Contaminated Land
Air Quality
Environmental Audit

SMITH GRANT Environmental Consultancy LLP

Partnership No: OC 300776

New Settlement Area, Heyford Park
Oxfordshire

Dorchester Phase 1A
Remediation Earthworks
Completion Report

For: Urban Regen Ltd.

March 2014

Report Ref: R1742-R02-v2

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1. Introduction

1.1. Planning permission for the redevelopment of the former RAF/USAF Upper Heyford airbase was granted by Cherwell District Council (CDC) on the 2nd November 2012, reference 10/01642/OUT. The site, converted to commercial and residential uses is known as Heyford Park, and is divided between the Flying Field Area (FFA) and New Settlement Area (NSA). Urban Regen Ltd. (UR) was instructed by the consortium of Dorchester Heyford Park Group Ltd and Bovis Homes to carry out demolition, remediation and preparatory earthworks across the NSA to prepare various zones for residential development. Dorchester Group and Bovis have divided the site into a number of development phases, and the UR works are referenced to these various phases.

1.2. The above planning consent contains the following conditions relating to contamination remediation:

24 No operational development approved by this planning permission shall take place (or such other date or stage in development as may be agreed in writing with the Local Planning Authority), until the following components of a scheme to deal with the risks associated with contamination of the site shall each be submitted to and approved, in writing, by the local planning authority:
(a) A preliminary risk assessment which has identified:
(i) -all previous uses.
(ii) -potential contaminants associated with those uses.
(b) A conceptual model of the site indicating sources, pathways and receptors.
(c) Potentially unacceptable risks arising from contamination at the site.
(d) A site investigation scheme, based on (1) to provide information for a detailed assessment of the risk to all receptors that may be affected, including those off site.
(e) The site investigation results and the detailed risk assessment (2) and, based on these, an options appraisal and remediation strategy giving full details of the remediation measures required and how they are to be undertaken.
(f) A verification plan providing details of the data that will be collected in order to demonstrate that the works set out in (3) are complete and identifying any requirements for longer-term monitoring of pollutant linkages, maintenance and arrangements for contingency action.
Any changes to these components require the express consent of the local planning authority. The scheme shall be implemented as approved.

25 Prior to occupation of any new build dwellings, a verification report demonstrating completion of the works set out in the approved remediation strategy and the effectiveness of the remediation shall be submitted to and approved, in writing, by the local planning authority. The report shall include results of sampling and monitoring carried out in accordance with the approved verification plan to demonstrate that the site remediation criteria have been met. It shall also include any plan (a "long-term monitoring and maintenance plan") for longer-term monitoring of pollutant linkages, maintenance and arrangements for contingency action, as identified in the verification plan, and for the reporting of this to the local planning authority.

26 If during development contamination not previously identified is found to be present at the site then no further development within 20m of the contamination shall be carried out until the developer has submitted to and obtained written approval from the local planning authority for an addendum to the method statement. This addendum to the

method statement shall detail how this unsuspected contamination will be remediated (if necessary) and thereafter this will be carried out as approved before any development within 20m recommences. Following completion of any such additional remediation, a verification report shall be submitted within 3 months of the completion of the works for the approval of the Local Planning Authority in writing.

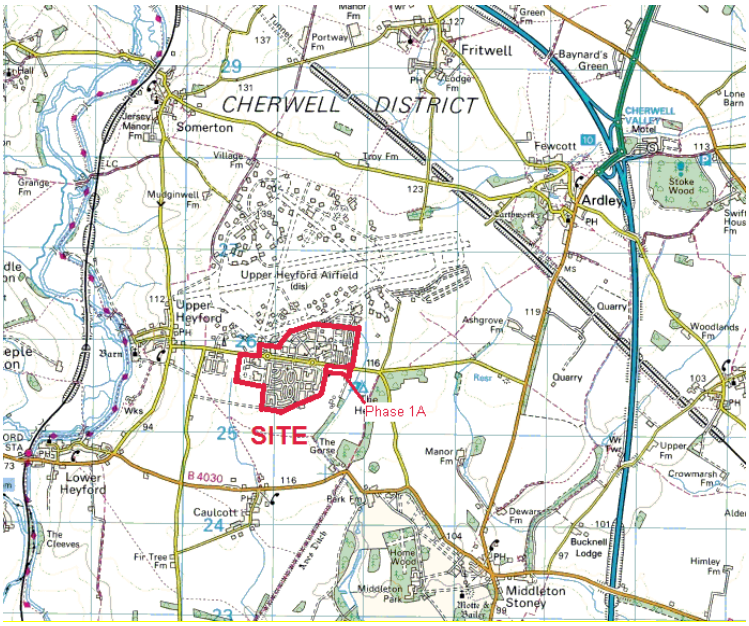
1.3. A Remediation Strategy (ref: EED10658-109_S_12.2.3_FA, September 2012) prepared by Waterman Energy, Environment and Design Ltd. (Waterman) on behalf of Dorchester Group, together with a Demolition and Remediation Method Statement produced by Vertase F.L.I Ltd. were submitted to the Local Planning Authority (Cherwell District Council). The Council subsequently approved the discharge of Condition 24 on 2/11/12. Whilst the role of Waterman has changed within the remediation scheme, and Vertase FLI is no longer involved in the site, the principles of the remediation strategy remain the same, and have been adopted by UR in their role as Principal Contractor to Dorchester Group and Bovis.

1.4. For clarity, it is proposed to re-submit an updated Remediation Strategy that reflects the changed contractual circumstances with respect to contamination remediation, however the works undertaken to date have complied in all material respects to the requirements set down in the existing approved Remediation Strategy.

1.5. Smith Grant LLP (SGP) has been instructed by UR to advise upon the implementation of the remediation works and to carry out all necessary inspections and monitoring of the works and to prepare all necessary verification reports as the preparatory earthworks in each phase are completed by UR. This verification reporting is intended to assist in the discharge of Condition 25 (although some aspects can only be completed by the developers). SGP also assesses whether the requirements of Condition 26 relating to previously unidentified contamination need to be invoked.

1.6. The site location is shown below and the site boundary that makes up the Dorchester Phase 1a area is marked on Drawing D01. A development layout plan provided by Dorchester to UR shows a total of 30 detached houses with private gardens and access roads across the site (as reproduced on the Urban Regen completed levels drawing in Appendix D).

Figure 1.1 Site Location



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1.7. SGP has inspected the UR preparatory earthworks carried out to date, and has collected samples of the stripped or replaced soil surfaces and stockpiled soils for determination of compliance with previously agreed quality standards. This report describes the works carried out, drawing conclusions and making recommendations concerning the further works required by Dorchester Heyford Park Group Ltd in order to fully discharge Planning Conditions 25 and 26.

2. Remediation Strategy

2.1. Expected Contamination

2.1.1. The wider development comprises an area of the former Upper Heyford Airbase, latterly developed and used by the United States Airforce, which has been decommissioned and is used in part for civilian purposes, including commercial and residential uses as part of Heyford Park. Identified known or potential contamination sources determined from the historical uses of the site and site investigations were generally found to be minor, consisting of low-level but pervasive contamination hydrocarbons associated with bulk fuel storage tanks and the potential for asbestos in pipe laggings and gaskets, insulation board and cement-bound products, or as dispersed fibre in made ground. The key identified contamination hot-spots were associated with bulk underground fuel storage tanks (USTs).

2.1.2. Natural background contamination may be present in the bedrock and soils. The site lies within or adjacent to the "ironstone domain" as described in DEFRA Technical Guidance Sheet TGS01 "Arsenic", July 2012; the site lies within 1km of mapped outcrops of ironstones within the Jurassic sedimentary rocks. Within the ironstone domain, the natural background concentration of arsenic is reported to be 220 mg/kg. The natural background concentration of vanadium within the ironstone domain is reported by BGS to be >128 mg/kg. Both values substantially exceed the Remediation Strategy Table B1 criteria for cover soils.

2.2. Remediation Objectives and Approach

2.2.1. The key contamination remediation objectives are to:

- create a significant betterment of the groundwater environment thereby protecting groundwater quality at and beyond the site boundary;
- remove/remediate significant pollution sources such as hydrocarbon hot-spots, if present, that pose a risk to man and the environment, to the extent feasible;
- break significant or potentially significant future pollutant linkages resulting from the change of landuse, in particular related to shallow garden soils and human exposure;
- carry out further soil investigations/inspections to complete gaps in the existing investigation coverage;
- respond appropriately to contingencies in particular the discovery of previously undisclosed contamination;
- remove development constraints and prepare the site physically to enable residential development;
- manage all emissions to air and water to protect surface waters and groundwater and the atmosphere during the remediation works;
- provide appropriate additional protection measures where necessary, to be implemented during construction, including building gas barriers, water mains protection, and garden / open space soil quality and thickness.

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

- provision of 600mm of clean soil cover over made ground materials within garden and landscaped areas;
- materials to be used as the garden/landscape soils must be suitable for use and validated, to comply with contamination targets set out in the Remediation Strategy at a rate of 1 sample per 500m^3;
- imported soils used for cover purposes to comply with contamination targets set out in the approved Remediation Strategy at a rate of 1 sample per 250m^3 with a minimum of 3 samples per source;

- in areas where natural uncontaminated soils are present following the site re-grade, clean topsoil may be required as a growing medium but there will be no requirement for a full 600mm of placed soil cover;

2.2.3. It is confirmed that the Phase 1A site be classed as "Green" under the NHBC classification scheme with no special measures required to address risks posed by ground gas.

2.3. Site Characterisation

2.3.1. The Phase 1A site extends to about 1.44ha and was previously occupied by around 10 buildings, roads, car park, recreational areas and grassland. Buildings within Phase 1a were (from west to east):
450 - barracks block from 1925, red brick with concrete floors and tiled roof
400-405 - prefabricated office units with part brick walls and corrugated roofs, from 1939;
407-409 - prefabricated office units with part brick walls and corrugated roofs, from 1939;
410 - boiler house from 1939, brick walls with sheet metal roof.

2.3.2. 1 above ground storage tank (AG-NSA-01) was present within the site, located on the west side of building 403 on an unbunded plinth. Ground adjacent was previously investigated by trial pit TP-NSA-206 with no significant finding of hydrocarbon contamination. The AST was inspected by SGP on 20th November 2013 and was found to carry a label for kerosene. The tank was of steel, approximate volume 850 litres, and was empty. A PID reading for VOCs within the tank measured 4.8 ppm.

2.3.3. A former UST was located adjacent to the boiler house, building 410; the tank and pipework had been removed prior to the remediation, and the ground adjacent had been previously investigated by trial pit TP-NSA-208, again finding no evidence of significant hydrocarbon contamination.

2.3.4. Elsewhere, and outside service trenches, the site was found to generally have a thin veneer of made ground or natural topsoil to around 0.3-0.5m depth over clayey gravel derived from the weathered bedrock at around 1m depth.

2.4. Phase-specific Strategy

2.4.1. It was concluded that the phase 1a area posed a minor risk of contamination and that the site-wide strategy of ensuring clean cover soils to 600mm depth would be adequate, pending additional investigation of the former UST location adjacent to building 410. No requirement for hydrocarbon remediation of soils or groundwater was identified.

3. Description of Works

3.1. In order to prepare the site physically for development, UR needed to modify ground levels, remove obstructions to foundations and services, and remove / treat any identified deleterious materials.

3.2. Building structures were subject to asbestos surveys and stripping by specialist contractors; asbestos containing construction materials, timber, scrap metal, plastic and other deleterious materials were removed from the site; this work is reported elsewhere.

3.3. All masonry, brick and concrete structures were processed on site to generate recovered aggregate to be used at a later date. SGP estimates the stockpile to be approximately 2000 m^3.

3.4. Following turnover, trim specifications were carried out in gardens, car parks and drives trimmed to Finished Garden Levels (FGL) less 200mm;

3.5. Stripped turf and "topsoil" was placed in a temporary stockpile for classification to determine its potential for re-use as garden topsoil. SGP estimates the stockpile volume to be approximately 1000m^3.

3.6. The locations of stockpiles are shown on drawing D02.

4. Inspections and Testing

4.1. SGP attended the site on 6 occasions during and following the remediation earthworks. The dates and activities carried out in the Phase 1A area during SGP attendance, cross referenced to the photographic record (Appendix A), and Analysis Results (Appendix B) are summarised in the table below.

Table 4.1 SGP Inspection Summary

Date	SGP Activities	Record
12/12/2013	Inspection of ground conditions. 3 samples taken in-situ of stripped surfaces and submitted to Jones Environmental for a standard suite analysis.	Photos: 1-4 Sample analysis ref: 13/11762 (samples DOR410, DOR450-1, DOR450-2)
18/12/2013	Inspection of ground conditions. 3 samples taken in-situ of stripped subsoil surfaces, along with a further 3 samples of stripped topsoil stockpiled on site to be used at a later date and submitted to Jones Environmental for a standard suite analysis.	Photos: 5-12 Sample analysis ref: 13/11985 (samples PG-SS1, PG-SS2, PG-SS3, PG-TS1, PG-TS2, PG-TS3)

Date	SGP Activities	Record
10/01/2014	Inspection of ground conditions. 4 samples taken in-situ of stripped surfaces and submitted to Jones Environmental for a standard suite analysis. An additional retest sample was also collected in place of DOR-450-1 following additional remediation in this area.	Photos: 13-23 Sample analysis ref: 14/1676 (samples DOR402-SS1, DOR403-SS1, DOR404-SS1, DOR409-SS1, DOR450-SS3)
17/01/2014	Inspection of ground conditions. 2 samples taken in-situ of stripped surfaces and submitted to Jones Environmental for a standard suite analysis. 2 samples of site generated crush collected for asbestos screen only.	Photos: 24-28 Sample analysis ref: 14/1906 (sample DOR-403-SS1, DOR-BC-SS1, DOR-CRUSH1-SS2, DOR-CRUSH1-SS1)
07/02/2014	2 samples of site generated crush collected for asbestos screen only.	Sample analysis ref: 14/2706 (sample DOR-CRUSH1-S3, DOR-CRUSH1-S4)
25/02/2014	Inspection of completed site - development commenced on plots	Photos 29, 30

4.2. Validation of Cover Soils

4.2.1. Sampling and analysis was carried out to determine the suitability of recovered soil strip and retained in-situ material for the potential of use within the garden / landscaping cover layer. Because the site surface was left at least 200mm below finished garden level, validation of the retained / replaced soils was carried out to a minimum depth of 400mm (600mm below finished garden level).

4.2.2. A total of 12 samples (excluding one re-sample) were taken from the stripped or replaced soil surfaces. On the worst case assumption of the soils forming the lower 400mm of the garden / landscaping cover layer, and a total site area of 1.44ha, the volume of validated soil is effectively 5,760m^3, and the test rate is equivalent to 1 sample per 480m^3, achieving the specified rate of 1 sample per 500m^3.

4.2.3. Sampling of stripped and stockpiled "topsoil" was carried out from the stockpile, with 3 representative samples collected. The stockpile volume is estimated to be around 1,000m^3, so the required minimum sampling rate of 1 per 500m^3 was achieved.

4.2.4. All samples were collected by SGP geo-environmental consultants and were placed in appropriate laboratory-provided containers and stored in cooled boxes. Samples were delivered to the laboratory (Jones Environmental) within 24 hours of collection. SGP retains chain of custody documentation.

4.2.5. The results provided in laboratory certificates 13/11762, 13/11985, 14/1676, 14/1906 and 14/2706 (Appendix B) are summarised in the table below and are compared to assessment criteria for garden cover soils:

Table 4.2 Analysis Summary for cover soils

Contaminant	Samples	Range of Concentrations (mg/kg unless stated)	Residential Use	
			Screening criteria* (mg/kg unless stated)	Exceedences
SOM	16	<0.2-9.7	-	-
asbestos fibre*	16	NFD – Fibres Detected	<0.001%	5 (DOR410, DOR450-1, DOR403-SS1, DOR404-SS1, DOR-BC-SS1)
antimony	7	<1.0-2.0	550	none
arsenic	16	9.7-50.2	32	2 (DOR450-1, DOR403-SS1)
barium	16	31-300	1300	none
beryllium	16	<0.5-2.3	51	none
cadmium	16	<0.1-8.7	10	none
chromium	16	14-37.5	3000	none
chromium IV	16	<0.3	4.3	none
cobalt	16	3.8-15	240	none
copper	16	7-75	300	none
lead	16	8-255	450	none
mercury	16	<0.1-0.5	1	none
molybdenum	16	0.5-2.8	670	none
nickel	16	10-39.9	130	none
selenium	16	<1-1	350	none
vanadium	16	23-82	75	2 (DOR403-SS1, DOR403-SS2)
water soluble boron	16	0.2-2.5	291	none
zinc	16	29-780	300	1 (DOR450-1)
naphthalene	16	<0.04	1.5	none
acenaphthylene	16	<0.03-0.05	210	none
acenaphthene	16	<0.05-0.08	170	none
fluorene	16	<0.04-0.06	160	none
phenanthrene	16	<0.03-0.93	92	none
anthracene	16	<0.04-0.34	2300	none
fluoranthene	16	<0.03-2.03	260	none
pyrene	16	<0.03-1.65	560	none
benzo(a)anthracene	16	<0.06-0.91	3.1	none
chrysene	16	<0.02-0.89	6	none
benzo(bk)fluoranthene	16	<0.07-2.27		none
benzo(a)pyrene	16	<0.04-1.48	0.83	1 (DOR410)
indeno(123cd)pyrene	16	<0.04-1.79	3.2	none
dibenzo(ah)anthracene	16	<0.04-0.24	0.76	none
benzo(ghi)perylene	16	<0.04-1.17	44	none
aliphatic C5-C6	16	<0.1	30	none
aliphatic C6-C8	16	<0.1	73	none
aliphatic C8-C10	16	<0.1	19	none
aliphatic C10-C12	16	<0.2	93	none
aliphatic C12-C16	16	<4	740	none
aliphatic C16-C21	16	<7	1000	none
aliphatic C21-C35	16	<7-38	1000	none

Contaminant	Samples	Range of Concentrations (mg/kg unless stated)	Residential Use	
			Screening criteria* (mg/kg unless stated)	Exceedences
aromatic C6-C7	16	<0.1	0.08	none
aromatic C7-C8	16	<0.1	120	none
aromatic C8-C10	16	<0.1	27	none
aromatic C10-C12	16	<0.2	69	none
aromatic C12-C16	16	<4	140	none
aromatic C16-C21	16	<7	250	none
aromatic C21-C35	16	<7-116	890	none
benzene	16	<0.05	0.08	none
toluene	16	<0.05	120	none
ethylbenzene	16	<0.05	65	none
o-xylene	16	<0.05	45	none
m-xylene	16	<0.05	44	none
p-xylene	16	<0.05	42	none
methyl tert butyl ether	16	<0.05	49	none

* not included in approved Remedial Strategy but proposed in SGP draft revised Strategy, R1742-R01 Table 6.2

4.2.6. Five occurrences were reported where asbestos fibre was identified. No visible discrete fragments of suspected ACM were observed by SGP during inspections. Where positive asbestos fibre identification occurred, samples were scheduled for quantification by accredited methods. Four samples (DOR410, DOR403-SS1, DOR404-SS1, DOR-BC-SS1) were scheduled for quantification, of which all yielded quantification below 0.001% and thus meeting the proposed guideline criterion (no requirement for asbestos testing or criterion exists under the currently approved Remediation Strategy).

4.2.7. Sample DOR450-1 was not scheduled for asbestos quantification due to the presence also of arsenic and zinc in excess of the soil criteria. It was determined that a re-scrape of approximately 20m^3 in the immediate area would be carried out. This was followed by collection of an additional sample (DOR450-SS3) from the remaining upper 400mm of the soil profile. No asbestos fibres were detected in the soil following the re-scrape. No exceedence of arsenic at 22.7 mg/kg or zinc at 67 mg/kg was recorded in the re-scrape sample. All surplus excavation arisings were replaced at a level below the base 600mm cover system.

4.3. Two samples (DOR403-SS1, DOR403-SS2) were found to slightly exceed the 75 mg/kg screening criteria for vanadium, at 82 mg/kg and 79 mg/kg respectively, with DOR403-SS1 also slightly exceeding the arsenic criterion 36.7 mg/kg. In view of the published likelihood of naturally elevated concentrations of arsenic and vanadium in the area, and the absence of any identified anthropogenic material in the samples, it was determined that a statistical estimate of the sample mean taking the phase 1a area as a single averaging area should be carried out. The results, shown below, indicate that there is no significant risk to human health from the likely concentrations of arsenic and vanadium within the site subsoils.

Table 4.3 Statistical Analysis of Arsenic and Vanadium Concentrations

statistic	arsenic (mg/kg)	vanadium (mg/kg)
criterion	32.0	75.0
no. of samples	12	12
arithmetic mean	17.1	49.5
upper confidence limit (UCL 0.95)	20.9	59.8

4.3.1. One raised concentration of benzo(a)pyrene was encountered (DOR410) at 1.48 mg/kg. This is likely to have been the result of the inclusion of a relatively small proportion of boiler ash within the generally natural sand and gravel. The sample location was in a low lying area greater than 600mm below finished garden level, therefore the result does not apply to cover soil validation, and the material will be retained below the 600mm cover when this is placed by Dorchester during the development phase.

4.4. Validation of Site Generated Crushed Aggregate

4.4.1. Sampling analysis was carried out to determine the suitability of crushed recovered aggregate for potential reuse during the development phase.

4.4.2. Approximately 2,000m^3 of crushed aggregate was generated on site. SGP attended site on two occasions to collect a total of 4 samples, achieving a sampling frequency of 1 per 500m^3. The results provided in the laboratory certificates 14/1906 and 14/2706 (Appendix B) are summarised in the table below:

Table 4.4 Asbestos Screening Summary for Recovered Aggregate

Contaminant	Samples	Range of Concentrations (mg/kg unless stated)	Residential Use	
			Screening criteria (mg/kg unless stated)	Exceedances Concentration & location
asbestos fibre	4	NFD-Fibres Detected	<0.001%-0.002%	4 (CRUSH1-SS1, CRUSH1-SS2, DOR-CRUSH 1-S3, DOR-CRUSH 1-S4)

4.2.1 Only materials from stockpiles where samples were reported as containing 'no fibres present' or where quantification was below 0.001% are considered acceptable for unconstrained use on site without special precautions (subject to any additional requirements of stakeholders). 3 of the 4 samples yielded quantification below 0.001% with 1 sample (DORCRUSH1-S3) yielding 0.002%, exceeding the SGP soil screening criteria for aggregate materials. It should be noted that there is no criterion for asbestos under the approved Remediation Strategy, and consequently there is no established provision for how asbestos-containing material may be used.

4.2.2 The asbestos detected does not pose a risk to the developers, existing neighbours, future residents, other site users or external receptors provided that fibres are not released to the air in significant (above background) concentrations that could then be inhaled. Mobilisation of asbestos from the aggregate may occur through two processes; wind erosion from dry surfaces or as a result of mechanical disturbance of dry deposits; under damp conditions cohesive forces are likely to prevent the mobilisation of fibres.

4.2.3 The stockpile was sampled for grading analysis, with 2 samples delivered to Nicholls Colton (ref: DOR-CRUSH1-1 and DOR-CRUSH1-2). The laboratory certificate of analysis is provided in Appendix. Both samples met the grading requirements for class 6F2 material.

4.3 Unknown Contamination

4.3.1 No previously unknown contamination was encountered within the Dorchester Phase 1a area. Ground conditions were found to be as expected and consistent with the preceding site investigations.

5. Conclusions and Recommendations

5.1. Verification of Remediation

5.1.1. The site stripped/fill surfaces and recovered stockpiled materials have been inspected and sampled by SGP in accordance with the approved Remediation Strategy. The types of materials encountered during the additional assessment and remediation works carried out in Phase 1a were consistent with those described in the site characterisation.

5.1.2. On the basis that UR has stripped and / or filled the overall Phase 1A area to 200mm below finished garden level (although it is known that central parts of the site have been left lower), SGP has validated and sampled the remediated surfaces to an average depth of 400mm (see photographs in Appendix A). A sampling frequency of 1 per 500m^3 of potential cover soil material has therefore been achieved.

5.1.3. One cover soil validation sample in the location of building 450 failed following the detection of traces of asbestos and exceedences of soil guideline criteria for arsenic and zinc (DOR450-1). The immediate area surrounding this sample was further stripped by the removal of approximately 20m^3 and re-sampled appropriately (DOR450-SS3). The results support the visual observations made that any further contamination appeared absent. Two samples carried minor exceedences of the vanadium screening value, and one sample contained a minor exceedence of the arsenic screening value. Neither of these was of statistical significance, and both samples appeared to be of entirely natural material. Given the recognised potential for naturally elevated arsenic and vanadium in the region, it is considered

that these results are acceptable. One sample (DOR410) exceeded the screening value for benzo(a)pyrene, however the sample position is located in a low-point within the site where the finished ground level is more than 600mm higher, meaning that further remediation is not required.

5.2. Recovered Materials

5.2.1. A total of approximately 1000m^3 topsoil stripped from grassed areas during the remediation works has been stockpiled and retained on site. SGP has sampled this to determine the potential for reuse as cover soil. A total of three samples were collected achieving a sampling frequency of >1 per 500m^3. Testing indicates that the stockpiled topsoil is suitable for reuse within the development however any further necessary assessment of these materials following placing in gardens and landscaping will be the responsibility of the developer.

5.2.2. Approximately 2000m^3 recovered aggregate was generated on site. A total of 4 samples were collected from this stockpile for asbestos screening purposes only. As a result of one sample (DORCRUSH1-S3) yielding quantification of 0.002%, a concentration greater than the SGP proposed assessment criteria, it is recommended these materials are not used for the construction at shallow depth (less than 600mm below finished ground level) within the Phase 1A site. The material may be placed at depths below which excavations for plot drainage and utilities would normally be made, and well below those which could feasibly occur in a domestic setting. Deeper excavations will be required on the site to construct roads, drains and sewers; however the impacted materials should be located outside the footprints of roads and drainage corridors to prevent their disturbance and generation of arisings.

5.2.3. Prevention of the release of airborne dust and fibre from activities which disturb the placed aggregate should carried out during the construction phase of the development by effective dust controls and materials management. Although the low concentrations of asbestos present would not be anticipated to result in airborne concentrations approaching the HSE control limit, employers still have a duty of care to reduce exposure to asbestos to levels as low as reasonably practicable; this may be achieved through simple measures such as standard dust abatement practices including damping down excavations and arisings during works in dry conditions.

5.2.4. Works carried out during the construction phase must incorporate controls on materials to ensure that arisings potentially containing trace asbestos are not left at the surface to dry out and do not become incorporated within areas where future disturbance can be anticipated; the most sensitive being the clean cover within gardens and corridors where utilities are to be laid. Provided that appropriate control measures and materials management systems are implemented by the Developer, the presence of the reported trace asbestos fibres within the

recovered aggregate is not considered to pose significant risks or constraints for the remaining development works and future use of the site.

5.2.5. Once development is complete and the site surface is variously surfaced by permanent structures, hard standing or cover soils, the presence of trace asbestos within the aggregate layer at a minimum depth of 600mm cannot feasibly generate any airborne fibres; long-term soil mixing by natural processes (bioturbation) and most activities carried out in a domestic setting would not be expected to move materials to the surface from below depths of 600mm, the compacted aggregate forming a physical barrier that will be difficult to excavate using hand tools.

5.3. Ground Gas / Vapour Hazards

5.3.1. No significant sources of hydrocarbon vapours were identified on or adjacent to the site. Existing and former bulk storage tank locations were not significantly contaminated.

5.3.2. Significant amounts of degradable organic materials were not reported during the site turnover and there is no evidence to revise the classification of the site in respect to risks to development from hazardous ground gas.

5.4. Water Main Risk Assessment

5.4.1. No significant risks have been identified with respect to the laying of water mains, however the requirements of the water services provider, including risk assessment, should be followed.

5.5. Sulphates and Concrete

5.5.1. No specific testing has been undertaken for potentially aggressive conditions to concrete. Reference should be made to the preceding site investigation reports.

5.6. Further Requirements

5.6.1. In order to secure completion of remediation in the Phase 1A area in accordance with the Remediation Strategy, the developer is required to complete the agreed garden / landscaping cover system by placing a minimum further 200mm of clean, validated soils in all garden and landscaped areas (up to 600mm in areas where the UR remediation works have left lower ground levels at handover).

5.6.2. Recommendations for the use of recovered aggregate stored on the site include careful handling, avoiding dust release or track-out, and placement in areas unlikely to be disturbed in the future, e.g. areas of fill at >600mm below finished garden or landscape areas, below roads outside service trenches and below plot footprints.

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

5.7. Long-term Management and Monitoring

5.7.1. No specific requirements for long-term monitoring or management have been identified within the site. Residual contamination has been found to be of low significance, low mobility and stable, and is unlikely to become a pollution source in the future.

5.8. Limitations

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

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

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

DRAWINGS

KEY:

- Approximate location of CRUSH 1 Stockpile
- Approximate location of Topsoil Stockpile
- Sample Entry Locations
- Boundary

SMITH GRANT Environmental Consultancy LLP

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Station House, Station Road
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Tel: 01978 822367
Fax: 01978 8247182

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

Project: Dorchester Phase 1A Upper Heyford	
Drawing: Soil Validation Location Plan	
Drawn: GC	Checked: AFS
Date: 04/03/2014	Scale: 1:1250 @ A3
Job No: R1742	Drg No: D01

APPENDIX A.

Site Photographs

1. 12.12.13 - cover validation DOR410

2. 12.12.13 - cover validation DOR410

3. 12.12.13 - cover validation DOR450-1

4. 12.12.13 - cover validation DOR450-2

5. 18.12.13 – Phase 1A site generated topsoil

6. 18.12.13 – Phase 1A site generated topsoil

7. cover validation 18.12.13 – PG-SS1

8. cover validation 18.12.13 – PG-SS1

9. cover validation 18.12.13 – PG-SS2

10. cover validation 18.12.13 – PG-SS2

11. cover validation 18.12.13 – PG-SS3

12. cover validation 18.12.13 – PG-SS3

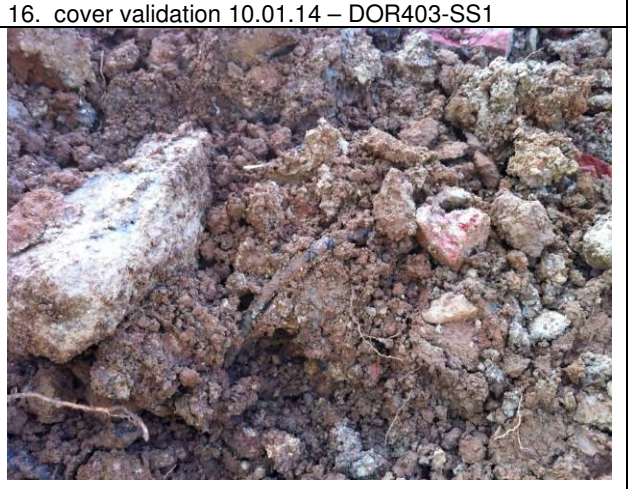
13. cover validation 10.01.14 – DOR402-SS1

14. cover validation 10.01.14 – DOR402-SS1

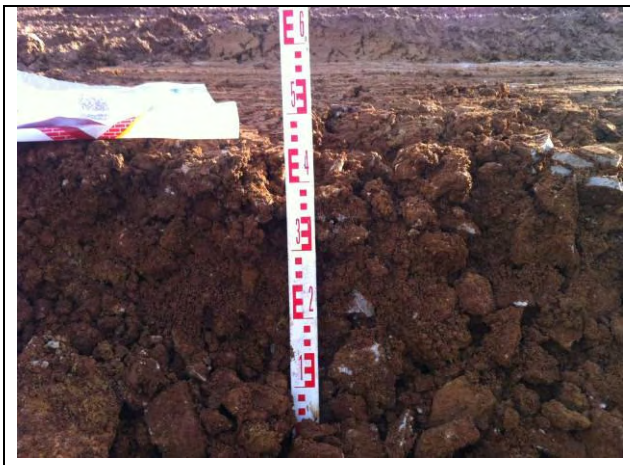
15. cover validation 10.01.14 – DOR403-SS1

16. cover validation 10.01.14 – DOR403-SS1

17. cover validation 10.01.14 – DOR404-SS1



18. cover validation 10.01.14 – DOR404-SS1



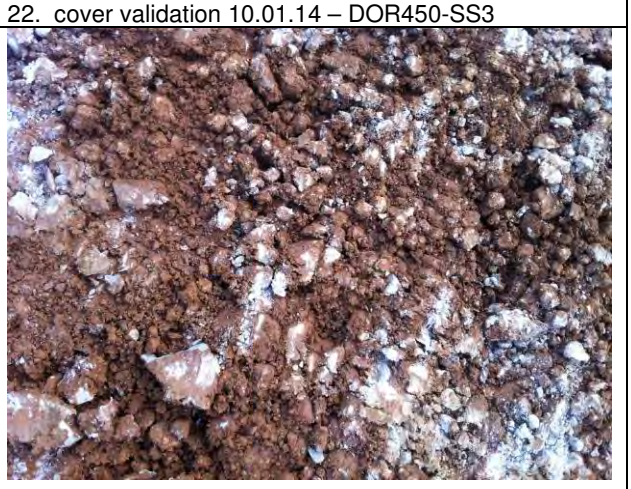
19. cover validation 10.01.14 – DOR409-SS1

20. cover validation 10.01.14 – DOR409-SS1

21. cover validation 10.01.14 – DOR450-SS3

22. cover validation 10.01.14 – DOR450-SS3

23. cover validation 17.01.14 – DOR403-SS2



24. cover validation 17.01.14 – DOR403-SS2

25. cover validation 17.01.14 – DOR-BC-SS1

26. cover validation 17.01.14 – DOR-BC-SS1

27. 17.01.14 – Site generated recycled aggregate

28. 17.01.14 – Site generated recycled aggregate

29. 25.02.14 – View from southwest facing east

30. 25.02.14 – View from northwest facing east

APPENDIX B.

Analytical Results

Jones Environmental Laboratory

Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

Tel: +44 (0) 1244 833780
Fax: +44 (0) 1244 833781

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

Attention :	Tony Smith
Date :	27th January, 2014
Your reference :	R1742
Our reference :	Test Report 13/11762 Batch 1 Schedule B
Location :	Heyford
Date samples received :	13th December, 2013
Status :	Final report
Issue :	1

Four samples were received for analysis on 13th December, 2013. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Bruce Leslie
Project Co-ordinator

Bob Millward BSc FRSC
Principal Chemist

Client Name: Smith Grant LLP
Reference: R1742
Location: Heyford
Contact: Tony Smith
JE Job No.: 13/11762

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	3-4										Please see attached notes for all abbreviations and acronyms		
Sample ID	DOR410												
Depth	0-0.4												
COC No / misc													
Containers	V J												
Sample Date	12/12/2013												
Sample Type	Soil												
Batch Number	1										LOD	Units	Method No.
Date of Receipt	13/12/2013												
Asbestos PCOM Quantification (Fibres)	<0.001										<0.001	mass %	TM65/PM42

Client Name: Smith Grant LLP
Reference: R1742
Location: Heyford
Contact: Tony Smith

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 13/11762						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 13/11762

SOILS

Please note we are only MCERTS accredited for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. If we are instructed to keep samples, a storage charge of £1 (1.5 Euros) per sample per month will be applied until we are asked to dispose of them.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

WATERS

Please note we are not a Drinking Water Inspectorate (DWI) Approved Laboratory . It is important that detection limits are carefully considered when requesting water analysis.

UKAS accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

NOTE

Data is only accredited when all the requirements of our Quality System have been met. In certain circumstances where the requirements have not been met, the laboratory may issue the data in an interim report but will remove the accreditation, in this instance results should be considered indicative only. Where possible samples will be re-extracted and a final report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	UKAS accredited.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance.
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
CO	Suspected carry over
OC	Outside Calibration Range
NFD	No Fibres Detected

JE Job No: 13/11762

Test Method No.	Description	Prep Method No. (if appropriate)	Description	UKAS	MCERTS (soils only)	Analysis done on As Received (AR) or Air Dried (AD)	Reported on dry weight basis
TM65	Asbestos Bulk Identification	PM42	Screening of soils for fibres			AR	Yes

Jones Environmental Laboratory

Unit 3 Deeside Point
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Deeside Industrial Park
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Smith Grant LLP
Station House
Station Road
Ruabon
Wrexham
LL14 6DL

Attention :	Tony Smith
Date :	6th January, 2014
Your reference :	R1742
Our reference :	Test Report 13/11762 Batch 1
Location :	Heyford
Date samples received :	13th December, 2013
Status :	Final report
Issue :	1

Four samples were received for analysis on 13th December, 2013. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Bruce Leslie
Project Co-ordinator

Bob Millward BSc FRSC
Principal Chemist

Client Name: Smith Grant LLP
Reference: R1742
Location: Heyford
Contact: Tony Smith
JE Job No.: 13/11762

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	3-4	5-6	7-8							LOD	Units	Method No.
Sample ID	AG02	DOR410	DOR450-1	DOR450-2									
Depth	0-0.4	0-0.4	0-0.4	0-0.4									
COC No / misc													
Containers	V J	V J	V J	V J									
Sample Date	12/12/2013	12/12/2013	12/12/2013	12/12/2013									
Sample Type	Soil	Soil	Soil	Soil									
Batch Number	1	1	1	1									
Date of Receipt	13/12/2013	13/12/2013	13/12/2013	13/12/2013									
Arsenic #M	10.9	-	-	12.6							<0.5	mg/kg	TM30/PM15
Arsenic	-	14.7	50.2	-							<0.5	mg/kg	TM30/PM62
Barium #M	30	-	-	58							<1	mg/kg	TM30/PM15
Barium	-	300	295	-							<1	mg/kg	TM30/PM62
Beryllium	0.6	-	-	0.5							<0.5	mg/kg	TM30/PM15
Beryllium	-	1.3	2.3	-							<0.5	mg/kg	TM30/PM62
Cadmium #M	<0.1	-	-	0.2							<0.1	mg/kg	TM30/PM15
Cadmium	-	0.6	8.7	-							<0.1	mg/kg	TM30/PM62
Chromium #M	18.4	-	-	17.3							<0.5	mg/kg	TM30/PM15
Chromium	-	19.2	16.1	-							<0.5	mg/kg	TM30/PM62
Cobalt #M	4.5	-	-	4.2							<0.5	mg/kg	TM30/PM15
Cobalt	-	11.7	15.0	-							<0.5	mg/kg	TM30/PM62
Copper #M	7	-	-	7							<1	mg/kg	TM30/PM15
Copper	-	34	75	-							<1	mg/kg	TM30/PM62
Lead #M	9	-	-	23							<5	mg/kg	TM30/PM15
Lead	-	199	255	-							<5	mg/kg	TM30/PM62
Mercury #M	<0.1	-	-	<0.1							<0.1	mg/kg	TM30/PM15
Mercury	-	0.5	0.3	-							<0.1	mg/kg	TM30/PM62
Molybdenum #M	0.9	-	-	0.9							<0.1	mg/kg	TM30/PM15
Molybdenum	-	2.5	2.8	-							<0.1	mg/kg	TM30/PM62
Nickel #M	10.3	-	-	10.0							<0.7	mg/kg	TM30/PM15
Nickel	-	23.2	39.9	-							<0.7	mg/kg	TM30/PM62
Selenium #M	<1	-	-	<1							<1	mg/kg	TM30/PM15
Selenium	-	<1	<1	-							<1	mg/kg	TM30/PM62
Vanadium	44	-	-	34							<1	mg/kg	TM30/PM15
Vanadium	-	23	52	-							<1	mg/kg	TM30/PM62
Water Soluble Boron #M	0.9	-	-	1.1							<0.1	mg/kg	TM74/PM32
Water Soluble Boron	-	1.8	1.2	-							<0.1	mg/kg	TM74/PM61
Zinc #M	29	-	-	57							<5	mg/kg	TM30/PM15
Zinc	-	168	780	-							<5	mg/kg	TM30/PM62

Please see attached notes for all abbreviations and acronyms

Client Name: Smith Grant LLP
Reference: R1742
Location: Heyford
Contact: Tony Smith
JE Job No.: 13/11762

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

J E Sample No.	1-2	3-4	5-6	7-8							LOD	Units	Method No.
Sample ID	AG02	DOR410	DOR450-1	DOR450-2									
Depth	0-0.4	0-0.4	0-0.4	0-0.4									
COC No / misc													
Containers	V J	V J	V J	V J									
Sample Date	12/12/2013	12/12/2013	12/12/2013	12/12/2013									
Sample Type	Soil	Soil	Soil	Soil									
Batch Number	1	1	1	1									
Date of Receipt	13/12/2013	13/12/2013	13/12/2013	13/12/2013									
PAH MS													
Naphthalene #M	<0.04	<0.04	<0.04	<0.04							<0.04	mg/kg	TM4/PM8
Acenaphthylene	0.03	0.04	<0.03	<0.03							<0.03	mg/kg	TM4/PM8
Acenaphthene #M	0.08	<0.05	<0.05	<0.05							<0.05	mg/kg	TM4/PM8
Fluorene #M	0.09	<0.04	<0.04	<0.04							<0.04	mg/kg	TM4/PM8
Phenanthrene #M	0.88	0.45	0.08	0.09							<0.03	mg/kg	TM4/PM8
Anthracene #	0.27	0.09	<0.04	<0.04							<0.04	mg/kg	TM4/PM8
Fluoranthene #M	1.97	1.52	0.22	0.19							<0.03	mg/kg	TM4/PM8
Pyrene #	1.35	1.32	0.20	0.16							<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.75	0.78	0.12	0.10							<0.06	mg/kg	TM4/PM8
Chrysene #M	0.78	0.89	0.13	0.10							<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #M	1.19	2.27	0.21	0.16							<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	0.73	1.48	0.11	0.08							<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #M	0.56	1.79	0.11	0.08							<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	0.08	0.24	<0.04	<0.04							<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.39	1.17	0.08	0.06							<0.04	mg/kg	TM4/PM8
PAH 16 Total	9.2	12.0	1.3	1.0							<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.86	1.63	0.15	0.12							<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.33	0.64	0.06	0.04							<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	92	97	99	102							<0	%	TM4/PM8
TPH CWG													
Aliphatics													
>C5-C6 #M	<0.1	<0.1	<0.1	<0.1							<0.1	mg/kg	TM36/PM12
>C6-C8 #M	<0.1	<0.1	<0.1	<0.1							<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1	<0.1	<0.1	<0.1							<0.1	mg/kg	TM36/PM12
>C10-C12 #M	<0.2	<0.2	<0.2	<0.2							<0.2	mg/kg	TM5/PM16
>C12-C16 #M	<4	<4	<4	<4							<4	mg/kg	TM5/PM16
>C16-C21 #M	<7	<7	<7	<7							<7	mg/kg	TM5/PM16
>C21-C35 #M	<7	<7	<7	<7							<7	mg/kg	TM5/PM16
Total aliphatics C5-35	<19	<19	<19	<19							<19	mg/kg	TM5/TM36/PM12/PM16
Aromatics													
>C5-EC7	<0.1	<0.1	<0.1	<0.1							<0.1	mg/kg	TM36/PM12
>EC7-EC8	<0.1	<0.1	<0.1	<0.1							<0.1	mg/kg	TM36/PM12
>EC8-EC10 #M	<0.1	<0.1	<0.1	<0.1							<0.1	mg/kg	TM36/PM12
>EC10-EC12	<0.2	<0.2	<0.2	<0.2							<0.2	mg/kg	TM5/PM16
>EC12-EC16	<4	<4	<4	<4							<4	mg/kg	TM5/PM16
>EC16-EC21	<7	<7	<7	<7							<7	mg/kg	TM5/PM16
>EC21-EC35	<7	52	<7	<7							<7	mg/kg	TM5/PM16
Total aromatics C5-35	<19	52	<19	<19							<19	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-35)	<38	52	<38	<38							<38	mg/kg	TM5/TM36/PM12/PM16
MTBE #	<5	<5	<5	<5							<5	ug/kg	TM31/PM12
Benzene #	<5	<5	<5	<5							<5	ug/kg	TM31/PM12

Client Name: Smith Grant LLP
Reference: R1742
Location: Heyford
Contact: Tony Smith
JE Job No.: 13/11762

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

J E Sample No.	1-2	3-4	5-6	7-8							LOD	Units	Method No.
Sample ID	AG02	DOR410	DOR450-1	DOR450-2									
Depth	0-0.4	0-0.4	0-0.4	0-0.4									
COC No / misc													
Containers	V J	V J	V J	V J									
Sample Date	12/12/2013	12/12/2013	12/12/2013	12/12/2013									
Sample Type	Soil	Soil	Soil	Soil									
Batch Number	1	1	1	1									
Date of Receipt	13/12/2013	13/12/2013	13/12/2013	13/12/2013									
Toluene #	<5	<5	<5	<5							<5	ug/kg	TM31/PM12
Ethylbenzene #	<5	<5	<5	<5							<5	ug/kg	TM31/PM12
m/p-Xylene #	<5	<5	<5	<5							<5	ug/kg	TM31/PM12
o-Xylene #	<5	<5	<5	<5							<5	ug/kg	TM31/PM12
PCBs (Total vs Aroclor 1254)	<10	<10	<10	<10							<10	ug/kg	TM16/PM8
Natural Moisture Content	9.1	NDP	NDP	8.2							<0.1	%	PM4/PM0
Hexavalent Chromium	<0.3	<0.3	<0.3	<0.3							<0.3	mg/kg	TM38/PM20
Chromium III	18.4	19.2	16.1	17.3							<0.5	mg/kg	NONE/NONE
Free Cyanide	<0.5	<0.5	<0.5	<0.5							<0.5	mg/kg	TM89/PM45
Complex Cyanide	<0.5	<0.5	<0.5	<0.5							<0.5	mg/kg	TM89/PM45
Organic Matter	0.7	NDP	NDP	0.5							<0.2	%	TM21/PM24
pH #M	8.73	8.41	8.35	8.02							<0.01	pH units	TM73/PM11
Sample Type	Clayey Loam	Loam	Loam	Loamy Sand								None	PM13/PM0
Sample Colour	Medium Brown	Dark Brown	Medium Brown	Dark Brown								None	PM13/PM0
Other Items	STONES,ROOTS	STONES,ROOTS	STONES	STONES								None	PM13/PM0

Client Name: Smith Grant LLP
Reference: R1742
Location: Heyford
Contact: Tony Smith

Note:

Analysis was carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

If asbestos fibres are reported at trace levels there will not be enough fibres to quantify and will be less than 0.001%.

Signed on behalf of Jones Environmental Laboratory:

Gemma Newsome
Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Description	Asbestos Containing Material	Asbestos Results	Asbestos Level	Comments
13/11762	1	AG02	0-0.4	2	30/12/13	Soil-Silt/Clay/Brick/Stone	None	NAD	NAD	
13/11762	1	DOR410	0-0.4	4	30/12/13	Soil-Silt/Clay/Brick/Stone	Free Fibres	Chrysotile	Quantifiable	
13/11762	1	DOR450-1	0-0.4	6	30/12/13	Soil-Silt/Clay/Brick/Stone/MMMF	Free Fibres	Amosite	Trace	
13/11762	1	DOR450-2	0-0.4	8	30/12/13	Soil-Silt/Clay/Brick/Stone/MMMF	None	NAD	NAD	

Client Name: Smith Grant LLP **Matrix : Solid**
Reference: R1742
Location: Heyford
Contact: Tony Smith

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	NDP Reason
13/11762	1	DOR410	0-0.4	3-4	Asbestos detected in sample
13/11762	1	DOR450-1	0-0.4	5-6	Asbestos detected in sample

Client Name: Smith Grant LLP
Reference: R1742
Location: Heyford
Contact: Tony Smith

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 13/11762						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 13/11762

SOILS

Please note we are only MCERTS accredited for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. If we are instructed to keep samples, a storage charge of £1 (1.5 Euros) per sample per month will be applied until we are asked to dispose of them.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

WATERS

Please note we are not a Drinking Water Inspectorate (DWI) Approved Laboratory . It is important that detection limits are carefully considered when requesting water analysis.

UKAS accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

NOTE

Data is only accredited when all the requirements of our Quality System have been met. In certain circumstances where the requirements have not been met, the laboratory may issue the data in an interim report but will remove the accreditation, in this instance results should be considered indicative only. Where possible samples will be re-extracted and a final report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	UKAS accredited.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance.
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
CO	Suspected carry over
OC	Outside Calibration Range
NFD	No Fibres Detected

JE Job No: 13/11762

Test Method No.	Description	Prep Method No. (if appropriate)	Description	UKAS	MCERTS (soils only)	Analysis done on As Received (AR) or Air Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
TM4	16 PAH by GC-MS, modified USEPA 8270	PM8	In-house method based on USEPA 3510. ISO 17025 accredited extraction method for organic extraction from solid samples using an end over end agitator.			AR	Yes
TM4	16 PAH by GC-MS, modified USEPA 8270	PM8	In-house method based on USEPA 3510. ISO 17025 accredited extraction method for organic extraction from solid samples using an end over end agitator.	Yes		AR	Yes
TM4	16 PAH by GC-MS, modified USEPA 8270	PM8	In-house method based on USEPA 3510. ISO 17025 accredited extraction method for organic extraction from solid samples using an end over end agitator.	Yes	Yes	AR	Yes
TM5	In-House method based on USEPA 8015B. Determination of Extractable Petroleum Hydrocarbons (EPH) in the carbon chain length range of C8-40 by GC-FID. Accredited to ISO 17025 on soil and water samples and MCERTS (carbon banding only) on soils. All accreditation is matrix specific.	PM16	Aliphatic/Aromatic fractionation			AR	Yes
TM5	In-House method based on USEPA 8015B. Determination of Extractable Petroleum Hydrocarbons (EPH) in the carbon chain length range of C8-40 by GC-FID. Accredited to ISO 17025 on soil and water samples and MCERTS (carbon banding only) on soils. All accreditation is matrix specific.	PM16	Aliphatic/Aromatic fractionation	Yes	Yes	AR	Yes
TM5/TM36	TPH CWG by GC-FID	PM12/PM16	CWG GC-FID			AR	Yes
PM13	Soil Typing for MCERTS	PM0	No preparation is required.			AR	
TM16	In-House method based on USEPA 8270. Determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS. Accredited to ISO 17025 for waters. All accreditation is matrix specific. Quantification by Internal Standard method.	PM8	In-house method based on USEPA 3510. ISO 17025 accredited extraction method for organic extraction from solid samples using an end over end agitator.			AR	Yes
TM21	TOC and TC by Combustion	PM24	Eltra preparation			AD	Yes

JE Job No: 13/11762

Test Method No.	Description	Prep Method No. (if appropriate)	Description	UKAS	MCERTS (soils only)	Analysis done on As Received (AR) or Air Dried (AD)	Reported on dry weight basis
TM30	Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry) using Thermo iCAP 6000 series instrument. Accredited to ISO 17025 for soils and waters and MCERTS accredited for Soils. All accreditation is matrix specific.	PM15	In-house method based on USEPA 3010A. Acid digestion of water samples and analsyis by ICP-OES as per method TM030S. ISO 17025 and MCERTS accredited extraction method. All accreditation is matrix specific			AD	Yes
TM30	Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry) using Thermo iCAP 6000 series instrument. Accredited to ISO 17025 for soils and waters and MCERTS accredited for Soils. All accreditation is matrix specific.	PM15	In-house method based on USEPA 3010A. Acid digestion of water samples and analsyis by ICP-OES as per method TM030S. ISO 17025 and MCERTS accredited extraction method. All accreditation is matrix specific	Yes	Yes	AD	Yes
TM30	Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry) using Thermo iCAP 6000 series instrument. Accredited to ISO 17025 for soils and waters and MCERTS accredited for Soils. All accreditation is matrix specific.	PM62	Aqua Regia extraction (Soils) (as received sample)			AR	Yes
TM31	In-house method based on USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID. Accredited to ISO 17025 for soils and waters and MCERTS accredited for soils. Accreditation is matrix specific.	PM12	In-house method based on USEPA 5021. Preparation of solid and liquid samples for headspace analysis. Samples are spiked with surrogates to facilitate quantification. ISO 17025 accredited extraction method. All accreditation is matrix specific			AR	Yes
TM31	In-house method based on USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID. Accredited to ISO 17025 for soils and waters and MCERTS accredited for soils. Accreditation is matrix specific.	PM12	In-house method based on USEPA 5021. Preparation of solid and liquid samples for headspace analysis. Samples are spiked with surrogates to facilitate quantification. ISO 17025 accredited extraction method. All accreditation is matrix specific	Yes		AR	Yes
TM36	In-House method based on USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-12 by headspace GC-FID. Accredited to ISO 17025 on soil and water samples and MCERTS accredited (carbon banding only) on soils. All accreditation is matrix specific.	PM12	In-house method based on USEPA 5021. Preparation of solid and liquid samples for headspace analysis. Samples are spiked with surrogates to facilitate quantification. ISO 17025 accredited extraction method. All accreditation is matrix specific			AR	Yes
TM36	In-House method based on USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-12 by headspace GC-FID. Accredited to ISO 17025 on soil and water samples and MCERTS accredited (carbon banding only) on soils. All accreditation is matrix specific.	PM12	In-house method based on USEPA 5021. Preparation of solid and liquid samples for headspace analysis. Samples are spiked with surrogates to facilitate quantification. ISO 17025 accredited extraction method. All accreditation is matrix specific	Yes	Yes	AR	Yes
TM38	Ionic analysis using the Thermo Aquakem Photometric Automatic Analyser. Accredited to ISO17025 and MCERTS for most analytes. All accreditation is matrix specific.	PM20	in-house method based on USEPA 1311 (TCLP). Solid samples are extracted with two parts de-ionised water to one part solid material for analysis of the extract for various parameters.			AR	Yes
TM65	Asbestos Bulk Identification	PM42	Screening of soils for fibres			AR	
TM65	Asbestos Bulk Identification	PM42	Screening of soils for fibres	Yes		AR	

JE Job No: 13/11762

Test Method No.	Description	Prep Method No. (if appropriate)	Description	UKAS	MCERTS (soils only)	Analysis done on As Received (AR) or Air Dried (AD)	Reported on dry weight basis
TM73	pH in by Metrohm	PM11	1:2.5 soil/water extraction	Yes	Yes	AR	No
TM74	Water Soluble Boron by ICP-OES	PM32	Preparation of soils for WSB	Yes	Yes	AD	Yes
TM74	Water Soluble Boron by ICP-OES	PM61	Preparation of soils for WSB (as received sample)			AR	Yes
TM89	In-house method based on USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. ISO17025 accredited method for soils and waters and MCERTS on soils. Accreditation is matrix specific.	PM45	Cyanide & Thiocyanate prep for soils			AR	Yes
NONE	No Method Code	NONE	No Method Code				Yes

Jones Environmental Laboratory

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

Attention :	Gareth Carroll
Date :	8th January, 2014
Your reference :	R1742
Our reference :	Test Report 13/11985 Batch 1
Location :	Upper Heyford
Date samples received :	19th December, 2013
Status :	Final report
Issue :	1

Seventeen samples were received for analysis on 19th December, 2013. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Bruce Leslie
Project Co-ordinator

Bob Millward BSc FRSC
Principal Chemist

Client Name: Smith Grant LLP
Reference: R1742
Location: Upper Heyford
Contact: Gareth Carroll
JE Job No.: 13/11985

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

J E Sample No.	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-20	LOD	Units	Method No.
Sample ID	PG-TS1	PG-TS2	PG-SS1	PG-SS2	PG-SS3	582-SS1-WEST	582-SS2-WEST	582-SS3-WEST	582-TS1-WEST	582-TS2-WEST			
Depth			0.45	0.45	0.45	0.4	0.4	0.4					
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J			
Sample Date	18/12/2013	18/12/2013	18/12/2013	18/12/2013	18/12/2013	18/12/2013	18/12/2013	18/12/2013	18/12/2013	18/12/2013			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	19/12/2013	19/12/2013	19/12/2013	19/12/2013	19/12/2013	19/12/2013	19/12/2013	19/12/2013	19/12/2013	19/12/2013			
Arsenic #M	20.5	19.6	14.2	14.6	9.7	16.2	13.6	15.5	23.7	28.6	<0.5	mg/kg	TM30/PM15
Barium #M	71	65	63	38	31	31	33	58	74	67	<1	mg/kg	TM30/PM15
Beryllium	1.3	1.2	0.6	0.7	0.7	0.9	0.8	0.9	1.3	1.4	<0.5	mg/kg	TM30/PM15
Cadmium #M	0.2	0.2	0.1	<0.1	<0.1	0.1	0.1	0.2	0.3	0.2	<0.1	mg/kg	TM30/PM15
Chromium #M	30.2	28.7	15.6	28.2	14.0	19.1	18.1	23.7	36.9	55.3	<0.5	mg/kg	TM30/PM15
Cobalt #M	9.9	9.6	4.8	4.6	4.9	5.9	5.1	6.9	9.4	10.7	<0.5	mg/kg	TM30/PM15
Copper #M	14	14	8	8	8	10	9	13	21	18	<1	mg/kg	TM30/PM15
Lead #M	27	25	14	13	15	17	15	21	46	38	<5	mg/kg	TM30/PM15
Mercury #M	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM30/PM15
Molybdenum #M	1.5	1.3	0.7	1.7	0.8	0.8	0.9	0.9	1.6	2.5	<0.1	mg/kg	TM30/PM15
Nickel #M	21.7	21.7	11.4	12.3	11.5	14.2	12.8	15.1	22.0	22.7	<0.7	mg/kg	TM30/PM15
Selenium #M	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	mg/kg	TM30/PM15
Vanadium	59	58	35	36	31	53	44	48	72	68	<1	mg/kg	TM30/PM15
Water Soluble Boron #M	2.1	2.5	0.7	0.5	1.3	1.2	1.4	1.8	2.3	1.9	<0.1	mg/kg	TM74/PM32
Zinc #M	64	66	34	29	29	33	33	49	154	112	<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #M	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.04	<0.03	<0.03	mg/kg	TM4/PM8
Acenaphthene #M	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	TM4/PM8
Fluorene #M	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Phenanthrene #M	0.07	0.08	<0.03	0.06	<0.03	<0.03	<0.03	0.04	0.91	0.08	<0.03	mg/kg	TM4/PM8
Anthracene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.10	<0.04	<0.04	mg/kg	TM4/PM8
Fluoranthene #M	0.18	0.17	0.07	0.27	0.03	<0.03	<0.03	0.18	1.81	0.27	<0.03	mg/kg	TM4/PM8
Pyrene #	0.16	0.14	0.06	0.25	0.03	<0.03	<0.03	0.17	1.31	0.23	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.09	0.12	<0.06	0.16	<0.06	<0.06	<0.06	0.13	0.52	0.14	<0.06	mg/kg	TM4/PM8
Chrysene #M	0.10	0.09	0.05	0.18	0.02	0.02	<0.02	0.16	0.91	0.17	<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #M	0.16	0.16	0.08	0.29	<0.07	<0.07	<0.07	0.21	1.36	0.24	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	0.12	0.10	0.06	0.22	<0.04	<0.04	<0.04	0.15	0.76	0.17	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #M	0.08	0.07	<0.04	0.13	<0.04	<0.04	<0.04	0.09	0.56	0.10	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.09	<0.04	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.08	0.07	<0.04	0.13	<0.04	<0.04	<0.04	0.09	0.51	0.10	<0.04	mg/kg	TM4/PM8
PAH 16 Total	1.0	1.0	<0.6	1.7	<0.6	<0.6	<0.6	1.2	8.9	1.5	<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.12	0.12	0.06	0.21	<0.05	<0.05	<0.05	0.15	0.98	0.17	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.04	0.04	0.02	0.08	<0.02	<0.02	<0.02	0.06	0.38	0.07	<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	99	109	83	96	96	99	101	99	97	96	<0	%	TM4/PM8

Client Name: Smith Grant LLP
Reference: R1742
Location: Upper Heyford
Contact: Gareth Carroll
JE Job No.: 13/11985

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

J E Sample No.	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-20	LOD	Units	Method No.
Sample ID	PG-TS1	PG-TS2	PG-SS1	PG-SS2	PG-SS3	582-SS1-WEST	582-SS2-WEST	582-SS3-WEST	582-TS1-WEST	582-TS2-WEST			
Depth			0.45	0.45	0.45	0.4	0.4	0.4					
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J			
Sample Date	18/12/2013	18/12/2013	18/12/2013	18/12/2013	18/12/2013	18/12/2013	18/12/2013	18/12/2013	18/12/2013	18/12/2013			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	19/12/2013	19/12/2013	19/12/2013	19/12/2013	19/12/2013	19/12/2013	19/12/2013	19/12/2013	19/12/2013	19/12/2013			
TPH CWG													
Aliphatics													
>C5-C6 #M	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C6-C8 #M	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C10-C12 #M	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM16
>C12-C16 #M	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	mg/kg	TM5/PM16
>C16-C21 #M	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	mg/kg	TM5/PM16
>C21-C35 #M	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	mg/kg	TM5/PM16
Total aliphatics C5-35	<19	<19	<19	<19	<19	<19	<19	<19	<19	<19	<19	mg/kg	TM5/TM36/PM12/PM16
Aromatics													
>C5-EC7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC7-EC8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC8-EC10 #M	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC10-EC12	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM16
>EC12-EC16	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	mg/kg	TM5/PM16
>EC16-EC21	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	mg/kg	TM5/PM16
>EC21-EC35	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	mg/kg	TM5/PM16
Total aromatics C5-35	<19	<19	<19	<19	<19	<19	<19	<19	<19	<19	<19	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-35)	<38	<38	<38	<38	<38	<38	<38	<38	<38	<38	<38	mg/kg	TM5/TM36/PM12/PM16
MTBE #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM31/PM12
Benzene #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM31/PM12
Toluene #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM31/PM12
Ethylbenzene #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM31/PM12
m/p-Xylene #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM31/PM12
o-Xylene #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM31/PM12
PCBs (Total vs Aroclor 1254)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Natural Moisture Content	24.4	26.9	11.4	8.9	11.6	17.4	13.4	15.2	29.7	25.6	<0.1	%	PM4/PM0
Hexavalent Chromium	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	mg/kg	TM38/PM20
Free Cyanide	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	mg/kg	TM89/PM45
Complex Cyanide	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	mg/kg	TM89/PM45
Organic Matter	3.6	3.4	0.7	<0.2	0.7	1.2	1.0	1.2	3.6	2.8	<0.2	%	TM21/PM24
Electrical Conductivity @25C (5:1 ext)	171	132	126	105	114	120	126	159	186	150	<100	uS/cm	TM76/PM58
pH #M	7.89	7.92	8.64	8.87	8.71	8.41	8.10	8.57	8.06	7.98	<0.01	pH units	TM73/PM11
Sample Type	Clay	Clay	Clay	Clayey Sand	Clay	Clay	Clay	Clay	Clay	Clay		None	PM13/PM0
Sample Colour	Medium Brown	Medium Brown	Light Brown	Light Brown	Light Brown	Light Brown	Medium Brown	Medium Brown	Medium Brown	Medium Brown		None	PM13/PM0
Other Items	stones	stones	stones	stones	stones	stones	stones	stones	stones and roots	stones and roots		None	PM13/PM0

All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name: Smith Grant LLP
Reference: R1742
Location: Upper Heyford
Contact: Gareth Carroll
JE Job No.: 13/11985

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	21-22	23-24	25-26	27-28	29-30	35-36					LOD	Units	Method No.
Sample ID	582-SS4-WEST	BOVIS-SP1(TS)-1	581-SS1-WEST	581-SS2-WEST	581-TS1-WEST	PG-TS3							
Depth	0.4												
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J							
Sample Date	18/12/2013	18/12/2013	18/12/2013	18/12/2013	18/12/2013	18/12/2013							
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil							
Batch Number	1	1	1	1	1	1							
Date of Receipt	19/12/2013	19/12/2013	19/12/2013	19/12/2013	19/12/2013	19/12/2013							
Arsenic #M	14.8	20.6	21.7	16.1	18.4	21.3					<0.5	mg/kg	TM30/PM15
Barium #M	38	67	43	38	57	70					<1	mg/kg	TM30/PM15
Beryllium	0.8	1.3	1.2	0.9	0.9	1.2					<0.5	mg/kg	TM30/PM15
Cadmium #M	0.1	0.5	0.2	0.2	0.2	0.2					<0.1	mg/kg	TM30/PM15
Chromium #M	19.9	49.9	24.2	18.6	24.2	33.1					<0.5	mg/kg	TM30/PM15
Cobalt #M	5.8	9.5	7.3	5.7	7.2	9.9					<0.5	mg/kg	TM30/PM15
Copper #M	10	18	11	25	14	13					<1	mg/kg	TM30/PM15
Lead #M	17	91	15	19	40	20					<5	mg/kg	TM30/PM15
Mercury #M	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1					<0.1	mg/kg	TM30/PM15
Molybdenum #M	0.8	2.1	1.7	1.8	1.2	1.6					<0.1	mg/kg	TM30/PM15
Nickel #M	13.6	25.0	18.7	15.9	18.0	22.3					<0.7	mg/kg	TM30/PM15
Selenium #M	<1	1	<1	<1	<1	1					<1	mg/kg	TM30/PM15
Vanadium	50	60	65	47	50	60					<1	mg/kg	TM30/PM15
Water Soluble Boron #M	5.5	2.7	1.6	1.6	1.6	1.9					<0.1	mg/kg	TM74/PM32
Zinc #M	33	75	43	206	76	59					<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #M	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04					<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03					<0.03	mg/kg	TM4/PM8
Acenaphthene #M	0.64	<0.05	<0.05	<0.05	<0.05	<0.05					<0.05	mg/kg	TM4/PM8
Fluorene #M	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04					<0.04	mg/kg	TM4/PM8
Phenanthrene #M	0.38	0.07	0.05	<0.03	0.12	0.05					<0.03	mg/kg	TM4/PM8
Anthracene #	0.08	<0.04	<0.04	<0.04	<0.04	<0.04					<0.04	mg/kg	TM4/PM8
Fluoranthene #M	1.26	0.17	0.19	0.08	0.36	0.17					<0.03	mg/kg	TM4/PM8
Pyrene #	1.29	0.14	0.18	0.07	0.28	0.14					<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	1.17	0.11	0.14	<0.06	0.17	0.12					<0.06	mg/kg	TM4/PM8
Chrysene #M	1.71	0.10	0.15	0.05	0.24	0.10					<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #M	4.24	0.15	0.19	<0.07	0.31	0.16					<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	3.77	0.10	0.13	0.05	0.17	0.12					<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #M	3.68	0.07	0.08	<0.04	0.12	0.06					<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	0.80	<0.04	<0.04	<0.04	<0.04	<0.04					<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	3.43	0.07	0.08	<0.04	0.12	0.06					<0.04	mg/kg	TM4/PM8
PAH 16 Total	22.5	1.0	1.2	<0.6	1.9	1.0					<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	3.05	0.11	0.14	<0.05	0.22	0.12					<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	1.19	0.04	0.05	<0.02	0.09	0.04					<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	100	98	101	97	102	102					<0	%	TM4/PM8

Please see attached notes for all abbreviations and acronyms

Client Name: Smith Grant LLP
Reference: R1742
Location: Upper Heyford
Contact: Gareth Carroll
JE Job No.: 13/11985

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	21-22	23-24	25-26	27-28	29-30	35-36					LOD	Units	Method No.
Sample ID	582-SS4-WEST	BOVIS-SP1(TS)-1	581-SS1-WEST	581-SS2-WEST	581-TS1-WEST	PG-TS3							
Depth	0.4												
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J							
Sample Date	18/12/2013	18/12/2013	18/12/2013	18/12/2013	18/12/2013	18/12/2013							
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil							
Batch Number	1	1	1	1	1	1							
Date of Receipt	19/12/2013	19/12/2013	19/12/2013	19/12/2013	19/12/2013	19/12/2013							
TPH CWG													
Aliphatics													
>C5-C6 #M	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1					<0.1	mg/kg	TM36/PM12
>C6-C8 #M	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1					<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1					<0.1	mg/kg	TM36/PM12
>C10-C12 #M	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2					<0.2	mg/kg	TM5/PM16
>C12-C16 #M	<4	<4	<4	<4	<4	<4					<4	mg/kg	TM5/PM16
>C16-C21 #M	<7	<7	<7	<7	<7	<7					<7	mg/kg	TM5/PM16
>C21-C35 #M	<7	<7	<7	<7	<7	<7					<7	mg/kg	TM5/PM16
Total aliphatics C5-35	<19	<19	<19	<19	<19	<19					<19	mg/kg	TM5/TM36/PM12/PM16
Aromatics													
>C5-EC7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1					<0.1	mg/kg	TM36/PM12
>EC7-EC8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1					<0.1	mg/kg	TM36/PM12
>EC8-EC10 #M	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1					<0.1	mg/kg	TM36/PM12
>EC10-EC12	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2					<0.2	mg/kg	TM5/PM16
>EC12-EC16	<4	<4	<4	<4	<4	<4					<4	mg/kg	TM5/PM16
>EC16-EC21	<7	<7	<7	<7	<7	<7					<7	mg/kg	TM5/PM16
>EC21-EC35	<7	<7	<7	<7	<7	<7					<7	mg/kg	TM5/PM16
Total aromatics C5-35	<19	<19	<19	<19	<19	<19					<19	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-35)	<38	<38	<38	<38	<38	<38					<38	mg/kg	TM5/TM36/PM12/PM16
MTBE #	<5	<5	<5	<5	<5	<5					<5	ug/kg	TM31/PM12
Benzene #	<5	<5	<5	<5	<5	<5					<5	ug/kg	TM31/PM12
Toluene #	<5	<5	<5	<5	<5	<5					<5	ug/kg	TM31/PM12
Ethylbenzene #	<5	<5	<5	<5	<5	<5					<5	ug/kg	TM31/PM12
m/p-Xylene #	<5	<5	<5	<5	<5	<5					<5	ug/kg	TM31/PM12
o-Xylene #	<5	<5	<5	<5	<5	<5					<5	ug/kg	TM31/PM12
PCBs (Total vs Aroclor 1254)	<10	<10	<10	<10	<10	<10					<10	ug/kg	TM16/PM8
Natural Moisture Content	16.0	28.2	17.6	17.5	20.6	23.2					<0.1	%	PM4/PM0
Hexavalent Chromium	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3					<0.3	mg/kg	TM38/PM20
Free Cyanide	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5					<0.5	mg/kg	TM89/PM45
Complex Cyanide	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5					<0.5	mg/kg	TM89/PM45
Organic Matter	1.2	5.3	0.9	1.0	1.9	2.1					<0.2	%	TM21/PM24
Electrical Conductivity @25C (5:1 ext)	119	185	119	120	148	158					<100	uS/cm	TM76/PM58
pH #M	8.29	7.93	8.45	8.48	8.10	8.04					<0.01	pH units	TM73/PM11
Sample Type	Clay	Loam	Clay	Clay	Loam	Clay						None	PM13/PM0
Sample Colour	Medium Brown	Medium Brown	Light Brown	Medium Brown	Medium Brown	Medium Brown						None	PM13/PM0
Other Items	stones	roots	none	stones	stones	stones						None	PM13/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Smith Grant LLP
Reference: R1742
Location: Upper Heyford
Contact: Gareth Carroll
JE Job No.: 13/11985

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

Please see attached notes for all abbreviations and acronyms

J E Sample No.	31-34												
Sample ID	HOSPITAL 2												
Depth													
COC No / misc													
Containers	V P G												
Sample Date	18/12/2013												
Sample Type	Liquid												
Batch Number	1												
Date of Receipt	19/12/2013												
												LOD	Units	Method No.
Dissolved Arsenic	5.5											<2.5	ug/l	TM30/PM14
Dissolved Boron	739											<12	ug/l	TM30/PM14
Dissolved Cadmium	0.9											<0.5	ug/l	TM30/PM14
Total Dissolved Chromium	3.6											<1.5	ug/l	TM30/PM14
Dissolved Copper	25											<7	ug/l	TM30/PM14
Dissolved Lead	5											<5	ug/l	TM30/PM14
Dissolved Mercury	<1											<1	ug/l	TM30/PM14
Dissolved Nickel	17											<2	ug/l	TM30/PM14
Dissolved Selenium	<3											<3	ug/l	TM30/PM14
Dissolved Zinc	1528											<3	ug/l	TM30/PM14
PAH MS														
Naphthalene	<0.014											<0.014	ug/l	TM4/PM30
Acenaphthylene	<0.013											<0.013	ug/l	TM4/PM30
Acenaphthene	<0.013											<0.013	ug/l	TM4/PM30
Fluorene	<0.014											<0.014	ug/l	TM4/PM30
Phenanthrene	<0.011											<0.011	ug/l	TM4/PM30
Anthracene	<0.013											<0.013	ug/l	TM4/PM30
Fluoranthene	<0.012											<0.012	ug/l	TM4/PM30
Pyrene	<0.013											<0.013	ug/l	TM4/PM30
Benzo(a)anthracene	<0.015											<0.015	ug/l	TM4/PM30
Chrysene	<0.011											<0.011	ug/l	TM4/PM30
Benzo(bk)fluoranthene	<0.018											<0.018	ug/l	TM4/PM30
Benzo(a)pyrene	<0.016											<0.016	ug/l	TM4/PM30
Indeno(123cd)pyrene	<0.011											<0.011	ug/l	TM4/PM30
Dibenzo(ah)anthracene	<0.01											<0.01	ug/l	TM4/PM30
Benzo(ghi)perylene	<0.011											<0.011	ug/l	TM4/PM30
PAH 16 Total	<0.195											<0.195	ug/l	TM4/PM30
Benzo(b)fluoranthene	<0.01											<0.01	ug/l	TM4/PM30
Benzo(k)fluoranthene	<0.01											<0.01	ug/l	TM4/PM30
PAH Surrogate % Recovery	84											<0	%	TM4/PM30
TPH CWG														
Aliphatics														
>C5-C6	<5											<5	ug/l	TM36/PM12
>C6-C8	<5											<5	ug/l	TM36/PM12
>C8-C10	<5											<5	ug/l	TM36/PM12
>C10-C12	<5											<5	ug/l	TM5/PM30
>C12-C16	<10											<10	ug/l	TM5/PM30
>C16-C21	<10											<10	ug/l	TM5/PM30
>C21-C35	<10											<10	ug/l	TM5/PM30
Total aliphatics C5-35	<10											<10	ug/l	TM5/TM36/PM30

Client Name: Smith Grant LLP
Reference: R1742
Location: Upper Heyford
Contact: Gareth Carroll
JE Job No.: 13/11985

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

Please see attached notes for all abbreviations and acronyms

J E Sample No.	31-34												
Sample ID	HOSPITAL 2												
Depth													
COC No / misc													
Containers	V P G												
Sample Date	18/12/2013												
Sample Type	Liquid												
Batch Number	1												
Date of Receipt	19/12/2013												
												LOD	Units	Method No.
TPH CWG														
Aromatics														
>C5-EC7	<5											<5	ug/l	TM36/PM12
>EC7-EC8	<5											<5	ug/l	TM36/PM12
>EC8-EC10	<5											<5	ug/l	TM36/PM12
>EC10-EC12	<5											<5	ug/l	TM5/PM30
>EC12-EC16	<10											<10	ug/l	TM5/PM30
>EC16-EC21	<10											<10	ug/l	TM5/PM30
>EC21-EC35	<10											<10	ug/l	TM5/PM30
Total aromatics C5-35	<10											<10	ug/l	TM5/PM30
Total aliphatics and aromatics(C5-35)	<10											<10	ug/l	TM5/TM36/PM30
MTBE	<5											<5	ug/l	TM36/PM12
Benzene	<5											<5	ug/l	TM36/PM12
Toluene	<5											<5	ug/l	TM36/PM12
Ethylbenzene	<5											<5	ug/l	TM36/PM12
m/p-Xylene	<5											<5	ug/l	TM36/PM12
o-Xylene	<5											<5	ug/l	TM36/PM12
pH	8.05											<0.01	pH units	TM73/PM0

Client Name: Smith Grant LLP
Reference: R1742
Location: Upper Heyford
Contact: Gareth Carroll

Note:

Analysis was carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

If asbestos fibres are reported at trace levels there will not be enough fibres to quantify and will be less than 0.001%.

Signed on behalf of Jones Environmental Laboratory:

Gemma Newsome
Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Description	Asbestos Containing Material	Asbestos Results	Asbestos Level	Comments
13/11985	1	PG-TS1		2	02/01/14	Soil/Stone	None	NAD	NAD	
13/11985	1	PG-TS2		4	02/01/14	Soil/Stone	None	NAD	NAD	
13/11985	1	PG-SS1	0.45	6	02/01/14	Soil/Stone	None	NAD	NAD	
13/11985	1	PG-SS2	0.45	8	02/01/14	Soil/Stone	None	NAD	NAD	
13/11985	1	PG-SS3	0.45	10	02/01/14	Soil/Stone	None	NAD	NAD	
13/11985	1	582-SS1-WEST	0.4	12	02/01/14	Soil/Stone	None	NAD	NAD	
13/11985	1	582-SS2-WEST	0.4	14	02/01/14	Soil/Stone	None	NAD	NAD	
13/11985	1	582-SS3-WEST	0.4	16	02/01/14	Soil/Stone	None	NAD	NAD	
13/11985	1	582-TS1-WEST		18	02/01/14	Soil/Stone	None	NAD	NAD	
13/11985	1	582-TS2-WEST		20	02/01/14	Soil/Stone	None	NAD	NAD	
13/11985	1	582-SS4-WEST	0.4	22	02/01/14	Soil/Stone	None	NAD	NAD	
13/11985	1	BOVIS-SP1(TS)-1		24	02/01/14	Soil/Stone	None	NAD	NAD	
13/11985	1	581-SS1-WEST		26	02/01/14	Soil/Stone	None	NAD	NAD	
13/11985	1	581-SS2-WEST		28	02/01/14	Soil/Stone	None	NAD	NAD	

Client Name: Smith Grant LLP
Reference: R1742
Location: Upper Heyford
Contact: Gareth Carroll

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Description	Asbestos Containing Material	Asbestos Results	Asbestos Level	Comments
13/11985	1	581-TS1-WEST		30	02/01/14	Soil/Stone	None	NAD	NAD	
13/11985	1	PG-TS3		36	02/01/14	Soil/Stone	None	NAD	NAD	

Client Name: Smith Grant LLP
Reference: R1742
Location: Upper Heyford
Contact: Gareth Carroll

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 13/11985						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 13/11985

SOILS

Please note we are only MCERTS accredited for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. If we are instructed to keep samples, a storage charge of £1 (1.5 Euros) per sample per month will be applied until we are asked to dispose of them.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

WATERS

Please note we are not a Drinking Water Inspectorate (DWI) Approved Laboratory . It is important that detection limits are carefully considered when requesting water analysis.

UKAS accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

NOTE

Data is only accredited when all the requirements of our Quality System have been met. In certain circumstances where the requirements have not been met, the laboratory may issue the data in an interim report but will remove the accreditation, in this instance results should be considered indicative only. Where possible samples will be re-extracted and a final report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	UKAS accredited.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance.
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
CO	Suspected carry over
OC	Outside Calibration Range
NFD	No Fibres Detected

JE Job No: 13/11985

Test Method No.	Description	Prep Method No. (if appropriate)	Description	UKAS	MCERTS (soils only)	Analysis done on As Received (AR) or Air Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
TM4	16 PAH by GC-MS, modified USEPA 8270	PM30	In-house method based on USEPA 3510. Liquid samples are mixed with solvent and agitated with an automatic magnetic stirrer with a stir bar for 15 minutes to extract organic molecules. ISO 17025 accredited extraction method. All accreditation is matrix specific				
TM4	16 PAH by GC-MS, modified USEPA 8270	PM8	In-house method based on USEPA 3510. ISO 17025 accredited extraction method for organic extraction from solid samples using an end over end agitator.			AR	Yes
TM4	16 PAH by GC-MS, modified USEPA 8270	PM8	In-house method based on USEPA 3510. ISO 17025 accredited extraction method for organic extraction from solid samples using an end over end agitator.	Yes		AR	Yes
TM4	16 PAH by GC-MS, modified USEPA 8270	PM8	In-house method based on USEPA 3510. ISO 17025 accredited extraction method for organic extraction from solid samples using an end over end agitator.	Yes	Yes	AR	Yes
TM5	In-House method based on USEPA 8015B. Determination of Extractable Petroleum Hydrocarbons (EPH) in the carbon chain length range of C8-40 by GC-FID. Accredited to ISO 17025 on soil and water samples and MCERTS (carbon banding only) on soils. All accreditation is matrix specific.	PM16	Aliphatic/Aromatic fractionation			AR	Yes
TM5	In-House method based on USEPA 8015B. Determination of Extractable Petroleum Hydrocarbons (EPH) in the carbon chain length range of C8-40 by GC-FID. Accredited to ISO 17025 on soil and water samples and MCERTS (carbon banding only) on soils. All accreditation is matrix specific.	PM16	Aliphatic/Aromatic fractionation	Yes	Yes	AR	Yes
TM5	In-House method based on USEPA 8015B. Determination of Extractable Petroleum Hydrocarbons (EPH) in the carbon chain length range of C8-40 by GC-FID. Accredited to ISO 17025 on soil and water samples and MCERTS (carbon banding only) on soils. All accreditation is matrix specific.	PM30	In-house method based on USEPA 3510. Liquid samples are mixed with solvent and agitated with an automatic magnetic stirrer with a stir bar for 15 minutes to extract organic molecules. ISO 17025 accredited extraction method. All accreditation is matrix specific				
TM5/TM36	TPH CWG by GC-FID	PM12/PM16	CWG GC-FID			AR	Yes
TM5/TM36	TPH CWG by GC-FID	PM30	In-house method based on USEPA 3510. Liquid samples are mixed with solvent and agitated with an automatic magnetic stirrer with a stir bar for 15 minutes to extract organic molecules. ISO 17025 accredited extraction method. All accreditation is matrix specific				

JE Job No: 13/11985

Test Method No.	Description	Prep Method No. (if appropriate)	Description	UKAS	MCERTS (soils only)	Analysis done on As Received (AR) or Air Dried (AD)	Reported on dry weight basis
PM13	Soil Typing for MCERTS	PM0	No preparation is required.			AR	
TM16	In-House method based on USEPA 8270. Determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS. Accredited to ISO 17025 for waters. All accreditation is matrix specific. Quantification by Internal Standard method.	PM8	In-house method based on USEPA 3510. ISO 17025 accredited extraction method for organic extraction from solid samples using an end over end agitator.			AR	Yes
TM21	TOC and TC by Combustion	PM24	Eltra preparation			AD	Yes
TM30	Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry) using Thermo iCAP 6000 series instrument. Accredited to ISO 17025 for soils and waters and MCERTS accredited for Soils. All accreditation is matrix specific.	PM14	In-house method based on USEPA 3005A. Acid digestion of water samples and analsyis by ICP-OES as per method TM030W.ISO 17025 accredited extraction method. All accreditation is matrix specific				
TM30	Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry) using Thermo iCAP 6000 series instrument. Accredited to ISO 17025 for soils and waters and MCERTS accredited for Soils. All accreditation is matrix specific.	PM15	In-house method based on USEPA 3010A. Acid digestion of water samples and analsyis by ICP-OES as per method TM030S. ISO 17025 and MCERTS accredited extraction method. All accreditation is matrix specific			AD	Yes
TM30	Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry) using Thermo iCAP 6000 series instrument. Accredited to ISO 17025 for soils and waters and MCERTS accredited for Soils. All accreditation is matrix specific.	PM15	In-house method based on USEPA 3010A. Acid digestion of water samples and analsyis by ICP-OES as per method TM030S. ISO 17025 and MCERTS accredited extraction method. All accreditation is matrix specific	Yes	Yes	AD	Yes
TM31	In-house method based on USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID. Accredited to ISO 17025 for soils and waters and MCERTS accredited for soils. Accreditation is matrix specific.	PM12	In-house method based on USEPA 5021. Preparation of solid and liquid samples for headspace analysis. Samples are spiked with surrogates to facilitate quantification. ISO 17025 accredited extraction method. All accreditation is matrix specific			AR	Yes
TM31	In-house method based on USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID. Accredited to ISO 17025 for soils and waters and MCERTS accredited for soils. Accreditation is matrix specific.	PM12	In-house method based on USEPA 5021. Preparation of solid and liquid samples for headspace analysis. Samples are spiked with surrogates to facilitate quantification. ISO 17025 accredited extraction method. All accreditation is matrix specific	Yes		AR	Yes
TM36	In-House method based on USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-12 by headspace GC-FID. Accredited to ISO 17025 on soil and water samples and MCERTS accredited (carbon banding only) on soils. All accreditation is matrix specific.	PM12	In-house method based on USEPA 5021. Preparation of solid and liquid samples for headspace analysis. Samples are spiked with surrogates to facilitate quantification. ISO 17025 accredited extraction method. All accreditation is matrix specific				
TM36	In-House method based on USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-12 by headspace GC-FID. Accredited to ISO 17025 on soil and water samples and MCERTS accredited (carbon banding only) on soils. All accreditation is matrix specific.	PM12	In-house method based on USEPA 5021. Preparation of solid and liquid samples for headspace analysis. Samples are spiked with surrogates to facilitate quantification. ISO 17025 accredited extraction method. All accreditation is matrix specific			AR	Yes

JE Job No: 13/11985

Test Method No.	Description	Prep Method No. (if appropriate)	Description	UKAS	MCERTS (soils only)	Analysis done on As Received (AR) or Air Dried (AD)	Reported on dry weight basis
TM36	In-House method based on USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-12 by headspace GC-FID. Accredited to ISO 17025 on soil and water samples and MCERTS accredited (carbon banding only) on soils. All accreditation is matrix specific.	PM12	In-house method based on USEPA 5021. Preparation of solid and liquid samples for headspace analysis. Samples are spiked with surrogates to facilitate quantification. ISO 17025 accredited extraction method. All accreditation is matrix specific	Yes	Yes	AR	Yes
TM38	Ionic analysis using the Thermo Aquakem Photometric Automatic Analyser. Accredited to ISO17025 and MCERTS for most analytes. All accreditation is matrix specific.	PM20	in-house method based on USEPA 1311 (TCLP). Solid samples are extracted with two parts de-ionised water to one part solid material for analysis of the extract for various parameters.			AR	Yes
TM65	Asbestos Bulk Identification	PM42	Screening of soils for fibres			AR	
TM65	Asbestos Bulk Identification	PM42	Screening of soils for fibres	Yes		AR	
TM73	pH in by Metrohm	PM0	No preparation is required.				
TM73	pH in by Metrohm	PM11	1:2.5 soil/water extraction	Yes	Yes	AR	No
TM74	Water Soluble Boron by ICP-OES	PM32	Preparation of soils for WSB	Yes	Yes	AD	Yes
TM76	Electrical Conductivity by Metrohm	PM58	Preparation of sample for Electrical Conductivity			AD	Yes
TM89	In-house method based on USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. ISO17025 accredited method for soils and waters and MCERTS on soils. Accreditation is matrix specific.	PM45	Cyanide & Thiocyanate prep for soils			AR	Yes

Jones Environmental Laboratory

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Station Road
Ruabon
Wrexham
LL14 6DL

Attention :	Gareth Carroll
Date :	27th January, 2014
Your reference :	R1742
Our reference :	Test Report 14/1676 Batch 1
Location :	Upper Heyford
Date samples received :	10th January, 2014
Status :	Final report
Issue :	2

Six samples were received for analysis on 10th January, 2014. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Bruce Leslie
Project Co-ordinator

Bob Millward BSc FRSC
Principal Chemist

Client Name: Smith Grant LLP
Reference: R1742
Location: Upper Heyford
Contact: Gareth Carroll
JE Job No.: 14/1676

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	3-4	5-6	7-8	9-10	11-12					LOD	Units	Method No.
Sample ID	DOR474-SS1	DOR450-SS3	DOR403-SS1	DOR402-SS1	DOR404-SS1	DOR409-SS1							
Depth	0.4	0.6	0.4	0.4	0.35	0.4							
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J							
Sample Date	10/01/2014	10/01/2014	10/01/2014	10/01/2014	10/01/2014	10/01/2014							
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil							
Batch Number	1	1	1	1	1	1							
Date of Receipt	10/01/2014	10/01/2014	10/01/2014	10/01/2014	10/01/2014	10/01/2014							
Antimony	2	2	-	<1	-	1					<1	mg/kg	TM30/PM15
Antimony	-	-	2	-	1	-					<1	mg/kg	TM30/PM62
Arsenic #M	21.9	22.7	-	15.4	-	14.0					<0.5	mg/kg	TM30/PM15
Arsenic	-	-	36.7	-	18.0	-					<0.5	mg/kg	TM30/PM62
Barium #M	90	78	-	49	-	47					<1	mg/kg	TM30/PM15
Barium	-	-	85	-	69	-					<1	mg/kg	TM30/PM62
Beryllium	1.3	1.5	-	0.8	-	1.0					<0.5	mg/kg	TM30/PM15
Beryllium	-	-	2.0	-	1.1	-					<0.5	mg/kg	TM30/PM62
Cadmium #M	0.2	0.2	-	<0.1	-	<0.1					<0.1	mg/kg	TM30/PM15
Cadmium	-	-	0.2	-	0.2	-					<0.1	mg/kg	TM30/PM62
Chromium #M	28.6	31.7	-	18.0	-	21.8					<0.5	mg/kg	TM30/PM15
Chromium	-	-	37.5	-	24.9	-					<0.5	mg/kg	TM30/PM62
Cobalt #M	9.4	11.8	-	6.1	-	7.2					<0.5	mg/kg	TM30/PM15
Cobalt	-	-	12.2	-	8.9	-					<0.5	mg/kg	TM30/PM62
Copper #M	10	12	-	8	-	7					<1	mg/kg	TM30/PM15
Copper	-	-	22	-	10	-					<1	mg/kg	TM30/PM62
Lead #M	28	22	-	15	-	8					<5	mg/kg	TM30/PM15
Lead	-	-	32	-	17	-					<5	mg/kg	TM30/PM62
Mercury #M	<0.1	<0.1	-	<0.1	-	<0.1					<0.1	mg/kg	TM30/PM15
Mercury	-	-	<0.1	-	<0.1	-					<0.1	mg/kg	TM30/PM62
Molybdenum #M	1.7	1.7	-	0.9	-	1.3					<0.1	mg/kg	TM30/PM15
Molybdenum	-	-	1.6	-	1.3	-					<0.1	mg/kg	TM30/PM62
Nickel #M	20.3	25.7	-	14.1	-	16.5					<0.7	mg/kg	TM30/PM15
Nickel	-	-	29.8	-	20.3	-					<0.7	mg/kg	TM30/PM62
Selenium #M	<1	<1	-	<1	-	<1					<1	mg/kg	TM30/PM15
Selenium	-	-	<1	-	<1	-					<1	mg/kg	TM30/PM62
Vanadium	79	74	-	52	-	48					<1	mg/kg	TM30/PM15
Vanadium	-	-	82	-	58	-					<1	mg/kg	TM30/PM62
Water Soluble Boron #M	3.3	0.9	-	2.1	-	1.3					<0.1	mg/kg	TM74/PM32
Water Soluble Boron	-	-	1.1	-	1.7	-					<0.1	mg/kg	TM74/PM61
Zinc #M	65	67	-	48	-	39					<5	mg/kg	TM30/PM15
Zinc	-	-	100	-	68	-					<5	mg/kg	TM30/PM62

Please see attached notes for all abbreviations and acronyms

Client Name: Smith Grant LLP
Reference: R1742
Location: Upper Heyford
Contact: Gareth Carroll
JE Job No.: 14/1676

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	3-4	5-6	7-8	9-10	11-12						
Sample ID	DOR474-SS1	DOR450-SS3	DOR403-SS1	DOR402-SS1	DOR404-SS1	DOR409-SS1						
Depth	0.4	0.6	0.4	0.4	0.35	0.4						
COC No / misc												
Containers	V J	V J	V J	V J	V J	V J						
Sample Date	10/01/2014	10/01/2014	10/01/2014	10/01/2014	10/01/2014	10/01/2014						
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil						
Batch Number	1	1	1	1	1	1						
Date of Receipt	10/01/2014	10/01/2014	10/01/2014	10/01/2014	10/01/2014	10/01/2014						

Please see attached notes for all abbreviations and acronyms

											LOD	Units	Method No.
PAH MS													
Naphthalene #M	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04					<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	<0.03	<0.03	<0.03	0.05	<0.03					<0.03	mg/kg	TM4/PM8
Acenaphthene #M	<0.05	<0.05	<0.05	<0.05	0.08	<0.05					<0.05	mg/kg	TM4/PM8
Fluorene #M	<0.04	<0.04	<0.04	<0.04	0.06	<0.04					<0.04	mg/kg	TM4/PM8
Phenanthrene #M	0.07	<0.03	0.05	<0.03	0.93	<0.03					<0.03	mg/kg	TM4/PM8
Anthracene #	<0.04	<0.04	<0.04	<0.04	0.34	<0.04					<0.04	mg/kg	TM4/PM8
Fluoranthene #M	0.14	0.04	0.16	0.10	2.03	<0.03					<0.03	mg/kg	TM4/PM8
Pyrene #	0.11	<0.03	0.13	0.07	1.65	<0.03					<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.07	0.07	0.12	0.07	0.91	0.07					<0.06	mg/kg	TM4/PM8
Chrysene #M	0.06	0.05	0.11	0.06	0.86	0.06					<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #M	0.09	0.17	0.18	0.10	1.25	0.19					<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	<0.04	0.07	0.12	0.05	0.79	0.11					<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #M	<0.04	<0.04	0.07	<0.04	0.50	0.05					<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	<0.04	<0.04	<0.04	0.05	0.05					<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	<0.04	0.06	0.07	<0.04	0.42	0.07					<0.04	mg/kg	TM4/PM8
PAH 16 Total	<0.6	<0.6	1.0	<0.6	9.9	0.6					<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.06	0.12	0.13	0.07	0.90	0.14					<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.03	0.05	0.05	0.03	0.35	0.05					<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	93	103	89	97	98	104					<0	%	TM4/PM8
TPH CWG													
Aliphatics													
>C5-C6 #M	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1					<0.1	mg/kg	TM36/PM12
>C6-C8 #M	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1					<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1					<0.1	mg/kg	TM36/PM12
>C10-C12 #M	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2					<0.2	mg/kg	TM5/PM16
>C12-C16 #M	<4	<4	<4	<4	<4	<4					<4	mg/kg	TM5/PM16
>C16-C21 #M	<7	<7	<7	<7	<7	<7					<7	mg/kg	TM5/PM16
>C21-C35 #M	<7	<7	38	<7	<7	<7					<7	mg/kg	TM5/PM16
Total aliphatics C5-35	<19	<19	38	<19	<19	<19					<19	mg/kg	TM5/TM36/PM12/PM16
Aromatics													
>C5-EC7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1					<0.1	mg/kg	TM36/PM12
>EC7-EC8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1					<0.1	mg/kg	TM36/PM12
>EC8-EC10 #M	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1					<0.1	mg/kg	TM36/PM12
>EC10-EC12	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2					<0.2	mg/kg	TM5/PM16
>EC12-EC16	<4	<4	<4	<4	<4	<4					<4	mg/kg	TM5/PM16
>EC16-EC21	<7	<7	<7	<7	<7	<7					<7	mg/kg	TM5/PM16
>EC21-EC35	<7	<7	116	<7	21	<7					<7	mg/kg	TM5/PM16
Total aromatics C5-35	<19	<19	116	<19	21	<19					<19	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-35)	<38	<38	154	<38	<38	<38					<38	mg/kg	TM5/TM36/PM12/PM16
MTBE #	<5	<5	<5	<5	<5	<5					<5	ug/kg	TM31/PM12
Benzene #	<5	<5	<5	<5	<5	<5					<5	ug/kg	TM31/PM12

Client Name: Smith Grant LLP
Reference: R1742
Location: Upper Heyford
Contact: Gareth Carroll
JE Job No.: 14/1676

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

J E Sample No.	1-2	3-4	5-6	7-8	9-10	11-12					LOD	Units	Method No.
Sample ID	DOR474-SS1	DOR450-SS3	DOR403-SS1	DOR402-SS1	DOR404-SS1	DOR409-SS1							
Depth	0.4	0.6	0.4	0.4	0.35	0.4							
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J							
Sample Date	10/01/2014	10/01/2014	10/01/2014	10/01/2014	10/01/2014	10/01/2014							
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil							
Batch Number	1	1	1	1	1	1							
Date of Receipt	10/01/2014	10/01/2014	10/01/2014	10/01/2014	10/01/2014	10/01/2014							
Toluene #	<5	<5	<5	<5	<5	<5					<5	ug/kg	TM31/PM12
Ethylbenzene #	<5	<5	<5	<5	<5	<5					<5	ug/kg	TM31/PM12
m/p-Xylene #	<5	<5	<5	<5	<5	<5					<5	ug/kg	TM31/PM12
o-Xylene #	<5	<5	<5	<5	<5	<5					<5	ug/kg	TM31/PM12
PCBs (Total vs Aroclor 1254)	<10	<10	<10	<10	<10	<10					<10	ug/kg	TM16/PM8
Natural Moisture Content	14.3	15.1	NDP	20.2	NDP	15.6					<0.1	%	PM4/PM0
Hexavalent Chromium	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3					<0.3	mg/kg	TM38/PM20
Free Cyanide	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5					<0.5	mg/kg	TM89/PM45
Complex Cyanide	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5					<0.5	mg/kg	TM89/PM45
Organic Matter	1.2	0.5	NDP	1.7	NDP	0.7					<0.2	%	TM21/PM24
Asbestos PCOM Quantification (Fibres)	-	-	<0.001	-	<0.001	-					<0.001	mass %	TM65/PM42
Electrical Conductivity @25C (5:1 ext)	495	172	NDP	148	NDP	180					<100	uS/cm	TM76/PM58
pH #M	8.00	8.44	8.21	8.00	7.99	8.16					<0.01	pH units	TM73/PM11
Sample Type	Clay	Clay	Clay	Clay	Clay	Clay						None	PM13/PM0
Sample Colour	Light Brown	Light Brown	Light Brown	Light Brown	Light Brown	Light Brown						None	PM13/PM0
Other Items	stones & roots	stones & roots	stones & roots	stones & roots	stones & roots	stones & roots						None	PM13/PM0

Client Name: Smith Grant LLP
Reference: R1742
Location: Upper Heyford
Contact: Gareth Carroll

Note:

Analysis was carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

If asbestos fibres are reported at trace levels there will not be enough fibres to quantify and will be less than 0.001%.

Signed on behalf of Jones Environmental Laboratory:

Gemma Newsome
Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Description	Asbestos Containing Material	Asbestos Results	Asbestos Level	Comments
14/1676	1	DOR474-SS1	0.4	2	13/01/14	Soil-Clay/Brick/Stone	None	NAD	NAD	
14/1676	1	DOR450-SS3	0.6	4	13/01/14	Soil-Clay/Brick/Stone	None	NAD	NAD	
14/1676	1	DOR403-SS1	0.4	6	13/01/14	Soil-Clay/Brick/Stone	Free Fibres	Chrysotile	Quantifiable	
14/1676	1	DOR402-SS1	0.4	8	13/01/14	Soil/Stone	None	NAD	NAD	
14/1676	1	DOR404-SS1	0.35	10	13/01/14	Soil/Stone	Free Fibres	Chrysotile	Quantifiable	
14/1676	1	DOR409-SS1	0.4	12	13/01/14	Soil/Stone	None	NAD	NAD	

Client Name: Smith Grant LLP
Reference: R1742
Location: Upper Heyford
Contact: Gareth Carroll

Matrix : Solid

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	NDP Reason
14/1676	1	DOR403-SS1	0.4	5-6	Asbestos detected in sample
14/1676	1	DOR404-SS1	0.35	9-10	Asbestos detected in sample

Client Name: Smith Grant LLP
Reference: R1742
Location: Upper Heyford
Contact: Gareth Carroll

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 14/1676						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 14/1676

SOILS

Please note we are only MCERTS accredited for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. If we are instructed to keep samples, a storage charge of £1 (1.5 Euros) per sample per month will be applied until we are asked to dispose of them.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

WATERS

Please note we are not a Drinking Water Inspectorate (DWI) Approved Laboratory . It is important that detection limits are carefully considered when requesting water analysis.

UKAS accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

NOTE

Data is only accredited when all the requirements of our Quality System have been met. In certain circumstances where the requirements have not been met, the laboratory may issue the data in an interim report but will remove the accreditation, in this instance results should be considered indicative only. Where possible samples will be re-extracted and a final report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	UKAS accredited.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance.
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
CO	Suspected carry over
OC	Outside Calibration Range
NFD	No Fibres Detected

JE Job No: 14/1676

Test Method No.	Description	Prep Method No. (if appropriate)	Description	UKAS	MCERTS (soils only)	Analysis done on As Received (AR) or Air Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
TM4	16 PAH by GC-MS, modified USEPA 8270	PM8	In-house method based on USEPA 3510. ISO 17025 accredited extraction method for organic extraction from solid samples using an end over end agitator.			AR	Yes
TM4	16 PAH by GC-MS, modified USEPA 8270	PM8	In-house method based on USEPA 3510. ISO 17025 accredited extraction method for organic extraction from solid samples using an end over end agitator.	Yes		AR	Yes
TM4	16 PAH by GC-MS, modified USEPA 8270	PM8	In-house method based on USEPA 3510. ISO 17025 accredited extraction method for organic extraction from solid samples using an end over end agitator.	Yes	Yes	AR	Yes
TM5	In-House method based on USEPA 8015B. Determination of Extractable Petroleum Hydrocarbons (EPH) in the carbon chain length range of C8-40 by GC-FID. Accredited to ISO 17025 on soil and water samples and MCERTS (carbon banding only) on soils. All accreditation is matrix specific.	PM16	Aliphatic/Aromatic fractionation			AR	Yes
TM5	In-House method based on USEPA 8015B. Determination of Extractable Petroleum Hydrocarbons (EPH) in the carbon chain length range of C8-40 by GC-FID. Accredited to ISO 17025 on soil and water samples and MCERTS (carbon banding only) on soils. All accreditation is matrix specific.	PM16	Aliphatic/Aromatic fractionation	Yes	Yes	AR	Yes
TM5/TM36	TPH CWG by GC-FID	PM12/PM16	CWG GC-FID			AR	Yes
PM13	Soil Typing for MCERTS	PM0	No preparation is required.			AR	
TM16	In-House method based on USEPA 8270. Determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS. Accredited to ISO 17025 for waters. All accreditation is matrix specific. Quantification by Internal Standard method.	PM8	In-house method based on USEPA 3510. ISO 17025 accredited extraction method for organic extraction from solid samples using an end over end agitator.			AR	Yes
TM21	TOC and TC by Combustion	PM24	Eltra preparation			AD	Yes

JE Job No: 14/1676

Test Method No.	Description	Prep Method No. (if appropriate)	Description	UKAS	MCERTS (soils only)	Analysis done on As Received (AR) or Air Dried (AD)	Reported on dry weight basis
TM30	Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry) using Thermo iCAP 6000 series instrument. Accredited to ISO 17025 for soils and waters and MCERTS accredited for Soils. All accreditation is matrix specific.	PM15	In-house method based on USEPA 3010A. Acid digestion of water samples and analsyis by ICP-OES as per method TM030S. ISO 17025 and MCERTS accredited extraction method. All accreditation is matrix specific			AD	Yes
TM30	Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry) using Thermo iCAP 6000 series instrument. Accredited to ISO 17025 for soils and waters and MCERTS accredited for Soils. All accreditation is matrix specific.	PM15	In-house method based on USEPA 3010A. Acid digestion of water samples and analsyis by ICP-OES as per method TM030S. ISO 17025 and MCERTS accredited extraction method. All accreditation is matrix specific	Yes	Yes	AD	Yes
TM30	Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry) using Thermo iCAP 6000 series instrument. Accredited to ISO 17025 for soils and waters and MCERTS accredited for Soils. All accreditation is matrix specific.	PM62	Aqua Regia extraction (Soils) (as received sample)			AR	Yes
TM31	In-house method based on USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID. Accredited to ISO 17025 for soils and waters and MCERTS accredited for soils. Accreditation is matrix specific.	PM12	In-house method based on USEPA 5021. Preparation of solid and liquid samples for headspace analysis. Samples are spiked with surrogates to facilitate quantification. ISO 17025 accredited extraction method. All accreditation is matrix specific			AR	Yes
TM31	In-house method based on USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID. Accredited to ISO 17025 for soils and waters and MCERTS accredited for soils. Accreditation is matrix specific.	PM12	In-house method based on USEPA 5021. Preparation of solid and liquid samples for headspace analysis. Samples are spiked with surrogates to facilitate quantification. ISO 17025 accredited extraction method. All accreditation is matrix specific	Yes		AR	Yes
TM36	In-House method based on USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-12 by headspace GC-FID. Accredited to ISO 17025 on soil and water samples and MCERTS accredited (carbon banding only) on soils. All accreditation is matrix specific.	PM12	In-house method based on USEPA 5021. Preparation of solid and liquid samples for headspace analysis. Samples are spiked with surrogates to facilitate quantification. ISO 17025 accredited extraction method. All accreditation is matrix specific			AR	Yes
TM36	In-House method based on USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-12 by headspace GC-FID. Accredited to ISO 17025 on soil and water samples and MCERTS accredited (carbon banding only) on soils. All accreditation is matrix specific.	PM12	In-house method based on USEPA 5021. Preparation of solid and liquid samples for headspace analysis. Samples are spiked with surrogates to facilitate quantification. ISO 17025 accredited extraction method. All accreditation is matrix specific	Yes	Yes	AR	Yes
TM38	Ionic analysis using the Thermo Aquakem Photometric Automatic Analyser. Accredited to ISO17025 and MCERTS for most analytes. All accreditation is matrix specific.	PM20	in-house method based on USEPA 1311 (TCLP). Solid samples are extracted with two parts de-ionised water to one part solid material for analysis of the extract for various parameters.			AR	Yes
TM65	Asbestos Bulk Identification	PM42	Screening of soils for fibres			AR	Yes
TM65	Asbestos Bulk Identification	PM42	Screening of soils for fibres			AR	

JE Job No: 14/1676

Test Method No.	Description	Prep Method No. (if appropriate)	Description	UKAS	MCERTS (soils only)	Analysis done on As Received (AR) or Air Dried (AD)	Reported on dry weight basis
TM65	Asbestos Bulk Identification	PM42	Screening of soils for fibres	Yes		AR	
TM73	pH in by Metrohm	PM11	1:2.5 soil/water extraction	Yes	Yes	AR	No
TM74	Water Soluble Boron by ICP-OES	PM32	Preparation of soils for WSB	Yes	Yes	AD	Yes
TM74	Water Soluble Boron by ICP-OES	PM61	Preparation of soils for WSB (as received sample)			AR	Yes
TM76	Electrical Conductivity by Metrohm	PM58	Preparation of sample for Electrical Conductivity			AD	Yes
TM89	In-house method based on USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. ISO17025 accredited method for soils and waters and MCERTS on soils. Accreditation is matrix specific.	PM45	Cyanide & Thiocyanate prep for soils			AR	Yes

Jones Environmental Laboratory

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

Attention :	Gareth Carroll
Date :	27th January, 2014
Your reference :	R1742
Our reference :	Test Report 14/1906 Batch 1
Location :	Upper Heyford
Date samples received :	17th January, 2014
Status :	Final report
Issue :	1

Five samples were received for analysis on 17th January, 2014. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Bruce Leslie
Project Co-ordinator

Bob Millward BSc FRSC
Principal Chemist

Client Name: Smith Grant LLP
Reference: R1742
Location: Upper Heyford
Contact: Gareth Carroll
JE Job No.: 14/1906

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	3-4	5-6	7	8						LOD	Units	Method No.
Sample ID	DOR474-SS2	DOR403-SS2	DOR-BC-SS1	CRUSH1-SS1	CRUSH1-SS2								
Depth	0.4	0.4	0.4										
COC No / misc													
Containers	V J	V J	V J	T	T								
Sample Date	17/01/2014	17/01/2014	17/01/2014	17/01/2014	17/01/2014								
Sample Type	Soil	Soil	Soil	Soil	Soil								
Batch Number	1	1	1	1	1								
Date of Receipt	17/01/2014	17/01/2014	17/01/2014	17/01/2014	17/01/2014								
Antimony	1	1	-	-	-						<1	mg/kg	TM30/PM15
Antimony	-	-	<1	-	-						<1	mg/kg	TM30/PM62
Arsenic #M	20.7	20.7	-	-	-						<0.5	mg/kg	TM30/PM15
Arsenic	-	-	12.7	-	-						<0.5	mg/kg	TM30/PM62
Barium #M	76	80	-	-	-						<1	mg/kg	TM30/PM15
Barium	-	-	103	-	-						<1	mg/kg	TM30/PM62
Beryllium	1.3	1.5	-	-	-						<0.5	mg/kg	TM30/PM15
Beryllium	-	-	<0.5	-	-						<0.5	mg/kg	TM30/PM62
Cadmium #M	0.3	0.4	-	-	-						<0.1	mg/kg	TM30/PM15
Cadmium	-	-	<0.1	-	-						<0.1	mg/kg	TM30/PM62
Chromium #M	33.6	32.5	-	-	-						<0.5	mg/kg	TM30/PM15
Chromium	-	-	14.4	-	-						<0.5	mg/kg	TM30/PM62
Cobalt #M	11.9	10.7	-	-	-						<0.5	mg/kg	TM30/PM15
Cobalt	-	-	3.8	-	-						<0.5	mg/kg	TM30/PM62
Copper #M	12	14	-	-	-						<1	mg/kg	TM30/PM15
Copper	-	-	7	-	-						<1	mg/kg	TM30/PM62
Lead #M	14	13	-	-	-						<5	mg/kg	TM30/PM15
Lead	-	-	12	-	-						<5	mg/kg	TM30/PM62
Mercury #M	<0.1	<0.1	-	-	-						<0.1	mg/kg	TM30/PM15
Mercury	-	-	<0.1	-	-						<0.1	mg/kg	TM30/PM62
Molybdenum #M	1.1	1.3	-	-	-						<0.1	mg/kg	TM30/PM15
Molybdenum	-	-	0.5	-	-						<0.1	mg/kg	TM30/PM62
Nickel #M	21.5	23.4	-	-	-						<0.7	mg/kg	TM30/PM15
Nickel	-	-	11.3	-	-						<0.7	mg/kg	TM30/PM62
Selenium #M	<1	<1	-	-	-						<1	mg/kg	TM30/PM15
Selenium	-	-	<1	-	-						<1	mg/kg	TM30/PM62
Vanadium	80	79	-	-	-						<1	mg/kg	TM30/PM15
Vanadium	-	-	42	-	-						<1	mg/kg	TM30/PM62
Water Soluble Boron #M	1.6	0.2	-	-	-						<0.1	mg/kg	TM74/PM32
Water Soluble Boron	-	-	0.6	-	-						<0.1	mg/kg	TM74/PM61
Zinc #M	48	62	-	-	-						<5	mg/kg	TM30/PM15
Zinc	-	-	36	-	-						<5	mg/kg	TM30/PM62

Please see attached notes for all abbreviations and acronyms

Client Name: Smith Grant LLP
Reference: R1742
Location: Upper Heyford
Contact: Gareth Carroll
JE Job No.: 14/1906

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	3-4	5-6	7	8								
Sample ID	DOR474-SS2	DOR403-SS2	DOR-BC-SS1	CRUSH1-SS1	CRUSH1-SS2								
Depth	0.4	0.4	0.4								Please see attached notes for all abbreviations and acronyms		
COC No / misc													
Containers	V J	V J	V J	T	T								
Sample Date	17/01/2014	17/01/2014	17/01/2014	17/01/2014	17/01/2014								
Sample Type	Soil	Soil	Soil	Soil	Soil								
Batch Number	1	1	1	1	1						LOD	Units	Method No.
Date of Receipt	17/01/2014	17/01/2014	17/01/2014	17/01/2014	17/01/2014								
PAH MS													
Naphthalene #M	<0.04	<0.04	<0.04	-	-						<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	<0.03	<0.03	-	-						<0.03	mg/kg	TM4/PM8
Acenaphthene #M	<0.05	<0.05	<0.05	-	-						<0.05	mg/kg	TM4/PM8
Fluorene #M	<0.04	<0.04	<0.04	-	-						<0.04	mg/kg	TM4/PM8
Phenanthrene #M	<0.03	<0.03	0.03	-	-						<0.03	mg/kg	TM4/PM8
Anthracene #	<0.04	<0.04	<0.04	-	-						<0.04	mg/kg	TM4/PM8
Fluoranthene #M	<0.03	<0.03	0.10	-	-						<0.03	mg/kg	TM4/PM8
Pyrene #	<0.03	<0.03	0.09	-	-						<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	<0.06	<0.06	0.09	-	-						<0.06	mg/kg	TM4/PM8
Chrysene #M	<0.02	<0.02	0.08	-	-						<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #M	<0.07	<0.07	0.14	-	-						<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	<0.04	<0.04	0.10	-	-						<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #M	<0.04	<0.04	0.07	-	-						<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	<0.04	<0.04	-	-						<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	<0.04	<0.04	0.07	-	-						<0.04	mg/kg	TM4/PM8
PAH 16 Total	<0.6	<0.6	0.8	-	-						<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	<0.05	<0.05	0.10	-	-						<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	<0.02	<0.02	0.04	-	-						<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	93	95	92	-	-						<0	%	TM4/PM8
TPH CWG													
Aliphatics													
>C5-C6 #M	<0.1	<0.1	<0.1	-	-						<0.1	mg/kg	TM36/PM12
>C6-C8 #M	<0.1	<0.1	<0.1	-	-						<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1	<0.1	<0.1	-	-						<0.1	mg/kg	TM36/PM12
>C10-C12 #M	<0.2	<0.2	<0.2	-	-						<0.2	mg/kg	TM5/PM16
>C12-C16 #M	<4	<4	<4	-	-						<4	mg/kg	TM5/PM16
>C16-C21 #M	<7	<7	<7	-	-						<7	mg/kg	TM5/PM16
>C21-C35 #M	<7	<7	<7	-	-						<7	mg/kg	TM5/PM16
Total aliphatics C5-35	<19	<19	<19	-	-						<19	mg/kg	TM5/TM36/PM12/PM16
Aromatics													
>C5-EC7	<0.1	<0.1	<0.1	-	-						<0.1	mg/kg	TM36/PM12
>EC7-EC8	<0.1	<0.1	<0.1	-	-						<0.1	mg/kg	TM36/PM12
>EC8-EC10 #M	<0.1	<0.1	<0.1	-	-						<0.1	mg/kg	TM36/PM12
>EC10-EC12	<0.2	<0.2	<0.2	-	-						<0.2	mg/kg	TM5/PM16
>EC12-EC16	<4	<4	<4	-	-						<4	mg/kg	TM5/PM16
>EC16-EC21	<7	<7	<7	-	-						<7	mg/kg	TM5/PM16
>EC21-EC35	<7	<7	<7	-	-						<7	mg/kg	TM5/PM16
Total aromatics C5-35	<19	<19	<19	-	-						<19	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-35)	<38	<38	<38	-	-						<38	mg/kg	TM5/TM36/PM12/PM16
MTBE #	<5	<5	<5	-	-						<5	ug/kg	TM31/PM12
Benzene #	<5	<5	<5	-	-						<5	ug/kg	TM31/PM12

Client Name: Smith Grant LLP
Reference: R1742
Location: Upper Heyford
Contact: Gareth Carroll
JE Job No.: 14/1906

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	3-4	5-6	7	8							
Sample ID	DOR474-SS2	DOR403-SS2	DOR-BC-SS1	CRUSH1-SS1	CRUSH1-SS2							
Depth	0.4	0.4	0.4									
COC No / misc												
Containers	V J	V J	V J	T	T							
Sample Date	17/01/2014	17/01/2014	17/01/2014	17/01/2014	17/01/2014							
Sample Type	Soil	Soil	Soil	Soil	Soil							
Batch Number	1	1	1	1	1							
Date of Receipt	17/01/2014	17/01/2014	17/01/2014	17/01/2014	17/01/2014							

Please see attached notes for all abbreviations and acronyms

											LOD	Units	Method No.
Toluene #	<5	<5	<5	-	-						<5	ug/kg	TM31/PM12
Ethylbenzene #	<5	<5	<5	-	-						<5	ug/kg	TM31/PM12
m/p-Xylene #	<5	<5	<5	-	-						<5	ug/kg	TM31/PM12
o-Xylene #	<5	<5	<5	-	-						<5	ug/kg	TM31/PM12
PCBs (Total vs Aroclor 1254)	<10	<10	<10	-	-						<10	ug/kg	TM16/PM8
Natural Moisture Content	15.7	19.8	NDP	-	-						<0.1	%	PM4/PM0
Hexavalent Chromium	<0.3	<0.3	<0.3	-	-						<0.3	mg/kg	TM38/PM20
Free Cyanide	<0.5	<0.5	<0.5	-	-						<0.5	mg/kg	TM89/PM45
Complex Cyanide	<0.5	<0.5	<0.5	-	-						<0.5	mg/kg	TM89/PM45
Organic Matter	1.0	1.0	NDP	-	-						<0.2	%	TM21/PM24
Asbestos PCOM Quantification (Fibres)	-	-	<0.001	<0.001	<0.001						<0.001	mass %	TM65/PM42
Electrical Conductivity @25C (5:1 ext)	298	179	NDP	-	-						<100	uS/cm	TM76/PM58
pH #M	8.09	8.09	8.50	-	-						<0.01	pH units	TM73/PM11
Sample Type	Loam	Clayey Loam	Clayey Sand	-	-							None	PM13/PM0
Sample Colour	Dark Brown	Dark Brown	Light Brown	-	-							None	PM13/PM0
Other Items	STONES,ROOTS	STONES	STONES	-	-							None	PM13/PM0

Client Name: Smith Grant LLP
Reference: R1742
Location: Upper Heyford
Contact: Gareth Carroll

Note:

Analysis was carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

If asbestos fibres are reported at trace levels there will not be enough fibres to quantify and will be less than 0.001%.

Signed on behalf of Jones Environmental Laboratory:

Gemma Newsome
Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Description	Asbestos Containing Material	Asbestos Results	Asbestos Level	Comments
14/1906	1	DOR474-SS2	0.4	2	22/01/14	Soil-Clay/Brick/Stone	None	NAD	NAD	
14/1906	1	DOR403-SS2	0.4	4	22/01/14	Soil-Clay/Brick/Stonen	None	NAD	NAD	
14/1906	1	DOR-BC-SS1	0.4	6	22/01/14	Soil-Clay/Brick/Stone	Free Fibres, None	Amosite, Chrysotile	Quantifiable	
14/1906	1	CRUSH1-SS1		7	22/01/14	Soil-Clay/Brick/Stone	Free Fibres	Chrysotile	Quantifiable	
14/1906	1	CRUSH1-SS2		8	22/01/14	Soil-Clay/Brick/Stone	Free Fibres	Chrysotile	Quantifiable	

Client Name: Smith Grant LLP
Reference: R1742
Location: Upper Heyford
Contact: Gareth Carroll

Matrix : Solid

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	NDP Reason
14/1906	1	DOR-BC-SS1	0.4	5-6	Asbestos detected in sample

Client Name: Smith Grant LLP
Reference: R1742
Location: Upper Heyford
Contact: Gareth Carroll

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 14/1906						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 14/1906

SOILS

Please note we are only MCERTS accredited for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. If we are instructed to keep samples, a storage charge of £1 (1.5 Euros) per sample per month will be applied until we are asked to dispose of them.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

WATERS

Please note we are not a Drinking Water Inspectorate (DWI) Approved Laboratory . It is important that detection limits are carefully considered when requesting water analysis.

UKAS accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

NOTE

Data is only accredited when all the requirements of our Quality System have been met. In certain circumstances where the requirements have not been met, the laboratory may issue the data in an interim report but will remove the accreditation, in this instance results should be considered indicative only. Where possible samples will be re-extracted and a final report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	UKAS accredited.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance.
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
CO	Suspected carry over
OC	Outside Calibration Range
NFD	No Fibres Detected

JE Job No: 14/1906

Test Method No.	Description	Prep Method No. (if appropriate)	Description	UKAS	MCERTS (soils only)	Analysis done on As Received (AR) or Air Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
TM4	16 PAH by GC-MS, modified USEPA 8270	PM8	In-house method based on USEPA 3510. ISO 17025 accredited extraction method for organic extraction from solid samples using an end over end agitator.			AR	Yes
TM4	16 PAH by GC-MS, modified USEPA 8270	PM8	In-house method based on USEPA 3510. ISO 17025 accredited extraction method for organic extraction from solid samples using an end over end agitator.	Yes		AR	Yes
TM4	16 PAH by GC-MS, modified USEPA 8270	PM8	In-house method based on USEPA 3510. ISO 17025 accredited extraction method for organic extraction from solid samples using an end over end agitator.	Yes	Yes	AR	Yes
TM5	In-House method based on USEPA 8015B. Determination of Extractable Petroleum Hydrocarbons (EPH) in the carbon chain length range of C8-40 by GC-FID. Accredited to ISO 17025 on soil and water samples and MCERTS (carbon banding only) on soils. All accreditation is matrix specific.	PM16	Aliphatic/Aromatic fractionation			AR	Yes
TM5	In-House method based on USEPA 8015B. Determination of Extractable Petroleum Hydrocarbons (EPH) in the carbon chain length range of C8-40 by GC-FID. Accredited to ISO 17025 on soil and water samples and MCERTS (carbon banding only) on soils. All accreditation is matrix specific.	PM16	Aliphatic/Aromatic fractionation	Yes	Yes	AR	Yes
TM5/TM36	TPH CWG by GC-FID	PM12/PM16	CWG GC-FID			AR	Yes
PM13	Soil Typing for MCERTS	PM0	No preparation is required.			AR	
TM16	In-House method based on USEPA 8270. Determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS. Accredited to ISO 17025 for waters. All accreditation is matrix specific. Quantification by Internal Standard method.	PM8	In-house method based on USEPA 3510. ISO 17025 accredited extraction method for organic extraction from solid samples using an end over end agitator.			AR	Yes
TM21	TOC and TC by Combustion	PM24	Eltra preparation			AD	Yes

JE Job No: 14/1906

Test Method No.	Description	Prep Method No. (if appropriate)	Description	UKAS	MCERTS (soils only)	Analysis done on As Received (AR) or Air Dried (AD)	Reported on dry weight basis
TM30	Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry) using Thermo iCAP 6000 series instrument. Accredited to ISO 17025 for soils and waters and MCERTS accredited for Soils. All accreditation is matrix specific.	PM15	In-house method based on USEPA 3010A. Acid digestion of water samples and analsyis by ICP-OES as per method TM030S. ISO 17025 and MCERTS accredited extraction method. All accreditation is matrix specific			AD	Yes
TM30	Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry) using Thermo iCAP 6000 series instrument. Accredited to ISO 17025 for soils and waters and MCERTS accredited for Soils. All accreditation is matrix specific.	PM15	In-house method based on USEPA 3010A. Acid digestion of water samples and analsyis by ICP-OES as per method TM030S. ISO 17025 and MCERTS accredited extraction method. All accreditation is matrix specific	Yes	Yes	AD	Yes
TM30	Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry) using Thermo iCAP 6000 series instrument. Accredited to ISO 17025 for soils and waters and MCERTS accredited for Soils. All accreditation is matrix specific.	PM62	Aqua Regia extraction (Soils) (as received sample)			AR	Yes
TM31	In-house method based on USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID. Accredited to ISO 17025 for soils and waters and MCERTS accredited for soils. Accreditation is matrix specific.	PM12	In-house method based on USEPA 5021. Preparation of solid and liquid samples for headspace analysis. Samples are spiked with surrogates to facilitate quantification. ISO 17025 accredited extraction method. All accreditation is matrix specific			AR	Yes
TM31	In-house method based on USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID. Accredited to ISO 17025 for soils and waters and MCERTS accredited for soils. Accreditation is matrix specific.	PM12	In-house method based on USEPA 5021. Preparation of solid and liquid samples for headspace analysis. Samples are spiked with surrogates to facilitate quantification. ISO 17025 accredited extraction method. All accreditation is matrix specific	Yes		AR	Yes
TM36	In-House method based on USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-12 by headspace GC-FID. Accredited to ISO 17025 on soil and water samples and MCERTS accredited (carbon banding only) on soils. All accreditation is matrix specific.	PM12	In-house method based on USEPA 5021. Preparation of solid and liquid samples for headspace analysis. Samples are spiked with surrogates to facilitate quantification. ISO 17025 accredited extraction method. All accreditation is matrix specific			AR	Yes
TM36	In-House method based on USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-12 by headspace GC-FID. Accredited to ISO 17025 on soil and water samples and MCERTS accredited (carbon banding only) on soils. All accreditation is matrix specific.	PM12	In-house method based on USEPA 5021. Preparation of solid and liquid samples for headspace analysis. Samples are spiked with surrogates to facilitate quantification. ISO 17025 accredited extraction method. All accreditation is matrix specific	Yes	Yes	AR	Yes
TM38	Ionic analysis using the Thermo Aquakem Photometric Automatic Analyser. Accredited to ISO17025 and MCERTS for most analytes. All accreditation is matrix specific.	PM20	in-house method based on USEPA 1311 (TCLP). Solid samples are extracted with two parts de-ionised water to one part solid material for analysis of the extract for various parameters.			AR	Yes
TM65	Asbestos Bulk Identification	PM42	Screening of soils for fibres			AR	Yes
TM65	Asbestos Bulk Identification	PM42	Screening of soils for fibres			AR	

JE Job No: 14/1906

Test Method No.	Description	Prep Method No. (if appropriate)	Description	UKAS	MCERTS (soils only)	Analysis done on As Received (AR) or Air Dried (AD)	Reported on dry weight basis
TM65	Asbestos Bulk Identification	PM42	Screening of soils for fibres	Yes		AR	
TM73	pH in by Metrohm	PM11	1:2.5 soil/water extraction	Yes	Yes	AR	No
TM74	Water Soluble Boron by ICP-OES	PM32	Preparation of soils for WSB	Yes	Yes	AD	Yes
TM74	Water Soluble Boron by ICP-OES	PM61	Preparation of soils for WSB (as received sample)			AR	Yes
TM76	Electrical Conductivity by Metrohm	PM58	Preparation of sample for Electrical Conductivity			AD	Yes
TM89	In-house method based on USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. ISO17025 accredited method for soils and waters and MCERTS on soils. Accreditation is matrix specific.	PM45	Cyanide & Thiocyanate prep for soils			AR	Yes

Jones Environmental Laboratory

Registered Address : Unit 3 Deeside Point, Zone 3, Deeside Industrial Park, Deeside, CH5 2UA. UK

Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

Tel: +44 (0) 1244 833780
Fax: +44 (0) 1244 833781

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

Attention :	Gareth Carroll
Date :	6th March, 2014
Your reference :	R1742
Our reference :	Test Report 14/2706 Batch 1 Schedule D
Location :	Upper Heyford
Date samples received :	7th February, 2014
Status :	Final report
Issue :	1

Fifteen samples were received for analysis on 7th February, 2014. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Bruce Leslie
Project Co-ordinator

Bob Millward BSc FRSC
Principal Chemist

Client Name: Smith Grant LLP
Reference: R1742
Location: Upper Heyford
Contact: Gareth Carroll
JE Job No.: 14/2706

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	23	24											
Sample ID	DOR-CRUSH 1-S3	DOR-CRUSH 1-S4											
Depth													
COC No / misc													
Containers	T	T											
Sample Date	07/02/2014	07/02/2014											
Sample Type	Soil	Soil											
Batch Number	1	1											
Date of Receipt	07/02/2014	07/02/2014											
Asbestos PCOM Quantification (Fibres)	0.002	<0.001										<0.001	mass %	TM65/PM42

Please see attached notes for all abbreviations and acronyms

Client Name: Smith Grant LLP
Reference: R1742
Location: Upper Heyford
Contact: Gareth Carroll

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 14/2706						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
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NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 14/2706

SOILS

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It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. If we are instructed to keep samples, a storage charge of £1 (1.5 Euros) per sample per month will be applied until we are asked to dispose of them.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

WATERS

Please note we are not a Drinking Water Inspectorate (DWI) Approved Laboratory . It is important that detection limits are carefully considered when requesting water analysis.

UKAS accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

NOTE

Data is only accredited when all the requirements of our Quality System have been met. In certain circumstances where the requirements have not been met, the laboratory may issue the data in an interim report but will remove the accreditation, in this instance results should be considered indicative only. Where possible samples will be re-extracted and a final report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	UKAS accredited.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance.
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
CO	Suspected carry over
OC	Outside Calibration Range
NFD	No Fibres Detected

JE Job No: 14/2706

Test Method No.	Description	Prep Method No. (if appropriate)	Description	UKAS	MCERTS (soils only)	Analysis done on As Received (AR) or Air Dried (AD)	Reported on dry weight basis
TM65	Asbestos Bulk Identification	PM42	Screening of soils for fibres			AR	Yes

APPENDIX C.

Geotechnical Analysis Results

Nicholls Colton Analytical
7 - 11 Harding Street
Leicester
LE1 4DH

Nicholls Colton Analytical

Cover Sheet

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

Analytical Test Report:	**L14/0256/SGP/002**

Your Project Reference:	**R1742 - Upper Heyford**	Samples Received on:	10/02/2014
Your Order Number:	650	Testing Instruction Received:	10/02/2014
Report Issue Number:	1	Sample Tested :	14 to 18/02/2014
Samples Analysed	3 Soils	Report issued:	19/02/2014

Signed

Will Elson
Manager - Testing Services
Nicholls Colton Analytical

Notes:

Samples will be retained for 14 days after issue of this report unless otherwise requested.

Samples were provided by client

Grading

Sample preparation was in accordance with BS1377:Part 1:1990.

Testing was in accordance with BS1377:Part 2:1990 clause 9.2 wet sieving method

Issued by JG 29.01.13, Authorised by MS

0320

L14/0256/SGP/002

R1742 - Upper Heyford

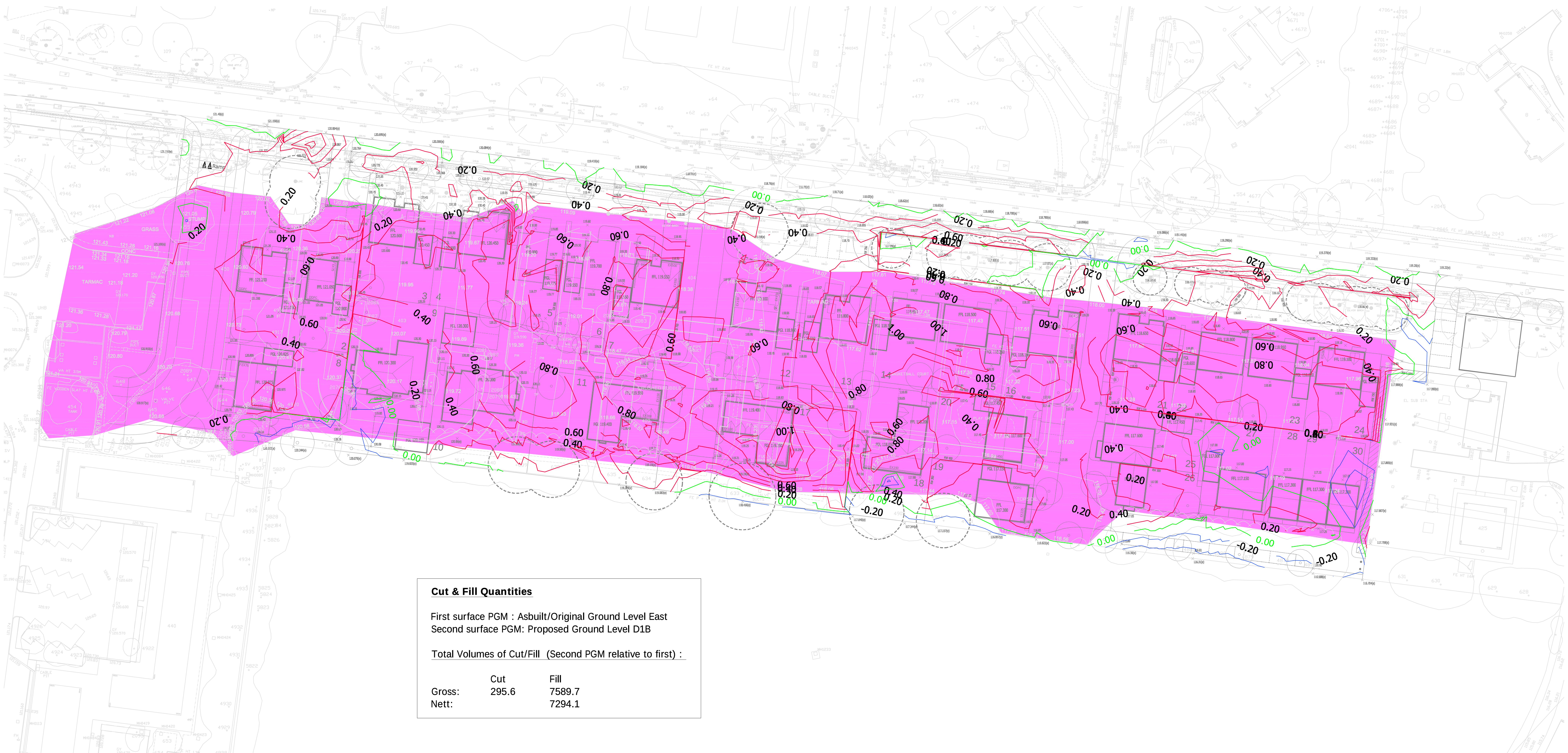
Material Analysis Results

NCA Reference			14-3116	14-3117	14-3120
Client Sample Reference			DOR-CRUSH 1-1	DOR-CRUSH 1-2	BOV-CRUSH 2-1
Client Sample Location			Not Provided	Not Provided	Not Provided
Date of Sampling			07/02/2014	07/02/2014	07/02/2014
Material Description			Grey/ brown concrete and brick	Brown/ grey concrete brick and occasional wood	Grey/ yellow crushed rock
BS Test Sieve (mm)	**Units**	**Specification**	**Class 6F2**	**Class 6F2**	**Class 6F2**
300	**% Passing**		100	100	100
125.0	**% Passing**	**100**	100	100	100
90.0	**% Passing**	**80-100**	96	90	85
75.0	**% Passing**	**65-100**	85	77	74
63.0	**% Passing**		74	65	67
50.0	**% Passing**		59	61	57
37.5	**% Passing**	**45-100**	52	56	51
28.0	**% Passing**		44	48	47
20.0	**% Passing**		38	42	43
14.0	**% Passing**		31	33	36
10.0	**% Passing**	**15-60**	26	26	33
6.3	**% Passing**		21	21	29
5.0	**% Passing**	**10-45**	19	20	27
3.35	**% Passing**		16	18	24
2.00	**% Passing**		13	16	20
1.18	**% Passing**		11	14	17
0.600	**% Passing**	**0-25**	9	11	13
0.425	**% Passing**		8	10	11
0.300	**% Passing**		7	9	9
0.212	**% Passing**		6	8	7
0.150	**% Passing**		5	7	6
0.063	**% Passing**	**0-12**	4	6	5
According to the above specification the sample:			**Complies**	**Complies**	**Complies**

APPENDIX D.

Urban Regen Cut and Fill Drawing
(at completion, 22/01/2014, ref: UR/HEYCF/D1B rev A)

UPPER HEYFORD



Key

Cut Contour

Fill Contour

Balance Contour

Extent of asbuilt survey

N

Cut & Fill Quantities

First surface PGM : Asbuilt/Original Ground Level East
Second surface PGM: Proposed Ground Level D1B

Total Volumes of Cut/Fill (Second PGM relative to first) :

	Cut	Fill
Gross:	295.6	7589.7
Nett:		7294.1

0 20 40 60 100

Rev	Date	Revision
A	22.01.14	OGL CHANGED FOR ASBUILT SURVEY

urban regen

Project **URBAN REGEN**
UPPER HEYFORD

Title **CUT AND FILL AREA D1B**

Scale	Date		
1:500@A1	JANUARY 2014		
Drawn: UR	Chk	Drg No: UR/HEYCF/D1B	A