49761

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1266508	1266509	1266510	1266511	1266512
Sample Reference				ATK-P-006	ATK-P-006	ATK-P-006	ATK-P-006	ATK-P-006
Sample Number				1	1	2	2	3
Depth (m)				0.00-0.50	0 30-0.40	0.50-0.60	0.50-1.00	1 00-1 20
Date Sampled				10/07/2019	10/07/2019	10/07/2019	10/07/2019	10/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs								
# PCB Congener 077	mg/kg	0.001	NONE	< 0.001	-	< 0.001	< 0.001	-
# PCB Congener 081	mg/kg	0.001	NONE	< 0.001	-	< 0.001	< 0.001	-
# PCB Congener 105	mg/kg	0.001	NONE	< 0.001	-	< 0.001	< 0.001	-
# PCB Congener 114	mg/kg	0.001	NONE	< 0.001	-	< 0.001	< 0.001	-
# PCB Congener 118	mg/kg	0.001	NONE	< 0.001	-	< 0.001	< 0.001	-
# PCB Congener 123	mg/kg	0.001	NONE	< 0.001	-	< 0.001	< 0.001	-
# PCB Congener 126	mg/kg	0.001	NONE	< 0.001	-	< 0.001	< 0.001	-
# PCB Congener 156	mg/kg	0.001	NONE	< 0.001	-	< 0.001	< 0.001	-
# PCB Congener 157	mg/kg	0.001	NONE	< 0.001	-	< 0.001	< 0.001	-
# PCB Congener 167	mg/kg	0.001	NONE	< 0.001	-	< 0.001	< 0.001	-
# PCB Congener 169	mg/kg	0.001	NONE	< 0.001	-	< 0.001	< 0.001	-
# PCB Congener 189	mg/kg	0.001	NONE	< 0.001	-	< 0.001	< 0.001	-
# Total PCBs	mg/kg	0.012	NONE	< 0.012	-	< 0.012	< 0.012	-
Organochlorine Pesticides (OCP)								
# Aldrin	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# BHC-alpha (benzene hexachloride)	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# BHC-beta	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# BHC-delta	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# BHC-gamma (Lindane, gamma HCH)	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Chlordane-cis	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Chlordane-trans	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Chlorothalonil	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# DDD-o,p'	µg/kg	1	NONE	4.4	-	< 1.0	< 1.0	-
# DDD-p,p'	µg/kg	1	NONE	15	-	2.4	< 1.0	-
# DDE-o, p'	µg/kg	1	NONE	< 1.0	-	< 1.0	< 1.0	-
# DDE-p,p'	µg/kg	1	NONE	5.8	-	< 1.0	< 1.0	-
# DDT-o,p'	µg/kg	1	NONE	< 1.0	-	< 1.0	< 1.0	-
# DDT-p,p'	µg/kg	1	NONE	1.0	-	< 1.0	< 1.0	-
# Dichlorobenzonitrile, 2,6-	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Dieldrin	µg/kg	10	NONE	15	-	< 10	< 10	-
# Endosulfan I (alpha isomer)	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Endosulfan II (beta isomer)	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Endosulfan sulfate	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Endrin	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Endrin aldehyde	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Endrin ketone	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Heptachlor	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Heptachlor exo-epoxide	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Hexachlorobenzene	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Hexachlorobutadiene	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Isodrin	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Methoxychlor, p,p'-	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Pentachlorobenzene	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Tecnazene	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Tetrachlorobenzene, 1,2,4,5-	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Trichlorobenzene, 1,2,3-	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Trichlorobenzene, 1,3,5-	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Trifluralin	µg/kg	10	NONE	< 10	-	< 10	< 10	-

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Analytical Report Number: 19-49761

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1266508	1266509	1266510	1266511	1266512
Sample Reference				ATK-P-006	ATK-P-006	ATK-P-006	ATK-P-006	ATK-P-006
Sample Number				1	1	2	2	3
Depth (m)				0.00-0.50	0 30-0.40	0.50-0.60	0.50-1.00	1 00-1 20
Date Sampled				10/07/2019	10/07/2019	10/07/2019	10/07/2019	10/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Organophosphorus Pesticides (OPP)								
# Azinphos-ethyl	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Azinphos-methyl	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Carbophenothion	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Chlorfenvinphos (mixture of z and e isomers)	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Chlorpyrifos	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Demeton-O	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Demeton-S	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Diazinon	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Dichlorvos	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Dimethoate	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Dimethylvinphos	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Ethion	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Etrimfos	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Fenitrothion	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Fenthion	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Malathion	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Methacrifos	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Mevinphos , E-	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Mevinphos, Z-	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Parathion	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Parathion-methyl	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Phorate	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Phosalone	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Phosphamidon I	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Pirimiphos-ethyl	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Pirimiphos-methyl	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Propetamphos	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Triazophos	µg/kg	10	NONE	< 10	-	< 10	< 10	-
Organonitrogen Pesticides (ONP)								
# Pendimethalin	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Propyzamide	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Triadimefon	µg/kg	10	NONE	< 10	-	< 10	< 10	-

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 19-49761

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1266508	1266509	1266510	1266511	1266512
Sample Reference				ATK-P-006	ATK-P-006	ATK-P-006	ATK-P-006	ATK-P-006
Sample Number				1	1	2	2	3
Depth (m)				0.00-0.50	0 30-0.40	0.50-0.60	0.50-1.00	1 00-1 20
Date Sampled				10/07/2019	10/07/2019	10/07/2019	10/07/2019	10/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Environmental Forensics								
Triazine Herbicides								
# Atrazine	mg/kg	0.1	NONE	< 0.10	-	< 0.10	< 0.10	-
# Simazine	mg/kg	0.1	NONE	< 0.10	-	< 0.10	< 0.10	-
# Prometryn	mg/kg	0.1	NONE	< 0.10	-	< 0.10	< 0.10	-
# Propazine	mg/kg	0.1	NONE	< 0.10	-	< 0.10	< 0.10	-
# Terbuthylazine	mg/kg	0.1	NONE	< 0.10	-	< 0.10	< 0.10	-
# Terbutryn	mg/kg	0.1	NONE	< 0.10	-	< 0.10	< 0.10	-
# Trietazine	mg/kg	0.1	NONE	< 0.10	-	< 0.10	< 0.10	-
# Cyanazine	mg/kg	0.1	NONE	< 0.10	-	< 0.10	< 0.10	-
Acid Herbicides								
# 2 4 5-T	µg/kg	20	NONE	< 20	-	< 20	< 20	-
# 2 4 5-TP	µg/kg	20	NONE	< 20	-	< 20	< 20	-
# 2,4-D	µg/kg	20	NONE	< 20	-	< 20	< 20	-
# 2,4-DB	µg/kg	20	NONE	< 20	-	< 20	< 20	-
# Dicamba	µg/kg	20	NONE	< 20	-	< 20	< 20	-
# Dichlorprop	µg/kg	20	NONE	< 20	-	< 20	< 20	-
# Dinoseb	µg/kg	20	NONE	< 20	-	< 20	< 20	-
# MCPA	µg/kg	20	NONE	< 20	-	< 20	< 20	-
# MCPB	µg/kg	20	NONE	< 20	-	< 20	< 20	-
# MCPP (Mecoprop)	µg/kg	20	NONE	< 20	-	< 20	< 20	-
# Picloram	µg/kg	20	NONE	< 20	-	< 20	< 20	-
Phenylurea herbicides								
# Isoproturon	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Chlortoluron	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Linuron	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Diuron	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Diflubenzuron	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Flumeturon	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Siduron	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Terbuthiuron	µg/kg	10	NONE	< 10	-	< 10	< 10	-
# Thidiazuron	µg/kg	10	NONE	< 10	-	< 10	< 10	-

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Analytical Report Number: 19-49761

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

	Lab Sample Number				1266513	1266514			
	Sample Reference				ATK-P-006	ATK-P-006			
	Sample Number				3	4			
	Depth (m)				1.20-2.00	2 30-3 00			
	Date Sampled				10/07/2019	10/07/2019			
	Time Taken				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	%	N/A	NONE	19	21			
#	Total mass of sample received	kg	0.001	NONE	2.0	2.0			
#	Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected			
	General Inorganics								
#	pH - Automated	pH Units	N/A	MCERTS	7.7	7.8			
#	Electrical Conductivity	µS/cm	10	ISO 17025	1500	1700			
#	Total Cyanide	mg/kg	1	MCERTS	< 1	< 1			
#	Free Cyanide	mg/kg	1	MCERTS	< 1	< 1			
#	Total Sulphate as SO_4	mg/kg	50	MCERTS	3600	3700			
#	Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0 00125	MCERTS	2.2	2.0			
#	Ammonia as NH_3	mg/kg	0.5	MCERTS	< 0.5	20			
#	Ammonium as NH_4	mg/kg	0.5	MCERTS	< 0.5	21			
#	Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	0 0027	0.017			
#	Total Organic Carbon (TOC)	%	0.1	MCERTS	0.3	1.7			
	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 05	< 0.05			
#	Anthracene	mg/kg	0.05	MCERTS	< 0 05	< 0.05			
#	Fluoranthene	mg/kg	0.05	MCERTS	< 0 05	< 0.05			
#	Pyrene	mg/kg	0.05	MCERTS	< 0 05	< 0.05			
#	Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0 05	< 0.05			
#	Chrysene	mg/kg	0.05	MCERTS	< 0 05	< 0.05			
#	Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0 05	< 0.05			
#	Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0 05	< 0.05			
#	Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0 05	< 0.05			
#	Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0 05	< 0.05			
#	Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0 05	< 0.05			
#	Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0 05	< 0.05			
	Total PAH								
#	Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0 80	< 0.80			

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Analytical Report Number: 19-49761

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1266513	1266514			
Sample Reference				ATK-P-006	ATK-P-006			
Sample Number				3	4			
Depth (m)				1.20-2.00	2 30-3 00			
Date Sampled				10/07/2019	10/07/2019			
Time Taken				None Supplied	None Supplied			
	Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
	Heavy Metals / Metalloids							
#	Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	11	13		
#	Barium (aqua regia extractable)	mg/kg	1	MCERTS	51	46		
#	Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.2	0.72		
#	Boron (water soluble)	mg/kg	0.2	MCERTS	1.2	3.1		
#	Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2		
#	Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0		
#	Chromium (aqua regia extractable)	mg/kg	1	MCERTS	55	38		
#	Copper (aqua regia extractable)	mg/kg	1	MCERTS	22	17		
#	Lead (aqua regia extractable)	mg/kg	1	MCERTS	12	24		
#	Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3		
#	Nickel (aqua regia extractable)	mg/kg	1	MCERTS	37	23		
#	Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0		
#	Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	72	60		
#	Zinc (aqua regia extractable)	mg/kg	1	MCERTS	53	58		
	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	mg/kg	0.001	MCERTS	< 0.001	< 0 001		
#	TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0 001		
#	TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0 001		
#	TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0		
#	TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	4.6		
#	TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	15		
#	TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	30		
#	**TPH-CWG - Aliphatic (EC5 - EC35)**	mg/kg	10	MCERTS	< 10	50		
#	TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 0 001		
#	TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0 001		
#	TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0 001		
#	TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0		
#	TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0		
#	TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	< 10		
#	TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	< 10		
#	**TPH-CWG - Aromatic (EC5 - EC35)**	mg/kg	10	MCERTS	< 10	< 10		

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Analytical Report Number: 19-49761

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1266513	1266514			
Sample Reference				ATK-P-006	ATK-P-006			
Sample Number				3	4			
Depth (m)				1.20-2.00	2 30-3 00			
Date Sampled				10/07/2019	10/07/2019			
Time Taken				None Supplied	None Supplied			
	Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
	VOCs							
#	Chloromethane	µg/kg	1	ISO 17025	< 1.0	< 1.0		
#	Chloroethane	µg/kg	1	NONE	< 1.0	< 1.0		
#	Bromomethane	µg/kg	1	ISO 17025	< 1.0	< 1.0		
#	Vinyl Chloride	µg/kg	1	NONE	< 1.0	< 1.0		
#	Trichlorofluoromethane	µg/kg	1	NONE	< 1.0	< 1.0		
#	1,1-Dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0		
#	1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1.0	< 1.0		
#	Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1.0	< 1.0		
#	MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0		
#	1,1-Dichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0		
#	2,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	< 1.0		
#	Trichloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0		
#	1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0		
#	1,2-Dichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0		
#	1,1-Dichloropropene	µg/kg	1	MCERTS	< 1.0	< 1.0		
#	Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0		
#	Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0		
#	Tetrachloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0		
#	1,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	< 1.0		
#	Trichloroethene	µg/kg	1	MCERTS	< 1.0	< 1.0		
#	Dibromomethane	µg/kg	1	MCERTS	< 1.0	< 1.0		
#	Bromodichloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0		
#	Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	< 1.0		
#	Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	< 1.0		
#	Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0		
#	1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0		
#	1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1.0	< 1.0		
#	Dibromochloromethane	µg/kg	1	ISO 17025	< 1.0	< 1.0		
#	Tetrachloroethene	µg/kg	1	NONE	< 1.0	< 1.0		
#	1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1.0	< 1.0		
#	Chlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0		
#	1,1,1,2-Tetrachloroethane	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		
#	Styrene	µg/kg	1	MCERTS	< 1.0	< 1.0		
#	Tribromomethane	µg/kg	1	NONE	< 1.0	< 1.0		
#	o-Xylene	µg/kg	1	MCERTS	< 1.0	< 1.0		
#	1 1 2 2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0		
#	Isopropylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0		
#	Bromobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0		
#	n-Propylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0		
#	2-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	< 1.0		
#	4-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	< 1.0		
#	1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0		
#	tert-Butylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0		
#	1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0		
#	sec-Butylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0		
#	1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0		
#	p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1.0	< 1.0		
#	1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0		
#	1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0		
#	Butylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0		
#	1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1.0	< 1.0		
#	1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0		
#	Hexachlorobutadiene	µg/kg	1	MCERTS	< 1.0	< 1.0		
#	1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0		

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Analytical Report Number: 19-49761

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1266513	1266514			
Sample Reference				ATK-P-006	ATK-P-006			
Sample Number				3	4			
Depth (m)				1.20-2.00	2 30-3 00			
Date Sampled				10/07/2019	10/07/2019			
Time Taken				None Supplied	None Supplied			
	Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
	SVOCs							
#	Aniline	mg/kg	0.1	NONE	< 0.1	< 0.1		
#	Phenol	mg/kg	0.2	ISO 17025	< 0.2	< 0.2		
#	2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1		
#	Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2		
#	1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2		
#	1 2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	< 0.1		
#	1 4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2		
#	Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	< 0.1		
#	2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3		
#	Hexachloroethane	mg/kg	0.05	MCERTS	< 0 05	< 0.05		
#	Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3		
#	4-Methylphenol	mg/kg	0.2	NONE	< 0.2	< 0.2		
#	Isophorone	mg/kg	0.2	MCERTS	< 0.2	< 0.2		
#	2-Nitrophenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3		
#	2 4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3		
#	Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3	< 0.3		
#	1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3		
#	Naphthalene	mg/kg	0.05	MCERTS	< 0 05	< 0.05		
#	2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3		
#	4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1		
#	Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	< 0.1		
#	4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1		
#	2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1		
#	2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0.2	< 0.2		
#	2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	< 0.1		
#	2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	< 0.1		
#	Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	< 0.1		
#	2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1	< 0.1		
#	Acenaphthylene	mg/kg	0.05	MCERTS	< 0 05	< 0.05		
#	Acenaphthene	mg/kg	0.05	MCERTS	< 0 05	< 0.05		
#	2 4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0.2	< 0.2		
#	Dibenzofuran	mg/kg	0.2	MCERTS	< 0.2	< 0.2		
#	4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0.3	< 0.3		
#	Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2	< 0.2		
#	4-Nitroaniline	mg/kg	0.2	MCERTS	< 0.2	< 0.2		
#	Fluorene	mg/kg	0.05	MCERTS	< 0 05	< 0.05		
#	Azobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3		
#	Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2		
#	Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3		
#	Phenanthrene	mg/kg	0.05	MCERTS	< 0 05	< 0.05		
#	Anthracene	mg/kg	0.05	MCERTS	< 0 05	< 0.05		
#	Carbazole	mg/kg	0.3	MCERTS	< 0.3	< 0.3		
#	Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0.2	< 0.2		
#	Anthraquinone	mg/kg	0.3	MCERTS	< 0.3	< 0.3		
#	Fluoranthene	mg/kg	0.05	MCERTS	< 0 05	< 0.05		
#	Pyrene	mg/kg	0.05	MCERTS	< 0 05	< 0.05		
#	Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0.3	< 0.3		
#	Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0 05	< 0.05		
#	Chrysene	mg/kg	0.05	MCERTS	< 0 05	< 0.05		
#	Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0 05	< 0.05		
#	Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0 05	< 0.05		
#	Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0 05	< 0.05		
#	Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0 05	< 0.05		
#	Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0 05	< 0.05		
#	Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0 05	< 0.05		

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Analytical Report Number: 19-49761

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1266513	1266514			
Sample Reference				ATK-P-006	ATK-P-006			
Sample Number				3	4			
Depth (m)				1.20-2.00	2 30-3 00			
Date Sampled				10/07/2019	10/07/2019			
Time Taken				None Supplied	None Supplied			
	Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
	PCBs							
#	PCB Congener 077	mg/kg	0.001	NONE	-	-		
#	PCB Congener 081	mg/kg	0.001	NONE	-	-		
#	PCB Congener 105	mg/kg	0.001	NONE	-	-		
#	PCB Congener 114	mg/kg	0.001	NONE	-	-		
#	PCB Congener 118	mg/kg	0.001	NONE	-	-		
#	PCB Congener 123	mg/kg	0.001	NONE	-	-		
#	PCB Congener 126	mg/kg	0.001	NONE	-	-		
#	PCB Congener 156	mg/kg	0.001	NONE	-	-		
#	PCB Congener 157	mg/kg	0.001	NONE	-	-		
#	PCB Congener 167	mg/kg	0.001	NONE	-	-		
#	PCB Congener 169	mg/kg	0.001	NONE	-	-		
#	PCB Congener 189	mg/kg	0.001	NONE	-	-		
#	Total PCBs	mg/kg	0.012	NONE	-	-		
	Organochlorine Pesticides (OCP)							
#	Aldrin	µg/kg	10	NONE	-	-		
#	BHC-alpha (benzene hexachloride)	µg/kg	10	NONE	-	-		
#	BHC-beta	µg/kg	10	NONE	-	-		
#	BHC-delta	µg/kg	10	NONE	-	-		
#	BHC-gamma (Lindane, gamma HCH)	µg/kg	10	NONE	-	-		
#	Chlordane-cis	µg/kg	10	NONE	-	-		
#	Chlordane-trans	µg/kg	10	NONE	-	-		
#	Chlorothalonil	µg/kg	10	NONE	-	-		
#	DDD-o,p'	µg/kg	1	NONE	-	-		
#	DDD-p,p'	µg/kg	1	NONE	-	-		
#	DDE-o, p'	µg/kg	1	NONE	-	-		
#	DDE-p,p'	µg/kg	1	NONE	-	-		
#	DDT-o,p'	µg/kg	1	NONE	-	-		
#	DDT-p,p'	µg/kg	1	NONE	-	-		
#	Dichlorobenzonitrile, 2,6-	µg/kg	10	NONE	-	-		
#	Dieldrin	µg/kg	10	NONE	-	-		
#	Endosulfan I (alpha isomer)	µg/kg	10	NONE	-	-		
#	Endosulfan II (beta isomer)	µg/kg	10	NONE	-	-		
#	Endosulfan sulfate	µg/kg	10	NONE	-	-		
#	Endrin	µg/kg	10	NONE	-	-		
#	Endrin aldehyde	µg/kg	10	NONE	-	-		
#	Endrin ketone	µg/kg	10	NONE	-	-		
#	Heptachlor	µg/kg	10	NONE	-	-		
#	Heptachlor exo-epoxide	µg/kg	10	NONE	-	-		
#	Hexachlorobenzene	µg/kg	10	NONE	-	-		
#	Hexachlorobutadiene	µg/kg	10	NONE	-	-		
#	Isodrin	µg/kg	10	NONE	-	-		
#	Methoxychlor, p,p'-	µg/kg	10	NONE	-	-		
#	Pentachlorobenzene	µg/kg	10	NONE	-	-		
#	Tecnazene	µg/kg	10	NONE	-	-		
#	Tetrachlorobenzene, 1,2,4,5-	µg/kg	10	NONE	-	-		
#	Trichlorobenzene, 1,2,3-	µg/kg	10	NONE	-	-		
#	Trichlorobenzene, 1,3,5-	µg/kg	10	NONE	-	-		
#	Trifluralin	µg/kg	10	NONE	-	-		

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Analytical Report Number: 19-49761

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1266513	1266514			
Sample Reference				ATK-P-006	ATK-P-006			
Sample Number				3	4			
Depth (m)				1.20-2.00	2 30-3 00			
Date Sampled				10/07/2019	10/07/2019			
Time Taken				None Supplied	None Supplied			
	Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
	Organophosphorus Pesticides (OPP)							
#	Azinphos-ethyl	µg/kg	10	NONE	-	-		
#	Azinphos-methyl	µg/kg	10	NONE	-	-		
#	Carbophenothion	µg/kg	10	NONE	-	-		
#	Chlorfenvinphos (mixture of z and e isomers)	µg/kg	10	NONE	-	-		
#	Chlorpyrifos	µg/kg	10	NONE	-	-		
#	Demeton-O	µg/kg	10	NONE	-	-		
#	Demeton-S	µg/kg	10	NONE	-	-		
#	Diazinon	µg/kg	10	NONE	-	-		
#	Dichlorvos	µg/kg	10	NONE	-	-		
#	Dimethoate	µg/kg	10	NONE	-	-		
#	Dimethylvinphos	µg/kg	10	NONE	-	-		
#	Ethion	µg/kg	10	NONE	-	-		
#	Etrimfos	µg/kg	10	NONE	-	-		
#	Fenitrothion	µg/kg	10	NONE	-	-		
#	Fenthion	µg/kg	10	NONE	-	-		
#	Malathion	µg/kg	10	NONE	-	-		
#	Methacrifos	µg/kg	10	NONE	-	-		
#	Mevinphos , E-	µg/kg	10	NONE	-	-		
#	Mevinphos, Z-	µg/kg	10	NONE	-	-		
#	Parathion	µg/kg	10	NONE	-	-		
#	Parathion-methyl	µg/kg	10	NONE	-	-		
#	Phorate	µg/kg	10	NONE	-	-		
#	Phosalone	µg/kg	10	NONE	-	-		
#	Phosphamidon I	µg/kg	10	NONE	-	-		
#	Pirimiphos-ethyl	µg/kg	10	NONE	-	-		
#	Pirimiphos-methyl	µg/kg	10	NONE	-	-		
#	Propetamphos	µg/kg	10	NONE	-	-		
#	Triazophos	µg/kg	10	NONE	-	-		
	Organonitrogen Pesticides (ONP)							
#	Pendimethalin	µg/kg	10	NONE	-	-		
#	Propyzamide	µg/kg	10	NONE	-	-		
#	Triadimefon	µg/kg	10	NONE	-	-		

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Analytical Report Number: 19-49761

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1266513	1266514			
Sample Reference				ATK-P-006	ATK-P-006			
Sample Number				3	4			
Depth (m)				1.20-2.00	2 30-3 00			
Date Sampled				10/07/2019	10/07/2019			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Environmental Forensics								
Triazine Herbicides								
# Atrazine	mg/kg	0.1	NONE	-	-			
# Simazine	mg/kg	0.1	NONE	-	-			
# Prometryn	mg/kg	0.1	NONE	-	-			
# Propazine	mg/kg	0.1	NONE	-	-			
# Terbuthylazine	mg/kg	0.1	NONE	-	-			
# Terbutryn	mg/kg	0.1	NONE	-	-			
# Trietazine	mg/kg	0.1	NONE	-	-			
# Cyanazine	mg/kg	0.1	NONE	-	-			
Acid Herbicides								
# 2 4 5-T	µg/kg	20	NONE	-	-			
# 2 4 5-TP	µg/kg	20	NONE	-	-			
# 2,4-D	µg/kg	20	NONE	-	-			
# 2,4-DB	µg/kg	20	NONE	-	-			
# Dicamba	µg/kg	20	NONE	-	-			
# Dichlorprop	µg/kg	20	NONE	-	-			
# Dinoseb	µg/kg	20	NONE	-	-			
# MCPA	µg/kg	20	NONE	-	-			
# MCPB	µg/kg	20	NONE	-	-			
# MCPP (Mecoprop)	µg/kg	20	NONE	-	-			
# Picloram	µg/kg	20	NONE	-	-			
Phenylurea herbicides								
# Isoproturon	µg/kg	10	NONE	-	-			
# Chlortoluron	µg/kg	10	NONE	-	-			
# Linuron	µg/kg	10	NONE	-	-			
# Diuron	µg/kg	10	NONE	-	-			
# Diflubenzuron	µg/kg	10	NONE	-	-			
# Flumeturon	µg/kg	10	NONE	-	-			
# Siduron	µg/kg	10	NONE	-	-			
# Terbuthiuron	µg/kg	10	NONE	-	-			
# Thidiazuron	µg/kg	10	NONE	-	-			

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Analytical Report Number: 19-49761

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1266515	1266516	1266517		
Sample Reference				ATK-P-006	ATK-P-006	ATK-P-006		
Sample Number				1	2	3		
Depth (m)				0.30-0.40	0.50-0.60	1.00-1.20		
Date Sampled				10/07/2019	10/07/2019	10/07/2019		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	7.6	7.7	7.5		
Electrical Conductivity	µS/cm	10	ISO 17025	1700	1200	99		
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10		
Free Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10		
Sulphate as SO_4	mg/l	0.1	ISO 17025	1540	997	9.1		
Sulphide	µg/l	5	NONE	< 5 0	< 5.0	< 5.0		
Chloride	mg/l	0.15	ISO 17025	9.2	7 3	1.9		
Ammonium as NH_4	µg/l	15	NONE	< 15	520	66		
Total Organic Carbon (TOC)	mg/l	0.1	NONE	5.98	7.09	4.91		
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	5.77	6.69	4.43		
Total Phenols								
Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10	< 10		
Heavy Metals / Metalloids								
Antimony (dissolved)	µg/l	1.7	ISO 17025	< 1.7	< 1.7	< 1.7		
Arsenic (dissolved)	µg/l	1.1	ISO 17025	7.0	5 8	< 1.1		
Barium (dissolved)	µg/l	0.05	ISO 17025	57	32	8.1		
Beryllium (dissolved)	µg/l	0.2	ISO 17025	< 0 2	< 0.2	< 0.2		
Boron (dissolved)	µg/l	10	ISO 17025	100	27	< 10		
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0 08		
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5 0	< 5.0	< 5.0		
Chromium (III)	µg/l	1	NONE	1.2	< 1.0	2.2		
Chromium (dissolved)	µg/l	0.4	ISO 17025	1.2	< 0.4	2.2		
Cobalt (dissolved)	µg/l	0.3	ISO 17025	< 0 3	0 3	0.3		
Copper (dissolved)	µg/l	0.7	ISO 17025	5.0	2 6	8.0		
Iron (dissolved)	mg/l	0.004	ISO 17025	0 037	0.010	0 38		
Lead (dissolved)	µg/l	1	ISO 17025	< 1 0	< 1.0	< 1.0		
Manganese (dissolved)	µg/l	0.06	ISO 17025	240	290	120		
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0 5	< 0.5	< 0.5		
Molybdenum (dissolved)	µg/l	0.4	ISO 17025	6.7	3 8	2.7		
Nickel (dissolved)	µg/l	0.3	ISO 17025	2.2	2 6	0.4		
Phosphorus (dissolved)	µg/l	30	NONE	190	150	190		
Selenium (dissolved)	µg/l	4	ISO 17025	< 4 0	< 4.0	< 4.0		
Tin (dissolved)	µg/l	1	ISO 17025	< 1 0	< 1.0	< 1.0		
Vanadium (dissolved)	µg/l	1.7	ISO 17025	3.9	< 1.7	3.3		
Zinc (dissolved)	µg/l	0.4	ISO 17025	5.7	4.4	5.6		
Calcium (dissolved)	mg/l	0.012	ISO 17025	540	280	8.0		
Magnesium (dissolved)	mg/l	0.005	ISO 17025	13	24	3.2		
Potassium (dissolved)	mg/l	0.025	ISO 17025	11	7 0	0 67		
Sodium (dissolved)	mg/l	0.01	ISO 17025	10	4 8	2.0		

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Analytical Report Number : 19-49761

Project / Site name: M25 Junction 28

* 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 *
1266508	ATK-P-006	1	0.00-0.50	Brown clay and sand with rubble and vegetation.
1266509	ATK-P-006	1	0.30-0.40	Brown loam and clay with gravel.
1266510	ATK-P-006	2	0.50-0.60	Brown clay and loam with stones and gravel
1266511	ATK-P-006	2	0.50-1.00	Brown clay and sand with gravel and vegetation.
1266512	ATK-P-006	3	1.00-1.20	Light brown clay with gravel.
1266513	ATK-P-006	3	1.20-2.00	Light brown clay.
1266514	ATK-P-006	4	2.30-3.00	Brown clay.

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Analytical Report Number : 19-49761

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Ammonia as NH3 in soil	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	MCERTS
Ammonium as NH4 in leachate	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	NONE
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
Boron in leachate	Determination of boron in leachate. Sample acidified and followed by ICP-OES.	In-house method based on MEWAM	L039-PL	W	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
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
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
Chloride in leachate	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
Cr (III) in leachate	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Dissolved Organic Carbon in leachate	Determination of dissolved organic carbon in leachate by the measurement on a non-dispersive infrared analyser of carbon dioxide released by acidification.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L023-PL	W	NONE
EF - Phenylurea herbicides in soil by LC-MS/MS	Phenylurea herbicides by LC-MS/MS	In-house method	UK	W	NONE
Electrical conductivity at 20oC of leachate	Determination of electrical conductivity in leachate by electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031-PL	W	ISO 17025
Electrical conductivity of soil	Determination of electrical conductivity in soil by electrometric measurement.	In-house method	L031-PL	W	ISO 17025
Fraction of Organic Carbon in soil	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L009-PL	D	MCERTS
Free cyanide in leachate	Determination of free cyanide by distillation followed by colorimetry.	In-house method	L080-PL	W	ISO 17025
Free cyanide in soil	Determination of free 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
Hexavalent chromium in leachate	Determination of hexavalent chromium in leachate by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	ISO 17025

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Analytical Report Number : 19-49761

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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	MCERTS
Metals by ICP-OES in leachate	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
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
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in leachate	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 (skalar)	L080-PL	W	ISO 17025
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
Organochlorine Pesticides in soil by GC MS/MS	Detemination of Pesticides in soil by GC MS/MS	Organochlorine Pesticides in soil by GC MS/MS	L055B-PL	D	NONE
Organonitrogen Pesticides in soil by GC MS/MS	Detemination of Pesticides in soil by GC MS/MS	Organonitrogen Pesticides in soil by GC MS/MS	L055B-PL	D	NONE
Organophosphorus Pesticides in soil by GC MS/MS	Detemination of Pesticides in soil by GC MS/MS	Organophosphorus Pesticides in soil by GC MS/MS	L055B-PL	D	NONE
PCBs WHO 12 in soil	Determination of PCBs (WHO-12 Congeners) by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	NONE
pH at 20oC in leachate	Determination of pH in leachate by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	ISO 17025
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	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
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
Sulphate in leachates	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS

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Analytical Report Number : 19-49761

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphide in leachate	Determination of sulphide in leachate by ion selective electrode.	In-house method	L010-PL	W	NONE
TO - Acid Herbicides in soil by LC-MS/MS	Determination of Acid herbicides in waters by LC-MS/MS	In-house method		W	NONE
TO - Triazine pesticides in soil	Determination of Triazines by LC-MS(/MS).	In-house method based on USEPA method 615.		W	NONE
Total cyanide in leachate	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	ISO 17025
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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS
Total organic carbon in leachate	Determination of dissolved organic 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
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	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
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

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.

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Sample ID	Other_ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
ATK-P-006	1	S	19-49761	1266509	b	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	b
ATK-P-006	1	S	19-49761	1266509	b	TPHCWG (Soil)	L088/76-PL	b

Key: a - No sampling date b - Incorrect container
c - Holding time d - Headspace e - Temperature

[redacted]
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Centurion House
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Quedgeley
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GL2 4NF

[redacted]

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Analytical Report Number : 19-49764

Project / Site name:	M25 Junction 28	**Samples received on:**	11/07/2019
Your job number:	35403	**Samples instructed on:**	12/07/2019
Your order number:	35403-DO	**Analysis completed by:**	19/07/2019
Report Issue Number:	1	**Report issued on:**	19/07/2019
Samples Analysed:	3 10:1 WAC samples		

Signed [redacted]

[redacted]
Head of Reporting Section
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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The results included within the report are representative of the samples submitted for analysis.

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Waste Acceptance Criteria Analytical Results

Report No:	**19-49764**						
					Client: GEOENG		
Location	**M25 Junction 28**						
Lab Reference (Sample Number)	1266522 / 1266523				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	10/07/2019				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	ATK-P-006 1						
Depth (m)	0.00-0.50						
Solid Waste Analysis							
TOC (%)**	1.8				3%	5%	6%
Loss on Ignition (%) **	-				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	110				500	--	--
Total PAH (WAC-17) (mg/kg)	6.6				100	--	--
pH (units)**	-				--	>6	--
Acid Neutralisation Capacity (mol / kg)	-				--	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 *	0.0111			0.100	0.5	2	25
Barium *	0.0661			0.596	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0013			0.012	0.5	10	70
Copper *	0.014			0.13	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0090			0.0814	0.5	10	30
Nickel *	0.0029			0.026	0.4	10	40
Lead *	0.0016			0.015	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.0071			0.064	4	50	200
Chloride *	11			95	800	4000	25000
Fluoride	0.57			5.1	10	150	500
Sulphate *	1900			18000	1000	20000	50000
TDS*	990			9000	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	10.7			96.5	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	2.0						
Dry Matter (%)	94						
Moisture (%)	6.4						

Results are expressed on a dry weight basis, after correction for moisture content where applicable.
*= UKAS accredited (liquid eluate analysis only)
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** = 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:	**19-49764**						
					Client:	**GEOENG**	
Location	**M25 Junction 28**						
Lab Reference (Sample Number)	1266524 / 1266525				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	10/07/2019				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	ATK-P-006 2						
Depth (m)	0.50-1.00						
Solid Waste Analysis							
TOC (%)**	2.1				3%	5%	6%
Loss on Ignition (%) **	-				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	140				500	--	--
Total PAH (WAC-17) (mg/kg)	< 0.9				100	--	--
pH (units)**	-				--	>6	--
Acid Neutralisation Capacity (mol / kg)	-				--	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 *	0.0049			0.0401	0.5	2	25
Barium *	0.0267			0.221	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	< 0.0004			< 0.0040	0.5	10	70
Copper *	0.0032			0.026	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0035			0.0288	0.5	10	30
Nickel *	0.0030			0.025	0.4	10	40
Lead *	< 0.0010			< 0.010	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.0025			0.021	4	50	200
Chloride *	3.9			32	800	4000	25000
Fluoride	0.91			7.5	10	150	500
Sulphate *	210			1700	1000	20000	50000
TDS*	280			2300	4000	60000	100000
Phenol Index (Monhydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	10.2			84.6	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	2.0						
Dry Matter (%)	83						
Moisture (%)	17						

Results are expressed on a dry weight basis, after correction for moisture content where applicable.
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Waste Acceptance Criteria Analytical Results

Report No:	**19-49764**						
					Client: GEOENG		
Location	**M25 Junction 28**						
Lab Reference (Sample Number)	1266526 / 1266527				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	10/07/2019				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	ATK-P-006 3						
Depth (m)	1.20-2.00						
Solid Waste Analysis							
TOC (%)**	0.2				3%	5%	6%
Loss on Ignition (%) **	-				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	< 0.9				100	--	--
pH (units)**	-				--	>6	--
Acid Neutralisation Capacity (mol / kg)	-				--	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 *	< 0.0011			< 0.0110	0.5	2	25
Barium *	0.0218			0.175	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0005			< 0.0040	0.5	10	70
Copper *	0.0010			0.0081	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0012			0.0095	0.5	10	30
Nickel *	0.0009			0.0075	0.4	10	40
Lead *	< 0.0010			< 0.010	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.0022			0.018	4	50	200
Chloride *	3.3			27	800	4000	25000
Fluoride	0.84			6.7	10	150	500
Sulphate *	240			1900	1000	20000	50000
TDS*	250			2000	4000	60000	100000
Phenol Index (Monhydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	5.51			44.1	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	2.0						
Dry Matter (%)	81						
Moisture (%)	19						

Results are expressed on a dry weight basis, after correction for moisture content where applicable.
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Analytical Report Number : 19-49764

Project / Site name: M25 Junction 28

* 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 *
1266522	ATK-P-006	1	0.00-0.50	Brown clay and sand with rubble and vegetation.
1266524	ATK-P-006	2	0.50-1.00	Brown clay and sand with gravel and vegetation.
1266526	ATK-P-006	3	1.20-2.00	Light brown clay.

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Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

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
BTEX in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Chloride 10:1 WAC	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-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
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
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
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.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
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
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
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	NONE
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
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 electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L004-PL	W	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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS

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.

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Analytical Report Number : 19-49796

Project / Site name:	M25 Junction 28	**Samples received on:**	11/07/2019
Your job number:	35403	**Samples instructed on:**	12/07/2019
Your order number:	35403-DO	**Analysis completed by:**	19/07/2019
Report Issue Number:	1	**Report issued on:**	19/07/2019
Samples Analysed:	5 leachate samples - 5 soil samples		

Signed: [redacted]

[redacted]
Senior Quality Specialist
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.

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soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Analytical Report Number: 19-49796

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1266706	1266707	1266708	1266709	1266710
Sample Reference				ATK-P-102	ATK-P-102	ATK-P-102	ATK-P-102	ATK-P-102
Sample Number				4	6	8	10	12
Depth (m)				1.50-1.70	2.50-2.70	4.20-4.40	5.60-5.80	7.10-7.30
Date Sampled				09/07/2019	09/07/2019	09/07/2019	09/07/2019	09/07/2019
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	< 0.1
Moisture Content	%	N/A	NONE	17	21	22	20	19
Total mass of sample received	kg	0.001	NONE	2.0	2 0	2.0	2.0	2 0
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	7.3	7 5	6.2	7.5	7 5
Electrical Conductivity	µS/cm	10	ISO 17025	360	1900	240	750	3000
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Total Sulphate as SO_4	mg/kg	50	MCERTS	370	4300	340	920	15000
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.12	2.4	0.069	0.47	3 0
Ammonia as NH_3	mg/kg	0 5	MCERTS	6.2	1 2	32	0.6	0.9
Ammonium as NH_4	mg/kg	0 5	MCERTS	6.6	1 2	34	0.6	0.9
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	0.0044	0.0074	0 0073	0.0025	0.0025
Total Organic Carbon (TOC)	%	0.1	MCERTS	0.4	0.7	0.7	0.2	0 2
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	< 0.05	< 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	< 0.05	< 0.05	< 0 05	< 0.05	0.37
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	0.10
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	0.70
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	0.63
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	0.33
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	0.31
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	0.33
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	0.12
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	0.24
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0 8	MCERTS	< 0.80	< 0.80	< 0 80	< 0.80	3.13

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Analytical Report Number: 19-49796

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1266706	1266707	1266708	1266709	1266710
Sample Reference				ATK-P-102	ATK-P-102	ATK-P-102	ATK-P-102	ATK-P-102
Sample Number				4	6	8	10	12
Depth (m)				1.50-1.70	2.50-2.70	4.20-4.40	5.60-5.80	7.10-7.30
Date Sampled				09/07/2019	09/07/2019	09/07/2019	09/07/2019	09/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	11	14	11	12	11
Barium (aqua regia extractable)	mg/kg	1	MCERTS	27	61	38	45	35
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.96	1.1	0.93	1.2	1 3
Boron (water soluble)	mg/kg	0 2	MCERTS	0.8	0.9	2.1	1.6	2 6
Cadmium (aqua regia extractable)	mg/kg	0 2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4 0	< 4.0	< 4.0	< 4 0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	60	55	47	52	51
Copper (aqua regia extractable)	mg/kg	1	MCERTS	14	21	15	20	27
Lead (aqua regia extractable)	mg/kg	1	MCERTS	10	53	15	11	13
Mercury (aqua regia extractable)	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	18	29	17	33	39
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	74	82	69	62	72
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	42	70	55	59	72
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
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	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2 0	< 2.0	< 2.0	< 2 0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8 0	< 8.0	< 8.0	< 8 0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8 0	< 8.0	< 8.0	< 8 0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2 0	< 2.0	< 2.0	< 2 0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10

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Analytical Report Number: 19-49796

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1266706	1266707	1266708	1266709	1266710
Sample Reference				ATK-P-102	ATK-P-102	ATK-P-102	ATK-P-102	ATK-P-102
Sample Number				4	6	8	10	12
Depth (m)				1.50-1.70	2.50-2.70	4.20-4.40	5.60-5.80	7.10-7.30
Date Sampled				09/07/2019	09/07/2019	09/07/2019	09/07/2019	09/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	< 1 0	-	< 1.0	-	< 1.0
Chloroethane	µg/kg	1	NONE	< 1 0	-	< 1.0	-	< 1.0
Bromomethane	µg/kg	1	ISO 17025	< 1 0	-	< 1.0	-	< 1.0
Vinyl Chloride	µg/kg	1	NONE	< 1 0	-	< 1.0	-	< 1.0
Trichlorofluoromethane	µg/kg	1	NONE	< 1 0	-	< 1.0	-	< 1.0
1,1-Dichloroethene	µg/kg	1	NONE	< 1 0	-	< 1.0	-	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1 0	-	< 1.0	-	< 1.0
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1 0	-	< 1.0	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1 0	-	< 1.0	-	< 1.0
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1 0	-	< 1.0	-	< 1.0
2,2-Dichloropropane	µg/kg	1	MCERTS	< 1 0	-	< 1.0	-	< 1.0
Trichloromethane	µg/kg	1	MCERTS	< 1 0	-	< 1.0	-	< 1.0
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1 0	-	< 1.0	-	< 1.0
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1 0	-	< 1.0	-	< 1.0
1,1-Dichloropropene	µg/kg	1	MCERTS	< 1 0	-	< 1.0	-	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1 0	-	< 1.0	-	< 1.0
Benzene	µg/kg	1	MCERTS	< 1 0	-	< 1.0	-	< 1.0
Tetrachloromethane	µg/kg	1	MCERTS	< 1 0	-	< 1.0	-	< 1.0
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1 0	-	< 1.0	-	< 1.0
Trichloroethene	µg/kg	1	MCERTS	< 1 0	-	< 1.0	-	< 1.0
Dibromomethane	µg/kg	1	MCERTS	< 1 0	-	< 1.0	-	< 1.0
Bromodichloromethane	µg/kg	1	MCERTS	< 1 0	-	< 1.0	-	< 1.0
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1 0	-	< 1.0	-	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1 0	-	< 1.0	-	< 1.0
Toluene	µg/kg	1	MCERTS	< 1 0	-	< 1.0	-	< 1.0
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1 0	-	< 1.0	-	< 1.0
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1 0	-	< 1.0	-	< 1.0
Dibromochloromethane	µg/kg	1	ISO 17025	< 1 0	-	< 1.0	-	< 1.0
Tetrachloroethene	µg/kg	1	NONE	< 1 0	-	< 1.0	-	< 1.0
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1 0	-	< 1.0	-	< 1.0
Chlorobenzene	µg/kg	1	MCERTS	< 1 0	-	< 1.0	-	< 1.0
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1 0	-	< 1.0	-	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1 0	-	< 1.0	-	< 1.0
p & m-Xylene	µg/kg	1	MCERTS	< 1 0	-	< 1.0	-	< 1.0
Styrene	µg/kg	1	MCERTS	< 1 0	-	< 1.0	-	< 1.0
Tribromomethane	µg/kg	1	NONE	< 1 0	-	< 1.0	-	< 1.0
o-Xylene	µg/kg	1	MCERTS	< 1 0	-	< 1.0	-	< 1.0
1 1 2 2-Tetrachloroethane	µg/kg	1	MCERTS	< 1 0	-	< 1.0	-	< 1.0
Isopropylbenzene	µg/kg	1	MCERTS	< 1 0	-	< 1.0	-	< 1.0
Bromobenzene	µg/kg	1	MCERTS	< 1 0	-	< 1.0	-	< 1.0
n-Propylbenzene	µg/kg	1	ISO 17025	< 1 0	-	< 1.0	-	< 1.0
2-Chlorotoluene	µg/kg	1	MCERTS	< 1 0	-	< 1.0	-	< 1.0
4-Chlorotoluene	µg/kg	1	MCERTS	< 1 0	-	< 1.0	-	< 1.0
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1 0	-	< 1.0	-	< 1.0
tert-Butylbenzene	µg/kg	1	MCERTS	< 1 0	-	< 1.0	-	< 1.0
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1 0	-	< 1.0	-	< 1.0
sec-Butylbenzene	µg/kg	1	MCERTS	< 1 0	-	< 1.0	-	< 1.0
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1 0	-	< 1.0	-	< 1.0
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1 0	-	< 1.0	-	< 1.0
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1 0	-	< 1.0	-	< 1.0
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1 0	-	< 1.0	-	< 1.0
Butylbenzene	µg/kg	1	MCERTS	< 1 0	-	< 1.0	-	< 1.0
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1 0	-	< 1.0	-	< 1.0
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1 0	-	< 1.0	-	< 1.0
Hexachlorobutadiene	µg/kg	1	MCERTS	< 1 0	-	< 1.0	-	< 1.0
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	< 1 0	-	< 1.0	-	< 1.0

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Analytical Report Number: 19-49796

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1266706	1266707	1266708	1266709	1266710
Sample Reference				ATK-P-102	ATK-P-102	ATK-P-102	ATK-P-102	ATK-P-102
Sample Number				4	6	8	10	12
Depth (m)				1.50-1.70	2.50-2.70	4.20-4.40	5.60-5.80	7.10-7.30
Date Sampled				09/07/2019	09/07/2019	09/07/2019	09/07/2019	09/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	< 0.1	-	< 0.1	-	< 0.1
Phenol	mg/kg	0 2	ISO 17025	< 0 2	-	< 0.2	-	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0 2	MCERTS	< 0 2	-	< 0.2	-	< 0.2
1,3-Dichlorobenzene	mg/kg	0 2	MCERTS	< 0 2	-	< 0.2	-	< 0.2
1 2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	< 0.1
1 4-Dichlorobenzene	mg/kg	0 2	MCERTS	< 0 2	-	< 0.2	-	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	< 0.1
2-Methylphenol	mg/kg	0 3	MCERTS	< 0 3	-	< 0.3	-	< 0.3
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	< 0.05
Nitrobenzene	mg/kg	0 3	MCERTS	< 0 3	-	< 0.3	-	< 0.3
4-Methylphenol	mg/kg	0 2	NONE	< 0 2	-	< 0.2	-	< 0.2
Isophorone	mg/kg	0 2	MCERTS	< 0 2	-	< 0.2	-	< 0.2
2-Nitrophenol	mg/kg	0 3	MCERTS	< 0 3	-	< 0.3	-	< 0.3
2 4-Dimethylphenol	mg/kg	0 3	MCERTS	< 0 3	-	< 0.3	-	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0 3	MCERTS	< 0 3	-	< 0.3	-	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0 3	MCERTS	< 0 3	-	< 0.3	-	< 0.3
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	< 0.05
2,4-Dichlorophenol	mg/kg	0 3	MCERTS	< 0 3	-	< 0.3	-	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	-	< 0.1	-	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	-	< 0.1	-	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0 2	-	< 0.2	-	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	-	< 0.1	-	< 0.1
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	< 0.1
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	< 0.05
2 4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0 2	-	< 0.2	-	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	< 0 2	-	< 0.2	-	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0 3	-	< 0.3	-	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0 2	-	< 0.2	-	< 0.2
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0 2	-	< 0.2	-	< 0.2
Fluorene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	< 0.05
Azobenzene	mg/kg	0.3	MCERTS	< 0 3	-	< 0.3	-	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0 2	-	< 0.2	-	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0 3	-	< 0.3	-	< 0.3
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	0.37
Anthracene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	0.10
Carbazole	mg/kg	0.3	MCERTS	< 0 3	-	< 0.3	-	< 0.3
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0 2	-	< 0.2	-	< 0.2
Anthraquinone	mg/kg	0.3	MCERTS	< 0 3	-	< 0.3	-	< 0.3
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	0.70
Pyrene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	0.63
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0 3	-	< 0.3	-	< 0.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	0.33
Chrysene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	0.31
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	0.33
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	0.12
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	0.24
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	-	< 0 05	-	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	< 0 05	-	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	-	< 0 05	-	< 0.05

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Analytical Report Number: 19-49796

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1266711	1266712	1266713	1266714	1266715
Sample Reference				ATK-P-102	ATK-P-102	ATK-P-102	ATK-P-102	ATK-P-102
Sample Number				4	6	8	10	12
Depth (m)				1.50-1.70	2.50-2.70	4.20-4.40	5 60-5.80	7.10-7.30
Date Sampled				09/07/2019	09/07/2019	09/07/2019	09/07/2019	09/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	7.5	8 0	8.1	7.8	7.9
Electrical Conductivity	µS/cm	10	ISO 17025	82	400	200	210	280
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
Free Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
Sulphate as SO_4	mg/l	0.1	ISO 17025	9.5	194	5.9	73.1	118
Sulphide	µg/l	5	NONE	< 5 0	< 5.0	< 5.0	< 5.0	< 5.0
Chloride	mg/l	0.15	ISO 17025	5.6	5 2	5.8	3.4	5 2
Ammonium as NH_4	µg/l	15	NONE	560	110	2200	39	67
Total Organic Carbon (TOC)	mg/l	0.1	NONE	11.0	9.21	19 2	5.07	4.03
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	9.61	8.26	16.9	4.53	3.65
Total Phenols								
Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
Heavy Metals / Metalloids								
Antimony (dissolved)	µg/l	1.7	ISO 17025	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7
Arsenic (dissolved)	µg/l	1.1	ISO 17025	6.6	2 8	3.8	< 1.1	< 1.1
Barium (dissolved)	µg/l	0.05	ISO 17025	11	20	3.3	13	5 8
Beryllium (dissolved)	µg/l	0.2	ISO 17025	< 0 2	< 0.2	< 0.2	< 0.2	< 0.2
Boron (dissolved)	µg/l	10	ISO 17025	< 10	< 10	14	< 10	15
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0 08	< 0.08	< 0.08
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5 0	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (III)	µg/l	1	NONE	9.7	2.1	2.8	2.1	< 1.0
Chromium (dissolved)	µg/l	0.4	ISO 17025	9.7	2.1	2.8	2.1	< 0.4
Cobalt (dissolved)	µg/l	0.3	ISO 17025	2.1	0 5	1.3	< 0 3	< 0.3
Copper (dissolved)	µg/l	0.7	ISO 17025	9.5	2.7	14	0.7	< 0.7
Iron (dissolved)	mg/l	0.004	ISO 17025	0.41	1.1	0 37	0.86	0.005
Lead (dissolved)	µg/l	1	ISO 17025	3.6	1.1	< 1.0	< 1 0	< 1.0
Manganese (dissolved)	µg/l	0.06	ISO 17025	24	8.7	41	8.5	7 8
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0 5	< 0.5	< 0.5	< 0.5	< 0.5
Molybdenum (dissolved)	µg/l	0.4	ISO 17025	< 0.4	0 6	< 0.4	0.8	< 0.4
Nickel (dissolved)	µg/l	0.3	ISO 17025	2.4	1.7	1.9	1.3	< 0.3
Phosphorus (dissolved)	µg/l	30	NONE	64	< 30	< 30	< 30	< 30
Selenium (dissolved)	µg/l	4	ISO 17025	< 4 0	< 4.0	< 4.0	< 4.0	< 4.0
Tin (dissolved)	µg/l	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (dissolved)	µg/l	1.7	ISO 17025	4.7	5.1	1.9	4.0	< 1.7
Zinc (dissolved)	µg/l	0.4	ISO 17025	3.0	3 3	1.4	2.6	0 6
Calcium (dissolved)	mg/l	0.012	ISO 17025	6.6	63	2.9	13	14
Magnesium (dissolved)	mg/l	0.005	ISO 17025	3.5	15	1.1	11	15
Potassium (dissolved)	mg/l	0.025	ISO 17025	1.7	4 2	2.1	5.1	6 8
Sodium (dissolved)	mg/l	0.01	ISO 17025	5.8	5 5	4.8	10	16

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Analytical Report Number : 19-49796

Project / Site name: M25 Junction 28

* 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 *
1266706	ATK-P-102	4	1.50-1.70	Brown clay.
1266707	ATK-P-102	6	2.50-2.70	Brown clay.
1266708	ATK-P-102	8	4.20-4.40	Brown clay.
1266709	ATK-P-102	10	5.60-5.80	Brown clay.
1266710	ATK-P-102	12	7.10-7.30	Brown clay.

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Analytical Report Number : 19-49796

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Ammonia as NH3 in soil	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	MCERTS
Ammonium as NH4 in leachate	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	NONE
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
Boron in leachate	Determination of boron in leachate. Sample acidified and followed by ICP-OES.	In-house method based on MEWAM	L039-PL	W	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	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
Chloride in leachate	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
Cr (III) in leachate	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Dissolved Organic Carbon in leachate	Determination of dissolved organic carbon in leachate by the measurement on a non-dispersive infrared analyser of carbon dioxide released by acidification.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L023-PL	W	NONE
Electrical conductivity at 20oC of leachate	Determination of electrical conductivity in leachate by electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031-PL	W	ISO 17025
Electrical conductivity of soil	Determination of electrical conductivity in soil by electrometric measurement.	In-house method	L031-PL	W	ISO 17025
Fraction of Organic Carbon in soil	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L009-PL	D	MCERTS
Free cyanide in leachate	Determination of free cyanide by distillation followed by colorimetry.	In-house method	L080-PL	W	ISO 17025
Free cyanide in soil	Determination of free 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
Hexavalent chromium in leachate	Determination of hexavalent chromium in leachate by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	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	MCERTS
Metals by ICP-OES in leachate	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

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number : 19-49796

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

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
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in leachate	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 (skalar)	L080-PL	W	ISO 17025
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
NRA Leachate Prep	10:1 extract with de-ionised water shaken for 24 hours then filtered.	In-house method based on National Rivers Authority	L020-PL	W	NONE
pH at 20oC in leachate	Determination of pH in leachate by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	ISO 17025
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	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
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
Sulphate in leachates	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
Sulphide in leachate	Determination of sulphide in leachate by ion selective electrode.	In-house method	L010-PL	W	NONE
Total cyanide in leachate	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	ISO 17025
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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS
Total organic carbon in leachate	Determination of dissolved organic 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
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS

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Analytical Report Number : 19-49796

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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
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

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.

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Sample ID	Other_ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
ATK-P-102	8	S	19-49796	1266708	b	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	b
ATK-P-102	8	S	19-49796	1266708	b	TPHCWG (Soil)	L088/76-PL	b
ATK-P-102	8	S	19-49796	1266708	b	Volatile organic compounds in soil	L073B-PL	b

Key: a - No sampling date b - Incorrect container
c - Holding time d - Headspace e - Temperature

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Analytical Report Number : 19-50371

Project / Site name:	M25 Junction 28	**Samples received on:**	09/07/2019
Your job number:	35403	**Samples instructed on:**	18/07/2019
Your order number:	35403-DO	**Analysis completed by:**	22/07/2019
Report Issue Number:	1	**Report issued on:**	22/07/2019
Samples Analysed:	1 soil sample		

Signed: [redacted]

[redacted]
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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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 19-50371

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270170				
Sample Reference				ATK-P-006				
Sample Number				1				
Depth (m)				0.20				
Date Sampled				09/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected				

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Analytical Report Number : 19-50371

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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
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.

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Analytical Report Number : 19-50459

Project / Site name:	M25 Junction 28	**Samples received on:**	15/07/2019
Your job number:	35403	**Samples instructed on:**	18/07/2019
Your order number:	35403-DO	**Analysis completed by:**	25/07/2019
Report Issue Number:	1	**Report issued on:**	25/07/2019
Samples Analysed:	2 leachate samples - 6 soil samples		

Signed: [redacted]

[redacted]
Senior Quality Specialist
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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Analytical Report Number: 19-50459

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270632	1270633	1270634	1270635	1270636
Sample Reference				ATK-P-009	ATK-P-009	ATK-P-009	ATK-P-009	ATK-P-009
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.80-0.90	0.00-0.40	0.60-1.10	1.10-1.60
Date Sampled				15/07/2019	15/07/2019	15/07/2019	15/07/2019	15/07/2019
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	< 0.1
Moisture Content	%	N/A	NONE	4.7	21	5.7	20	15
Total mass of sample received	kg	0.001	NONE	2.0	1 5	2.0	2.0	2 0
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	7.6	7 5	8.4	7.7	7 6
Electrical Conductivity	µS/cm	10	ISO 17025	2300	1900	2200	2200	1000
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Total Sulphate as SO_4	mg/kg	50	MCERTS	13000	6500	16000	8500	2100
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	1.7	2.7	1.8	2.4	1 0
Ammonia as NH_3	mg/kg	0 5	MCERTS	< 0 5	< 0.5	< 0.5	0.6	19
Ammonium as NH_4	mg/kg	0 5	MCERTS	< 0 5	< 0.5	< 0.5	0.6	21
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	0 017	0.0053	0.014	0.0035	0.013
Total Organic Carbon (TOC)	%	0.1	MCERTS	1.7	0 5	1.4	0.4	1 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	0.34	< 0.05	< 0 05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	< 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	< 0.05	< 0.05	0 38	< 0.05	0.41
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.53	< 0.05	0 88	< 0.05	0.95
Pyrene	mg/kg	0.05	MCERTS	0.49	< 0.05	0 83	< 0.05	0.76
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.27	< 0.05	0.45	< 0.05	0.43
Chrysene	mg/kg	0.05	MCERTS	0.32	< 0.05	0.47	< 0.05	0.40
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.37	< 0.05	0 62	< 0.05	0.53
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.20	< 0.05	0 23	< 0.05	0.18
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.32	< 0.05	0.48	< 0.05	0.46
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0 24	< 0.05	0.24
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0 30	< 0.05	0.27
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0 8	MCERTS	2.84	< 0.80	4 88	< 0.80	4.63

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Analytical Report Number: 19-50459

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270632	1270633	1270634	1270635	1270636
Sample Reference				ATK-P-009	ATK-P-009	ATK-P-009	ATK-P-009	ATK-P-009
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.80-0.90	0.00-0.40	0.60-1.10	1.10-1.60
Date Sampled				15/07/2019	15/07/2019	15/07/2019	15/07/2019	15/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13	14	11	12	13
Barium (aqua regia extractable)	mg/kg	1	MCERTS	130	47	100	42	51
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.95	1 3	0.79	1.3	1 0
Boron (water soluble)	mg/kg	0 2	MCERTS	4.2	2 5	3.8	3.2	1 8
Cadmium (aqua regia extractable)	mg/kg	0 2	MCERTS	0.2	< 0.2	0.2	< 0 2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4 0	< 4.0	< 4.0	< 4 0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	36	64	34	67	54
Copper (aqua regia extractable)	mg/kg	1	MCERTS	34	25	38	27	22
Lead (aqua regia extractable)	mg/kg	1	MCERTS	54	15	70	12	25
Mercury (aqua regia extractable)	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	22	40	20	40	27
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	48	83	48	87	64
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	110	69	120	76	66
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
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	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2 0	< 2.0	< 2.0	< 2 0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	9.2	< 8.0	< 8.0	< 8 0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	41	< 8.0	< 8.0	< 8 0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	53	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	6.0	< 1.0	< 1.0	< 1 0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	6.8	< 2.0	3.5	< 2 0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	24	< 10	19	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	67	< 10	52	< 10	27
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	100	< 10	75	< 10	32

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Analytical Report Number: 19-50459

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270632	1270633	1270634	1270635	1270636
Sample Reference				ATK-P-009	ATK-P-009	ATK-P-009	ATK-P-009	ATK-P-009
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.80-0.90	0.00-0.40	0.60-1.10	1.10-1.60
Date Sampled				15/07/2019	15/07/2019	15/07/2019	15/07/2019	15/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
Chloroethane	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	-	-
Bromomethane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
Vinyl Chloride	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	-	-
Trichlorofluoromethane	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	-	-
1,1-Dichloroethene	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
2,2-Dichloropropane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Trichloromethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,1-Dichloropropene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	-	-
Benzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Tetrachloromethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Trichloroethene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Dibromomethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Bromodichloromethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
Toluene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
Tetrachloroethene	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
Chlorobenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Ethylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
p & m-Xylene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Styrene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Tribromomethane	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	-	-
o-Xylene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1 1 2 2-Tetrachloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Isopropylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Bromobenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
n-Propylbenzene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
2-Chlorotoluene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
4-Chlorotoluene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
tert-Butylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
sec-Butylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Butylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Hexachlorobutadiene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-

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Analytical Report Number: 19-50459

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270632	1270633	1270634	1270635	1270636
Sample Reference				ATK-P-009	ATK-P-009	ATK-P-009	ATK-P-009	ATK-P-009
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.80-0.90	0.00-0.40	0.60-1.10	1.10-1.60
Date Sampled				15/07/2019	15/07/2019	15/07/2019	15/07/2019	15/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	-	-
Phenol	mg/kg	0 2	ISO 17025	< 0 2	< 0.2	< 0.2	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
Bis(2-chloroethyl)ether	mg/kg	0 2	MCERTS	< 0 2	< 0.2	< 0.2	-	-
1,3-Dichlorobenzene	mg/kg	0 2	MCERTS	< 0 2	< 0.2	< 0.2	-	-
1 2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
1 4-Dichlorobenzene	mg/kg	0 2	MCERTS	< 0 2	< 0.2	< 0.2	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
2-Methylphenol	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	-	-
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	-	-
Nitrobenzene	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	-	-
4-Methylphenol	mg/kg	0 2	NONE	< 0 2	< 0.2	< 0.2	-	-
Isophorone	mg/kg	0 2	MCERTS	< 0 2	< 0.2	< 0.2	-	-
2-Nitrophenol	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	-	-
2 4-Dimethylphenol	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	-	-
Bis(2-chloroethoxy)methane	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	-	-
1,2,4-Trichlorobenzene	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	-	-
Naphthalene	mg/kg	0.05	MCERTS	0.34	< 0.05	< 0.05	-	-
2,4-Dichlorophenol	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	-	-
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	-
2 4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0 3	< 0.3	< 0.3	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	-	-
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	-	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	-
Azobenzene	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	-	-
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0 38	-	-
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	-
Carbazole	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	-	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	-	-
Anthraquinone	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	-	-
Fluoranthene	mg/kg	0.05	MCERTS	0.53	< 0 05	0 88	-	-
Pyrene	mg/kg	0.05	MCERTS	0.49	< 0 05	0 83	-	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0 3	< 0.3	< 0.3	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.27	< 0 05	0.45	-	-
Chrysene	mg/kg	0.05	MCERTS	0.32	< 0 05	0.47	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.37	< 0 05	0 62	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.20	< 0 05	0 23	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.32	< 0 05	0.48	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0 24	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0 30	-	-

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Analytical Report Number: 19-50459

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270632	1270633	1270634	1270635	1270636
Sample Reference				ATK-P-009	ATK-P-009	ATK-P-009	ATK-P-009	ATK-P-009
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.80-0.90	0.00-0.40	0.60-1.10	1.10-1.60
Date Sampled				15/07/2019	15/07/2019	15/07/2019	15/07/2019	15/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs								
PCB Congener 077	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 081	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 105	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 114	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 118	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 123	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 126	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 156	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 157	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 167	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 169	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 189	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
Total PCBs	mg/kg	0.012	NONE	< 0 012	< 0.012	< 0.012	-	-
Organochlorine Pesticides (OCP)								
Aldrin	ug/kg	10	NONE	< 10	< 10	< 10	-	-
BHC-alpha (benzene hexachloride)	ug/kg	10	NONE	< 10	< 10	< 10	-	-
BHC-beta	ug/kg	10	NONE	< 10	< 10	< 10	-	-
BHC-delta	ug/kg	10	NONE	< 10	< 10	< 10	-	-
BHC-gamma (Lindane, gamma HCH)	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Chlordane-cis	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Chlordane-trans	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Chlorothalonil	ug/kg	10	NONE	< 10	< 10	< 10	-	-
DDD-o,p'	ug/kg	1	NONE	< 1 0	< 1.0	< 1.0	-	-
DDD-p,p'	ug/kg	1	NONE	< 1 0	< 1.0	1.2	-	-
DDE-o, p'	ug/kg	1	NONE	< 1 0	< 1.0	< 1.0	-	-
DDE-p,p'	ug/kg	1	NONE	< 1 0	< 1.0	2.7	-	-
DDT-o,p'	ug/kg	1	NONE	< 1 0	< 1.0	< 1.0	-	-
DDT-p,p'	ug/kg	1	NONE	2.9	< 1.0	2.3	-	-
Dichlorobenzonitrile, 2,6-	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Dieldrin	ug/kg	10	NONE	13	< 10	14	-	-
Endosulfan I (alpha isomer)	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Endosulfan II (beta isomer)	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Endosulfan sulfate	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Endrin	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Endrin aldehyde	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Endrin ketone	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Heptachlor	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Heptachlor exo-epoxide	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Hexachlorobenzene	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Hexachlorobutadiene	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Isodrin	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Methoxychlor, p,p'-	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Pentachlorobenzene	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Tecnazene	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Tetrachlorobenzene, 1,2,4,5-	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Trichlorobenzene, 1,2,3-	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Trichlorobenzene, 1,3,5-	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Trifluralin	ug/kg	10	NONE	< 10	< 10	< 10	-	-

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Analytical Report Number: 19-50459

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270632	1270633	1270634	1270635	1270636
Sample Reference				ATK-P-009	ATK-P-009	ATK-P-009	ATK-P-009	ATK-P-009
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.80-0.90	0.00-0.40	0.60-1.10	1.10-1.60
Date Sampled				15/07/2019	15/07/2019	15/07/2019	15/07/2019	15/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Organophosphorus Pesticides (OPP)								
Azinphos-ethyl	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Azinphos-methyl	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Carbophenothion	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Chlorfenvinphos (mixture of z and e isomers)	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Chlorpyrifos	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Demeton-O	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Demeton-S	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Diazinon	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Dichlorvos	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Dimethoate	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Dimethylvinphos	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Ethion	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Etrimfos	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Fenitrothion	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Fenthion	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Malathion	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Methacrifos	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Mevinphos , E-	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Mevinphos, Z-	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Parathion	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Parathion-methyl	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Phorate	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Phosalone	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Phosphamidon I	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Pirimiphos-ethyl	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Pirimiphos-methyl	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Propetamphos	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Triazophos	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Organonitrogen Pesticides (ONP)								
Pendimethalin	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Propyzamide	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Triadimefon	ug/kg	10	NONE	< 10	< 10	< 10	-	-

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Analytical Report Number: 19-50459

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270632	1270633	1270634	1270635	1270636
Sample Reference				ATK-P-009	ATK-P-009	ATK-P-009	ATK-P-009	ATK-P-009
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.80-0.90	0.00-0.40	0.60-1.10	1.10-1.60
Date Sampled				15/07/2019	15/07/2019	15/07/2019	15/07/2019	15/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Environmental Forensics								
Triazine Herbicides								
Atrazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	-	-
Simazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	-	-
Prometryn	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	-	-
Propazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	-	-
Terbuthylazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	-	-
Terbutryn	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	-	-
Trietazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	-	-
Cyanazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	-	-
Acid Herbicides								
2 4 5-T	ug/kg	20	NONE	< 20	< 20	< 20	-	-
2 4 5-TP	ug/kg	20	NONE	< 20	< 20	< 20	-	-
2,4-D	ug/kg	20	NONE	< 20	< 20	< 20	-	-
2,4-DB	ug/kg	20	NONE	< 20	< 20	< 20	-	-
Dicamba	ug/kg	20	NONE	< 20	< 20	< 20	-	-
Dichlorprop	ug/kg	20	NONE	< 20	< 20	< 20	-	-
Dinoseb	ug/kg	20	NONE	< 20	< 20	< 20	-	-
MCPA	ug/kg	20	NONE	< 20	< 20	< 20	-	-
MCPB	ug/kg	20	NONE	< 20	< 20	< 20	-	-
MCPP (Mecoprop)	ug/kg	20	NONE	< 20	< 20	< 20	-	-
Picloram	ug/kg	20	NONE	< 20	< 20	< 20	-	-
Phenylurea herbicides								
Isoproturon	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Chlortoluron	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Linuron	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Diuron	ug/kg	10	NONE	12	< 10	15	-	-
Diflubenzuron	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Flumeturon	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Siduron	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Terbuthiuron	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Thidiazuron	ug/kg	10	NONE	< 10	< 10	< 10	-	-

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Analytical Report Number: 19-50459

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270637				
Sample Reference				ATK-P-009				
Sample Number				4				
Depth (m)				2.50-3.00				
Date Sampled				15/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1				
Moisture Content	%	N/A	NONE	30				
Total mass of sample received	kg	0.001	NONE	2.0				
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected				
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	7.6				
Electrical Conductivity	µS/cm	10	ISO 17025	1900				
Total Cyanide	mg/kg	1	MCERTS	< 1				
Free Cyanide	mg/kg	1	MCERTS	< 1				
Total Sulphate as SO_4	mg/kg	50	MCERTS	5400				
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	2.4				
Ammonia as NH_3	mg/kg	0 5	MCERTS	42				
Ammonium as NH_4	mg/kg	0 5	MCERTS	44				
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	0 036				
Total Organic Carbon (TOC)	%	0.1	MCERTS	3.6				
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	0.24				
Anthracene	mg/kg	0.05	MCERTS	0.15				
Fluoranthene	mg/kg	0.05	MCERTS	0.81				
Pyrene	mg/kg	0.05	MCERTS	0.70				
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.39				
Chrysene	mg/kg	0.05	MCERTS	0.37				
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.43				
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.18				
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.34				
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05				
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05				
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0 8	MCERTS	3.61				

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Analytical Report Number: 19-50459

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270637				
Sample Reference				ATK-P-009				
Sample Number				4				
Depth (m)				2.50-3.00				
Date Sampled				15/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13				
Barium (aqua regia extractable)	mg/kg	1	MCERTS	50				
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.90				
Boron (water soluble)	mg/kg	0 2	MCERTS	5.0				
Cadmium (aqua regia extractable)	mg/kg	0 2	MCERTS	< 0 2				
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4 0				
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	46				
Copper (aqua regia extractable)	mg/kg	1	MCERTS	26				
Lead (aqua regia extractable)	mg/kg	1	MCERTS	30				
Mercury (aqua regia extractable)	mg/kg	0 3	MCERTS	< 0 3				
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	24				
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1 0				
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	62				
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	83				
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	< 1 0				
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	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1 0				
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2 0				
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8 0				
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8 0				
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10				
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1 0				
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2 0				
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	13				
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	37				
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	52				

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Analytical Report Number: 19-50459

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270637				
Sample Reference				ATK-P-009				
Sample Number				4				
Depth (m)				2.50-3.00				
Date Sampled				15/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
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				
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				

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Analytical Report Number: 19-50459

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270637				
Sample Reference				ATK-P-009				
Sample Number				4				
Depth (m)				2.50-3.00				
Date Sampled				15/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	< 0.1				
Phenol	mg/kg	0 2	ISO 17025	< 0 2				
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1				
Bis(2-chloroethyl)ether	mg/kg	0 2	MCERTS	< 0 2				
1,3-Dichlorobenzene	mg/kg	0 2	MCERTS	< 0 2				
1 2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1				
1 4-Dichlorobenzene	mg/kg	0 2	MCERTS	< 0 2				
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1				
2-Methylphenol	mg/kg	0 3	MCERTS	< 0 3				
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05				
Nitrobenzene	mg/kg	0 3	MCERTS	< 0 3				
4-Methylphenol	mg/kg	0 2	NONE	< 0 2				
Isophorone	mg/kg	0 2	MCERTS	< 0 2				
2-Nitrophenol	mg/kg	0 3	MCERTS	< 0 3				
2 4-Dimethylphenol	mg/kg	0 3	MCERTS	< 0 3				
Bis(2-chloroethoxy)methane	mg/kg	0 3	MCERTS	< 0 3				
1,2,4-Trichlorobenzene	mg/kg	0 3	MCERTS	< 0 3				
Naphthalene	mg/kg	0.05	MCERTS	< 0.05				
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0 3				
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1				
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1				
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1				
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1				
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0 2				
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1				
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1				
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1				
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1				
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05				
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05				
2 4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0 2				
Dibenzofuran	mg/kg	0.2	MCERTS	< 0 2				
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0 3				
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0 2				
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0 2				
Fluorene	mg/kg	0.05	MCERTS	< 0.05				
Azobenzene	mg/kg	0.3	MCERTS	< 0 3				
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0 2				
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0 3				
Phenanthrene	mg/kg	0.05	MCERTS	0.24				
Anthracene	mg/kg	0.05	MCERTS	0.15				
Carbazole	mg/kg	0.3	MCERTS	< 0 3				
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0 2				
Anthraquinone	mg/kg	0.3	MCERTS	< 0 3				
Fluoranthene	mg/kg	0.05	MCERTS	0.81				
Pyrene	mg/kg	0.05	MCERTS	0.70				
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0 3				
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.39				
Chrysene	mg/kg	0.05	MCERTS	0.37				
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.43				
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.18				
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.34				
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05				
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05				

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Analytical Report Number: 19-50459

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270637				
Sample Reference				ATK-P-009				
Sample Number				4				
Depth (m)				2.50-3.00				
Date Sampled				15/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs								
PCB Congener 077	mg/kg	0.001	NONE	-				
PCB Congener 081	mg/kg	0.001	NONE	-				
PCB Congener 105	mg/kg	0.001	NONE	-				
PCB Congener 114	mg/kg	0.001	NONE	-				
PCB Congener 118	mg/kg	0.001	NONE	-				
PCB Congener 123	mg/kg	0.001	NONE	-				
PCB Congener 126	mg/kg	0.001	NONE	-				
PCB Congener 156	mg/kg	0.001	NONE	-				
PCB Congener 157	mg/kg	0.001	NONE	-				
PCB Congener 167	mg/kg	0.001	NONE	-				
PCB Congener 169	mg/kg	0.001	NONE	-				
PCB Congener 189	mg/kg	0.001	NONE	-				
Total PCBs	mg/kg	0.012	NONE	-				
Organochlorine Pesticides (OCP)								
Aldrin	ug/kg	10	NONE	-				
BHC-alpha (benzene hexachloride)	ug/kg	10	NONE	-				
BHC-beta	ug/kg	10	NONE	-				
BHC-delta	ug/kg	10	NONE	-				
BHC-gamma (Lindane, gamma HCH)	ug/kg	10	NONE	-				
Chlordane-cis	ug/kg	10	NONE	-				
Chlordane-trans	ug/kg	10	NONE	-				
Chlorothalonil	ug/kg	10	NONE	-				
DDD-o,p'	ug/kg	1	NONE	-				
DDD-p,p'	ug/kg	1	NONE	-				
DDE-o, p'	ug/kg	1	NONE	-				
DDE-p,p'	ug/kg	1	NONE	-				
DDT-o,p'	ug/kg	1	NONE	-				
DDT-p,p'	ug/kg	1	NONE	-				
Dichlorobenzonitrile, 2,6-	ug/kg	10	NONE	-				
Dieldrin	ug/kg	10	NONE	-				
Endosulfan I (alpha isomer)	ug/kg	10	NONE	-				
Endosulfan II (beta isomer)	ug/kg	10	NONE	-				
Endosulfan sulfate	ug/kg	10	NONE	-				
Endrin	ug/kg	10	NONE	-				
Endrin aldehyde	ug/kg	10	NONE	-				
Endrin ketone	ug/kg	10	NONE	-				
Heptachlor	ug/kg	10	NONE	-				
Heptachlor exo-epoxide	ug/kg	10	NONE	-				
Hexachlorobenzene	ug/kg	10	NONE	-				
Hexachlorobutadiene	ug/kg	10	NONE	-				
Isodrin	ug/kg	10	NONE	-				
Methoxychlor, p,p'-	ug/kg	10	NONE	-				
Pentachlorobenzene	ug/kg	10	NONE	-				
Tecnazene	ug/kg	10	NONE	-				
Tetrachlorobenzene, 1,2,4,5-	ug/kg	10	NONE	-				
Trichlorobenzene, 1,2,3-	ug/kg	10	NONE	-				
Trichlorobenzene, 1,3,5-	ug/kg	10	NONE	-				
Trifluralin	ug/kg	10	NONE	-				

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Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270637				
Sample Reference				ATK-P-009				
Sample Number				4				
Depth (m)				2.50-3.00				
Date Sampled				15/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Organophosphorus Pesticides (OPP)								
Azinphos-ethyl	ug/kg	10	NONE	-				
Azinphos-methyl	ug/kg	10	NONE	-				
Carbophenothion	ug/kg	10	NONE	-				
Chlorfenvinphos (mixture of z and e isomers)	ug/kg	10	NONE	-				
Chlorpyrifos	ug/kg	10	NONE	-				
Demeton-O	ug/kg	10	NONE	-				
Demeton-S	ug/kg	10	NONE	-				
Diazinon	ug/kg	10	NONE	-				
Dichlorvos	ug/kg	10	NONE	-				
Dimethoate	ug/kg	10	NONE	-				
Dimethylvinphos	ug/kg	10	NONE	-				
Ethion	ug/kg	10	NONE	-				
Etrimfos	ug/kg	10	NONE	-				
Fenitrothion	ug/kg	10	NONE	-				
Fenthion	ug/kg	10	NONE	-				
Malathion	ug/kg	10	NONE	-				
Methacrifos	ug/kg	10	NONE	-				
Mevinphos , E-	ug/kg	10	NONE	-				
Mevinphos, Z-	ug/kg	10	NONE	-				
Parathion	ug/kg	10	NONE	-				
Parathion-methyl	ug/kg	10	NONE	-				
Phorate	ug/kg	10	NONE	-				
Phosalone	ug/kg	10	NONE	-				
Phosphamidon I	ug/kg	10	NONE	-				
Pirimiphos-ethyl	ug/kg	10	NONE	-				
Pirimiphos-methyl	ug/kg	10	NONE	-				
Propetamphos	ug/kg	10	NONE	-				
Triazophos	ug/kg	10	NONE	-				
Organonitrogen Pesticides (ONP)								
Pendimethalin	ug/kg	10	NONE	-				
Propyzamide	ug/kg	10	NONE	-				
Triadimefon	ug/kg	10	NONE	-				

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Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270637				
Sample Reference				ATK-P-009				
Sample Number				4				
Depth (m)				2.50-3.00				
Date Sampled				15/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Environmental Forensics								
Triazine Herbicides								
Atrazine	mg/kg	0.1	NONE	-				
Simazine	mg/kg	0.1	NONE	-				
Prometryn	mg/kg	0.1	NONE	-				
Propazine	mg/kg	0.1	NONE	-				
Terbuthylazine	mg/kg	0.1	NONE	-				
Terbutryn	mg/kg	0.1	NONE	-				
Trietazine	mg/kg	0.1	NONE	-				
Cyanazine	mg/kg	0.1	NONE	-				
Acid Herbicides								
2 4 5-T	ug/kg	20	NONE	-				
2 4 5-TP	ug/kg	20	NONE	-				
2,4-D	ug/kg	20	NONE	-				
2,4-DB	ug/kg	20	NONE	-				
Dicamba	ug/kg	20	NONE	-				
Dichlorprop	ug/kg	20	NONE	-				
Dinoseb	ug/kg	20	NONE	-				
MCPA	ug/kg	20	NONE	-				
MCPB	ug/kg	20	NONE	-				
MCPP (Mecoprop)	ug/kg	20	NONE	-				
Picloram	ug/kg	20	NONE	-				
Phenylurea herbicides								
Isoproturon	ug/kg	10	NONE	-				
Chlortoluron	ug/kg	10	NONE	-				
Linuron	ug/kg	10	NONE	-				
Diuron	ug/kg	10	NONE	-				
Diflubenzuron	ug/kg	10	NONE	-				
Flumeturon	ug/kg	10	NONE	-				
Siduron	ug/kg	10	NONE	-				
Terbuthiuron	ug/kg	10	NONE	-				
Thidiazuron	ug/kg	10	NONE	-				

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Analytical Report Number: 19-50459

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270638	1270639			
Sample Reference				ATK-P-009	ATK-P-009			
Sample Number				1	2			
Depth (m)				0.00-0.20	0.80-0.90			
Date Sampled				15/07/2019	15/07/2019			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	7.4	8 0			
Electrical Conductivity	µS/cm	10	ISO 17025	2200	150			
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10			
Free Cyanide	µg/l	10	ISO 17025	< 10	< 10			
Sulphate as SO_4	mg/l	0.1	ISO 17025	1690	27.9			
Sulphide	µg/l	5	NONE	< 5 0	< 5.0			
Chloride	mg/l	0.15	ISO 17025	3.7	2 5			
Ammonium as NH_4	µg/l	15	NONE	43	580			
Total Organic Carbon (TOC)	mg/l	0.1	NONE	7.14	8.23			
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	6.65	7.81			
Total Phenols								
Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10			
Heavy Metals / Metalloids								
Antimony (dissolved)	µg/l	1.7	ISO 17025	< 1.7	< 1.7			
Arsenic (dissolved)	µg/l	1.1	ISO 17025	8.1	7 2			
Barium (dissolved)	µg/l	0.05	ISO 17025	86	8.9			
Beryllium (dissolved)	µg/l	0.2	ISO 17025	< 0 2	< 0.2			
Boron (dissolved)	µg/l	10	ISO 17025	58	< 10			
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08			
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5 0	< 5.0			
Chromium (III)	µg/l	1	NONE	< 1 0	< 1.0			
Chromium (dissolved)	µg/l	0.4	ISO 17025	0.9	1 0			
Cobalt (dissolved)	µg/l	0.3	ISO 17025	< 0 3	1 3			
Copper (dissolved)	µg/l	0.7	ISO 17025	9.2	4 3			
Iron (dissolved)	mg/l	0.004	ISO 17025	0 095	0.86			
Lead (dissolved)	µg/l	1	ISO 17025	2.8	1 2			
Manganese (dissolved)	µg/l	0.06	ISO 17025	15	3.4			
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0 5	< 0.5			
Molybdenum (dissolved)	µg/l	0.4	ISO 17025	7.6	< 0.4			
Nickel (dissolved)	µg/l	0.3	ISO 17025	1.9	1 3			
Phosphorus (dissolved)	µg/l	30	NONE	32	< 30			
Selenium (dissolved)	µg/l	4	ISO 17025	< 4 0	< 4.0			
Tin (dissolved)	µg/l	1	ISO 17025	< 1 0	< 1.0			
Vanadium (dissolved)	µg/l	1.7	ISO 17025	3.3	5 3			
Zinc (dissolved)	µg/l	0.4	ISO 17025	7.8	11			
Calcium (dissolved)	mg/l	0.012	ISO 17025	540	14			
Magnesium (dissolved)	mg/l	0.005	ISO 17025	15	6 3			
Potassium (dissolved)	mg/l	0.025	ISO 17025	9.1	2 6			
Sodium (dissolved)	mg/l	0.01	ISO 17025	5.3	3 2			

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Analytical Report Number : 19-50459

Project / Site name: M25 Junction 28

* 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 *
1270632	ATK-P-009	1	0.00-0.20	Brown loam and sand with gravel and vegetation.
1270633	ATK-P-009	2	0.80-0.90	Brown clay and sand with gravel and vegetation.
1270634	ATK-P-009	1	0.00-0.40	Brown loam and sand with gravel and vegetation.
1270635	ATK-P-009	2	0.60-1.10	Brown clay and sand with vegetation.
1270636	ATK-P-009	3	1.10-1.60	Brown clay and sand with vegetation.
1270637	ATK-P-009	4	2.50-3.00	Brown clay and sand with vegetation.

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Analytical Report Number : 19-50459

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Ammonia as NH3 in soil	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	MCERTS
Ammonium as NH4 in leachate	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	NONE
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
Boron in leachate	Determination of boron in leachate. Sample acidified and followed by ICP-OES.	In-house method based on MEWAM	L039-PL	W	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	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
Chloride in leachate	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
Cr (III) in leachate	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Dissolved Organic Carbon in leachate	Determination of dissolved organic carbon in leachate by the measurement on a non-dispersive infrared analyser of carbon dioxide released by acidification.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L023-PL	W	NONE
EF - Phenylurea herbicides in soil by LC-MS/MS	Phenylurea herbicides by LC-MS/MS	In-house method	UK	W	NONE
Electrical conductivity at 20oC of leachate	Determination of electrical conductivity in leachate by electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031-PL	W	ISO 17025
Electrical conductivity of soil	Determination of electrical conductivity in soil by electrometric measurement.	In-house method	L031-PL	W	ISO 17025
Fraction of Organic Carbon in soil	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L009-PL	D	MCERTS
Free cyanide in leachate	Determination of free cyanide by distillation followed by colorimetry.	In-house method	L080-PL	W	ISO 17025
Free cyanide in soil	Determination of free 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
Hexavalent chromium in leachate	Determination of hexavalent chromium in leachate by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	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	MCERTS

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Analytical Report Number : 19-50459

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals by ICP-OES in leachate	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
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
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in leachate	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 (skalar)	L080-PL	W	ISO 17025
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
NRA Leachate Prep	10:1 extract with de-ionised water shaken for 24 hours then filtered.	In-house method based on National Rivers Authority	L020-PL	W	NONE
Organochlorine Pesticides in soil by GC MS/MS	Detemination of Pesticides in soil by GC MS/MS	Organochlorine Pesticides in soil by GC MS/MS	L055B-PL	D	NONE
Organonitrogen Pesticides in soil by GC MS/MS	Detemination of Pesticides in soil by GC MS/MS	Organonitrogen Pesticides in soil by GC MS/MS	L055B-PL	D	NONE
Organophosphorus Pesticides in soil by GC MS/MS	Detemination of Pesticides in soil by GC MS/MS	Organophosphorus Pesticides in soil by GC MS/MS	L055B-PL	D	NONE
PCBs WHO 12 in soil	Determination of PCBs (WHO-12 Congeners) by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	NONE
pH at 20oC in leachate	Determination of pH in leachate by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	ISO 17025
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	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
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
Sulphate in leachates	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS

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Analytical Report Number : 19-50459

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphide in leachate	Determination of sulphide in leachate by ion selective electrode.	In-house method	L010-PL	W	NONE
TO - Acid Herbicides in soil by LC-MS/MS	Determination of Acid herbicides in waters by LC-MS/MS	In-house method		W	NONE
TO - Triazine pesticides in soil	Determination of Triazines by LC-MS(/MS).	In-house method based on USEPA method 615.		W	NONE
Total cyanide in leachate	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	ISO 17025
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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS
Total organic carbon in leachate	Determination of dissolved organic 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
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	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
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

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.

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Analytical Report Number : 19-50460

Project / Site name:	M25 Junction 28	**Samples received on:**	15/07/2019
Your job number:	35403	**Samples instructed on:**	18/07/2019
Your order number:	35403-DO	**Analysis completed by:**	25/07/2019
Report Issue Number:	1	**Report issued on:**	25/07/2019
Samples Analysed:	1 10:1 WAC sample		

Signed: [redacted]

[redacted]
Head of Customer Services
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:	**19-50460**						
					Client: GEOENG		
Location	**M25 Junction 28**						
Lab Reference (Sample Number)	1270640 / 1270641				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	15/07/2019				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	ATK-P-009 4						
Depth (m)	2.50-3.00						
Solid Waste Analysis							
TOC (%)**	3.9				3%	5%	6%
Loss on Ignition (%) **	-				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	18				100	--	--
pH (units)**	-				--	>6	--
Acid Neutralisation Capacity (mol / kg)	-				--	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 *	0.0020			0.0162	0.5	2	25
Barium *	0.0832			0.668	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0078			0.063	0.5	10	70
Copper *	0.0072			0.058	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0072			0.0578	0.5	10	30
Nickel *	0.0064			0.052	0.4	10	40
Lead *	< 0.0010			< 0.010	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.0078			0.062	4	50	200
Chloride *	5.6			45	800	4000	25000
Fluoride	0.89			7.2	10	150	500
Sulphate *	350			2800	1000	20000	50000
TDS*	490			3900	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	14.4			116	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	2.0						
Dry Matter (%)	70						
Moisture (%)	30						

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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Analytical Report Number : 19-50460

Project / Site name: M25 Junction 28

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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 *
1270640	ATK-P-009	4	2.50-3.00	Brown clay and sand with vegetation.

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Analytical Report Number : 19-50460

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

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
BTEX in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Chloride 10:1 WAC	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-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
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
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
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.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
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
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
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	NONE
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
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 electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L004-PL	W	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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS

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.

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Analytical Report Number : 19-50462

Replaces Analytical Report Number : 19-50462, issue no. 1

Project / Site name:	M25 Junction 28	**Samples received on:**	16/07/2019
Your job number:	35403	**Samples instructed on:**	18/07/2019
Your order number:	35403-DO	**Analysis completed by:**	13/08/2019
Report Issue Number:	2	**Report issued on:**	13/08/2019
Samples Analysed:	2 leachate samples - 6 soil samples		

Signed: [redacted]

[redacted]
Head of Customer Services
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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Analytical Report Number: 19-50462

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270649	1270650	1270651	1270652	1270653
Sample Reference				ATK-P-003	ATK-P-003	ATK-P-003	ATK-P-003	ATK-P-003
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.80-0.90	0.00-0 50	0.80-1.30	1.60-1.90
Date Sampled				15/07/2019	15/07/2019	15/07/2019	15/07/2019	15/07/2019
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	< 0.1
Moisture Content	%	N/A	NONE	10	20	12	19	22
Total mass of sample received	kg	0.001	NONE	2.0	2 0	2.0	2.0	2 0
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	< 0 001	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	< 0 001	-	-	-	-
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	9.0	8.1	9.2	7.8	7.7
Electrical Conductivity	µS/cm	10	ISO 17025	2200	780	2300	590	1900
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Total Sulphate as SO_4	mg/kg	50	MCERTS	16000	1200	25000	960	4200
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	1.7	0.45	2.1	0.32	2 3
Ammonia as NH_3	mg/kg	0 5	MCERTS	< 0 5	0 8	< 0.5	1.2	0.7
Ammonium as NH_4	mg/kg	0 5	MCERTS	< 0 5	0.9	< 0.5	1.2	0 8
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	0 013	0.0038	0.018	0.0066	0.0030
Total Organic Carbon (TOC)	%	0.1	MCERTS	1.3	0.4	1.8	0.7	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	< 0.05	< 0.05	< 0 05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	< 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	< 0.05	< 0.05	0 57	1.1	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.16	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.25	< 0.05	1.3	1.1	< 0.05
Pyrene	mg/kg	0.05	MCERTS	0.23	< 0.05	1.2	0.90	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0 60	0.29	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.70	0.44	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0 87	0.46	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0 32	0.22	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0 69	0.36	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0 34	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.41	< 0.05	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0 8	MCERTS	< 0.80	< 0.80	7 22	4.86	< 0.80

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Analytical Report Number: 19-50462

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270649	1270650	1270651	1270652	1270653
Sample Reference				ATK-P-003	ATK-P-003	ATK-P-003	ATK-P-003	ATK-P-003
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.80-0.90	0.00-0 50	0.80-1.30	1.60-1.90
Date Sampled				15/07/2019	15/07/2019	15/07/2019	15/07/2019	15/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	12	11	13	12	9 5
Barium (aqua regia extractable)	mg/kg	1	MCERTS	120	72	150	63	41
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.93	1.1	0 84	1.1	1.1
Boron (water soluble)	mg/kg	0 2	MCERTS	3.5	1 5	3.5	1.8	1.7
Cadmium (aqua regia extractable)	mg/kg	0 2	MCERTS	0.3	< 0.2	0.6	< 0 2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4 0	< 4.0	< 4.0	< 4 0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	36	53	31	54	51
Copper (aqua regia extractable)	mg/kg	1	MCERTS	67	23	39	25	22
Lead (aqua regia extractable)	mg/kg	1	MCERTS	110	14	88	25	13
Mercury (aqua regia extractable)	mg/kg	0 3	MCERTS	0.4	< 0.3	< 0.3	< 0 3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	21	34	18	34	34
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1 0	< 1.0	1.7	< 1 0	1 6
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	51	75	40	72	70
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	150	65	160	66	64
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
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	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	5.2	< 2.0	8.8	< 2 0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	16	< 8.0	15	< 8 0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	61	< 8.0	82	< 8 0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	83	< 10	110	< 10	< 10
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2 0	< 2.0	< 2.0	< 2 0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	< 10	18	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	33	< 10	70	13	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	40	< 10	89	23	< 10

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Analytical Report Number: 19-50462

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270649	1270650	1270651	1270652	1270653
Sample Reference				ATK-P-003	ATK-P-003	ATK-P-003	ATK-P-003	ATK-P-003
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.80-0.90	0.00-0 50	0.80-1.30	1.60-1.90
Date Sampled				15/07/2019	15/07/2019	15/07/2019	15/07/2019	15/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
Chloroethane	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	-	-
Bromomethane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
Vinyl Chloride	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	-	-
Trichlorofluoromethane	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	-	-
1,1-Dichloroethene	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
2,2-Dichloropropane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Trichloromethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,1-Dichloropropene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	-	-
Benzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Tetrachloromethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Trichloroethene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Dibromomethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Bromodichloromethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
Toluene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
Tetrachloroethene	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
Chlorobenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Ethylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
p & m-Xylene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Styrene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Tribromomethane	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	-	-
o-Xylene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1 1 2 2-Tetrachloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Isopropylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Bromobenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
n-Propylbenzene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
2-Chlorotoluene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
4-Chlorotoluene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
tert-Butylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
sec-Butylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Butylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Hexachlorobutadiene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-

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Analytical Report Number: 19-50462

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270649	1270650	1270651	1270652	1270653
Sample Reference				ATK-P-003	ATK-P-003	ATK-P-003	ATK-P-003	ATK-P-003
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.80-0.90	0.00-0 50	0.80-1.30	1.60-1.90
Date Sampled				15/07/2019	15/07/2019	15/07/2019	15/07/2019	15/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	-	-
Phenol	mg/kg	0 2	ISO 17025	< 0 2	< 0.2	< 0.2	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
Bis(2-chloroethyl)ether	mg/kg	0 2	MCERTS	< 0 2	< 0.2	< 0.2	-	-
1,3-Dichlorobenzene	mg/kg	0 2	MCERTS	< 0 2	< 0.2	< 0.2	-	-
1 2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
1 4-Dichlorobenzene	mg/kg	0 2	MCERTS	< 0 2	< 0.2	< 0.2	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
2-Methylphenol	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	-	-
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	-	-
Nitrobenzene	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	-	-
4-Methylphenol	mg/kg	0 2	NONE	< 0 2	< 0.2	< 0.2	-	-
Isophorone	mg/kg	0 2	MCERTS	< 0 2	< 0.2	< 0.2	-	-
2-Nitrophenol	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	-	-
2 4-Dimethylphenol	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	-	-
Bis(2-chloroethoxy)methane	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	-	-
1,2,4-Trichlorobenzene	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	-	-
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	-
2,4-Dichlorophenol	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	-	-
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	-
2 4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0 3	< 0.3	< 0.3	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	-	-
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	-	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	-
Azobenzene	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	-	-
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0 57	-	-
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.16	-	-
Carbazole	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	-	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	-	-
Anthraquinone	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	-	-
Fluoranthene	mg/kg	0.05	MCERTS	0.25	< 0 05	1.3	-	-
Pyrene	mg/kg	0.05	MCERTS	0.23	< 0 05	1.2	-	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0 3	< 0.3	< 0.3	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	0 60	-	-
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	0.70	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	0 87	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	0 32	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	0 69	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0 34	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.41	-	-

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Analytical Report Number: 19-50462

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270649	1270650	1270651	1270652	1270653
Sample Reference				ATK-P-003	ATK-P-003	ATK-P-003	ATK-P-003	ATK-P-003
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.80-0.90	0.00-0 50	0.80-1.30	1.60-1.90
Date Sampled				15/07/2019	15/07/2019	15/07/2019	15/07/2019	15/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs								
PCB Congener 077	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 081	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 105	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 114	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 118	mg/kg	0.001	NONE	< 0 001	< 0.001	0.001	-	-
PCB Congener 123	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 126	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 156	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 157	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 167	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 169	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 189	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
Total PCBs	mg/kg	0.012	NONE	< 0 012	< 0.012	< 0.012	-	-
Organochlorine Pesticides (OCP)								
Aldrin	ug/kg	10	NONE	< 10	< 10	< 10	-	-
BHC-alpha (benzene hexachloride)	ug/kg	10	NONE	< 10	< 10	< 10	-	-
BHC-beta	ug/kg	10	NONE	< 10	< 10	< 10	-	-
BHC-delta	ug/kg	10	NONE	< 10	< 10	< 10	-	-
BHC-gamma (Lindane, gamma HCH)	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Chlordane-cis	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Chlordane-trans	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Chlorothalonil	ug/kg	10	NONE	< 10	< 10	< 10	-	-
DDD-o,p'	ug/kg	1	NONE	< 1 0	< 1.0	2.1	-	-
DDD-p,p'	ug/kg	1	NONE	< 1 0	< 1.0	10	-	-
DDE-o, p'	ug/kg	1	NONE	< 1 0	< 1.0	< 1.0	-	-
DDE-p,p'	ug/kg	1	NONE	< 1 0	< 1.0	3.4	-	-
DDT-o,p'	ug/kg	1	NONE	1.0	< 1.0	1.5	-	-
DDT-p,p'	ug/kg	1	NONE	5.2	< 1.0	5.7	-	-
Dichlorobenzonitrile, 2,6-	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Dieldrin	ug/kg	10	NONE	25	< 10	16	-	-
Endosulfan I (alpha isomer)	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Endosulfan II (beta isomer)	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Endosulfan sulfate	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Endrin	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Endrin aldehyde	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Endrin ketone	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Heptachlor	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Heptachlor exo-epoxide	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Hexachlorobenzene	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Hexachlorobutadiene	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Isodrin	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Methoxychlor, p,p'-	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Pentachlorobenzene	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Tecnazene	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Tetrachlorobenzene, 1,2,4,5-	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Trichlorobenzene, 1,2,3-	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Trichlorobenzene, 1,3,5-	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Trifluralin	ug/kg	10	NONE	< 10	< 10	< 10	-	-

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Analytical Report Number: 19-50462

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270649	1270650	1270651	1270652	1270653
Sample Reference				ATK-P-003	ATK-P-003	ATK-P-003	ATK-P-003	ATK-P-003
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.80-0.90	0.00-0 50	0.80-1.30	1.60-1.90
Date Sampled				15/07/2019	15/07/2019	15/07/2019	15/07/2019	15/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Organophosphorus Pesticides (OPP)								
Azinphos-ethyl	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Azinphos-methyl	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Carbophenothion	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Chlorfenvinphos (mixture of z and e isomers)	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Chlorpyrifos	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Demeton-O	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Demeton-S	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Diazinon	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Dichlorvos	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Dimethoate	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Dimethylvinphos	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Ethion	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Etrimfos	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Fenitrothion	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Fenthion	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Malathion	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Methacrifos	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Mevinphos , E-	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Mevinphos, Z-	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Parathion	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Parathion-methyl	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Phorate	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Phosalone	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Phosphamidon I	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Pirimiphos-ethyl	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Pirimiphos-methyl	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Propetamphos	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Triazophos	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Organonitrogen Pesticides (ONP)								
Pendimethalin	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Propyzamide	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Triadimefon	ug/kg	10	NONE	< 10	< 10	< 10	-	-

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Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270649	1270650	1270651	1270652	1270653
Sample Reference				ATK-P-003	ATK-P-003	ATK-P-003	ATK-P-003	ATK-P-003
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.80-0.90	0.00-0 50	0.80-1.30	1.60-1.90
Date Sampled				15/07/2019	15/07/2019	15/07/2019	15/07/2019	15/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Environmental Forensics								
Triazine Herbicides								
Atrazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	-	-
Simazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	-	-
Prometryn	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	-	-
Propazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	-	-
Terbuthylazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	-	-
Terbutryn	mg/kg	0.1	NONE	< 0.10	< 0.10	0 35	-	-
Trietazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	-	-
Cyanazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	-	-
Acid Herbicides								
2 4 5-T	ug/kg	20	NONE	< 20	< 20	< 20	-	-
2 4 5-TP	ug/kg	20	NONE	< 20	< 20	< 20	-	-
2,4-D	ug/kg	20	NONE	< 20	< 20	< 20	-	-
2,4-DB	ug/kg	20	NONE	< 20	< 20	< 20	-	-
Dicamba	ug/kg	20	NONE	< 20	< 20	< 20	-	-
Dichlorprop	ug/kg	20	NONE	< 20	< 20	< 20	-	-
Dinoseb	ug/kg	20	NONE	< 20	< 20	< 20	-	-
MCPA	ug/kg	20	NONE	< 20	< 20	< 20	-	-
MCPB	ug/kg	20	NONE	< 20	< 20	< 20	-	-
MCPP (Mecoprop)	ug/kg	20	NONE	< 20	< 20	< 20	-	-
Picloram	ug/kg	20	NONE	< 20	< 20	< 20	-	-
Phenylurea herbicides								
Isoproturon	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Chlortoluron	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Linuron	ug/kg	10	NONE	< 10	< 10	11	-	-
Diuron	ug/kg	10	NONE	10	< 10	65	-	-
Diflubenzuron	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Flumeturon	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Siduron	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Terbuthiuron	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Thidiazuron	ug/kg	10	NONE	< 10	< 10	< 10	-	-

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Analytical Report Number: 19-50462

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270654				
Sample Reference				ATK-P-003				
Sample Number				4				
Depth (m)				2.50-3.00				
Date Sampled				15/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1				
Moisture Content	%	N/A	NONE	21				
Total mass of sample received	kg	0.001	NONE	2.0				
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	-				
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	6.7				
Electrical Conductivity	µS/cm	10	ISO 17025	810				
Total Cyanide	mg/kg	1	MCERTS	< 1				
Free Cyanide	mg/kg	1	MCERTS	< 1				
Total Sulphate as SO_4	mg/kg	50	MCERTS	1100				
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.53				
Ammonia as NH_3	mg/kg	0 5	MCERTS	34				
Ammonium as NH_4	mg/kg	0 5	MCERTS	36				
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	0 024				
Total Organic Carbon (TOC)	%	0.1	MCERTS	2.4				
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	< 0.05				
Anthracene	mg/kg	0.05	MCERTS	< 0.05				
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Pyrene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05				
Chrysene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05				
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05				
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05				
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0 8	MCERTS	< 0.80				

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Analytical Report Number: 19-50462

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270654				
Sample Reference				ATK-P-003				
Sample Number				4				
Depth (m)				2.50-3.00				
Date Sampled				15/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	10				
Barium (aqua regia extractable)	mg/kg	1	MCERTS	48				
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.70				
Boron (water soluble)	mg/kg	0 2	MCERTS	2.7				
Cadmium (aqua regia extractable)	mg/kg	0 2	MCERTS	< 0 2				
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4 0				
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	38				
Copper (aqua regia extractable)	mg/kg	1	MCERTS	17				
Lead (aqua regia extractable)	mg/kg	1	MCERTS	35				
Mercury (aqua regia extractable)	mg/kg	0 3	MCERTS	< 0 3				
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	14				
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1 0				
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	60				
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	64				
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	< 1 0				
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	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1 0				
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2 0				
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8 0				
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	13				
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	13				
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1 0				
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2 0				
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10				
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10				
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10				

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Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270654				
Sample Reference				ATK-P-003				
Sample Number				4				
Depth (m)				2.50-3.00				
Date Sampled				15/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
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	-				
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	-				

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Analytical Report Number: 19-50462

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270654				
Sample Reference				ATK-P-003				
Sample Number				4				
Depth (m)				2.50-3.00				
Date Sampled				15/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	-				
Phenol	mg/kg	0 2	ISO 17025	-				
2-Chlorophenol	mg/kg	0.1	MCERTS	-				
Bis(2-chloroethyl)ether	mg/kg	0 2	MCERTS	-				
1,3-Dichlorobenzene	mg/kg	0 2	MCERTS	-				
1 2-Dichlorobenzene	mg/kg	0.1	MCERTS	-				
1 4-Dichlorobenzene	mg/kg	0 2	MCERTS	-				
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-				
2-Methylphenol	mg/kg	0 3	MCERTS	-				
Hexachloroethane	mg/kg	0.05	MCERTS	-				
Nitrobenzene	mg/kg	0 3	MCERTS	-				
4-Methylphenol	mg/kg	0 2	NONE	-				
Isophorone	mg/kg	0 2	MCERTS	-				
2-Nitrophenol	mg/kg	0 3	MCERTS	-				
2 4-Dimethylphenol	mg/kg	0 3	MCERTS	-				
Bis(2-chloroethoxy)methane	mg/kg	0 3	MCERTS	-				
1,2,4-Trichlorobenzene	mg/kg	0 3	MCERTS	-				
Naphthalene	mg/kg	0.05	MCERTS	-				
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-				
4-Chloroaniline	mg/kg	0.1	NONE	-				
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-				
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-				
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-				
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-				
2-Methylnaphthalene	mg/kg	0.1	NONE	-				
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-				
Dimethylphthalate	mg/kg	0.1	MCERTS	-				
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-				
Acenaphthylene	mg/kg	0.05	MCERTS	-				
Acenaphthene	mg/kg	0.05	MCERTS	-				
2 4-Dinitrotoluene	mg/kg	0.2	MCERTS	-				
Dibenzofuran	mg/kg	0.2	MCERTS	-				
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-				
Diethyl phthalate	mg/kg	0.2	MCERTS	-				
4-Nitroaniline	mg/kg	0.2	MCERTS	-				
Fluorene	mg/kg	0.05	MCERTS	-				
Azobenzene	mg/kg	0.3	MCERTS	-				
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-				
Hexachlorobenzene	mg/kg	0.3	MCERTS	-				
Phenanthrene	mg/kg	0.05	MCERTS	-				
Anthracene	mg/kg	0.05	MCERTS	-				
Carbazole	mg/kg	0.3	MCERTS	-				
Dibutyl phthalate	mg/kg	0.2	MCERTS	-				
Anthraquinone	mg/kg	0.3	MCERTS	-				
Fluoranthene	mg/kg	0.05	MCERTS	-				
Pyrene	mg/kg	0.05	MCERTS	-				
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-				
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	-				

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Analytical Report Number: 19-50462

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270654				
Sample Reference				ATK-P-003				
Sample Number				4				
Depth (m)				2.50-3.00				
Date Sampled				15/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs								
PCB Congener 077	mg/kg	0.001	NONE	-				
PCB Congener 081	mg/kg	0.001	NONE	-				
PCB Congener 105	mg/kg	0.001	NONE	-				
PCB Congener 114	mg/kg	0.001	NONE	-				
PCB Congener 118	mg/kg	0.001	NONE	-				
PCB Congener 123	mg/kg	0.001	NONE	-				
PCB Congener 126	mg/kg	0.001	NONE	-				
PCB Congener 156	mg/kg	0.001	NONE	-				
PCB Congener 157	mg/kg	0.001	NONE	-				
PCB Congener 167	mg/kg	0.001	NONE	-				
PCB Congener 169	mg/kg	0.001	NONE	-				
PCB Congener 189	mg/kg	0.001	NONE	-				
Total PCBs	mg/kg	0.012	NONE	-				
Organochlorine Pesticides (OCP)								
Aldrin	ug/kg	10	NONE	-				
BHC-alpha (benzene hexachloride)	ug/kg	10	NONE	-				
BHC-beta	ug/kg	10	NONE	-				
BHC-delta	ug/kg	10	NONE	-				
BHC-gamma (Lindane, gamma HCH)	ug/kg	10	NONE	-				
Chlordane-cis	ug/kg	10	NONE	-				
Chlordane-trans	ug/kg	10	NONE	-				
Chlorothalonil	ug/kg	10	NONE	-				
DDD-o,p'	ug/kg	1	NONE	-				
DDD-p,p'	ug/kg	1	NONE	-				
DDE-o, p'	ug/kg	1	NONE	-				
DDE-p,p'	ug/kg	1	NONE	-				
DDT-o,p'	ug/kg	1	NONE	-				
DDT-p,p'	ug/kg	1	NONE	-				
Dichlorobenzonitrile, 2,6-	ug/kg	10	NONE	-				
Dieldrin	ug/kg	10	NONE	-				
Endosulfan I (alpha isomer)	ug/kg	10	NONE	-				
Endosulfan II (beta isomer)	ug/kg	10	NONE	-				
Endosulfan sulfate	ug/kg	10	NONE	-				
Endrin	ug/kg	10	NONE	-				
Endrin aldehyde	ug/kg	10	NONE	-				
Endrin ketone	ug/kg	10	NONE	-				
Heptachlor	ug/kg	10	NONE	-				
Heptachlor exo-epoxide	ug/kg	10	NONE	-				
Hexachlorobenzene	ug/kg	10	NONE	-				
Hexachlorobutadiene	ug/kg	10	NONE	-				
Isodrin	ug/kg	10	NONE	-				
Methoxychlor, p,p'-	ug/kg	10	NONE	-				
Pentachlorobenzene	ug/kg	10	NONE	-				
Tecnazene	ug/kg	10	NONE	-				
Tetrachlorobenzene, 1,2,4,5-	ug/kg	10	NONE	-				
Trichlorobenzene, 1,2,3-	ug/kg	10	NONE	-				
Trichlorobenzene, 1,3,5-	ug/kg	10	NONE	-				
Trifluralin	ug/kg	10	NONE	-				

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Analytical Report Number: 19-50462

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270654				
Sample Reference				ATK-P-003				
Sample Number				4				
Depth (m)				2.50-3.00				
Date Sampled				15/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Organophosphorus Pesticides (OPP)								
Azinphos-ethyl	ug/kg	10	NONE	-				
Azinphos-methyl	ug/kg	10	NONE	-				
Carbophenothion	ug/kg	10	NONE	-				
Chlorfenvinphos (mixture of z and e isomers)	ug/kg	10	NONE	-				
Chlorpyrifos	ug/kg	10	NONE	-				
Demeton-O	ug/kg	10	NONE	-				
Demeton-S	ug/kg	10	NONE	-				
Diazinon	ug/kg	10	NONE	-				
Dichlorvos	ug/kg	10	NONE	-				
Dimethoate	ug/kg	10	NONE	-				
Dimethylvinphos	ug/kg	10	NONE	-				
Ethion	ug/kg	10	NONE	-				
Etrimfos	ug/kg	10	NONE	-				
Fenitrothion	ug/kg	10	NONE	-				
Fenthion	ug/kg	10	NONE	-				
Malathion	ug/kg	10	NONE	-				
Methacrifos	ug/kg	10	NONE	-				
Mevinphos , E-	ug/kg	10	NONE	-				
Mevinphos, Z-	ug/kg	10	NONE	-				
Parathion	ug/kg	10	NONE	-				
Parathion-methyl	ug/kg	10	NONE	-				
Phorate	ug/kg	10	NONE	-				
Phosalone	ug/kg	10	NONE	-				
Phosphamidon I	ug/kg	10	NONE	-				
Pirimiphos-ethyl	ug/kg	10	NONE	-				
Pirimiphos-methyl	ug/kg	10	NONE	-				
Propetamphos	ug/kg	10	NONE	-				
Triazophos	ug/kg	10	NONE	-				
Organonitrogen Pesticides (ONP)								
Pendimethalin	ug/kg	10	NONE	-				
Propyzamide	ug/kg	10	NONE	-				
Triadimefon	ug/kg	10	NONE	-				

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Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270654				
Sample Reference				ATK-P-003				
Sample Number				4				
Depth (m)				2.50-3.00				
Date Sampled				15/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Environmental Forensics								
Triazine Herbicides								
Atrazine	mg/kg	0.1	NONE	-				
Simazine	mg/kg	0.1	NONE	-				
Prometryn	mg/kg	0.1	NONE	-				
Propazine	mg/kg	0.1	NONE	-				
Terbuthylazine	mg/kg	0.1	NONE	-				
Terbutryn	mg/kg	0.1	NONE	-				
Trietazine	mg/kg	0.1	NONE	-				
Cyanazine	mg/kg	0.1	NONE	-				
Acid Herbicides								
2 4 5-T	ug/kg	20	NONE	-				
2 4 5-TP	ug/kg	20	NONE	-				
2,4-D	ug/kg	20	NONE	-				
2,4-DB	ug/kg	20	NONE	-				
Dicamba	ug/kg	20	NONE	-				
Dichlorprop	ug/kg	20	NONE	-				
Dinoseb	ug/kg	20	NONE	-				
MCPA	ug/kg	20	NONE	-				
MCPB	ug/kg	20	NONE	-				
MCPP (Mecoprop)	ug/kg	20	NONE	-				
Picloram	ug/kg	20	NONE	-				
Phenylurea herbicides								
Isoproturon	ug/kg	10	NONE	-				
Chlortoluron	ug/kg	10	NONE	-				
Linuron	ug/kg	10	NONE	-				
Diuron	ug/kg	10	NONE	-				
Diflubenzuron	ug/kg	10	NONE	-				
Flumeturon	ug/kg	10	NONE	-				
Siduron	ug/kg	10	NONE	-				
Terbuthiuron	ug/kg	10	NONE	-				
Thidiazuron	ug/kg	10	NONE	-				

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Analytical Report Number: 19-50462
Project / Site name: M25 Junction 28
Your Order No: 35403-DO

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 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
1270649	ATK-P-003	0.00-0.20	145	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

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Analytical Report Number: 19-50462

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270655	1270656			
Sample Reference				ATK-P-003	ATK-P-003			
Sample Number				1	2			
Depth (m)				0.00-0.20	0.80-0.90			
Date Sampled				15/07/2019	15/07/2019			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	7.6	7 6			
Electrical Conductivity	µS/cm	10	ISO 17025	1700	180			
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10			
Free Cyanide	µg/l	10	ISO 17025	< 10	< 10			
Sulphate as SO_4	mg/l	0.1	ISO 17025	1150	42.1			
Sulphide	µg/l	5	NONE	< 5 0	< 5.0			
Chloride	mg/l	0.15	ISO 17025	3.8	3 0			
Ammonium as NH_4	µg/l	15	NONE	44	67			
Total Organic Carbon (TOC)	mg/l	0.1	NONE	5.76	3.85			
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	5.62	3.35			
Total Phenols								
Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10			
Heavy Metals / Metalloids								
Antimony (dissolved)	µg/l	1.7	ISO 17025	< 1.7	< 1.7			
Arsenic (dissolved)	µg/l	1.1	ISO 17025	2.6	3 2			
Barium (dissolved)	µg/l	0.05	ISO 17025	51	8.1			
Beryllium (dissolved)	µg/l	0.2	ISO 17025	< 0 2	< 0.2			
Boron (dissolved)	µg/l	10	ISO 17025	95	13			
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08			
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5 0	< 5.0			
Chromium (III)	µg/l	1	NONE	2.7	< 1.0			
Chromium (dissolved)	µg/l	0.4	ISO 17025	2.7	< 0.4			
Cobalt (dissolved)	µg/l	0.3	ISO 17025	< 0 3	0.4			
Copper (dissolved)	µg/l	0.7	ISO 17025	7.2	2 2			
Iron (dissolved)	mg/l	0.004	ISO 17025	0.14	0.11			
Lead (dissolved)	µg/l	1	ISO 17025	4.1	2 8			
Manganese (dissolved)	µg/l	0.06	ISO 17025	10	7.4			
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0 5	< 0.5			
Molybdenum (dissolved)	µg/l	0.4	ISO 17025	3.6	< 0.4			
Nickel (dissolved)	µg/l	0.3	ISO 17025	1.7	< 0.3			
Phosphorus (dissolved)	µg/l	30	NONE	54	< 30			
Selenium (dissolved)	µg/l	4	ISO 17025	< 4 0	< 4.0			
Tin (dissolved)	µg/l	1	ISO 17025	< 1 0	< 1.0			
Vanadium (dissolved)	µg/l	1.7	ISO 17025	1.9	< 1.7			
Zinc (dissolved)	µg/l	0.4	ISO 17025	4.9	3.1			
Calcium (dissolved)	mg/l	0.012	ISO 17025	350	17			
Magnesium (dissolved)	mg/l	0.005	ISO 17025	16	7.1			
Potassium (dissolved)	mg/l	0.025	ISO 17025	11	2.7			
Sodium (dissolved)	mg/l	0.01	ISO 17025	7.8	3.7			

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* 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 *
1270649	ATK-P-003	1	0.00-0.20	Brown loam and clay with gravel and vegetation.
1270650	ATK-P-003	2	0.80-0.90	Brown clay.
1270651	ATK-P-003	1	0.00-0.50	Brown loam and clay with gravel and rubble.
1270652	ATK-P-003	2	0.80-1.30	Brown clay with gravel and vegetation.
1270653	ATK-P-003	3	1.60-1.90	Brown clay with vegetation.
1270654	ATK-P-003	4	2.50-3.00	Brown clay and sand with gravel and vegetation.

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Analytical Report Number : 19-50462

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Ammonia as NH3 in soil	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	MCERTS
Ammonium as NH4 in leachate	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	NONE
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
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
Boron in leachate	Determination of boron in leachate. Sample acidified and followed by ICP-OES.	In-house method based on MEWAM	L039-PL	W	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	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
Chloride in leachate	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
Cr (III) in leachate	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Dissolved Organic Carbon in leachate	Determination of dissolved organic carbon in leachate by the measurement on a non-dispersive infrared analyser of carbon dioxide released by acidification.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L023-PL	W	NONE
EF - Phenylurea herbicides in soil by LC-MS/MS	Phenylurea herbicides by LC-MS/MS	In-house method	UK	W	NONE
Electrical conductivity at 20oC of leachate	Determination of electrical conductivity in leachate by electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031-PL	W	ISO 17025
Electrical conductivity of soil	Determination of electrical conductivity in soil by electrometric measurement.	In-house method	L031-PL	W	ISO 17025
Fraction of Organic Carbon in soil	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L009-PL	D	MCERTS
Free cyanide in leachate	Determination of free cyanide by distillation followed by colorimetry.	In-house method	L080-PL	W	ISO 17025
Free cyanide in soil	Determination of free 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
Hexavalent chromium in leachate	Determination of hexavalent chromium in leachate by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	ISO 17025

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Analytical Report Number : 19-50462

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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	MCERTS
Metals by ICP-OES in leachate	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
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
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in leachate	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 (skalar)	L080-PL	W	ISO 17025
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
NRA Leachate Prep	10:1 extract with de-ionised water shaken for 24 hours then filtered.	In-house method based on National Rivers Authority	L020-PL	W	NONE
Organochlorine Pesticides in soil by GC MS/MS	Detemination of Pesticides in soil by GC MS/MS	Organochlorine Pesticides in soil by GC MS/MS	L055B-PL	D	NONE
Organonitrogen Pesticides in soil by GC MS/MS	Detemination of Pesticides in soil by GC MS/MS	Organonitrogen Pesticides in soil by GC MS/MS	L055B-PL	D	NONE
Organophosphorus Pesticides in soil by GC MS/MS	Detemination of Pesticides in soil by GC MS/MS	Organophosphorus Pesticides in soil by GC MS/MS	L055B-PL	D	NONE
PCBs WHO 12 in soil	Determination of PCBs (WHO-12 Congeners) by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	NONE
pH at 20oC in leachate	Determination of pH in leachate by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	ISO 17025
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	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
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
Sulphate in leachates	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025

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Analytical Report Number : 19-50462

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
Sulphide in leachate	Determination of sulphide in leachate by ion selective electrode.	In-house method	L010-PL	W	NONE
TO - Acid Herbicides in soil by LC-MS/MS	Determination of Acid herbicides in waters by LC-MS/MS	In-house method		W	NONE
TO - Triazine pesticides in soil	Determination of Triazines by LC-MS(/MS).	In-house method based on USEPA method 615.		W	NONE
Total cyanide in leachate	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	ISO 17025
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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS
Total organic carbon in leachate	Determination of dissolved organic 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
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	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
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

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.

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Analytical Report Number : 19-50464

Replaces Analytical Report Number : 19-50464, issue no. 1

Project / Site name:	M25 Junction 28	**Samples received on:**	15/07/2019
Your job number:	35403	**Samples instructed on:**	18/07/2019
Your order number:	35403-DO	**Analysis completed by:**	13/08/2019
Report Issue Number:	2	**Report issued on:**	13/08/2019
Samples Analysed:	1 bulk sample - 2 leachate samples - 6 soil samples		

Signed: [redacted]

[redacted]
Head of Customer Services
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.

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Analytical Report Number: 19-50464

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270672	1270673	1270674	1270675	1270676
Sample Reference				ATK-P-004	ATK-P-004	ATK-P-004	ATK-P-004	ATK-P-004
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.60-0.80	0.00-0 30	0.50-0.80	1.70-2.00
Date Sampled				12/07/2019	12/07/2019	12/07/2019	12/07/2019	12/07/2019
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	< 0.1
Moisture Content	%	N/A	NONE	11	15	8.4	15	20
Total mass of sample received	kg	0.001	NONE	2.0	2 0	2.0	2.0	2 0
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	Chrysotile	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	< 0 001	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	< 0 001	-
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	10.2	9 5	9.4	7.8	7.9
Electrical Conductivity	µS/cm	10	ISO 17025	2300	2400	2300	2400	480
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Total Sulphate as SO_4	mg/kg	50	MCERTS	26000	16000	22000	23000	880
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	1.7	1 8	1.8	1.9	0.30
Ammonia as NH_3	mg/kg	0 5	MCERTS	< 0 5	5 0	< 0.5	< 0 5	< 0.5
Ammonium as NH_4	mg/kg	0 5	MCERTS	< 0 5	5 3	< 0.5	< 0 5	0 5
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	0 016	0.021	0.016	0 020	0.011
Total Organic Carbon (TOC)	%	0.1	MCERTS	1.6	2.1	1.6	2.0	1.1
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	< 0.05	< 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	0.68	2 0	0 29	0.70	< 0.05
Anthracene	mg/kg	0.05	MCERTS	0.18	0.39	< 0.05	0.20	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	1.6	3 3	0.79	1.7	< 0.05
Pyrene	mg/kg	0.05	MCERTS	1.4	2.9	0.78	1.5	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.83	1 2	0.42	0.77	< 0.05
Chrysene	mg/kg	0.05	MCERTS	0.70	1 3	0.43	0.84	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	1.1	1 6	0 64	1.1	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.33	0.67	0 25	0.42	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.79	1 3	0 52	0.86	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.40	0.66	0 25	0.41	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.48	0.76	0 31	0.55	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0 8	MCERTS	8.44	16.0	4 68	9.07	< 0.80
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	12	12	14	11	12
Barium (aqua regia extractable)	mg/kg	1	MCERTS	130	120	160	160	41
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.71	0.79	0.70	0.72	0.86
Boron (water soluble)	mg/kg	0 2	MCERTS	3.3	5 6	4.7	5.1	1.4
Cadmium (aqua regia extractable)	mg/kg	0 2	MCERTS	0.3	0 8	0.3	0.3	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4 0	< 4.0	< 4.0	< 4 0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	29	28	28	26	41
Copper (aqua regia extractable)	mg/kg	1	MCERTS	44	52	44	61	16
Lead (aqua regia extractable)	mg/kg	1	MCERTS	87	110	140	110	23
Mercury (aqua regia extractable)	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	19	19	20	36	21
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	1 5
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	37	42	41	40	66

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Analytical Report Number: 19-50464

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270672	1270673	1270674	1270675	1270676
Sample Reference				ATK-P-004	ATK-P-004	ATK-P-004	ATK-P-004	ATK-P-004
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.60-0.80	0.00-0 30	0.50-0.80	1.70-2.00
Date Sampled				12/07/2019	12/07/2019	12/07/2019	12/07/2019	12/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	150	140	150	160	60

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Analytical Report Number: 19-50464

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270672	1270673	1270674	1270675	1270676
Sample Reference				ATK-P-004	ATK-P-004	ATK-P-004	ATK-P-004	ATK-P-004
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.60-0.80	0.00-0 30	0.50-0.80	1.70-2.00
Date Sampled				12/07/2019	12/07/2019	12/07/2019	12/07/2019	12/07/2019
Time Taken				None Supplied	None Supplied	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	< 1.0	< 1 0	< 1.0
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	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1 0	< 1.0	1.3	1.4	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2 0	< 2.0	9.8	9.4	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	12	< 8.0	10	16	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	82	68	46	100	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	95	76	68	130	< 10
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	2.0	< 2.0	3.8	2.2	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	15	12	15	21	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	67	48	68	79	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	84	62	86	100	< 10

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Analytical Report Number: 19-50464

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270672	1270673	1270674	1270675	1270676
Sample Reference				ATK-P-004	ATK-P-004	ATK-P-004	ATK-P-004	ATK-P-004
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.60-0.80	0.00-0 30	0.50-0.80	1.70-2.00
Date Sampled				12/07/2019	12/07/2019	12/07/2019	12/07/2019	12/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
Chloroethane	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	-
Bromomethane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
Vinyl Chloride	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	-
Trichlorofluoromethane	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	-
1,1-Dichloroethene	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 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	-
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
2,2-Dichloropropane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Trichloromethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,1-Dichloropropene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	-
Benzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Tetrachloromethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Trichloroethene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Dibromomethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Bromodichloromethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
Toluene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
Dibromochloromethane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
Tetrachloroethene	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
Chlorobenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Ethylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
p & m-Xylene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Styrene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Tribromomethane	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	-
o-Xylene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1 1 2 2-Tetrachloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Isopropylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Bromobenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
n-Propylbenzene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
2-Chlorotoluene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
4-Chlorotoluene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
tert-Butylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
sec-Butylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Butylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Hexachlorobutadiene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-

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Analytical Report Number: 19-50464

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270672	1270673	1270674	1270675	1270676
Sample Reference				ATK-P-004	ATK-P-004	ATK-P-004	ATK-P-004	ATK-P-004
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.60-0.80	0.00-0 30	0.50-0.80	1.70-2.00
Date Sampled				12/07/2019	12/07/2019	12/07/2019	12/07/2019	12/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	-
Phenol	mg/kg	0 2	ISO 17025	< 0 2	< 0.2	< 0.2	< 0 2	-
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
Bis(2-chloroethyl)ether	mg/kg	0 2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
1,3-Dichlorobenzene	mg/kg	0 2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
1 2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
1 4-Dichlorobenzene	mg/kg	0 2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
2-Methylphenol	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	-
Nitrobenzene	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
4-Methylphenol	mg/kg	0 2	NONE	< 0 2	< 0.2	< 0.2	< 0 2	-
Isophorone	mg/kg	0 2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
2-Nitrophenol	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
2 4-Dimethylphenol	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
Bis(2-chloroethoxy)methane	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
1,2,4-Trichlorobenzene	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
2 4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
Dibenzofuran	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0 3	< 0.3	< 0.3	< 0 3	-
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Azobenzene	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
Phenanthrene	mg/kg	0.05	MCERTS	0.68	2.0	0 29	0.70	-
Anthracene	mg/kg	0.05	MCERTS	0.18	0.39	< 0.05	0.20	-
Carbazole	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
Anthraquinone	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
Fluoranthene	mg/kg	0.05	MCERTS	1.6	3.3	0.79	1.7	-
Pyrene	mg/kg	0.05	MCERTS	1.4	2.9	0.78	1.5	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0 3	< 0.3	< 0.3	< 0 3	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.83	1.2	0.42	0.77	-
Chrysene	mg/kg	0.05	MCERTS	0.70	1.3	0.43	0.84	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	1.1	1.6	0 64	1.1	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.33	0.67	0 25	0.42	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.79	1.3	0 52	0.86	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.40	0.66	0 25	0.41	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.48	0.76	0 31	0.55	-

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Analytical Report Number: 19-50464

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270672	1270673	1270674	1270675	1270676
Sample Reference				ATK-P-004	ATK-P-004	ATK-P-004	ATK-P-004	ATK-P-004
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.60-0.80	0.00-0 30	0.50-0.80	1.70-2.00
Date Sampled				12/07/2019	12/07/2019	12/07/2019	12/07/2019	12/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs								
PCB Congener 077	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 081	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 105	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 114	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 118	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 123	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 126	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 156	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 157	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 167	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 169	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 189	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
Total PCBs	mg/kg	0.012	NONE	< 0 012	< 0.012	< 0.012	-	-
Organochlorine Pesticides (OCP)								
Aldrin	ug/kg	10	NONE	< 10	< 10	< 10	-	-
BHC-alpha (benzene hexachloride)	ug/kg	10	NONE	< 10	< 10	< 10	-	-
BHC-beta	ug/kg	10	NONE	< 10	< 10	< 10	-	-
BHC-delta	ug/kg	10	NONE	< 10	< 10	< 10	-	-
BHC-gamma (Lindane, gamma HCH)	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Chlordane-cis	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Chlordane-trans	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Chlorothalonil	ug/kg	10	NONE	< 10	< 10	< 10	-	-
DDD-o,p'	ug/kg	1	NONE	< 1 0	< 1.0	< 1.0	-	-
DDD-p,p'	ug/kg	1	NONE	3.9	4 3	4.6	-	-
DDE-o, p'	ug/kg	1	NONE	< 1 0	< 1.0	< 1.0	-	-
DDE-p,p'	ug/kg	1	NONE	3.8	2 6	2.1	-	-
DDT-o,p'	ug/kg	1	NONE	1.9	< 1.0	1.2	-	-
DDT-p,p'	ug/kg	1	NONE	9.9	< 1.0	13	-	-
Dichlorobenzonitrile, 2,6-	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Dieldrin	ug/kg	10	NONE	15	13	16	-	-
Endosulfan I (alpha isomer)	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Endosulfan II (beta isomer)	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Endosulfan sulfate	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Endrin	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Endrin aldehyde	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Endrin ketone	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Heptachlor	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Heptachlor exo-epoxide	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Hexachlorobenzene	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Hexachlorobutadiene	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Isodrin	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Methoxychlor, p,p'-	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Pentachlorobenzene	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Tecnazene	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Tetrachlorobenzene, 1,2,4,5-	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Trichlorobenzene, 1,2,3-	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Trichlorobenzene, 1,3,5-	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Trifluralin	ug/kg	10	NONE	< 10	< 10	< 10	-	-

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Analytical Report Number: 19-50464

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270672	1270673	1270674	1270675	1270676
Sample Reference				ATK-P-004	ATK-P-004	ATK-P-004	ATK-P-004	ATK-P-004
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.60-0.80	0.00-0 30	0.50-0.80	1.70-2.00
Date Sampled				12/07/2019	12/07/2019	12/07/2019	12/07/2019	12/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Organophosphorus Pesticides (OPP)								
Azinphos-ethyl	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Azinphos-methyl	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Carbophenothion	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Chlorfenvinphos (mixture of z and e isomers)	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Chlorpyrifos	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Demeton-O	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Demeton-S	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Diazinon	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Dichlorvos	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Dimethoate	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Dimethylvinphos	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Ethion	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Etrimfos	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Fenitrothion	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Fenthion	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Malathion	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Methacrifos	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Mevinphos , E-	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Mevinphos, Z-	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Parathion	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Parathion-methyl	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Phorate	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Phosalone	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Phosphamidon I	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Pirimiphos-ethyl	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Pirimiphos-methyl	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Propetamphos	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Triazophos	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Organonitrogen Pesticides (ONP)								
Pendimethalin	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Propyzamide	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Triadimefon	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Environmental Forensics								
Triazine Herbicides								
Atrazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	-	-
Simazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	-	-
Prometryn	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	-	-
Propazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	-	-
Terbuthylazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	-	-
Terbutryn	mg/kg	0.1	NONE	0.12	0.56	< 0.10	-	-
Trietazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	-	-
Cyanazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	-	-

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Analytical Report Number: 19-50464

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270672	1270673	1270674	1270675	1270676
Sample Reference				ATK-P-004	ATK-P-004	ATK-P-004	ATK-P-004	ATK-P-004
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.60-0.80	0.00-0 30	0.50-0.80	1.70-2.00
Date Sampled				12/07/2019	12/07/2019	12/07/2019	12/07/2019	12/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Acid Herbicides								
2,4,5-T	ug/kg	20	NONE	< 20	< 20	< 20	-	-
2,4,5-TP	ug/kg	20	NONE	< 20	< 20	< 20	-	-
2,4-D	ug/kg	20	NONE	< 20	< 20	< 20	-	-
2,4-DB	ug/kg	20	NONE	< 20	< 20	< 20	-	-
Dicamba	ug/kg	20	NONE	< 20	< 20	< 20	-	-
Dichlorprop	ug/kg	20	NONE	< 20	< 20	< 20	-	-
Dinoseb	ug/kg	20	NONE	< 20	< 20	< 20	-	-
MCPA	ug/kg	20	NONE	< 20	< 20	< 20	-	-
MCPB	ug/kg	20	NONE	< 20	< 20	< 20	-	-
MCPP (Mecoprop)	ug/kg	20	NONE	< 20	< 20	< 20	-	-
Picloram	ug/kg	20	NONE	< 20	< 20	< 20	-	-
Phenylurea herbicides								
Isoproturon	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Chlortoluron	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Linuron	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Diuron	ug/kg	10	NONE	17	53	17	-	-
Diflubenzuron	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Flumeturon	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Siduron	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Terbuthiuron	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Thidiazuron	ug/kg	10	NONE	< 10	< 10	< 10	-	-

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Analytical Report Number: 19-50464

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270677				
Sample Reference				ATK-P-004				
Sample Number				4				
Depth (m)				2.50-3.00				
Date Sampled				12/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1				
Moisture Content	%	N/A	NONE	22				
Total mass of sample received	kg	0.001	NONE	2.0				
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	-				
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	7.0				
Electrical Conductivity	µS/cm	10	ISO 17025	560				
Total Cyanide	mg/kg	1	MCERTS	< 1				
Free Cyanide	mg/kg	1	MCERTS	< 1				
Total Sulphate as SO_4	mg/kg	50	MCERTS	890				
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.28				
Ammonia as NH_3	mg/kg	0 5	MCERTS	87				
Ammonium as NH_4	mg/kg	0 5	MCERTS	92				
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	0 027				
Total Organic Carbon (TOC)	%	0.1	MCERTS	2.7				
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	< 0.05				
Anthracene	mg/kg	0.05	MCERTS	< 0.05				
Fluoranthene	mg/kg	0.05	MCERTS	0.28				
Pyrene	mg/kg	0.05	MCERTS	0.26				
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05				
Chrysene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05				
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05				
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05				
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0 8	MCERTS	< 0.80				
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	9.9				
Barium (aqua regia extractable)	mg/kg	1	MCERTS	42				
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.59				
Boron (water soluble)	mg/kg	0 2	MCERTS	2.6				
Cadmium (aqua regia extractable)	mg/kg	0 2	MCERTS	< 0 2				
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4 0				
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	31				
Copper (aqua regia extractable)	mg/kg	1	MCERTS	19				
Lead (aqua regia extractable)	mg/kg	1	MCERTS	56				
Mercury (aqua regia extractable)	mg/kg	0 3	MCERTS	< 0 3				
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	12				
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1 0				
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	51				

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Analytical Report Number: 19-50464

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270677				
Sample Reference				ATK-P-004				
Sample Number				4				
Depth (m)				2.50-3.00				
Date Sampled				12/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	71				

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Analytical Report Number: 19-50464

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270677				
Sample Reference				ATK-P-004				
Sample Number				4				
Depth (m)				2.50-3.00				
Date Sampled				12/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	< 1 0				
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	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1 0				
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2 0				
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8 0				
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8 0				
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10				
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1 0				
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2 0				
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10				
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10				
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10				

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Analytical Report Number: 19-50464

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270677				
Sample Reference				ATK-P-004				
Sample Number				4				
Depth (m)				2.50-3.00				
Date Sampled				12/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
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	-				
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	-				

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Analytical Report Number: 19-50464

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270677				
Sample Reference				ATK-P-004				
Sample Number				4				
Depth (m)				2.50-3.00				
Date Sampled				12/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	-				
Phenol	mg/kg	0 2	ISO 17025	-				
2-Chlorophenol	mg/kg	0.1	MCERTS	-				
Bis(2-chloroethyl)ether	mg/kg	0 2	MCERTS	-				
1,3-Dichlorobenzene	mg/kg	0 2	MCERTS	-				
1 2-Dichlorobenzene	mg/kg	0.1	MCERTS	-				
1 4-Dichlorobenzene	mg/kg	0 2	MCERTS	-				
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-				
2-Methylphenol	mg/kg	0 3	MCERTS	-				
Hexachloroethane	mg/kg	0.05	MCERTS	-				
Nitrobenzene	mg/kg	0 3	MCERTS	-				
4-Methylphenol	mg/kg	0 2	NONE	-				
Isophorone	mg/kg	0 2	MCERTS	-				
2-Nitrophenol	mg/kg	0 3	MCERTS	-				
2 4-Dimethylphenol	mg/kg	0 3	MCERTS	-				
Bis(2-chloroethoxy)methane	mg/kg	0 3	MCERTS	-				
1,2,4-Trichlorobenzene	mg/kg	0 3	MCERTS	-				
Naphthalene	mg/kg	0.05	MCERTS	-				
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-				
4-Chloroaniline	mg/kg	0.1	NONE	-				
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-				
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-				
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-				
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-				
2-Methylnaphthalene	mg/kg	0.1	NONE	-				
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-				
Dimethylphthalate	mg/kg	0.1	MCERTS	-				
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-				
Acenaphthylene	mg/kg	0.05	MCERTS	-				
Acenaphthene	mg/kg	0.05	MCERTS	-				
2 4-Dinitrotoluene	mg/kg	0.2	MCERTS	-				
Dibenzofuran	mg/kg	0.2	MCERTS	-				
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-				
Diethyl phthalate	mg/kg	0.2	MCERTS	-				
4-Nitroaniline	mg/kg	0.2	MCERTS	-				
Fluorene	mg/kg	0.05	MCERTS	-				
Azobenzene	mg/kg	0.3	MCERTS	-				
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-				
Hexachlorobenzene	mg/kg	0.3	MCERTS	-				
Phenanthrene	mg/kg	0.05	MCERTS	-				
Anthracene	mg/kg	0.05	MCERTS	-				
Carbazole	mg/kg	0.3	MCERTS	-				
Dibutyl phthalate	mg/kg	0.2	MCERTS	-				
Anthraquinone	mg/kg	0.3	MCERTS	-				
Fluoranthene	mg/kg	0.05	MCERTS	-				
Pyrene	mg/kg	0.05	MCERTS	-				
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-				
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	-				

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Analytical Report Number: 19-50464

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270677				
Sample Reference				ATK-P-004				
Sample Number				4				
Depth (m)				2.50-3.00				
Date Sampled				12/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs								
PCB Congener 077	mg/kg	0.001	NONE	-				
PCB Congener 081	mg/kg	0.001	NONE	-				
PCB Congener 105	mg/kg	0.001	NONE	-				
PCB Congener 114	mg/kg	0.001	NONE	-				
PCB Congener 118	mg/kg	0.001	NONE	-				
PCB Congener 123	mg/kg	0.001	NONE	-				
PCB Congener 126	mg/kg	0.001	NONE	-				
PCB Congener 156	mg/kg	0.001	NONE	-				
PCB Congener 157	mg/kg	0.001	NONE	-				
PCB Congener 167	mg/kg	0.001	NONE	-				
PCB Congener 169	mg/kg	0.001	NONE	-				
PCB Congener 189	mg/kg	0.001	NONE	-				
Total PCBs	mg/kg	0.012	NONE	-				
Organochlorine Pesticides (OCP)								
Aldrin	ug/kg	10	NONE	-				
BHC-alpha (benzene hexachloride)	ug/kg	10	NONE	-				
BHC-beta	ug/kg	10	NONE	-				
BHC-delta	ug/kg	10	NONE	-				
BHC-gamma (Lindane, gamma HCH)	ug/kg	10	NONE	-				
Chlordane-cis	ug/kg	10	NONE	-				
Chlordane-trans	ug/kg	10	NONE	-				
Chlorothalonil	ug/kg	10	NONE	-				
DDD-o,p'	ug/kg	1	NONE	-				
DDD-p,p'	ug/kg	1	NONE	-				
DDE-o, p'	ug/kg	1	NONE	-				
DDE-p,p'	ug/kg	1	NONE	-				
DDT-o,p'	ug/kg	1	NONE	-				
DDT-p,p'	ug/kg	1	NONE	-				
Dichlorobenzonitrile, 2,6-	ug/kg	10	NONE	-				
Dieldrin	ug/kg	10	NONE	-				
Endosulfan I (alpha isomer)	ug/kg	10	NONE	-				
Endosulfan II (beta isomer)	ug/kg	10	NONE	-				
Endosulfan sulfate	ug/kg	10	NONE	-				
Endrin	ug/kg	10	NONE	-				
Endrin aldehyde	ug/kg	10	NONE	-				
Endrin ketone	ug/kg	10	NONE	-				
Heptachlor	ug/kg	10	NONE	-				
Heptachlor exo-epoxide	ug/kg	10	NONE	-				
Hexachlorobenzene	ug/kg	10	NONE	-				
Hexachlorobutadiene	ug/kg	10	NONE	-				
Isodrin	ug/kg	10	NONE	-				
Methoxychlor, p,p'-	ug/kg	10	NONE	-				
Pentachlorobenzene	ug/kg	10	NONE	-				
Tecnazene	ug/kg	10	NONE	-				
Tetrachlorobenzene, 1,2,4,5-	ug/kg	10	NONE	-				
Trichlorobenzene, 1,2,3-	ug/kg	10	NONE	-				
Trichlorobenzene, 1,3,5-	ug/kg	10	NONE	-				
Trifluralin	ug/kg	10	NONE	-				

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Analytical Report Number: 19-50464

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270677				
Sample Reference				ATK-P-004				
Sample Number				4				
Depth (m)				2.50-3.00				
Date Sampled				12/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Organophosphorus Pesticides (OPP)								
Azinphos-ethyl	ug/kg	10	NONE	-				
Azinphos-methyl	ug/kg	10	NONE	-				
Carbophenothion	ug/kg	10	NONE	-				
Chlorfenvinphos (mixture of z and e isomers)	ug/kg	10	NONE	-				
Chlorpyrifos	ug/kg	10	NONE	-				
Demeton-O	ug/kg	10	NONE	-				
Demeton-S	ug/kg	10	NONE	-				
Diazinon	ug/kg	10	NONE	-				
Dichlorvos	ug/kg	10	NONE	-				
Dimethoate	ug/kg	10	NONE	-				
Dimethylvinphos	ug/kg	10	NONE	-				
Ethion	ug/kg	10	NONE	-				
Etrimfos	ug/kg	10	NONE	-				
Fenitrothion	ug/kg	10	NONE	-				
Fenthion	ug/kg	10	NONE	-				
Malathion	ug/kg	10	NONE	-				
Methacrifos	ug/kg	10	NONE	-				
Mevinphos , E-	ug/kg	10	NONE	-				
Mevinphos, Z-	ug/kg	10	NONE	-				
Parathion	ug/kg	10	NONE	-				
Parathion-methyl	ug/kg	10	NONE	-				
Phorate	ug/kg	10	NONE	-				
Phosalone	ug/kg	10	NONE	-				
Phosphamidon I	ug/kg	10	NONE	-				
Pirimiphos-ethyl	ug/kg	10	NONE	-				
Pirimiphos-methyl	ug/kg	10	NONE	-				
Propetamphos	ug/kg	10	NONE	-				
Triazophos	ug/kg	10	NONE	-				
Organonitrogen Pesticides (ONP)								
Pendimethalin	ug/kg	10	NONE	-				
Propyzamide	ug/kg	10	NONE	-				
Triadimefon	ug/kg	10	NONE	-				

Environmental Forensics

Triazine Herbicides

Atrazine	mg/kg	0.1	NONE	-				
Simazine	mg/kg	0.1	NONE	-				
Prometryn	mg/kg	0.1	NONE	-				
Propazine	mg/kg	0.1	NONE	-				
Terbuthylazine	mg/kg	0.1	NONE	-				
Terbutryn	mg/kg	0.1	NONE	-				
Trietazine	mg/kg	0.1	NONE	-				
Cyanazine	mg/kg	0.1	NONE	-				

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Analytical Report Number: 19-50464

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270677				
Sample Reference				ATK-P-004				
Sample Number				4				
Depth (m)				2.50-3.00				
Date Sampled				12/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Acid Herbicides								
2,4,5-T	ug/kg	20	NONE	-				
2,4,5-TP	ug/kg	20	NONE	-				
2,4-D	ug/kg	20	NONE	-				
2,4-DB	ug/kg	20	NONE	-				
Dicamba	ug/kg	20	NONE	-				
Dichlorprop	ug/kg	20	NONE	-				
Dinoseb	ug/kg	20	NONE	-				
MCPA	ug/kg	20	NONE	-				
MCPB	ug/kg	20	NONE	-				
MCPP (Mecoprop)	ug/kg	20	NONE	-				
Picloram	ug/kg	20	NONE	-				
Phenylurea herbicides								
Isoproturon	ug/kg	10	NONE	-				
Chlortoluron	ug/kg	10	NONE	-				
Linuron	ug/kg	10	NONE	-				
Diuron	ug/kg	10	NONE	-				
Diflubenzuron	ug/kg	10	NONE	-				
Flumeturon	ug/kg	10	NONE	-				
Siduron	ug/kg	10	NONE	-				
Terbuthiuron	ug/kg	10	NONE	-				
Thidiazuron	ug/kg	10	NONE	-				

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Analytical Report Number: 19-50464
Project / Site name: M25 Junction 28
Your Order No: 35403-DO

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 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
1270675	ATK-P-004	0.50-0.80	117	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

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Analytical Report Number: 19-50464

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270679	1270680			
Sample Reference				ATK-P-004	ATK-P-004			
Sample Number				1	2			
Depth (m)				0.00-0.20	0.60-0.80			
Date Sampled				12/07/2019	12/07/2019			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	7.6	7 6			
Electrical Conductivity	µS/cm	10	ISO 17025	1500	2100			
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10			
Free Cyanide	µg/l	10	ISO 17025	< 10	< 10			
Sulphate as SO_4	mg/l	0.1	ISO 17025	1000	1430			
Sulphide	µg/l	5	NONE	< 5 0	< 5.0			
Chloride	mg/l	0.15	ISO 17025	8.3	12			
Ammonium as NH_4	µg/l	15	NONE	42	52			
Total Organic Carbon (TOC)	mg/l	0.1	NONE	6.31	9.75			
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	5.92	9.52			
Total Phenols								
Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10			
Heavy Metals / Metalloids								
Antimony (dissolved)	µg/l	1.7	ISO 17025	< 1.7	< 1.7			
Arsenic (dissolved)	µg/l	1.1	ISO 17025	10	3 0			
Barium (dissolved)	µg/l	0.05	ISO 17025	64	110			
Beryllium (dissolved)	µg/l	0.2	ISO 17025	< 0 2	< 0.2			
Boron (dissolved)	µg/l	10	ISO 17025	110	210			
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08			
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5 0	< 5.0			
Chromium (III)	µg/l	1	NONE	1.3	1.9			
Chromium (dissolved)	µg/l	0.4	ISO 17025	1.3	1.9			
Cobalt (dissolved)	µg/l	0.3	ISO 17025	0.5	1 6			
Copper (dissolved)	µg/l	0.7	ISO 17025	6.6	8.1			
Iron (dissolved)	mg/l	0.004	ISO 17025	0.20	0.16			
Lead (dissolved)	µg/l	1	ISO 17025	4.1	4.7			
Manganese (dissolved)	µg/l	0.06	ISO 17025	11	130			
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0 5	< 0.5			
Molybdenum (dissolved)	µg/l	0.4	ISO 17025	6.1	8 6			
Nickel (dissolved)	µg/l	0.3	ISO 17025	2.8	3 5			
Phosphorus (dissolved)	µg/l	30	NONE	64	45			
Selenium (dissolved)	µg/l	4	ISO 17025	< 4 0	< 4.0			
Tin (dissolved)	µg/l	1	ISO 17025	< 1 0	< 1.0			
Vanadium (dissolved)	µg/l	1.7	ISO 17025	2.3	< 1.7			
Zinc (dissolved)	µg/l	0.4	ISO 17025	6.5	15			
Calcium (dissolved)	mg/l	0.012	ISO 17025	390	550			
Magnesium (dissolved)	mg/l	0.005	ISO 17025	12	15			
Potassium (dissolved)	mg/l	0.025	ISO 17025	12	17			
Sodium (dissolved)	mg/l	0.01	ISO 17025	11	14			

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Analytical Report Number: 19-50464

Project / Site name: M25 Junction 28

Lab Sample Number				1270678				
Sample Reference				ATK-P-004				
Sample Number				None Supplied				
Depth (m)				1.20				
Date Sampled				12/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Bulk Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Asbestos Identification	Type	N/A	ISO 17025	No Asbestos Detected				

General Inorganics

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Analytical Report Number : 19-50464

Project / Site name: M25 Junction 28

* 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 *
1270672	ATK-P-004	1	0.00-0.20	Brown loam and clay with gravel and vegetation.
1270673	ATK-P-004	2	0.60-0.80	Brown loam and clay with gravel and vegetation.
1270674	ATK-P-004	1	0.00-0.30	Brown loam and clay with gravel and vegetation.
1270675	ATK-P-004	2	0.50-0.80	Brown loam and clay with gravel and vegetation.
1270676	ATK-P-004	3	1.70-2.00	Brown clay and sand with gravel and vegetation.
1270677	ATK-P-004	4	2.50-3.00	Brown clay and sand with gravel and vegetation.

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Analytical Report Number : 19-50464

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Ammonia as NH3 in soil	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	MCERTS
Ammonium as NH4 in leachate	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	NONE
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
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
Boron in leachate	Determination of boron in leachate. Sample acidified and followed by ICP-OES.	In-house method based on MEWAM	L039-PL	W	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	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
Chloride in leachate	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
Cr (III) in leachate	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Dissolved Organic Carbon in leachate	Determination of dissolved organic carbon in leachate by the measurement on a non-dispersive infrared analyser of carbon dioxide released by acidification.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L023-PL	W	NONE
EF - Phenylurea herbicides in soil by LC-MS/MS	Phenylurea herbicides by LC-MS/MS	In-house method	UK	W	NONE
Electrical conductivity at 20oC of leachate	Determination of electrical conductivity in leachate by electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031-PL	W	ISO 17025
Electrical conductivity of soil	Determination of electrical conductivity in soil by electrometric measurement.	In-house method	L031-PL	W	ISO 17025
Fraction of Organic Carbon in soil	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L009-PL	D	MCERTS
Free cyanide in leachate	Determination of free cyanide by distillation followed by colorimetry.	In-house method	L080-PL	W	ISO 17025
Free cyanide in soil	Determination of free 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

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number : 19-50464

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Hexavalent chromium in leachate	Determination of hexavalent chromium in leachate by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	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	MCERTS
Metals by ICP-OES in leachate	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
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
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in leachate	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 (skalar)	L080-PL	W	ISO 17025
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
NRA Leachate Prep	10:1 extract with de-ionised water shaken for 24 hours then filtered.	In-house method based on National Rivers Authority	L020-PL	W	NONE
Organochlorine Pesticides in soil by GC MS/MS	Detemination of Pesticides in soil by GC MS/MS	Organochlorine Pesticides in soil by GC MS/MS	L055B-PL	D	NONE
Organonitrogen Pesticides in soil by GC MS/MS	Detemination of Pesticides in soil by GC MS/MS	Organonitrogen Pesticides in soil by GC MS/MS	L055B-PL	D	NONE
Organophosphorus Pesticides in soil by GC MS/MS	Detemination of Pesticides in soil by GC MS/MS	Organophosphorus Pesticides in soil by GC MS/MS	L055B-PL	D	NONE
PCBs WHO 12 in soil	Determination of PCBs (WHO-12 Congeners) by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	NONE
pH at 20oC in leachate	Determination of pH in leachate by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	ISO 17025
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	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
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

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Analytical Report Number : 19-50464

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate in leachates	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
Sulphide in leachate	Determination of sulphide in leachate by ion selective electrode.	In-house method	L010-PL	W	NONE
TO - Acid Herbicides in soil by LC-MS/MS	Determination of Acid herbicides in waters by LC-MS/MS	In-house method		W	NONE
TO - Triazine pesticides in soil	Determination of Triazines by LC-MS(/MS).	In-house method based on USEPA method 615.		W	NONE
Total cyanide in leachate	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	ISO 17025
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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS
Total organic carbon in leachate	Determination of dissolved organic 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
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	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
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

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.

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Analytical Report Number : 19-50465

Project / Site name:	M25 Junction 28	**Samples received on:**	15/07/2019
Your job number:	35403	**Samples instructed on:**	18/07/2019
Your order number:	35403-DO	**Analysis completed by:**	25/07/2019
Report Issue Number:	1	**Report issued on:**	25/07/2019
Samples Analysed:	1 10:1 WAC sample		

Signed: [redacted]

[redacted]
Head of Customer Services
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:	**19-50465**						
					Client: GEOENG		
Location	**M25 Junction 28**						
Lab Reference (Sample Number)	1270681 / 1270682				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	12/07/2019				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	ATK-P-004 1						
Depth (m)	0.00-0.30						
Solid Waste Analysis							
TOC (%)**	1.6				3%	5%	6%
Loss on Ignition (%) **	-				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	100				500	--	--
Total PAH (WAC-17) (mg/kg)	4.7				100	--	--
pH (units)**	-				--	>6	--
Acid Neutralisation Capacity (mol / kg)	-				--	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 *	0.0060			0.0526	0.5	2	25
Barium *	0.0797			0.700	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.010			0.088	0.5	10	70
Copper *	0.0085			0.074	2	50	100
Mercury *	0.0008			0.0068	0.01	0.2	2
Molybdenum *	0.0064			0.0563	0.5	10	30
Nickel *	0.0052			0.046	0.4	10	40
Lead *	< 0.0010			< 0.010	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.0031			0.027	4	50	200
Chloride *	7.8			68	800	4000	25000
Fluoride	0.75			6.6	10	150	500
Sulphate *	1900			16000	1000	20000	50000
TDS*	1400			12000	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	6.18			54.2	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	2.0						
Dry Matter (%)	92						
Moisture (%)	8.4						

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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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number : 19-50465

Project / Site name: M25 Junction 28

* 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 *
1270681	ATK-P-004	1	0.00-0.30	Brown loam and clay with gravel and vegetation.

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Analytical Report Number : 19-50465

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

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
BTEX in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Chloride 10:1 WAC	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-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
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
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
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.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
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
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
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	NONE
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
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 electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L004-PL	W	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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS

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.

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Analytical Report Number : 19-50466

Project / Site name:	Ms2 Junction 28	**Samples received on:**	16/07/2019
Your job number:	35403	**Samples instructed on:**	18/07/2019
Your order number:	35403-DO	**Analysis completed by:**	25/07/2019
Report Issue Number:	1	**Report issued on:**	25/07/2019
Samples Analysed:	10:1 WAC sample		

Signed: [redacted]

[redacted]
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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Waste Acceptance Criteria Analytical Results

Report No:	**19-50466**						
					Client:	**GEOENG**	
Location	**Ms2 Junction 28**						
Lab Reference (Sample Number)	1270683 / 1270684				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	15/07/2019				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	ATK-P-003 1						
Depth (m)	0.00-0.50						
Solid Waste Analysis							
TOC (%)**	1.7				3%	5%	6%
Loss on Ignition (%) **	-				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	110				500	--	--
Total PAH (WAC-17) (mg/kg)	7.2				100	--	--
pH (units)**	-				--	>6	--
Acid Neutralisation Capacity (mol / kg)	-				--	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 *	0.0025			0.0229	0.5	2	25
Barium *	0.0880			0.812	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0059			0.054	0.5	10	70
Copper *	0.0090			0.083	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0118			0.109	0.5	10	30
Nickel *	0.0053			0.049	0.4	10	40
Lead *	0.0032			0.030	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.0061			0.057	4	50	200
Chloride *	7.6			70	800	4000	25000
Fluoride	0.93			8.5	10	150	500
Sulphate *	1700			15000	1000	20000	50000
TDS*	1400			13000	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	8.52			78.6	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	2.0						
Dry Matter (%)	88						
Moisture (%)	12						

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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Analytical Report Number : 19-50466

Project / Site name: Ms2 Junction 28

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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 *
1270683	ATK-P-003	1	0.00-0.50	Brown loam and clay with gravel and rubble.

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Analytical Report Number : 19-50466

Project / Site name: Ms2 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

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
BTEX in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Chloride 10:1 WAC	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-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
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
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
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.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
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
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
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	NONE
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
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 electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L004-PL	W	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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS

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.

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The results included within the report are representative of the samples submitted for analysis.

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Analytical Report Number : 19-50468

Project / Site name:	M25 Junction 28	**Samples received on:**	15/07/2019
Your job number:	35403	**Samples instructed on:**	18/07/2019
Your order number:	35403-DO	**Analysis completed by:**	26/07/2019
Report Issue Number:	1	**Report issued on:**	26/07/2019
Samples Analysed:	1 bulk sample - 2 leachate samples - 6 soil samples		

Signed: [redacted]

[redacted]
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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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 19-50468

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270701	1270702	1270703	1270704	1270705
Sample Reference				ATK-P-010	ATK-P-010	ATK-P-010	ATK-P-010	ATK-P-010
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.80-0.90	0.00-0 30	0.50-1.00	1.20-1.70
Date Sampled				12/07/2019	12/07/2019	12/07/2019	12/07/2019	12/07/2019
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	< 0.1
Moisture Content	%	N/A	NONE	10	15	9.5	14	22
Total mass of sample received	kg	0.001	NONE	2.0	2 0	2.0	2.0	2 0
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	7.8	8 0	8.0	8.1	7.9
Electrical Conductivity	µS/cm	10	ISO 17025	2500	2500	2500	2500	1300
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Total Sulphate as SO_4	mg/kg	50	MCERTS	22000	30000	24000	26000	2700
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	2.0	2.4	1.9	2.4	1 3
Ammonia as NH_3	mg/kg	0 5	MCERTS	< 0 5	34	< 0.5	30	< 0.5
Ammonium as NH_4	mg/kg	0 5	MCERTS	< 0 5	36	< 0.5	32	< 0.5
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	0 020	0.019	0.018	0 016	0.0057
Total Organic Carbon (TOC)	%	0.1	MCERTS	2.0	1.9	1.8	1.6	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	< 0.05	< 0.05	< 0 05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	< 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	0.85	2 0	0 63	1.6	0.32
Anthracene	mg/kg	0.05	MCERTS	0.23	0.50	0.17	0.42	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	1.8	3.4	1.4	3.0	0.26
Pyrene	mg/kg	0.05	MCERTS	1.5	2.9	1.3	2.7	0.22
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.73	1.4	0.75	1.4	< 0.05
Chrysene	mg/kg	0.05	MCERTS	0.79	1 3	0 64	1.2	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	1.0	1 5	0.97	1.6	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.42	0.88	0 39	0.74	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.86	1.4	0.79	1.4	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.39	0.64	0 39	0.57	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.45	0.69	0 50	0.76	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0 8	MCERTS	9.04	16.7	7.93	15.3	0.80

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Analytical Report Number: 19-50468

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270701	1270702	1270703	1270704	1270705
Sample Reference				ATK-P-010	ATK-P-010	ATK-P-010	ATK-P-010	ATK-P-010
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.80-0.90	0.00-0 30	0.50-1.00	1.20-1.70
Date Sampled				12/07/2019	12/07/2019	12/07/2019	12/07/2019	12/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	16	6 8	11	9.7	12
Barium (aqua regia extractable)	mg/kg	1	MCERTS	170	110	130	160	62
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.92	0.58	0.70	0.74	1.1
Boron (water soluble)	mg/kg	0 2	MCERTS	6.1	7 3	6.0	7.5	2 6
Cadmium (aqua regia extractable)	mg/kg	0 2	MCERTS	0.3	0 3	0.3	0.3	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4 0	< 4.0	< 4.0	< 4 0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	43	33	28	55	62
Copper (aqua regia extractable)	mg/kg	1	MCERTS	64	51	59	52	23
Lead (aqua regia extractable)	mg/kg	1	MCERTS	180	75	110	120	18
Mercury (aqua regia extractable)	mg/kg	0 3	MCERTS	0.6	< 0.3	0.6	0.4	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	30	30	22	48	33
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	1.1	< 1.0	< 1.0	< 1 0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	47	31	38	40	80
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	200	130	140	150	68
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
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	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	5.0	33	< 1.0	2.2	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	13	190	3.5	11	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	17	230	9.6	33	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	100	360	77	160	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	140	810	91	210	< 10
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1 0	14	< 1.0	2.4	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	2.4	120	< 2.0	8.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	13	300	16	48	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	55	890	97	230	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	70	1300	110	290	< 10

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Analytical Report Number: 19-50468

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270701	1270702	1270703	1270704	1270705
Sample Reference				ATK-P-010	ATK-P-010	ATK-P-010	ATK-P-010	ATK-P-010
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.80-0.90	0.00-0 30	0.50-1.00	1.20-1.70
Date Sampled				12/07/2019	12/07/2019	12/07/2019	12/07/2019	12/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
Chloroethane	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	-
Bromomethane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
Vinyl Chloride	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	-
Trichlorofluoromethane	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	-
1,1-Dichloroethene	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 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	-
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
2,2-Dichloropropane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Trichloromethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,1-Dichloropropene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	-
Benzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Tetrachloromethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Trichloroethene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Dibromomethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Bromodichloromethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
Toluene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
Dibromochloromethane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
Tetrachloroethene	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
Chlorobenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Ethylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
p & m-Xylene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Styrene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Tribromomethane	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	-
o-Xylene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1 1 2 2-Tetrachloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Isopropylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Bromobenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
n-Propylbenzene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
2-Chlorotoluene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
4-Chlorotoluene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
tert-Butylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
sec-Butylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Butylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Hexachlorobutadiene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-

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Analytical Report Number: 19-50468

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270701	1270702	1270703	1270704	1270705
Sample Reference				ATK-P-010	ATK-P-010	ATK-P-010	ATK-P-010	ATK-P-010
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.80-0.90	0.00-0 30	0.50-1.00	1.20-1.70
Date Sampled				12/07/2019	12/07/2019	12/07/2019	12/07/2019	12/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	-
Phenol	mg/kg	0 2	ISO 17025	< 0 2	< 0.2	< 0.2	< 0 2	-
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
Bis(2-chloroethyl)ether	mg/kg	0 2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
1,3-Dichlorobenzene	mg/kg	0 2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
1 2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
1 4-Dichlorobenzene	mg/kg	0 2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
2-Methylphenol	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	-
Nitrobenzene	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
4-Methylphenol	mg/kg	0 2	NONE	< 0 2	< 0.2	< 0.2	< 0 2	-
Isophorone	mg/kg	0 2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
2-Nitrophenol	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
2 4-Dimethylphenol	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
Bis(2-chloroethoxy)methane	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
1,2,4-Trichlorobenzene	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
2 4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
Dibenzofuran	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0 3	< 0.3	< 0.3	< 0 3	-
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Azobenzene	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
Phenanthrene	mg/kg	0.05	MCERTS	0.85	2.0	0 63	1.6	-
Anthracene	mg/kg	0.05	MCERTS	0.23	0.50	0.17	0.42	-
Carbazole	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
Anthraquinone	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
Fluoranthene	mg/kg	0.05	MCERTS	1.8	3.4	1.4	3.0	-
Pyrene	mg/kg	0.05	MCERTS	1.5	2.9	1.3	2.7	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0 3	< 0.3	< 0.3	< 0 3	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.73	1.4	0.75	1.4	-
Chrysene	mg/kg	0.05	MCERTS	0.79	1.3	0 64	1.2	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	1.0	1.5	0.97	1.6	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.42	0.88	0 39	0.74	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.86	1.4	0.79	1.4	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.39	0.64	0 39	0.57	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.45	0.69	0 50	0.76	-

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Analytical Report Number: 19-50468

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270701	1270702	1270703	1270704	1270705
Sample Reference				ATK-P-010	ATK-P-010	ATK-P-010	ATK-P-010	ATK-P-010
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.80-0.90	0.00-0 30	0.50-1.00	1.20-1.70
Date Sampled				12/07/2019	12/07/2019	12/07/2019	12/07/2019	12/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs								
PCB Congener 077	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 081	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 105	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 114	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 118	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 123	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 126	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 156	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 157	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 167	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 169	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 189	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
Total PCBs	mg/kg	0.012	NONE	< 0 012	< 0.012	< 0.012	< 0 012	-
Organochlorine Pesticides (OCP)								
Aldrin	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
BHC-alpha (benzene hexachloride)	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
BHC-beta	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
BHC-delta	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
BHC-gamma (Lindane, gamma HCH)	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Chlordane-cis	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Chlordane-trans	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Chlorothalonil	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
DDD-o,p'	µg/kg	1	NONE	1.4	1.4	1.7	1.3	-
DDD-p,p'	µg/kg	1	NONE	6.8	6 6	7.5	7.4	-
DDE-o, p'	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	-
DDE-p,p'	µg/kg	1	NONE	2.8	3 3	4.3	2.9	-
DDT-o,p'	µg/kg	1	NONE	1.1	< 1.0	1.1	< 1 0	-
DDT-p,p'	µg/kg	1	NONE	10	1.9	10	1.4	-
Dichlorobenzonitrile, 2,6-	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Dieldrin	µg/kg	10	NONE	18	15	19	19	-
Endosulfan I (alpha isomer)	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Endosulfan II (beta isomer)	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Endosulfan sulfate	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Endrin	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Endrin aldehyde	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Endrin ketone	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Heptachlor	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Heptachlor exo-epoxide	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Hexachlorobenzene	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Hexachlorobutadiene	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Isodrin	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Methoxychlor, p,p'-	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Pentachlorobenzene	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Tecnazene	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Tetrachlorobenzene, 1,2,4,5-	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Trichlorobenzene, 1,2,3-	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Trichlorobenzene, 1,3,5-	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Trifluralin	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-

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Analytical Report Number: 19-50468

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270701	1270702	1270703	1270704	1270705
Sample Reference				ATK-P-010	ATK-P-010	ATK-P-010	ATK-P-010	ATK-P-010
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.80-0.90	0.00-0 30	0.50-1.00	1.20-1.70
Date Sampled				12/07/2019	12/07/2019	12/07/2019	12/07/2019	12/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Organophosphorus Pesticides (OPP)								
Azinphos-ethyl	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Azinphos-methyl	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Carbophenothion	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Chlorfenvinphos (mixture of z and e isomers)	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Chlorpyrifos	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Demeton-O	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Demeton-S	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Diazinon	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Dichlorvos	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Dimethoate	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Dimethylvinphos	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Ethion	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Etrimfos	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Fenitrothion	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Fenthion	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Malathion	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Methacrifos	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Mevinphos , E-	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Mevinphos, Z-	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Parathion	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Parathion-methyl	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Phorate	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Phosalone	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Phosphamidon I	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Pirimiphos-ethyl	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Pirimiphos-methyl	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Propetamphos	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Triazophos	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Organonitrogen Pesticides (ONP)								
Pendimethalin	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Propyzamide	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Triadimefon	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-

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Analytical Report Number: 19-50468

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270701	1270702	1270703	1270704	1270705
Sample Reference				ATK-P-010	ATK-P-010	ATK-P-010	ATK-P-010	ATK-P-010
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.80-0.90	0.00-0 30	0.50-1.00	1.20-1.70
Date Sampled				12/07/2019	12/07/2019	12/07/2019	12/07/2019	12/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Environmental Forensics								
Triazine Herbicides								
Atrazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	-
Simazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	-
Prometryn	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	-
Propazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	-
Terbuthylazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	-
Terbutryn	mg/kg	0.1	NONE	0.27	0.26	0 30	0.29	-
Trietazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	-
Cyanazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	-
Acid Herbicides								
2 4 5-T	µg/kg	20	NONE	< 20	< 20	< 20	< 20	-
2 4 5-TP	µg/kg	20	NONE	< 20	< 20	< 20	< 20	-
2 4-D	µg/kg	20	NONE	< 20	< 20	< 20	< 20	-
2,4-DB	µg/kg	20	NONE	< 20	< 20	< 20	< 20	-
Dicamba	µg/kg	20	NONE	< 20	< 20	< 20	< 20	-
Dichlorprop	µg/kg	20	NONE	< 20	< 20	< 20	< 20	-
Dinoseb	µg/kg	20	NONE	< 20	< 20	< 20	< 20	-
MCPA	µg/kg	20	NONE	< 20	< 20	< 20	< 20	-
MCPB	µg/kg	20	NONE	< 20	< 20	< 20	< 20	-
MCPP (Mecoprop)	µg/kg	20	NONE	< 20	< 20	< 20	20	-
Picloram	µg/kg	20	NONE	< 20	< 20	< 20	< 20	-
Phenylurea herbicides								
Isoproturon	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Chlortoluron	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Linuron	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Diuron	µg/kg	10	NONE	24	46	28	61	-
Diflubenzuron	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Flumeturon	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Siduron	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Terbuthiuron	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Thidiazuron	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-

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Analytical Report Number: 19-50468

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270706				
Sample Reference				ATK-P-010				
Sample Number				4				
Depth (m)				2.50-3.00				
Date Sampled				12/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1				
Moisture Content	%	N/A	NONE	22				
Total mass of sample received	kg	0.001	NONE	2.0				
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected				
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	7.4				
Electrical Conductivity	µS/cm	10	ISO 17025	460				
Total Cyanide	mg/kg	1	MCERTS	< 1				
Free Cyanide	mg/kg	1	MCERTS	< 1				
Total Sulphate as SO_4	mg/kg	50	MCERTS	580				
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.17				
Ammonia as NH_3	mg/kg	0 5	MCERTS	30				
Ammonium as NH_4	mg/kg	0 5	MCERTS	32				
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	0 014				
Total Organic Carbon (TOC)	%	0.1	MCERTS	1.4				
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	0.31				
Anthracene	mg/kg	0.05	MCERTS	< 0.05				
Fluoranthene	mg/kg	0.05	MCERTS	0.33				
Pyrene	mg/kg	0.05	MCERTS	0.29				
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05				
Chrysene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05				
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05				
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05				
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0 8	MCERTS	0.93				

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Analytical Report Number: 19-50468

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270706				
Sample Reference				ATK-P-010				
Sample Number				4				
Depth (m)				2.50-3.00				
Date Sampled				12/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	11				
Barium (aqua regia extractable)	mg/kg	1	MCERTS	43				
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.86				
Boron (water soluble)	mg/kg	0 2	MCERTS	1.9				
Cadmium (aqua regia extractable)	mg/kg	0 2	MCERTS	< 0 2				
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4 0				
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	50				
Copper (aqua regia extractable)	mg/kg	1	MCERTS	16				
Lead (aqua regia extractable)	mg/kg	1	MCERTS	27				
Mercury (aqua regia extractable)	mg/kg	0 3	MCERTS	< 0 3				
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	17				
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1 0				
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	71				
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	54				
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	< 1 0				
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	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	2.2				
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	5.0				
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8 0				
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	35				
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	48				
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	3.2				
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	7.3				
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	12				
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	21				
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	44				

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Analytical Report Number: 19-50468

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270706				
Sample Reference				ATK-P-010				
Sample Number				4				
Depth (m)				2.50-3.00				
Date Sampled				12/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
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	-				
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	-				

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Analytical Report Number: 19-50468

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270706				
Sample Reference				ATK-P-010				
Sample Number				4				
Depth (m)				2.50-3.00				
Date Sampled				12/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	-				
Phenol	mg/kg	0 2	ISO 17025	-				
2-Chlorophenol	mg/kg	0.1	MCERTS	-				
Bis(2-chloroethyl)ether	mg/kg	0 2	MCERTS	-				
1,3-Dichlorobenzene	mg/kg	0 2	MCERTS	-				
1 2-Dichlorobenzene	mg/kg	0.1	MCERTS	-				
1 4-Dichlorobenzene	mg/kg	0 2	MCERTS	-				
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-				
2-Methylphenol	mg/kg	0 3	MCERTS	-				
Hexachloroethane	mg/kg	0.05	MCERTS	-				
Nitrobenzene	mg/kg	0 3	MCERTS	-				
4-Methylphenol	mg/kg	0 2	NONE	-				
Isophorone	mg/kg	0 2	MCERTS	-				
2-Nitrophenol	mg/kg	0 3	MCERTS	-				
2 4-Dimethylphenol	mg/kg	0 3	MCERTS	-				
Bis(2-chloroethoxy)methane	mg/kg	0 3	MCERTS	-				
1,2,4-Trichlorobenzene	mg/kg	0 3	MCERTS	-				
Naphthalene	mg/kg	0.05	MCERTS	-				
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-				
4-Chloroaniline	mg/kg	0.1	NONE	-				
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-				
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-				
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-				
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-				
2-Methylnaphthalene	mg/kg	0.1	NONE	-				
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-				
Dimethylphthalate	mg/kg	0.1	MCERTS	-				
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-				
Acenaphthylene	mg/kg	0.05	MCERTS	-				
Acenaphthene	mg/kg	0.05	MCERTS	-				
2 4-Dinitrotoluene	mg/kg	0.2	MCERTS	-				
Dibenzofuran	mg/kg	0.2	MCERTS	-				
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-				
Diethyl phthalate	mg/kg	0.2	MCERTS	-				
4-Nitroaniline	mg/kg	0.2	MCERTS	-				
Fluorene	mg/kg	0.05	MCERTS	-				
Azobenzene	mg/kg	0.3	MCERTS	-				
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-				
Hexachlorobenzene	mg/kg	0.3	MCERTS	-				
Phenanthrene	mg/kg	0.05	MCERTS	-				
Anthracene	mg/kg	0.05	MCERTS	-				
Carbazole	mg/kg	0.3	MCERTS	-				
Dibutyl phthalate	mg/kg	0.2	MCERTS	-				
Anthraquinone	mg/kg	0.3	MCERTS	-				
Fluoranthene	mg/kg	0.05	MCERTS	-				
Pyrene	mg/kg	0.05	MCERTS	-				
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-				
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	-				

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Analytical Report Number: 19-50468

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270706				
Sample Reference				ATK-P-010				
Sample Number				4				
Depth (m)				2.50-3.00				
Date Sampled				12/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs								
PCB Congener 077	mg/kg	0.001	NONE	-				
PCB Congener 081	mg/kg	0.001	NONE	-				
PCB Congener 105	mg/kg	0.001	NONE	-				
PCB Congener 114	mg/kg	0.001	NONE	-				
PCB Congener 118	mg/kg	0.001	NONE	-				
PCB Congener 123	mg/kg	0.001	NONE	-				
PCB Congener 126	mg/kg	0.001	NONE	-				
PCB Congener 156	mg/kg	0.001	NONE	-				
PCB Congener 157	mg/kg	0.001	NONE	-				
PCB Congener 167	mg/kg	0.001	NONE	-				
PCB Congener 169	mg/kg	0.001	NONE	-				
PCB Congener 189	mg/kg	0.001	NONE	-				
Total PCBs	mg/kg	0.012	NONE	-				
Organochlorine Pesticides (OCP)								
Aldrin	µg/kg	10	NONE	-				
BHC-alpha (benzene hexachloride)	µg/kg	10	NONE	-				
BHC-beta	µg/kg	10	NONE	-				
BHC-delta	µg/kg	10	NONE	-				
BHC-gamma (Lindane, gamma HCH)	µg/kg	10	NONE	-				
Chlordane-cis	µg/kg	10	NONE	-				
Chlordane-trans	µg/kg	10	NONE	-				
Chlorothalonil	µg/kg	10	NONE	-				
DDD-o,p'	µg/kg	1	NONE	-				
DDD-p,p'	µg/kg	1	NONE	-				
DDE-o, p'	µg/kg	1	NONE	-				
DDE-p,p'	µg/kg	1	NONE	-				
DDT-o,p'	µg/kg	1	NONE	-				
DDT-p,p'	µg/kg	1	NONE	-				
Dichlorobenzonitrile, 2,6-	µg/kg	10	NONE	-				
Dieldrin	µg/kg	10	NONE	-				
Endosulfan I (alpha isomer)	µg/kg	10	NONE	-				
Endosulfan II (beta isomer)	µg/kg	10	NONE	-				
Endosulfan sulfate	µg/kg	10	NONE	-				
Endrin	µg/kg	10	NONE	-				
Endrin aldehyde	µg/kg	10	NONE	-				
Endrin ketone	µg/kg	10	NONE	-				
Heptachlor	µg/kg	10	NONE	-				
Heptachlor exo-epoxide	µg/kg	10	NONE	-				
Hexachlorobenzene	µg/kg	10	NONE	-				
Hexachlorobutadiene	µg/kg	10	NONE	-				
Isodrin	µg/kg	10	NONE	-				
Methoxychlor, p,p'-	µg/kg	10	NONE	-				
Pentachlorobenzene	µg/kg	10	NONE	-				
Tecnazene	µg/kg	10	NONE	-				
Tetrachlorobenzene, 1,2,4,5-	µg/kg	10	NONE	-				
Trichlorobenzene, 1,2,3-	µg/kg	10	NONE	-				
Trichlorobenzene, 1,3,5-	µg/kg	10	NONE	-				
Trifluralin	µg/kg	10	NONE	-				

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Analytical Report Number: 19-50468

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270706				
Sample Reference				ATK-P-010				
Sample Number				4				
Depth (m)				2.50-3.00				
Date Sampled				12/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Organophosphorus Pesticides (OPP)								
Azinphos-ethyl	µg/kg	10	NONE	-				
Azinphos-methyl	µg/kg	10	NONE	-				
Carbophenothion	µg/kg	10	NONE	-				
Chlorfenvinphos (mixture of z and e isomers)	µg/kg	10	NONE	-				
Chlorpyrifos	µg/kg	10	NONE	-				
Demeton-O	µg/kg	10	NONE	-				
Demeton-S	µg/kg	10	NONE	-				
Diazinon	µg/kg	10	NONE	-				
Dichlorvos	µg/kg	10	NONE	-				
Dimethoate	µg/kg	10	NONE	-				
Dimethylvinphos	µg/kg	10	NONE	-				
Ethion	µg/kg	10	NONE	-				
Etrimfos	µg/kg	10	NONE	-				
Fenitrothion	µg/kg	10	NONE	-				
Fenthion	µg/kg	10	NONE	-				
Malathion	µg/kg	10	NONE	-				
Methacrifos	µg/kg	10	NONE	-				
Mevinphos , E-	µg/kg	10	NONE	-				
Mevinphos, Z-	µg/kg	10	NONE	-				
Parathion	µg/kg	10	NONE	-				
Parathion-methyl	µg/kg	10	NONE	-				
Phorate	µg/kg	10	NONE	-				
Phosalone	µg/kg	10	NONE	-				
Phosphamidon I	µg/kg	10	NONE	-				
Pirimiphos-ethyl	µg/kg	10	NONE	-				
Pirimiphos-methyl	µg/kg	10	NONE	-				
Propetamphos	µg/kg	10	NONE	-				
Triazophos	µg/kg	10	NONE	-				
Organonitrogen Pesticides (ONP)								
Pendimethalin	µg/kg	10	NONE	-				
Propyzamide	µg/kg	10	NONE	-				
Triadimefon	µg/kg	10	NONE	-				

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Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270706				
Sample Reference				ATK-P-010				
Sample Number				4				
Depth (m)				2.50-3.00				
Date Sampled				12/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Environmental Forensics								
Triazine Herbicides								
Atrazine	mg/kg	0.1	NONE	-				
Simazine	mg/kg	0.1	NONE	-				
Prometryn	mg/kg	0.1	NONE	-				
Propazine	mg/kg	0.1	NONE	-				
Terbuthylazine	mg/kg	0.1	NONE	-				
Terbutryn	mg/kg	0.1	NONE	-				
Trietazine	mg/kg	0.1	NONE	-				
Cyanazine	mg/kg	0.1	NONE	-				
Acid Herbicides								
2 4 5-T	µg/kg	20	NONE	-				
2 4 5-TP	µg/kg	20	NONE	-				
2 4-D	µg/kg	20	NONE	-				
2,4-DB	µg/kg	20	NONE	-				
Dicamba	µg/kg	20	NONE	-				
Dichlorprop	µg/kg	20	NONE	-				
Dinoseb	µg/kg	20	NONE	-				
MCPA	µg/kg	20	NONE	-				
MCPB	µg/kg	20	NONE	-				
MCPP (Mecoprop)	µg/kg	20	NONE	-				
Picloram	µg/kg	20	NONE	-				
Phenylurea herbicides								
Isoproturon	µg/kg	10	NONE	-				
Chlortoluron	µg/kg	10	NONE	-				
Linuron	µg/kg	10	NONE	-				
Diuron	µg/kg	10	NONE	-				
Diflubenzuron	µg/kg	10	NONE	-				
Flumeturon	µg/kg	10	NONE	-				
Siduron	µg/kg	10	NONE	-				
Terbuthiuron	µg/kg	10	NONE	-				
Thidiazuron	µg/kg	10	NONE	-				

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Analytical Report Number: 19-50468

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1270707	1270708			
Sample Reference				ATK-P-010	ATK-P-010			
Sample Number				1	2			
Depth (m)				0.00-0.20	0.80-0.90			
Date Sampled				12/07/2019	12/07/2019			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	7.7	7 6			
Electrical Conductivity	µS/cm	10	ISO 17025	2300	2500			
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10			
Free Cyanide	µg/l	10	ISO 17025	< 10	< 10			
Sulphate as SO_4	mg/l	0.1	ISO 17025	1700	2080			
Sulphide	µg/l	5	NONE	< 5 0	< 5.0			
Chloride	mg/l	0.15	ISO 17025	15	16			
Ammonium as NH_4	µg/l	15	NONE	59	2200			
Total Organic Carbon (TOC)	mg/l	0.1	NONE	7.70	17.1			
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	7.38	15.5			
Total Phenols								
Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10			
Heavy Metals / Metalloids								
Antimony (dissolved)	µg/l	1.7	ISO 17025	< 1.7	< 1.7			
Arsenic (dissolved)	µg/l	1.1	ISO 17025	12	6.9			
Barium (dissolved)	µg/l	0.05	ISO 17025	77	120			
Beryllium (dissolved)	µg/l	0.2	ISO 17025	< 0 2	< 0.2			
Boron (dissolved)	µg/l	10	ISO 17025	140	250			
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08			
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5 0	< 5.0			
Chromium (III)	µg/l	1	NONE	< 1 0	< 1.0			
Chromium (dissolved)	µg/l	0.4	ISO 17025	0.4	0 8			
Cobalt (dissolved)	µg/l	0.3	ISO 17025	0.4	1 2			
Copper (dissolved)	µg/l	0.7	ISO 17025	8.5	9.4			
Iron (dissolved)	mg/l	0.004	ISO 17025	0.15	0.28			
Lead (dissolved)	µg/l	1	ISO 17025	3.6	6 0			
Manganese (dissolved)	µg/l	0.06	ISO 17025	10	51			
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0 5	< 0.5			
Molybdenum (dissolved)	µg/l	0.4	ISO 17025	5.5	11			
Nickel (dissolved)	µg/l	0.3	ISO 17025	2.3	5 8			
Phosphorus (dissolved)	µg/l	30	NONE	60	80			
Selenium (dissolved)	µg/l	4	ISO 17025	< 4 0	< 4.0			
Tin (dissolved)	µg/l	1	ISO 17025	< 1 0	< 1.0			
Vanadium (dissolved)	µg/l	1.7	ISO 17025	3.2	3 0			
Zinc (dissolved)	µg/l	0.4	ISO 17025	5.9	27			
Calcium (dissolved)	mg/l	0.012	ISO 17025	650	670			
Magnesium (dissolved)	mg/l	0.005	ISO 17025	19	12			
Potassium (dissolved)	mg/l	0.025	ISO 17025	14	20			
Sodium (dissolved)	mg/l	0.01	ISO 17025	17	20			

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Analytical Report Number: 19-50468

Project / Site name: M25 Junction 28

Lab Sample Number				1270700				
Sample Reference				ATK-P-010				
Sample Number				None Supplied				
Depth (m)				0.00				
Date Sampled				12/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Bulk Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Asbestos Identification Name	Type	N/A	ISO 17025	No Asbestos Detected				

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Analytical Report Number : 19-50468

Project / Site name: M25 Junction 28

* 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 *
1270701	ATK-P-010	1	0.00-0.20	Brown loam and clay with gravel and vegetation.
1270702	ATK-P-010	2	0.80-0.90	Brown loam and clay with gravel and vegetation.
1270703	ATK-P-010	1	0.00-0.30	Brown loam and clay with gravel and vegetation.
1270704	ATK-P-010	2	0.50-1.00	Brown loam and clay with gravel and vegetation.
1270705	ATK-P-010	3	1.20-1.70	Brown clay with vegetation.
1270706	ATK-P-010	4	2.50-3.00	Brown clay and sand with vegetation.

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Analytical Report Number : 19-50468

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Ammonia as NH3 in soil	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	MCERTS
Ammonium as NH4 in leachate	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	NONE
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
Boron in leachate	Determination of boron in leachate. Sample acidified and followed by ICP-OES.	In-house method based on MEWAM	L039-PL	W	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	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
Chloride in leachate	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
Cr (III) in leachate	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Dissolved Organic Carbon in leachate	Determination of dissolved organic carbon in leachate by the measurement on a non-dispersive infrared analyser of carbon dioxide released by acidification.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L023-PL	W	NONE
EF - Phenylurea herbicides in soil by LC-MS/MS	Phenylurea herbicides by LC-MS/MS	In-house method	UK	W	NONE
Electrical conductivity at 20oC of leachate	Determination of electrical conductivity in leachate by electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031-PL	W	ISO 17025
Electrical conductivity of soil	Determination of electrical conductivity in soil by electrometric measurement.	In-house method	L031-PL	W	ISO 17025
Fraction of Organic Carbon in soil	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L009-PL	D	MCERTS
Free cyanide in leachate	Determination of free cyanide by distillation followed by colorimetry.	In-house method	L080-PL	W	ISO 17025
Free cyanide in soil	Determination of free 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
Hexavalent chromium in leachate	Determination of hexavalent chromium in leachate by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	ISO 17025

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number : 19-50468

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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	MCERTS
Metals by ICP-OES in leachate	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
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
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in leachate	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 (skalar)	L080-PL	W	ISO 17025
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
NRA Leachate Prep	10:1 extract with de-ionised water shaken for 24 hours then filtered.	In-house method based on National Rivers Authority	L020-PL	W	NONE
Organochlorine Pesticides in soil by GC MS/MS	Detemination of Pesticides in soil by GC MS/MS	Organochlorine Pesticides in soil by GC MS/MS	L055B-PL	D	NONE
Organonitrogen Pesticides in soil by GC MS/MS	Detemination of Pesticides in soil by GC MS/MS	Organonitrogen Pesticides in soil by GC MS/MS	L055B-PL	D	NONE
Organophosphorus Pesticides in soil by GC MS/MS	Detemination of Pesticides in soil by GC MS/MS	Organophosphorus Pesticides in soil by GC MS/MS	L055B-PL	D	NONE
PCBs WHO 12 in soil	Determination of PCBs (WHO-12 Congeners) by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	NONE
pH at 20oC in leachate	Determination of pH in leachate by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	ISO 17025
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	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
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
Sulphate in leachates	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025

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Analytical Report Number : 19-50468

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
Sulphide in leachate	Determination of sulphide in leachate by ion selective electrode.	In-house method	L010-PL	W	NONE
TO - Acid Herbicides in soil by LC-MS/MS	Determination of Acid herbicides in waters by LC-MS/MS	In-house method		W	NONE
TO - Triazine pesticides in soil	Determination of Triazines by LC-MS(/MS).	In-house method based on USEPA method 615.		W	NONE
Total cyanide in leachate	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	ISO 17025
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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS
Total organic carbon in leachate	Determination of dissolved organic 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
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	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
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

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.

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Analytical Report Number : 19-50470

Project / Site name:	M25 Junction 28	**Samples received on:**	15/07/2019
Your job number:	35403	**Samples instructed on:**	18/07/2019
Your order number:	35403-DO	**Analysis completed by:**	25/07/2019
Report Issue Number:	1	**Report issued on:**	25/07/2019
Samples Analysed:	10:1 WAC sample		

Signed: [redacted]

[redacted]
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:	**19-50470**						
					Client: GEOENG		
Location	**M25 Junction 28**						
Lab Reference (Sample Number)	1270716 / 1270717				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	12/07/2019				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	ATK-P-010 2						
Depth (m)	0.50-1.00						
Solid Waste Analysis							
TOC (%)**	1.6				3%	5%	6%
Loss on Ignition (%) **	-				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	270				500	--	--
Total PAH (WAC-17) (mg/kg)	15				100	--	--
pH (units)**	-				--	>6	--
Acid Neutralisation Capacity (mol / kg)	-				--	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 *	0.0081			0.0687	0.5	2	25
Barium *	0.128			1.09	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0038			0.033	0.5	10	70
Copper *	0.012			0.10	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0123			0.104	0.5	10	30
Nickel *	0.0080			0.067	0.4	10	40
Lead *	0.0043			0.036	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.012			0.098	4	50	200
Chloride *	19			170	800	4000	25000
Fluoride	0.66			5.6	10	150	500
Sulphate *	1800			15000	1000	20000	50000
TDS*	1500			13000	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	18.4			156	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	2.0						
Dry Matter (%)	86						
Moisture (%)	14						

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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Analytical Report Number : 19-50470

Project / Site name: M25 Junction 28

* 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 *
1270716	ATK-P-010	2	0.50-1.00	Brown loam and clay with gravel and vegetation.

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Analytical Report Number : 19-50470

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

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
BTEX in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Chloride 10:1 WAC	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-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
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
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
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.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
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
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
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	NONE
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
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 electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L004-PL	W	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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS

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.
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Analytical Report Number : 19-50597

Project / Site name:	M25 Junction 28	**Samples received on:**	17/07/2019
Your job number:	35403	**Samples instructed on:**	18/07/2019
Your order number:	35403-DO	**Analysis completed by:**	26/07/2019
Report Issue Number:	1	**Report issued on:**	26/07/2019
Samples Analysed:	2 leachate samples - 6 soil samples		

Signed: [redacted]

[redacted]
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.

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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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Analytical Report Number: 19-50597

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271368	1271369	1271370	1271371	1271372
Sample Reference				ATK-P-002	ATK-P-002	ATK-P-002	ATK-P-002	ATK-P-002
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.00-0.90	0.00-0 25	1.20-1.60	1.80-2.10
Date Sampled				16/07/2019	16/07/2019	16/07/2019	16/07/2019	16/07/2019
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	36
Moisture Content	%	N/A	NONE	9.4	17	7.9	15	5.4
Total mass of sample received	kg	0.001	NONE	1.9	1 8	2.0	2.0	2 0
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	7.6	7 6	7.6	7.6	7 6
Electrical Conductivity	µS/cm	10	ISO 17025	540	2000	640	2500	260
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Total Sulphate as SO_4	mg/kg	50	MCERTS	1100	5300	1300	7700	400
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.31	2 8	0.45	2.4	0.22
Ammonia as NH_3	mg/kg	0 5	MCERTS	< 0 5	< 0.5	< 0.5	0.6	16
Ammonium as NH_4	mg/kg	0 5	MCERTS	< 0 5	< 0.5	< 0.5	0.6	17
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	0 017	0.0029	0.018	0.0035	0.0048
Total Organic Carbon (TOC)	%	0.1	MCERTS	1.7	0 3	1.8	0.4	0 5
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	< 0.05	< 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	< 0.05	< 0.05	< 0 05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0 28	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0 28	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0 8	MCERTS	< 0.80	< 0.80	< 0 80	< 0.80	< 0.80

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Analytical Report Number: 19-50597

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271368	1271369	1271370	1271371	1271372
Sample Reference				ATK-P-002	ATK-P-002	ATK-P-002	ATK-P-002	ATK-P-002
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.00-0.90	0.00-0 25	1.20-1.60	1.80-2.10
Date Sampled				16/07/2019	16/07/2019	16/07/2019	16/07/2019	16/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	10	13	9.9	10	8 8
Barium (aqua regia extractable)	mg/kg	1	MCERTS	46	47	40	41	23
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.80	1.1	0.77	0.97	0.52
Boron (water soluble)	mg/kg	0 2	MCERTS	2.7	2 8	2.7	3.0	1 0
Cadmium (aqua regia extractable)	mg/kg	0 2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4 0	< 4.0	< 4.0	< 4 0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	38	54	35	47	27
Copper (aqua regia extractable)	mg/kg	1	MCERTS	19	22	17	22	9 8
Lead (aqua regia extractable)	mg/kg	1	MCERTS	23	11	30	11	9 2
Mercury (aqua regia extractable)	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	23	35	22	35	19
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	57	70	52	65	35
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	60	69	55	64	26
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
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	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2 0	< 2.0	< 2.0	< 2 0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8 0	< 8.0	< 8.0	< 8 0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8 0	< 8.0	< 8.0	< 8 0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2 0	< 2.0	< 2.0	< 2 0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10

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Analytical Report Number: 19-50597

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271368	1271369	1271370	1271371	1271372
Sample Reference				ATK-P-002	ATK-P-002	ATK-P-002	ATK-P-002	ATK-P-002
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.00-0.90	0.00-0 25	1.20-1.60	1.80-2.10
Date Sampled				16/07/2019	16/07/2019	16/07/2019	16/07/2019	16/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
Chloroethane	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	-	-
Bromomethane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
Vinyl Chloride	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	-	-
Trichlorofluoromethane	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	-	-
1,1-Dichloroethene	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
2,2-Dichloropropane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Trichloromethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,1-Dichloropropene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	-	-
Benzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Tetrachloromethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Trichloroethene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Dibromomethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Bromodichloromethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
Toluene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
Tetrachloroethene	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
Chlorobenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Ethylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
p & m-Xylene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Styrene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Tribromomethane	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	-	-
o-Xylene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1 1 2 2-Tetrachloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Isopropylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Bromobenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
n-Propylbenzene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
2-Chlorotoluene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
4-Chlorotoluene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
tert-Butylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
sec-Butylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Butylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
Hexachlorobutadiene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	-	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	-	-

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Analytical Report Number: 19-50597

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271368	1271369	1271370	1271371	1271372
Sample Reference				ATK-P-002	ATK-P-002	ATK-P-002	ATK-P-002	ATK-P-002
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.00-0.90	0.00-0 25	1.20-1.60	1.80-2.10
Date Sampled				16/07/2019	16/07/2019	16/07/2019	16/07/2019	16/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	-	-
Phenol	mg/kg	0 2	ISO 17025	< 0 2	< 0.2	< 0.2	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
Bis(2-chloroethyl)ether	mg/kg	0 2	MCERTS	< 0 2	< 0.2	< 0.2	-	-
1,3-Dichlorobenzene	mg/kg	0 2	MCERTS	< 0 2	< 0.2	< 0.2	-	-
1 2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
1 4-Dichlorobenzene	mg/kg	0 2	MCERTS	< 0 2	< 0.2	< 0.2	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
2-Methylphenol	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	-	-
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	-	-
Nitrobenzene	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	-	-
4-Methylphenol	mg/kg	0 2	NONE	< 0 2	< 0.2	< 0.2	-	-
Isophorone	mg/kg	0 2	MCERTS	< 0 2	< 0.2	< 0.2	-	-
2-Nitrophenol	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	-	-
2 4-Dimethylphenol	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	-	-
Bis(2-chloroethoxy)methane	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	-	-
1,2,4-Trichlorobenzene	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	-	-
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	-
2,4-Dichlorophenol	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	-	-
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	-
2 4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0 3	< 0.3	< 0.3	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	-	-
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	-	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	-
Azobenzene	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	-	-
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	-
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	-
Carbazole	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	-	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	-	-
Anthraquinone	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	-	-
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	0 28	-	-
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	0 28	-	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0 3	< 0.3	< 0.3	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	-	-
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0 05	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	-	-

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Analytical Report Number: 19-50597

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271368	1271369	1271370	1271371	1271372
Sample Reference				ATK-P-002	ATK-P-002	ATK-P-002	ATK-P-002	ATK-P-002
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.00-0.90	0.00-0 25	1.20-1.60	1.80-2.10
Date Sampled				16/07/2019	16/07/2019	16/07/2019	16/07/2019	16/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs								
PCB Congener 077	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 081	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 105	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 114	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 118	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 123	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 126	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 156	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 157	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 167	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 169	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
PCB Congener 189	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	-	-
Total PCBs	mg/kg	0.012	NONE	< 0 012	< 0.012	< 0.012	-	-
Organochlorine Pesticides (OCP)								
Aldrin	ug/kg	10	NONE	< 10	< 10	< 10	-	-
BHC-alpha (benzene hexachloride)	ug/kg	10	NONE	< 10	< 10	< 10	-	-
BHC-beta	ug/kg	10	NONE	< 10	< 10	< 10	-	-
BHC-delta	ug/kg	10	NONE	< 10	< 10	< 10	-	-
BHC-gamma (Lindane, gamma HCH)	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Chlordane-cis	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Chlordane-trans	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Chlorothalonil	ug/kg	10	NONE	< 10	< 10	< 10	-	-
DDD-o,p'	ug/kg	1	NONE	< 1 0	< 1.0	< 1.0	-	-
DDD-p,p'	ug/kg	1	NONE	< 1 0	< 1.0	< 1.0	-	-
DDE-o, p'	ug/kg	1	NONE	< 1 0	< 1.0	< 1.0	-	-
DDE-p,p'	ug/kg	1	NONE	< 1 0	< 1.0	< 1.0	-	-
DDT-o,p'	ug/kg	1	NONE	< 1 0	< 1.0	< 1.0	-	-
DDT-p,p'	ug/kg	1	NONE	< 1 0	< 1.0	< 1.0	-	-
Dichlorobenzonitrile, 2,6-	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Dieldrin	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Endosulfan I (alpha isomer)	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Endosulfan II (beta isomer)	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Endosulfan sulfate	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Endrin	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Endrin aldehyde	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Endrin ketone	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Heptachlor	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Heptachlor exo-epoxide	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Hexachlorobenzene	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Hexachlorobutadiene	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Isodrin	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Methoxychlor, p,p'-	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Pentachlorobenzene	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Tecnazene	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Tetrachlorobenzene, 1,2,4,5-	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Trichlorobenzene, 1,2,3-	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Trichlorobenzene, 1,3,5-	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Trifluralin	ug/kg	10	NONE	< 10	< 10	< 10	-	-

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Analytical Report Number: 19-50597

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271368	1271369	1271370	1271371	1271372
Sample Reference				ATK-P-002	ATK-P-002	ATK-P-002	ATK-P-002	ATK-P-002
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.00-0.90	0.00-0 25	1.20-1.60	1.80-2.10
Date Sampled				16/07/2019	16/07/2019	16/07/2019	16/07/2019	16/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Organophosphorus Pesticides (OPP)								
Azinphos-ethyl	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Azinphos-methyl	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Carbophenothion	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Chlorfenvinphos (mixture of z and e isomers)	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Chlorpyrifos	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Demeton-O	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Demeton-S	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Diazinon	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Dichlorvos	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Dimethoate	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Dimethylvinphos	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Ethion	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Etrimfos	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Fenitrothion	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Fenthion	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Malathion	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Methacrifos	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Mevinphos , E-	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Mevinphos, Z-	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Parathion	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Parathion-methyl	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Phorate	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Phosalone	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Phosphamidon I	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Pirimiphos-ethyl	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Pirimiphos-methyl	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Propetamphos	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Triazophos	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Organonitrogen Pesticides (ONP)								
Pendimethalin	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Propyzamide	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Triadimefon	ug/kg	10	NONE	< 10	< 10	< 10	-	-

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Analytical Report Number: 19-50597

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271368	1271369	1271370	1271371	1271372
Sample Reference				ATK-P-002	ATK-P-002	ATK-P-002	ATK-P-002	ATK-P-002
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.00-0.90	0.00-0 25	1.20-1.60	1.80-2.10
Date Sampled				16/07/2019	16/07/2019	16/07/2019	16/07/2019	16/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Environmental Forensics								
Triazine Herbicides								
Atrazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	-	-
Simazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	-	-
Prometryn	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	-	-
Propazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	-	-
Terbuthylazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	-	-
Terbutryn	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	-	-
Trietazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	-	-
Cyanazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	-	-
Acid Herbicides								
2 4 5-T	ug/kg	20	NONE	< 20	< 20	< 20	-	-
2 4 5-TP	ug/kg	20	NONE	< 20	< 20	< 20	-	-
2,4-D	ug/kg	20	NONE	< 20	< 20	< 20	-	-
2,4-DB	ug/kg	20	NONE	< 20	< 20	< 20	-	-
Dicamba	ug/kg	20	NONE	< 20	< 20	< 20	-	-
Dichlorprop	ug/kg	20	NONE	< 20	< 20	< 20	-	-
Dinoseb	ug/kg	20	NONE	< 20	< 20	< 20	-	-
MCPA	ug/kg	20	NONE	< 20	< 20	< 20	-	-
MCPB	ug/kg	20	NONE	< 20	< 20	< 20	-	-
MCPP (Mecoprop)	ug/kg	20	NONE	< 20	< 20	< 20	-	-
Picloram	ug/kg	20	NONE	< 20	< 20	< 20	-	-
Phenylurea herbicides								
Isoproturon	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Chlortoluron	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Linuron	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Diuron	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Diflubenzuron	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Flumeturon	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Siduron	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Terbuthiuron	ug/kg	10	NONE	< 10	< 10	< 10	-	-
Thidiazuron	ug/kg	10	NONE	< 10	< 10	< 10	-	-

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Analytical Report Number: 19-50597

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271373				
Sample Reference				ATK-P-002				
Sample Number				4				
Depth (m)				2.60-3.00				
Date Sampled				16/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1				
Moisture Content	%	N/A	NONE	17				
Total mass of sample received	kg	0.001	NONE	2.0				
Asbestos in Soil	Type	N/A	ISO 17025	-				
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	7.7				
Electrical Conductivity	µS/cm	10	ISO 17025	820				
Total Cyanide	mg/kg	1	MCERTS	< 1				
Free Cyanide	mg/kg	1	MCERTS	< 1				
Total Sulphate as SO_4	mg/kg	50	MCERTS	1300				
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.55				
Ammonia as NH_3	mg/kg	0 5	MCERTS	< 0 5				
Ammonium as NH_4	mg/kg	0 5	MCERTS	< 0 5				
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	0.0021				
Total Organic Carbon (TOC)	%	0.1	MCERTS	0.2				
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	< 0.05				
Anthracene	mg/kg	0.05	MCERTS	< 0.05				
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Pyrene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05				
Chrysene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05				
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05				
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05				
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0 8	MCERTS	< 0.80				

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Analytical Report Number: 19-50597

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271373				
Sample Reference				ATK-P-002				
Sample Number				4				
Depth (m)				2.60-3.00				
Date Sampled				16/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	9.4				
Barium (aqua regia extractable)	mg/kg	1	MCERTS	120				
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.5				
Boron (water soluble)	mg/kg	0 2	MCERTS	1.1				
Cadmium (aqua regia extractable)	mg/kg	0 2	MCERTS	< 0 2				
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4 0				
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	58				
Copper (aqua regia extractable)	mg/kg	1	MCERTS	31				
Lead (aqua regia extractable)	mg/kg	1	MCERTS	11				
Mercury (aqua regia extractable)	mg/kg	0 3	MCERTS	< 0 3				
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	41				
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1 0				
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	85				
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	78				
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	< 1 0				
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	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1 0				
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2 0				
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8 0				
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8 0				
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10				
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1 0				
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2 0				
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10				
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10				
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10				

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Analytical Report Number: 19-50597

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271373				
Sample Reference				ATK-P-002				
Sample Number				4				
Depth (m)				2.60-3.00				
Date Sampled				16/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
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	-				
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	-				

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Analytical Report Number: 19-50597

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271373				
Sample Reference				ATK-P-002				
Sample Number				4				
Depth (m)				2.60-3.00				
Date Sampled				16/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	-				
Phenol	mg/kg	0 2	ISO 17025	-				
2-Chlorophenol	mg/kg	0.1	MCERTS	-				
Bis(2-chloroethyl)ether	mg/kg	0 2	MCERTS	-				
1,3-Dichlorobenzene	mg/kg	0 2	MCERTS	-				
1 2-Dichlorobenzene	mg/kg	0.1	MCERTS	-				
1 4-Dichlorobenzene	mg/kg	0 2	MCERTS	-				
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-				
2-Methylphenol	mg/kg	0 3	MCERTS	-				
Hexachloroethane	mg/kg	0.05	MCERTS	-				
Nitrobenzene	mg/kg	0 3	MCERTS	-				
4-Methylphenol	mg/kg	0 2	NONE	-				
Isophorone	mg/kg	0 2	MCERTS	-				
2-Nitrophenol	mg/kg	0 3	MCERTS	-				
2 4-Dimethylphenol	mg/kg	0 3	MCERTS	-				
Bis(2-chloroethoxy)methane	mg/kg	0 3	MCERTS	-				
1,2,4-Trichlorobenzene	mg/kg	0 3	MCERTS	-				
Naphthalene	mg/kg	0.05	MCERTS	-				
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-				
4-Chloroaniline	mg/kg	0.1	NONE	-				
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-				
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-				
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-				
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-				
2-Methylnaphthalene	mg/kg	0.1	NONE	-				
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-				
Dimethylphthalate	mg/kg	0.1	MCERTS	-				
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-				
Acenaphthylene	mg/kg	0.05	MCERTS	-				
Acenaphthene	mg/kg	0.05	MCERTS	-				
2 4-Dinitrotoluene	mg/kg	0.2	MCERTS	-				
Dibenzofuran	mg/kg	0.2	MCERTS	-				
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-				
Diethyl phthalate	mg/kg	0.2	MCERTS	-				
4-Nitroaniline	mg/kg	0.2	MCERTS	-				
Fluorene	mg/kg	0.05	MCERTS	-				
Azobenzene	mg/kg	0.3	MCERTS	-				
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-				
Hexachlorobenzene	mg/kg	0.3	MCERTS	-				
Phenanthrene	mg/kg	0.05	MCERTS	-				
Anthracene	mg/kg	0.05	MCERTS	-				
Carbazole	mg/kg	0.3	MCERTS	-				
Dibutyl phthalate	mg/kg	0.2	MCERTS	-				
Anthraquinone	mg/kg	0.3	MCERTS	-				
Fluoranthene	mg/kg	0.05	MCERTS	-				
Pyrene	mg/kg	0.05	MCERTS	-				
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-				
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	-				

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Analytical Report Number: 19-50597

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271373				
Sample Reference				ATK-P-002				
Sample Number				4				
Depth (m)				2.60-3.00				
Date Sampled				16/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs								
PCB Congener 077	mg/kg	0.001	NONE	-				
PCB Congener 081	mg/kg	0.001	NONE	-				
PCB Congener 105	mg/kg	0.001	NONE	-				
PCB Congener 114	mg/kg	0.001	NONE	-				
PCB Congener 118	mg/kg	0.001	NONE	-				
PCB Congener 123	mg/kg	0.001	NONE	-				
PCB Congener 126	mg/kg	0.001	NONE	-				
PCB Congener 156	mg/kg	0.001	NONE	-				
PCB Congener 157	mg/kg	0.001	NONE	-				
PCB Congener 167	mg/kg	0.001	NONE	-				
PCB Congener 169	mg/kg	0.001	NONE	-				
PCB Congener 189	mg/kg	0.001	NONE	-				
Total PCBs	mg/kg	0.012	NONE	-				
Organochlorine Pesticides (OCP)								
Aldrin	ug/kg	10	NONE	-				
BHC-alpha (benzene hexachloride)	ug/kg	10	NONE	-				
BHC-beta	ug/kg	10	NONE	-				
BHC-delta	ug/kg	10	NONE	-				
BHC-gamma (Lindane, gamma HCH)	ug/kg	10	NONE	-				
Chlordane-cis	ug/kg	10	NONE	-				
Chlordane-trans	ug/kg	10	NONE	-				
Chlorothalonil	ug/kg	10	NONE	-				
DDD-o,p'	ug/kg	1	NONE	-				
DDD-p,p'	ug/kg	1	NONE	-				
DDE-o, p'	ug/kg	1	NONE	-				
DDE-p,p'	ug/kg	1	NONE	-				
DDT-o,p'	ug/kg	1	NONE	-				
DDT-p,p'	ug/kg	1	NONE	-				
Dichlorobenzonitrile, 2,6-	ug/kg	10	NONE	-				
Dieldrin	ug/kg	10	NONE	-				
Endosulfan I (alpha isomer)	ug/kg	10	NONE	-				
Endosulfan II (beta isomer)	ug/kg	10	NONE	-				
Endosulfan sulfate	ug/kg	10	NONE	-				
Endrin	ug/kg	10	NONE	-				
Endrin aldehyde	ug/kg	10	NONE	-				
Endrin ketone	ug/kg	10	NONE	-				
Heptachlor	ug/kg	10	NONE	-				
Heptachlor exo-epoxide	ug/kg	10	NONE	-				
Hexachlorobenzene	ug/kg	10	NONE	-				
Hexachlorobutadiene	ug/kg	10	NONE	-				
Isodrin	ug/kg	10	NONE	-				
Methoxychlor, p,p'-	ug/kg	10	NONE	-				
Pentachlorobenzene	ug/kg	10	NONE	-				
Tecnazene	ug/kg	10	NONE	-				
Tetrachlorobenzene, 1,2,4,5-	ug/kg	10	NONE	-				
Trichlorobenzene, 1,2,3-	ug/kg	10	NONE	-				
Trichlorobenzene, 1,3,5-	ug/kg	10	NONE	-				
Trifluralin	ug/kg	10	NONE	-				

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Analytical Report Number: 19-50597

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271373				
Sample Reference				ATK-P-002				
Sample Number				4				
Depth (m)				2.60-3.00				
Date Sampled				16/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Organophosphorus Pesticides (OPP)								
Azinphos-ethyl	ug/kg	10	NONE	-				
Azinphos-methyl	ug/kg	10	NONE	-				
Carbophenothion	ug/kg	10	NONE	-				
Chlorfenvinphos (mixture of z and e isomers)	ug/kg	10	NONE	-				
Chlorpyrifos	ug/kg	10	NONE	-				
Demeton-O	ug/kg	10	NONE	-				
Demeton-S	ug/kg	10	NONE	-				
Diazinon	ug/kg	10	NONE	-				
Dichlorvos	ug/kg	10	NONE	-				
Dimethoate	ug/kg	10	NONE	-				
Dimethylvinphos	ug/kg	10	NONE	-				
Ethion	ug/kg	10	NONE	-				
Etrimfos	ug/kg	10	NONE	-				
Fenitrothion	ug/kg	10	NONE	-				
Fenthion	ug/kg	10	NONE	-				
Malathion	ug/kg	10	NONE	-				
Methacrifos	ug/kg	10	NONE	-				
Mevinphos , E-	ug/kg	10	NONE	-				
Mevinphos, Z-	ug/kg	10	NONE	-				
Parathion	ug/kg	10	NONE	-				
Parathion-methyl	ug/kg	10	NONE	-				
Phorate	ug/kg	10	NONE	-				
Phosalone	ug/kg	10	NONE	-				
Phosphamidon I	ug/kg	10	NONE	-				
Pirimiphos-ethyl	ug/kg	10	NONE	-				
Pirimiphos-methyl	ug/kg	10	NONE	-				
Propetamphos	ug/kg	10	NONE	-				
Triazophos	ug/kg	10	NONE	-				
Organonitrogen Pesticides (ONP)								
Pendimethalin	ug/kg	10	NONE	-				
Propyzamide	ug/kg	10	NONE	-				
Triadimefon	ug/kg	10	NONE	-				

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Analytical Report Number: 19-50597

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271373				
Sample Reference				ATK-P-002				
Sample Number				4				
Depth (m)				2.60-3.00				
Date Sampled				16/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Environmental Forensics								
Triazine Herbicides								
Atrazine	mg/kg	0.1	NONE	-				
Simazine	mg/kg	0.1	NONE	-				
Prometryn	mg/kg	0.1	NONE	-				
Propazine	mg/kg	0.1	NONE	-				
Terbuthylazine	mg/kg	0.1	NONE	-				
Terbutryn	mg/kg	0.1	NONE	-				
Trietazine	mg/kg	0.1	NONE	-				
Cyanazine	mg/kg	0.1	NONE	-				
Acid Herbicides								
2 4 5-T	ug/kg	20	NONE	-				
2 4 5-TP	ug/kg	20	NONE	-				
2,4-D	ug/kg	20	NONE	-				
2,4-DB	ug/kg	20	NONE	-				
Dicamba	ug/kg	20	NONE	-				
Dichlorprop	ug/kg	20	NONE	-				
Dinoseb	ug/kg	20	NONE	-				
MCPA	ug/kg	20	NONE	-				
MCPB	ug/kg	20	NONE	-				
MCPP (Mecoprop)	ug/kg	20	NONE	-				
Picloram	ug/kg	20	NONE	-				
Phenylurea herbicides								
Isoproturon	ug/kg	10	NONE	-				
Chlortoluron	ug/kg	10	NONE	-				
Linuron	ug/kg	10	NONE	-				
Diuron	ug/kg	10	NONE	-				
Diflubenzuron	ug/kg	10	NONE	-				
Flumeturon	ug/kg	10	NONE	-				
Siduron	ug/kg	10	NONE	-				
Terbuthiuron	ug/kg	10	NONE	-				
Thidiazuron	ug/kg	10	NONE	-				

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Analytical Report Number: 19-50597

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271374	1271375			
Sample Reference				ATK-P-002	ATK-P-002			
Sample Number				1	2			
Depth (m)				0.00-0.20	0.80-0.90			
Date Sampled				16/07/2019	16/07/2019			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	7.7	7 6			
Electrical Conductivity	µS/cm	10	ISO 17025	150	1000			
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10			
Free Cyanide	µg/l	10	ISO 17025	< 10	< 10			
Sulphate as SO_4	mg/l	0.1	ISO 17025	39.2	633			
Sulphide	µg/l	5	NONE	< 5 0	< 5.0			
Chloride	mg/l	0.15	ISO 17025	2.5	2 5			
Ammonium as NH_4	µg/l	15	NONE	< 15	64			
Total Organic Carbon (TOC)	mg/l	0.1	NONE	7.54	3.37			
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	7.26	2.85			
Total Phenols								
Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10			
Heavy Metals / Metalloids								
Antimony (dissolved)	µg/l	1.7	ISO 17025	< 1.7	< 1.7			
Arsenic (dissolved)	µg/l	1.1	ISO 17025	4.2	8 0			
Barium (dissolved)	µg/l	0.05	ISO 17025	13	20			
Beryllium (dissolved)	µg/l	0.2	ISO 17025	< 0 2	< 0.2			
Boron (dissolved)	µg/l	10	ISO 17025	38	30			
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08			
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5 0	< 5.0			
Chromium (III)	µg/l	1	NONE	4.6	< 1.0			
Chromium (dissolved)	µg/l	0.4	ISO 17025	4.6	< 0.4			
Cobalt (dissolved)	µg/l	0.3	ISO 17025	1.7	0.4			
Copper (dissolved)	µg/l	0.7	ISO 17025	6.1	2.9			
Iron (dissolved)	mg/l	0.004	ISO 17025	4.0	0.083			
Lead (dissolved)	µg/l	1	ISO 17025	5.2	< 1.0			
Manganese (dissolved)	µg/l	0.06	ISO 17025	14	13			
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0 5	0 6			
Molybdenum (dissolved)	µg/l	0.4	ISO 17025	< 0.4	< 0.4			
Nickel (dissolved)	µg/l	0.3	ISO 17025	3.0	1.7			
Phosphorus (dissolved)	µg/l	30	NONE	61	< 30			
Selenium (dissolved)	µg/l	4	ISO 17025	< 4 0	< 4.0			
Tin (dissolved)	µg/l	1	ISO 17025	< 1 0	< 1.0			
Vanadium (dissolved)	µg/l	1.7	ISO 17025	13	< 1.7			
Zinc (dissolved)	µg/l	0.4	ISO 17025	9.1	4.1			
Calcium (dissolved)	mg/l	0.012	ISO 17025	17	150			
Magnesium (dissolved)	mg/l	0.005	ISO 17025	4.2	49			
Potassium (dissolved)	mg/l	0.025	ISO 17025	3.9	10			
Sodium (dissolved)	mg/l	0.01	ISO 17025	3.3	6 6			

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Analytical Report Number : 19-50597

Project / Site name: M25 Junction 28

* 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 *
1271368	ATK-P-002	1	0.00-0.20	Brown clay and loam with vegetation and gravel
1271369	ATK-P-002	2	0.00-0.90	Brown clay.
1271370	ATK-P-002	1	0.00-0.25	Brown clay and loam with vegetation and gravel
1271371	ATK-P-002	2	1.20-1.60	Brown clay.
1271372	ATK-P-002	3	1.80-2.10	Brown clay with gravel and stones.
1271373	ATK-P-002	4	2.60-3.00	Brown clay.

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Analytical Report Number : 19-50597

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Ammonia as NH3 in soil	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	MCERTS
Ammonium as NH4 in leachate	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	NONE
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
Boron in leachate	Determination of boron in leachate. Sample acidified and followed by ICP-OES.	In-house method based on MEWAM	L039-PL	W	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	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
Chloride in leachate	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
Cr (III) in leachate	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Dissolved Organic Carbon in leachate	Determination of dissolved organic carbon in leachate by the measurement on a non-dispersive infrared analyser of carbon dioxide released by acidification.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L023-PL	W	NONE
EF - Phenylurea herbicides in soil by LC-MS/MS	Phenylurea herbicides by LC-MS/MS	In-house method	UK	W	NONE
Electrical conductivity at 20oC of leachate	Determination of electrical conductivity in leachate by electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031-PL	W	ISO 17025
Electrical conductivity of soil	Determination of electrical conductivity in soil by electrometric measurement.	In-house method	L031-PL	W	ISO 17025
Fraction of Organic Carbon in soil	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L009-PL	D	MCERTS
Free cyanide in leachate	Determination of free cyanide by distillation followed by colorimetry.	In-house method	L080-PL	W	ISO 17025
Free cyanide in soil	Determination of free 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
Hexavalent chromium in leachate	Determination of hexavalent chromium in leachate by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	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	MCERTS

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Analytical Report Number : 19-50597

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals by ICP-OES in leachate	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
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
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in leachate	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 (skalar)	L080-PL	W	ISO 17025
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
NRA Leachate Prep	10:1 extract with de-ionised water shaken for 24 hours then filtered.	In-house method based on National Rivers Authority	L020-PL	W	NONE
Organochlorine Pesticides in soil by GC MS/MS	Detemination of Pesticides in soil by GC MS/MS	Organochlorine Pesticides in soil by GC MS/MS	L055B-PL	D	NONE
Organonitrogen Pesticides in soil by GC MS/MS	Detemination of Pesticides in soil by GC MS/MS	Organonitrogen Pesticides in soil by GC MS/MS	L055B-PL	D	NONE
Organophosphorus Pesticides in soil by GC MS/MS	Detemination of Pesticides in soil by GC MS/MS	Organophosphorus Pesticides in soil by GC MS/MS	L055B-PL	D	NONE
PCBs WHO 12 in soil	Determination of PCBs (WHO-12 Congeners) by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	NONE
pH at 20oC in leachate	Determination of pH in leachate by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	ISO 17025
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	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
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
Sulphate in leachates	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS

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Analytical Report Number : 19-50597

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphide in leachate	Determination of sulphide in leachate by ion selective electrode.	In-house method	L010-PL	W	NONE
TO - Acid Herbicides in soil by LC-MS/MS	Determination of Acid herbicides in waters by LC-MS/MS	In-house method		W	NONE
TO - Triazine pesticides in soil	Determination of Triazines by LC-MS(/MS).	In-house method based on USEPA method 615.		W	NONE
Total cyanide in leachate	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	ISO 17025
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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS
Total organic carbon in leachate	Determination of dissolved organic 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
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	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
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

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.

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Analytical Report Number : 19-50600

Project / Site name:	M25 Junction 28	**Samples received on:**	17/07/2019
Your job number:	35403	**Samples instructed on:**	18/07/2019
Your order number:	35403-DO	**Analysis completed by:**	25/07/2019
Report Issue Number:	1	**Report issued on:**	25/07/2019
Samples Analysed:	1 WAC 10:1 Sample		

Signed: [redacted]

[redacted]
Head of Customer Services
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:	**19-50600**						
					Client:	**GEOENG**	
Location	**M25 Junction 28**						
Lab Reference (Sample Number)	1271387 / 1271388				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	16/07/2019				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	ATK-P-002 4						
Depth (m)	2.60-3.00						
Solid Waste Analysis							
TOC (%)**	0.3				3%	5%	6%
Loss on Ignition (%) **	-				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	< 0.9				100	--	--
pH (units)**	-				--	>6	--
Acid Neutralisation Capacity (mol / kg)	-				--	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 *	0.0081			0.0693	0.5	2	25
Barium *	0.0113			0.0970	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0006			0.0048	0.5	10	70
Copper *	< 0.0007			< 0.0070	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	< 0.0004			< 0.0040	0.5	10	30
Nickel *	< 0.0003			< 0.0030	0.4	10	40
Lead *	< 0.0010			< 0.010	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	< 0.0004			< 0.0040	4	50	200
Chloride *	7.4			64	800	4000	25000
Fluoride	1.2			10	10	150	500
Sulphate *	100			900	1000	20000	50000
TDS*	180			1500	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	3.42			29.4	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	2.0						
Dry Matter (%)	83						
Moisture (%)	17						

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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Analytical Report Number : 19-50600

Project / Site name: M25 Junction 28

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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 *
1271387	ATK-P-002	4	2.60-3.00	Brown clay.

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Analytical Report Number : 19-50600

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

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
BTEX in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Chloride 10:1 WAC	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-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
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
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
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.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
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
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
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	NONE
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
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 electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L004-PL	W	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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS

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.

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The results included within the report are representative of the samples submitted for analysis.

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Analytical Report Number : 19-50679

Project / Site name:	M25 Junction 28	**Samples received on:**	12/07/2019
Your job number:	35403	**Samples instructed on:**	18/07/2019
Your order number:	35403-DO	**Analysis completed by:**	29/07/2019
Report Issue Number:	1	**Report issued on:**	29/07/2019
Samples Analysed:	2 leachate samples - 6 soil samples		

Signed: [redacted]

[redacted]
Head of Customer Services
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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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 19-50679

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271711	1271712	1271713	1271714	1271715
Sample Reference				ATK-P-008	ATK-P-008	ATK-P-008	ATK-P-008	ATK-P-008
Sample Number				1	2	3	4	5
Depth (m)				0.00-0.20	0.00-0.60	0.60-0 80	0.60-1.00	1.50-2.50
Date Sampled				11/07/2019	11/07/2019	11/07/2019	11/07/2019	11/07/2019
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	33	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	3.3	7.1	16	16	17
Total mass of sample received	kg	0.001	NONE	2.0	2 0	1.9	2.0	2 0
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	10.9	8.4	8.0	7.9	7 8
Electrical Conductivity	µS/cm	10	ISO 17025	2600	2300	2100	1200	470
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Total Sulphate as SO_4	mg/kg	50	MCERTS	11000	17000	6700	2600	540
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	2.0	2 5	3.3	1.2	0.30
Ammonia as NH_3	mg/kg	0 5	MCERTS	< 0 5	< 0.5	< 0.5	< 0 5	23
Ammonium as NH_4	mg/kg	0 5	MCERTS	< 0 5	< 0.5	< 0.5	< 0 5	25
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	0 013	0.019	0 0052	0.0055	0.011
Total Organic Carbon (TOC)	%	0.1	MCERTS	1.2	1.9	0.5	0.5	1.1
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	< 0.05	< 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	< 0.05	1.1	< 0 05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	0.30	< 0 05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.44	1 8	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	0.39	1 6	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.32	1.1	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	0.20	0.79	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.27	0.94	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.23	0.79	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.26	0.96	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.46	< 0 05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	0.58	< 0 05	< 0.05	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0 8	MCERTS	2.11	10.5	< 0.80	< 0.80	< 0.80
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	10	12	14	11	11
Barium (aqua regia extractable)	mg/kg	1	MCERTS	160	110	56	59	45
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.78	0.81	1.3	1.1	0.86
Boron (water soluble)	mg/kg	0 2	MCERTS	3.8	4.9	2.5	2.3	1 5
Cadmium (aqua regia extractable)	mg/kg	0 2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4 0	< 4.0	< 4.0	< 4 0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	37	33	62	54	48
Copper (aqua regia extractable)	mg/kg	1	MCERTS	40	34	21	19	14
Lead (aqua regia extractable)	mg/kg	1	MCERTS	42	150	11	14	18
Mercury (aqua regia extractable)	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	23	21	38	34	20
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	50	46	81	77	66
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	96	140	64	66	56

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Analytical Report Number: 19-50679

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271711	1271712	1271713	1271714	1271715
Sample Reference				ATK-P-008	ATK-P-008	ATK-P-008	ATK-P-008	ATK-P-008
Sample Number				1	2	3	4	5
Depth (m)				0.00-0.20	0.00-0.60	0.60-0 80	0.60-1.00	1.50-2.50
Date Sampled				11/07/2019	11/07/2019	11/07/2019	11/07/2019	11/07/2019
Time Taken				None Supplied	None Supplied	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	< 1.0	< 1 0	< 1.0
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	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1 0	2 0	2.1	1.7	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2 0	5.1	5.8	4.1	2.7
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8 0	12	13	< 8 0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8 0	68	19	18	9 2
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	87	40	31	18
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2 0	< 2.0	< 2.0	< 2 0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	24	39	< 10	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	31	49	< 10	< 10	< 10

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Analytical Report Number: 19-50679

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271711	1271712	1271713	1271714	1271715
Sample Reference				ATK-P-008	ATK-P-008	ATK-P-008	ATK-P-008	ATK-P-008
Sample Number				1	2	3	4	5
Depth (m)				0.00-0.20	0.00-0.60	0.60-0 80	0.60-1.00	1.50-2.50
Date Sampled				11/07/2019	11/07/2019	11/07/2019	11/07/2019	11/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
Chloroethane	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	-
Bromomethane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
Vinyl Chloride	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	-
Trichlorofluoromethane	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	-
1,1-Dichloroethene	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 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	-
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
2,2-Dichloropropane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Trichloromethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,1-Dichloropropene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	-
Benzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Tetrachloromethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Trichloroethene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Dibromomethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Bromodichloromethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
Toluene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
Dibromochloromethane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
Tetrachloroethene	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
Chlorobenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Ethylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
p & m-Xylene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Styrene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Tribromomethane	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	-
o-Xylene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1 1 2 2-Tetrachloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Isopropylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Bromobenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
n-Propylbenzene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
2-Chlorotoluene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
4-Chlorotoluene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
tert-Butylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
sec-Butylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Butylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Hexachlorobutadiene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-

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Analytical Report Number: 19-50679

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271711	1271712	1271713	1271714	1271715
Sample Reference				ATK-P-008	ATK-P-008	ATK-P-008	ATK-P-008	ATK-P-008
Sample Number				1	2	3	4	5
Depth (m)				0.00-0.20	0.00-0.60	0.60-0 80	0.60-1.00	1.50-2.50
Date Sampled				11/07/2019	11/07/2019	11/07/2019	11/07/2019	11/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	-
Phenol	mg/kg	0 2	ISO 17025	< 0 2	< 0.2	< 0.2	< 0 2	-
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
Bis(2-chloroethyl)ether	mg/kg	0 2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
1,3-Dichlorobenzene	mg/kg	0 2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
1 2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
1 4-Dichlorobenzene	mg/kg	0 2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
2-Methylphenol	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	-
Nitrobenzene	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
4-Methylphenol	mg/kg	0 2	NONE	< 0 2	< 0.2	< 0.2	< 0 2	-
Isophorone	mg/kg	0 2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
2-Nitrophenol	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
2 4-Dimethylphenol	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
Bis(2-chloroethoxy)methane	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
1,2,4-Trichlorobenzene	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
2 4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
Dibenzofuran	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0 3	< 0.3	< 0.3	< 0 3	-
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Azobenzene	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	1.1	< 0.05	< 0.05	-
Anthracene	mg/kg	0.05	MCERTS	< 0.05	0.30	< 0.05	< 0.05	-
Carbazole	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
Anthraquinone	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
Fluoranthene	mg/kg	0.05	MCERTS	0.44	1.8	< 0.05	< 0.05	-
Pyrene	mg/kg	0.05	MCERTS	0.39	1.6	< 0.05	< 0.05	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0 3	< 0.3	< 0.3	< 0 3	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.32	1.1	< 0.05	< 0.05	-
Chrysene	mg/kg	0.05	MCERTS	0.20	0.79	< 0.05	< 0.05	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.27	0.94	< 0.05	< 0.05	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.23	0.79	< 0.05	< 0.05	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.26	0.96	< 0.05	< 0.05	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.46	< 0 05	< 0.05	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	0.58	< 0 05	< 0.05	-

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Analytical Report Number: 19-50679

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271711	1271712	1271713	1271714	1271715
Sample Reference				ATK-P-008	ATK-P-008	ATK-P-008	ATK-P-008	ATK-P-008
Sample Number				1	2	3	4	5
Depth (m)				0.00-0.20	0.00-0.60	0.60-0 80	0.60-1.00	1.50-2.50
Date Sampled				11/07/2019	11/07/2019	11/07/2019	11/07/2019	11/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs								
PCB Congener 077	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 081	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 105	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 114	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 118	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 123	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 126	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 156	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 157	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 167	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 169	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 189	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
Total PCBs	mg/kg	0.012	NONE	< 0 012	< 0.012	< 0.012	< 0 012	-
Organochlorine Pesticides (OCP)								
Aldrin	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
BHC-alpha (benzene hexachloride)	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
BHC-beta	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
BHC-delta	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
BHC-gamma (Lindane, gamma HCH)	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Chlordane-cis	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Chlordane-trans	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Chlorothalonil	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
DDD-o,p'	ug/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	-
DDD-p,p'	ug/kg	1	NONE	1.7	1.4	< 1.0	< 1 0	-
DDE-o, p'	ug/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	-
DDE-p,p'	ug/kg	1	NONE	1.3	< 1.0	< 1.0	< 1 0	-
DDT-o,p'	ug/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	-
DDT-p,p'	ug/kg	1	NONE	2.3	1.1	< 1.0	< 1 0	-
Dichlorobenzonitrile, 2,6-	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Dieldrin	ug/kg	10	NONE	11	13	< 10	< 10	-
Endosulfan I (alpha isomer)	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Endosulfan II (beta isomer)	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Endosulfan sulfate	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Endrin	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Endrin aldehyde	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Endrin ketone	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Heptachlor	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Heptachlor exo-epoxide	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Hexachlorobenzene	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Hexachlorobutadiene	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Isodrin	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Methoxychlor, p,p'-	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Pentachlorobenzene	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Tecnazene	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Tetrachlorobenzene, 1,2,4,5-	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Trichlorobenzene, 1,2,3-	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Trichlorobenzene, 1,3,5-	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Trifluralin	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-

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Analytical Report Number: 19-50679

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271711	1271712	1271713	1271714	1271715
Sample Reference				ATK-P-008	ATK-P-008	ATK-P-008	ATK-P-008	ATK-P-008
Sample Number				1	2	3	4	5
Depth (m)				0.00-0.20	0.00-0.60	0.60-0 80	0.60-1.00	1.50-2.50
Date Sampled				11/07/2019	11/07/2019	11/07/2019	11/07/2019	11/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Organophosphorus Pesticides (OPP)								
Azinphos-ethyl	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Azinphos-methyl	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Carbophenothion	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Chlorfenvinphos (mixture of z and e isomers)	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Chlorpyrifos	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Demeton-O	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Demeton-S	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Diazinon	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Dichlorvos	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Dimethoate	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Dimethylvinphos	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Ethion	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Etrimfos	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Fenitrothion	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Fenthion	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Malathion	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Methacrifos	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Mevinphos , E-	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Mevinphos, Z-	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Parathion	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Parathion-methyl	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Phorate	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Phosalone	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Phosphamidon I	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Pirimiphos-ethyl	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Pirimiphos-methyl	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Propetamphos	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Triazophos	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Organonitrogen Pesticides (ONP)								
Pendimethalin	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Propyzamide	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Triadimefon	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-

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Analytical Report Number: 19-50679

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271711	1271712	1271713	1271714	1271715
Sample Reference				ATK-P-008	ATK-P-008	ATK-P-008	ATK-P-008	ATK-P-008
Sample Number				1	2	3	4	5
Depth (m)				0.00-0.20	0.00-0.60	0.60-0 80	0.60-1.00	1.50-2.50
Date Sampled				11/07/2019	11/07/2019	11/07/2019	11/07/2019	11/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Environmental Forensics								
Triazine Herbicides								
Atrazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	-
Simazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	-
Prometryn	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	-
Propazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	-
Terbuthylazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	-
Terbutryn	mg/kg	0.1	NONE	0.12	0.14	< 0.10	< 0.10	-
Trietazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	-
Cyanazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	-
Acid Herbicides								
2 4 5-T	ug/kg	20	NONE	< 20	< 20	< 20	< 20	-
2 4 5-TP	ug/kg	20	NONE	< 20	< 20	< 20	< 20	-
2 4-D	ug/kg	20	NONE	< 20	< 20	< 20	< 20	-
2,4-DB	ug/kg	20	NONE	< 20	< 20	< 20	< 20	-
Dicamba	ug/kg	20	NONE	< 20	< 20	< 20	< 20	-
Dichlorprop	ug/kg	20	NONE	< 20	< 20	< 20	< 20	-
Dinoseb	ug/kg	20	NONE	< 20	< 20	< 20	< 20	-
MCPA	ug/kg	20	NONE	< 20	< 20	< 20	< 20	-
MCPB	ug/kg	20	NONE	< 20	< 20	< 20	< 20	-
MCPP (Mecoprop)	ug/kg	20	NONE	< 20	< 20	< 20	< 20	-
Picloram	ug/kg	20	NONE	< 20	< 20	< 20	< 20	-
Phenylurea herbicides								
Isoproturon	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Chlortoluron	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Linuron	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Diuron	ug/kg	10	NONE	27	26	< 10	< 10	-
Diflubenzuron	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Flumeturon	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Siduron	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Terbuthiuron	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Thidiazuron	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-

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Analytical Report Number: 19-50679

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271716				
Sample Reference				ATK-P-008				
Sample Number				6				
Depth (m)				2.50-3.00				
Date Sampled				11/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1				
Moisture Content	%	N/A	NONE	20				
Total mass of sample received	kg	0.001	NONE	2.0				
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected				
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	7.7				
Electrical Conductivity	µS/cm	10	ISO 17025	600				
Total Cyanide	mg/kg	1	MCERTS	< 1				
Free Cyanide	mg/kg	1	MCERTS	< 1				
Total Sulphate as SO_4	mg/kg	50	MCERTS	710				
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.39				
Ammonia as NH_3	mg/kg	0 5	MCERTS	11				
Ammonium as NH_4	mg/kg	0 5	MCERTS	11				
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	0.0072				
Total Organic Carbon (TOC)	%	0.1	MCERTS	0.7				
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	< 0.05				
Anthracene	mg/kg	0.05	MCERTS	< 0.05				
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Pyrene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05				
Chrysene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05				
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05				
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05				
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0 8	MCERTS	< 0.80				
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13				
Barium (aqua regia extractable)	mg/kg	1	MCERTS	44				
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.1				
Boron (water soluble)	mg/kg	0 2	MCERTS	1.0				
Cadmium (aqua regia extractable)	mg/kg	0 2	MCERTS	< 0 2				
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4 0				
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	67				
Copper (aqua regia extractable)	mg/kg	1	MCERTS	19				
Lead (aqua regia extractable)	mg/kg	1	MCERTS	14				
Mercury (aqua regia extractable)	mg/kg	0 3	MCERTS	< 0 3				
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	25				
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1 0				
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	81				
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	57				

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Analytical Report Number: 19-50679

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271716				
Sample Reference				ATK-P-008				
Sample Number				6				
Depth (m)				2.50-3.00				
Date Sampled				11/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	< 1 0				
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	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1 0				
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	3.2				
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8 0				
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	9.8				
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	19				
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1 0				
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2 0				
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10				
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10				
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10				

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Analytical Report Number: 19-50679

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271716				
Sample Reference				ATK-P-008				
Sample Number				6				
Depth (m)				2.50-3.00				
Date Sampled				11/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
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	-				
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	-				

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Analytical Report Number: 19-50679

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271716				
Sample Reference				ATK-P-008				
Sample Number				6				
Depth (m)				2.50-3.00				
Date Sampled				11/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	-				
Phenol	mg/kg	0 2	ISO 17025	-				
2-Chlorophenol	mg/kg	0.1	MCERTS	-				
Bis(2-chloroethyl)ether	mg/kg	0 2	MCERTS	-				
1,3-Dichlorobenzene	mg/kg	0 2	MCERTS	-				
1 2-Dichlorobenzene	mg/kg	0.1	MCERTS	-				
1 4-Dichlorobenzene	mg/kg	0 2	MCERTS	-				
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-				
2-Methylphenol	mg/kg	0 3	MCERTS	-				
Hexachloroethane	mg/kg	0.05	MCERTS	-				
Nitrobenzene	mg/kg	0 3	MCERTS	-				
4-Methylphenol	mg/kg	0 2	NONE	-				
Isophorone	mg/kg	0 2	MCERTS	-				
2-Nitrophenol	mg/kg	0 3	MCERTS	-				
2 4-Dimethylphenol	mg/kg	0 3	MCERTS	-				
Bis(2-chloroethoxy)methane	mg/kg	0 3	MCERTS	-				
1,2,4-Trichlorobenzene	mg/kg	0 3	MCERTS	-				
Naphthalene	mg/kg	0.05	MCERTS	-				
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-				
4-Chloroaniline	mg/kg	0.1	NONE	-				
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-				
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-				
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-				
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-				
2-Methylnaphthalene	mg/kg	0.1	NONE	-				
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-				
Dimethylphthalate	mg/kg	0.1	MCERTS	-				
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-				
Acenaphthylene	mg/kg	0.05	MCERTS	-				
Acenaphthene	mg/kg	0.05	MCERTS	-				
2 4-Dinitrotoluene	mg/kg	0.2	MCERTS	-				
Dibenzofuran	mg/kg	0.2	MCERTS	-				
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-				
Diethyl phthalate	mg/kg	0.2	MCERTS	-				
4-Nitroaniline	mg/kg	0.2	MCERTS	-				
Fluorene	mg/kg	0.05	MCERTS	-				
Azobenzene	mg/kg	0.3	MCERTS	-				
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-				
Hexachlorobenzene	mg/kg	0.3	MCERTS	-				
Phenanthrene	mg/kg	0.05	MCERTS	-				
Anthracene	mg/kg	0.05	MCERTS	-				
Carbazole	mg/kg	0.3	MCERTS	-				
Dibutyl phthalate	mg/kg	0.2	MCERTS	-				
Anthraquinone	mg/kg	0.3	MCERTS	-				
Fluoranthene	mg/kg	0.05	MCERTS	-				
Pyrene	mg/kg	0.05	MCERTS	-				
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-				
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	-				

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Analytical Report Number: 19-50679

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271716				
Sample Reference				ATK-P-008				
Sample Number				6				
Depth (m)				2.50-3.00				
Date Sampled				11/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs								
PCB Congener 077	mg/kg	0.001	NONE	-				
PCB Congener 081	mg/kg	0.001	NONE	-				
PCB Congener 105	mg/kg	0.001	NONE	-				
PCB Congener 114	mg/kg	0.001	NONE	-				
PCB Congener 118	mg/kg	0.001	NONE	-				
PCB Congener 123	mg/kg	0.001	NONE	-				
PCB Congener 126	mg/kg	0.001	NONE	-				
PCB Congener 156	mg/kg	0.001	NONE	-				
PCB Congener 157	mg/kg	0.001	NONE	-				
PCB Congener 167	mg/kg	0.001	NONE	-				
PCB Congener 169	mg/kg	0.001	NONE	-				
PCB Congener 189	mg/kg	0.001	NONE	-				
Total PCBs	mg/kg	0.012	NONE	-				
Organochlorine Pesticides (OCP)								
Aldrin	ug/kg	10	NONE	-				
BHC-alpha (benzene hexachloride)	ug/kg	10	NONE	-				
BHC-beta	ug/kg	10	NONE	-				
BHC-delta	ug/kg	10	NONE	-				
BHC-gamma (Lindane, gamma HCH)	ug/kg	10	NONE	-				
Chlordane-cis	ug/kg	10	NONE	-				
Chlordane-trans	ug/kg	10	NONE	-				
Chlorothalonil	ug/kg	10	NONE	-				
DDD-o,p'	ug/kg	1	NONE	-				
DDD-p,p'	ug/kg	1	NONE	-				
DDE-o, p'	ug/kg	1	NONE	-				
DDE-p,p'	ug/kg	1	NONE	-				
DDT-o,p'	ug/kg	1	NONE	-				
DDT-p,p'	ug/kg	1	NONE	-				
Dichlorobenzonitrile, 2,6-	ug/kg	10	NONE	-				
Dieldrin	ug/kg	10	NONE	-				
Endosulfan I (alpha isomer)	ug/kg	10	NONE	-				
Endosulfan II (beta isomer)	ug/kg	10	NONE	-				
Endosulfan sulfate	ug/kg	10	NONE	-				
Endrin	ug/kg	10	NONE	-				
Endrin aldehyde	ug/kg	10	NONE	-				
Endrin ketone	ug/kg	10	NONE	-				
Heptachlor	ug/kg	10	NONE	-				
Heptachlor exo-epoxide	ug/kg	10	NONE	-				
Hexachlorobenzene	ug/kg	10	NONE	-				
Hexachlorobutadiene	ug/kg	10	NONE	-				
Isodrin	ug/kg	10	NONE	-				
Methoxychlor, p,p'-	ug/kg	10	NONE	-				
Pentachlorobenzene	ug/kg	10	NONE	-				
Tecnazene	ug/kg	10	NONE	-				
Tetrachlorobenzene, 1,2,4,5-	ug/kg	10	NONE	-				
Trichlorobenzene, 1,2,3-	ug/kg	10	NONE	-				
Trichlorobenzene, 1,3,5-	ug/kg	10	NONE	-				
Trifluralin	ug/kg	10	NONE	-				

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Analytical Report Number: 19-50679

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271716				
Sample Reference				ATK-P-008				
Sample Number				6				
Depth (m)				2.50-3.00				
Date Sampled				11/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Organophosphorus Pesticides (OPP)								
Azinphos-ethyl	ug/kg	10	NONE	-				
Azinphos-methyl	ug/kg	10	NONE	-				
Carbophenothion	ug/kg	10	NONE	-				
Chlorfenvinphos (mixture of z and e isomers)	ug/kg	10	NONE	-				
Chlorpyrifos	ug/kg	10	NONE	-				
Demeton-O	ug/kg	10	NONE	-				
Demeton-S	ug/kg	10	NONE	-				
Diazinon	ug/kg	10	NONE	-				
Dichlorvos	ug/kg	10	NONE	-				
Dimethoate	ug/kg	10	NONE	-				
Dimethylvinphos	ug/kg	10	NONE	-				
Ethion	ug/kg	10	NONE	-				
Etrimfos	ug/kg	10	NONE	-				
Fenitrothion	ug/kg	10	NONE	-				
Fenthion	ug/kg	10	NONE	-				
Malathion	ug/kg	10	NONE	-				
Methacrifos	ug/kg	10	NONE	-				
Mevinphos , E-	ug/kg	10	NONE	-				
Mevinphos, Z-	ug/kg	10	NONE	-				
Parathion	ug/kg	10	NONE	-				
Parathion-methyl	ug/kg	10	NONE	-				
Phorate	ug/kg	10	NONE	-				
Phosalone	ug/kg	10	NONE	-				
Phosphamidon I	ug/kg	10	NONE	-				
Pirimiphos-ethyl	ug/kg	10	NONE	-				
Pirimiphos-methyl	ug/kg	10	NONE	-				
Propetamphos	ug/kg	10	NONE	-				
Triazophos	ug/kg	10	NONE	-				
Organonitrogen Pesticides (ONP)								
Pendimethalin	ug/kg	10	NONE	-				
Propyzamide	ug/kg	10	NONE	-				
Triadimefon	ug/kg	10	NONE	-				

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Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271716				
Sample Reference				ATK-P-008				
Sample Number				6				
Depth (m)				2.50-3.00				
Date Sampled				11/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Environmental Forensics								
Triazine Herbicides								
Atrazine	mg/kg	0.1	NONE	-				
Simazine	mg/kg	0.1	NONE	-				
Prometryn	mg/kg	0.1	NONE	-				
Propazine	mg/kg	0.1	NONE	-				
Terbuthylazine	mg/kg	0.1	NONE	-				
Terbutryn	mg/kg	0.1	NONE	-				
Trietazine	mg/kg	0.1	NONE	-				
Cyanazine	mg/kg	0.1	NONE	-				
Acid Herbicides								
2 4 5-T	ug/kg	20	NONE	-				
2 4 5-TP	ug/kg	20	NONE	-				
2 4-D	ug/kg	20	NONE	-				
2,4-DB	ug/kg	20	NONE	-				
Dicamba	ug/kg	20	NONE	-				
Dichlorprop	ug/kg	20	NONE	-				
Dinoseb	ug/kg	20	NONE	-				
MCPA	ug/kg	20	NONE	-				
MCPB	ug/kg	20	NONE	-				
MCPP (Mecoprop)	ug/kg	20	NONE	-				
Picloram	ug/kg	20	NONE	-				
Phenylurea herbicides								
Isoproturon	ug/kg	10	NONE	-				
Chlortoluron	ug/kg	10	NONE	-				
Linuron	ug/kg	10	NONE	-				
Diuron	ug/kg	10	NONE	-				
Diflubenzuron	ug/kg	10	NONE	-				
Flumeturon	ug/kg	10	NONE	-				
Siduron	ug/kg	10	NONE	-				
Terbuthiuron	ug/kg	10	NONE	-				
Thidiazuron	ug/kg	10	NONE	-				

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Analytical Report Number: 19-50679

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271717	1271718			
Sample Reference				ATK-P-008	ATK-P-008			
Sample Number				1	3			
Depth (m)				0.00-0.20	0.60-0.80			
Date Sampled				11/07/2019	11/07/2019			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	7.5	7 5			
Electrical Conductivity	µS/cm	10	ISO 17025	1700	330			
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10			
Free Cyanide	µg/l	10	ISO 17025	< 10	< 10			
Sulphate as SO_4	mg/l	0.1	ISO 17025	1300	162			
Sulphide	µg/l	5	NONE	< 5 0	< 5.0			
Chloride	mg/l	0.15	ISO 17025	14	2 3			
Ammonium as NH_4	µg/l	15	NONE	46	67			
Total Organic Carbon (TOC)	mg/l	0.1	NONE	7.11	3.43			
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	6.36	3.14			
Total Phenols								
Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10			
Heavy Metals / Metalloids								
Antimony (dissolved)	µg/l	1.7	ISO 17025	< 1.7	< 1.7			
Arsenic (dissolved)	µg/l	1.1	ISO 17025	11	3.1			
Barium (dissolved)	µg/l	0.05	ISO 17025	52	14			
Beryllium (dissolved)	µg/l	0.2	ISO 17025	< 0 2	< 0.2			
Boron (dissolved)	µg/l	10	ISO 17025	130	15			
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08			
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5 0	< 5.0			
Chromium (III)	µg/l	1	NONE	< 1 0	< 1.0			
Chromium (dissolved)	µg/l	0.4	ISO 17025	0.6	< 0.4			
Cobalt (dissolved)	µg/l	0.3	ISO 17025	0.4	< 0.3			
Copper (dissolved)	µg/l	0.7	ISO 17025	7.9	12			
Iron (dissolved)	mg/l	0.004	ISO 17025	0 041	0.14			
Lead (dissolved)	µg/l	1	ISO 17025	1.4	< 1.0			
Manganese (dissolved)	µg/l	0.06	ISO 17025	10	11			
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0 5	< 0.5			
Molybdenum (dissolved)	µg/l	0.4	ISO 17025	9.0	< 0.4			
Nickel (dissolved)	µg/l	0.3	ISO 17025	2.3	0.7			
Phosphorus (dissolved)	µg/l	30	NONE	< 30	< 30			
Selenium (dissolved)	µg/l	4	ISO 17025	< 4 0	< 4.0			
Tin (dissolved)	µg/l	1	ISO 17025	< 1 0	1 6			
Vanadium (dissolved)	µg/l	1.7	ISO 17025	< 1.7	< 1.7			
Zinc (dissolved)	µg/l	0.4	ISO 17025	5.9	17			
Calcium (dissolved)	mg/l	0.012	ISO 17025	380	35			
Magnesium (dissolved)	mg/l	0.005	ISO 17025	22	19			
Potassium (dissolved)	mg/l	0.025	ISO 17025	14	4 3			
Sodium (dissolved)	mg/l	0.01	ISO 17025	16	5 5			

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Project / Site name: M25 Junction 28

* 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 *
1271711	ATK-P-008	1	0.00-0.20	Brown loam and clay with rubble and stones.
1271712	ATK-P-008	2	0.00-0.60	Brown loam and clay with rubble and vegetation.
1271713	ATK-P-008	3	0.60-0.80	Brown clay with gravel.
1271714	ATK-P-008	4	0.60-1.00	Brown clay.
1271715	ATK-P-008	5	1.50-2.50	Brown clay with gravel.
1271716	ATK-P-008	6	2.50-3.00	Brown clay.

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Analytical Report Number : 19-50679

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Ammonia as NH3 in soil	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	MCERTS
Ammonium as NH4 in leachate	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	NONE
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
Boron in leachate	Determination of boron in leachate. Sample acidified and followed by ICP-OES.	In-house method based on MEWAM	L039-PL	W	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	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
Chloride in leachate	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
Cr (III) in leachate	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Dissolved Organic Carbon in leachate	Determination of dissolved organic carbon in leachate by the measurement on a non-dispersive infrared analyser of carbon dioxide released by acidification.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L023-PL	W	NONE
EF - Phenylurea herbicides in soil by LC-MS/MS	Phenylurea herbicides by LC-MS/MS	In-house method	UK	W	NONE
Electrical conductivity at 20oC of leachate	Determination of electrical conductivity in leachate by electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031-PL	W	ISO 17025
Electrical conductivity of soil	Determination of electrical conductivity in soil by electrometric measurement.	In-house method	L031-PL	W	ISO 17025
Fraction of Organic Carbon in soil	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L009-PL	D	MCERTS
Free cyanide in leachate	Determination of free cyanide by distillation followed by colorimetry.	In-house method	L080-PL	W	ISO 17025
Free cyanide in soil	Determination of free 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
Hexavalent chromium in leachate	Determination of hexavalent chromium in leachate by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	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	MCERTS

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Analytical Report Number : 19-50679

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals by ICP-OES in leachate	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
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
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in leachate	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 (skalar)	L080-PL	W	ISO 17025
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
NRA Leachate Prep	10:1 extract with de-ionised water shaken for 24 hours then filtered.	In-house method based on National Rivers Authority	L020-PL	W	NONE
Organochlorine Pesticides in soil by GC MS/MS	Detemination of Pesticides in soil by GC MS/MS	Organochlorine Pesticides in soil by GC MS/MS	L055B-PL	D	NONE
Organonitrogen Pesticides in soil by GC MS/MS	Detemination of Pesticides in soil by GC MS/MS	Organonitrogen Pesticides in soil by GC MS/MS	L055B-PL	D	NONE
Organophosphorus Pesticides in soil by GC MS/MS	Detemination of Pesticides in soil by GC MS/MS	Organophosphorus Pesticides in soil by GC MS/MS	L055B-PL	D	NONE
PCBs WHO 12 in soil	Determination of PCBs (WHO-12 Congeners) by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	NONE
pH at 20oC in leachate	Determination of pH in leachate by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	ISO 17025
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	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
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
Sulphate in leachates	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number : 19-50679

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphide in leachate	Determination of sulphide in leachate by ion selective electrode.	In-house method	L010-PL	W	NONE
TO - Acid Herbicides in soil by LC-MS/MS	Determination of Acid herbicides in waters by LC-MS/MS	In-house method		W	NONE
TO - Triazine pesticides in soil	Determination of Triazines by LC-MS(/MS).	In-house method based on USEPA method 615.		W	NONE
Total cyanide in leachate	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	ISO 17025
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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS
Total organic carbon in leachate	Determination of dissolved organic 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
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	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
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

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.

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Sample ID	Other_ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
ATK-P-008	1	S	19-50679	1271711	c	Free cyanide in soil	L080-PL	c
ATK-P-008	1	S	19-50679	1271711	c	Total cyanide in soil	L080-PL	c
ATK-P-008	2	S	19-50679	1271712	c	Free cyanide in soil	L080-PL	c
ATK-P-008	2	S	19-50679	1271712	c	Total cyanide in soil	L080-PL	c
ATK-P-008	3	S	19-50679	1271713	c	Free cyanide in soil	L080-PL	c
ATK-P-008	3	S	19-50679	1271713	c	Total cyanide in soil	L080-PL	c
ATK-P-008	4	S	19-50679	1271714	c	Free cyanide in soil	L080-PL	c
ATK-P-008	4	S	19-50679	1271714	c	Total cyanide in soil	L080-PL	c
ATK-P-008	5	S	19-50679	1271715	c	Free cyanide in soil	L080-PL	c
ATK-P-008	5	S	19-50679	1271715	c	Total cyanide in soil	L080-PL	c
ATK-P-008	6	S	19-50679	1271716	c	Free cyanide in soil	L080-PL	c
ATK-P-008	6	S	19-50679	1271716	c	Total cyanide in soil	L080-PL	c

Key: a - No sampling date b - Incorrect container
c - Holding time d - Headspace e - Temperature

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Analytical Report Number : 19-50681

Project / Site name:	M25 Junction 28	**Samples received on:**	12/07/2019
Your job number:	35403	**Samples instructed on:**	18/07/2019
Your order number:	35403-DO	**Analysis completed by:**	25/07/2019
Report Issue Number:	1	**Report issued on:**	25/07/2019
Samples Analysed:	10:1 WAC sample		

Signed: [redacted]

[redacted]
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:	**19-50681**						
					Client:	**GEOENG**	
Location	**M25 Junction 28**						
Lab Reference (Sample Number)	1271745 / 1271746				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	11/07/2019				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	ATK-P-008 5						
Depth (m)	1.50-2.50						
Solid Waste Analysis							
TOC (%)**	1.1				3%	5%	6%
Loss on Ignition (%) **	-				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	< 0.9				100	--	--
pH (units)**	-				--	>6	--
Acid Neutralisation Capacity (mol / kg)	-				--	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 *	0.0018			0.0144	0.5	2	25
Barium *	0.0236			0.193	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0032			0.026	0.5	10	70
Copper *	0.0046			0.038	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0019			0.0157	0.5	10	30
Nickel *	0.0042			0.035	0.4	10	40
Lead *	0.0079			0.065	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.0051			0.042	4	50	200
Chloride *	12			98	800	4000	25000
Fluoride	1.1			8.9	10	150	500
Sulphate *	39			320	1000	20000	50000
TDS*	110			880	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	15.5			127	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	2.0						
Dry Matter (%)	83						
Moisture (%)	17						

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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Analytical Report Number : 19-50681

Project / Site name: M25 Junction 28

* 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 *
1271745	ATK-P-008	5	1.50-2.50	Brown clay with gravel.

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Analytical Report Number : 19-50681

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

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
BTEX in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Chloride 10:1 WAC	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-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
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
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
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.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
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
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
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	NONE
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
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 electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L004-PL	W	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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS

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.

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Analytical Report Number : 19-50706

Project / Site name:	M25 Junction 28	**Samples received on:**	17/07/2019
Your job number:	35403	**Samples instructed on:**	18/07/2019
Your order number:	35403-DO	**Analysis completed by:**	30/07/2019
Report Issue Number:	1	**Report issued on:**	30/07/2019
Samples Analysed:	2 leachate samples - 6 soil samples		

Signed: [redacted]

[redacted]
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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Analytical Report Number: 19-50706

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271808	1271809	1271810	1271811	1271812
Sample Reference				ATK-P-001	ATK-P-001	ATK-P-001	ATK-P-001	ATK-P-001
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.70-0.80	0.00-0.40	0.70-1.00	1.40-1.80
Date Sampled				16/07/2019	16/07/2019	16/07/2019	16/07/2019	16/07/2019
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	< 0.1
Moisture Content	%	N/A	NONE	6.1	19	8.9	18	19
Total mass of sample received	kg	0.001	NONE	2.0	1.7	2.0	2.0	2 0
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	9.3	7.7	8.3	7.7	7 3
Electrical Conductivity	µS/cm	10	ISO 17025	2300	800	2300	690	740
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Total Sulphate as SO_4	mg/kg	50	MCERTS	13000	1200	12000	1300	1100
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	2.4	0.49	2.3	0.53	0.57
Ammonia as NH_3	mg/kg	0 5	MCERTS	< 0 5	< 0.5	< 0.5	< 0 5	41
Ammonium as NH_4	mg/kg	0 5	MCERTS	< 0 5	< 0.5	< 0.5	< 0 5	43
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	0 018	0.011	0.017	0.0094	0.019
Total Organic Carbon (TOC)	%	0.1	MCERTS	1.8	1.1	1.7	0.9	1.9
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	< 0.05	< 0.05	< 0 05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	< 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	0.43	< 0.05	0.45	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.86	< 0.05	0.98	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	0.85	< 0.05	0 89	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.53	< 0.05	0 60	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	0.57	< 0.05	0 51	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.67	< 0.05	0.74	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.41	< 0.05	0 27	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.64	< 0.05	0 69	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.37	< 0.05	< 0 05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.46	< 0.05	0.46	< 0.05	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0 8	MCERTS	5.79	< 0.80	5 59	< 0.80	< 0.80

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 19-50706

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271808	1271809	1271810	1271811	1271812
Sample Reference				ATK-P-001	ATK-P-001	ATK-P-001	ATK-P-001	ATK-P-001
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.70-0.80	0.00-0.40	0.70-1.00	1.40-1.80
Date Sampled				16/07/2019	16/07/2019	16/07/2019	16/07/2019	16/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	17	12	15	12	9 8
Barium (aqua regia extractable)	mg/kg	1	MCERTS	110	50	110	45	44
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.80	1.1	0.77	1.1	0.79
Boron (water soluble)	mg/kg	0 2	MCERTS	4.6	1.9	5.9	2.4	1 6
Cadmium (aqua regia extractable)	mg/kg	0 2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4 0	< 4.0	< 4.0	< 4 0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	31	51	45	52	35
Copper (aqua regia extractable)	mg/kg	1	MCERTS	37	19	71	18	14
Lead (aqua regia extractable)	mg/kg	1	MCERTS	150	19	79	16	23
Mercury (aqua regia extractable)	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	21	31	37	29	20
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	2.2	< 1.0	< 1.0	< 1 0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	44	76	56	73	58
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	140	67	120	64	63
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
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	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	18	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2 0	< 2.0	< 2.0	33	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	12	< 8.0	< 8.0	30	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	65	< 8.0	< 8.0	70	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	79	< 10	< 10	150	< 10
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1 0	26	< 1.0	< 1 0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2 0	32	< 2.0	< 2 0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	30	< 10	< 10	14
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	27	< 10	< 10	63
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	120	< 10	< 10	78

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 19-50706

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271808	1271809	1271810	1271811	1271812
Sample Reference				ATK-P-001	ATK-P-001	ATK-P-001	ATK-P-001	ATK-P-001
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.70-0.80	0.00-0.40	0.70-1.00	1.40-1.80
Date Sampled				16/07/2019	16/07/2019	16/07/2019	16/07/2019	16/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
Chloroethane	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
Bromomethane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
Vinyl Chloride	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
Trichlorofluoromethane	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
1,1-Dichloroethene	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
Cis-1,2-dichloroethene	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
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
2,2-Dichloropropane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
Trichloromethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
1,1-Dichloropropene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
Benzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
Tetrachloromethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
Trichloroethene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
Dibromomethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
Bromodichloromethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
Dibromochloromethane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
Tetrachloroethene	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
Chlorobenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
1,1,1,2-Tetrachloroethane	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
Styrene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
Tribromomethane	µg/kg	1	NONE	< 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
1 1 2 2-Tetrachloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
Isopropylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
Bromobenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
n-Propylbenzene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
2-Chlorotoluene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
4-Chlorotoluene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
tert-Butylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
sec-Butylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
Butylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
Hexachlorobutadiene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0

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Analytical Report Number: 19-50706

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271808	1271809	1271810	1271811	1271812
Sample Reference				ATK-P-001	ATK-P-001	ATK-P-001	ATK-P-001	ATK-P-001
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.70-0.80	0.00-0.40	0.70-1.00	1.40-1.80
Date Sampled				16/07/2019	16/07/2019	16/07/2019	16/07/2019	16/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	mg/kg	0 2	ISO 17025	< 0 2	< 0.2	< 0.2	< 0 2	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0 2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	< 0.2
1,3-Dichlorobenzene	mg/kg	0 2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	< 0.2
1 2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1 4-Dichlorobenzene	mg/kg	0 2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	< 0.3
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	< 0.05
Nitrobenzene	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	< 0.3
4-Methylphenol	mg/kg	0 2	NONE	< 0 2	< 0.2	< 0.2	< 0 2	< 0.2
Isophorone	mg/kg	0 2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	< 0.2
2-Nitrophenol	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	< 0.3
2 4-Dimethylphenol	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	< 0.3
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2 4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0 3	< 0.3	< 0.3	< 0 3	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	< 0.2
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	< 0.2
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Azobenzene	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	< 0.3
Phenanthrene	mg/kg	0.05	MCERTS	0.43	< 0 05	0.45	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	< 0.05
Carbazole	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	< 0.3
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	< 0.2
Anthraquinone	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	< 0.3
Fluoranthene	mg/kg	0.05	MCERTS	0.86	< 0 05	0.98	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	0.85	< 0 05	0 89	< 0.05	< 0.05
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0 3	< 0.3	< 0.3	< 0 3	< 0.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.53	< 0 05	0 60	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	0.57	< 0 05	0 51	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.67	< 0 05	0.74	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.41	< 0 05	0 27	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.64	< 0 05	0 69	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.37	< 0.05	< 0 05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.46	< 0.05	0.46	< 0.05	< 0.05

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Analytical Report Number: 19-50706

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271808	1271809	1271810	1271811	1271812
Sample Reference				ATK-P-001	ATK-P-001	ATK-P-001	ATK-P-001	ATK-P-001
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.70-0.80	0.00-0.40	0.70-1.00	1.40-1.80
Date Sampled				16/07/2019	16/07/2019	16/07/2019	16/07/2019	16/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs								
PCB Congener 077	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 081	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 105	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 114	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 118	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 123	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 126	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 156	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 157	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 167	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 169	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 189	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
Total PCBs	mg/kg	0.012	NONE	< 0 012	< 0.012	< 0.012	< 0 012	-
Organochlorine Pesticides (OCP)								
Aldrin	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
BHC-alpha (benzene hexachloride)	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
BHC-beta	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
BHC-delta	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
BHC-gamma (Lindane, gamma HCH)	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Chlordane-cis	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Chlordane-trans	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Chlorothalonil	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
DDD-o,p'	µg/kg	1	NONE	1.2	< 1.0	< 1.0	< 1 0	-
DDD-p,p'	µg/kg	1	NONE	6.0	< 1.0	3.4	< 1 0	-
DDE-o, p'	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	-
DDE-p,p'	µg/kg	1	NONE	3.1	< 1.0	2.1	< 1 0	-
DDT-o,p'	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	-
DDT-p,p'	µg/kg	1	NONE	9.7	< 1.0	4.1	< 1 0	-
Dichlorobenzonitrile, 2,6-	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Dieldrin	µg/kg	10	NONE	17	< 10	15	< 10	-
Endosulfan I (alpha isomer)	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Endosulfan II (beta isomer)	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Endosulfan sulfate	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Endrin	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Endrin aldehyde	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Endrin ketone	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Heptachlor	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Heptachlor exo-epoxide	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Hexachlorobenzene	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Hexachlorobutadiene	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Isodrin	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Methoxychlor, p,p'-	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Pentachlorobenzene	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Tecnazene	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Tetrachlorobenzene, 1,2,4,5-	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Trichlorobenzene, 1,2,3-	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Trichlorobenzene, 1,3,5-	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Trifluralin	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-

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Analytical Report Number: 19-50706

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271808	1271809	1271810	1271811	1271812
Sample Reference				ATK-P-001	ATK-P-001	ATK-P-001	ATK-P-001	ATK-P-001
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.70-0.80	0.00-0.40	0.70-1.00	1.40-1.80
Date Sampled				16/07/2019	16/07/2019	16/07/2019	16/07/2019	16/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Organophosphorus Pesticides (OPP)								
Azinphos-ethyl	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Azinphos-methyl	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Carbophenothion	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Chlorfenvinphos (mixture of z and e isomers)	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Chlorpyrifos	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Demeton-O	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Demeton-S	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Diazinon	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Dichlorvos	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Dimethoate	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Dimethylvinphos	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Ethion	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Etrimfos	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Fenitrothion	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Fenthion	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Malathion	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Methacrifos	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Mevinphos , E-	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Mevinphos, Z-	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Parathion	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Parathion-methyl	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Phorate	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Phosalone	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Phosphamidon I	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Pirimiphos-ethyl	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Pirimiphos-methyl	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Propetamphos	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Triazophos	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Organonitrogen Pesticides (ONP)								
Pendimethalin	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Propyzamide	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Triadimefon	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-

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Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271808	1271809	1271810	1271811	1271812
Sample Reference				ATK-P-001	ATK-P-001	ATK-P-001	ATK-P-001	ATK-P-001
Sample Number				1	2	1	2	3
Depth (m)				0.00-0.20	0.70-0.80	0.00-0.40	0.70-1.00	1.40-1.80
Date Sampled				16/07/2019	16/07/2019	16/07/2019	16/07/2019	16/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Environmental Forensics								
Triazine Herbicides								
Atrazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	-
Simazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	-
Prometryn	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	-
Propazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	-
Terbuthylazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	-
Terbutryn	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	-
Trietazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	-
Cyanazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	-
Acid Herbicides								
2 4 5-T	µg/kg	20	NONE	< 20	< 20	< 20	< 20	-
2 4 5-TP	µg/kg	20	NONE	< 20	< 20	< 20	< 20	-
2,4-D	µg/kg	20	NONE	< 20	< 20	< 20	< 20	-
2,4-DB	µg/kg	20	NONE	< 20	< 20	< 20	< 20	-
Dicamba	µg/kg	20	NONE	< 20	< 20	< 20	< 20	-
Dichlorprop	µg/kg	20	NONE	< 20	< 20	< 20	< 20	-
Dinoseb	µg/kg	20	NONE	< 20	< 20	< 20	< 20	-
MCPA	µg/kg	20	NONE	< 20	< 20	< 20	< 20	-
MCPB	µg/kg	20	NONE	< 20	< 20	< 20	< 20	-
MCPP (Mecoprop)	µg/kg	20	NONE	< 20	< 20	< 20	< 20	-
Picloram	µg/kg	20	NONE	< 20	< 20	< 20	< 20	-
Phenylurea herbicides								
Isoproturon	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Chlortoluron	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Linuron	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Diuron	µg/kg	10	NONE	16	< 10	< 10	< 10	-
Diflubenzuron	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Flumeturon	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Siduron	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Terbuthiuron	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-
Thidiazuron	µg/kg	10	NONE	< 10	< 10	< 10	< 10	-

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Analytical Report Number: 19-50706

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271813				
Sample Reference				ATK-P-001				
Sample Number				4				
Depth (m)				2.70-3.00				
Date Sampled				16/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1				
Moisture Content	%	N/A	NONE	16				
Total mass of sample received	kg	0.001	NONE	2.0				
Asbestos in Soil	Type	N/A	ISO 17025	-				
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	8.0				
Electrical Conductivity	µS/cm	10	ISO 17025	960				
Total Cyanide	mg/kg	1	MCERTS	< 1				
Free Cyanide	mg/kg	1	MCERTS	< 1				
Total Sulphate as SO_4	mg/kg	50	MCERTS	1400				
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.67				
Ammonia as NH_3	mg/kg	0 5	MCERTS	0.7				
Ammonium as NH_4	mg/kg	0 5	MCERTS	0.7				
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	0.0049				
Total Organic Carbon (TOC)	%	0.1	MCERTS	0.5				
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	< 0.05				
Anthracene	mg/kg	0.05	MCERTS	< 0.05				
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Pyrene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05				
Chrysene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05				
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05				
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05				
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0 8	MCERTS	< 0.80				

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Analytical Report Number: 19-50706

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271813				
Sample Reference				ATK-P-001				
Sample Number				4				
Depth (m)				2.70-3.00				
Date Sampled				16/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	9.3				
Barium (aqua regia extractable)	mg/kg	1	MCERTS	53				
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.96				
Boron (water soluble)	mg/kg	0 2	MCERTS	1.0				
Cadmium (aqua regia extractable)	mg/kg	0 2	MCERTS	< 0 2				
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4 0				
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	42				
Copper (aqua regia extractable)	mg/kg	1	MCERTS	23				
Lead (aqua regia extractable)	mg/kg	1	MCERTS	10				
Mercury (aqua regia extractable)	mg/kg	0 3	MCERTS	< 0 3				
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	36				
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1 0				
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	62				
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	54				
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	< 1 0				
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	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1 0				
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2 0				
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8 0				
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8 0				
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10				
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1 0				
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2 0				
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10				
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10				
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10				

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Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271813				
Sample Reference				ATK-P-001				
Sample Number				4				
Depth (m)				2.70-3.00				
Date Sampled				16/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
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	-				
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	-				

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Analytical Report Number: 19-50706

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271813				
Sample Reference				ATK-P-001				
Sample Number				4				
Depth (m)				2.70-3.00				
Date Sampled				16/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	-				
Phenol	mg/kg	0 2	ISO 17025	-				
2-Chlorophenol	mg/kg	0.1	MCERTS	-				
Bis(2-chloroethyl)ether	mg/kg	0 2	MCERTS	-				
1,3-Dichlorobenzene	mg/kg	0 2	MCERTS	-				
1 2-Dichlorobenzene	mg/kg	0.1	MCERTS	-				
1 4-Dichlorobenzene	mg/kg	0 2	MCERTS	-				
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-				
2-Methylphenol	mg/kg	0 3	MCERTS	-				
Hexachloroethane	mg/kg	0.05	MCERTS	-				
Nitrobenzene	mg/kg	0 3	MCERTS	-				
4-Methylphenol	mg/kg	0 2	NONE	-				
Isophorone	mg/kg	0 2	MCERTS	-				
2-Nitrophenol	mg/kg	0 3	MCERTS	-				
2 4-Dimethylphenol	mg/kg	0 3	MCERTS	-				
Bis(2-chloroethoxy)methane	mg/kg	0 3	MCERTS	-				
1,2,4-Trichlorobenzene	mg/kg	0 3	MCERTS	-				
Naphthalene	mg/kg	0.05	MCERTS	-				
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-				
4-Chloroaniline	mg/kg	0.1	NONE	-				
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-				
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-				
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-				
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-				
2-Methylnaphthalene	mg/kg	0.1	NONE	-				
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-				
Dimethylphthalate	mg/kg	0.1	MCERTS	-				
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-				
Acenaphthylene	mg/kg	0.05	MCERTS	-				
Acenaphthene	mg/kg	0.05	MCERTS	-				
2 4-Dinitrotoluene	mg/kg	0.2	MCERTS	-				
Dibenzofuran	mg/kg	0.2	MCERTS	-				
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-				
Diethyl phthalate	mg/kg	0.2	MCERTS	-				
4-Nitroaniline	mg/kg	0.2	MCERTS	-				
Fluorene	mg/kg	0.05	MCERTS	-				
Azobenzene	mg/kg	0.3	MCERTS	-				
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-				
Hexachlorobenzene	mg/kg	0.3	MCERTS	-				
Phenanthrene	mg/kg	0.05	MCERTS	-				
Anthracene	mg/kg	0.05	MCERTS	-				
Carbazole	mg/kg	0.3	MCERTS	-				
Dibutyl phthalate	mg/kg	0.2	MCERTS	-				
Anthraquinone	mg/kg	0.3	MCERTS	-				
Fluoranthene	mg/kg	0.05	MCERTS	-				
Pyrene	mg/kg	0.05	MCERTS	-				
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-				
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	-				

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Analytical Report Number: 19-50706

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271813				
Sample Reference				ATK-P-001				
Sample Number				4				
Depth (m)				2.70-3.00				
Date Sampled				16/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs								
PCB Congener 077	mg/kg	0.001	NONE	-				
PCB Congener 081	mg/kg	0.001	NONE	-				
PCB Congener 105	mg/kg	0.001	NONE	-				
PCB Congener 114	mg/kg	0.001	NONE	-				
PCB Congener 118	mg/kg	0.001	NONE	-				
PCB Congener 123	mg/kg	0.001	NONE	-				
PCB Congener 126	mg/kg	0.001	NONE	-				
PCB Congener 156	mg/kg	0.001	NONE	-				
PCB Congener 157	mg/kg	0.001	NONE	-				
PCB Congener 167	mg/kg	0.001	NONE	-				
PCB Congener 169	mg/kg	0.001	NONE	-				
PCB Congener 189	mg/kg	0.001	NONE	-				
Total PCBs	mg/kg	0.012	NONE	-				
Organochlorine Pesticides (OCP)								
Aldrin	µg/kg	10	NONE	-				
BHC-alpha (benzene hexachloride)	µg/kg	10	NONE	-				
BHC-beta	µg/kg	10	NONE	-				
BHC-delta	µg/kg	10	NONE	-				
BHC-gamma (Lindane, gamma HCH)	µg/kg	10	NONE	-				
Chlordane-cis	µg/kg	10	NONE	-				
Chlordane-trans	µg/kg	10	NONE	-				
Chlorothalonil	µg/kg	10	NONE	-				
DDD-o,p'	µg/kg	1	NONE	-				
DDD-p,p'	µg/kg	1	NONE	-				
DDE-o, p'	µg/kg	1	NONE	-				
DDE-p,p'	µg/kg	1	NONE	-				
DDT-o,p'	µg/kg	1	NONE	-				
DDT-p,p'	µg/kg	1	NONE	-				
Dichlorobenzonitrile, 2,6-	µg/kg	10	NONE	-				
Dieldrin	µg/kg	10	NONE	-				
Endosulfan I (alpha isomer)	µg/kg	10	NONE	-				
Endosulfan II (beta isomer)	µg/kg	10	NONE	-				
Endosulfan sulfate	µg/kg	10	NONE	-				
Endrin	µg/kg	10	NONE	-				
Endrin aldehyde	µg/kg	10	NONE	-				
Endrin ketone	µg/kg	10	NONE	-				
Heptachlor	µg/kg	10	NONE	-				
Heptachlor exo-epoxide	µg/kg	10	NONE	-				
Hexachlorobenzene	µg/kg	10	NONE	-				
Hexachlorobutadiene	µg/kg	10	NONE	-				
Isodrin	µg/kg	10	NONE	-				
Methoxychlor, p,p'-	µg/kg	10	NONE	-				
Pentachlorobenzene	µg/kg	10	NONE	-				
Tecnazene	µg/kg	10	NONE	-				
Tetrachlorobenzene, 1,2,4,5-	µg/kg	10	NONE	-				
Trichlorobenzene, 1,2,3-	µg/kg	10	NONE	-				
Trichlorobenzene, 1,3,5-	µg/kg	10	NONE	-				
Trifluralin	µg/kg	10	NONE	-				

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Analytical Report Number: 19-50706

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271813				
Sample Reference				ATK-P-001				
Sample Number				4				
Depth (m)				2.70-3.00				
Date Sampled				16/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Organophosphorus Pesticides (OPP)								
Azinphos-ethyl	µg/kg	10	NONE	-				
Azinphos-methyl	µg/kg	10	NONE	-				
Carbophenothion	µg/kg	10	NONE	-				
Chlorfenvinphos (mixture of z and e isomers)	µg/kg	10	NONE	-				
Chlorpyrifos	µg/kg	10	NONE	-				
Demeton-O	µg/kg	10	NONE	-				
Demeton-S	µg/kg	10	NONE	-				
Diazinon	µg/kg	10	NONE	-				
Dichlorvos	µg/kg	10	NONE	-				
Dimethoate	µg/kg	10	NONE	-				
Dimethylvinphos	µg/kg	10	NONE	-				
Ethion	µg/kg	10	NONE	-				
Etrimfos	µg/kg	10	NONE	-				
Fenitrothion	µg/kg	10	NONE	-				
Fenthion	µg/kg	10	NONE	-				
Malathion	µg/kg	10	NONE	-				
Methacrifos	µg/kg	10	NONE	-				
Mevinphos , E-	µg/kg	10	NONE	-				
Mevinphos, Z-	µg/kg	10	NONE	-				
Parathion	µg/kg	10	NONE	-				
Parathion-methyl	µg/kg	10	NONE	-				
Phorate	µg/kg	10	NONE	-				
Phosalone	µg/kg	10	NONE	-				
Phosphamidon I	µg/kg	10	NONE	-				
Pirimiphos-ethyl	µg/kg	10	NONE	-				
Pirimiphos-methyl	µg/kg	10	NONE	-				
Propetamphos	µg/kg	10	NONE	-				
Triazophos	µg/kg	10	NONE	-				
Organonitrogen Pesticides (ONP)								
Pendimethalin	µg/kg	10	NONE	-				
Propyzamide	µg/kg	10	NONE	-				
Triadimefon	µg/kg	10	NONE	-				

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Analytical Report Number: 19-50706

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271813				
Sample Reference				ATK-P-001				
Sample Number				4				
Depth (m)				2.70-3.00				
Date Sampled				16/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Environmental Forensics								
Triazine Herbicides								
Atrazine	mg/kg	0.1	NONE	-				
Simazine	mg/kg	0.1	NONE	-				
Prometryn	mg/kg	0.1	NONE	-				
Propazine	mg/kg	0.1	NONE	-				
Terbuthylazine	mg/kg	0.1	NONE	-				
Terbutryn	mg/kg	0.1	NONE	-				
Trietazine	mg/kg	0.1	NONE	-				
Cyanazine	mg/kg	0.1	NONE	-				
Acid Herbicides								
2 4 5-T	µg/kg	20	NONE	-				
2 4 5-TP	µg/kg	20	NONE	-				
2,4-D	µg/kg	20	NONE	-				
2,4-DB	µg/kg	20	NONE	-				
Dicamba	µg/kg	20	NONE	-				
Dichlorprop	µg/kg	20	NONE	-				
Dinoseb	µg/kg	20	NONE	-				
MCPA	µg/kg	20	NONE	-				
MCPB	µg/kg	20	NONE	-				
MCPP (Mecoprop)	µg/kg	20	NONE	-				
Picloram	µg/kg	20	NONE	-				
Phenylurea herbicides								
Isoproturon	µg/kg	10	NONE	-				
Chlortoluron	µg/kg	10	NONE	-				
Linuron	µg/kg	10	NONE	-				
Diuron	µg/kg	10	NONE	-				
Diflubenzuron	µg/kg	10	NONE	-				
Flumeturon	µg/kg	10	NONE	-				
Siduron	µg/kg	10	NONE	-				
Terbuthiuron	µg/kg	10	NONE	-				
Thidiazuron	µg/kg	10	NONE	-				

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Analytical Report Number: 19-50706

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1271814	1271815			
Sample Reference				ATK-P-001	ATK-P-001			
Sample Number				1	2			
Depth (m)				0.00-0.20	0.70-0.80			
Date Sampled				16/07/2019	16/07/2019			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	7.7	7 6			
Electrical Conductivity	µS/cm	10	ISO 17025	1600	140			
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10			
Free Cyanide	µg/l	10	ISO 17025	< 10	< 10			
Sulphate as SO_4	mg/l	0.1	ISO 17025	1490	35.9			
Sulphide	µg/l	5	NONE	< 5 0	< 5.0			
Chloride	mg/l	0.15	ISO 17025	6.0	3 2			
Ammonium as NH_4	µg/l	15	NONE	41	340			
Total Organic Carbon (TOC)	mg/l	0.1	NONE	6.39	6.03			
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	6.13	5.59			
Total Phenols								
Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10			
Heavy Metals / Metalloids								
Antimony (dissolved)	µg/l	1.7	ISO 17025	< 1.7	< 1.7			
Arsenic (dissolved)	µg/l	1.1	ISO 17025	7.9	2.9			
Barium (dissolved)	µg/l	0.05	ISO 17025	64	5.7			
Beryllium (dissolved)	µg/l	0.2	ISO 17025	< 0 2	< 0.2			
Boron (dissolved)	µg/l	10	ISO 17025	92	< 10			
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08			
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5 0	< 5.0			
Chromium (III)	µg/l	1	NONE	< 1 0	< 1.0			
Chromium (dissolved)	µg/l	0.4	ISO 17025	0.5	0.9			
Cobalt (dissolved)	µg/l	0.3	ISO 17025	0.3	0.9			
Copper (dissolved)	µg/l	0.7	ISO 17025	8.8	1 8			
Iron (dissolved)	mg/l	0.004	ISO 17025	0 063	0.32			
Lead (dissolved)	µg/l	1	ISO 17025	2.5	1 3			
Manganese (dissolved)	µg/l	0.06	ISO 17025	10	5 3			
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0 5	< 0.5			
Molybdenum (dissolved)	µg/l	0.4	ISO 17025	6.0	< 0.4			
Nickel (dissolved)	µg/l	0.3	ISO 17025	1.1	0 5			
Phosphorus (dissolved)	µg/l	30	NONE	40	< 30			
Selenium (dissolved)	µg/l	4	ISO 17025	< 4 0	< 4.0			
Tin (dissolved)	µg/l	1	ISO 17025	< 1 0	< 1.0			
Vanadium (dissolved)	µg/l	1.7	ISO 17025	< 1.7	1 8			
Zinc (dissolved)	µg/l	0.4	ISO 17025	13	< 0.4			
Calcium (dissolved)	mg/l	0.012	ISO 17025	450	13			
Magnesium (dissolved)	mg/l	0.005	ISO 17025	15	4.9			
Potassium (dissolved)	mg/l	0.025	ISO 17025	11	2.7			
Sodium (dissolved)	mg/l	0.01	ISO 17025	10	3.1			

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Project / Site name: M25 Junction 28

* 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 *
1271808	ATK-P-001	1	0.00-0.20	Brown loam and clay with rubble and plastic.
1271809	ATK-P-001	2	0.70-0.80	Brown clay and loam with gravel.
1271810	ATK-P-001	1	0.00-0.40	Brown loam and clay with rubble and vegetation.
1271811	ATK-P-001	2	0.70-1.00	Brown clay and loam.
1271812	ATK-P-001	3	1.40-1.80	Brown clay and loam.
1271813	ATK-P-001	4	2.70-3.00	Brown clay.

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Analytical Report Number : 19-50706

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Ammonia as NH3 in soil	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	MCERTS
Ammonium as NH4 in leachate	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	NONE
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
Boron in leachate	Determination of boron in leachate. Sample acidified and followed by ICP-OES.	In-house method based on MEWAM	L039-PL	W	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	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
Chloride in leachate	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
Cr (III) in leachate	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Dissolved Organic Carbon in leachate	Determination of dissolved organic carbon in leachate by the measurement on a non-dispersive infrared analyser of carbon dioxide released by acidification.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L023-PL	W	NONE
EF - Phenylurea herbicides in soil by LC-MS/MS	Phenylurea herbicides by LC-MS/MS	In-house method	UK	W	NONE
Electrical conductivity at 20oC of leachate	Determination of electrical conductivity in leachate by electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031-PL	W	ISO 17025
Electrical conductivity of soil	Determination of electrical conductivity in soil by electrometric measurement.	In-house method	L031-PL	W	ISO 17025
Fraction of Organic Carbon in soil	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L009-PL	D	MCERTS
Free cyanide in leachate	Determination of free cyanide by distillation followed by colorimetry.	In-house method	L080-PL	W	ISO 17025
Free cyanide in soil	Determination of free 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
Hexavalent chromium in leachate	Determination of hexavalent chromium in leachate by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	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	MCERTS

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Analytical Report Number : 19-50706

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals by ICP-OES in leachate	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
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
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in leachate	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 (skalar)	L080-PL	W	ISO 17025
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
NRA Leachate Prep	10:1 extract with de-ionised water shaken for 24 hours then filtered.	In-house method based on National Rivers Authority	L020-PL	W	NONE
Organochlorine Pesticides in soil by GC MS/MS	Detemination of Pesticides in soil by GC MS/MS	Organochlorine Pesticides in soil by GC MS/MS	L055B-PL	D	NONE
Organonitrogen Pesticides in soil by GC MS/MS	Detemination of Pesticides in soil by GC MS/MS	Organonitrogen Pesticides in soil by GC MS/MS	L055B-PL	D	NONE
Organophosphorus Pesticides in soil by GC MS/MS	Detemination of Pesticides in soil by GC MS/MS	Organophosphorus Pesticides in soil by GC MS/MS	L055B-PL	D	NONE
PCBs WHO 12 in soil	Determination of PCBs (WHO-12 Congeners) by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	NONE
pH at 20oC in leachate	Determination of pH in leachate by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	ISO 17025
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	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
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
Sulphate in leachates	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS

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Analytical Report Number : 19-50706

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphide in leachate	Determination of sulphide in leachate by ion selective electrode.	In-house method	L010-PL	W	NONE
TO - Acid Herbicides in soil by LC-MS/MS	Determination of Acid herbicides in waters by LC-MS/MS	In-house method		W	NONE
TO - Triazine pesticides in soil	Determination of Triazines by LC-MS(/MS).	In-house method based on USEPA method 615.		W	NONE
Total cyanide in leachate	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	ISO 17025
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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS
Total organic carbon in leachate	Determination of dissolved organic 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
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	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
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

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.

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Analytical Report Number : 19-50715

Project / Site name:	M25 Junction 28	**Samples received on:**	17/07/2019
Your job number:	35403	**Samples instructed on:**	18/07/2019
Your order number:	35403-DO	**Analysis completed by:**	25/07/2019
Report Issue Number:	1	**Report issued on:**	25/07/2019
Samples Analysed:	1 WAC 10:1 SAMPLES		

Signed: [redacted]

[redacted]
Head of Customer Services
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:	**19-50715**							
					Client:	**GEOENG**		
Location	**M25 Junction 28**							
Lab Reference (Sample Number)	1271841 / 1271842				**Landfill Waste Acceptance Criteria Limits**			
Sampling Date	16/07/2019				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	ATK-P-001 1						
Depth (m)	0.00-0.40						
Solid Waste Analysis							
TOC (%)**	1.7				3%	5%	6%
Loss on Ignition (%) **	-				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	87				500	--	--
Total PAH (WAC-17) (mg/kg)	5.2				100	--	--
pH (units)**	-				--	>6	--
Acid Neutralisation Capacity (mol / kg)	-				--	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 *	< 0.0011			< 0.0110	0.5	2	25
Barium *	0.0628			0.572	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0075			0.069	0.5	10	70
Copper *	0.011			0.10	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0070			0.0639	0.5	10	30
Nickel *	0.0055			0.050	0.4	10	40
Lead *	0.0033			0.030	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.0073			0.067	4	50	200
Chloride *	7.2			65	800	4000	25000
Fluoride	1.0			9.1	10	150	500
Sulphate *	1300			11000	1000	20000	50000
TDS*	1100			10000	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	6.23			56.8	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	2.0						
Dry Matter (%)	91						
Moisture (%)	8.9						

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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Analytical Report Number : 19-50715

Project / Site name: M25 Junction 28

* 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 *
1271841	ATK-P-001	1	0.00-0.40	Brown loam and clay with rubble and vegetation.

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Analytical Report Number : 19-50715

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

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
BTEX in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Chloride 10:1 WAC	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-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
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
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
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.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
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
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
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	NONE
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
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 electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L004-PL	W	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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS

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.

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Analytical Report Number : 19-50733

Project / Site name:	M25 Junction 28	**Samples received on:**	11/07/2019
Your job number:	35403	**Samples instructed on:**	18/07/2019
Your order number:	35403-DO	**Analysis completed by:**	29/07/2019
Report Issue Number:	1	**Report issued on:**	29/07/2019
Samples Analysed:	2 leachate samples - 6 soil samples		

Signed: [redacted]

[redacted]
Head of Customer Services
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.

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Analytical Report Number: 19-50733

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1272008	1272009	1272010	1272011	1272012
Sample Reference				ATK-P-005	ATK-P-005	ATK-P-005	ATK-P-005	ATK-P-005
Sample Number				1	2	3	4	5
Depth (m)				0.00-0.20	0.00-0.40	0.60-0.70	0.60-1.00	1.20-1.60
Date Sampled				11/07/2019	11/07/2019	11/07/2019	11/07/2019	11/07/2019
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	34	< 0.1
Moisture Content	%	N/A	NONE	6.2	6 8	11	11	13
Total mass of sample received	kg	0.001	NONE	2.0	2 0	1.8	2.0	2 0
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	8.3	8.1	9.7	9.0	7 2
Electrical Conductivity	µS/cm	10	ISO 17025	2200	2300	2300	880	2600
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Total Sulphate as SO_4	mg/kg	50	MCERTS	11000	21000	7000	2700	12000
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	2.3	2.4	2.2	0.84	3 2
Ammonia as NH_3	mg/kg	0 5	MCERTS	< 0 5	< 0.5	2.7	3.2	1 0
Ammonium as NH_4	mg/kg	0 5	MCERTS	< 0 5	< 0.5	2.9	3.4	1 0
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	0 014	0.017	0.018	0 014	0.0049
Total Organic Carbon (TOC)	%	0.1	MCERTS	1.4	1.7	1.8	1.4	0 5
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	< 0.05	< 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	< 0.05	0.37	< 0 05	0.39	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.67	0.89	0 34	0.63	< 0.05
Pyrene	mg/kg	0.05	MCERTS	0.61	0.83	0 32	0.53	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.34	0.45	0 21	0.26	< 0.05
Chrysene	mg/kg	0.05	MCERTS	0.40	0.46	0.19	0.26	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.44	0.52	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.20	0.29	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.39	0.49	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.24	< 0 05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	0.30	< 0 05	< 0.05	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0 8	MCERTS	3.05	4.84	1 06	2.07	< 0.80

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Analytical Report Number: 19-50733

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1272008	1272009	1272010	1272011	1272012
Sample Reference				ATK-P-005	ATK-P-005	ATK-P-005	ATK-P-005	ATK-P-005
Sample Number				1	2	3	4	5
Depth (m)				0.00-0.20	0.00-0.40	0.60-0.70	0.60-1.00	1.20-1.60
Date Sampled				11/07/2019	11/07/2019	11/07/2019	11/07/2019	11/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	11	13	10	11	13
Barium (aqua regia extractable)	mg/kg	1	MCERTS	86	140	88	53	56
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.89	0.84	0.77	0.90	1 2
Boron (water soluble)	mg/kg	0 2	MCERTS	3.3	5 8	2.8	1.9	1 2
Cadmium (aqua regia extractable)	mg/kg	0 2	MCERTS	< 0 2	0 3	< 0.2	< 0 2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4 0	< 4.0	< 4.0	< 4 0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	54	42	34	41	55
Copper (aqua regia extractable)	mg/kg	1	MCERTS	38	54	21	17	20
Lead (aqua regia extractable)	mg/kg	1	MCERTS	44	150	46	22	12
Mercury (aqua regia extractable)	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	38	30	18	23	35
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	54	46	54	60	75
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	95	170	96	55	62
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
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	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1 0	1 2	< 1.0	< 1 0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	2.7	3.7	< 2.0	< 2 0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8 0	18	< 8.0	< 8 0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	37	98	34	< 8 0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	47	120	41	< 10	< 10
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2 0	< 2.0	< 2.0	< 2 0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	30	73	19	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	35	84	23	< 10	< 10

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Analytical Report Number: 19-50733

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1272008	1272009	1272010	1272011	1272012
Sample Reference				ATK-P-005	ATK-P-005	ATK-P-005	ATK-P-005	ATK-P-005
Sample Number				1	2	3	4	5
Depth (m)				0.00-0.20	0.00-0.40	0.60-0.70	0.60-1.00	1.20-1.60
Date Sampled				11/07/2019	11/07/2019	11/07/2019	11/07/2019	11/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
Chloroethane	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	-
Bromomethane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
Vinyl Chloride	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	-
Trichlorofluoromethane	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	-
1,1-Dichloroethene	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 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	-
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
2,2-Dichloropropane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Trichloromethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,1-Dichloropropene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	-
Benzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Tetrachloromethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Trichloroethene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Dibromomethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Bromodichloromethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
Toluene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
Dibromochloromethane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
Tetrachloroethene	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
Chlorobenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Ethylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
p & m-Xylene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Styrene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Tribromomethane	µg/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	-
o-Xylene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1 1 2 2-Tetrachloroethane	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Isopropylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Bromobenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
n-Propylbenzene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
2-Chlorotoluene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
4-Chlorotoluene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
tert-Butylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
sec-Butylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Butylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
Hexachlorobutadiene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0	< 1 0	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	< 1 0	< 1.0	< 1.0	< 1 0	-

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Analytical Report Number: 19-50733

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1272008	1272009	1272010	1272011	1272012
Sample Reference				ATK-P-005	ATK-P-005	ATK-P-005	ATK-P-005	ATK-P-005
Sample Number				1	2	3	4	5
Depth (m)				0.00-0.20	0.00-0.40	0.60-0.70	0.60-1.00	1.20-1.60
Date Sampled				11/07/2019	11/07/2019	11/07/2019	11/07/2019	11/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	-
Phenol	mg/kg	0 2	ISO 17025	< 0 2	< 0.2	< 0.2	< 0 2	-
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
Bis(2-chloroethyl)ether	mg/kg	0 2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
1,3-Dichlorobenzene	mg/kg	0 2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
1 2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
1 4-Dichlorobenzene	mg/kg	0 2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
2-Methylphenol	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	-
Nitrobenzene	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
4-Methylphenol	mg/kg	0 2	NONE	< 0 2	< 0.2	< 0.2	< 0 2	-
Isophorone	mg/kg	0 2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
2-Nitrophenol	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
2 4-Dimethylphenol	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
Bis(2-chloroethoxy)methane	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
1,2,4-Trichlorobenzene	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
2 4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
Dibenzofuran	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0 3	< 0.3	< 0.3	< 0 3	-
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Azobenzene	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	0.37	< 0.05	0.39	-
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0 05	< 0.05	< 0.05	-
Carbazole	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0 2	< 0.2	< 0.2	< 0 2	-
Anthraquinone	mg/kg	0.3	MCERTS	< 0 3	< 0.3	< 0.3	< 0 3	-
Fluoranthene	mg/kg	0.05	MCERTS	0.67	0.89	0 34	0.63	-
Pyrene	mg/kg	0.05	MCERTS	0.61	0.83	0 32	0.53	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0 3	< 0.3	< 0.3	< 0 3	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.34	0.45	0 21	0.26	-
Chrysene	mg/kg	0.05	MCERTS	0.40	0.46	0.19	0.26	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.44	0.52	< 0.05	< 0.05	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.20	0.29	< 0.05	< 0.05	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.39	0.49	< 0.05	< 0.05	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.24	< 0 05	< 0.05	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	0.30	< 0 05	< 0.05	-

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Analytical Report Number: 19-50733

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1272008	1272009	1272010	1272011	1272012
Sample Reference				ATK-P-005	ATK-P-005	ATK-P-005	ATK-P-005	ATK-P-005
Sample Number				1	2	3	4	5
Depth (m)				0.00-0.20	0.00-0.40	0.60-0.70	0.60-1.00	1.20-1.60
Date Sampled				11/07/2019	11/07/2019	11/07/2019	11/07/2019	11/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs								
PCB Congener 077	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 081	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 105	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 114	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 118	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 123	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 126	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 156	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 157	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 167	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 169	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
PCB Congener 189	mg/kg	0.001	NONE	< 0 001	< 0.001	< 0.001	< 0 001	-
Total PCBs	mg/kg	0.012	NONE	< 0 012	< 0.012	< 0.012	< 0 012	-
Organochlorine Pesticides (OCP)								
Aldrin	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
BHC-alpha (benzene hexachloride)	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
BHC-beta	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
BHC-delta	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
BHC-gamma (Lindane, gamma HCH)	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Chlordane-cis	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Chlordane-trans	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Chlorothalonil	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
DDD-o,p'	ug/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	-
DDD-p,p'	ug/kg	1	NONE	< 1 0	5 3	2.7	< 1 0	-
DDE-o, p'	ug/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	-
DDE-p,p'	ug/kg	1	NONE	< 1 0	2.4	< 1.0	< 1 0	-
DDT-o,p'	ug/kg	1	NONE	< 1 0	< 1.0	< 1.0	< 1 0	-
DDT-p,p'	ug/kg	1	NONE	3.9	6.4	< 1.0	< 1 0	-
Dichlorobenzonitrile, 2,6-	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Dieldrin	ug/kg	10	NONE	< 10	16	< 10	< 10	-
Endosulfan I (alpha isomer)	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Endosulfan II (beta isomer)	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Endosulfan sulfate	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Endrin	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Endrin aldehyde	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Endrin ketone	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Heptachlor	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Heptachlor exo-epoxide	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Hexachlorobenzene	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Hexachlorobutadiene	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Isodrin	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Methoxychlor, p,p'-	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Pentachlorobenzene	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Tecnazene	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Tetrachlorobenzene, 1,2,4,5-	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Trichlorobenzene, 1,2,3-	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Trichlorobenzene, 1,3,5-	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Trifluralin	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-

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Analytical Report Number: 19-50733

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1272008	1272009	1272010	1272011	1272012
Sample Reference				ATK-P-005	ATK-P-005	ATK-P-005	ATK-P-005	ATK-P-005
Sample Number				1	2	3	4	5
Depth (m)				0.00-0.20	0.00-0.40	0.60-0.70	0.60-1.00	1.20-1.60
Date Sampled				11/07/2019	11/07/2019	11/07/2019	11/07/2019	11/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Organophosphorus Pesticides (OPP)								
Azinphos-ethyl	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Azinphos-methyl	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Carbophenothion	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Chlorfenvinphos (mixture of z and e isomers)	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Chlorpyrifos	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Demeton-O	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Demeton-S	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Diazinon	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Dichlorvos	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Dimethoate	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Dimethylvinphos	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Ethion	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Etrimfos	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Fenitrothion	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Fenthion	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Malathion	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Methacrifos	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Mevinphos , E-	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Mevinphos, Z-	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Parathion	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Parathion-methyl	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Phorate	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Phosalone	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Phosphamidon I	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Pirimiphos-ethyl	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Pirimiphos-methyl	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Propetamphos	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Triazophos	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Organonitrogen Pesticides (ONP)								
Pendimethalin	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Propyzamide	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Triadimefon	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Environmental Forensics								
Triazine Herbicides								
Atrazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	-
Simazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	-
Prometryn	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	-
Propazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	-
Terbuthylazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	-
Terbutryn	mg/kg	0.1	NONE	< 0.10	0.11	< 0.10	< 0.10	-
Trietazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	-
Cyanazine	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	-
Acid Herbicides								
2,4,5-T	ug/kg	20	NONE	< 20	< 20	< 20	< 20	-
2,4,5-TP	ug/kg	20	NONE	< 20	< 20	< 20	< 20	-
2,4-D	ug/kg	20	NONE	< 20	< 20	< 20	< 20	-
2,4-DB	ug/kg	20	NONE	< 20	< 20	< 20	< 20	-
Dicamba	ug/kg	20	NONE	< 20	< 20	< 20	< 20	-
Dichlorprop	ug/kg	20	NONE	< 20	< 20	< 20	< 20	-
Dinoseb	ug/kg	20	NONE	< 20	< 20	< 20	< 20	-
MCPA	ug/kg	20	NONE	< 20	< 20	< 20	< 20	-
MCPB	ug/kg	20	NONE	< 20	< 20	< 20	< 20	-
MCPP (Mecoprop)	ug/kg	20	NONE	< 20	< 20	< 20	< 20	-
Picloram	ug/kg	20	NONE	< 20	< 20	< 20	< 20	-

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Analytical Report Number: 19-50733

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1272008	1272009	1272010	1272011	1272012
Sample Reference				ATK-P-005	ATK-P-005	ATK-P-005	ATK-P-005	ATK-P-005
Sample Number				1	2	3	4	5
Depth (m)				0.00-0.20	0.00-0.40	0.60-0.70	0.60-1.00	1.20-1.60
Date Sampled				11/07/2019	11/07/2019	11/07/2019	11/07/2019	11/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Phenylurea herbicides								
Isoproturon	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Chlortoluron	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Linuron	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Diuron	ug/kg	10	NONE	< 10	47	< 10	< 10	-
Diflubenzuron	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Flumeturon	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Siduron	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Terbuthiuron	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-
Thidiazuron	ug/kg	10	NONE	< 10	< 10	< 10	< 10	-

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Analytical Report Number: 19-50733

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1272013				
Sample Reference				ATK-P-005				
Sample Number				6				
Depth (m)				1.60-2.00				
Date Sampled				11/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1				
Moisture Content	%	N/A	NONE	17				
Total mass of sample received	kg	0.001	NONE	2.0				
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected				
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	7.1				
Electrical Conductivity	µS/cm	10	ISO 17025	1900				
Total Cyanide	mg/kg	1	MCERTS	< 1				
Free Cyanide	mg/kg	1	MCERTS	< 1				
Total Sulphate as SO_4	mg/kg	50	MCERTS	5300				
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	2.8				
Ammonia as NH_3	mg/kg	0 5	MCERTS	9.8				
Ammonium as NH_4	mg/kg	0 5	MCERTS	10				
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	0.0071				
Total Organic Carbon (TOC)	%	0.1	MCERTS	0.7				
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	< 0.05				
Anthracene	mg/kg	0.05	MCERTS	< 0.05				
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Pyrene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05				
Chrysene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05				
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05				
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05				
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0 8	MCERTS	< 0.80				

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Analytical Report Number: 19-50733

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1272013				
Sample Reference				ATK-P-005				
Sample Number				6				
Depth (m)				1.60-2.00				
Date Sampled				11/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	14				
Barium (aqua regia extractable)	mg/kg	1	MCERTS	39				
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.1				
Boron (water soluble)	mg/kg	0 2	MCERTS	2.3				
Cadmium (aqua regia extractable)	mg/kg	0 2	MCERTS	< 0 2				
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4 0				
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	63				
Copper (aqua regia extractable)	mg/kg	1	MCERTS	21				
Lead (aqua regia extractable)	mg/kg	1	MCERTS	13				
Mercury (aqua regia extractable)	mg/kg	0 3	MCERTS	< 0 3				
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	33				
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1 0				
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	77				
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	60				
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	< 1 0				
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	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1 0				
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2 0				
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8 0				
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8 0				
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10				
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0 001				
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1 0				
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2 0				
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10				
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10				
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10				

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Analytical Report Number: 19-50733

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1272013				
Sample Reference				ATK-P-005				
Sample Number				6				
Depth (m)				1.60-2.00				
Date Sampled				11/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
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	-				
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	-				

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Analytical Report Number: 19-50733

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1272013				
Sample Reference				ATK-P-005				
Sample Number				6				
Depth (m)				1.60-2.00				
Date Sampled				11/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	-				
Phenol	mg/kg	0 2	ISO 17025	-				
2-Chlorophenol	mg/kg	0.1	MCERTS	-				
Bis(2-chloroethyl)ether	mg/kg	0 2	MCERTS	-				
1,3-Dichlorobenzene	mg/kg	0 2	MCERTS	-				
1 2-Dichlorobenzene	mg/kg	0.1	MCERTS	-				
1 4-Dichlorobenzene	mg/kg	0 2	MCERTS	-				
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-				
2-Methylphenol	mg/kg	0 3	MCERTS	-				
Hexachloroethane	mg/kg	0.05	MCERTS	-				
Nitrobenzene	mg/kg	0 3	MCERTS	-				
4-Methylphenol	mg/kg	0 2	NONE	-				
Isophorone	mg/kg	0 2	MCERTS	-				
2-Nitrophenol	mg/kg	0 3	MCERTS	-				
2 4-Dimethylphenol	mg/kg	0 3	MCERTS	-				
Bis(2-chloroethoxy)methane	mg/kg	0 3	MCERTS	-				
1,2,4-Trichlorobenzene	mg/kg	0 3	MCERTS	-				
Naphthalene	mg/kg	0.05	MCERTS	-				
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-				
4-Chloroaniline	mg/kg	0.1	NONE	-				
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-				
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-				
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-				
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-				
2-Methylnaphthalene	mg/kg	0.1	NONE	-				
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-				
Dimethylphthalate	mg/kg	0.1	MCERTS	-				
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-				
Acenaphthylene	mg/kg	0.05	MCERTS	-				
Acenaphthene	mg/kg	0.05	MCERTS	-				
2 4-Dinitrotoluene	mg/kg	0.2	MCERTS	-				
Dibenzofuran	mg/kg	0.2	MCERTS	-				
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-				
Diethyl phthalate	mg/kg	0.2	MCERTS	-				
4-Nitroaniline	mg/kg	0.2	MCERTS	-				
Fluorene	mg/kg	0.05	MCERTS	-				
Azobenzene	mg/kg	0.3	MCERTS	-				
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-				
Hexachlorobenzene	mg/kg	0.3	MCERTS	-				
Phenanthrene	mg/kg	0.05	MCERTS	-				
Anthracene	mg/kg	0.05	MCERTS	-				
Carbazole	mg/kg	0.3	MCERTS	-				
Dibutyl phthalate	mg/kg	0.2	MCERTS	-				
Anthraquinone	mg/kg	0.3	MCERTS	-				
Fluoranthene	mg/kg	0.05	MCERTS	-				
Pyrene	mg/kg	0.05	MCERTS	-				
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-				
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	-				

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Analytical Report Number: 19-50733

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1272013				
Sample Reference				ATK-P-005				
Sample Number				6				
Depth (m)				1.60-2.00				
Date Sampled				11/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs								
PCB Congener 077	mg/kg	0.001	NONE	-				
PCB Congener 081	mg/kg	0.001	NONE	-				
PCB Congener 105	mg/kg	0.001	NONE	-				
PCB Congener 114	mg/kg	0.001	NONE	-				
PCB Congener 118	mg/kg	0.001	NONE	-				
PCB Congener 123	mg/kg	0.001	NONE	-				
PCB Congener 126	mg/kg	0.001	NONE	-				
PCB Congener 156	mg/kg	0.001	NONE	-				
PCB Congener 157	mg/kg	0.001	NONE	-				
PCB Congener 167	mg/kg	0.001	NONE	-				
PCB Congener 169	mg/kg	0.001	NONE	-				
PCB Congener 189	mg/kg	0.001	NONE	-				
Total PCBs	mg/kg	0.012	NONE	-				
Organochlorine Pesticides (OCP)								
Aldrin	ug/kg	10	NONE	-				
BHC-alpha (benzene hexachloride)	ug/kg	10	NONE	-				
BHC-beta	ug/kg	10	NONE	-				
BHC-delta	ug/kg	10	NONE	-				
BHC-gamma (Lindane, gamma HCH)	ug/kg	10	NONE	-				
Chlordane-cis	ug/kg	10	NONE	-				
Chlordane-trans	ug/kg	10	NONE	-				
Chlorothalonil	ug/kg	10	NONE	-				
DDD-o,p'	ug/kg	1	NONE	-				
DDD-p,p'	ug/kg	1	NONE	-				
DDE-o, p'	ug/kg	1	NONE	-				
DDE-p,p'	ug/kg	1	NONE	-				
DDT-o,p'	ug/kg	1	NONE	-				
DDT-p,p'	ug/kg	1	NONE	-				
Dichlorobenzonitrile, 2,6-	ug/kg	10	NONE	-				
Dieldrin	ug/kg	10	NONE	-				
Endosulfan I (alpha isomer)	ug/kg	10	NONE	-				
Endosulfan II (beta isomer)	ug/kg	10	NONE	-				
Endosulfan sulfate	ug/kg	10	NONE	-				
Endrin	ug/kg	10	NONE	-				
Endrin aldehyde	ug/kg	10	NONE	-				
Endrin ketone	ug/kg	10	NONE	-				
Heptachlor	ug/kg	10	NONE	-				
Heptachlor exo-epoxide	ug/kg	10	NONE	-				
Hexachlorobenzene	ug/kg	10	NONE	-				
Hexachlorobutadiene	ug/kg	10	NONE	-				
Isodrin	ug/kg	10	NONE	-				
Methoxychlor, p,p'-	ug/kg	10	NONE	-				
Pentachlorobenzene	ug/kg	10	NONE	-				
Tecnazene	ug/kg	10	NONE	-				
Tetrachlorobenzene, 1,2,4,5-	ug/kg	10	NONE	-				
Trichlorobenzene, 1,2,3-	ug/kg	10	NONE	-				
Trichlorobenzene, 1,3,5-	ug/kg	10	NONE	-				
Trifluralin	ug/kg	10	NONE	-				

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Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1272013				
Sample Reference				ATK-P-005				
Sample Number				6				
Depth (m)				1.60-2.00				
Date Sampled				11/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Organophosphorus Pesticides (OPP)								
Azinphos-ethyl	ug/kg	10	NONE	-				
Azinphos-methyl	ug/kg	10	NONE	-				
Carbophenothion	ug/kg	10	NONE	-				
Chlorfenvinphos (mixture of z and e isomers)	ug/kg	10	NONE	-				
Chlorpyrifos	ug/kg	10	NONE	-				
Demeton-O	ug/kg	10	NONE	-				
Demeton-S	ug/kg	10	NONE	-				
Diazinon	ug/kg	10	NONE	-				
Dichlorvos	ug/kg	10	NONE	-				
Dimethoate	ug/kg	10	NONE	-				
Dimethylvinphos	ug/kg	10	NONE	-				
Ethion	ug/kg	10	NONE	-				
Etrimfos	ug/kg	10	NONE	-				
Fenitrothion	ug/kg	10	NONE	-				
Fenthion	ug/kg	10	NONE	-				
Malathion	ug/kg	10	NONE	-				
Methacrifos	ug/kg	10	NONE	-				
Mevinphos , E-	ug/kg	10	NONE	-				
Mevinphos, Z-	ug/kg	10	NONE	-				
Parathion	ug/kg	10	NONE	-				
Parathion-methyl	ug/kg	10	NONE	-				
Phorate	ug/kg	10	NONE	-				
Phosalone	ug/kg	10	NONE	-				
Phosphamidon I	ug/kg	10	NONE	-				
Pirimiphos-ethyl	ug/kg	10	NONE	-				
Pirimiphos-methyl	ug/kg	10	NONE	-				
Propetamphos	ug/kg	10	NONE	-				
Triazophos	ug/kg	10	NONE	-				
Organonitrogen Pesticides (ONP)								
Pendimethalin	ug/kg	10	NONE	-				
Propyzamide	ug/kg	10	NONE	-				
Triadimefon	ug/kg	10	NONE	-				
Environmental Forensics								
Triazine Herbicides								
Atrazine	mg/kg	0.1	NONE	-				
Simazine	mg/kg	0.1	NONE	-				
Prometryn	mg/kg	0.1	NONE	-				
Propazine	mg/kg	0.1	NONE	-				
Terbuthylazine	mg/kg	0.1	NONE	-				
Terbutryn	mg/kg	0.1	NONE	-				
Trietazine	mg/kg	0.1	NONE	-				
Cyanazine	mg/kg	0.1	NONE	-				
Acid Herbicides								
2,4,5-T	ug/kg	20	NONE	-				
2,4,5-TP	ug/kg	20	NONE	-				
2,4-D	ug/kg	20	NONE	-				
2,4-DB	ug/kg	20	NONE	-				
Dicamba	ug/kg	20	NONE	-				
Dichlorprop	ug/kg	20	NONE	-				
Dinoseb	ug/kg	20	NONE	-				
MCPA	ug/kg	20	NONE	-				
MCPB	ug/kg	20	NONE	-				
MCPP (Mecoprop)	ug/kg	20	NONE	-				
Picloram	ug/kg	20	NONE	-				

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Analytical Report Number: 19-50733

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1272013				
Sample Reference				ATK-P-005				
Sample Number				6				
Depth (m)				1.60-2.00				
Date Sampled				11/07/2019				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Phenylurea herbicides								
Isoproturon	ug/kg	10	NONE	-				
Chlortoluron	ug/kg	10	NONE	-				
Linuron	ug/kg	10	NONE	-				
Diuron	ug/kg	10	NONE	-				
Diflubenzuron	ug/kg	10	NONE	-				
Flumeturon	ug/kg	10	NONE	-				
Siduron	ug/kg	10	NONE	-				
Terbuthiuron	ug/kg	10	NONE	-				
Thidiazuron	ug/kg	10	NONE	-				

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Analytical Report Number: 19-50733

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1272014	1272015			
Sample Reference				ATK-P-005	ATK-P-005			
Sample Number				1	3			
Depth (m)				0.00-0.20	0.60-0.70			
Date Sampled				11/07/2019	11/07/2019			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	7.6	7.7			
Electrical Conductivity	µS/cm	10	ISO 17025	1400	1200			
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10			
Free Cyanide	µg/l	10	ISO 17025	< 10	< 10			
Sulphate as SO_4	mg/l	0.1	ISO 17025	903	765			
Sulphide	µg/l	5	NONE	< 5 0	< 5.0			
Chloride	mg/l	0.15	ISO 17025	6.4	9.4			
Ammonium as NH_4	µg/l	15	NONE	36	52			
Total Organic Carbon (TOC)	mg/l	0.1	NONE	7.96	7.04			
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	6.74	6.33			
Total Phenols								
Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10			
Heavy Metals / Metalloids								
Antimony (dissolved)	µg/l	1.7	ISO 17025	< 1.7	< 1.7			
Arsenic (dissolved)	µg/l	1.1	ISO 17025	3.8	9 3			
Barium (dissolved)	µg/l	0.05	ISO 17025	44	51			
Beryllium (dissolved)	µg/l	0.2	ISO 17025	< 0 2	< 0.2			
Boron (dissolved)	µg/l	10	ISO 17025	62	54			
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08			
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5 0	< 5.0			
Chromium (III)	µg/l	1	NONE	< 1 0	< 1.0			
Chromium (dissolved)	µg/l	0.4	ISO 17025	< 0.4	1 0			
Cobalt (dissolved)	µg/l	0.3	ISO 17025	0.3	0 6			
Copper (dissolved)	µg/l	0.7	ISO 17025	7.9	5.4			
Iron (dissolved)	mg/l	0.004	ISO 17025	0 067	0.17			
Lead (dissolved)	µg/l	1	ISO 17025	3.6	1.1			
Manganese (dissolved)	µg/l	0.06	ISO 17025	11	12			
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0 5	< 0.5			
Molybdenum (dissolved)	µg/l	0.4	ISO 17025	3.1	3 3			
Nickel (dissolved)	µg/l	0.3	ISO 17025	1.7	0.9			
Phosphorus (dissolved)	µg/l	30	NONE	62	38			
Selenium (dissolved)	µg/l	4	ISO 17025	< 4 0	< 4.0			
Tin (dissolved)	µg/l	1	ISO 17025	< 1 0	< 1.0			
Vanadium (dissolved)	µg/l	1.7	ISO 17025	< 1.7	< 1.7			
Zinc (dissolved)	µg/l	0.4	ISO 17025	12	7 0			
Calcium (dissolved)	mg/l	0.012	ISO 17025	290	240			
Magnesium (dissolved)	mg/l	0.005	ISO 17025	18	16			
Potassium (dissolved)	mg/l	0.025	ISO 17025	8.8	9 0			
Sodium (dissolved)	mg/l	0.01	ISO 17025	8.0	10			

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Project / Site name: M25 Junction 28

* 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 *
1272008	ATK-P-005	1	0.00-0.20	Brown loam and clay with rubble and vegetation.
1272009	ATK-P-005	2	0.00-0.40	Brown loam and clay with rubble and vegetation.
1272010	ATK-P-005	3	0.60-0.70	Brown loam and clay with rubble and vegetation.
1272011	ATK-P-005	4	0.60-1.00	Brown loam and clay with stones and vegetation.
1272012	ATK-P-005	5	1.20-1.60	Brown clay with gravel.
1272013	ATK-P-005	6	1.60-2.00	Brown clay with gravel.

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Analytical Report Number : 19-50733

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Ammonia as NH3 in soil	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	MCERTS
Ammonium as NH4 in leachate	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	NONE
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
Boron in leachate	Determination of boron in leachate. Sample acidified and followed by ICP-OES.	In-house method based on MEWAM	L039-PL	W	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	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
Chloride in leachate	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
Cr (III) in leachate	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Dissolved Organic Carbon in leachate	Determination of dissolved organic carbon in leachate by the measurement on a non-dispersive infrared analyser of carbon dioxide released by acidification.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L023-PL	W	NONE
EF - Phenylurea herbicides in soil by LC-MS/MS	Phenylurea herbicides by LC-MS/MS	In-house method	UK	W	NONE
Electrical conductivity at 20oC of leachate	Determination of electrical conductivity in leachate by electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031-PL	W	ISO 17025
Electrical conductivity of soil	Determination of electrical conductivity in soil by electrometric measurement.	In-house method	L031-PL	W	ISO 17025
Fraction of Organic Carbon in soil	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L009-PL	D	MCERTS
Free cyanide in leachate	Determination of free cyanide by distillation followed by colorimetry.	In-house method	L080-PL	W	ISO 17025
Free cyanide in soil	Determination of free 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
Hexavalent chromium in leachate	Determination of hexavalent chromium in leachate by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	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	MCERTS

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Analytical Report Number : 19-50733

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals by ICP-OES in leachate	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
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
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in leachate	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 (skalar)	L080-PL	W	ISO 17025
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
NRA Leachate Prep	10:1 extract with de-ionised water shaken for 24 hours then filtered.	In-house method based on National Rivers Authority	L020-PL	W	NONE
Organochlorine Pesticides in soil by GC MS/MS	Detemination of Pesticides in soil by GC MS/MS	Organochlorine Pesticides in soil by GC MS/MS	L055B-PL	D	NONE
Organonitrogen Pesticides in soil by GC MS/MS	Detemination of Pesticides in soil by GC MS/MS	Organonitrogen Pesticides in soil by GC MS/MS	L055B-PL	D	NONE
Organophosphorus Pesticides in soil by GC MS/MS	Detemination of Pesticides in soil by GC MS/MS	Organophosphorus Pesticides in soil by GC MS/MS	L055B-PL	D	NONE
PCBs WHO 12 in soil	Determination of PCBs (WHO-12 Congeners) by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	NONE
pH at 20oC in leachate	Determination of pH in leachate by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	ISO 17025
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	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
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
Sulphate in leachates	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS

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Analytical Report Number : 19-50733

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphide in leachate	Determination of sulphide in leachate by ion selective electrode.	In-house method	L010-PL	W	NONE
TO - Acid Herbicides in soil by LC-MS/MS	Determination of Acid herbicides in waters by LC-MS/MS	In-house method		W	NONE
TO - Triazine pesticides in soil	Determination of Triazines by LC-MS(/MS).	In-house method based on USEPA method 615.		W	NONE
Total cyanide in leachate	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	ISO 17025
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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS
Total organic carbon in leachate	Determination of dissolved organic 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
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	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
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

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.

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Sample ID	Other_ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
ATK-P-005	1	S	19-50733	1272008	c	Free cyanide in soil	L080-PL	c
ATK-P-005	1	S	19-50733	1272008	c	Total cyanide in soil	L080-PL	c
ATK-P-005	2	S	19-50733	1272009	c	Free cyanide in soil	L080-PL	c
ATK-P-005	2	S	19-50733	1272009	c	Total cyanide in soil	L080-PL	c
ATK-P-005	3	S	19-50733	1272010	c	Free cyanide in soil	L080-PL	c
ATK-P-005	3	S	19-50733	1272010	c	Total cyanide in soil	L080-PL	c
ATK-P-005	4	S	19-50733	1272011	c	Free cyanide in soil	L080-PL	c
ATK-P-005	4	S	19-50733	1272011	c	Total cyanide in soil	L080-PL	c
ATK-P-005	5	S	19-50733	1272012	c	Free cyanide in soil	L080-PL	c
ATK-P-005	5	S	19-50733	1272012	c	Total cyanide in soil	L080-PL	c
ATK-P-005	6	S	19-50733	1272013	c	Free cyanide in soil	L080-PL	c
ATK-P-005	6	S	19-50733	1272013	c	Total cyanide in soil	L080-PL	c

Key: a - No sampling date b - Incorrect container
c - Holding time d - Headspace e - Temperature

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Analytical Report Number : 19-50735

Project / Site name:	M25 Junction 28	**Samples received on:**	11/07/2019
Your job number:	35403	**Samples instructed on:**	18/07/2019
Your order number:	35403-DO	**Analysis completed by:**	25/07/2019
Report Issue Number:	1	**Report issued on:**	25/07/2019
Samples Analysed:	2 10:1 WAC samples		

Signed: [redacted]

[redacted]
Head of Reporting Section
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:	**19-50735**						
					Client: GEOENG		
Location	**M25 Junction 28**						
Lab Reference (Sample Number)	1272016 / 1272017				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	11/07/2019				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	ATK-P-005 2						
Depth (m)	0.00-0.40						
Solid Waste Analysis							
TOC (%)**	1.6				3%	5%	6%
Loss on Ignition (%) **	-				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	63				500	--	--
Total PAH (WAC-17) (mg/kg)	4.8				100	--	--
pH (units)**	-				--	>6	--
Acid Neutralisation Capacity (mol / kg)	-				--	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 *	0.0059			0.0541	0.5	2	25
Barium *	0.0645			0.590	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0054			0.049	0.5	10	70
Copper *	0.0093			0.085	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0061			0.0556	0.5	10	30
Nickel *	0.0047			0.043	0.4	10	40
Lead *	0.0047			0.043	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.0086			0.079	4	50	200
Chloride *	10			92	800	4000	25000
Fluoride	0.73			6.7	10	150	500
Sulphate *	1800			17000	1000	20000	50000
TDS*	1400			13000	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	7.83			71.6	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	2.0						
Dry Matter (%)	93						
Moisture (%)	6.8						

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:	**19-50735**						
					Client: GEOENG		
Location	**M25 Junction 28**						
Lab Reference (Sample Number)	1272018 / 1272019				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	11/07/2019				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	ATK-P-005 4						
Depth (m)	0.60-1.00						
Solid Waste Analysis							
TOC (%)**	1.3				3%	5%	6%
Loss on Ignition (%) **	-				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	2.1				100	--	--
pH (units)**	-				--	>6	--
Acid Neutralisation Capacity (mol / kg)	-				--	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 *	0.0063			0.0524	0.5	2	25
Barium *	0.0156			0.129	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0021			0.018	0.5	10	70
Copper *	0.0044			0.037	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	< 0.0004			< 0.0040	0.5	10	30
Nickel *	0.0018			0.015	0.4	10	40
Lead *	0.0050			0.042	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.0093			0.077	4	50	200
Chloride *	10			85	800	4000	25000
Fluoride	0.90			7.5	10	150	500
Sulphate *	42			350	1000	20000	50000
TDS*	130			1000	4000	60000	100000
Phenol Index (Monhydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	7.43			61.7	500	800	1000
Leach Test Information							
Stone Content (%)	34						
Sample Mass (kg)	2.0						
Dry Matter (%)	89						
Moisture (%)	11						

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 accrediited

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 : 19-50735

Project / Site name: M25 Junction 28

* 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 *
1272016	ATK-P-005	2	0.00-0.40	Brown loam and clay with rubble and vegetation.
1272018	ATK-P-005	4	0.60-1.00	Brown loam and clay with stones and vegetation.

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Analytical Report Number : 19-50735

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

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
BTEX in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Chloride 10:1 WAC	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-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
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
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
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.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
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
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
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	NONE
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
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 electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L004-PL	W	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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS

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.

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Analytical Report Number : 19-54362

Project / Site name:	M25 Junction 28	**Samples received on:**	09/07/2019
Your job number:	35403	**Samples instructed on:**	14/08/2019
Your order number:	35403-DO	**Analysis completed by:**	23/08/2019
Report Issue Number:	1	**Report issued on:**	23/08/2019
Samples Analysed:	3 leachate samples - 3 soil samples		

Signed: [redacted]

[redacted]
Senior Quality Specialist
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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Analytical Report Number: 19-54362

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1290194	1290195	1290196		
Sample Reference				ATK-P-102	ATK-P-102	ATK-P-102		
Sample Number				1	2	3		
Depth (m)				0.20	0 50	1.00		
Date Sampled				08/07/2019	08/07/2019	08/07/2019		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	23	16	< 0.1		
Moisture Content	%	N/A	NONE	8.3	18	16		
Total mass of sample received	kg	0.001	NONE	2.0	2 0	2.0		
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected		
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	10.6	7.9	7.7		
Electrical Conductivity	µS/cm	10	ISO 17025	2300	480	1600		
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1		
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1		
Total Sulphate as SO_4	mg/kg	50	MCERTS	21000	670	11000		
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	3.4	0.26	3.2		
Ammonia as NH_3	mg/kg	0 5	MCERTS	< 0 5	< 0.5	< 0.5		
Ammonium as NH_4	mg/kg	0 5	MCERTS	< 0 5	< 0.5	< 0.5		
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	0 017	0.0034	0 0034		
Total Organic Carbon (TOC)	%	0.1	MCERTS	1.6	0 3	0.3		
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0		
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Phenanthrene	mg/kg	0.05	MCERTS	0.55	< 0.05	< 0 05		
Anthracene	mg/kg	0.05	MCERTS	0.16	< 0.05	< 0 05		
Fluoranthene	mg/kg	0.05	MCERTS	1.6	< 0.05	< 0 05		
Pyrene	mg/kg	0.05	MCERTS	1.5	< 0.05	< 0 05		
Benzo(a)anthracene	mg/kg	0.05	MCERTS	1.1	< 0.05	< 0 05		
Chrysene	mg/kg	0.05	MCERTS	0.81	< 0.05	< 0 05		
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	1.3	< 0.05	< 0 05		
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.42	< 0.05	< 0 05		
Benzo(a)pyrene	mg/kg	0.05	MCERTS	1.1	< 0.05	< 0 05		
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.55	< 0.05	< 0 05		
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.65	< 0.05	< 0 05		
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0 8	MCERTS	9.71	< 0.80	< 0 80		
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	7.7	12	12		
Barium (aqua regia extractable)	mg/kg	1	MCERTS	180	110	66		
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.80	1 2	1.1		
Boron (water soluble)	mg/kg	0 2	MCERTS	2.6	0 6	0.8		
Cadmium (aqua regia extractable)	mg/kg	0 2	MCERTS	0.3	< 0.2	< 0.2		
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4 0	< 4.0	< 4.0		
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	30	56	57		
Copper (aqua regia extractable)	mg/kg	1	MCERTS	43	23	21		
Lead (aqua regia extractable)	mg/kg	1	MCERTS	130	34	30		
Mercury (aqua regia extractable)	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3		
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	19	38	36		
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0		
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	43	80	74		
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	170	73	72		

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Analytical Report Number: 19-54362

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1290194	1290195	1290196		
Sample Reference				ATK-P-102	ATK-P-102	ATK-P-102		
Sample Number				1	2	3		
Depth (m)				0.20	0 50	1.00		
Date Sampled				08/07/2019	08/07/2019	08/07/2019		
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	< 1.0		
Toluene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0		
Ethylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0		
p & m-xylene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0		
o-xylene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0		
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0		
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001		
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001		
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001		
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0		
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2 0	< 2.0	< 2.0		
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	13	16	< 8.0		
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	96	80	< 8.0		
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	110	98	< 10		
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001		
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001		
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001		
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0		
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2 0	< 2.0	< 2.0		
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	10	< 10	< 10		
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	61	< 10	< 10		
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	72	< 10	< 10		

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Analytical Report Number: 19-54362

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1290194	1290195	1290196		
Sample Reference				ATK-P-102	ATK-P-102	ATK-P-102		
Sample Number				1	2	3		
Depth (m)				0.20	0 50	1.00		
Date Sampled				08/07/2019	08/07/2019	08/07/2019		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	< 1 0	-	< 1.0		
Chloroethane	µg/kg	1	NONE	< 1 0	-	< 1.0		
Bromomethane	µg/kg	1	ISO 17025	< 1 0	-	< 1.0		
Vinyl Chloride	µg/kg	1	NONE	< 1 0	-	< 1.0		
Trichlorofluoromethane	µg/kg	1	NONE	< 1 0	-	< 1.0		
1,1-Dichloroethene	µg/kg	1	NONE	< 1 0	-	< 1.0		
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1 0	-	< 1.0		
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
2,2-Dichloropropane	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
Trichloromethane	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
1,1-Dichloropropene	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1 0	-	< 1.0		
Benzene	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
Tetrachloromethane	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
Trichloroethene	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
Dibromomethane	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
Bromodichloromethane	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1 0	-	< 1.0		
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1 0	-	< 1.0		
Toluene	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1 0	-	< 1.0		
Dibromochloromethane	µg/kg	1	ISO 17025	< 1 0	-	< 1.0		
Tetrachloroethene	µg/kg	1	NONE	< 1 0	-	< 1.0		
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1 0	-	< 1.0		
Chlorobenzene	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
1,1,1,2-Tetrachloroethane	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		
Styrene	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
Tribromomethane	µg/kg	1	NONE	< 1 0	-	< 1.0		
o-Xylene	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
1 1 2 2-Tetrachloroethane	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
Isopropylbenzene	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
Bromobenzene	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
n-Propylbenzene	µg/kg	1	ISO 17025	< 1 0	-	< 1.0		
2-Chlorotoluene	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
4-Chlorotoluene	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1 0	-	< 1.0		
tert-Butylbenzene	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1 0	-	< 1.0		
sec-Butylbenzene	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1 0	-	< 1.0		
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1 0	-	< 1.0		
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
Butylbenzene	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1 0	-	< 1.0		
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
Hexachlorobutadiene	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	< 1 0	-	< 1.0		

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Analytical Report Number: 19-54362

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1290194	1290195	1290196		
Sample Reference				ATK-P-102	ATK-P-102	ATK-P-102		
Sample Number				1	2	3		
Depth (m)				0.20	0 50	1.00		
Date Sampled				08/07/2019	08/07/2019	08/07/2019		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	< 0.1	-	< 0.1		
Phenol	mg/kg	0 2	ISO 17025	< 0 2	-	< 0.2		
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1		
Bis(2-chloroethyl)ether	mg/kg	0 2	MCERTS	< 0 2	-	< 0.2		
1,3-Dichlorobenzene	mg/kg	0 2	MCERTS	< 0 2	-	< 0.2		
1 2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1		
1 4-Dichlorobenzene	mg/kg	0 2	MCERTS	< 0 2	-	< 0.2		
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1		
2-Methylphenol	mg/kg	0 3	MCERTS	< 0 3	-	< 0.3		
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05		
Nitrobenzene	mg/kg	0 3	MCERTS	< 0 3	-	< 0.3		
4-Methylphenol	mg/kg	0 2	NONE	< 0 2	-	< 0.2		
Isophorone	mg/kg	0 2	MCERTS	< 0 2	-	< 0.2		
2-Nitrophenol	mg/kg	0 3	MCERTS	< 0 3	-	< 0.3		
2 4-Dimethylphenol	mg/kg	0 3	MCERTS	< 0 3	-	< 0.3		
Bis(2-chloroethoxy)methane	mg/kg	0 3	MCERTS	< 0 3	-	< 0.3		
1,2,4-Trichlorobenzene	mg/kg	0 3	MCERTS	< 0 3	-	< 0.3		
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05		
2,4-Dichlorophenol	mg/kg	0 3	MCERTS	< 0 3	-	< 0.3		
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	-	< 0.1		
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1		
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	-	< 0.1		
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1		
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0 2	-	< 0.2		
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	-	< 0.1		
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1		
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1		
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1		
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05		
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05		
2 4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0 2	-	< 0.2		
Dibenzofuran	mg/kg	0.2	MCERTS	< 0 2	-	< 0.2		
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0 3	-	< 0.3		
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0 2	-	< 0.2		
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0 2	-	< 0.2		
Fluorene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05		
Azobenzene	mg/kg	0.3	MCERTS	< 0 3	-	< 0.3		
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0 2	-	< 0.2		
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0 3	-	< 0.3		
Phenanthrene	mg/kg	0.05	MCERTS	0.55	-	< 0.05		
Anthracene	mg/kg	0.05	MCERTS	0.16	-	< 0.05		
Carbazole	mg/kg	0.3	MCERTS	< 0 3	-	< 0.3		
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0 2	-	< 0.2		
Anthraquinone	mg/kg	0.3	MCERTS	< 0 3	-	< 0.3		
Fluoranthene	mg/kg	0.05	MCERTS	1.6	-	< 0.05		
Pyrene	mg/kg	0.05	MCERTS	1.5	-	< 0.05		
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0 3	-	< 0.3		
Benzo(a)anthracene	mg/kg	0.05	MCERTS	1.1	-	< 0.05		
Chrysene	mg/kg	0.05	MCERTS	0.81	-	< 0.05		
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	1.3	-	< 0.05		
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.42	-	< 0.05		
Benzo(a)pyrene	mg/kg	0.05	MCERTS	1.1	-	< 0.05		
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.55	-	< 0.05		
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	< 0 05		
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.65	-	< 0.05		

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Analytical Report Number: 19-54362

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1290194	1290195	1290196		
Sample Reference				ATK-P-102	ATK-P-102	ATK-P-102		
Sample Number				1	2	3		
Depth (m)				0.20	0 50	1.00		
Date Sampled				08/07/2019	08/07/2019	08/07/2019		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs								
PCB Congener 077	mg/kg	0.001	NONE	< 0 001	-	< 0.001		
PCB Congener 081	mg/kg	0.001	NONE	< 0 001	-	< 0.001		
PCB Congener 105	mg/kg	0.001	NONE	< 0 001	-	< 0.001		
PCB Congener 114	mg/kg	0.001	NONE	< 0 001	-	< 0.001		
PCB Congener 118	mg/kg	0.001	NONE	< 0 001	-	< 0.001		
PCB Congener 123	mg/kg	0.001	NONE	< 0 001	-	< 0.001		
PCB Congener 126	mg/kg	0.001	NONE	< 0 001	-	< 0.001		
PCB Congener 156	mg/kg	0.001	NONE	< 0 001	-	< 0.001		
PCB Congener 157	mg/kg	0.001	NONE	< 0 001	-	< 0.001		
PCB Congener 167	mg/kg	0.001	NONE	< 0 001	-	< 0.001		
PCB Congener 169	mg/kg	0.001	NONE	< 0 001	-	< 0.001		
PCB Congener 189	mg/kg	0.001	NONE	< 0 001	-	< 0.001		
Total PCBs	mg/kg	0.012	NONE	< 0 012	-	< 0.012		
Organochlorine Pesticides (OCP)								
Aldrin	ug/kg	10	NONE	< 10	-	< 10		
BHC-alpha (benzene hexachloride)	ug/kg	10	NONE	< 10	-	< 10		
BHC-beta	ug/kg	10	NONE	< 10	-	< 10		
BHC-delta	ug/kg	10	NONE	< 10	-	< 10		
BHC-gamma (Lindane, gamma HCH)	ug/kg	10	NONE	< 10	-	< 10		
Chlordane-cis	ug/kg	10	NONE	< 10	-	< 10		
Chlordane-trans	ug/kg	10	NONE	< 10	-	< 10		
Chlorothalonil	ug/kg	10	NONE	< 10	-	< 10		
DDD-o,p'	ug/kg	1	NONE	< 1 0	-	< 1.0		
DDD-p,p'	ug/kg	1	NONE	3.2	-	< 1.0		
DDE-o, p'	ug/kg	1	NONE	< 1 0	-	< 1.0		
DDE-p,p'	ug/kg	1	NONE	1.8	-	< 1.0		
DDT-o,p'	ug/kg	1	NONE	1.2	-	< 1.0		
DDT-p,p'	ug/kg	1	NONE	17	-	< 1.0		
Dichlorobenzonitrile, 2,6-	ug/kg	10	NONE	< 10	-	< 10		
Dieldrin	ug/kg	10	NONE	13	-	< 10		
Endosulfan I (alpha isomer)	ug/kg	10	NONE	< 10	-	< 10		
Endosulfan II (beta isomer)	ug/kg	10	NONE	< 10	-	< 10		
Endosulfan sulfate	ug/kg	10	NONE	< 10	-	< 10		
Endrin	ug/kg	10	NONE	< 10	-	< 10		
Endrin aldehyde	ug/kg	10	NONE	< 10	-	< 10		
Endrin ketone	ug/kg	10	NONE	< 10	-	< 10		
Heptachlor	ug/kg	10	NONE	< 10	-	< 10		
Heptachlor exo-epoxide	ug/kg	10	NONE	< 10	-	< 10		
Hexachlorobenzene	ug/kg	10	NONE	< 10	-	< 10		
Hexachlorobutadiene	ug/kg	10	NONE	< 10	-	< 10		
Isodrin	ug/kg	10	NONE	< 10	-	< 10		
Methoxychlor, p,p'-	ug/kg	10	NONE	< 10	-	< 10		
Pentachlorobenzene	ug/kg	10	NONE	< 10	-	< 10		
Tecnazene	ug/kg	10	NONE	< 10	-	< 10		
Tetrachlorobenzene, 1,2,4,5-	ug/kg	10	NONE	< 10	-	< 10		
Trichlorobenzene, 1,2,3-	ug/kg	10	NONE	< 10	-	< 10		
Trichlorobenzene, 1,3,5-	ug/kg	10	NONE	< 10	-	< 10		
Trifluralin	ug/kg	10	NONE	< 10	-	< 10		
Organophosphorus Pesticides (OPP)								
Azinphos-ethyl	ug/kg	10	NONE	< 10	-	< 10		
Azinphos-methyl	ug/kg	10	NONE	< 10	-	< 10		
Carbophenothion	ug/kg	10	NONE	< 10	-	< 10		
Chlorfenvinphos (mixture of z and e isomers)	ug/kg	10	NONE	< 10	-	< 10		
Chlorpyrifos	ug/kg	10	NONE	< 10	-	< 10		
Demeton-O	ug/kg	10	NONE	< 10	-	< 10		
Demeton-S	ug/kg	10	NONE	< 10	-	< 10		
Diazinon	ug/kg	10	NONE	< 10	-	< 10		

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Analytical Report Number: 19-54362

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1290194	1290195	1290196		
Sample Reference				ATK-P-102	ATK-P-102	ATK-P-102		
Sample Number				1	2	3		
Depth (m)				0.20	0 50	1.00		
Date Sampled				08/07/2019	08/07/2019	08/07/2019		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Dichlorvos	ug/kg	10	NONE	< 10	-	< 10		
Dimethoate	ug/kg	10	NONE	< 10	-	< 10		
Dimethylvinphos	ug/kg	10	NONE	< 10	-	< 10		
Ethion	ug/kg	10	NONE	< 10	-	< 10		
Etrimfos	ug/kg	10	NONE	< 10	-	< 10		
Fenitrothion	ug/kg	10	NONE	< 10	-	< 10		
Fenthion	ug/kg	10	NONE	< 10	-	< 10		
Malathion	ug/kg	10	NONE	< 10	-	< 10		
Methacrifos	ug/kg	10	NONE	< 10	-	< 10		
Mevinphos E-	ug/kg	10	NONE	< 10	-	< 10		
Mevinphos Z-	ug/kg	10	NONE	< 10	-	< 10		
Parathion	ug/kg	10	NONE	< 10	-	< 10		
Parathion-methyl	ug/kg	10	NONE	< 10	-	< 10		
Phorate	ug/kg	10	NONE	< 10	-	< 10		
Phosalone	ug/kg	10	NONE	< 10	-	< 10		
Phosphamidon I	ug/kg	10	NONE	< 10	-	< 10		
Pirimiphos-ethyl	ug/kg	10	NONE	< 10	-	< 10		
Pirimiphos-methyl	ug/kg	10	NONE	< 10	-	< 10		
Propetamphos	ug/kg	10	NONE	< 10	-	< 10		
Triazophos	ug/kg	10	NONE	< 10	-	< 10		
Organonitrogen Pesticides (ONP)								
Pendimethalin	ug/kg	10	NONE	< 10	-	< 10		
Propyzamide	ug/kg	10	NONE	< 10	-	< 10		
Triadimefon	ug/kg	10	NONE	< 10	-	< 10		

Environmental Forensics

Triazine Herbicides

Atrazine	mg/kg	0.1	NONE	< 0.10	-	< 0.10		
Simazine	mg/kg	0.1	NONE	< 0.10	-	< 0.10		
Prometryn	mg/kg	0.1	NONE	< 0.10	-	< 0.10		
Propazine	mg/kg	0.1	NONE	< 0.10	-	< 0.10		
Terbuthylazine	mg/kg	0.1	NONE	< 0.10	-	< 0.10		
Terbutryn	mg/kg	0.1	NONE	< 0.10	-	< 0.10		
Trietazine	mg/kg	0.1	NONE	< 0.10	-	< 0.10		
Cyanazine	mg/kg	0.1	NONE	< 0.10	-	< 0.10		

Acid Herbicides

2,4,5-T	ug/kg	20	NONE	< 20	-	< 20		
2,4,5-TP	ug/kg	20	NONE	< 20	-	< 20		
2,4-D	ug/kg	20	NONE	< 20	-	< 20		
2,4-DB	ug/kg	20	NONE	< 20	-	< 20		
Dicamba	ug/kg	20	NONE	< 20	-	< 20		
Dichlorprop	ug/kg	20	NONE	< 20	-	< 20		
Dinoseb	ug/kg	20	NONE	< 20	-	< 20		
MCPA	ug/kg	20	NONE	< 20	-	< 20		
MCPB	ug/kg	20	NONE	< 20	-	< 20		
MCPP (Mecoprop)	ug/kg	20	NONE	< 20	-	< 20		
Picloram	ug/kg	20	NONE	< 20	-	< 20		

Phenylurea herbicides

Isoproturon	ug/kg	10	NONE	< 10	-	< 10		
Chlortoluron	ug/kg	10	NONE	< 10	-	< 10		
Linuron	ug/kg	10	NONE	24	-	< 10		

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Analytical Report Number: 19-54362

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1290194	1290195	1290196		
Sample Reference				ATK-P-102	ATK-P-102	ATK-P-102		
Sample Number				1	2	3		
Depth (m)				0.20	0 50	1.00		
Date Sampled				08/07/2019	08/07/2019	08/07/2019		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Diuron	ug/kg	10	NONE	43	-	< 10		
Diflubenzuron	ug/kg	10	NONE	< 10	-	< 10		
Flumeturon	ug/kg	10	NONE	< 10	-	< 10		
Siduron	ug/kg	10	NONE	< 10	-	< 10		
Terbuthiuron	ug/kg	10	NONE	< 10	-	< 10		
Thidiazuron	ug/kg	10	NONE	< 10	-	< 10		

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Analytical Report Number: 19-54362

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1290197	1290198	1290199		
Sample Reference				ATK-P-102	ATK-P-102	ATK-P-102		
Sample Number				1	2	3		
Depth (m)				0.20	0 50	1.00		
Date Sampled				08/07/2019	08/07/2019	08/07/2019		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	7.8	8 0	7.7		
Electrical Conductivity	µS/cm	10	ISO 17025	2300	120	970		
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10		
Free Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10		
Sulphate as SO_4	mg/l	0.1	ISO 17025	1660	13.6	528		
Sulphide	µg/l	5	NONE	< 5 0	< 5.0	< 5.0		
Chloride	mg/l	0.15	ISO 17025	11	6 0	3.7		
Ammonium as NH_4	µg/l	15	NONE	55	54	35		
Total Organic Carbon (TOC)	mg/l	0.1	NONE	4.26	7.33	4.48		
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	4.20	6.99	2.40		
Total Phenols								
Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10	< 10		
Heavy Metals / Metalloids								
Antimony (dissolved)	µg/l	1.7	ISO 17025	< 1.7	< 1.7	< 1.7		
Arsenic (dissolved)	µg/l	1.1	ISO 17025	15	< 1.1	< 1.1		
Barium (dissolved)	µg/l	0.05	ISO 17025	56	9 3	20		
Beryllium (dissolved)	µg/l	0.2	ISO 17025	< 0 2	< 0.2	< 0.2		
Boron (dissolved)	µg/l	10	ISO 17025	170	34	35		
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0 08		
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5 0	< 5.0	< 5.0		
Chromium (III)	µg/l	1	NONE	3.1	2 5	2.7		
Chromium (dissolved)	µg/l	0.4	ISO 17025	3.1	2 5	2.7		
Cobalt (dissolved)	µg/l	0.3	ISO 17025	< 0 3	0.9	< 0.3		
Copper (dissolved)	µg/l	0.7	ISO 17025	9.2	9.9	4.0		
Iron (dissolved)	mg/l	0.004	ISO 17025	0.19	0.79	0 23		
Lead (dissolved)	µg/l	1	ISO 17025	4.6	< 1.0	< 1.0		
Manganese (dissolved)	µg/l	0.06	ISO 17025	160	230	220		
Mercury (dissolved)	µg/l	0.5	ISO 17025	1.0	< 0.5	< 0.5		
Molybdenum (dissolved)	µg/l	0.4	ISO 17025	6.3	< 0.4	1.5		
Nickel (dissolved)	µg/l	0.3	ISO 17025	2.2	1.4	< 0.3		
Phosphorus (dissolved)	µg/l	30	NONE	210	490	170		
Selenium (dissolved)	µg/l	4	ISO 17025	< 4 0	< 4.0	< 4.0		
Tin (dissolved)	µg/l	1	ISO 17025	< 1 0	< 1.0	< 1.0		
Vanadium (dissolved)	µg/l	1.7	ISO 17025	< 1.7	4 5	< 1.7		
Zinc (dissolved)	µg/l	0.4	ISO 17025	3.5	3 5	2.5		
Calcium (dissolved)	mg/l	0.012	ISO 17025	600	14	160		
Magnesium (dissolved)	mg/l	0.005	ISO 17025	14	5 0	47		
Potassium (dissolved)	mg/l	0.025	ISO 17025	14	2 2	4.8		
Sodium (dissolved)	mg/l	0.01	ISO 17025	11	4.1	7.0		

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Project / Site name: M25 Junction 28

* 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 *
1290194	ATK-P-102	1	0.20	Grey loam and gravel with stones and vegetation.
1290195	ATK-P-102	2	0.50	Brown clay with stones.
1290196	ATK-P-102	3	1.00	Brown clay with gravel.

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Analytical Report Number : 19-54362

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Ammonia as NH3 in soil	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	MCERTS
Ammonium as NH4 in leachate	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	NONE
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
Boron in leachate	Determination of boron in leachate. Sample acidified and followed by ICP-OES.	In-house method based on MEWAM	L039-PL	W	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
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
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
Chloride in leachate	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
Cr (III) in leachate	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Dissolved Organic Carbon in leachate	Determination of dissolved organic carbon in leachate by the measurement on a non-dispersive infrared analyser of carbon dioxide released by acidification.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L023-PL	W	NONE
EF - Phenylurea herbicides in soil by LC-MS/MS	Phenylurea herbicides by LC-MS/MS	In-house method	UK	W	NONE
Electrical conductivity at 20oC of leachate	Determination of electrical conductivity in leachate by electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031-PL	W	ISO 17025
Electrical conductivity of soil	Determination of electrical conductivity in soil by electrometric measurement.	In-house method	L031-PL	W	ISO 17025
Fraction of Organic Carbon in soil	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L009-PL	D	MCERTS
Free cyanide in leachate	Determination of free cyanide by distillation followed by colorimetry.	In-house method	L080-PL	W	ISO 17025
Free cyanide in soil	Determination of free 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
Hexavalent chromium in leachate	Determination of hexavalent chromium in leachate by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	ISO 17025

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Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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	MCERTS
Metals by ICP-OES in leachate	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
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
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in leachate	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 (skalar)	L080-PL	W	ISO 17025
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
Organochlorine Pesticides in soil by GC MS/MS	Detemination of Pesticides in soil by GC MS/MS	Organochlorine Pesticides in soil by GC MS/MS	L055B-PL	D	NONE
Organonitrogen Pesticides in soil by GC MS/MS	Detemination of Pesticides in soil by GC MS/MS	Organonitrogen Pesticides in soil by GC MS/MS	L055B-PL	D	NONE
Organophosphorus Pesticides in soil by GC MS/MS	Detemination of Pesticides in soil by GC MS/MS	Organophosphorus Pesticides in soil by GC MS/MS	L055B-PL	D	NONE
PCBs WHO 12 in soil	Determination of PCBs (WHO-12 Congeners) by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	NONE
pH at 20oC in leachate	Determination of pH in leachate by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	ISO 17025
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	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
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
Sulphate in leachates	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS

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Analytical Report Number : 19-54362

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphide in leachate	Determination of sulphide in leachate by ion selective electrode.	In-house method	L010-PL	W	NONE
TO - Acid Herbicides in soil by LC-MS/MS	Determination of Acid herbicides in waters by LC-MS/MS	In-house method		W	NONE
TO - Triazine pesticides in soil	Determination of Triazines by LC-MS(/MS).	In-house method based on USEPA method 615.		W	NONE
Total cyanide in leachate	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	ISO 17025
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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS
Total organic carbon in leachate	Determination of dissolved organic 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
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	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
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

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.

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Sample ID	Other_ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
ATK-P-102	1	S	19-54362	1290194	c	Free cyanide in soil	L080-PL	c
ATK-P-102	1	S	19-54362	1290194	c	Hexavalent chromium in soil	L080-PL	c
ATK-P-102	1	S	19-54362	1290194	c	Ammonia as NH3 in soil	L082-PL	c
ATK-P-102	1	S	19-54362	1290194	c	Ammoniacal Nitrogen as N in soil	L082-PL	c
ATK-P-102	1	S	19-54362	1290194	c	Ammonium as NH4 in soil	L082-PL	c
ATK-P-102	1	S	19-54362	1290194	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
ATK-P-102	1	S	19-54362	1290194	c	EF - Phenylurea herbicides in soil by LC-MS/MS	UK	c
ATK-P-102	1	S	19-54362	1290194	c	Electrical conductivity of soil	L031-PL	c
ATK-P-102	1	S	19-54362	1290194	c	Fraction of Organic Carbon in soil	L009-PL	c
ATK-P-102	1	S	19-54362	1290194	c	Monohydric phenols in soil	L080-PL	c
ATK-P-102	1	S	19-54362	1290194	c	Organic matter (Automated) in soil	L009-PL	c
ATK-P-102	1	S	19-54362	1290194	c	Organochlorine Pesticides in soil by GC MS/MS	L055B-PL	c
ATK-P-102	1	S	19-54362	1290194	c	Organonitrogen Pesticides in soil by GC MS/MS	L055B-PL	c
ATK-P-102	1	S	19-54362	1290194	c	Organophosphorus Pesticides in soil by GC MS/MS	L055B-PL	c
ATK-P-102	1	S	19-54362	1290194	c	PCBs WHO 12 in soil	L027-PL	c
ATK-P-102	1	S	19-54362	1290194	c	Semi-volatile organic compounds in soil	L064-PL	c
ATK-P-102	1	S	19-54362	1290194	c	Speciated EPA-16 PAHs in soil	L064-PL	c
ATK-P-102	1	S	19-54362	1290194	c	TO - Acid Herbicides in soil by LC-MS/MS		c
ATK-P-102	1	S	19-54362	1290194	c	TO - Triazine pesticides in soil		c
ATK-P-102	1	S	19-54362	1290194	c	TPHCWG (Soil)	L088/76-PL	c
ATK-P-102	1	S	19-54362	1290194	c	Total cyanide in soil	L080-PL	c
ATK-P-102	1	S	19-54362	1290194	c	Total organic carbon (Automated) in soil	L009-PL	c
ATK-P-102	1	S	19-54362	1290194	c	Volatile organic compounds in soil	L073B-PL	c
ATK-P-102	1	S	19-54362	1290194	c	pH in soil (automated)	L099-PL	c
ATK-P-102	2	S	19-54362	1290195	c	Free cyanide in soil	L080-PL	c
ATK-P-102	2	S	19-54362	1290195	c	Hexavalent chromium in soil	L080-PL	c
ATK-P-102	2	S	19-54362	1290195	c	Ammonia as NH3 in soil	L082-PL	c
ATK-P-102	2	S	19-54362	1290195	c	Ammoniacal Nitrogen as N in soil	L082-PL	c
ATK-P-102	2	S	19-54362	1290195	c	Ammonium as NH4 in soil	L082-PL	c
ATK-P-102	2	S	19-54362	1290195	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
ATK-P-102	2	S	19-54362	1290195	c	Electrical conductivity of soil	L031-PL	c
ATK-P-102	2	S	19-54362	1290195	c	Fraction of Organic Carbon in soil	L009-PL	c
ATK-P-102	2	S	19-54362	1290195	c	Monohydric phenols in soil	L080-PL	c
ATK-P-102	2	S	19-54362	1290195	c	Organic matter (Automated) in soil	L009-PL	c
ATK-P-102	2	S	19-54362	1290195	c	Speciated EPA-16 PAHs in soil	L064-PL	c
ATK-P-102	2	S	19-54362	1290195	c	TPHCWG (Soil)	L088/76-PL	c
ATK-P-102	2	S	19-54362	1290195	c	Total cyanide in soil	L080-PL	c
ATK-P-102	2	S	19-54362	1290195	c	Total organic carbon (Automated) in soil	L009-PL	c
ATK-P-102	2	S	19-54362	1290195	c	pH in soil (automated)	L099-PL	c
ATK-P-102	3	S	19-54362	1290196	c	Free cyanide in soil	L080-PL	c
ATK-P-102	3	S	19-54362	1290196	c	Hexavalent chromium in soil	L080-PL	c
ATK-P-102	3	S	19-54362	1290196	c	Ammonia as NH3 in soil	L082-PL	c
ATK-P-102	3	S	19-54362	1290196	c	Ammoniacal Nitrogen as N in soil	L082-PL	c
ATK-P-102	3	S	19-54362	1290196	c	Ammonium as NH4 in soil	L082-PL	c
ATK-P-102	3	S	19-54362	1290196	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
ATK-P-102	3	S	19-54362	1290196	c	EF - Phenylurea herbicides in soil by LC-MS/MS	UK	c
ATK-P-102	3	S	19-54362	1290196	c	Electrical conductivity of soil	L031-PL	c
ATK-P-102	3	S	19-54362	1290196	c	Fraction of Organic Carbon in soil	L009-PL	c
ATK-P-102	3	S	19-54362	1290196	c	Monohydric phenols in soil	L080-PL	c
ATK-P-102	3	S	19-54362	1290196	c	Organic matter (Automated) in soil	L009-PL	c
ATK-P-102	3	S	19-54362	1290196	c	Organochlorine Pesticides in soil by GC MS/MS	L055B-PL	c

ATK-P-102	3	S	19-54362	1290196	c	Organonitrogen Pesticides in soil by GC MS/MS	L055B-PL	c
ATK-P-102	3	S	19-54362	1290196	c	Organophosphorus Pesticides in soil by GC MS/MS	L055B-PL	c
ATK-P-102	3	S	19-54362	1290196	c	PCBs WHO 12 in soil	L027-PL	c
ATK-P-102	3	S	19-54362	1290196	c	Semi-volatile organic compounds in soil	L064-PL	c
ATK-P-102	3	S	19-54362	1290196	c	Speciated EPA-16 PAHs in soil	L064-PL	c
ATK-P-102	3	S	19-54362	1290196	c	TO - Acid Herbicides in soil by LC-MS/MS		c
ATK-P-102	3	S	19-54362	1290196	c	TO - Triazine pesticides in soil		c
ATK-P-102	3	S	19-54362	1290196	c	TPHCWG (Soil)	L088/76-PL	c
ATK-P-102	3	S	19-54362	1290196	c	Total cyanide in soil	L080-PL	c
ATK-P-102	3	S	19-54362	1290196	c	Total organic carbon (Automated) in soil	L009-PL	c
ATK-P-102	3	S	19-54362	1290196	c	Volatile organic compounds in soil	L073B-PL	c
ATK-P-102	3	S	19-54362	1290196	c	pH in soil (automated)	L099-PL	c

Key: a - No sampling date b - Incorrect container
c - Holding time d - Headspace e - Temperature

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Analytical Report Number : 19-54363

Project / Site name:	M25 Junction 28	**Samples received on:**	10/07/2019
Your job number:	35403	**Samples instructed on:**	14/08/2019
Your order number:	35403-DO	**Analysis completed by:**	23/08/2019
Report Issue Number:	1	**Report issued on:**	23/08/2019
Samples Analysed:	3 leachate samples - 3 soil samples		

Signed: [redacted]

[redacted]
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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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 19-54363

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1290200	1290201	1290202		
Sample Reference				ATK-P-101	ATK-P-101	ATK-P-101		
Sample Number				4	5	6		
Depth (m)				2.00-2.10	3.20-3.40	4.20-4.40		
Date Sampled				10/07/2019	10/07/2019	10/07/2019		
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	< 0.1		
Moisture Content	%	N/A	NONE	17	13	15		
Total mass of sample received	kg	0.001	NONE	1.4	2 0	1.9		
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected		
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	6.5	7 8	8.2		
Electrical Conductivity	µS/cm	10	ISO 17025	830	2200	1200		
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1		
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1		
Total Sulphate as SO_4	mg/kg	50	MCERTS	1000	31000	1700		
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.36	3 2	0.98		
Ammonia as NH_3	mg/kg	0 5	MCERTS	18	< 0.5	0.5		
Ammonium as NH_4	mg/kg	0 5	MCERTS	19	< 0.5	0.5		
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	0 018	0.0015	0 0031		
Total Organic Carbon (TOC)	%	0.1	MCERTS	1.8	0 2	0.3		
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0		
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0 8	MCERTS	< 0.80	< 0.80	< 0 80		
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	9.2	7.4	17		
Barium (aqua regia extractable)	mg/kg	1	MCERTS	53	54	75		
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.80	1.1	1.2		
Boron (water soluble)	mg/kg	0 2	MCERTS	0.4	0.9	0.5		
Cadmium (aqua regia extractable)	mg/kg	0 2	MCERTS	< 0 2	< 0.2	< 0.2		
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4 0	< 4.0	< 4.0		
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	44	50	53		
Copper (aqua regia extractable)	mg/kg	1	MCERTS	18	26	32		
Lead (aqua regia extractable)	mg/kg	1	MCERTS	47	37	74		
Mercury (aqua regia extractable)	mg/kg	0 3	MCERTS	< 0 3	< 0.3	< 0.3		
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	20	38	42		
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0		
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	68	71	70		
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	68	77	97		

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Analytical Report Number: 19-54363

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1290200	1290201	1290202		
Sample Reference				ATK-P-101	ATK-P-101	ATK-P-101		
Sample Number				4	5	6		
Depth (m)				2.00-2.10	3.20-3.40	4.20-4.40		
Date Sampled				10/07/2019	10/07/2019	10/07/2019		
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	< 1.0		
Toluene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0		
Ethylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0		
p & m-xylene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0		
o-xylene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0		
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0		
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001		
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001		
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001		
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0		
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2 0	< 2.0	< 2.0		
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8 0	< 8.0	< 8.0		
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8 0	< 8.0	< 8.0		
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10		
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001		
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001		
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001		
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0		
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2 0	< 2.0	< 2.0		
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	< 10	< 10		
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	< 10	< 10		
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10		

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Analytical Report Number: 19-54363

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1290200	1290201	1290202		
Sample Reference				ATK-P-101	ATK-P-101	ATK-P-101		
Sample Number				4	5	6		
Depth (m)				2.00-2.10	3.20-3.40	4.20-4.40		
Date Sampled				10/07/2019	10/07/2019	10/07/2019		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	< 1 0	-	< 1.0		
Chloroethane	µg/kg	1	NONE	< 1 0	-	< 1.0		
Bromomethane	µg/kg	1	ISO 17025	< 1 0	-	< 1.0		
Vinyl Chloride	µg/kg	1	NONE	< 1 0	-	< 1.0		
Trichlorofluoromethane	µg/kg	1	NONE	< 1 0	-	< 1.0		
1,1-Dichloroethene	µg/kg	1	NONE	< 1 0	-	< 1.0		
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1 0	-	< 1.0		
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
2,2-Dichloropropane	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
Trichloromethane	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
1,1-Dichloropropene	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1 0	-	< 1.0		
Benzene	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
Tetrachloromethane	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
Trichloroethene	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
Dibromomethane	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
Bromodichloromethane	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1 0	-	< 1.0		
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1 0	-	< 1.0		
Toluene	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1 0	-	< 1.0		
Dibromochloromethane	µg/kg	1	ISO 17025	< 1 0	-	< 1.0		
Tetrachloroethene	µg/kg	1	NONE	< 1 0	-	< 1.0		
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1 0	-	< 1.0		
Chlorobenzene	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
1,1,1,2-Tetrachloroethane	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		
Styrene	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
Tribromomethane	µg/kg	1	NONE	< 1 0	-	< 1.0		
o-Xylene	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
1 1 2 2-Tetrachloroethane	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
Isopropylbenzene	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
Bromobenzene	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
n-Propylbenzene	µg/kg	1	ISO 17025	< 1 0	-	< 1.0		
2-Chlorotoluene	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
4-Chlorotoluene	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1 0	-	< 1.0		
tert-Butylbenzene	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1 0	-	< 1.0		
sec-Butylbenzene	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1 0	-	< 1.0		
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1 0	-	< 1.0		
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
Butylbenzene	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1 0	-	< 1.0		
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
Hexachlorobutadiene	µg/kg	1	MCERTS	< 1 0	-	< 1.0		
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	< 1 0	-	< 1.0		

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Analytical Report Number: 19-54363

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1290200	1290201	1290202		
Sample Reference				ATK-P-101	ATK-P-101	ATK-P-101		
Sample Number				4	5	6		
Depth (m)				2.00-2.10	3.20-3.40	4.20-4.40		
Date Sampled				10/07/2019	10/07/2019	10/07/2019		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	< 0.1	-	< 0.1		
Phenol	mg/kg	0 2	ISO 17025	< 0 2	-	< 0.2		
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1		
Bis(2-chloroethyl)ether	mg/kg	0 2	MCERTS	< 0 2	-	< 0.2		
1,3-Dichlorobenzene	mg/kg	0 2	MCERTS	< 0 2	-	< 0.2		
1 2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1		
1 4-Dichlorobenzene	mg/kg	0 2	MCERTS	< 0 2	-	< 0.2		
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1		
2-Methylphenol	mg/kg	0 3	MCERTS	< 0 3	-	< 0.3		
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05		
Nitrobenzene	mg/kg	0 3	MCERTS	< 0 3	-	< 0.3		
4-Methylphenol	mg/kg	0 2	NONE	< 0 2	-	< 0.2		
Isophorone	mg/kg	0 2	MCERTS	< 0 2	-	< 0.2		
2-Nitrophenol	mg/kg	0 3	MCERTS	< 0 3	-	< 0.3		
2 4-Dimethylphenol	mg/kg	0 3	MCERTS	< 0 3	-	< 0.3		
Bis(2-chloroethoxy)methane	mg/kg	0 3	MCERTS	< 0 3	-	< 0.3		
1,2,4-Trichlorobenzene	mg/kg	0 3	MCERTS	< 0 3	-	< 0.3		
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05		
2,4-Dichlorophenol	mg/kg	0 3	MCERTS	< 0 3	-	< 0.3		
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	-	< 0.1		
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1		
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	-	< 0.1		
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1		
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0 2	-	< 0.2		
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	-	< 0.1		
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1		
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1		
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1		
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05		
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05		
2 4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0 2	-	< 0.2		
Dibenzofuran	mg/kg	0.2	MCERTS	< 0 2	-	< 0.2		
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0 3	-	< 0.3		
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0 2	-	< 0.2		
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0 2	-	< 0.2		
Fluorene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05		
Azobenzene	mg/kg	0.3	MCERTS	< 0 3	-	< 0.3		
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0 2	-	< 0.2		
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0 3	-	< 0.3		
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05		
Anthracene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05		
Carbazole	mg/kg	0.3	MCERTS	< 0 3	-	< 0.3		
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0 2	-	< 0.2		
Anthraquinone	mg/kg	0.3	MCERTS	< 0 3	-	< 0.3		
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05		
Pyrene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05		
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0 3	-	< 0.3		
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05		
Chrysene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05		
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05		
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05		
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05		
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	-	< 0 05		
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	< 0 05		
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	-	< 0 05		

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Analytical Report Number: 19-54363

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1290200	1290201	1290202		
Sample Reference				ATK-P-101	ATK-P-101	ATK-P-101		
Sample Number				4	5	6		
Depth (m)				2.00-2.10	3.20-3.40	4.20-4.40		
Date Sampled				10/07/2019	10/07/2019	10/07/2019		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs								
PCB Congener 077	mg/kg	0.001	NONE	< 0 001	-	-		
PCB Congener 081	mg/kg	0.001	NONE	< 0 001	-	-		
PCB Congener 105	mg/kg	0.001	NONE	< 0 001	-	-		
PCB Congener 114	mg/kg	0.001	NONE	< 0 001	-	-		
PCB Congener 118	mg/kg	0.001	NONE	< 0 001	-	-		
PCB Congener 123	mg/kg	0.001	NONE	< 0 001	-	-		
PCB Congener 126	mg/kg	0.001	NONE	< 0 001	-	-		
PCB Congener 156	mg/kg	0.001	NONE	< 0 001	-	-		
PCB Congener 157	mg/kg	0.001	NONE	< 0 001	-	-		
PCB Congener 167	mg/kg	0.001	NONE	< 0 001	-	-		
PCB Congener 169	mg/kg	0.001	NONE	< 0 001	-	-		
PCB Congener 189	mg/kg	0.001	NONE	< 0 001	-	-		
Total PCBs	mg/kg	0.012	NONE	< 0 012	-	-		
Organochlorine Pesticides (OCP)								
Aldrin	µg/kg	10	NONE	< 10	-	-		
BHC-alpha (benzene hexachloride)	µg/kg	10	NONE	< 10	-	-		
BHC-beta	µg/kg	10	NONE	< 10	-	-		
BHC-delta	µg/kg	10	NONE	< 10	-	-		
BHC-gamma (Lindane, gamma HCH)	µg/kg	10	NONE	< 10	-	-		
Chlordane-cis	µg/kg	10	NONE	< 10	-	-		
Chlordane-trans	µg/kg	10	NONE	< 10	-	-		
Chlorothalonil	µg/kg	10	NONE	< 10	-	-		
DDD-o,p'	µg/kg	1	NONE	< 1 0	-	-		
DDD-p,p'	µg/kg	1	NONE	< 1 0	-	-		
DDE-o, p'	µg/kg	1	NONE	< 1 0	-	-		
DDE-p,p'	µg/kg	1	NONE	< 1 0	-	-		
DDT-o,p'	µg/kg	1	NONE	< 1 0	-	-		
DDT-p,p'	µg/kg	1	NONE	< 1 0	-	-		
Dichlorobenzonitrile, 2,6-	µg/kg	10	NONE	< 10	-	-		
Dieldrin	µg/kg	10	NONE	< 10	-	-		
Endosulfan I (alpha isomer)	µg/kg	10	NONE	< 10	-	-		
Endosulfan II (beta isomer)	µg/kg	10	NONE	< 10	-	-		
Endosulfan sulfate	µg/kg	10	NONE	< 10	-	-		
Endrin	µg/kg	10	NONE	< 10	-	-		
Endrin aldehyde	µg/kg	10	NONE	< 10	-	-		
Endrin ketone	µg/kg	10	NONE	< 10	-	-		
Heptachlor	µg/kg	10	NONE	< 10	-	-		
Heptachlor exo-epoxide	µg/kg	10	NONE	< 10	-	-		
Hexachlorobenzene	µg/kg	10	NONE	< 10	-	-		
Hexachlorobutadiene	µg/kg	10	NONE	< 10	-	-		
Isodrin	µg/kg	10	NONE	< 10	-	-		
Methoxychlor, p,p'-	µg/kg	10	NONE	< 10	-	-		
Pentachlorobenzene	µg/kg	10	NONE	< 10	-	-		
Tecnazene	µg/kg	10	NONE	< 10	-	-		
Tetrachlorobenzene, 1,2,4,5-	µg/kg	10	NONE	< 10	-	-		
Trichlorobenzene, 1,2,3-	µg/kg	10	NONE	< 10	-	-		
Trichlorobenzene, 1,3,5-	µg/kg	10	NONE	< 10	-	-		
Trifluralin	µg/kg	10	NONE	< 10	-	-		

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Analytical Report Number: 19-54363

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1290200	1290201	1290202		
Sample Reference				ATK-P-101	ATK-P-101	ATK-P-101		
Sample Number				4	5	6		
Depth (m)				2.00-2.10	3.20-3.40	4.20-4.40		
Date Sampled				10/07/2019	10/07/2019	10/07/2019		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Organophosphorus Pesticides (OPP)								
Azinphos-ethyl	µg/kg	10	NONE	< 10	-	-		
Azinphos-methyl	µg/kg	10	NONE	< 10	-	-		
Carbophenothion	µg/kg	10	NONE	< 10	-	-		
Chlorfenvinphos (mixture of z and e isomers)	µg/kg	10	NONE	< 10	-	-		
Chlorpyrifos	µg/kg	10	NONE	< 10	-	-		
Demeton-O	µg/kg	10	NONE	< 10	-	-		
Demeton-S	µg/kg	10	NONE	< 10	-	-		
Diazinon	µg/kg	10	NONE	< 10	-	-		
Dichlorvos	µg/kg	10	NONE	< 10	-	-		
Dimethoate	µg/kg	10	NONE	< 10	-	-		
Dimethylvinphos	µg/kg	10	NONE	< 10	-	-		
Ethion	µg/kg	10	NONE	< 10	-	-		
Etrimfos	µg/kg	10	NONE	< 10	-	-		
Fenitrothion	µg/kg	10	NONE	< 10	-	-		
Fenthion	µg/kg	10	NONE	< 10	-	-		
Malathion	µg/kg	10	NONE	< 10	-	-		
Methacrifos	µg/kg	10	NONE	< 10	-	-		
Mevinphos , E-	µg/kg	10	NONE	< 10	-	-		
Mevinphos, Z-	µg/kg	10	NONE	< 10	-	-		
Parathion	µg/kg	10	NONE	< 10	-	-		
Parathion-methyl	µg/kg	10	NONE	< 10	-	-		
Phorate	µg/kg	10	NONE	< 10	-	-		
Phosalone	µg/kg	10	NONE	< 10	-	-		
Phosphamidon I	µg/kg	10	NONE	< 10	-	-		
Pirimiphos-ethyl	µg/kg	10	NONE	< 10	-	-		
Pirimiphos-methyl	µg/kg	10	NONE	< 10	-	-		
Propetamphos	µg/kg	10	NONE	< 10	-	-		
Triazophos	µg/kg	10	NONE	< 10	-	-		
Organonitrogen Pesticides (ONP)								
Pendimethalin	µg/kg	10	NONE	< 10	-	-		
Propyzamide	µg/kg	10	NONE	< 10	-	-		
Triadimefon	µg/kg	10	NONE	< 10	-	-		

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Analytical Report Number: 19-54363

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1290200	1290201	1290202		
Sample Reference				ATK-P-101	ATK-P-101	ATK-P-101		
Sample Number				4	5	6		
Depth (m)				2.00-2.10	3.20-3.40	4.20-4.40		
Date Sampled				10/07/2019	10/07/2019	10/07/2019		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Environmental Forensics								
Triazine Herbicides								
Atrazine	mg/kg	0.1	NONE	< 0.10	-	-		
Simazine	mg/kg	0.1	NONE	< 0.10	-	-		
Prometryn	mg/kg	0.1	NONE	< 0.10	-	-		
Propazine	mg/kg	0.1	NONE	< 0.10	-	-		
Terbuthylazine	mg/kg	0.1	NONE	< 0.10	-	-		
Terbutryn	mg/kg	0.1	NONE	< 0.10	-	-		
Trietazine	mg/kg	0.1	NONE	< 0.10	-	-		
Cyanazine	mg/kg	0.1	NONE	< 0.10	-	-		
Acid Herbicides								
2 4 5-T	µg/kg	20	NONE	< 20	-	-		
2 4 5-TP	µg/kg	20	NONE	< 20	-	-		
2,4-D	µg/kg	20	NONE	< 20	-	-		
2,4-DB	µg/kg	20	NONE	< 20	-	-		
Dicamba	µg/kg	20	NONE	< 20	-	-		
Dichlorprop	µg/kg	20	NONE	< 20	-	-		
Dinoseb	µg/kg	20	NONE	< 20	-	-		
MCPA	µg/kg	20	NONE	< 20	-	-		
MCPB	µg/kg	20	NONE	< 20	-	-		
MCPP (Mecoprop)	µg/kg	20	NONE	< 20	-	-		
Picloram	µg/kg	20	NONE	< 20	-	-		
Phenylurea herbicides								
Isoproturon	µg/kg	10	NONE	< 10	-	-		
Chlortoluron	µg/kg	10	NONE	< 10	-	-		
Linuron	µg/kg	10	NONE	< 10	-	-		
Diuron	µg/kg	10	NONE	< 10	-	-		
Diflubenzuron	µg/kg	10	NONE	< 10	-	-		
Flumeturon	µg/kg	10	NONE	< 10	-	-		
Siduron	µg/kg	10	NONE	< 10	-	-		
Terbuthiuron	µg/kg	10	NONE	< 10	-	-		
Thidiazuron	µg/kg	10	NONE	< 10	-	-		

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Analytical Report Number: 19-54363

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1290203	1290204	1290205		
Sample Reference				ATK-P-101	ATK-P-101	ATK-P-101		
Sample Number				4	5	6		
Depth (m)				2.00-2.10	3.20-3.40	4.20-4.40		
Date Sampled				10/07/2019	10/07/2019	10/07/2019		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	6.7	8 0	8.1		
Electrical Conductivity	µS/cm	10	ISO 17025	270	280	460		
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10		
Free Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10		
Sulphate as SO_4	mg/l	0.1	ISO 17025	78.5	96.4	172		
Sulphide	µg/l	5	NONE	< 5 0	< 5.0	< 5.0		
Chloride	mg/l	0.15	ISO 17025	13	11	15		
Ammonium as NH_4	µg/l	15	NONE	960	240	54		
Total Organic Carbon (TOC)	mg/l	0.1	NONE	9.15	4.08	4 35		
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	8.55	3.72	4 02		
Total Phenols								
Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10	< 10		
Heavy Metals / Metalloids								
Antimony (dissolved)	µg/l	1.7	ISO 17025	< 1.7	< 1.7	< 1.7		
Arsenic (dissolved)	µg/l	1.1	ISO 17025	4.6	< 1.1	2.6		
Barium (dissolved)	µg/l	0.05	ISO 17025	21	7 3	9.3		
Beryllium (dissolved)	µg/l	0.2	ISO 17025	< 0 2	< 0.2	< 0.2		
Boron (dissolved)	µg/l	10	ISO 17025	82	17	19		
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0 08		
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5 0	< 5.0	< 5.0		
Chromium (III)	µg/l	1	NONE	2.7	1 3	2.5		
Chromium (dissolved)	µg/l	0.4	ISO 17025	2.7	1 3	2.5		
Cobalt (dissolved)	µg/l	0.3	ISO 17025	0.9	0 3	1.2		
Copper (dissolved)	µg/l	0.7	ISO 17025	8.7	8.9	7.6		
Iron (dissolved)	mg/l	0.004	ISO 17025	1.2	0.12	0 21		
Lead (dissolved)	µg/l	1	ISO 17025	< 1 0	< 1.0	1.2		
Manganese (dissolved)	µg/l	0.06	ISO 17025	350	210	240		
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0 5	< 0.5	< 0.5		
Molybdenum (dissolved)	µg/l	0.4	ISO 17025	0.5	< 0.4	< 0.4		
Nickel (dissolved)	µg/l	0.3	ISO 17025	2.4	< 0.3	0.6		
Phosphorus (dissolved)	µg/l	30	NONE	390	240	250		
Selenium (dissolved)	µg/l	4	ISO 17025	< 4 0	< 4.0	< 4.0		
Tin (dissolved)	µg/l	1	ISO 17025	< 1 0	< 1.0	< 1.0		
Vanadium (dissolved)	µg/l	1.7	ISO 17025	2.1	< 1.7	< 1.7		
Zinc (dissolved)	µg/l	0.4	ISO 17025	12	0.4	0.8		
Calcium (dissolved)	mg/l	0.012	ISO 17025	24	19	29		
Magnesium (dissolved)	mg/l	0.005	ISO 17025	7.0	13	23		
Potassium (dissolved)	mg/l	0.025	ISO 17025	7.6	1.9	2.5		
Sodium (dissolved)	mg/l	0.01	ISO 17025	11	21	31		

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Analytical Report Number : 19-54363

Project / Site name: M25 Junction 28

* 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 *
1290200	ATK-P-101	4	2.00-2.10	Brown clay and loam with vegetation.
1290201	ATK-P-101	5	3.20-3.40	Brown clay with vegetation.
1290202	ATK-P-101	6	4.20-4.40	Brown clay.

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Analytical Report Number : 19-54363

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Ammonia as NH3 in soil	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	MCERTS
Ammonium as NH4 in leachate	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	NONE
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
Boron in leachate	Determination of boron in leachate. Sample acidified and followed by ICP-OES.	In-house method based on MEWAM	L039-PL	W	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
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
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
Chloride in leachate	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
Cr (III) in leachate	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Dissolved Organic Carbon in leachate	Determination of dissolved organic carbon in leachate by the measurement on a non-dispersive infrared analyser of carbon dioxide released by acidification.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L023-PL	W	NONE
EF - Phenylurea herbicides in soil by LC-MS/MS	Phenylurea herbicides by LC-MS/MS	In-house method	UK	W	NONE
Electrical conductivity at 20oC of leachate	Determination of electrical conductivity in leachate by electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031-PL	W	ISO 17025
Electrical conductivity of soil	Determination of electrical conductivity in soil by electrometric measurement.	In-house method	L031-PL	W	ISO 17025
Fraction of Organic Carbon in soil	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L009-PL	D	MCERTS
Free cyanide in leachate	Determination of free cyanide by distillation followed by colorimetry.	In-house method	L080-PL	W	ISO 17025
Free cyanide in soil	Determination of free 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
Hexavalent chromium in leachate	Determination of hexavalent chromium in leachate by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	ISO 17025

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Analytical Report Number : 19-54363

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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	MCERTS
Metals by ICP-OES in leachate	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
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
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in leachate	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 (skalar)	L080-PL	W	ISO 17025
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
Organochlorine Pesticides in soil by GC MS/MS	Detemination of Pesticides in soil by GC MS/MS	Organochlorine Pesticides in soil by GC MS/MS	L055B-PL	D	NONE
Organonitrogen Pesticides in soil by GC MS/MS	Detemination of Pesticides in soil by GC MS/MS	Organonitrogen Pesticides in soil by GC MS/MS	L055B-PL	D	NONE
Organophosphorus Pesticides in soil by GC MS/MS	Detemination of Pesticides in soil by GC MS/MS	Organophosphorus Pesticides in soil by GC MS/MS	L055B-PL	D	NONE
PCBs WHO 12 in soil	Determination of PCBs (WHO-12 Congeners) by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	NONE
pH at 20oC in leachate	Determination of pH in leachate by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	ISO 17025
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	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
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
Sulphate in leachates	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS

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Analytical Report Number : 19-54363

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphide in leachate	Determination of sulphide in leachate by ion selective electrode.	In-house method	L010-PL	W	NONE
TO - Acid Herbicides in soil by LC-MS/MS	Determination of Acid herbicides in waters by LC-MS/MS	In-house method		W	NONE
TO - Triazine pesticides in soil	Determination of Triazines by LC-MS(/MS).	In-house method based on USEPA method 615.		W	NONE
Total cyanide in leachate	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	ISO 17025
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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS
Total organic carbon in leachate	Determination of dissolved organic 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
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	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
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

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.

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Sample ID	Other_ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
ATK-P-101	4	S	19-54363	1290200	c	Free cyanide in soil	L080-PL	c
ATK-P-101	4	S	19-54363	1290200	c	Hexavalent chromium in soil	L080-PL	c
ATK-P-101	4	S	19-54363	1290200	c	Ammonia as NH3 in soil	L082-PL	c
ATK-P-101	4	S	19-54363	1290200	c	Ammoniacal Nitrogen as N in soil	L082-PL	c
ATK-P-101	4	S	19-54363	1290200	c	Ammonium as NH4 in soil	L082-PL	c
ATK-P-101	4	S	19-54363	1290200	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
ATK-P-101	4	S	19-54363	1290200	c	EF - Phenylurea herbicides in soil by LC-MS/MS	UK	c
ATK-P-101	4	S	19-54363	1290200	c	Electrical conductivity of soil	L031-PL	c
ATK-P-101	4	S	19-54363	1290200	c	Fraction of Organic Carbon in soil	L009-PL	c
ATK-P-101	4	S	19-54363	1290200	c	Monohydric phenols in soil	L080-PL	c
ATK-P-101	4	S	19-54363	1290200	c	Organic matter (Automated) in soil	L009-PL	c
ATK-P-101	4	S	19-54363	1290200	c	Organochlorine Pesticides in soil by GC MS/MS	L055B-PL	c
ATK-P-101	4	S	19-54363	1290200	c	Organonitrogen Pesticides in soil by GC MS/MS	L055B-PL	c
ATK-P-101	4	S	19-54363	1290200	c	Organophosphorus Pesticides in soil by GC MS/MS	L055B-PL	c
ATK-P-101	4	S	19-54363	1290200	c	PCBs WHO 12 in soil	L027-PL	c
ATK-P-101	4	S	19-54363	1290200	c	Semi-volatile organic compounds in soil	L064-PL	c
ATK-P-101	4	S	19-54363	1290200	c	Speciated EPA-16 PAHs in soil	L064-PL	c
ATK-P-101	4	S	19-54363	1290200	c	TO - Acid Herbicides in soil by LC-MS/MS		c
ATK-P-101	4	S	19-54363	1290200	c	TO - Triazine pesticides in soil		c
ATK-P-101	4	S	19-54363	1290200	c	TPHCWG (Soil)	L088/76-PL	c
ATK-P-101	4	S	19-54363	1290200	c	Total cyanide in soil	L080-PL	c
ATK-P-101	4	S	19-54363	1290200	c	Total organic carbon (Automated) in soil	L009-PL	c
ATK-P-101	4	S	19-54363	1290200	c	Volatile organic compounds in soil	L073B-PL	c
ATK-P-101	4	S	19-54363	1290200	c	pH in soil (automated)	L099-PL	c
ATK-P-101	5	S	19-54363	1290201	c	Free cyanide in soil	L080-PL	c
ATK-P-101	5	S	19-54363	1290201	c	Hexavalent chromium in soil	L080-PL	c
ATK-P-101	5	S	19-54363	1290201	c	Ammonia as NH3 in soil	L082-PL	c
ATK-P-101	5	S	19-54363	1290201	c	Ammoniacal Nitrogen as N in soil	L082-PL	c
ATK-P-101	5	S	19-54363	1290201	c	Ammonium as NH4 in soil	L082-PL	c
ATK-P-101	5	S	19-54363	1290201	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
ATK-P-101	5	S	19-54363	1290201	c	Electrical conductivity of soil	L031-PL	c
ATK-P-101	5	S	19-54363	1290201	c	Fraction of Organic Carbon in soil	L009-PL	c
ATK-P-101	5	S	19-54363	1290201	c	Monohydric phenols in soil	L080-PL	c
ATK-P-101	5	S	19-54363	1290201	c	Organic matter (Automated) in soil	L009-PL	c
ATK-P-101	5	S	19-54363	1290201	c	Speciated EPA-16 PAHs in soil	L064-PL	c
ATK-P-101	5	S	19-54363	1290201	c	TPHCWG (Soil)	L088/76-PL	c
ATK-P-101	5	S	19-54363	1290201	c	Total cyanide in soil	L080-PL	c
ATK-P-101	5	S	19-54363	1290201	c	Total organic carbon (Automated) in soil	L009-PL	c
ATK-P-101	5	S	19-54363	1290201	c	pH in soil (automated)	L099-PL	c
ATK-P-101	6	S	19-54363	1290202	c	Free cyanide in soil	L080-PL	c
ATK-P-101	6	S	19-54363	1290202	c	Hexavalent chromium in soil	L080-PL	c
ATK-P-101	6	S	19-54363	1290202	c	Ammonia as NH3 in soil	L082-PL	c
ATK-P-101	6	S	19-54363	1290202	c	Ammoniacal Nitrogen as N in soil	L082-PL	c
ATK-P-101	6	S	19-54363	1290202	c	Ammonium as NH4 in soil	L082-PL	c
ATK-P-101	6	S	19-54363	1290202	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
ATK-P-101	6	S	19-54363	1290202	c	Electrical conductivity of soil	L031-PL	c
ATK-P-101	6	S	19-54363	1290202	c	Fraction of Organic Carbon in soil	L009-PL	c
ATK-P-101	6	S	19-54363	1290202	c	Monohydric phenols in soil	L080-PL	c
ATK-P-101	6	S	19-54363	1290202	c	Organic matter (Automated) in soil	L009-PL	c
ATK-P-101	6	S	19-54363	1290202	c	Semi-volatile organic compounds in soil	L064-PL	c
ATK-P-101	6	S	19-54363	1290202	c	Speciated EPA-16 PAHs in soil	L064-PL	c

ATK-P-101	6	S	19-54363	1290202	c	TPHCWG (Soil)	L088/76-PL	c
ATK-P-101	6	S	19-54363	1290202	c	Total cyanide in soil	L080-PL	c
ATK-P-101	6	S	19-54363	1290202	c	Total organic carbon (Automated) in soil	L009-PL	c
ATK-P-101	6	S	19-54363	1290202	c	Volatile organic compounds in soil	L073B-PL	c
ATK-P-101	6	S	19-54363	1290202	c	pH in soil (automated)	L099-PL	c

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Analytical Report Number : 19-54367

Replaces Analytical Report Number : 19-54367, issue no. 2

Project / Site name:	M25 Junction 28	**Samples received on:**	10/07/2019
Your job number:	35403	**Samples instructed on:**	14/08/2019
Your order number:	35403-DO	**Analysis completed by:**	30/08/2019
Report Issue Number:	3	**Report issued on:**	03/09/2019
Samples Analysed:	3 leachate samples - 3 soil samples		

Signed: [redacted]

[redacted]
Head of Customer Services
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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Analytical Report Number: 19-54367

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1290219	1290220	1290221		
Sample Reference				ATK-P-101	ATK-P-101	ATK-P-101		
Sample Number				1	2	3		
Depth (m)				0.20	0 50	1.00		
Date Sampled				09/07/2019	09/07/2019	09/07/2019		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	70	58	46		
Moisture Content	%	N/A	NONE	8.8	13	17		
Total mass of sample received	kg	0.001	NONE	2.0	2 0	2.0		
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	Chrysotile	-		
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Detected	Not-detected		
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	< 0.001	-		
Asbestos Quantification Total	%	0.001	ISO 17025	-	< 0.001	-		
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	7.9	8 0	8.0		
Electrical Conductivity	µS/cm	10	ISO 17025	2500	2600	2500		
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1		
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1		
Total Sulphate as SO_4	mg/kg	50	MCERTS	21000	34000	32000		
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	4.0	3.9	4.6		
Ammonia as NH_3	mg/kg	0 5	MCERTS	< 0 5	0.7	1.4		
Ammonium as NH_4	mg/kg	0 5	MCERTS	< 0 5	0.7	1.5		
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	0 011	0.014	0.015		
Total Organic Carbon (TOC)	%	0.1	MCERTS	1.1	1.4	1.5		
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0		
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Phenanthrene	mg/kg	0.05	MCERTS	0.37	0.66	1.0		
Anthracene	mg/kg	0.05	MCERTS	< 0.05	0.19	0 25		
Fluoranthene	mg/kg	0.05	MCERTS	1.1	2.1	2.7		
Pyrene	mg/kg	0.05	MCERTS	1.1	1.9	2.5		
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.61	1 3	1.5		
Chrysene	mg/kg	0.05	MCERTS	0.54	0.88	1.1		
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.74	1 5	1.5		
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.37	0.62	0 82		
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.58	1 2	1.4		
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.36	0.65	0.74		
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.46	0.81	0 84		
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0 8	MCERTS	6.16	11.8	14.4		

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Analytical Report Number: 19-54367

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1290219	1290220	1290221		
Sample Reference				ATK-P-101	ATK-P-101	ATK-P-101		
Sample Number				1	2	3		
Depth (m)				0.20	0 50	1.00		
Date Sampled				09/07/2019	09/07/2019	09/07/2019		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	10	13	11		
Barium (aqua regia extractable)	mg/kg	1	MCERTS	140	170	210		
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.64	0.71	0 80		
Boron (water soluble)	mg/kg	0 2	MCERTS	3.6	3.7	3.4		
Cadmium (aqua regia extractable)	mg/kg	0 2	MCERTS	0.2	0.4	0.3		
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4 0	< 4.0	< 4.0		
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	21	27	31		
Copper (aqua regia extractable)	mg/kg	1	MCERTS	35	65	62		
Lead (aqua regia extractable)	mg/kg	1	MCERTS	140	160	100		
Mercury (aqua regia extractable)	mg/kg	0 3	MCERTS	< 0 3	< 0.3	0.5		
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	14	18	22		
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0		
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	35	40	41		
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	140	310	400		
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0		
Toluene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0		
Ethylbenzene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0		
p & m-xylene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0		
o-xylene	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0		
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0		
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001		
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001		
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001		
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1 0	< 1.0	2.2		
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2 0	< 2.0	8.5		
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8 0	< 8.0	40		
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	55	42	180		
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	63	45	230		
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001		
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001		
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0 001	< 0.001	< 0.001		
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1 0	< 1.0	< 1.0		
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	10	2 6	6.3		
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	23	14	21		
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	76	78	92		
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	110	94	120		

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Analytical Report Number: 19-54367

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1290219	1290220	1290221		
Sample Reference				ATK-P-101	ATK-P-101	ATK-P-101		
Sample Number				1	2	3		
Depth (m)				0.20	0 50	1.00		
Date Sampled				09/07/2019	09/07/2019	09/07/2019		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	-	< 1.0	< 1.0		
Chloroethane	µg/kg	1	NONE	-	< 1.0	< 1.0		
Bromomethane	µg/kg	1	ISO 17025	-	< 1.0	< 1.0		
Vinyl Chloride	µg/kg	1	NONE	-	< 1.0	< 1.0		
Trichlorofluoromethane	µg/kg	1	NONE	-	< 1.0	< 1.0		
1,1-Dichloroethene	µg/kg	1	NONE	-	< 1.0	< 1.0		
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	< 1.0	< 1.0		
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	< 1.0	< 1.0		
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0	< 1.0		
1,1-Dichloroethane	µg/kg	1	MCERTS	-	< 1.0	< 1.0		
2,2-Dichloropropane	µg/kg	1	MCERTS	-	< 1.0	< 1.0		
Trichloromethane	µg/kg	1	MCERTS	-	< 1.0	< 1.0		
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	< 1.0	< 1.0		
1,2-Dichloroethane	µg/kg	1	MCERTS	-	< 1.0	< 1.0		
1,1-Dichloropropene	µg/kg	1	MCERTS	-	< 1.0	< 1.0		
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	< 1.0	< 1.0		
Benzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0		
Tetrachloromethane	µg/kg	1	MCERTS	-	< 1.0	< 1.0		
1,2-Dichloropropane	µg/kg	1	MCERTS	-	< 1.0	< 1.0		
Trichloroethene	µg/kg	1	MCERTS	-	< 1.0	< 1.0		
Dibromomethane	µg/kg	1	MCERTS	-	< 1.0	< 1.0		
Bromodichloromethane	µg/kg	1	MCERTS	-	< 1.0	< 1.0		
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	< 1.0	< 1.0		
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	< 1.0	< 1.0		
Toluene	µg/kg	1	MCERTS	-	< 1.0	< 1.0		
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	< 1.0	< 1.0		
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	< 1.0	< 1.0		
Dibromochloromethane	µg/kg	1	ISO 17025	-	< 1.0	< 1.0		
Tetrachloroethene	µg/kg	1	NONE	-	< 1.0	< 1.0		
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	< 1.0	< 1.0		
Chlorobenzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0		
1,1,1,2-Tetrachloroethane	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		
Styrene	µg/kg	1	MCERTS	-	< 1.0	< 1.0		
Tribromomethane	µg/kg	1	NONE	-	< 1.0	< 1.0		
o-Xylene	µg/kg	1	MCERTS	-	< 1.0	< 1.0		
1 1 2 2-Tetrachloroethane	µg/kg	1	MCERTS	-	< 1.0	< 1.0		
Isopropylbenzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0		
Bromobenzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0		
n-Propylbenzene	µg/kg	1	ISO 17025	-	< 1.0	< 1.0		
2-Chlorotoluene	µg/kg	1	MCERTS	-	< 1.0	< 1.0		
4-Chlorotoluene	µg/kg	1	MCERTS	-	< 1.0	< 1.0		
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	< 1.0	< 1.0		
tert-Butylbenzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0		
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	< 1.0	< 1.0		
sec-Butylbenzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0		
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	< 1.0	< 1.0		
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	< 1.0	< 1.0		
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0		
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0		
Butylbenzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0		
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	< 1.0	< 1.0		
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0		
Hexachlorobutadiene	µg/kg	1	MCERTS	-	< 1.0	< 1.0		
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	< 1.0	< 1.0		

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Analytical Report Number: 19-54367

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1290219	1290220	1290221		
Sample Reference				ATK-P-101	ATK-P-101	ATK-P-101		
Sample Number				1	2	3		
Depth (m)				0.20	0 50	1.00		
Date Sampled				09/07/2019	09/07/2019	09/07/2019		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	-	< 0.1	< 0.1		
Phenol	mg/kg	0 2	ISO 17025	-	< 0.2	< 0.2		
2-Chlorophenol	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1		
Bis(2-chloroethyl)ether	mg/kg	0 2	MCERTS	-	< 0.2	< 0.2		
1,3-Dichlorobenzene	mg/kg	0 2	MCERTS	-	< 0.2	< 0.2		
1 2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1		
1 4-Dichlorobenzene	mg/kg	0 2	MCERTS	-	< 0.2	< 0.2		
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1		
2-Methylphenol	mg/kg	0 3	MCERTS	-	< 0.3	< 0.3		
Hexachloroethane	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05		
Nitrobenzene	mg/kg	0 3	MCERTS	-	< 0.3	< 0.3		
4-Methylphenol	mg/kg	0 2	NONE	-	< 0.2	< 0.2		
Isophorone	mg/kg	0 2	MCERTS	-	< 0.2	< 0.2		
2-Nitrophenol	mg/kg	0 3	MCERTS	-	< 0.3	< 0.3		
2 4-Dimethylphenol	mg/kg	0 3	MCERTS	-	< 0.3	< 0.3		
Bis(2-chloroethoxy)methane	mg/kg	0 3	MCERTS	-	< 0.3	< 0.3		
1,2,4-Trichlorobenzene	mg/kg	0 3	MCERTS	-	< 0.3	< 0.3		
Naphthalene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05		
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	< 0.3	< 0.3		
4-Chloroaniline	mg/kg	0.1	NONE	-	< 0.1	< 0.1		
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1		
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	< 0.1	< 0.1		
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1		
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	< 0.2	< 0.2		
2-Methylnaphthalene	mg/kg	0.1	NONE	-	< 0.1	< 0.1		
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1		
Dimethylphthalate	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1		
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1		
Acenaphthylene	mg/kg	0.05	MCERTS	-	< 0 05	< 0.05		
Acenaphthene	mg/kg	0.05	MCERTS	-	< 0 05	< 0.05		
2 4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	< 0.2	< 0.2		
Dibenzofuran	mg/kg	0.2	MCERTS	-	< 0.2	< 0.2		
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	< 0.3	< 0.3		
Diethyl phthalate	mg/kg	0.2	MCERTS	-	< 0.2	< 0.2		
4-Nitroaniline	mg/kg	0.2	MCERTS	-	< 0.2	< 0.2		
Fluorene	mg/kg	0.05	MCERTS	-	< 0 05	< 0.05		
Azobenzene	mg/kg	0.3	MCERTS	-	< 0.3	< 0.3		
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	< 0.2	< 0.2		
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	< 0.3	< 0.3		
Phenanthrene	mg/kg	0.05	MCERTS	-	0.66	1.0		
Anthracene	mg/kg	0.05	MCERTS	-	0.19	0 25		
Carbazole	mg/kg	0.3	MCERTS	-	< 0.3	< 0.3		
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	< 0.2	< 0.2		
Anthraquinone	mg/kg	0.3	MCERTS	-	< 0.3	< 0.3		
Fluoranthene	mg/kg	0.05	MCERTS	-	2.1	2.7		
Pyrene	mg/kg	0.05	MCERTS	-	1.9	2.5		
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	< 0.3	< 0.3		
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	1.3	1.5		
Chrysene	mg/kg	0.05	MCERTS	-	0.88	1.1		
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	1.5	1.5		
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	0.62	0 82		
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	1.2	1.4		
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	0.65	0.74		
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	< 0.05	< 0 05		
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	0.81	0 84		

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Analytical Report Number: 19-54367

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1290219	1290220	1290221		
Sample Reference				ATK-P-101	ATK-P-101	ATK-P-101		
Sample Number				1	2	3		
Depth (m)				0.20	0 50	1.00		
Date Sampled				09/07/2019	09/07/2019	09/07/2019		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs								
PCB Congener 077	mg/kg	0.001	NONE	-	< 0.001	< 0.001		
PCB Congener 081	mg/kg	0.001	NONE	-	< 0.001	< 0.001		
PCB Congener 105	mg/kg	0.001	NONE	-	< 0.001	< 0.001		
PCB Congener 114	mg/kg	0.001	NONE	-	< 0.001	< 0.001		
PCB Congener 118	mg/kg	0.001	NONE	-	< 0.001	< 0.001		
PCB Congener 123	mg/kg	0.001	NONE	-	< 0.001	< 0.001		
PCB Congener 126	mg/kg	0.001	NONE	-	< 0.001	< 0.001		
PCB Congener 156	mg/kg	0.001	NONE	-	< 0.001	< 0.001		
PCB Congener 157	mg/kg	0.001	NONE	-	< 0.001	< 0.001		
PCB Congener 167	mg/kg	0.001	NONE	-	< 0.001	< 0.001		
PCB Congener 169	mg/kg	0.001	NONE	-	< 0.001	< 0.001		
PCB Congener 189	mg/kg	0.001	NONE	-	< 0.001	< 0.001		
Total PCBs	mg/kg	0.012	NONE	-	< 0.012	< 0.012		
Organochlorine Pesticides (OCP)								
Aldrin	ug/kg	10	NONE	-	< 10	< 10		
BHC-alpha (benzene hexachloride)	ug/kg	10	NONE	-	< 10	< 10		
BHC-beta	ug/kg	10	NONE	-	< 10	< 10		
BHC-delta	ug/kg	10	NONE	-	< 10	< 10		
BHC-gamma (Lindane, gamma HCH)	ug/kg	10	NONE	-	< 10	< 10		
Chlordane-cis	ug/kg	10	NONE	-	< 10	< 10		
Chlordane-trans	ug/kg	10	NONE	-	< 10	< 10		
Chlorothalonil	ug/kg	10	NONE	-	< 10	< 10		
DDD-o,p'	ug/kg	1	NONE	-	1 5	2.1		
DDD-p,p'	ug/kg	1	NONE	-	6 3	8.5		
DDE-o, p'	ug/kg	1	NONE	-	< 1.0	< 1.0		
DDE-p,p'	ug/kg	1	NONE	-	2 2	2.3		
DDT-o,p'	ug/kg	1	NONE	-	< 1.0	3.6		
DDT-p,p'	ug/kg	1	NONE	-	< 1.0	14		
Dichlorobenzonitrile, 2,6-	ug/kg	10	NONE	-	< 10	< 10		
Dieldrin	ug/kg	10	NONE	-	22	20		
Endosulfan I (alpha isomer)	ug/kg	10	NONE	-	< 10	< 10		
Endosulfan II (beta isomer)	ug/kg	10	NONE	-	< 10	< 10		
Endosulfan sulfate	ug/kg	10	NONE	-	< 10	< 10		
Endrin	ug/kg	10	NONE	-	< 10	< 10		
Endrin aldehyde	ug/kg	10	NONE	-	< 10	< 10		
Endrin ketone	ug/kg	10	NONE	-	< 10	< 10		
Heptachlor	ug/kg	10	NONE	-	< 10	< 10		
Heptachlor exo-epoxide	ug/kg	10	NONE	-	< 10	< 10		
Hexachlorobenzene	ug/kg	10	NONE	-	< 10	< 10		
Hexachlorobutadiene	ug/kg	10	NONE	-	< 10	< 10		
Isodrin	ug/kg	10	NONE	-	< 10	< 10		
Methoxychlor, p,p'-	ug/kg	10	NONE	-	< 10	< 10		
Pentachlorobenzene	ug/kg	10	NONE	-	< 10	< 10		
Tecnazene	ug/kg	10	NONE	-	< 10	< 10		
Tetrachlorobenzene, 1,2,4,5-	ug/kg	10	NONE	-	< 10	< 10		
Trichlorobenzene, 1,2,3-	ug/kg	10	NONE	-	< 10	< 10		
Trichlorobenzene, 1,3,5-	ug/kg	10	NONE	-	< 10	< 10		
Trifluralin	ug/kg	10	NONE	-	< 10	< 10		

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Analytical Report Number: 19-54367

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1290219	1290220	1290221		
Sample Reference				ATK-P-101	ATK-P-101	ATK-P-101		
Sample Number				1	2	3		
Depth (m)				0.20	0 50	1.00		
Date Sampled				09/07/2019	09/07/2019	09/07/2019		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Organophosphorus Pesticides (OPP)								
Azinphos-ethyl	ug/kg	10	NONE	-	< 10	< 10		
Azinphos-methyl	ug/kg	10	NONE	-	< 10	< 10		
Carbophenothion	ug/kg	10	NONE	-	< 10	< 10		
Chlorfenvinphos (mixture of z and e isomers)	ug/kg	10	NONE	-	< 10	< 10		
Chlorpyrifos	ug/kg	10	NONE	-	< 10	< 10		
Demeton-O	ug/kg	10	NONE	-	< 10	< 10		
Demeton-S	ug/kg	10	NONE	-	< 10	< 10		
Diazinon	ug/kg	10	NONE	-	< 10	< 10		
Dichlorvos	ug/kg	10	NONE	-	< 10	< 10		
Dimethoate	ug/kg	10	NONE	-	< 10	< 10		
Dimethylvinphos	ug/kg	10	NONE	-	< 10	< 10		
Ethion	ug/kg	10	NONE	-	< 10	< 10		
Etrimfos	ug/kg	10	NONE	-	< 10	< 10		
Fenitrothion	ug/kg	10	NONE	-	< 10	< 10		
Fenthion	ug/kg	10	NONE	-	< 10	< 10		
Malathion	ug/kg	10	NONE	-	< 10	< 10		
Methacrifos	ug/kg	10	NONE	-	< 10	< 10		
Mevinphos , E-	ug/kg	10	NONE	-	< 10	< 10		
Mevinphos, Z-	ug/kg	10	NONE	-	< 10	< 10		
Parathion	ug/kg	10	NONE	-	< 10	< 10		
Parathion-methyl	ug/kg	10	NONE	-	< 10	< 10		
Phorate	ug/kg	10	NONE	-	< 10	< 10		
Phosalone	ug/kg	10	NONE	-	< 10	< 10		
Phosphamidon I	ug/kg	10	NONE	-	< 10	< 10		
Pirimiphos-ethyl	ug/kg	10	NONE	-	< 10	< 10		
Pirimiphos-methyl	ug/kg	10	NONE	-	< 10	< 10		
Propetamphos	ug/kg	10	NONE	-	< 10	< 10		
Triazophos	ug/kg	10	NONE	-	< 10	< 10		
Organonitrogen Pesticides (ONP)								
Pendimethalin	ug/kg	10	NONE	-	< 10	< 10		
Propyzamide	ug/kg	10	NONE	-	< 10	< 10		
Triadimefon	ug/kg	10	NONE	-	< 10	< 10		

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Analytical Report Number: 19-54367

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1290219	1290220	1290221		
Sample Reference				ATK-P-101	ATK-P-101	ATK-P-101		
Sample Number				1	2	3		
Depth (m)				0.20	0 50	1.00		
Date Sampled				09/07/2019	09/07/2019	09/07/2019		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Environmental Forensics								
Triazine Herbicides								
Atrazine	mg/kg	0.1	NONE	-	< 0.10	< 0.10		
Simazine	mg/kg	0.1	NONE	-	< 0.10	< 0.10		
Prometryn	mg/kg	0.1	NONE	-	< 0.10	< 0.10		
Propazine	mg/kg	0.1	NONE	-	< 0.10	< 0.10		
Terbuthylazine	mg/kg	0.1	NONE	-	< 0.10	< 0.10		
Terbutryn	mg/kg	0.1	NONE	-	0.28	0.49		
Trietazine	mg/kg	0.1	NONE	-	< 0.10	< 0.10		
Cyanazine	mg/kg	0.1	NONE	-	< 0.10	< 0.10		
Acid Herbicides								
2 4 5-T	ug/kg	20	NONE	-	< 20	< 20		
2 4 5-TP	ug/kg	20	NONE	-	< 20	< 20		
2,4-D	ug/kg	20	NONE	-	< 20	< 20		
2,4-DB	ug/kg	20	NONE	-	< 20	< 20		
Dicamba	ug/kg	20	NONE	-	< 20	< 20		
Dichlorprop	ug/kg	20	NONE	-	< 20	< 20		
Dinoseb	ug/kg	20	NONE	-	< 20	< 20		
MCPA	ug/kg	20	NONE	-	< 20	< 20		
MCPB	ug/kg	20	NONE	-	< 20	< 20		
MCPP (Mecoprop)	ug/kg	20	NONE	-	< 20	< 20		
Picloram	ug/kg	20	NONE	-	< 20	< 20		
Phenylurea herbicides								
Isoproturon	ug/kg	10	NONE	-	< 10	< 10		
Chlortoluron	ug/kg	10	NONE	-	< 10	< 10		
Linuron	ug/kg	10	NONE	-	< 10	< 10		
Diuron	ug/kg	10	NONE	-	14	31		
Diflubenzuron	ug/kg	10	NONE	-	< 10	< 10		
Flumeturon	ug/kg	10	NONE	-	< 10	< 10		
Siduron	ug/kg	10	NONE	-	< 10	< 10		
Terbuthiuron	ug/kg	10	NONE	-	< 10	< 10		
Thidiazuron	ug/kg	10	NONE	-	< 10	< 10		

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Project / Site name: M25 Junction 28
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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 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
1290220	ATK-P-101	0.50	132	Bitumen	**Chrysotile**	< 0.001	**< 0.001**

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

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Analytical Report Number: 19-54367

Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1290222	1290223	1290224		
Sample Reference				ATK-P-101	ATK-P-101	ATK-P-101		
Sample Number				1	2	3		
Depth (m)				0.20	0 50	1.00		
Date Sampled				09/07/2019	09/07/2019	09/07/2019		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	7.9	7.7	7.7		
Electrical Conductivity	µS/cm	10	ISO 17025	2300	2300	2300		
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10		
Free Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10		
Sulphate as SO_4	mg/l	0.1	ISO 17025	1860	1760	1910		
Sulphide	µg/l	5	NONE	< 5 0	< 5.0	< 5.0		
Chloride	mg/l	0.15	ISO 17025	9.3	9 8	10		
Ammonium as NH_4	µg/l	15	NONE	38	46	34		
Total Organic Carbon (TOC)	mg/l	0.1	NONE	7.03	9.11	7 36		
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	6.98	8.87	7 38		
Total Phenols								
Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10	< 10		
Heavy Metals / Metalloids								
Antimony (dissolved)	µg/l	1.7	ISO 17025	< 1.7	< 1.7	9.1		
Arsenic (dissolved)	µg/l	1.1	ISO 17025	7.7	9.9	8.7		
Barium (dissolved)	µg/l	0.05	ISO 17025	59	73	67		
Beryllium (dissolved)	µg/l	0.2	ISO 17025	< 0 2	< 0.2	< 0.2		
Boron (dissolved)	µg/l	10	ISO 17025	170	250	260		
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0 08		
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5 0	< 5.0	< 5.0		
Chromium (III)	µg/l	1	NONE	4.4	3 2	3.2		
Chromium (dissolved)	µg/l	0.4	ISO 17025	4.4	3 2	3.2		
Cobalt (dissolved)	µg/l	0.3	ISO 17025	0.8	0.7	0.7		
Copper (dissolved)	µg/l	0.7	ISO 17025	9.1	9 6	11		
Iron (dissolved)	mg/l	0.004	ISO 17025	0.15	0.30	0 29		
Lead (dissolved)	µg/l	1	ISO 17025	< 1 0	< 1.0	3.4		
Manganese (dissolved)	µg/l	0.06	ISO 17025	160	190	160		
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0 5	< 0.5	< 0.5		
Molybdenum (dissolved)	µg/l	0.4	ISO 17025	6.8	9.7	14		
Nickel (dissolved)	µg/l	0.3	ISO 17025	2.2	3 5	3.4		
Phosphorus (dissolved)	µg/l	30	NONE	200	190	210		
Selenium (dissolved)	µg/l	4	ISO 17025	< 4 0	< 4.0	< 4.0		
Tin (dissolved)	µg/l	1	ISO 17025	< 1 0	< 1.0	< 1.0		
Vanadium (dissolved)	µg/l	1.7	ISO 17025	3.6	3 8	< 1.7		
Zinc (dissolved)	µg/l	0.4	ISO 17025	6.0	9.7	16		
Calcium (dissolved)	mg/l	0.012	ISO 17025	660	650	720		
Magnesium (dissolved)	mg/l	0.005	ISO 17025	12	11	13		
Potassium (dissolved)	mg/l	0.025	ISO 17025	13	15	16		
Sodium (dissolved)	mg/l	0.01	ISO 17025	12	14	15		

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* 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 *
1290219	ATK-P-101	1	0.20	Brown clay with brick and stones.
1290220	ATK-P-101	2	0.50	Brown clay with stones and gravel
1290221	ATK-P-101	3	1.00	Brown clay with stones and brick.

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Analytical Report Number : 19-54367

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Ammonia as NH3 in soil	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	MCERTS
Ammonium as NH4 in leachate	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	NONE
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
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
Boron in leachate	Determination of boron in leachate. Sample acidified and followed by ICP-OES.	In-house method based on MEWAM	L039-PL	W	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
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
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
Chloride in leachate	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
Cr (III) in leachate	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Dissolved Organic Carbon in leachate	Determination of dissolved organic carbon in leachate by the measurement on a non-dispersive infrared analyser of carbon dioxide released by acidification.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L023-PL	W	NONE
EF - Phenylurea herbicides in soil by LC-MS/MS	Phenylurea herbicides by LC-MS/MS	In-house method	UK	W	NONE
Electrical conductivity at 20oC of leachate	Determination of electrical conductivity in leachate by electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031-PL	W	ISO 17025
Electrical conductivity of soil	Determination of electrical conductivity in soil by electrometric measurement.	In-house method	L031-PL	W	ISO 17025
Fraction of Organic Carbon in soil	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L009-PL	D	MCERTS
Free cyanide in leachate	Determination of free cyanide by distillation followed by colorimetry.	In-house method	L080-PL	W	ISO 17025
Free cyanide in soil	Determination of free 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

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Analytical Report Number : 19-54367

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Hexavalent chromium in leachate	Determination of hexavalent chromium in leachate by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	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	MCERTS
Metals by ICP-OES in leachate	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
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
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in leachate	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 (skalar)	L080-PL	W	ISO 17025
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
Organochlorine Pesticides in soil by GC MS/MS	Detemination of Pesticides in soil by GC MS/MS	Organochlorine Pesticides in soil by GC MS/MS	L055B-PL	D	NONE
Organonitrogen Pesticides in soil by GC MS/MS	Detemination of Pesticides in soil by GC MS/MS	Organonitrogen Pesticides in soil by GC MS/MS	L055B-PL	D	NONE
Organophosphorus Pesticides in soil by GC MS/MS	Detemination of Pesticides in soil by GC MS/MS	Organophosphorus Pesticides in soil by GC MS/MS	L055B-PL	D	NONE
PCBs WHO 12 in soil	Determination of PCBs (WHO-12 Congeners) by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	NONE
pH at 20oC in leachate	Determination of pH in leachate by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	ISO 17025
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	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
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
Sulphate in leachates	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025

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Analytical Report Number : 19-54367

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
Sulphide in leachate	Determination of sulphide in leachate by ion selective electrode.	In-house method	L010-PL	W	NONE
TO - Acid Herbicides in soil by LC-MS/MS	Determination of Acid herbicides in waters by LC-MS/MS	In-house method		W	NONE
TO - Triazine pesticides in soil	Determination of Triazines by LC-MS(/MS).	In-house method based on USEPA method 615.		W	NONE
Total cyanide in leachate	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	ISO 17025
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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS
Total organic carbon in leachate	Determination of dissolved organic 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
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	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
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

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.

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Sample ID	Other_ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
ATK-P-101	1	S	19-54367	1290219	c	Free cyanide in soil	L080-PL	c
ATK-P-101	1	S	19-54367	1290219	c	Hexavalent chromium in soil	L080-PL	c
ATK-P-101	1	S	19-54367	1290219	c	Ammonia as NH3 in soil	L082-PL	c
ATK-P-101	1	S	19-54367	1290219	c	Ammoniacal Nitrogen as N in soil	L082-PL	c
ATK-P-101	1	S	19-54367	1290219	c	Ammonium as NH4 in soil	L082-PL	c
ATK-P-101	1	S	19-54367	1290219	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
ATK-P-101	1	S	19-54367	1290219	c	Electrical conductivity of soil	L031-PL	c
ATK-P-101	1	S	19-54367	1290219	c	Fraction of Organic Carbon in soil	L009-PL	c
ATK-P-101	1	S	19-54367	1290219	c	Monohydric phenols in soil	L080-PL	c
ATK-P-101	1	S	19-54367	1290219	c	Organic matter (Automated) in soil	L009-PL	c
ATK-P-101	1	S	19-54367	1290219	c	Speciated EPA-16 PAHs in soil	L064-PL	c
ATK-P-101	1	S	19-54367	1290219	c	TPHCWG (Soil)	L088/76-PL	c
ATK-P-101	1	S	19-54367	1290219	c	Total cyanide in soil	L080-PL	c
ATK-P-101	1	S	19-54367	1290219	c	Total organic carbon (Automated) in soil	L009-PL	c
ATK-P-101	1	S	19-54367	1290219	c	pH in soil (automated)	L099-PL	c
ATK-P-101	2	S	19-54367	1290220	c	Free cyanide in soil	L080-PL	c
ATK-P-101	2	S	19-54367	1290220	c	Hexavalent chromium in soil	L080-PL	c
ATK-P-101	2	S	19-54367	1290220	c	Ammonia as NH3 in soil	L082-PL	c
ATK-P-101	2	S	19-54367	1290220	c	Ammoniacal Nitrogen as N in soil	L082-PL	c
ATK-P-101	2	S	19-54367	1290220	c	Ammonium as NH4 in soil	L082-PL	c
ATK-P-101	2	S	19-54367	1290220	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
ATK-P-101	2	S	19-54367	1290220	c	EF - Phenylurea herbicides in soil by LC-MS/MS	UK	c
ATK-P-101	2	S	19-54367	1290220	c	Electrical conductivity of soil	L031-PL	c
ATK-P-101	2	S	19-54367	1290220	c	Fraction of Organic Carbon in soil	L009-PL	c
ATK-P-101	2	S	19-54367	1290220	c	Monohydric phenols in soil	L080-PL	c
ATK-P-101	2	S	19-54367	1290220	c	Organic matter (Automated) in soil	L009-PL	c
ATK-P-101	2	S	19-54367	1290220	c	Organochlorine Pesticides in soil by GC MS/MS	L055B-PL	c
ATK-P-101	2	S	19-54367	1290220	c	Organonitrogen Pesticides in soil by GC MS/MS	L055B-PL	c
ATK-P-101	2	S	19-54367	1290220	c	Organophosphorus Pesticides in soil by GC MS/MS	L055B-PL	c
ATK-P-101	2	S	19-54367	1290220	c	PCBs WHO 12 in soil	L027-PL	c
ATK-P-101	2	S	19-54367	1290220	c	Semi-volatile organic compounds in soil	L064-PL	c
ATK-P-101	2	S	19-54367	1290220	c	Speciated EPA-16 PAHs in soil	L064-PL	c
ATK-P-101	2	S	19-54367	1290220	c	TO - Acid Herbicides in soil by LC-MS/MS		c
ATK-P-101	2	S	19-54367	1290220	c	TO - Triazine pesticides in soil		c
ATK-P-101	2	S	19-54367	1290220	c	TPHCWG (Soil)	L088/76-PL	c
ATK-P-101	2	S	19-54367	1290220	c	Total cyanide in soil	L080-PL	c
ATK-P-101	2	S	19-54367	1290220	c	Total organic carbon (Automated) in soil	L009-PL	c
ATK-P-101	2	S	19-54367	1290220	c	Volatile organic compounds in soil	L073B-PL	c
ATK-P-101	2	S	19-54367	1290220	c	pH in soil (automated)	L099-PL	c
ATK-P-101	3	S	19-54367	1290221	c	Free cyanide in soil	L080-PL	c
ATK-P-101	3	S	19-54367	1290221	c	Hexavalent chromium in soil	L080-PL	c
ATK-P-101	3	S	19-54367	1290221	c	Ammonia as NH3 in soil	L082-PL	c
ATK-P-101	3	S	19-54367	1290221	c	Ammoniacal Nitrogen as N in soil	L082-PL	c
ATK-P-101	3	S	19-54367	1290221	c	Ammonium as NH4 in soil	L082-PL	c
ATK-P-101	3	S	19-54367	1290221	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
ATK-P-101	3	S	19-54367	1290221	c	EF - Phenylurea herbicides in soil by LC-MS/MS	UK	c
ATK-P-101	3	S	19-54367	1290221	c	Electrical conductivity of soil	L031-PL	c
ATK-P-101	3	S	19-54367	1290221	c	Fraction of Organic Carbon in soil	L009-PL	c
ATK-P-101	3	S	19-54367	1290221	c	Monohydric phenols in soil	L080-PL	c
ATK-P-101	3	S	19-54367	1290221	c	Organic matter (Automated) in soil	L009-PL	c
ATK-P-101	3	S	19-54367	1290221	c	Organochlorine Pesticides in soil by GC MS/MS	L055B-PL	c

ATK-P-101	3	S	19-54367	1290221	c	Organonitrogen Pesticides in soil by GC MS/MS	L055B-PL	c
ATK-P-101	3	S	19-54367	1290221	c	Organophosphorus Pesticides in soil by GC MS/MS	L055B-PL	c
ATK-P-101	3	S	19-54367	1290221	c	PCBs WHO 12 in soil	L027-PL	c
ATK-P-101	3	S	19-54367	1290221	c	Semi-volatile organic compounds in soil	L064-PL	c
ATK-P-101	3	S	19-54367	1290221	c	Speciated EPA-16 PAHs in soil	L064-PL	c
ATK-P-101	3	S	19-54367	1290221	c	TO - Acid Herbicides in soil by LC-MS/MS		c
ATK-P-101	3	S	19-54367	1290221	c	TO - Triazine pesticides in soil		c
ATK-P-101	3	S	19-54367	1290221	c	TPHCWG (Soil)	L088/76-PL	c
ATK-P-101	3	S	19-54367	1290221	c	Total cyanide in soil	L080-PL	c
ATK-P-101	3	S	19-54367	1290221	c	Total organic carbon (Automated) in soil	L009-PL	c
ATK-P-101	3	S	19-54367	1290221	c	Volatile organic compounds in soil	L073B-PL	c
ATK-P-101	3	S	19-54367	1290221	c	pH in soil (automated)	L099-PL	c

Key: a - No sampling date b - Incorrect container
c - Holding time d - Headspace e - Temperature

[redacted]
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Analytical Report Number : 19-54383

Replaces Analytical Report Number : 19-54383, issue no. 1

Project / Site name:	M25 Junction 28	**Samples received on:**	11/07/2019
Your job number:	35403	**Samples instructed on:**	14/08/2019
Your order number:	35403-DO	**Analysis completed by:**	28/08/2019
Report Issue Number:	2	**Report issued on:**	29/08/2019
Samples Analysed:	4 leachate samples - 8 soil samples		

Signed: [redacted]

[redacted]
Senior Quality Specialist
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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Analytical Report Number: 19-54383

Project / Site name: M25 Junction 28
Your Order No: 35403-DO

Lab Sample Number				1290296	1290297	1290298	1290299	1290300
Sample Reference				ATK-P-007	ATK-P-007	ATK-P-007	ATK-P-007	ATK-P-007
Sample Number				1	1	2	2	3
Depth (m)				0.20-0.30	0.00-0.30	0.40-0.50	0 30-1.00	1.00-1.80
Date Sampled				10/07/2019	10/07/2019	10/07/2019	10/07/2019	10/07/2019
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	< 0.1
Moisture Content	%	N/A	NONE	11	7.4	18	20	12
Total mass of sample received	kg	0.001	NONE	1.8	2.0	2.0	2.0	2.0
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	7.5	7.6	7.9	7.7	7.2
Electrical Conductivity	µS/cm	10	ISO 17025	1700	350	1200	1900	850
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Total Sulphate as SO_4	mg/kg	50	MCERTS	4000	530	1600	5300	1800
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	2.1	0.18	0.48	1.7	0.42
Ammonia as NH_3	mg/kg	0.5	MCERTS	< 0.5	< 0.5	< 0.5	< 0.5	19
Ammonium as NH_4	mg/kg	0.5	MCERTS	< 0.5	< 0.5	< 0.5	< 0.5	20
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	0.0041	0.010	0.0014	0.0021	0.0095
Total Organic Carbon (TOC)	%	0.1	MCERTS	0.4	1.0	0.1	0.2	0.9
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	< 0.05	< 0.05	< 0 05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	< 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	< 0.05	1.0	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	0.24	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	2.7	< 0.05	< 0.05	0.30
Pyrene	mg/kg	0.05	MCERTS	< 0.05	2.5	< 0.05	< 0.05	0.31
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	1.4	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	1.1	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	1.6	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	0.74	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	1.4	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.77	< 0.05	< 0.05	< 0.05
Dibenz(a h)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.20	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	0.94	< 0.05	< 0.05	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	14.6	< 0.80	< 0.80	< 0.80

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Analytical Report Number: 19-54383

Project / Site name: M25 Junction 28
Your Order No: 35403-DO

Lab Sample Number				1290296	1290297	1290298	1290299	1290300
Sample Reference				ATK-P-007	ATK-P-007	ATK-P-007	ATK-P-007	ATK-P-007
Sample Number				1	1	2	2	3
Depth (m)				0.20-0.30	0.00-0.30	0.40-0.50	0 30-1.00	1.00-1.80
Date Sampled				10/07/2019	10/07/2019	10/07/2019	10/07/2019	10/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	16	11	10	12	14
Barium (aqua regia extractable)	mg/kg	1	MCERTS	68	67	63	45	73
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.2	0.94	1.1	1.1	1.0
Boron (water soluble)	mg/kg	0.2	MCERTS	1.5	0.4	0.4	1.5	1.0
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	53	40	53	49	46
Copper (aqua regia extractable)	mg/kg	1	MCERTS	21	22	22	21	19
Lead (aqua regia extractable)	mg/kg	1	MCERTS	12	89	11	11	24
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	37	24	37	36	27
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	77	59	76	71	68
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	62	85	61	58	60
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
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

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Analytical Report Number: 19-54383

Project / Site name: M25 Junction 28
Your Order No: 35403-DO

Lab Sample Number				1290296	1290297	1290298	1290299	1290300
Sample Reference				ATK-P-007	ATK-P-007	ATK-P-007	ATK-P-007	ATK-P-007
Sample Number				1	1	2	2	3
Depth (m)				0.20-0.30	0.00-0.30	0.40-0.50	0 30-1.00	1.00-1.80
Date Sampled				10/07/2019	10/07/2019	10/07/2019	10/07/2019	10/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0 001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	8.4	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	17	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	72	< 10	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	98	< 10	< 10	< 10

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 19-54383

Project / Site name: M25 Junction 28
Your Order No: 35403-DO

Lab Sample Number				1290296	1290297	1290298	1290299	1290300
Sample Reference				ATK-P-007	ATK-P-007	ATK-P-007	ATK-P-007	ATK-P-007
Sample Number				1	1	2	2	3
Depth (m)				0.20-0.30	0.00-0.30	0.40-0.50	0 30-1.00	1.00-1.80
Date Sampled				10/07/2019	10/07/2019	10/07/2019	10/07/2019	10/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,2-dichloroethene	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
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	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
Styrene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	µg/kg	1	NONE	< 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
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
n-Propylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1 3 5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
tert-Butylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
sec-Butylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1 3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1 2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

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Analytical Report Number: 19-54383

Project / Site name: M25 Junction 28
Your Order No: 35403-DO

Lab Sample Number				1290296	1290297	1290298	1290299	1290300
Sample Reference				ATK-P-007	ATK-P-007	ATK-P-007	ATK-P-007	ATK-P-007
Sample Number				1	1	2	2	3
Depth (m)				0.20-0.30	0.00-0.30	0.40-0.50	0 30-1.00	1.00-1.80
Date Sampled				10/07/2019	10/07/2019	10/07/2019	10/07/2019	10/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	mg/kg	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
1 2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1 4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Isophorone	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
2-Nitrophenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
2 4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	< 0.05
2 4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2 4 6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2 4 5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2 6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	< 0.05
2 4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05	< 0.05	< 0.05
Azobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	1.0	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	0.24	< 0.05	< 0.05	< 0.05
Carbazole	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Anthraquinone	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	2.7	< 0.05	< 0.05	0.30
Pyrene	mg/kg	0.05	MCERTS	< 0.05	2.5	< 0.05	< 0.05	0.31
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	1.4	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	1.1	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	1.6	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	0.74	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	1.4	< 0.05	< 0.05	< 0.05
Indeno(1 2 3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.77	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.20	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	0.94	< 0.05	< 0.05	< 0.05

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 19-54383

Project / Site name: M25 Junction 28
Your Order No: 35403-DO

Lab Sample Number				1290296	1290297	1290298	1290299	1290300
Sample Reference				ATK-P-007	ATK-P-007	ATK-P-007	ATK-P-007	ATK-P-007
Sample Number				1	1	2	2	3
Depth (m)				0.20-0.30	0.00-0.30	0.40-0.50	0 30-1.00	1.00-1.80
Date Sampled				10/07/2019	10/07/2019	10/07/2019	10/07/2019	10/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs								
PCB Congener 077	mg/kg	0.001	NONE	< 0.001	< 0.001	-	-	-
PCB Congener 081	mg/kg	0.001	NONE	< 0.001	< 0.001	-	-	-
PCB Congener 105	mg/kg	0.001	NONE	< 0.001	< 0.001	-	-	-
PCB Congener 114	mg/kg	0.001	NONE	< 0.001	< 0.001	-	-	-
PCB Congener 118	mg/kg	0.001	NONE	< 0.001	< 0.001	-	-	-
PCB Congener 123	mg/kg	0.001	NONE	< 0.001	< 0.001	-	-	-
PCB Congener 126	mg/kg	0.001	NONE	< 0.001	< 0.001	-	-	-
PCB Congener 156	mg/kg	0.001	NONE	< 0.001	< 0.001	-	-	-
PCB Congener 157	mg/kg	0.001	NONE	< 0.001	< 0.001	-	-	-
PCB Congener 167	mg/kg	0.001	NONE	< 0.001	< 0.001	-	-	-
PCB Congener 169	mg/kg	0.001	NONE	< 0.001	< 0.001	-	-	-
PCB Congener 189	mg/kg	0.001	NONE	< 0.001	< 0.001	-	-	-
Total PCBs	mg/kg	0.012	NONE	< 0.012	< 0.012	-	-	-
Organochlorine Pesticides (OCP)								
Aldrin	ug/kg	10	NONE	< 10	< 10	-	-	-
BHC-alpha (benzene hexachloride)	ug/kg	10	NONE	< 10	< 10	-	-	-
BHC-beta	ug/kg	10	NONE	< 10	< 10	-	-	-
BHC-delta	ug/kg	10	NONE	< 10	< 10	-	-	-
BHC-gamma (Lindane gamma HCH)	ug/kg	10	NONE	< 10	< 10	-	-	-
Chlordane-cis	ug/kg	10	NONE	< 10	< 10	-	-	-
Chlordane-trans	ug/kg	10	NONE	< 10	< 10	-	-	-
Chlorothalonil	ug/kg	10	NONE	< 10	< 10	-	-	-
DDD-o p'	ug/kg	1	NONE	< 1.0	< 1.0	-	-	-
DDD-p,p'	ug/kg	1	NONE	< 1.0	< 1.0	-	-	-
DDE-o, p'	ug/kg	1	NONE	< 1.0	< 1.0	-	-	-
DDE-p p'	ug/kg	1	NONE	< 1.0	< 1.0	-	-	-
DDT-o p'	ug/kg	1	NONE	< 1.0	< 1.0	-	-	-
DDT-p,p'	ug/kg	1	NONE	< 1.0	< 1.0	-	-	-
Dichlorobenzonitrile, 2,6-	ug/kg	10	NONE	< 10	< 10	-	-	-
Dieldrin	ug/kg	10	NONE	< 10	< 10	-	-	-
Endosulfan I (alpha isomer)	ug/kg	10	NONE	< 10	< 10	-	-	-
Endosulfan II (beta isomer)	ug/kg	10	NONE	< 10	< 10	-	-	-
Endosulfan sulfate	ug/kg	10	NONE	< 10	< 10	-	-	-
Endrin	ug/kg	10	NONE	< 10	< 10	-	-	-
Endrin aldehyde	ug/kg	10	NONE	< 10	< 10	-	-	-
Endrin ketone	ug/kg	10	NONE	< 10	< 10	-	-	-
Heptachlor	ug/kg	10	NONE	< 10	< 10	-	-	-
Heptachlor exo-epoxide	ug/kg	10	NONE	< 10	< 10	-	-	-
Hexachlorobenzene	ug/kg	10	NONE	< 10	< 10	-	-	-
Hexachlorobutadiene	ug/kg	10	NONE	< 10	< 10	-	-	-
Isodrin	ug/kg	10	NONE	< 10	< 10	-	-	-
Methoxychlor, p,p'-	ug/kg	10	NONE	< 10	< 10	-	-	-
Pentachlorobenzene	ug/kg	10	NONE	< 10	< 10	-	-	-
Tecnazene	ug/kg	10	NONE	< 10	< 10	-	-	-
Tetrachlorobenzene, 1,2,4,5-	ug/kg	10	NONE	< 10	< 10	-	-	-
Trichlorobenzene, 1,2,3-	ug/kg	10	NONE	< 10	< 10	-	-	-
Trichlorobenzene 1 3 5-	ug/kg	10	NONE	< 10	< 10	-	-	-
Trifluralin	ug/kg	10	NONE	< 10	< 10	-	-	-
Organophosphorus Pesticides (OPP)								
Azinphos-ethyl	ug/kg	10	NONE	< 10	< 10	-	-	-
Azinphos-methyl	ug/kg	10	NONE	< 10	< 10	-	-	-
Carbophenothion	ug/kg	10	NONE	< 10	< 10	-	-	-
Chlorfenvinphos (mixture of z and e isomers)	ug/kg	10	NONE	< 10	< 10	-	-	-
Chlorpyrifos	ug/kg	10	NONE	< 10	< 10	-	-	-
Demeton-O	ug/kg	10	NONE	< 10	< 10	-	-	-
Demeton-S	ug/kg	10	NONE	< 10	< 10	-	-	-
Diazinon	ug/kg	10	NONE	< 10	< 10	-	-	-

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Analytical Report Number: 19-54383

Project / Site name: M25 Junction 28
Your Order No: 35403-DO

Lab Sample Number				1290296	1290297	1290298	1290299	1290300
Sample Reference				ATK-P-007	ATK-P-007	ATK-P-007	ATK-P-007	ATK-P-007
Sample Number				1	1	2	2	3
Depth (m)				0.20-0.30	0.00-0.30	0.40-0.50	0 30-1.00	1.00-1.80
Date Sampled				10/07/2019	10/07/2019	10/07/2019	10/07/2019	10/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Dichlorvos	ug/kg	10	NONE	< 10	< 10	-	-	-
Dimethoate	ug/kg	10	NONE	< 10	< 10	-	-	-
Dimethylvinphos	ug/kg	10	NONE	< 10	< 10	-	-	-
Ethion	ug/kg	10	NONE	< 10	< 10	-	-	-
Etrimfos	ug/kg	10	NONE	< 10	< 10	-	-	-
Fenitrothion	ug/kg	10	NONE	< 10	< 10	-	-	-
Fenthion	ug/kg	10	NONE	< 10	< 10	-	-	-
Malathion	ug/kg	10	NONE	< 10	< 10	-	-	-
Methacrifos	ug/kg	10	NONE	< 10	< 10	-	-	-
Mevinphos , E-	ug/kg	10	NONE	< 10	< 10	-	-	-
Mevinphos, Z-	ug/kg	10	NONE	< 10	< 10	-	-	-
Parathion	ug/kg	10	NONE	< 10	< 10	-	-	-
Parathion-methyl	ug/kg	10	NONE	< 10	< 10	-	-	-
Phorate	ug/kg	10	NONE	< 10	< 10	-	-	-
Phosalone	ug/kg	10	NONE	< 10	< 10	-	-	-
Phosphamidon I	ug/kg	10	NONE	< 10	< 10	-	-	-
Pirimiphos-ethyl	ug/kg	10	NONE	< 10	< 10	-	-	-
Pirimiphos-methyl	ug/kg	10	NONE	< 10	< 10	-	-	-
Propetamphos	ug/kg	10	NONE	< 10	< 10	-	-	-
Triazophos	ug/kg	10	NONE	< 10	< 10	-	-	-
Organonitrogen Pesticides (ONP)								
Pendimethalin	ug/kg	10	NONE	< 10	< 10	-	-	-
Propyzamide	ug/kg	10	NONE	< 10	< 10	-	-	-
Triadimefon	ug/kg	10	NONE	< 10	< 10	-	-	-
Environmental Forensics								
Triazine Herbicides								
Atrazine	mg/kg	0.1	NONE	< 0.10	< 0.10	-	-	-
Simazine	mg/kg	0.1	NONE	< 0.10	< 0.10	-	-	-
Prometryn	mg/kg	0.1	NONE	< 0.10	< 0.10	-	-	-
Propazine	mg/kg	0.1	NONE	< 0.10	< 0.10	-	-	-
Terbuthylazine	mg/kg	0.1	NONE	< 0.10	< 0.10	-	-	-
Terbutryn	mg/kg	0.1	NONE	< 0.10	< 0.10	-	-	-
Trietazine	mg/kg	0.1	NONE	< 0.10	< 0.10	-	-	-
Cyanazine	mg/kg	0.1	NONE	< 0.10	< 0.10	-	-	-
Acid Herbicides								
2 4 5-T	ug/kg	20	NONE	< 20	< 20	-	-	-
2 4 5-TP	ug/kg	20	NONE	< 20	< 20	-	-	-
2,4-D	ug/kg	20	NONE	< 20	< 20	-	-	-
2,4-DB	ug/kg	20	NONE	< 20	< 20	-	-	-
Dicamba	ug/kg	20	NONE	< 20	< 20	-	-	-
Dichlorprop	ug/kg	20	NONE	< 20	< 20	-	-	-
Dinoseb	ug/kg	20	NONE	< 20	< 20	-	-	-
MCPA	ug/kg	20	NONE	< 20	< 20	-	-	-
MCPB	ug/kg	20	NONE	< 20	< 20	-	-	-
MCPP (Mecoprop)	ug/kg	20	NONE	< 20	< 20	-	-	-
Picloram	ug/kg	20	NONE	< 20	< 20	-	-	-
Phenylurea herbicides								
Isoproturon	ug/kg	10	NONE	< 10	< 10	-	-	-
Chlortoluron	ug/kg	10	NONE	< 10	< 10	-	-	-
Linuron	ug/kg	10	NONE	< 10	< 10	-	-	-

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Analytical Report Number: 19-54383

Project / Site name: M25 Junction 28
Your Order No: 35403-DO

Lab Sample Number				1290296	1290297	1290298	1290299	1290300
Sample Reference				ATK-P-007	ATK-P-007	ATK-P-007	ATK-P-007	ATK-P-007
Sample Number				1	1	2	2	3
Depth (m)				0.20-0.30	0.00-0.30	0.40-0.50	0 30-1.00	1.00-1.80
Date Sampled				10/07/2019	10/07/2019	10/07/2019	10/07/2019	10/07/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Diuron	ug/kg	10	NONE	< 10	< 10	-	-	-
Diflubenzuron	ug/kg	10	NONE	< 10	< 10	-	-	-
Flumeturon	ug/kg	10	NONE	< 10	< 10	-	-	-
Siduron	ug/kg	10	NONE	< 10	< 10	-	-	-
Terbuthiuron	ug/kg	10	NONE	< 10	< 10	-	-	-
Thidiazuron	ug/kg	10	NONE	< 10	< 10	-	-	-

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Analytical Report Number: 19-54383

Project / Site name: M25 Junction 28
Your Order No: 35403-DO

Lab Sample Number				1290301	1290302	1290303		
Sample Reference				ATK-P-007	ATK-P-007	ATK-P-007		
Sample Number				3	4	4		
Depth (m)				1.20-1.40	1.80-3.00	2.50-3.00		
Date Sampled				10/07/2019	10/07/2019	10/07/2019		
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	< 0.1		
Moisture Content	%	N/A	NONE	16	13	15		
Total mass of sample received	kg	0.001	NONE	2.0	2.0	2.0		
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected		
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	7.2	7.4	8.2		
Electrical Conductivity	µS/cm	10	ISO 17025	790	930	650		
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1		
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1		
Total Sulphate as SO_4	mg/kg	50	MCERTS	1100	1800	820		
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0 27	0.74	0.19		
Ammonia as NH_3	mg/kg	0.5	MCERTS	11	3.6	3.2		
Ammonium as NH_4	mg/kg	0.5	MCERTS	12	3.8	3.4		
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	0.0030	0.0027	0.0012		
Total Organic Carbon (TOC)	%	0.1	MCERTS	0.3	0.3	0.1		
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Dibenz(a h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0 05		
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	< 0 80		

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Analytical Report Number: 19-54383

Project / Site name: M25 Junction 28
Your Order No: 35403-DO

Lab Sample Number				1290301	1290302	1290303		
Sample Reference				ATK-P-007	ATK-P-007	ATK-P-007		
Sample Number				3	4	4		
Depth (m)				1.20-1.40	1.80-3.00	2.50-3.00		
Date Sampled				10/07/2019	10/07/2019	10/07/2019		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	14	13	32		
Barium (aqua regia extractable)	mg/kg	1	MCERTS	53	38	44		
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.3	0.98	2.6		
Boron (water soluble)	mg/kg	0.2	MCERTS	0.5	0.3	0.4		
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2		
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0		
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	55	43	47		
Copper (aqua regia extractable)	mg/kg	1	MCERTS	17	13	21		
Lead (aqua regia extractable)	mg/kg	1	MCERTS	12	11	11		
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3		
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	27	26	63		
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	72	67	77		
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	53	48	78		
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		

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Analytical Report Number: 19-54383

Project / Site name: M25 Junction 28
Your Order No: 35403-DO

Lab Sample Number				1290301	1290302	1290303		
Sample Reference				ATK-P-007	ATK-P-007	ATK-P-007		
Sample Number				3	4	4		
Depth (m)				1.20-1.40	1.80-3.00	2.50-3.00		
Date Sampled				10/07/2019	10/07/2019	10/07/2019		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001		
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001		
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001		
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0		
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	14	< 8.0	< 8.0		
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	72	< 8.0	< 8.0		
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	86	< 10	< 10		
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001		
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001		
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001		
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0		
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	< 10	< 10		
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	< 10	< 10		
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10		

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Analytical Report Number: 19-54383

Project / Site name: M25 Junction 28
Your Order No: 35403-DO

Lab Sample Number				1290301	1290302	1290303		
Sample Reference				ATK-P-007	ATK-P-007	ATK-P-007		
Sample Number				3	4	4		
Depth (m)				1.20-1.40	1.80-3.00	2.50-3.00		
Date Sampled				10/07/2019	10/07/2019	10/07/2019		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	-		
Chloroethane	µg/kg	1	NONE	< 1.0	< 1.0	-		
Bromomethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	-		
Vinyl Chloride	µg/kg	1	NONE	< 1.0	< 1.0	-		
Trichlorofluoromethane	µg/kg	1	NONE	< 1.0	< 1.0	-		
1,1-Dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	-		
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	-		
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1.0	< 1.0	-		
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	-		
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	-		
2,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	< 1.0	-		
Trichloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	-		
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	-		
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	-		
1,1-Dichloropropene	µg/kg	1	MCERTS	< 1.0	< 1.0	-		
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	-		
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	-		
Tetrachloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	-		
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	< 1.0	-		
Trichloroethene	µg/kg	1	MCERTS	< 1.0	< 1.0	-		
Dibromomethane	µg/kg	1	MCERTS	< 1.0	< 1.0	-		
Bromodichloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	-		
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	< 1.0	-		
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	< 1.0	-		
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	-		
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	-		
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1.0	< 1.0	-		
Dibromochloromethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	-		
Tetrachloroethene	µg/kg	1	NONE	< 1.0	< 1.0	-		
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	-		
Chlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	-		
1,1,1,2-Tetrachloroethane	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	-		
Styrene	µg/kg	1	MCERTS	< 1.0	< 1.0	-		
Tribromomethane	µg/kg	1	NONE	< 1.0	< 1.0	-		
o-Xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	-		
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	-		
Isopropylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	-		
Bromobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	-		
n-Propylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	-		
2-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	< 1.0	-		
4-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	< 1.0	-		
1 3 5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	-		
tert-Butylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	-		
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	-		
sec-Butylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	-		
1 3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	-		
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1.0	< 1.0	-		
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	-		
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	-		
Butylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	-		
1 2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1.0	< 1.0	-		
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	-		
Hexachlorobutadiene	µg/kg	1	MCERTS	< 1.0	< 1.0	-		
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	-		

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Analytical Report Number: 19-54383

Project / Site name: M25 Junction 28
Your Order No: 35403-DO

Lab Sample Number				1290301	1290302	1290303		
Sample Reference				ATK-P-007	ATK-P-007	ATK-P-007		
Sample Number				3	4	4		
Depth (m)				1.20-1.40	1.80-3.00	2.50-3.00		
Date Sampled				10/07/2019	10/07/2019	10/07/2019		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	< 0.1	< 0.1	-		
Phenol	mg/kg	0.2	ISO 17025	< 0.2	< 0.2	-		
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-		
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2	-		
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	-		
1 2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-		
1 4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	-		
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-		
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	-		
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-		
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	-		
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	< 0.2	-		
Isophorone	mg/kg	0.2	MCERTS	< 0.2	< 0.2	-		
2-Nitrophenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	-		
2 4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	-		
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3	< 0.3	-		
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	-		
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-		
2 4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	-		
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1	-		
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-		
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1	-		
2 4 6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-		
2 4 5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0.2	< 0.2	-		
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	< 0.1	-		
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-		
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-		
2 6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-		
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-		
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-		
2 4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	-		
Dibenzofuran	mg/kg	0.2	MCERTS	< 0.2	< 0.2	-		
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0.3	< 0.3	-		
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2	< 0.2	-		
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0.2	< 0.2	-		
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-		
Azobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	-		
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2	-		
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	-		
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-		
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-		
Carbazole	mg/kg	0.3	MCERTS	< 0.3	< 0.3	-		
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0.2	< 0.2	-		
Anthraquinone	mg/kg	0.3	MCERTS	< 0.3	< 0.3	-		
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-		
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-		
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0.3	< 0.3	-		
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-		
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-		
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-		
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-		
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-		
Indeno(1 2 3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-		
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-		
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-		

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Analytical Report Number: 19-54383

Project / Site name: M25 Junction 28
Your Order No: 35403-DO

Lab Sample Number				1290301	1290302	1290303		
Sample Reference				ATK-P-007	ATK-P-007	ATK-P-007		
Sample Number				3	4	4		
Depth (m)				1.20-1.40	1.80-3.00	2.50-3.00		
Date Sampled				10/07/2019	10/07/2019	10/07/2019		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs								
PCB Congener 077	mg/kg	0.001	NONE	< 0.001	-	-		
PCB Congener 081	mg/kg	0.001	NONE	< 0.001	-	-		
PCB Congener 105	mg/kg	0.001	NONE	< 0.001	-	-		
PCB Congener 114	mg/kg	0.001	NONE	< 0.001	-	-		
PCB Congener 118	mg/kg	0.001	NONE	< 0.001	-	-		
PCB Congener 123	mg/kg	0.001	NONE	< 0.001	-	-		
PCB Congener 126	mg/kg	0.001	NONE	< 0.001	-	-		
PCB Congener 156	mg/kg	0.001	NONE	< 0.001	-	-		
PCB Congener 157	mg/kg	0.001	NONE	< 0.001	-	-		
PCB Congener 167	mg/kg	0.001	NONE	< 0.001	-	-		
PCB Congener 169	mg/kg	0.001	NONE	< 0.001	-	-		
PCB Congener 189	mg/kg	0.001	NONE	< 0.001	-	-		
Total PCBs	mg/kg	0.012	NONE	< 0.012	-	-		
Organochlorine Pesticides (OCP)								
Aldrin	ug/kg	10	NONE	< 10	-	-		
BHC-alpha (benzene hexachloride)	ug/kg	10	NONE	< 10	-	-		
BHC-beta	ug/kg	10	NONE	< 10	-	-		
BHC-delta	ug/kg	10	NONE	< 10	-	-		
BHC-gamma (Lindane gamma HCH)	ug/kg	10	NONE	< 10	-	-		
Chlordane-cis	ug/kg	10	NONE	< 10	-	-		
Chlordane-trans	ug/kg	10	NONE	< 10	-	-		
Chlorothalonil	ug/kg	10	NONE	< 10	-	-		
DDD-o p'	ug/kg	1	NONE	< 1.0	-	-		
DDD-p,p'	ug/kg	1	NONE	< 1.0	-	-		
DDE-o, p'	ug/kg	1	NONE	< 1.0	-	-		
DDE-p p'	ug/kg	1	NONE	< 1.0	-	-		
DDT-o p'	ug/kg	1	NONE	< 1.0	-	-		
DDT-p,p'	ug/kg	1	NONE	< 1.0	-	-		
Dichlorobenzonitrile, 2,6-	ug/kg	10	NONE	< 10	-	-		
Dieldrin	ug/kg	10	NONE	< 10	-	-		
Endosulfan I (alpha isomer)	ug/kg	10	NONE	< 10	-	-		
Endosulfan II (beta isomer)	ug/kg	10	NONE	< 10	-	-		
Endosulfan sulfate	ug/kg	10	NONE	< 10	-	-		
Endrin	ug/kg	10	NONE	< 10	-	-		
Endrin aldehyde	ug/kg	10	NONE	< 10	-	-		
Endrin ketone	ug/kg	10	NONE	< 10	-	-		
Heptachlor	ug/kg	10	NONE	< 10	-	-		
Heptachlor exo-epoxide	ug/kg	10	NONE	< 10	-	-		
Hexachlorobenzene	ug/kg	10	NONE	< 10	-	-		
Hexachlorobutadiene	ug/kg	10	NONE	< 10	-	-		
Isodrin	ug/kg	10	NONE	< 10	-	-		
Methoxychlor, p,p'-	ug/kg	10	NONE	< 10	-	-		
Pentachlorobenzene	ug/kg	10	NONE	< 10	-	-		
Tecnazene	ug/kg	10	NONE	< 10	-	-		
Tetrachlorobenzene, 1,2,4,5-	ug/kg	10	NONE	< 10	-	-		
Trichlorobenzene, 1,2,3-	ug/kg	10	NONE	< 10	-	-		
Trichlorobenzene 1 3 5-	ug/kg	10	NONE	< 10	-	-		
Trifluralin	ug/kg	10	NONE	< 10	-	-		
Organophosphorus Pesticides (OPP)								
Azinphos-ethyl	ug/kg	10	NONE	< 10	-	-		
Azinphos-methyl	ug/kg	10	NONE	< 10	-	-		
Carbophenothion	ug/kg	10	NONE	< 10	-	-		
Chlorfenvinphos (mixture of z and e isomers)	ug/kg	10	NONE	< 10	-	-		
Chlorpyrifos	ug/kg	10	NONE	< 10	-	-		
Demeton-O	ug/kg	10	NONE	< 10	-	-		
Demeton-S	ug/kg	10	NONE	< 10	-	-		
Diazinon	ug/kg	10	NONE	< 10	-	-		

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Analytical Report Number: 19-54383

Project / Site name: M25 Junction 28
Your Order No: 35403-DO

Lab Sample Number				1290301	1290302	1290303		
Sample Reference				ATK-P-007	ATK-P-007	ATK-P-007		
Sample Number				3	4	4		
Depth (m)				1.20-1.40	1.80-3.00	2.50-3.00		
Date Sampled				10/07/2019	10/07/2019	10/07/2019		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Dichlorvos	ug/kg	10	NONE	< 10	-	-		
Dimethoate	ug/kg	10	NONE	< 10	-	-		
Dimethylvinphos	ug/kg	10	NONE	< 10	-	-		
Ethion	ug/kg	10	NONE	< 10	-	-		
Etrimfos	ug/kg	10	NONE	< 10	-	-		
Fenitrothion	ug/kg	10	NONE	< 10	-	-		
Fenthion	ug/kg	10	NONE	< 10	-	-		
Malathion	ug/kg	10	NONE	< 10	-	-		
Methacrifos	ug/kg	10	NONE	< 10	-	-		
Mevinphos , E-	ug/kg	10	NONE	< 10	-	-		
Mevinphos, Z-	ug/kg	10	NONE	< 10	-	-		
Parathion	ug/kg	10	NONE	< 10	-	-		
Parathion-methyl	ug/kg	10	NONE	< 10	-	-		
Phorate	ug/kg	10	NONE	< 10	-	-		
Phosalone	ug/kg	10	NONE	< 10	-	-		
Phosphamidon I	ug/kg	10	NONE	< 10	-	-		
Pirimiphos-ethyl	ug/kg	10	NONE	< 10	-	-		
Pirimiphos-methyl	ug/kg	10	NONE	< 10	-	-		
Propetamphos	ug/kg	10	NONE	< 10	-	-		
Triazophos	ug/kg	10	NONE	< 10	-	-		
Organonitrogen Pesticides (ONP)								
Pendimethalin	ug/kg	10	NONE	< 10	-	-		
Propyzamide	ug/kg	10	NONE	< 10	-	-		
Triadimefon	ug/kg	10	NONE	< 10	-	-		
Environmental Forensics								
Triazine Herbicides								
Atrazine	mg/kg	0.1	NONE	< 0.10	-	-		
Simazine	mg/kg	0.1	NONE	< 0.10	-	-		
Prometryn	mg/kg	0.1	NONE	< 0.10	-	-		
Propazine	mg/kg	0.1	NONE	< 0.10	-	-		
Terbuthylazine	mg/kg	0.1	NONE	< 0.10	-	-		
Terbutryn	mg/kg	0.1	NONE	< 0.10	-	-		
Trietazine	mg/kg	0.1	NONE	< 0.10	-	-		
Cyanazine	mg/kg	0.1	NONE	< 0.10	-	-		
Acid Herbicides								
2 4 5-T	ug/kg	20	NONE	< 20	-	-		
2 4 5-TP	ug/kg	20	NONE	< 20	-	-		
2,4-D	ug/kg	20	NONE	< 20	-	-		
2,4-DB	ug/kg	20	NONE	< 20	-	-		
Dicamba	ug/kg	20	NONE	< 20	-	-		
Dichlorprop	ug/kg	20	NONE	< 20	-	-		
Dinoseb	ug/kg	20	NONE	< 20	-	-		
MCPA	ug/kg	20	NONE	< 20	-	-		
MCPB	ug/kg	20	NONE	< 20	-	-		
MCPP (Mecoprop)	ug/kg	20	NONE	< 20	-	-		
Picloram	ug/kg	20	NONE	< 20	-	-		
Phenylurea herbicides								
Isoproturon	ug/kg	10	NONE	< 10	-	-		
Chlortoluron	ug/kg	10	NONE	< 10	-	-		
Linuron	ug/kg	10	NONE	< 10	-	-		

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Analytical Report Number: 19-54383

Project / Site name: M25 Junction 28
Your Order No: 35403-DO

Lab Sample Number				1290301	1290302	1290303		
Sample Reference				ATK-P-007	ATK-P-007	ATK-P-007		
Sample Number				3	4	4		
Depth (m)				1.20-1.40	1.80-3.00	2.50-3.00		
Date Sampled				10/07/2019	10/07/2019	10/07/2019		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Diuron	ug/kg	10	NONE	< 10	-	-		
Diflubenzuron	ug/kg	10	NONE	< 10	-	-		
Flumeturon	ug/kg	10	NONE	< 10	-	-		
Siduron	ug/kg	10	NONE	< 10	-	-		
Terbuthiuron	ug/kg	10	NONE	< 10	-	-		
Thidiazuron	ug/kg	10	NONE	< 10	-	-		

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Project / Site name: M25 Junction 28

Your Order No: 35403-DO

Lab Sample Number				1290304	1290305	1290306	1290307	
Sample Reference				ATK-P-007	ATK-P-007	ATK-P-007	ATK-P-007	
Sample Number				1	2	3	4	
Depth (m)				0 20-0.30	0.40-0.50	1.20-1.40	2.50-3.00	
Date Sampled				10/07/2019	10/07/2019	10/07/2019	10/07/2019	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	8.2	7.8	7.6	7.8	
Electrical Conductivity	µS/cm	10	ISO 17025	150	370	120	200	
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	
Free Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	
Sulphate as SO_4	mg/l	0.1	ISO 17025	38.6	149	27.3	51.4	
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	
Chloride	mg/l	0.15	ISO 17025	4.0	4.5	9.4	5.8	
Ammonium as NH_4	µg/l	15	NONE	45	52	710	360	
Total Organic Carbon (TOC)	mg/l	0.1	NONE	4.06	3.37	14.1	5.43	
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	3.82	3.05	13.7	5.05	
Total Phenols								
Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	
Heavy Metals / Metalloids								
Antimony (dissolved)	µg/l	1.7	ISO 17025	< 1.7	< 1.7	< 1.7	< 1.7	
Arsenic (dissolved)	µg/l	1.1	ISO 17025	< 1.1	2.2	5.1	6.8	
Barium (dissolved)	µg/l	0 05	ISO 17025	8.1	21	10	8.6	
Beryllium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2	
Boron (dissolved)	µg/l	10	ISO 17025	27	26	20	13	
Cadmium (dissolved)	µg/l	0 08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08	
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	
Chromium (III)	µg/l	1	NONE	3.5	1.9	3.1	2.0	
Chromium (dissolved)	µg/l	0.4	ISO 17025	3.5	1.9	3.1	2.0	
Cobalt (dissolved)	µg/l	0.3	ISO 17025	0.8	0.6	0.6	< 0.3	
Copper (dissolved)	µg/l	0.7	ISO 17025	8.3	6.8	13	6.9	
Iron (dissolved)	mg/l	0.004	ISO 17025	0.85	0.94	1.6	0.21	
Lead (dissolved)	µg/l	1	ISO 17025	< 1.0	4.2	2.3	< 1.0	
Manganese (dissolved)	µg/l	0 06	ISO 17025	180	230	250	230	
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	
Molybdenum (dissolved)	µg/l	0.4	ISO 17025	< 0.4	0.6	1.0	< 0.4	
Nickel (dissolved)	µg/l	0.3	ISO 17025	0.5	2.4	2.1	4.7	
Phosphorus (dissolved)	µg/l	30	NONE	290	200	650	290	
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	
Tin (dissolved)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
Vanadium (dissolved)	µg/l	1.7	ISO 17025	3.9	< 1.7	3.2	< 1.7	
Zinc (dissolved)	µg/l	0.4	ISO 17025	3.3	8.1	6.6	4.4	
Calcium (dissolved)	mg/l	0.012	ISO 17025	15	35	9.9	16	
Magnesium (dissolved)	mg/l	0.005	ISO 17025	6.3	17	4.5	9.3	
Potassium (dissolved)	mg/l	0.025	ISO 17025	3.3	3.9	2.0	0.99	
Sodium (dissolved)	mg/l	0 01	ISO 17025	4.8	7.9	8.4	7.7	

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* 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 *
1290296	ATK-P-007	1	0 20-0.30	Brown clay.
1290297	ATK-P-007	1	0 00-0.30	Brown clay with gravel and vegetation.
1290298	ATK-P-007	2	0.40-0.50	Brown clay.
1290299	ATK-P-007	2	0 30-1.00	Brown clay with gravel.
1290300	ATK-P-007	3	1 00-1.80	Brown clay with gravel and vegetation.
1290301	ATK-P-007	3	1 20-1.40	Brown clay with gravel.
1290302	ATK-P-007	4	1 80-3.00	Brown clay.
1290303	ATK-P-007	4	2 50-3.00	Brown clay.

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Analytical Report Number : 19-54383

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Ammonia as NH3 in soil	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	MCERTS
Ammonium as NH4 in leachate	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	NONE
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
Boron in leachate	Determination of boron in leachate. Sample acidified and followed by ICP-OES.	In-house method based on MEWAM	L039-PL	W	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
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
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
Chloride in leachate	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
Cr (III) in leachate	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Dissolved Organic Carbon in leachate	Determination of dissolved organic carbon in leachate by the measurement on a non-dispersive infrared analyser of carbon dioxide released by acidification.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L023-PL	W	NONE
EF - Phenylurea herbicides in soil by LC-MS/MS	Phenylurea herbicides by LC-MS/MS	In-house method	UK	W	NONE
Electrical conductivity at 20oC of leachate	Determination of electrical conductivity in leachate by electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031-PL	W	ISO 17025
Electrical conductivity of soil	Determination of electrical conductivity in soil by electrometric measurement.	In-house method	L031-PL	W	ISO 17025
Fraction of Organic Carbon in soil	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L009-PL	D	MCERTS
Free cyanide in leachate	Determination of free cyanide by distillation followed by colorimetry.	In-house method	L080-PL	W	ISO 17025
Free cyanide in soil	Determination of free 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
Hexavalent chromium in leachate	Determination of hexavalent chromium in leachate by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	ISO 17025

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Analytical Report Number : 19-54383

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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	MCERTS
Metals by ICP-OES in leachate	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
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
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in leachate	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 (skalar)	L080-PL	W	ISO 17025
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
Organochlorine Pesticides in soil by GC MS/MS	Detemination of Pesticides in soil by GC MS/MS	Organochlorine Pesticides in soil by GC MS/MS	L055B-PL	D	NONE
Organonitrogen Pesticides in soil by GC MS/MS	Detemination of Pesticides in soil by GC MS/MS	Organonitrogen Pesticides in soil by GC MS/MS	L055B-PL	D	NONE
Organophosphorus Pesticides in soil by GC MS/MS	Detemination of Pesticides in soil by GC MS/MS	Organophosphorus Pesticides in soil by GC MS/MS	L055B-PL	D	NONE
PCBs WHO 12 in soil	Determination of PCBs (WHO-12 Congeners) by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	NONE
pH at 20oC in leachate	Determination of pH in leachate by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	ISO 17025
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	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
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
Sulphate in leachates	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number : 19-54383

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphide in leachate	Determination of sulphide in leachate by ion selective electrode.	In-house method	L010-PL	W	NONE
TO - Acid Herbicides in soil by LC-MS/MS	Determination of Acid herbicides in waters by LC-MS/MS	In-house method		W	NONE
TO - Triazine pesticides in soil	Determination of Triazines by LC-MS(/MS).	In-house method based on USEPA method 615.		W	NONE
Total cyanide in leachate	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	ISO 17025
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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS
Total organic carbon in leachate	Determination of dissolved organic 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
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	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
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

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.

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The results included within the report are representative of the samples submitted for analysis.

Sample_D	Other_ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
ATK-P-007	1	S	19-54383	1290296	c	Free cyanide in soil	L080-PL	c
ATK-P-007	1	S	19-54383	1290296	c	Hexavalent chromium in soil	L080-PL	c
ATK-P-007	1	S	19-54383	1290296	c	Ammonia as NH3 in soil	L082-PL	c
ATK-P-007	1	S	19-54383	1290296	c	Ammoniacal Nitrogen as N in soil	L082-PL	c
ATK-P-007	1	S	19-54383	1290296	c	Ammonium as NH4 in soil	L082-PL	c
ATK-P-007	1	S	19-54383	1290296	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
ATK-P-007	1	S	19-54383	1290296	c	EF - Phenylurea herbicides in soil by LC-MS/MS	UK	c
ATK-P-007	1	S	19-54383	1290296	c	Electrical conductivity of soil	L031-PL	c
ATK-P-007	1	S	19-54383	1290296	c	Fraction of Organic Carbon in soil	L009-PL	c
ATK-P-007	1	S	19-54383	1290296	c	Monohydric phenols in soil	L080-PL	c
ATK-P-007	1	S	19-54383	1290296	c	Organic matter (Automated) in soil	L009-PL	c
ATK-P-007	1	S	19-54383	1290296	c	Organochlorine Pesticides in soil by GC MS/MS	L055B-PL	c
ATK-P-007	1	S	19-54383	1290296	c	Organonitrogen Pesticides in soil by GC MS/MS	L055B-PL	c
ATK-P-007	1	S	19-54383	1290296	c	Organophosphorus Pesticides in soil by GC MS/MS	L055B-PL	c
ATK-P-007	1	S	19-54383	1290296	c	PCBs WHO 12 in soil	L027-PL	c
ATK-P-007	1	S	19-54383	1290296	c	Semi-volatile organic compounds in soil	L064-PL	c
ATK-P-007	1	S	19-54383	1290296	c	Speciated EPA-16 PAHs in soil	L064-PL	c
ATK-P-007	1	S	19-54383	1290296	c	TO - Acid Herbicides in soil by LC-MS/MS		c
ATK-P-007	1	S	19-54383	1290296	c	TO - Triazine pesticides in soil		c
ATK-P-007	1	S	19-54383	1290296	c	TPHCWG (Soil)	L088/76-PL	c
ATK-P-007	1	S	19-54383	1290296	c	Total cyanide in soil	L080-PL	c
ATK-P-007	1	S	19-54383	1290296	c	Total organic carbon (Automated) in soil	L009-PL	c
ATK-P-007	1	S	19-54383	1290296	c	Volatile organic compounds in soil	L073B-PL	c
ATK-P-007	1	S	19-54383	1290296	c	pH in soil (automated)	L099-PL	c
ATK-P-007	1	S	19-54383	1290297	c	Free cyanide in soil	L080-PL	c
ATK-P-007	1	S	19-54383	1290297	c	Hexavalent chromium in soil	L080-PL	c
ATK-P-007	1	S	19-54383	1290297	c	Ammonia as NH3 in soil	L082-PL	c
ATK-P-007	1	S	19-54383	1290297	c	Ammoniacal Nitrogen as N in soil	L082-PL	c
ATK-P-007	1	S	19-54383	1290297	c	Ammonium as NH4 in soil	L082-PL	c
ATK-P-007	1	S	19-54383	1290297	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
ATK-P-007	1	S	19-54383	1290297	c	EF - Phenylurea herbicides in soil by LC-MS/MS	UK	c
ATK-P-007	1	S	19-54383	1290297	c	Electrical conductivity of soil	L031-PL	c
ATK-P-007	1	S	19-54383	1290297	c	Fraction of Organic Carbon in soil	L009-PL	c
ATK-P-007	1	S	19-54383	1290297	c	Monohydric phenols in soil	L080-PL	c
ATK-P-007	1	S	19-54383	1290297	c	Organic matter (Automated) in soil	L009-PL	c
ATK-P-007	1	S	19-54383	1290297	c	Organochlorine Pesticides in soil by GC MS/MS	L055B-PL	c
ATK-P-007	1	S	19-54383	1290297	c	Organonitrogen Pesticides in soil by GC MS/MS	L055B-PL	c
ATK-P-007	1	S	19-54383	1290297	c	Organophosphorus Pesticides in soil by GC MS/MS	L055B-PL	c
ATK-P-007	1	S	19-54383	1290297	c	PCBs WHO 12 in soil	L027-PL	c
ATK-P-007	1	S	19-54383	1290297	c	Semi-volatile organic compounds in soil	L064-PL	c
ATK-P-007	1	S	19-54383	1290297	c	Speciated EPA-16 PAHs in soil	L064-PL	c
ATK-P-007	1	S	19-54383	1290297	c	TO - Acid Herbicides in soil by LC-MS/MS		c
ATK-P-007	1	S	19-54383	1290297	c	TO - Triazine pesticides in soil		c
ATK-P-007	1	S	19-54383	1290297	c	TPHCWG (Soil)	L088/76-PL	c
ATK-P-007	1	S	19-54383	1290297	c	Total cyanide in soil	L080-PL	c
ATK-P-007	1	S	19-54383	1290297	c	Total organic carbon (Automated) in soil	L009-PL	c
ATK-P-007	1	S	19-54383	1290297	c	Volatile organic compounds in soil	L073B-PL	c
ATK-P-007	1	S	19-54383	1290297	c	pH in soil (automated)	L099-PL	c
ATK-P-007	2	S	19-54383	1290298	c	Free cyanide in soil	L080-PL	c
ATK-P-007	2	S	19-54383	1290298	c	Hexavalent chromium in soil	L080-PL	c
ATK-P-007	2	S	19-54383	1290298	c	Ammonia as NH3 in soil	L082-PL	c

ATK-P-007	2	S	19-54383	1290298	c	Ammoniacal Nitrogen as N in soil	L082-PL	c
ATK-P-007	2	S	19-54383	1290298	c	Ammonium as NH4 in soil	L082-PL	c
ATK-P-007	2	S	19-54383	1290298	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
ATK-P-007	2	S	19-54383	1290298	c	Electrical conductivity of soil	L031-PL	c
ATK-P-007	2	S	19-54383	1290298	c	Fraction of Organic Carbon in soil	L009-PL	c
ATK-P-007	2	S	19-54383	1290298	c	Monohydric phenols in soil	L080-PL	c
ATK-P-007	2	S	19-54383	1290298	c	Organic matter (Automated) in soil	L009-PL	c
ATK-P-007	2	S	19-54383	1290298	c	Semi-volatile organic compounds in soil	L064-PL	c
ATK-P-007	2	S	19-54383	1290298	c	Speciated EPA-16 PAHs in soil	L064-PL	c
ATK-P-007	2	S	19-54383	1290298	c	TPHCWG (Soil)	L088/76-PL	c
ATK-P-007	2	S	19-54383	1290298	c	Total cyanide in soil	L080-PL	c
ATK-P-007	2	S	19-54383	1290298	c	Total organic carbon (Automated) in soil	L009-PL	c
ATK-P-007	2	S	19-54383	1290298	c	Volatile organic compounds in soil	L073B-PL	c
ATK-P-007	2	S	19-54383	1290298	c	pH in soil (automated)	L099-PL	c
ATK-P-007	2	S	19-54383	1290299	c	Free cyanide in soil	L080-PL	c
ATK-P-007	2	S	19-54383	1290299	c	Hexavalent chromium in soil	L080-PL	c
ATK-P-007	2	S	19-54383	1290299	c	Ammonia as NH3 in soil	L082-PL	c
ATK-P-007	2	S	19-54383	1290299	c	Ammoniacal Nitrogen as N in soil	L082-PL	c
ATK-P-007	2	S	19-54383	1290299	c	Ammonium as NH4 in soil	L082-PL	c
ATK-P-007	2	S	19-54383	1290299	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
ATK-P-007	2	S	19-54383	1290299	c	Electrical conductivity of soil	L031-PL	c
ATK-P-007	2	S	19-54383	1290299	c	Fraction of Organic Carbon in soil	L009-PL	c
ATK-P-007	2	S	19-54383	1290299	c	Monohydric phenols in soil	L080-PL	c
ATK-P-007	2	S	19-54383	1290299	c	Organic matter (Automated) in soil	L009-PL	c
ATK-P-007	2	S	19-54383	1290299	c	Semi-volatile organic compounds in soil	L064-PL	c
ATK-P-007	2	S	19-54383	1290299	c	Speciated EPA-16 PAHs in soil	L064-PL	c
ATK-P-007	2	S	19-54383	1290299	c	TPHCWG (Soil)	L088/76-PL	c
ATK-P-007	2	S	19-54383	1290299	c	Total cyanide in soil	L080-PL	c
ATK-P-007	2	S	19-54383	1290299	c	Total organic carbon (Automated) in soil	L009-PL	c
ATK-P-007	2	S	19-54383	1290299	c	Volatile organic compounds in soil	L073B-PL	c
ATK-P-007	2	S	19-54383	1290299	c	pH in soil (automated)	L099-PL	c
ATK-P-007	3	S	19-54383	1290300	c	Free cyanide in soil	L080-PL	c
ATK-P-007	3	S	19-54383	1290300	c	Hexavalent chromium in soil	L080-PL	c
ATK-P-007	3	S	19-54383	1290300	c	Ammonia as NH3 in soil	L082-PL	c
ATK-P-007	3	S	19-54383	1290300	c	Ammoniacal Nitrogen as N in soil	L082-PL	c
ATK-P-007	3	S	19-54383	1290300	c	Ammonium as NH4 in soil	L082-PL	c
ATK-P-007	3	S	19-54383	1290300	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
ATK-P-007	3	S	19-54383	1290300	c	Electrical conductivity of soil	L031-PL	c
ATK-P-007	3	S	19-54383	1290300	c	Fraction of Organic Carbon in soil	L009-PL	c
ATK-P-007	3	S	19-54383	1290300	c	Monohydric phenols in soil	L080-PL	c
ATK-P-007	3	S	19-54383	1290300	c	Organic matter (Automated) in soil	L009-PL	c
ATK-P-007	3	S	19-54383	1290300	c	Semi-volatile organic compounds in soil	L064-PL	c
ATK-P-007	3	S	19-54383	1290300	c	Speciated EPA-16 PAHs in soil	L064-PL	c
ATK-P-007	3	S	19-54383	1290300	c	TPHCWG (Soil)	L088/76-PL	c
ATK-P-007	3	S	19-54383	1290300	c	Total cyanide in soil	L080-PL	c
ATK-P-007	3	S	19-54383	1290300	c	Total organic carbon (Automated) in soil	L009-PL	c
ATK-P-007	3	S	19-54383	1290300	c	Volatile organic compounds in soil	L073B-PL	c
ATK-P-007	3	S	19-54383	1290300	c	pH in soil (automated)	L099-PL	c
ATK-P-007	3	S	19-54383	1290301	c	Free cyanide in soil	L080-PL	c
ATK-P-007	3	S	19-54383	1290301	c	Hexavalent chromium in soil	L080-PL	c
ATK-P-007	3	S	19-54383	1290301	c	Ammonia as NH3 in soil	L082-PL	c
ATK-P-007	3	S	19-54383	1290301	c	Ammoniacal Nitrogen as N in soil	L082-PL	c
ATK-P-007	3	S	19-54383	1290301	c	Ammonium as NH4 in soil	L082-PL	c
ATK-P-007	3	S	19-54383	1290301	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c

ATK-P-007	3	S	19-54383	1290301	c	EF - Phenylurea herbicides in soil by LC-MS/MS	UK	c
ATK-P-007	3	S	19-54383	1290301	c	Electrical conductivity of soil	L031-PL	c
ATK-P-007	3	S	19-54383	1290301	c	Fraction of Organic Carbon in soil	L009-PL	c
ATK-P-007	3	S	19-54383	1290301	c	Monohydric phenols in soil	L080-PL	c
ATK-P-007	3	S	19-54383	1290301	c	Organic matter (Automated) in soil	L009-PL	c
ATK-P-007	3	S	19-54383	1290301	c	Organochlorine Pesticides in soil by GC MS/MS	L055B-PL	c
ATK-P-007	3	S	19-54383	1290301	c	Organonitrogen Pesticides in soil by GC MS/MS	L055B-PL	c
ATK-P-007	3	S	19-54383	1290301	c	Organophosphorus Pesticides in soil by GC MS/MS	L055B-PL	c
ATK-P-007	3	S	19-54383	1290301	c	PCBs WHO 12 in soil	L027-PL	c
ATK-P-007	3	S	19-54383	1290301	c	Semi-volatile organic compounds in soil	L064-PL	c
ATK-P-007	3	S	19-54383	1290301	c	Speciated EPA-16 PAHs in soil	L064-PL	c
ATK-P-007	3	S	19-54383	1290301	c	TO - Acid Herbicides in soil by LC-MS/MS		c
ATK-P-007	3	S	19-54383	1290301	c	TO - Triazine pesticides in soil		c
ATK-P-007	3	S	19-54383	1290301	c	TPHCWG (Soil)	L088/76-PL	c
ATK-P-007	3	S	19-54383	1290301	c	Total cyanide in soil	L080-PL	c
ATK-P-007	3	S	19-54383	1290301	c	Total organic carbon (Automated) in soil	L009-PL	c
ATK-P-007	3	S	19-54383	1290301	c	Volatile organic compounds in soil	L073B-PL	c
ATK-P-007	3	S	19-54383	1290301	c	pH in soil (automated)	L099-PL	c
ATK-P-007	4	S	19-54383	1290302	c	Free cyanide in soil	L080-PL	c
ATK-P-007	4	S	19-54383	1290302	c	Hexavalent chromium in soil	L080-PL	c
ATK-P-007	4	S	19-54383	1290302	c	Ammonia as NH3 in soil	L082-PL	c
ATK-P-007	4	S	19-54383	1290302	c	Ammoniacal Nitrogen as N in soil	L082-PL	c
ATK-P-007	4	S	19-54383	1290302	c	Ammonium as NH4 in soil	L082-PL	c
ATK-P-007	4	S	19-54383	1290302	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
ATK-P-007	4	S	19-54383	1290302	c	Electrical conductivity of soil	L031-PL	c
ATK-P-007	4	S	19-54383	1290302	c	Fraction of Organic Carbon in soil	L009-PL	c
ATK-P-007	4	S	19-54383	1290302	c	Monohydric phenols in soil	L080-PL	c
ATK-P-007	4	S	19-54383	1290302	c	Organic matter (Automated) in soil	L009-PL	c
ATK-P-007	4	S	19-54383	1290302	c	Semi-volatile organic compounds in soil	L064-PL	c
ATK-P-007	4	S	19-54383	1290302	c	Speciated EPA-16 PAHs in soil	L064-PL	c
ATK-P-007	4	S	19-54383	1290302	c	TPHCWG (Soil)	L088/76-PL	c
ATK-P-007	4	S	19-54383	1290302	c	Total cyanide in soil	L080-PL	c
ATK-P-007	4	S	19-54383	1290302	c	Total organic carbon (Automated) in soil	L009-PL	c
ATK-P-007	4	S	19-54383	1290302	c	Volatile organic compounds in soil	L073B-PL	c
ATK-P-007	4	S	19-54383	1290302	c	pH in soil (automated)	L099-PL	c
ATK-P-007	4	S	19-54383	1290303	c	Free cyanide in soil	L080-PL	c
ATK-P-007	4	S	19-54383	1290303	c	Hexavalent chromium in soil	L080-PL	c
ATK-P-007	4	S	19-54383	1290303	c	Ammonia as NH3 in soil	L082-PL	c
ATK-P-007	4	S	19-54383	1290303	c	Ammoniacal Nitrogen as N in soil	L082-PL	c
ATK-P-007	4	S	19-54383	1290303	c	Ammonium as NH4 in soil	L082-PL	c
ATK-P-007	4	S	19-54383	1290303	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
ATK-P-007	4	S	19-54383	1290303	c	Electrical conductivity of soil	L031-PL	c
ATK-P-007	4	S	19-54383	1290303	c	Fraction of Organic Carbon in soil	L009-PL	c
ATK-P-007	4	S	19-54383	1290303	c	Monohydric phenols in soil	L080-PL	c
ATK-P-007	4	S	19-54383	1290303	c	Organic matter (Automated) in soil	L009-PL	c
ATK-P-007	4	S	19-54383	1290303	c	Speciated EPA-16 PAHs in soil	L064-PL	c
ATK-P-007	4	S	19-54383	1290303	c	TPHCWG (Soil)	L088/76-PL	c
ATK-P-007	4	S	19-54383	1290303	c	Total cyanide in soil	L080-PL	c
ATK-P-007	4	S	19-54383	1290303	c	Total organic carbon (Automated) in soil	L009-PL	c
ATK-P-007	4	S	19-54383	1290303	c	pH in soil (automated)	L099-PL	c

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Analytical Report Number : 19-54388

Replaces Analytical Report Number : 19-54388, issue no. 1

Project / Site name:	M25 Junction 28	**Samples received on:**	11/07/2019
Your job number:	35403	**Samples instructed on:**	14/08/2019
Your order number:	35403-DO	**Analysis completed by:**	28/08/2019
Report Issue Number:	2	**Report issued on:**	29/08/2019
Samples Analysed:	2 wac 10:1		

Signed: [redacted]

[redacted]
Senior Quality Specialist
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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The results included within the report are representative of the samples submitted for analysis.

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Waste Acceptance Criteria Analytical Results

Report No:	**19-54388**						
					Client:	**GEOENG**	
Location	**M25 Junction 28**						
Lab Reference (Sample Number)	1290328 / 1290329				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	10/07/2019				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	ATK-P-007 1						
Depth (m)	0 00-0.30						
Solid Waste Analysis							
TOC (%)**	0.9				3%	5%	6%
Loss on Ignition (%) **	-				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	15				100	--	--
pH (units)**	-				--	>6	--
Acid Neutralisation Capacity (mol / kg)	-				--	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 *	0.0101			0 0903	0 5	2	25
Barium *	0.0118			0.106	20	100	300
Cadmium *	< 0.0001			< 0 0008	0.04	1	5
Chromium *	0.0007			0 0063	0.5	10	70
Copper *	0.0027			0.024	2	50	100
Mercury *	< 0.0005			< 0 0050	0.01	0.2	2
Molybdenum *	0.0011			0 0098	0.5	10	30
Nickel *	< 0.0003			< 0 0030	0.4	10	40
Lead *	< 0.0010			< 0.010	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0 5	7
Zinc *	0.0024			0.022	4	50	200
Chloride *	3.2			29	800	4000	25000
Fluoride	3.3			29	10	150	500
Sulphate *	46			410	1000	20000	50000
TDS*	120			1100	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	3.77			33.7	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	2.0						
Dry Matter (%)	93						
Moisture (%)	7.4						

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:	**19-54388**						
					Client:	**GEOENG**	
Location	**M25 Junction 28**						
Lab Reference (Sample Number)	1290330 / 1290331				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	10/07/2019				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	ATK-P-007 2						
Depth (m)	0 30-1.00						
Solid Waste Analysis							
TOC (%)**	0.2				3%	5%	6%
Loss on Ignition (%) **	-				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	< 0.9				100	--	--
pH (units)**	-				--	>6	--
Acid Neutralisation Capacity (mol / kg)	-				--	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 *	0.0072			0 0644	0 5	2	25
Barium *	0.0235			0.209	20	100	300
Cadmium *	< 0.0001			< 0 0008	0.04	1	5
Chromium *	0.0007			0 0062	0.5	10	70
Copper *	0.0029			0.026	2	50	100
Mercury *	< 0.0005			< 0 0050	0.01	0.2	2
Molybdenum *	< 0.0004			< 0 0040	0.5	10	30
Nickel *	0.0018			0.016	0.4	10	40
Lead *	< 0.0010			< 0.010	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0 5	7
Zinc *	0.017			0.15	4	50	200
Chloride *	5.6			50	800	4000	25000
Fluoride	3.9			35	10	150	500
Sulphate *	960			8500	1000	20000	50000
TDS*	890			7900	4000	60000	100000
Phenol Index (Monhydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	4.05			36.1	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	2.0						
Dry Matter (%)	80						
Moisture (%)	20						

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 accrediited

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 : 19-54388

Project / Site name: M25 Junction 28

* 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 *
1290328	ATK-P-007	1	0 00-0.30	Brown clay with gravel and vegetation.
1290330	ATK-P-007	2	0 30-1.00	Brown clay with gravel.

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Analytical Report Number : 19-54388

Project / Site name: M25 Junction 28

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

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
BTEX in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Chloride 10:1 WAC	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-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
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
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
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.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
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
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
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	NONE
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
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 electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L004-PL	W	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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS

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.

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Sample_D	Other_ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
ATK-P-007	1	S	19-54388	1290328	c	BTEX in soil (Monoaromatics)	L073B-PL	c
ATK-P-007	1	S	19-54388	1290328	c	Mineral Oil (Soil) C10 - C40	L076-PL	c
ATK-P-007	1	S	19-54388	1290328	c	Organic matter (Automated) in soil	L009-PL	c
ATK-P-007	1	S	19-54388	1290328	c	PCB's By GC-MS in soil	L027-PL	c
ATK-P-007	1	S	19-54388	1290328	c	Speciated WAC-17 PAHs in soil	L064-PL	c
ATK-P-007	1	S	19-54388	1290328	c	Total BTEX in soil (Poland)	L073-PL	c
ATK-P-007	1	S	19-54388	1290328	c	Total organic carbon (Automated) in soil	L009-PL	c
ATK-P-007	2	S	19-54388	1290330	c	BTEX in soil (Monoaromatics)	L073B-PL	c
ATK-P-007	2	S	19-54388	1290330	c	Mineral Oil (Soil) C10 - C40	L076-PL	c
ATK-P-007	2	S	19-54388	1290330	c	Organic matter (Automated) in soil	L009-PL	c
ATK-P-007	2	S	19-54388	1290330	c	PCB's By GC-MS in soil	L027-PL	c
ATK-P-007	2	S	19-54388	1290330	c	Speciated WAC-17 PAHs in soil	L064-PL	c
ATK-P-007	2	S	19-54388	1290330	c	Total BTEX in soil (Poland)	L073-PL	c
ATK-P-007	2	S	19-54388	1290330	c	Total organic carbon (Automated) in soil	L009-PL	c

Key: a - No sampling date b - Incorrect container
c - Holding time d - Headspace e - Temperature

Appendix B: Human health screening

ATKINS

Appendix C: Controlled waters screening

ATKINS

Assessment Criteria :	Freshwater EQS
CaCO (mg/l):	0.00
Calcium (mg/l):	0.00
pH	0.00
DOC (mg/l)	0.00
Catchment area:	Freshwater not listed

Constituents	Unit	Limit of Detection	Generic Assessment Criteria	Number of Samples	Minimum Value	Maximum Value	Number of Exceedences	Locations of Exceedences	Zone	Location	Sample ID	Depth	Date	Strata
pH	pH Units	N/A	6-9	37	6.7	8.2	0				ATK-P-001	0.00-0.20m	16/07/2019	
Electrical Conductivity	µS/cm	10	No WSV	37	82	2500	0				1600	140	16/07/2019	
Total Cyanide	mg/l	0.01	N/A	37	<0.01	<0.01	0				<0.01	<0.01	16/07/2019	
Free Cyanide	mg/l	0.01	0.001	37	<0.01	<0.01	0				<0.01	<0.01	16/07/2019	
Sulphate as SO	mg/l	0.1	00	37	5.9	2080	18	ATK-P-001, 0.00-0.20m; ATK-P-002, 0.80-0.90m; ATK-P-003, 0.00-0.20m; ATK-P-00 , 0.00-0.20m; ATK-P-00 , 0.60-0.80m; ATK-P-005, 0.00-0.20m; ATK-P-005, 0.60-0.70m; ATK-P-006, 0.30-0. 0m; ATK-P-006, 0.60-0.80m; ATK-P-008, 0.00-0.20m; ATK-P-009, 0.00-0.20m; ATK-P-010, 0.00-0.20m; ATK-P-010, 0.80-0.90m; ATK-P-101, 0.20m; ATK-P-101, 0.50m; ATK-P-101, 1.00m; ATK-P-102, 0.20m; ATK-P-102, 1.00m			1490	35.9	16/07/2019
Sulphide	mg/l	0.005	No WSV	37	<0.005	<0.005	0				<0.005	<0.005	16/07/2019	
Chloride	mg/l	0.15	250	37	1.9	16	0				6	3.2	16/07/2019	
Ammonium as NH	mg/l	0.015	0.26	37	<0.015	2.2	9	ATK-P-001, 0.70-0.80m; ATK-P-006, 0.50-0.60m; ATK-P-009, 0.80-0.90m; ATK-P-010, 0.80-0.90m; ATK-P-102, 1.50-1.70m; ATK-P-102, .20- . 0m; ATK-P-007, 1.20-1. 0m; ATK-P-007, 2.50-3.00m; ATK-P-101, 2.00-2.10m			0.041	0.34	16/07/2019
Total Organic Carbon (TOC)	mg/l	0.1	No WSV	37	3.37	19.2	0				6.39	6.03	16/07/2019	
Dissolved Organic Carbon (DOC)	mg/l	0.1	No WSV	37	2.	16.9	0				6.13	5.59	16/07/2019	
otal Phenols														
Total Phenols (monohydric)	mg/l	0.01	No WSV	37	<0.01	<0.01	0				<0.01	<0.01	16/07/2019	
Heavy Metals / Metalloids														
Antimony	mg/l	0.0017	N/A	37	<0.0017	0.0091	0				<0.0017	<0.0017	16/07/2019	
Arsenic	mg/l	0.0011	0.05	37	<0.0011	0.015	0				0.0079	0.0029	16/07/2019	
Barium	mg/l	0.00005	N/A	37	0.0033	0.12	0				0.064	0.0057	16/07/2019	
Beryllium	mg/l	0.0002	N/A	37	<0.0002	<0.0002	0				<0.0002	<0.0002	16/07/2019	
Boron	mg/l	0.01	2	37	<0.01	0.26	0				0.092	<0.01	16/07/2019	
Cadmium	mg/l	0.00008	0.00008	37	<0.00008	<0.00008	0				<0.00008	<0.00008	16/07/2019	
Chromium VI	mg/l	0.005	0.003	37	<0.005	<0.005	0				<0.005	<0.005	16/07/2019	
Chromium III	mg/l	0.001	0.00 7	37	<0.001	0.0097	1	ATK-P-102, 1.50-1.70m			<0.001	<0.001	16/07/2019	
Chromium	mg/l	0.000	See Cr VI as first pass	37	0.000	0.0097	0				0.0095	0.0009	16/07/2019	
Cobalt	mg/l	0.0003	0.003	37	0.0003	0.0021	0				0.0003	0.0009	16/07/2019	
Copper	mg/l	0.0007	0.001	37	0.0007	0.01	35	ATK-P-001, 0.00-0.20m; ATK-P-001, 0.70-0.80m; ATK-P-002, 0.00-0.20m; ATK-P-002, 0.80-0.90m; ATK-P-003, 0.00-0.20m; ATK-P-003, 0.80-0.90m; ATK-P-00 , 0.00-0.20m; ATK-P-00 , 0.60-0.80m; ATK-P-005, 0.00-0.20m; ATK-P-005, 0.60-0.70m; ATK-P-006, 0.30-0. 0m; ATK-P-006, 0.50-0.60m; ATK-P-006, 1.00-1.20m; ATK-P-008, 0.00-0.20m; ATK-P-008, 0.60-0.80m; ATK-P-009, 0.00-0.20m; ATK-P-009, 0.80-0.90m; ATK-P-010, 0.00-0.20m; ATK-P-010, 0.80-0.90m; ATK-P-102, 1.50-1.70m; ATK-P-102, 2.50-2.70m; ATK-P-102, .20- . 0m; ATK-P-007, 0.20-0.30m; ATK-P-007, 0. 0-0.50m; ATK-P-007, 1.20-1. 0m; ATK-P-007, 2.50-3.00m; ATK-P-101, 2.00-2.10m; ATK-P-101, 3.20-3. 0m; ATK-P-101, .20- . 0m; ATK-P-101, 0.20m; ATK-P-101, 0.50m; ATK-P-101, 1.00m; ATK-P-102, 0.20m; ATK-P-102, 0.50m; ATK-P-102, 1.00m			0.0088	0.0018	16/07/2019
Iron	mg/l	0.00	1	37	0.005			ATK-P-002, 0.00-0.20m; ATK-P-102, 2.50-2.70m; ATK-P-007, 1.20-1. 0m; ATK-P-101, 2.00-2.10m			0.063	0.32	16/07/2019	
Lead	mg/l	0.001	0.0012	37	<0.001	0.006	17	ATK-P-001, 0.00-0.20m; ATK-P-001, 0.70-0.80m; ATK-P-002, 0.00-0.20m; ATK-P-003, 0.00-0.20m; ATK-P-003, 0.80-0.90m; ATK-P-00 , 0.00-0.20m; ATK-P-00 , 0.60-0.80m; ATK-P-005, 0.00-0.20m; ATK-P-008, 0.00-0.20m; ATK-P-009, 0.00-0.20m; ATK-P-010, 0.00-0.20m; ATK-P-010, 0.80-0.90m; ATK-P-102, 1.50-1.70m; ATK-P-007, 0. 0-0.50m; ATK-P-007, 1.20-1. 0m; ATK-P-101, 1.00m; ATK-P-102, 0.20m			0.0025	0.0013	16/07/2019
Manganese	mg/l	0.00006	0.123	37	0.003	0.35	16	ATK-P-00 , 0.60-0.80m; ATK-P-006, 0.30-0. 0m; ATK-P-006, 0.50-0.60m; ATK-P-007, 0.20-0.30m; ATK-P-007, 0. 0-0.50m; ATK-P-007, 1.20-1. 0m; ATK-P-007, 2.50-3.00m; ATK-P-101, 2.00-2.10m; ATK-P-101, 3.20-3. 0m; ATK-P-101, .20- . 0m; ATK-P-101, 0.20m; ATK-P-101, 0.50m; ATK-P-101, 1.00m; ATK-P-102, 0.20m; ATK-P-102, 0.50m; ATK-P-102, 1.00m			0.01	0.0053	16/07/2019
Mercury	mg/l	0.00005	0.00007	37	<0.0005	0.001	2	ATK-P-002, 0.80-0.90m; ATK-P-102, 0.20m			<0.0005	<0.0005	16/07/2019	
Molybdenum	mg/l	0.000	N/A	37	<0.000	0.01	0				0.006	<0.0004	16/07/2019	
Nickel	mg/l	0.0003	0.00	37	<0.0003	0.0058	2	ATK-P-010, 0.80-0.90m; ATK-P-007, 2.50-3.00m			0.0011	0.0005	16/07/2019	
Phosphorus	mg/l	0.03	ca cuate as per Schedule 3 Part 1 of 2015 WFD Directions	37	<0.03	0.65	0				0.04	<0.03	16/07/2019	
Selenium	mg/l	0.00	N/A	37	<0.00	<0.00	0				<0.004	<0.004	16/07/2019	
Tin	mg/l	0.001	0.026	37	<0.001	0.0016	0				<0.001	<0.001	16/07/2019	
Vanadium	mg/l	0.0017	0.02	37	<0.0017	0.013	0				<0.0017	0.0018	16/07/2019	
Zinc	mg/l	0.000	0.0123	37	0.000	0.027	5	ATK-P-001, 0.00-0.20m; ATK-P-00 , 0.60-0.80m; ATK-P-008, 0.60-0.80m; ATK-P-010, 0.80-0.90m; ATK-P-101, 1.00m			0.013	<0.0004	16/07/2019	
Calcium	mg/l	0.012	N/A	37	2.9	720	0				450	13	16/07/2019	
Magnesium	mg/l	0.005	N/A	37	1.1	9	0				15	4.9	16/07/2019	
Potassium	mg/l	0.025	N/A	37	0.67	20	0				11	2.7	16/07/2019	
Sodium	mg/l	0.01	N/A	37	2	31	0				10	3.1	16/07/2019	

Location	ATK-P-001	ATK-P-001	ATK-P-002	ATK-P-002	ATK-P-003	ATK-P-003	ATK-P-00	ATK-P-00	ATK-P-005	ATK-P-005	ATK-P-006	ATK-P-006	ATK-P-008	ATK-P-008	ATK-P-009	ATK-P-009	ATK-P-010	ATK-P-010	ATK-P-102	ATK-P-102	ATK-P-102	ATK-P-102	ATK-P-007	ATK-P-007	ATK-P-007	ATK-P-007	ATK-P-101	ATK-P-101	ATK-P-101	ATK-P-101	ATK-P-101	ATK-P-102	ATK-P-102	ATK-P-102
Sample ID																																		
Depth	0.00-0.20m	0.70-0.80m	0.00-0.20m	0.80-0.90m	0.00-0.20m	0.80-0.90m	0.00-0.20m	0.60-0.80m	0.00-0.20m	0.60-0.70m	0.30-0. 0m	0.50-0.60m	1.00-1.20m	0.00-0.20m	0.60-0.80m	0.00-0.20m	0.80-0.90m	0.00-0.20m	0.80-0.90m	1.50-1.70m	2.50-2.70m	.20- . 0m	5.60-5.80m	7.10-7.30m	0.20-0.30m	0. 0-0.50m	1.20-1. 0m	2.50-3.00m	2.00-2.10m	3.20-3. 0m	.20- . 0m	0.20m	0.50m	1.00m	0.20m	0.50m	1.00m
Date	16/07/2019	16/07/2019	16/07/2019	16/07 2019	15/07/2019	15/07/2019	12 07/2019	12/07/2019	11/07/2019	11/07/2019	10/07/2019	10/07/2019	10/07/2019	10/07/2019	11/07/2019	11/07/2019	15/07 2019	15/07 2019	12/07/2019	12/07/2019	09/07/2019	09/07/2019	09/07/2019	09/07/2019	09/07/2019	10/07/2019	10/07/2019	10/07/2019	10/07/2019	10/07/2019	10/07/2019	10/07/2019	09 07/2019	09/07/2019	09/07/2019	08/07/2019	08/07/2019	08/07/2019
7.7	7.6	7.7	7.6	7.6	7.6	7.6	7.6	7.6	7.7	7.6	7.7	7.5	7.5	7.5	7.4	8	7.7	7.6	7.5	8	8.1	7.8	7.9	8.2	7.8	7.6	7.8	6.7	8	8.1	7.9	7.7	7.7	7.8	8	7.7
1600	140	150	1000	1700	180	1500	2100	1400	1200	1700	1200	99	1700	330	2200	150	2300	2500	82	400	200	210	280	150	370	120	200	270	280	460	2300	2300	120	2300	120	970
<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1490	35.9	39.2	633	1150	42.1	1000	1430	903	765	1540	997	9.1	1300	162	1690	27.9	1700	2080	9.5	194	5.9	73.1	118	38.6	149	27.3	51.4	78.5	96.4	172	1860	1760	1910	1660	13.6	528
<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
6	3.2	2.5	2.5	3.8	3	8.3	12	6.4	9.4	9.2	7.3	1.9	14	2.3	3.7	2.5	15	16	5.6	5.2	5.8	3.4	5.2	4	4.5	9.4	5.8	13	11	15	9.3	9.8	10	11	6	3.7
0.041	0.34	<0.015	0.064	0.044	0.067	0.042	0.052	0.036	0.052	<0.015	0.52	0.066	0.046	0.067	0.043	0.58	0.059	2.2	0.56	0.11	2.2	0.039	0.067	0.045	0.052	0.71	0.36	0.96	0.24	0.054	0.038	0.046	0.034	0.055	0.054	0.035
6.39	6.03	7.54	3.37	5.76	3.85	6.31	9.75	7.96	7.04	5.98	7.09	4.91	7.11	3.43	7.14	8.23	7.7	17.1	11	9.21	19.2	5.07	4.03	4.06	3.37	14.1	5.43	9.15	4.08	4.35	7.03	9.11	7.36	4.26	7.33	4.48
6.13	5.59	7.26	2.85	5.62	3.35	5.92	9.52	6.74	6.33	5.77	6.69	4.43	6.36	3.14	6.65	7.81	7.38	15.5	9.61	8.26	16.9	4.53	3.65	3.82	3.05	13.7	5.05	8.55	3.72	4.02	6.98	8.87	7.38	4.2	6.99	2.4
<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	0.0091	<0.0017	<0.0017	<0.0017
0.0079	0.0029	0.0042	0.008	0.0026	0.0032	0.01	0.003	0.0038	0.0093	0.007	0.0058	<0.0011	0.011	0.0031	0.0081	0.0072	0.012	0.0069	0.0066	0.0028	0.0038	<0.0011	<0.0011	<0.0011	0.0022	0.0051	0.0068	0.0046	<0.0011	0.0026	0.0077	0.0099	0.0087	0.015	<0.0011	<0.0011
0.064	0.0057	0.013	0.02	0.051	0.0081	0.064	0.11	0.044	0.051	0.057	0.032	0.0081	0.052	0.014	0.086	0.0089	0.077	0.12	0.011	0.02	0.0033	0.013	0.0058	0.0081	0.021	0.01	0.0086	0.021	0.0073	0.0093	0.059	0.073	0.067	0.056	0.0093	0.02
<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
0.092	<0.01	0.038	0.03	0.095	0.013	0.11	0.21	0.062	0.054	0.1	0.027	<0.01	0.13	0.015	0.058	<0.01	0.14	0.25	<0.01	<0.01	0.014	<0.01	0.015	0.027	0.026	0.02	0.013	0.082	0.017	0.019	0.17	0.25	0.26	0.17	0.034	0.035
<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008
<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0012	<0.001	0.0022	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0097	0.0021	0.0028	0.0021	<0.001	0.0035	0.0019	0.0031	0.002	0.0027	0.0013	0.0025	0.0044	0.0032	0.0032	0.0031	0.0025	0.0027
0.0003	0.0009	0.0017	0.0004	<0.0003	0.0004	0.0005	0.0016	0.0003	0.0006	<0.0003	0.0003	0.0003	0.0004	<0.0003	<0.0003	0.0013	0.0004	0.0012	0.0021	0.0005	0.0013	<0.0003	<0.0003	0.0008	0.0006	0.0006	<0.0003	0.0009	0.0003	0.0012	0.0008	0.0007	0.0007	<0.0003	0.0009	<0.0003
0.0088	0.0018	0.0061	0.0029	0.0072	0.0022	0.0066	0.0081	0.0079	0.0054	0.005	0.0026	0.008	0.0079	0.012	0.0092	0.0043	0.0085	0.0094	0.0095	0.0027	0.014	0.0007	<0.0007	0.0083	0.0068	0.013	0.0069	0.0087	0.0089	0.0076	0.0091	0.0096	0.011	0.0092	0.0099	0.004
0.063	0.32	4	0.083	0.14	0.11	0.2	0.16	0.067	0.17	0.037	0.01	0.38	0.041	0.14	0.095	0.86	0.15	0.28	0.41	1.1	0.37	0.86	0.005	0.85	0.94	1.6	0.21	1.2	0.12	0.21	0.15	0.3	0.29	0.19	0.79	0.23
0.0025	0.0013	0.0052	<0.001	0.0041	0.0028	0.0041	0.0047	0.0036	0.0011	<0.001	<0.001	<0.001	0.0014	<0.001	0.0028	0.0012	0.0036	0.006	0.0036	0.0011	<0.001	<0.001	<0.001	<0.001	<0.001	0.0042	0.0023	<0.001	<0.001	<0.001	0.0012	<0.001	<0.001	0.0034	0.0046	<0.001	<0.001
0.01	0.0053	0.014	0.013	0.01	0.0074	0.011	0.13	0.011	0.012	0.24	0.29	0.12	0.01	0.011	0.015	0.0034	0.01	0.051	0.024	0.0087	0.041	0.0085	0.0078	0.18	0.23	0.25	0.23	0.35	0.21	0.24	0.16	0.19	0.16	0.16	0.23	0.22
<0.0005	<0.0005	<0.0005	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.001	<0.0005	<0.0005
0.006	<0.0004	<0.0004	<0.0004	0.0036	<0.0004	0.0061	0.0086	0.0031	0.0033	0.0067	0.0038	0.0027	0.009	<0.0004	0.0076	<0.0004	0.0055	0.011	<0.0004	0.0006	<0.0004	0.0008	<0.0004	<0.0004	0.0006	0.001	<0.0004	0.0005	<0.0004	<0.0004	0.0004	0.0068	0.0097	0.014	0.0063	<0.0004	0.0015
0.0011	0.0005	0.003	0.0017	0.0017	<0.0003	0.0028	0.0035	0.0017	0.0009	0.0022	0.0026	0.0004	0.0023	0.0007	0.0019	0.0013	0.0023	0.0058	0.0024	0.0017	0.0019	0.0013	<0.0003	0.0005	0.0024	0.0021	0.0047	0.0024	<0.0003	0.0006	0.0022	0.0035	0.0034	0.0022	0.0014	<0.0003
0.04	<0.03	0.061	<0.03	0.054	<0.03	0.064	0.045	0.062	0.038	0.19	0.15	0.19	<0.03	<0.03	0.032	<0.03	0.06	0.08	0.064	<0.03	<0.03	<0.03	<0.03	0.29	0.2	0.65	0.29	0.39	0.24	0.25	0.2	0.19	0.21	0.21	0.49	0.17
<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
<0.0017	0.0018	0.013	<0.0017	0.0019	<0.0017	0.0023	<0.0017	<0.0017	<0.0017	0.0039	<0.0017	0.0033	<0.0017	<0.0017	0.0033	0.0053	0.0032	0.003	0.0047	0.0051	0.0019	0.004	<0.0017	0.0039	<0.0017	0.0032	<0.0017	0.0021	<0.0017	<0.0017	0.0036	0.0038	<0.0017	<0.0017	0.0045	<0.0017
0.013	<0.0004	0.0091	0.0041	0.0049	0.0031	0.0065	0.015	0.012	0.007	0.0057	0.0044	0.0056	0.0059	0.017	0.0078	0.011	0.0059	0.027	0.003	0.0033	0.0014	0.0026	0.0006	0.0033	0.0081	0.0066	0.0044	0.012	0.0004	0.0008	0.006	0.0097	0.016	0.0035	0.0035	0.0025
450	13	17	150	350	17	390	550	290	240	540	280	8	380	35	540	14	650	670	6.6	63	2.9	13	14	15	35	9.9	16	24	19	29	660	650	720	600	14	160
15	4.9	4.2	49	16	7.1	12	15	18	16	13	24	3.2	22	19	15	6.3	19	12	3.5	15	1.1	11	15	6.3	17	4.5	9.3	7	13	23	12	11	13	14	5	47
11	2.7	3.9	10	11	2.7	12	17	8.8	9	11	7	0.67	14	4.3	9.1	2.6	14	20	1.7	4.2	2.1	5.1	6.8	3.3	3.9	2	0.99	7.6	1.9	2.5	13	15	16	14	2.2	4.8
10	3.1	3.3	6.6	7.8	3.7	11	14	8	10	10	4.8	2	16	5.5	5.3	3.2	17	20	5.8	5.5	4.8	10	16	4.8	7.9	8.4	7.7	11	21	31	12	14	15	11	4.1	7

*Blue denotes EQS which are higher than the laboratory method detect on lim t

Appendix D: CatWaste soil

Made Ground Composite Samples

ATKINS CatWasteSoil

Classification Assessment Tool of Soil Wastes - Hazard Summary Sheet

Site Name	M25 Junction 28 (Pre-GI)
Location	M25 Junction 28
Site ID	
Job Number	200161209
Date	9/11/2019
User Name	gelly.tsolka@atkinsglobal.com
Company Name	Atkins

Hole ID	Sample Depth	Hazardous Waste Y/N	HP1	HP2	HP3	HP4	HP5	HP6	HP7	HP8	HP9
ATK-P-001 (COMP)	0.00-0.40	N	No	No	No	No	No	No	No	No	No
ATK-P-001 (COMP)	0.70-1.00	N	No	No	No	No	No	No	No	No	No
ATK-P-001 (COMP)	1.40-1.80	N	No	No	No	No	No	No	No	No	No
ATK-P-001 (COMP)	2.70-3.00	N	No	No	No	No	No	No	No	No	No
ATK-P-002 (COMP)	0.00-0.25	N	No	No	No	No	No	No	No	No	No
ATK-P-002 (COMP)	1.20-1.60	N	No	No	No	No	No	No	No	No	No
ATK-P-003 (COMP)	0.00-0.50	N	No	No	No	No	No	No	No	No	No
ATK-P-003 (COMP)	0.80-1.30	N	No	No	No	No	No	No	No	No	No
ATK-P-003 (COMP)	1.60-1.90	N	No	No	No	No	No	No	No	No	No
ATK-P-003 (COMP)	2.50-3.00	N	No	No	No	No	No	No	No	No	No
ATK-P-004 (COMP)	0.00-0.30	N	No	No	No	No	No	No	No	No	No
ATK-P-004 (COMP)	0.50-0.80	N	No	No	No	No	No	No	No	No	No
ATK-P-004 (COMP)	1.70-2.00	N	No	No	No	No	No	No	No	No	No
ATK-P-004 (COMP)	2.50-3.00	N	No	No	No	No	No	No	No	No	No
ATK-P-005 (COMP)	0.00-0.40	N	No	No	No	No	No	No	No	No	No
ATK-P-005 (COMP)	0.60-1.00	N	No	No	No	No	No	No	No	No	No
ATK-P-005 (COMP)	1.20-1.60	N	No	No	No	No	No	No	No	No	No
ATK-P-005 (COMP)	1.60-2.00	N	No	No	No	No	No	No	No	No	No
ATK-P-006 (COMP)	0.00-0.50	N	No	No	No	No	No	No	No	No	No
ATK-P-006 (COMP)	0.50-1.00	N	No	No	No	No	No	No	No	No	No
ATK-P-006 (COMP)	1.20-2.00	N	No	No	No	No	No	No	No	No	No
ATK-P-007 (COMP)	0.00-0.30	N	No	No	No	No	No	No	No	No	No
ATK-P-007 (COMP)	0.30-1.00	N	No	No	No	No	No	No	No	No	No
ATK-P-007 (COMP)	1.00-1.80	N	No	No	No	No	No	No	No	No	No
ATK-P-007 (COMP)	1.80-3.00	N	No	No	No	No	No	No	No	No	No
ATK-P-008 (COMP)	0.00-0.60	N	No	No	No	No	No	No	No	No	No
ATK-P-008 (COMP)	0.60-1.00	N	No	No	No	No	No	No	No	No	No
ATK-P-008 (COMP)	1.50-2.50	N	No	No	No	No	No	No	No	No	No
ATK-P-008 (COMP)	2.50-3.00	N	No	No	No	No	No	No	No	No	No
ATK-P-009 (COMP)	0.00-0.40	N	No	No	No	No	No	No	No	No	No
ATK-P-009 (COMP)	0.60-1.10	N	No	No	No	No	No	No	No	No	No

This output data has been generated by the CAT-Waste Soil waste classification tool provided by Atkins Consultants Ltd and J.McArdle Contracts and should be read in conjuntion with the standard Terms and Conditions

Made Ground Composite Samples

ATKINS CatWasteSoil

Classification Assessment Tool of Soil Wastes - Hazard Summary Sheet

Site Name	M25 Junction 28 (Pre-GI)
Location	M25 Junction 28
Site ID	
Job Number	200161209
Date	9/11/2019
User Name	gelly.tsolka@atkinsglobal.com
Company Name	Atkins

Hole ID	Sample Depth	Hazardous Waste Y/N	HP1	HP2	HP3	HP4	HP5	HP6	HP7	HP8	HP9
ATK-P-009 (COMP)	1.10-1.60	N	No	No	No	No	No	No	No	No	No
ATK-P-009 (COMP)	2.50-3.00	N	No	No	No	No	No	No	No	No	No
ATK-P-010 (COMP)	0.00-0.30	N	No	No	No	No	No	No	No	No	No
ATK-P-010 (COMP)	0.50-1.00	N	No	No	No	No	No	No	No	No	No
ATK-P-010 (COMP)	1.20-1.70	N	No	No	No	No	No	No	No	No	No
ATK-P-010 (COMP)	2.50-3.00	N	No	No	No	No	No	No	No	No	No

This output data has been generated by the CAT-Waste Soil waste classification tool provided by Atkins Consultants Ltd and J.McArdle Contracts and should be read in conjuntion with the standard Terms and Conditions

Made Ground Composite Samples

ATKINS CatWasteSoil

Site Name	M25 Junction 28 (Pre-GI)
Location	M25 Junction 28
Site ID	
Job Number	200161209
Date	9/11/2019
User Name	gelly.tsolka@atkinsglobal.com
Company Name	Atkins

Hole ID	Sample Depth	Hazardous Waste Y/N	HP10	HP11	HP12	HP13	HP14	HP15	HP16
ATK-P-001 (COMP)	0.00-0.40	N	No	No	No	No	No	No	No
ATK-P-001 (COMP)	0.70-1.00	N	No	No	No	No	No	No	No
ATK-P-001 (COMP)	1.40-1.80	N	No	No	No	No	No	No	No
ATK-P-001 (COMP)	2.70-3.00	N	No	No	No	No	No	No	No
ATK-P-002 (COMP)	0.00-0.25	N	No	No	No	No	No	No	No
ATK-P-002 (COMP)	1.20-1.60	N	No	No	No	No	No	No	No
ATK-P-003 (COMP)	0.00-0.50	N	No	No	No	No	No	No	No
ATK-P-003 (COMP)	0.80-1.30	N	No	No	No	No	No	No	No
ATK-P-003 (COMP)	1.60-1.90	N	No	No	No	No	No	No	No
ATK-P-003 (COMP)	2.50-3.00	N	No	No	No	No	No	No	No
ATK-P-004 (COMP)	0.00-0.30	N	No	No	No	No	No	No	No
ATK-P-004 (COMP)	0.50-0.80	N	No	No	No	No	No	No	No
ATK-P-004 (COMP)	1.70-2.00	N	No	No	No	No	No	No	No
ATK-P-004 (COMP)	2.50-3.00	N	No	No	No	No	No	No	No
ATK-P-005 (COMP)	0.00-0.40	N	No	No	No	No	No	No	No
ATK-P-005 (COMP)	0.60-1.00	N	No	No	No	No	No	No	No
ATK-P-005 (COMP)	1.20-1.60	N	No	No	No	No	No	No	No
ATK-P-005 (COMP)	1.60-2.00	N	No	No	No	No	No	No	No
ATK-P-006 (COMP)	0.00-0.50	N	No	No	No	No	No	No	No
ATK-P-006 (COMP)	0.50-1.00	N	No	No	No	No	No	No	No
ATK-P-006 (COMP)	1.20-2.00	N	No	No	No	No	No	No	No
ATK-P-007 (COMP)	0.00-0.30	N	No	No	No	No	No	No	No
ATK-P-007 (COMP)	0.30-1.00	N	No	No	No	No	No	No	No
ATK-P-007 (COMP)	1.00-1.80	N	No	No	No	No	No	No	No
ATK-P-007 (COMP)	1.80-3.00	N	No	No	No	No	No	No	No
ATK-P-008 (COMP)	0.00-0.60	N	No	No	No	No	No	No	No
ATK-P-008 (COMP)	0.60-1.00	N	No	No	No	No	No	No	No
ATK-P-008 (COMP)	1.50-2.50	N	No	No	No	No	No	No	No
ATK-P-008 (COMP)	2.50-3.00	N	No	No	No	No	No	No	No
ATK-P-009 (COMP)	0.00-0.40	N	No	No	No	No	No	No	No
ATK-P-009 (COMP)	0.60-1.10	N	No	No	No	No	No	No	No

Made Ground Composite Samples

ATKINS CatWasteSoil

Site Name	M25 Junction 28 (Pre-GI)
Location	M25 Junction 28
Site ID	
Job Number	200161209
Date	9/11/2019
User Name	gelly.tsolka@atkinsglobal.com
Company Name	Atkins

Hole ID	Sample Depth	Hazardous Waste Y/N	HP10	HP11	HP12	HP13	HP14	HP15	HP16
ATK-P-009 (COMP)	1.10-1.60	N	No	No	No	No	No	No	No
ATK-P-009 (COMP)	2.50-3.00	N	No	No	No	No	No	No	No
ATK-P-010 (COMP)	0.00-0.30	N	No	No	No	No	No	No	No
ATK-P-010 (COMP)	0.50-1.00	N	No	No	No	No	No	No	No
ATK-P-010 (COMP)	1.20-1.70	N	No	No	No	No	No	No	No
ATK-P-010 (COMP)	2.50-3.00	N	No	No	No	No	No	No	No

Made Ground Composite Samples

ATKINS CatWasteSoil

Site Name	M25 Junction 28 (Pre-GI)
Location	M25 Junction 28
Site ID	
Job Number	200161209
Date	9/11/2019
User Name	gelly.tsolka@atkinsglobal.com
Company Name	Atkins

Hole ID	Sample Depth	Hazardous Waste Y/N
ATK-P-001 (COMP)	0.00-0.40	N
ATK-P-001 (COMP)	0.70-1.00	N
ATK-P-001 (COMP)	1.40-1.80	N
ATK-P-001 (COMP)	2.70-3.00	N
ATK-P-002 (COMP)	0.00-0.25	N
ATK-P-002 (COMP)	1.20-1.60	N
ATK-P-003 (COMP)	0.00-0.50	N
ATK-P-003 (COMP)	0.80-1.30	N
ATK-P-003 (COMP)	1.60-1.90	N
ATK-P-003 (COMP)	2.50-3.00	N
ATK-P-004 (COMP)	0.00-0.30	N
ATK-P-004 (COMP)	0.50-0.80	N
ATK-P-004 (COMP)	1.70-2.00	N
ATK-P-004 (COMP)	2.50-3.00	N
ATK-P-005 (COMP)	0.00-0.40	N
ATK-P-005 (COMP)	0.60-1.00	N
ATK-P-005 (COMP)	1.20-1.60	N
ATK-P-005 (COMP)	1.60-2.00	N
ATK-P-006 (COMP)	0.00-0.50	N
ATK-P-006 (COMP)	0.50-1.00	N
ATK-P-006 (COMP)	1.20-2.00	N
ATK-P-007 (COMP)	0.00-0.30	N
ATK-P-007 (COMP)	0.30-1.00	N
ATK-P-007 (COMP)	1.00-1.80	N
ATK-P-007 (COMP)	1.80-3.00	N
ATK-P-008 (COMP)	0.00-0.60	N
ATK-P-008 (COMP)	0.60-1.00	N
ATK-P-008 (COMP)	1.50-2.50	N
ATK-P-008 (COMP)	2.50-3.00	N
ATK-P-009 (COMP)	0.00-0.40	N
ATK-P-009 (COMP)	0.60-1.10	N

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Made Ground Composite Samples

ATKINS CatWasteSoil

Site Name	M25 Junction 28 (Pre-GI)
Location	M25 Junction 28
Site ID	
Job Number	200161209
Date	9/11/2019
User Name	gelly.tsolka@atkinsglobal.com
Company Name	Atkins

Hole ID	Sample Depth	Hazardous Waste Y/N
ATK-P-009 (COMP)	1.10-1.60	N
ATK-P-009 (COMP)	2.50-3.00	N
ATK-P-010 (COMP)	0.00-0.30	N
ATK-P-010 (COMP)	0.50-1.00	N
ATK-P-010 (COMP)	1.20-1.70	N
ATK-P-010 (COMP)	2.50-3.00	N

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Made Ground Environmental Samples

ATKINS CatWasteSoil

Classification Assessment Tool of Soil Wastes - Hazard Summary Sheet

Site Name	M25 Junction 28 (Pre-GI)
Location	M25 Junction 28
Site ID	
Job Number	200161209
Date	9/11/2019
User Name	gelly.tsolka@atkinsglobal.com
Company Name	Atkins

Hole ID	Sample Depth	Hazardous Waste Y/N	HP1	HP2	HP3	HP4	HP5	HP6	HP7	HP8	HP9
ATK-P-001 (ES)	0.00-0.20	N	No	No	No	No	No	No	No	No	No
ATK-P-001 (ES)	0.70-0.80	N	No	No	No	No	No	No	No	No	No
ATK-P-002 (ES)	0.00-0.20	N	No	No	No	No	No	No	No	No	No
ATK-P-002 (ES)	0.00-0.90	N	No	No	No	No	No	No	No	No	No
ATK-P-003 (ES)	0.00-0.20	N	No	No	No	No	No	No	No	No	No
ATK-P-003 (ES)	0.80-0.90	N	No	No	No	No	No	No	No	No	No
ATK-P-004 (ES)	0.00-0.20	N	No	No	No	No	No	No	No	No	No
ATK-P-004 (ES)	0.60-0.80	N	No	No	No	No	No	No	No	No	No
ATK-P-005 (ES)	0.00-0.20	N	No	No	No	No	No	No	No	No	No
ATK-P-005 (ES)	0.60-0.70	N	No	No	No	No	No	No	No	No	No
ATK-P-006 (ES)	0.30-0.40	N	No	No	No	No	No	No	No	No	No
ATK-P-006 (ES)	0.50-0.60	N	No	No	No	No	No	No	No	No	No
ATK-P-006 (ES)	1.00-1.20	N	No	No	No	No	No	No	No	No	No
ATK-P-007 (ES)	0.20-0.30	N	No	No	No	No	No	No	No	No	No
ATK-P-007 (ES)	0.40-0.50	N	No	No	No	No	No	No	No	No	No
ATK-P-007 (ES)	1.20-1.40	N	No	No	No	No	No	No	No	No	No
ATK-P-007 (ES)	2.50-3.00	N	No	No	No	No	No	No	No	No	No
ATK-P-008 (ES)	0.00-0.20	N	No	No	No	No	No	No	No	No	No
ATK-P-008 (ES)	0.60-0.80	N	No	No	No	No	No	No	No	No	No
ATK-P-009 (ES)	0.00-0.20	N	No	No	No	No	No	No	No	No	No
ATK-P-009 (ES)	0.80-0.90	N	No	No	No	No	No	No	No	No	No
ATK-P-010 (ES)	0.00-0.20	N	No	No	No	No	No	No	No	No	No
ATK-P-010 (ES)	0.80-0.90	Y	No	No	No	No	No	No	Yes	No	No
ATK-P-101 (ES)	0.2	N	No	No	No	No	No	No	No	No	No
ATK-P-101 (ES)	0.5	N	No	No	No	No	No	No	No	No	No
ATK-P-101 (ES)	1	N	No	No	No	No	No	No	No	No	No
ATK-P-101 (ES)	2.00-2.10	N	No	No	No	No	No	No	No	No	No
ATK-P-101 (ES)	3.20-3.40	N	No	No	No	No	No	No	No	No	No

This output data has been generated by the CAT-Waste Soil waste classification tool provided by Atkins Consultants Ltd and J.McArdle Contracts and should be read in conjuntion with the standard Terms and Conditions

Made Ground Environmental Samples

ATKINS CatWasteSoil

Classification Assessment Tool of Soil Wastes - Hazard Summary Sheet

Site Name	M25 Junction 28 (Pre-GI)
Location	M25 Junction 28
Site ID	
Job Number	200161209
Date	9/11/2019
User Name	gelly.tsolka@atkinsglobal.com
Company Name	Atkins

Hole ID	Sample Depth	Hazardous Waste Y/N	HP1	HP2	HP3	HP4	HP5	HP6	HP7	HP8	HP9
ATK-P-101 (ES)	4.20-4.40	N	No	No	No	No	No	No	No	No	No
ATK-P-102 (ES)	0.2	N	No	No	No	No	No	No	No	No	No
ATK-P-102 (ES)	0.5	N	No	No	No	No	No	No	No	No	No
ATK-P-102 (ES)	1	N	No	No	No	No	No	No	No	No	No
ATK-P-102 (ES)	1.50-1.70	N	No	No	No	No	No	No	No	No	No
ATK-P-102 (ES)	2.50-2.70	N	No	No	No	No	No	No	No	No	No
ATK-P-102 (ES)	4.20-4.40	N	No	No	No	No	No	No	No	No	No

This output data has been generated by the CAT-Waste Soil waste classification tool provided by Atkins Consultants Ltd and J.McArdle Contracts and should be read in conjuntion with the standard Terms and Conditions

Made Ground Environmental Samples

ATKINS CatWasteSoil

Site Name	M25 Junction 28 (Pre-GI)
Location	M25 Junction 28
Site ID	
Job Number	200161209
Date	9/11/2019
User Name	gelly.tsolka@atkinsglobal.com
Company Name	Atkins

Hole ID	Sample Depth	Hazardous Waste Y/N	HP10	HP11	HP12	HP13	HP14	HP15	HP16
ATK-P-001 (ES)	0.00-0.20	N	No	No	No	No	No	No	No
ATK-P-001 (ES)	0.70-0.80	N	No	No	No	No	No	No	No
ATK-P-002 (ES)	0.00-0.20	N	No	No	No	No	No	No	No
ATK-P-002 (ES)	0.00-0.90	N	No	No	No	No	No	No	No
ATK-P-003 (ES)	0.00-0.20	N	No	No	No	No	No	No	No
ATK-P-003 (ES)	0.80-0.90	N	No	No	No	No	No	No	No
ATK-P-004 (ES)	0.00-0.20	N	No	No	No	No	No	No	No
ATK-P-004 (ES)	0.60-0.80	N	No	No	No	No	No	No	No
ATK-P-005 (ES)	0.00-0.20	N	No	No	No	No	No	No	No
ATK-P-005 (ES)	0.60-0.70	N	No	No	No	No	No	No	No
ATK-P-006 (ES)	0.30-0.40	N	No	No	No	No	No	No	No
ATK-P-006 (ES)	0.50-0.60	N	No	No	No	No	No	No	No
ATK-P-006 (ES)	1.00-1.20	N	No	No	No	No	No	No	No
ATK-P-007 (ES)	0.20-0.30	N	No	No	No	No	No	No	No
ATK-P-007 (ES)	0.40-0.50	N	No	No	No	No	No	No	No
ATK-P-007 (ES)	1.20-1.40	N	No	No	No	No	No	No	No
ATK-P-007 (ES)	2.50-3.00	N	No	No	No	No	No	No	No
ATK-P-008 (ES)	0.00-0.20	N	No	No	No	No	No	No	No
ATK-P-008 (ES)	0.60-0.80	N	No	No	No	No	No	No	No
ATK-P-009 (ES)	0.00-0.20	N	No	No	No	No	No	No	No
ATK-P-009 (ES)	0.80-0.90	N	No	No	No	No	No	No	No
ATK-P-010 (ES)	0.00-0.20	N	No	No	No	No	No	No	No
ATK-P-010 (ES)	0.80-0.90	Y	No	Yes	No	No	No	No	No
ATK-P-101 (ES)	0.2	N	No	No	No	No	No	No	No
ATK-P-101 (ES)	0.5	N	No	No	No	No	No	No	No
ATK-P-101 (ES)	1	N	No	No	No	No	No	No	No
ATK-P-101 (ES)	2.00-2.10	N	No	No	No	No	No	No	No
ATK-P-101 (ES)	3.20-3.40	N	No	No	No	No	No	No	No

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Made Ground Environmental Samples

ATKINS CatWasteSoil

Site Name	M25 Junction 28 (Pre-GI)
Location	M25 Junction 28
Site ID	
Job Number	200161209
Date	9/11/2019
User Name	gelly.tsolka@atkinsglobal.com
Company Name	Atkins

Hole ID	Sample Depth	Hazardous Waste Y/N	HP10	HP11	HP12	HP13	HP14	HP15	HP16
ATK-P-101 (ES)	4.20-4.40	N	No	No	No	No	No	No	No
ATK-P-102 (ES)	0.2	N	No	No	No	No	No	No	No
ATK-P-102 (ES)	0.5	N	No	No	No	No	No	No	No
ATK-P-102 (ES)	1	N	No	No	No	No	No	No	No
ATK-P-102 (ES)	1.50-1.70	N	No	No	No	No	No	No	No
ATK-P-102 (ES)	2.50-2.70	N	No	No	No	No	No	No	No
ATK-P-102 (ES)	4.20-4.40	N	No	No	No	No	No	No	No

Natural Ground (Composite Samples)

ATKINS CatWasteSoil

Classification Assessment Tool of Soil Wastes - Hazard Summary Sheet

Site Name	M25 Junction 28 (Pre-GI)
Location	M25 Junction 28
Site ID	
Job Number	200161209
Date	9/11/2019
User Name	gelly.tsolka@atkinsglobal.com
Company Name	Atkins

Hole ID	Sample Depth	Hazardous Waste Y/N	HP1	HP2	HP3	HP4	HP5	HP6	HP7	HP8	HP9
ATK-P-002 (COMP)	1.80-2.10	N	No	No	No	No	No	No	No	No	No
ATK-P-002 (COMP)	2.60-3.00	N	No	No	No	No	No	No	No	No	No
ATK-P-006 (COMP)	2.30-3.00	N	No	No	No	No	No	No	No	No	No

This output data has been generated by the CAT-Waste Soil waste classification tool provided by Atkins Consultants Ltd and J.McArdle Contracts and should be read in conjuntion with the standard Terms and Conditions

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Natural Ground (Composite Samples)

ATKINS CatWasteSoil

Site Name	M25 Junction 28 (Pre-GI)
Location	M25 Junction 28
Site ID	
Job Number	200161209
Date	9/11/2019
User Name	gelly.tsolka@atkinsglobal.com
Company Name	Atkins

Hole ID	Sample Depth	Hazardous Waste Y/N	HP10	HP11	HP12	HP13	HP14	HP15	HP16
ATK-P-002 (COMP)	1.80-2.10	N	No	No	No	No	No	No	No
ATK-P-002 (COMP)	2.60-3.00	N	No	No	No	No	No	No	No
ATK-P-006 (COMP)	2.30-3.00	N	No	No	No	No	No	No	No

Natural Ground (Composite Samples)

ATKINS CatWasteSoil

Site Name	M25 Junction 28 (Pre-GI)
Location	M25 Junction 28
Site ID	
Job Number	200161209
Date	9/11/2019
User Name	gelly.tsolka@atkinsglobal.com
Company Name	Atkins

Hole ID	Sample Depth	Hazardous Waste Y/N
ATK-P-002 (COMP)	1.80-2.10	N
ATK-P-002 (COMP)	2.60-3.00	N
ATK-P-006 (COMP)	2.30-3.00	N

This output data has been generated by the CAT-Waste Soil waste classification tool provided by Atkins Consultants Ltd and J.McArdle Contracts and should be read in conjuntion with the standard Terms and Conditions

Natural Ground (Environmental Samples)

ATKINS CatWasteSoil

Classification Assessment Tool of Soil Wastes - Hazard Summary Sheet

Site Name	M25 Junction 28 (Pre-GI)
Location	M25 Junction 28
Site ID	
Job Number	200161209
Date	9/11/2019
User Name	gelly.tsolka@atkinsglobal.com
Company Name	Atkins

Hole ID	Sample Depth	Hazardous Waste Y/N	HP1	HP2	HP3	HP4	HP5	HP6	HP7	HP8	HP9
ATK-P-102 (ES)	5.60-5.80	N	No	No	No	No	No	No	No	No	No
ATK-P-102 (ES)	7.10-7.30	N	No	No	No	No	No	No	No	No	No

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Natural Ground (Environmental Samples)

ATKINS CatWasteSoil

Site Name	M25 Junction 28 (Pre-GI)
Location	M25 Junction 28
Site ID	
Job Number	200161209
Date	9/11/2019
User Name	gelly.tsolka@atkinsglobal.com
Company Name	Atkins

Hole ID	Sample Depth	Hazardous Waste Y/N	HP10	HP11	HP12	HP13	HP14	HP15	HP16
ATK-P-102 (ES)	5.60-5.80	N	No	No	No	No	No	No	No
ATK-P-102 (ES)	7.10-7.30	N	No	No	No	No	No	No	No

This output data has been generated by the CAT-Waste Soil waste classification tool provided by Atkins Consultants Ltd and J.McArdle Contracts and should be read in conjuntion with the standard Terms and Conditions

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Natural Ground (Environmental Samples)

ATKINS CatWasteSoil

Site Name	M25 Junction 28 (Pre-GI)
Location	M25 Junction 28
Site ID	
Job Number	200161209
Date	9/11/2019
User Name	gelly.tsolka@atkinsglobal.com
Company Name	Atkins

Hole ID	Sample Depth	Hazardous Waste Y/N
ATK-P-102 (ES)	5.60-5.80	N
ATK-P-102 (ES)	7.10-7.30	N

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driving forward

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