CALA HOMES (SOUTH HOME COUNTIES) LIMITED
TILFORD HOUSE, FARNHAM BUSINESS PARK,
WEYDON LANE, FARNHAM, SURREY, GU9 8QT

[redacted]

CALA

FAO David Innes, Planning N/D 12/5

This document accompanies the discharge of condition application. Planning portal reference: PP06066834.

for Gresswell Park, Angmering.

Regards Claire Smith

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West End Lane Nursery, Angmering

Post-remediation validation report – Phase 1A

27621 R06 (00)

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RSK GENERAL NOTES

Project No.: 27621 R06 (00)

Title: Post-remediation validation report - Phase 1A

Client: CALA Homes (South Home Counties) Limited, Tilford House, Farnham Business Park, Weydon Lane, Farnham, Surrey, GU9 8QT

Date: May 2017

Office: RSK Environment Limited, 18 Frogmore Road, Hemel Hempstead, Herts, HP3 9RT
Tel: 01442 437500

Status: Final

Author	Craig Lewis	**Technical reviewer**	Cathy Latimer
Signature	[redacted]	Signature	[redacted]
Date:	May 2017	Date:	May 2017
Project manager	Cathy Latimer	**Quality reviewer**	Pip Gobby
Signature	[redacted]	Signature	[redacted]
Date:	May 2017	Date:	May 2017

RSK Environment Limited (RSK) has prepared this report for the sole use of the client, showing reasonable skill and care, for the intended purposes as stated in the agreement under which this work was completed. The report may not be relied upon by any other party without the express agreement of the client and RSK. No other warranty, expressed or implied, is made as to the professional advice included in this report.

Where any data supplied by the client or from other sources have been used, it has been assumed that the information is correct. No responsibility can be accepted by RSK for inaccuracies in the data supplied by any other party. The conclusions and recommendations in this report are based on the assumption that all relevant information has been supplied by those bodies from whom it was requested.

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Where field investigations have been carried out, these have been restricted to a level of detail required to achieve the stated objectives of the work.

This work has been undertaken in accordance with the quality management system of RSK Environment Ltd.

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1 INTRODUCTION

RSK Environment Limited (RSK) was commissioned by CALA Homes Limited, hereafter known as the client, to produce a post remediation works validation report for Phase 1A (Plots 1-64) of the land at the former West End Lane Nursery, Angmering, BN16 4AX.

This report is subject to the RSK service constraints given in **Appendix A**.

1.1 Background

This report details remedial and validation works carried out within the Phase 1A development area, as well as across the wider site.

Validation of the soft landscaping and garden areas within Phase 1A (Plots 1 -64) is still ongoing, the results of which will be reported to the National House Building Council (NHBC) and the Local Authority.

Several preceding phases of site investigation and associated risk assessments have been completed for the site by RSK. These are outlined in the following reports:

- RSK, 2015a. Geo-environmental Site Investigation, report ref: 27621 R01 (02), dated September 2015;
- RSK, 2015b. Additional Geo-environmental Site Investigation and Remediation, report ref: 27621 R02 (00), dated June 2015;
- RSK, 2016a. Remedial Strategy, report ref: 27621 R03 (01), dated January 2016;
- RSK, 2016b. Supplementary Geo-environmental Site Assessment, report ref: 27621 R04 (01), dated June 2016;
- RSK 2016c. Tank Validation, report ref: 27621 L01/ad, dated August 2016;
- RSK 2016d. Bund Validation Works, report ref: 27621 L02, dated October 2016;
- RSK 2016e. Asbestos Delineation Works Phase 1A – Plots 1 to 19, report ref: 27621 L04, dated October 2016; and
- RSK, 2017. Asbestos Delineation Works Phase 1A – Plots 18 and 20 to 64, report ref: 27621 L05, dated February 2017.

Further to the above, Keltbray Remediation, carried out the first phase of remedial works at the site in accordance with recommendations contained within the RSK Remedial Strategy (report ref: 27621 R03 (01), January 2016). RSK attended site on an ad hoc basis during Keltbrays first phase of works to provide advice on delineation, waste disposal and to carry out validation when required. The remedial works undertaken y Keltbray were documented in a Completion Report, (report ref: 6033.CR.LH.08072016V3, dated August 2016. It is understood that this report has already be submitted to the Local Authority and therefore has not been appended to this report.

The salient findings of all the aforementioned works are included within the following report. However the report should be read in conjunction with the previous reports listed above, some of which are included in **Appendix B**.

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1.2 Objectives

The objective of the remediation is to produce a site that is suitable for its intended purposes (residential (housing and flats) end use with private gardens and communal soft landscaping) whilst providing a safe working environment with respect to site workers and adjacent users. This will involve the following measures:

- The placement of a suitable clean cover layer within any private gardens and proposed communal soft landscaped areas, locally deepened (to the requirements of the Landscape Architect) in the proximity of any proposed deep root-balled shrubs and/or trees: In order to break potential contamination pathways with respect to the underlying made ground.
- Following decommissioning and demolition of the CHP building, nitric acid store, substations and above ground storage tanks (ASTs), in the event that any visually impacted materials are observed, an Environmental Engineer be contacted so that appropriate sampling can be implemented to determine any additional remedial and validation requirements;
- Regrading of bund materials (where required) to form site levels, in accordance with the approved development plan; and to facilitate placement of a 'clean' cover layer across the remaining bund materials. Where possible material won as part of the re-grading exercise will be re-used on site in accordance with a materials management plan following the CL:AIRE Code of Practice.
- Incorporation of gas protection measures within the proposed buildings: structural barrier comprising suspended or ground bearing floor slab with appropriate ventilation and a gas resistant membrane, sealed at all joints and penetrations.
- Compliance with CAR 2012, through the adoption of safe working procedures with respect to the potential presence of asbestos containing materials (ACM) and notification to the HSE.

The objective this report is to demonstrate that the remedial objectives listed above have been achieved for Phase 1A and that this area of the site is suitable for its intended purposes by:

- Providing a record of validation sampling undertaken post demolition/site clearance, confirming suitability of remaining materials in Phase 1A for the proposed end use (residential).
- Production of a post remediation validation report recording all actions taken to implement the remedial works carried out to date: To confirm that remediation goals set out in the remedial strategy report (RSK ref: 27621 R03 (01), January 2016) have been achieved in Phase 1A and identify further works, if necessary.

1.3 Existing Conditions

The site is situated off Roundstone Lane, Angmering, BN16 4AX. The National Grid reference for the site is 507640, 103520 as shown on **Figure 1**. The site covers approximately 11 ha at an elevation of approximately 11 m above Ordnance Datum (AOD) with the exception that along some boundaries, there are bunds that rise up above general site levels.

The site is currently an active construction site, with the area known as Phase 1A containing Plots Nos. 1 to 64 near to completion.

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Historically the site was arable land up until the construction of West End Nursery circa 1943. The nursery was extended during the 1970's towards the eastern part of the site with the construction of greenhouses.

Redevelopment of the site occurred from the 1990's, with the addition of smaller greenhouse's to the south. Also present from the 1990s were ASTs, a gas governor and laboratory in the south west of the site and a drainage pond in the south east. The laboratory was no longer present on mapping data between 2012 and 2014.

It is understood that the site is being redeveloped with 244 residential plots comprising a mixture of housing and flats, with private and communal gardens and some areas of communal soft landscaping. The development plan for Phase 1A is shown within **Figure 3**.

1.4 Regulatory Correspondence

As part of regulatory consultation process, the client forwarded all reports pertaining to the site to the relevant regulators for review and comment.

Subsequently the remedial strategy for the site was agreed with the Pollution Officer at Arun District Council.

Since agreement of the remedial strategy the following items, which deviate from the agreed remedial strategy or, are additional to the remedial strategy have been discussed and agreed as specified with the Council:

- A cover layer validation sampling frequency of one sample per 250 m^3 in public open space areas has been agreed rather than one sample per 50 m^3.
- Prevention of public access to south west bund B by fencing and planting of prickly vegetation to deter trespassers has been agreed. Photographic evidence confirming these measures have been incorporated shall be included in the verification report for this area of the site.
- A hotspot of ACM of similar composition to materials encountered in other areas of the site was identified in Phase 1B. In accordance with the remedial strategy CALA informed Keltbray and RSK of the discovery. Keltbray subsequently removed the impacted materials in accordance with their previously agreed method statements and existing Health and Safety Executive (HSE) licence. The materials were temporarily stored in their designated treatment area in the centre of the site. RSK discussed the discovery with the Pollution Officer at Arun District Council 12th April 2017. Following verbal agreement from the Local Authority, RSK attended site on the 12th April 2017 to screen the removed materials for volatiles using a photo-ionisation detector (PID) prior to placement in the central public open space (POS) area, please refer to **Section 2.2.7** for further details.
- Following queries raised by the NHBC regarding the gas membrane design submitted for the site, further gas assessment in regards to Phase 1A is in the process of being discussed with the NHBC and Local Authority. Options being considered at this time include subfloor void monitoring within 10 % of the plots across Phase 1A (this is the preferred option) or the installation of gas monitoring wells to allow 6 spot monitoring visits to be undertaken over a three week period. The gas membrane design drawings for the remainder of the site are in the process of being updated and shall be agreed with the NHBC prior to installation commencing across the remainder of the site.

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Email correspondence between RSK and Arun District Council in regards to bullet points 1 and 2 above is presented in **Appendix C**.

1.5 Method Statement for Remediation of Contaminated Ground

The strategy proposed for the remedial works was based upon previous site investigations findings. Previous investigations found evidence for asbestos containing materials (ACM) in trial pits TP1-9 (all excavated through the bund materials) and within boreholes BH1, BH4, BH12 and BH15 during the initial ground investigation. Elevated concentrations of hydrocarbons and metals were also identified within bund materials. On this basis, a potentially complete pollutant linkage was identified to human health (construction workers and future residents) from asbestos in soil and elevated concentrations of hydrocarbons and metals.

Upon the basis of the original findings, the RMS outlined the following actions:

1.5.1 Implementation

The overall remediation strategy was divided into the enabling and demolition phase, i.e. those works required to produce a suitable development platform, and the subsequent construction phase.

The sequence of works required under both phases is outlined in the following sections relating to the proposed demolition sequence and the subsequent construction works.

- Before commencing demolition works of the remaining buildings, an asbestos survey suitable for demolition purposes should be undertaken to confirm the presence or absence of ACM within all structures. Where ACM are encountered removal an appropriately licensed contractor should undertake works before commencing demolition works. The demolition works were the responsibility of the vendor prior to handover of the site to our client. As such, no further details are available in regards to whether or not this was completed prior to demolition of the buildings.
- With regards to the removal of the ASTs and substations, live services to these features would need to be isolated/disconnected before removal. In addition the contents of any ASTs and associated pipework should be purged of their liquid contents. The liquid shall be tankered off-site for appropriate disposal by a licensed waste disposal contractor.
- The existing ASTs, substations and associated pipework, underlying concrete and brick, should be removed under the supervision of a suitably geo-environmental engineer and disposed off-site. Validation of the soils underlying these features, in relation to potential contamination, should be completed at the discretion of the geo-environmental engineer. Validation of the underlying soils is likely to include some or all of the following:
    - logging of the underlying materials to BS5930 (2015);
    - in-situ screening by a photo-ionisation device;
    - any materials suspected to be contaminated based on visual/olfactory observations and/or in-situ screening should be stockpiled in areas of impermeable surfacing (hard-standing/on impermeable geo-membrane material.

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Soil sample(s) should be collected from the stockpiled material and submitted for laboratory analysis to verify its suitability for re-use on-site or off-site disposal; and

- Any remaining drains or service ducts associated with these features, which have the potential to provide a pathway for contaminant migration should be removed or sealed.

- In accordance with the proposed development plan, sections of the bunds were proposed to be regraded with the removal of the top 1.3 m (approximately). Following agreement from the Local Authority, the excavated materials were to be re-used beneath a clean capping layer in the central POS area. A capping layer to a minimum depth of 600 mm was subsequently required across the re-graded bunds and POS area. The capping materials were proposed to be sourced from natural subsoil won from the central POS area and imported topsoil, underlain by a geo-marker layer.
- It was recommended that material movements across the site be controlled through the implementation of a CL:AIRE Code of Practice Material Management Plan to demonstrate compliance of the four factors set out therein.

1.5.2 Construction Phase

1.5.2.1 Placement of clean cover soils

In order to break the identified pollutant linkages, within proposed areas of private gardens and communal soft landscaping the placement of a suitable clean cover layer was required. To address potential risks posed from the impacts identified in a sustainable manner, a zoned approach was to be adopted in relation to the thickness of the clean cover layer as detailed below:

- 600mm in areas of identified impact (remaining bund materials, pesticide hotspot, and made ground containing asbestos), un-investigated areas considered to potentially impacted (i.e. made ground extending to the south of the sites buildings considered to potentially contain asbestos and soils in the vicinity of the fuel tanks and nitric acid store) and in the central POS area; and
- 450mm in lower risk areas (i.e. no impacts identified during the previous phases of works, no significant un-investigated potential sources identified and distribution of exploratory locations considered appropriate for 'low risk' to be concluded. This zone primarily relates to the footprint of the green house.
- Soils were to be placed over a geomarker in high risk garden and soft risk landscape areas as indicated in **Figure 3**.

1.5.2.2 Installation of gas protection membranes

It was recommended that a detailed gas membrane installation design and implementation plan be completed in accordance with the recent updates in UK guidance (BS8485).

Following queries raised by the NHBC regarding the gas membrane design submitted for the site which incorporated a 1200 gauge membrane (prepared following advice from Opus Engineering Limited), further validation gas assessment in regards to Phase 1A is

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in the process of being discussed with the NHBC and Local Authority. To date 1200 gauge membranes have been installed across Phase 1A.

Options being considered at this time in relation to further validation gas assessment include subfloor void monitoring within 10 % of the plots across Phase 1A (this is the preferred option) or the installation of gas monitoring wells to allow 6 spot monitoring visits to be undertaken over a 3 week period.

In the event that the validation monitoring does not demonstrate sufficiently low concentrations, integrity testing shall need to be undertaken to demonstrate retrospectively the integrity of the gas membranes in Phase 1A and if necessary based on the results retrospective mitigation measures may be required.

The gas membrane design drawings for the remainder of the site are in the process of being updated and shall be agreed with the NHBC and Local Authority prior to installation commencing across the remainder of the site.

1.5.3 Verification

1.5.3.1 Validation of clean cover soils

In accordance with the remedial strategy report, validation is required in regards to the thickness and chemical quality of the clean capping layer placed in gardens and areas of communal soft landscaping.

To verify the thickness of the cover layer, it will be necessary to dig through the cover layer at selected locations to verify the required thickness of topsoil, subsoil and presence of the marker layer where required.

In addition, validation samples are to be collected on a 1 in 50 m^3 frequency for garden areas and a 1 on 250 m^3 frequency in areas of communal soft landscaping as agreed with the Local Authority.

All chemical testing for validation purposes is required to be carried out by an MCERTS and UKAS accredited laboratory and the results compared to the relevant validation assessment criteria as set out in the remedial strategy report (RSK report ref: 27621 R03 (01), January 2016) and **Appendix D**.

1.5.3.2 Validation of gas protection measures

The gas installation and design plan was to provide details of verification requirements. However, it was recommended that as a minimum, validation certificates should be provided for the gas membrane installation along with supporting photographs, demonstrating that the membranes cover the entire building footprint and that all joints and penetrations have been suitably sealed in accordance with the manufacturer's guidelines.

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2 REMEDIAL WORKS

The remedial works have been carried out in a phased approach as development has progressed at the site. The remedial works conducted at the site to date are summarised in the subsequent subsections. Laboratory certificates presenting the validation sampling results conducted to date are presented in **Appendix F**.

2.1 Keltbray Remediation Works

Keltbray Remediation (Keltbray) were instructed by the client to carry out a 1st phase of remediation works at the site between the 20th of April and 29th June 2016. The scope of works aimed to provide a record of works carried out in accordance with the RSK remedial strategy (report ref: 27621- R03 (01), January 2016), Environment Agency (EA) and Arun District Council (ADC).

The scope of Keltbray's 1st Phase of works was as follows:

- Excavation of ACM soils across the western perimeter (north west bund);
- A cut to 600 mm below existing ground level to facilitate the development of a new access road;
- Excavation of ACM soils to 600 mm below existing ground levels surrounding the existing residential property near the south west bund;
- Excavation of made ground within the proposed central POS, until natural soils were encountered and removal of visible ACM from arisings for off-site disposal;
- Over dig natural soils to provide suitable site won materials for bund capping subsoil layer;
- Utilise the void space created within the proposed central POS to accommodate the treated made ground (i.e. visible ACM removed); and
- Capping of bunds (north west, north east and south west) with geo-marker layer and 600mm of site won subsoil/imported topsoil.

Further to the above Keltbray completed a Materials Management Plan (MMP) for the site, in which all arisings were managed and re-used. Due to the large volume of soil requiring treatment over the course of the remediation works a mobile treatment permit was deployed.

Further details regarding the Keltbray works are provided in the Keltbray Completion Report (report ref: 6033.CR.LH.08072016v3. It is understood that this report has already been submitted to Arun District Council and as such has not be appended to this report.

2.2 Verification Works

Throughout the remedial works RSK has been attending site on an ad hoc basis to verify the works carried out. The verification works carried out thus far are summarised below:

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2.2.1 Pesticide Validation Works (April 2016)

RSK carried out validation works on the 28th April 2016 within the vicinity of HA5, in which elevated concentrations of pesticides were previously recorded.

A series of hand excavated trial pits were considered the most appropriate methodology to delineate the pesticide hotspot previously identified in HA5.

Four samples (labelled HA5 V1-HA5 V4) were sent for validation laboratory testing. All samples were reported to be below laboratory detection limits for pesticides, therefore no further delineation works or remediation was deemed necessary in this area in relation to pesticides, other than the 450 mm capping layer proposed in lower risk garden and communal soft landscaped areas. The laboratory certificates for HA5 V1-HA6 V4 are presented in **Appendix F**.

2.2.2 Tank Validation Works (January & March 2016)

RSK carried out validation works on 25th January and 8th March 2016 in the vicinity of former above ground fuel storage tanks. The works undertaken are detailed in RSK letter report ref: 27621 L01 / ad, dated August 2016 (presented in **Appendix B**) and summarised below.

A series of mechanically excavated trial pits were considered to be the most appropriate investigation technique to provide suitable recovery of soils and inspection of potential contamination beneath the former tanks. A breaker was required to penetrate the concrete hardstanding that formed the base of the historic tanks.

The following site work was carried out:

- Trial pits V1-V4 – 25th January 2016; and
- Trial pits V5-V10 – 8th March 2016.

The locations of the above are shown in **Figure 2** and **Figure 2a**.

The general ground conditions encountered are summarised in **Table 1** below.

Table 1: Ground conditions encountered during tank validation works

Strata	Exploratory holes encountered	Depth to top of stratum m bgl	Thickness (m)
Topsoil	V9	0.00	0.10
Made Ground	All	0.00-0.10	>1.10
River Terrace Deposits	V5, V6, V7, V8, V9, V10	0.70-1.20	>0.70

Hydrocarbon odours were noted at V2, V3, V4, V6, V8 and V10. An oily product was noted to be seeping into trial pit V2 at 0.3m depth.

All soil samples were submitted for chemical laboratory testing comprising speciated total Petroleum Hydrocarbons (TPH-CWG). Additionally, soil sample V10 collected from the centre of the historic nitric acid store was tested for pH.

None of the validation samples collected were found to exceed the validation assessment criteria and pH was not found to be acidic in the sample tested from V10.

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However, a total TPH concentration of 1,420mg/kg in the sample from V2 at 0.3m depth would classify this material as hazardous waste.

Evidence for an oil seepage in the ground as previously mentioned was identified at V2, around 0.3m depth. No other positions showed signs of oil seepage. It was recommended that the vicinity of V2 be further investigated by a suitably qualified geo-environmental consultant to identify the extent of oil contamination in this area of the site, with a view to excavating visually impacted soils from this location under the supervision of a suitably qualified geo-environmental engineer, for disposal as hazardous waste or treatment and re-use on site.

Further validation works by a geo-environmental consultant are planned to be undertaken in this area in accordance with the next phase of works commencing; **Phase 1B**. The remaining localised impacts in this area are not considered to pose a risk to the future residents of Phase 1A, neighbouring residents or construction works (subject to standard PPE requirements and good working practices as outlined in the remedial strategy).

2.2.3 Bund and POS Validation Works (April 2016)

2.2.3.1 Validation of proposed natural materials for re-use as subsoil

Prior to implementation of remedial works by Keltbray, RSK undertook a series of mechanically excavated trial pits on the 27th April 2016 in the central POS area to obtain representative soil samples to demonstrate that natural subsoil was suitable for use as a subsoil capping material. The works undertaken are detailed in RSK letter report ref: RSK 27621 L02, dated October 2016 (presented in **Appendix B**) and summarised below.

Five trial pits were mechanically excavated to depths up to 3.2m bgl designated TP POS1 to TP POS5. Made ground was identified from surface level to depths of 0.50 m to 1.25 m bgl and comprised grey brown sandy gravelly clay with variable proportions of brick, asphalt and glass fragments. Natural soils were encountered beneath the made ground, generally comprising brown to orange brown sandy, slightly gravelly clay or clayey, sandy flint gravel.

Suspected ACM (fragments of cement bound asbestos) were identified at surface level in the vicinity of each trial pit location. No suspected ACM were encountered within the trial pits.

Samples of natural soils beneath the made ground were submitted for laboratory testing of TPH CWG, polycyclic aromatic hydrocarbons (PAHs), benzene, toluene, ethylbenzene, xylenes (BTEX), methyl-tert butyl ether (MTBE), metals and pH at a range of depths between 1.0 m and 2.0 m. None of the measured determinants were in excess of the validation assessment criteria and as such the natural materials were deemed suitable for use as 'clean' subsoil.

2.2.3.2 Validation of POS and bund capping layers

RSK attended site on 9th and 23rd June 2016, and 7th and 25th July 2016 to undertake validation works of the capping layer placed on the re-graded bunds and central POS area.

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In these areas, a series of hand excavated validation trial pits were undertaken to allow inspection of the capping layer and recovery of representative soils for laboratory testing in accordance with the testing suite outlined in the remedial strategy report (RSK report ref: 27621 R03 (01), January 2016. Trial pits were excavated to the base of the capping layer (i.e. when the bright orange 'geo-marker' geotextile was encountered) or up to a maximum of 600mm depth whereby the geo-marker layer was observed being placed during construction. Validation locations were targeted to give a good spread across the areas subject to remedial works, whilst working to a sampling ratio of 1 in 250 m^3 for communal soft landscaping, as agreed with Arun District Council.

The following validation pits were carried out:

- NWB V1-8 - 9th June 2016;
- SWB V1-4 - 23rd June 2016;
- POS V1–12 - 7th July 2016;
- NEB V1-4 - 25th July 2016; and
- Additional inspection pits POS V13-16, POS V2A-D, POS V12-A-D - 22nd August 2016.

The locations of the above are presented on **Figure 2**.

Following the initial validation, ACM were found at surface level in selected areas of the north west bund, north east bund, south west bund A and central POS area. Laboratory testing confirmed presence of chrysotile cement from surface samples obtained from the north west bund and POS. Asbestos was also identified in soil samples obtained from POSV2 and POSV12.

A recommendation for hand picking of visible fragments of asbestos from the surface of the bunds was made by RSK and completed by Keltbray, as summarised in the Keltbray Completion Report. Additional delineation and soil sampling works were recommended in the vicinity of POSV2 and POSV12.

Following the identification of ACM in several areas across the site (as detailed above) on the surface of bunds and within two soil samples (POSV2 and POSV12), Keltbray carried out a series of hand-picking exercises across these areas. RSK re-inspected these areas after Keltbray had completed the hand-picking exercise and were satisfied that visually identifiable asbestos fragments had been removed for the surface across these areas.

Additional validation trial pits were excavated by RSK on 2nd August 2016 to confirm the extent of asbestos materials in the vicinity of POSV2 and POSV12. Representative soils samples were obtained from the validation pits (refer to as POSV12A-D and POSV2A-D) and submitted for laboratory testing to screen for the presence of asbestos fibres. None of the additional soil samples were found to contain asbestos fibres.

It is noted that topsoil had not been placed across the bunds or POS area prior to the validation sampling visits detailed above. It was therefore recommended that additional validation works be completed following placement of topsoil with respect to the north west bund and south west bund A, whereby the subsoil capping layer thickness was observed to be less than 600 mm thick.

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It was also noted that works had yet to be completed in relation to the south east bund and the part of the south west bund outside of the hoarding during the initial phase of remedial works.

The north west bund has subsequently been re-validated as detailed in **Section 2.2.6**.

In accordance re-profiling of the north western bund and additional works in Phase 1B and 2, a 2nd phase of remedial works has been completed by Keltbray at the site. A completion report for this phase of works in is progress by Keltbray, as well as supplementary validation works by RSK including revalidation of the central POS area.

2.2.4 Asbestos Delineation Works Phase 1A – Plots 1 to 19 (August & September 2016)

To delineate asbestos impacts observed within Phase 1A, RSK carried out intrusive investigation works across Plots 1-19 between 31st August and 7th September 2016. The works undertaken are detailed in RSK letter report ref: RSK 27621 L04, dated October 2016 (presented in **Appendix B**) and summarised below.

The objective of the works was to characterise made ground and identify the potential presence of ACM and/or asbestos fibres in soil at each plot, to inform cover layer thickness requirements.

The investigation works comprised testing under each house and rear garden area across Plots 1-14, and testing within the rear gardens only at Plots 15-17, and 19. It was not possible to investigate Plot 18 due to access constraints. However, Plot 18 was investigated further during subsequent delineation works, please refer to **Section 2.2.5**.

The locations of the intrusive investigations are shown on **Figure 3**.

The exploratory holes revealed that this area of the site is underlain by a variable thickness of made ground over River Terrace Deposits encountered at depth. The general succession of strata is summarised in **Table 2** below:

Table 2: Ground conditions encountered during asbestos delineation works-Plots 1-19

Strata	Exploratory holes encountered	Depth to top of stratum m bgl	Thickness (m)
Made Ground	All	Ground level	0.15 – 1.10
River Terrace Deposits	All, except TPP14H and TPP19G	0.70 – 1.20	Proven to 1.05

Fragments of suspected cement bound asbestos were noted within made ground in TPP13G, TPP13H, TPP14G, TPP15G and TPP19G.

Soil samples were submitted for laboratory analysis to screen for asbestos in soils. The results from the laboratory testing indicated that the soils obtained from TPP12G at 0.10 m to 0.20 m and TPP17G at 0.20 m to 0.30 m tested positive for loose chrysotile fibres, and from TPP17G at 0.40 m to 0.50 m tested positive for loose amosite fibres.

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Based on the results it was recommended that a 600 mm capping layer underlain by a geo-marker membrane be installed in garden areas within Plots 1-19, Plots 12 to 15, 17 and 19. All other plots were deemed suitable for the installation of a 450 mm capping layer.

2.2.5 Asbestos Delineation Works Phase 1A – Plots 18 & 20 to 64 (October 2016)

To delineate asbestos impacts observed within Phase 1A Plots 18 and 20 to 64, RSK carried out intrusive investigation works on 25th and 26th October 2016. The works undertaken are detailed in RSK letter report ref: RSK 27621 L05, dated February 2017 (presented in **Appendix B**) and summarised below.

The objective of the works was to characterise made ground and identify the potential presence of ACM and/or asbestos fibres in soil at each plot, to inform cover layer thickness requirements.

In the vicinity of each plot, a single trial pit was excavated to target the footprint of the proposed rear garden. It was not possible to investigate the footprint of Plots 30 to 34 due to access constraints. The locations of the exploratory holes are shown on **Figure 3**.

A soil sample was collected from each accessible plot, with a total of 41 representative soil samples collected.

The exploratory holes revealed that the site is underlain by a variable thickness of made ground overlying River Terrace Deposits. The ground conditions encountered are summarised below in **Table 3**.

Table 3: Ground conditions encountered during asbestos delineation works- Plots 18, & 20-64

Strata	Exploratory holes encountered	Depth to top of stratum m bgl	Thickness (m)
Made Ground	All locations except Plots 52, 62 and 64	Ground level	0.10 – 1.10
River Terrace Deposits	All locations except Plots 27, 37, 38, 40 41, 55, and Plot 19 Garden	0.70 – 1.20	Proven to 1.05

Fragments of suspected cement bonded asbestos were noted within made ground deposits encountered in Plots 27, 36, 37, 38, 39 and 50. Fragments of suspected cement bonded asbestos were also noted on the surface adjacent to Plots 40 and 58.

The majority of the samples submitted for analysis returned negative asbestos screens with the exception of those detailed below in **Table 4**.

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Table 4: Summary of asbestos analysis results

Hole ID	Depth Range	Asbestos Species	Presenting As	Quantified?
Plot 36	0.50	Chrysotile	Loose Fibres	No
Plot 39	0.40 - 0.45	Chrysotile	Loose Fibres	No
Plot 47	0.40 - 0.50	Amosite	Loose Insulation	<0.001%
Plot 48	0.40 - 0.50	Chrysotile	Loose Fibres	No
Plot 49	0.50 - 0.60	Chrysotile	Cement	No
Plot 50	0.45 - 0.50	Amosite	Loose Fibres	No
Plot 61	0.50 - 0.60	Chrysotile	Loose Fibres	No

Based on frequency of asbestos testing already undertaken in this area of the site and in accordance with the protection measures already in place to protect construction workers and neighbouring residents, only one of the soil sample collected during this phase of works was submitted for asbestos quantification analysis (Plot 47 at 0.4 m to 0.5 m bgl).

It was recommended that handpicking for ACM at the ground surface also be completed across plots 22, 27 and 39, followed by removal of the upper 0.2 m of the existing ground profile through these plots.

On the basis of the results discussed above it was recommended that a 600 mm of clean capping layer, underlain by a geo-textile marker layer be placed in the gardens 64 27, 36-39, 43, 47, 48, 49, 50 and 61 (in addition to Plots 12 to 15, 17 and 19 identified during the first round of delineation works), whereby ACMs have been found to be present. A 450 mm cover layer is required across the gardens of all other plots in Phase 1A.

The capping layer thickness requirements for the entirety of Phase 1A is summarised on **Figure 3**.

2.2.6 North West Bund Supplementary Validation Phase 1A – (February 2017)

Following re-profiling works by Keltbray in the southern portion of the north west bund, RSK undertook supplementary validation works in this area on the 28th February 2017.

Five trial pits were hand excavated to depths of up to 0.80 m bgl designated TP101A to TP105A (as presented on **Figure 2**), in order to obtain representative soil samples to validate that the capping material had not been cross contaminated during re-profiling works and to determine the thickness of the capping layer.

The stratum observed within the trial pits was identified as a brown sandy gravelly clay with occasional cobbles of flint to a depth of 0.8 m. No made ground was identified in any of the trial pits. The trial pit logs and photographic log documenting the works are presented in **Appendix E**.

Topsoil was being placed at the time of sampling, therefore the capping layer will exceed the required 600 mm thickness. No geo-textile marker layer was observed during the validation visit. However, RSK observed the geo-textile marker layer being replaced following the re-profiling works prior to application of the subsoil and topsoil.

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Validation samples collected from the natural site 'won' subsoil's within the capping were submitted for laboratory testing, at a range of depths between 0.50 m and 0.70 m bgl. None of the determinants tested were found to exceed the validation assessment criteria.

Information pertaining to the imported topsoil is provided in **Appendix G**.

2.2.7 Assessment of ACM hotspot materials removed from Phase 1B

A hotspot of ACM of similar composition to materials encountered in other areas of the site was identified in Phase 1B during enabling works in this area. In accordance with the remedial strategy CALA informed Keltbray and RSK of the discovery. Keltbray subsequently removed the impacted materials in accordance with their previously agreed method statements and existing Health and Safety Executive (HSE) licence. The extent of the hotspot and treatment area set up during the removal works are presented on **Figure 4**.

The materials were temporarily stored in Keltbrays designated treatment area to the east of the POS area in the centre of the site.

RSK attended site on the 12th April 2017, following discussions with Arun District Council, to screen the removed materials for volatiles using a PID. This work was undertaken to validate that volatile compounds were not present/or were present at sufficiently low concentrations, to render the materials suitable for placement within the central POS area, without posing a risk to controlled waters.

Whilst on-site RSK observed the hotspot materials to be segregated in the Keltbray designated treatment area, and clearly labelled in accordance with procedures specified in the Keltbray MMP.

The materials observed comprised greyish brown gravelly sand, with occasional clay content. Sand is coarse. Gravel is angular to sub-rounded, fine to very coarse fragments of brick, concrete and ACM (predominately cement tiles). No visual evidence of hydrocarbons contamination was observed. Olfactory observations could not be made due to requirements for respiratory personal protective equipment (RPE) to be used during the sampling works. Representative soil samples were collected from 16 locations across the stockpiled hotspot materials, with PID results ranging from <0.1 ppmV to 0.3 ppmV.

Based on the consistently low levels of volatiles and absence of visual evidence for hydrocarbon contamination within the materials, they were deemed suitable for placement and encapsulation within the central POS area. Photographs collected during the validation works area presented in **Appendix H**.

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3 VALIDATION RESULTS SUMMARY

The remedial works are being carried out in a phased approach as the proposed development progresses. The following is applicable to the Phase 1A part of the site as shown within **Figure 3**.

3.1 Phase 1A

Investigation works prior to remediation of the site identified elevated pesticides in the vicinity of HA5 and elevated hydrocarbons and metals in made ground across Phase 1A. Additionally asbestos fibres and ACM were identified primarily within the bund materials but also locally across Phase 1A in made ground.

Subsequent delineation testing of the previously identified pesticide impacted area in the north east of Phase 1A, suggests that the impact has been sufficiently remediated with none of the samples sent for laboratory testing exceeding the recommended validation assessment criteria. Therefore, no further delineation works or remediation is deemed necessary in this area in relation to pesticides, other than the application of a 450 mm capping layer in garden and/or communal soft landscaping within this area.

Validation works conducted on the north west bund in June 2016 and February 2017 in regards the capping layer, have demonstrated that the capping layer thickness and chemical quality outlined in the agreed remedial strategy for the site has been achieved and that this area is suitable for use as communal soft landscaping. Therefore, no further validation is required with regards to the north west bund.

The asbestos delineation works conducted across Plots 1 to 64 (as detailed in **Sections 2.2.4** and **2.2.5**) have be used to refine the garden capping layer thickness requirements across Phase 1A on a plot by plot basis. The capping layer thickness required in each plots garden is presented on **Figure 3**.

Validation of the recommended capping layers within the garden and communal soft landscaping areas is still ongoing. In accordance with the agreed remedial strategy as plots/soft landscaping areas become available, validation sampling to demonstrate adequate capping layer thickness and chemical quality is being completed on a 1 in 50 m^3 ratio for gardens and 1 in 250 m^3 ratio in soft landscaping areas.

All garden validation testing data will then be submitted to the NHBC for approval prior to release of any CML's.

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4 CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusions - Phase 1A

Based upon the remedial works carried out to date within the Phase 1A, it is considered that the area is suitable for the proposed residential end use, subject to the results of additional validation gas assessment across Phase 1A and garden/soft landscaping validation works.

With exception to the gas membrane design, RSK are satisfied that the remedial works carried out to date by Cala Homes and Keltbray, have been carried out in accordance with the agreed remedial strategy.

Since the development works commenced RSK have collected a significant amount of additional data within Phase 1A (plots 1-64). Having reviewed the ground conditions and gas monitoring data from the nearby historic monitoring wells RSK anticipate that additional validation monitoring will demonstrate a sufficiently low risk that gas protection measures are not required in Phase 1A. As such rendering the installation of 1200 gauge membrane to be acceptable and negating the need for further verification information in relation to gas protection measures in this area of the site.

4.2 Recommendations – Phase 1A

In the event that the validation gas monitoring does not demonstrate sufficiently low concentrations, integrity testing shall need to be undertaken to demonstrate retrospectively the integrity of the 1200 gauge gas membranes installed across Phase 1A, and if necessary based on the results retrospective mitigation measures may be required.

Validation of the recommended capping layers within the garden and soft landscaped areas is still ongoing. All garden and soft landscaping validation testing data will then be submitted to the NHBC for approval prior to release of any CML's.

4.3 Conclusions - Phase 1B and 2

The gas membrane design drawings for the remainder of the site are in the process of being updated and shall be agreed with the NHBC and Local Authority prior to installation commencing across the remainder of the site.

Further remediation and validation of the site is ongoing in a phased approach.

4.4 Recommendations - Phase 1B and 2

The following validation and verification requirements need to be completed across Phases 1B and 2, prior to these areas of the site being deemed suitable for the proposed residential end use:

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- Additional validation of the south west bund A following the placement of topsoil and in the vicinity of the formerly inaccessible area outside of the hoarding (Phase 1B);
- Validation that secure fencing and prickly vegetation has been implemented in regards to south west bund B (Phase 1B);
- Further delineation and removal of oily impacts observed in the vicinity of tank validation sampling location V2 (Phase 1B);
- Validation sampling in the vicinity of the historic boiler house (Phase 1B);
- Validation sampling in the vicinity of the south east bund following capping of this feature (Phase 2);
- Re-validation of north east bund following re-grading works in accordance with design layout changes (Phase 2);
- Re-validation of the central POS area capping materials following placement of surplus asbestos impacted materials beneath this area;
- Installation of gas membranes following confirmation that the gas membrane design for Phases 1B and 2 is acceptable to the NHBC and Local Authority once completed;
- Compilation of gas membrane installation verification information, including photographs of gas membranes in-situ, installation certificates and/or if deemed necessary 3rd party inspections;
- Garden and soft landscaping validation sampling and reporting; and
- Post remediation validation reporting for all of the above in relation to Phases 1B and 2.

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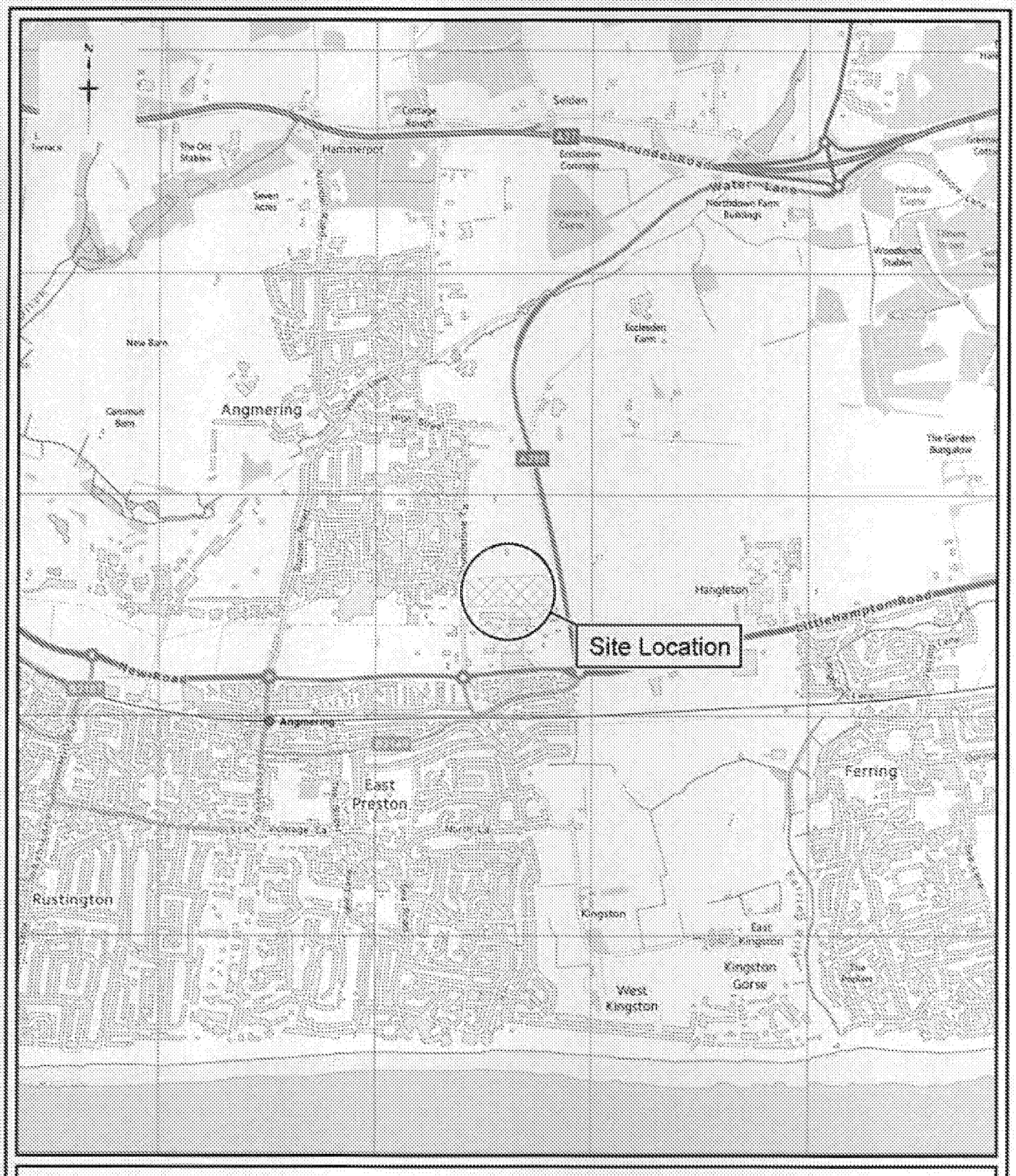
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FIGURES

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RSK

18 Frogmore Road
Hemel Hempstead
Hertfordshire
HP3 9RT
United Kingdom

Tel: +44 (0) 1442 437600
Fax: +44 (0) 1442 437700
Email: info@rsk.co.uk
Web: www.rsk.co.uk

Client: CALA HOMES (SOUTH HOME COUNTIES) LTD

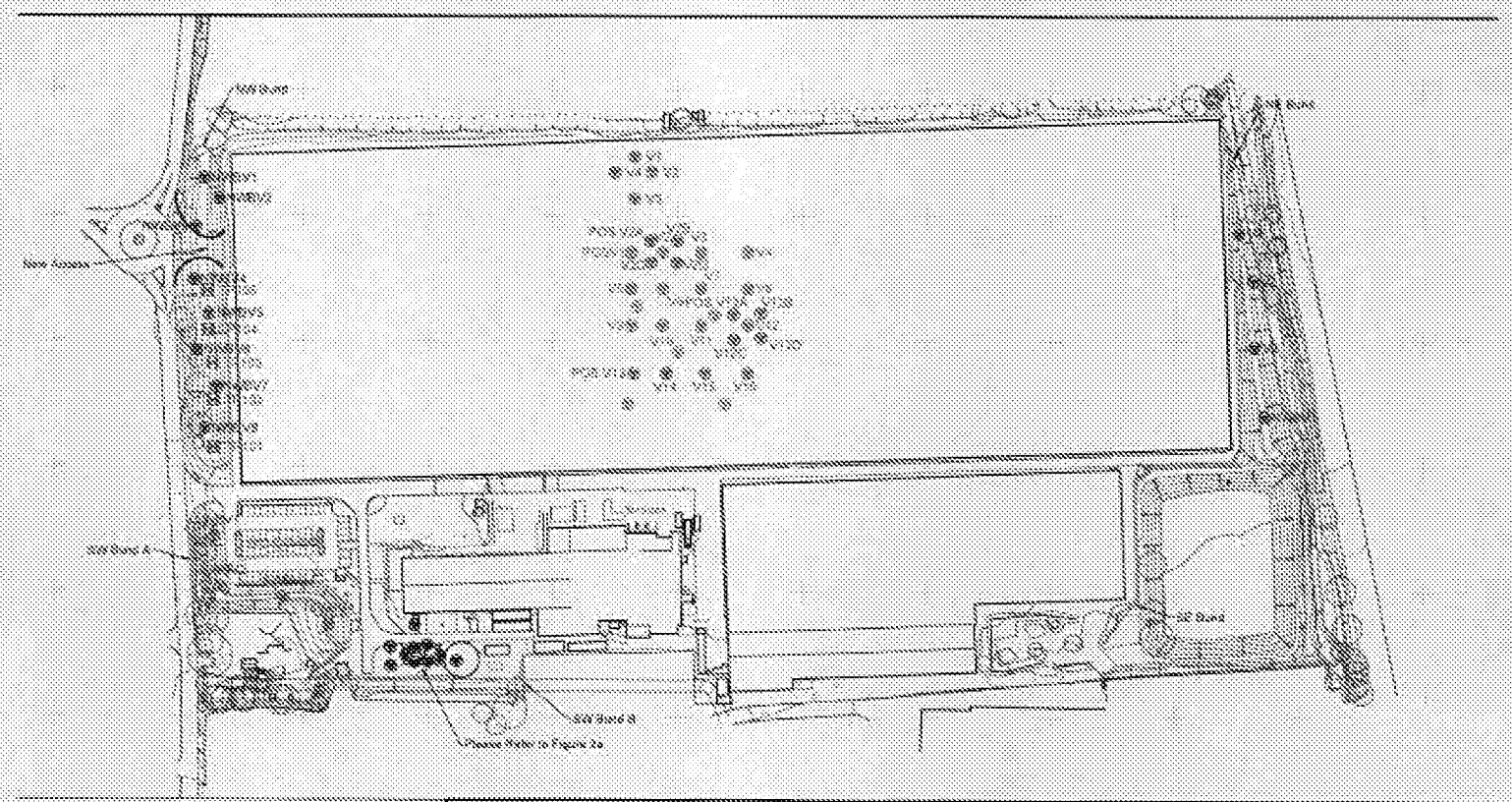
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Drawing Title: SITE LOCATION MAP

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Dimensions	Scale	Original Size
m	1:25,000	A4

Project Number	Drawing File	Drawing Number
27621 - R06	27621 - SLP.dwg	FIGURE 1



LEGEND

- Validation Sample Location - Northeast Bund Jun 2016
- Validation Sample Location - Southeast Bund Jun 2016
- Validation Sample Location - Public Open Space 1 Jul 2016
- Validation Sample Location - Northeast Bund Jun 2016
- Validation Sample Location - Public Open Space 02 Aug 2016
- Extent of Bund
- Trial Validation Sample Location Jan/March 2016
- Validation Sample Location - Northeast Bund February 2017
- Trial Pit Location (TP1/CS1-4) - Public Open Space April 2016
- Additional Validation Location - Public Open Space April 2016

RSK

Drawn	Date	Checked	Date	Approved	Date
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Rev	Date	Amendment	Drawn	Chkd	Apprd

Scale	Size	Orientation
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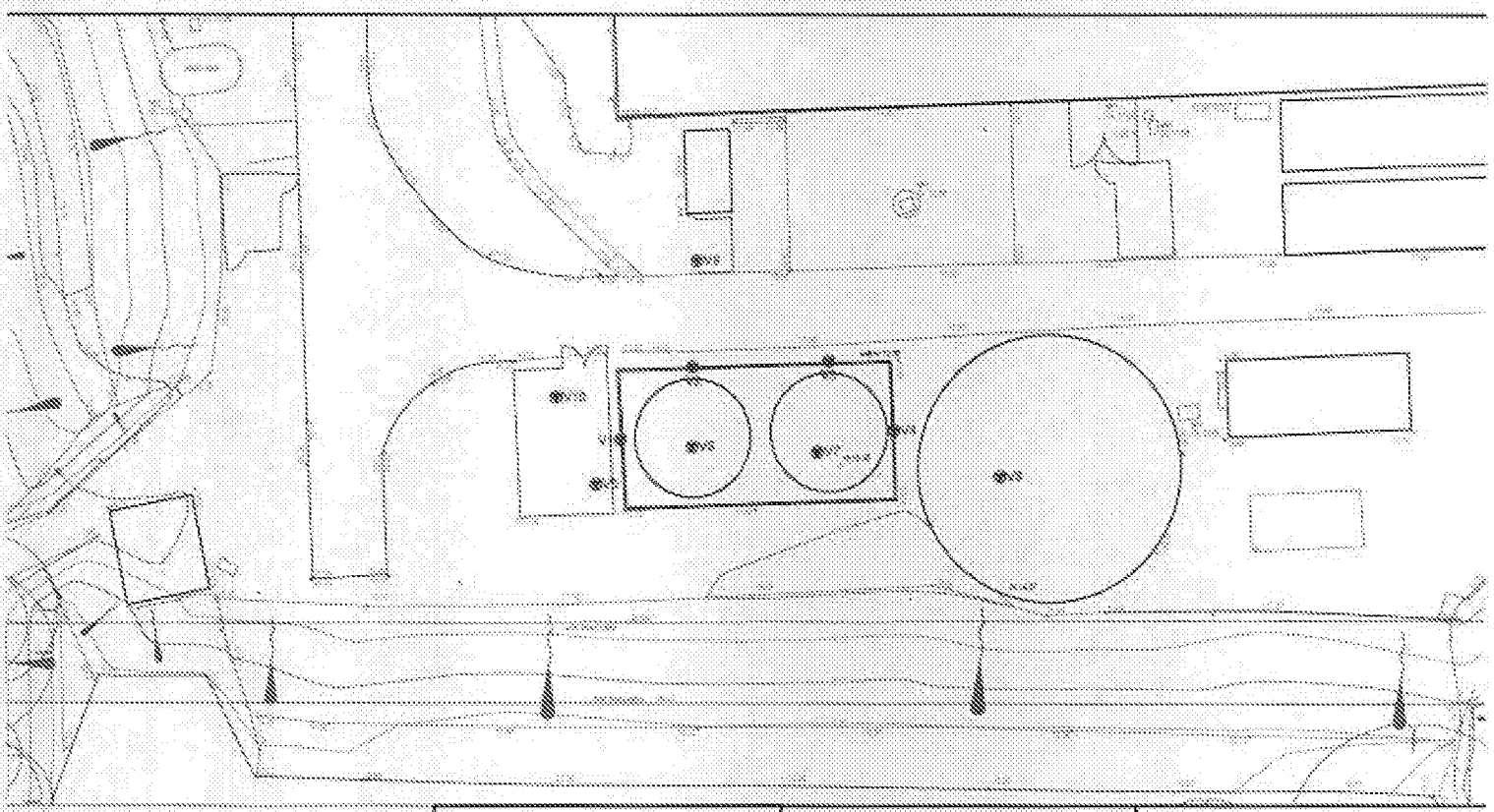
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Project title: WEST END NURSERY, ANGMERING

Drawing Title: VALIDATION SAMPLE LOCATION PLAN

Project No.	Drawing File
276021-R05	276021-R05(-)Fig2

Drawing No.	Rev.
FIGURE 2	P1



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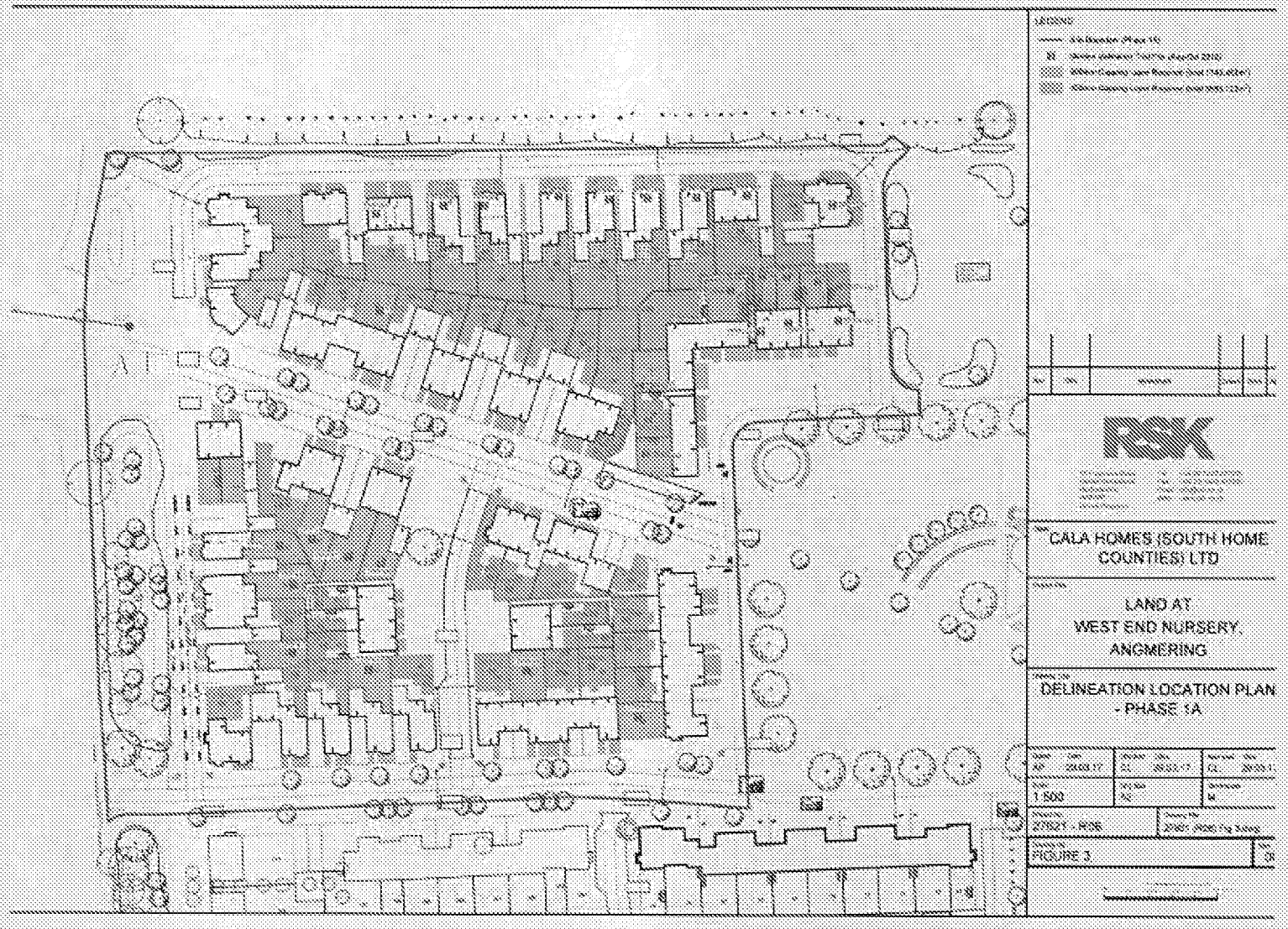
FORMER WEST END NURSERY
ANGMERING

TANK VALIDATION TRIAL PIT
LOCATION PLAN

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No.	Date	Amendment	Drawn	Chkd	Appd	Scale	Paper Size	Orientation	Drawing No.	No.
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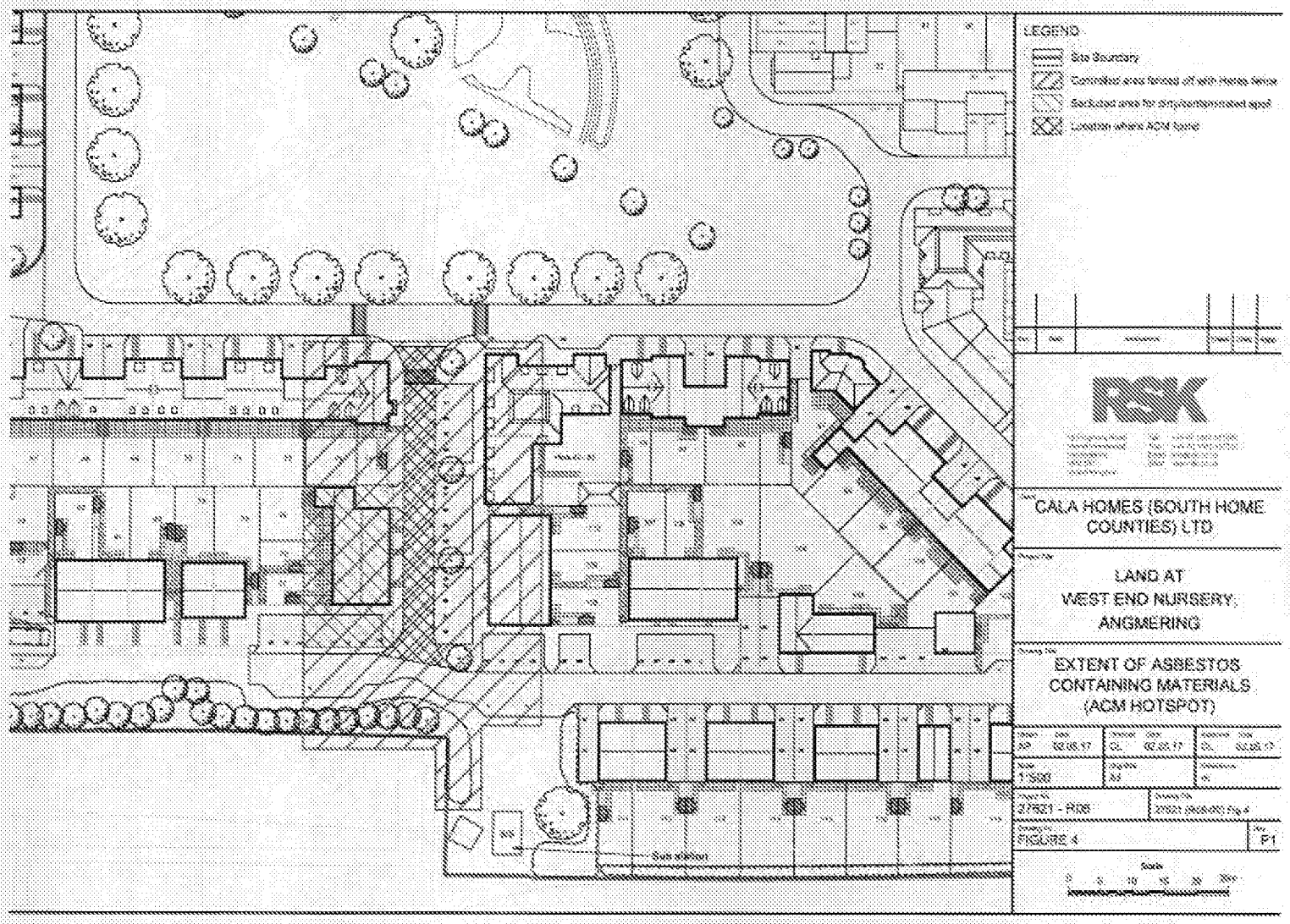
LAND AT
WEST END NURSERY,
ANGMERING

DELINEATION LOCATION PLAN
- PHASE 1A

1:500

FIGURE 3

ARUN DISTRICT COUNCIL A/94/17/DOC



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APPENDIX A
SERVICE CONSTRAINTS

1. This report and the site investigation carried out in connection with the report (together the "Services") were compiled and carried out by RSK Environment Limited (RSK) for CALA Homes (the "client") in accordance with the terms of a contract between RSK and the "client". The Services were performed by RSK with the skill and care ordinarily exercised by a reasonable environmental consultant at the time the Services were performed. Further, and in particular, the Services were performed by RSK taking into account the limits of the scope of works required by the client, the time scale involved and the resources, including financial and manpower resources, agreed between RSK and the client.

2. Other than that expressly contained in paragraph 1 above, RSK provides no other representation or warranty whether express or implied, in relation to the Services.

3. Unless otherwise agreed in writing the Services were performed by RSK exclusively for the purposes of the client. RSK is not aware of any interest of or reliance by any party other than the client in or on the Services. Unless expressly provided in writing, RSK does not authorise, consent or condone any party other than the client relying upon the Services. Should this report or any part of this report, or otherwise details of the Services or any part of the Services be made known to any such party, and such party relies thereon that party does so wholly at its own and sole risk and RSK disclaims any liability to such parties. **Any such party would be well advised to seek independent advice from a competent environmental consultant and/or lawyer.**

4. It is RSK's understanding that this report is to be used for the purpose described in the introduction to the report. That purpose was a significant factor in determining the scope and level of the Services. Should the purpose for which the report is used, or the proposed use of the site change, this report may no longer be valid and any further use of or reliance upon the report in those circumstances by the client without RSK 's review and advice shall be at the client's sole and own risk. Should RSK be requested to review the report after the date of this report, RSK shall be entitled to additional payment at the then existing rates or such other terms as agreed between RSK and the client.

5. The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the report inaccurate or unreliable. The information and conclusions contained in this report should not be relied upon in the future without the written advice of RSK. In the absence of such written advice of RSK, reliance on the report in the future shall be at the client's own and sole risk. Should RSK be requested to review the report in the future, RSK shall be entitled to additional payment at the then existing rate or such other terms as may be agreed between RSK and the client.

6. The observations and conclusions described in this report are based solely upon the Services which were provided pursuant to the agreement between the client and RSK. RSK has not performed any observations, investigations, studies or testing not specifically set out or required by the contract between the client and RSK. RSK is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the Services. For the avoidance of doubt, unless otherwise expressly referred to in the introduction to this report, RSK did not seek to evaluate the presence on or off the site of asbestos, electromagnetic fields, lead paint, heavy metals, radon gas or other radioactive or hazardous materials.

7. The Services are based upon RSK's observations of existing physical conditions at the Site gained from a walk-over survey of the site together with RSK's interpretation of information including documentation, obtained from third parties and from the client on the history and usage of the site. The Services are also based on information and/or analysis provided by independent testing and information services or laboratories upon which RSK was reasonably entitled to rely. The Services clearly are limited by the accuracy of the information, including documentation, reviewed by RSK and the observations possible at the time of the walk-over survey. Further RSK was not authorised and did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the client or third parties, including laboratories and information services, during the performance of the Services. RSK is not liable for any inaccurate information or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to RSK and including the doing of any independent investigation of the information provided to RSK save as otherwise provided in the terms of the contract between the client and RSK.

8. The intrusive environmental site investigation aspects of the Services is a limited sampling of the site at pre-determined borehole and soil vapour locations based on the operational configuration of the site. The conclusions given in this report are based on information gathered at the specific test locations and can only be extrapolated to an undefined limited area around those locations. The extent of the limited area depends on the soil and groundwater conditions, together with the position of any current structures and underground facilities and natural and other activities on site. In addition chemical analysis was carried out for a limited number of parameters [as stipulated in the contract between the client and RSK] [based on an understanding of the available operational and historical information,] and is should not be inferred that other chemical species are not present.

9. Any site drawing(s) provided in this report is (are) not meant to be an accurate base plan, but is (are) used to present the general relative locations of features on, and surrounding, the site. Features (boreholes, trial pits etc) annotated on site plans are not drawn to scale but are centred over the approximate location. Such features should not be used for setting out and should be considered indicative only.

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APPENDIX B
PAST REPORTS

ARUN DISTRICT COUNCIL A/94/17/DOC

18 Progmore Road
Hemel Hempstead
Hertfordshire
HP3 9RT
UK

[redacted]

Our Ref: 27621L01/ad

30th August 2016

CALA Homes (South Home Counties) Limited
Tilford House,
Farnham Business Park,
Weydon Lane,
Farnham,
Surrey, GU9 8QT

For attention of: Mr Gary Biggs

Dear Sirs

RE: TANK VALIDATION WORKS AT FORMER WEST END NURSERY, ANGMERING

1. BACKGROUND

RSK Environment Limited (RSK) was commissioned by CALA Homes (South Home Counties) Limited to carry out validation testing of an area in the south west of the site which may have been impacted by the presence of historical above ground fuel storage tanks. The site was previously occupied by a garden nursery growing herbs and agricultural fields. The garden nursery has since been demolished and the fuel tanks have been removed.

Several phases of investigation and risk assessment have previously been carried out by RSK. These are outlined in the following reports:

- RSK, 27621- R01(02) 'Geo-environmental Site Investigation', West End Nursery, Angmering, September 2015;
- RSK, 27621- R02 (00) 'Additional Geo-environmental Site Investigation and Remediation', West End Nursery, Angmering, June 2015;
- RSK, 27621- R03 (01) 'Remedial Strategy', West End Nursery, Angmering, January 2016;
- RSK, 27621- R04 (01) 'Supplementary Geo-environmental Site Assessment', West End Nursery, Angmering, June 2016;

2. SITE WORKS

RSK carried out intrusive investigation work on 25th January and 8th March 2016 to undertake validation works in the vicinity of former above ground fuel storage tanks.

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2.1 Sampling strategy and methodology

The techniques adopted for the investigation have been chosen considering the anticipated ground conditions, existing land use and the proposed development. A series of mechanically excavated trial pits were considered to be the most appropriate to provide suitable recovery of soils and inspection of potential contamination within the natural strata. A breaker was required to penetrate the concrete hardstanding that formed the base of the tanks.

2.1.1 Health and safety considerations

Prior to intrusive works, the RSK engineer undertook service clearance works using a Cable Avoidance Tool (CAT) and Genny to identify any potential underground utilities.

2.1.2 Investigation locations

The following site work was carried out:

- Trial Pits V1-V4 – 25th January 2016; and
- Trial Pits V5-V10 – 8th March 2016.

The exploratory hole records are presented in Appendix C.

The locations of the intrusive investigations are shown on Figure 2. The investigation points were located approximately by reference to physical features present on the site at the time of investigation and were designed to provide accurate coverage of the above ground storage tank locations to determine the extent of contamination to the underlying strata.

2.1.3 Soil sampling, in-situ testing and laboratory analysis

Soils collected for laboratory analysis were collected in a variety of containers appropriate to the anticipated testing suite required. Samples were stored in accordance with the RSK quality procedures to maintain sample integrity and preservation and to minimise the chance of cross contamination.

10 samples were taken and are recorded together with their depths on the exploratory hole records in Appendix E. The samples were transported to the laboratory in chilled cool boxes. Laboratory chain of custody forms can be provided if required. The rationale for soil sample chemical analysis is presented in Table 1.

Table 1: Scheduled analysis – soil

Location	Sample depth (m bgl)	Analyte	Rationale
V1	0.80-1.00	TPH-CWG	To assess potential for hydrocarbon contamination from historic above ground fuel storage tanks
V2	0.30		
V3	0.30-0.40		

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V4	0.40-0.50		
V5	0.30-0.50		
V6	0.20-0.40		
V7	0.30-0.50		
V8	0.30-0.50		
V8	1.00		
V10	0.50		

3. GROUND CONDITIONS

The results of the intrusive investigation and subsequent laboratory analysis undertaken are detailed below. The descriptions of the strata encountered, notes regarding visual or olfactory evidence of contamination, list of samples taken and field observations are included on the exploratory hole records presented in Appendix C.

3.1 Soil

The exploratory holes revealed that the site is underlain by a variable thickness of made ground, over River Terrace Deposits encountered at depth. For the purpose of discussion, the ground conditions are summarised in Table 2 and the strata discussed in subsequent subsections

Table 2: General succession of strata encountered

Strata	Exploratory holes encountered	Depth to top of stratum m bgl	Thickness (m)
Topsoil	V9	0.00	0.10
Made Ground	All	0.00-0.10	>1.10
River Terrace Deposits	V5, V6, V7, V8, V9, V10	0.70-1.20	>0.70

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3.1.1 Topsoil

Grass over topsoil from surface level was noted at V9 to a depth of 0.10m. The topsoil generally comprised brown silty clay.

3.1.2 Made ground

The composition of the made ground was variable with gravel, clay, sand and silt encountered beneath concrete. This generally contained variable proportions of concrete, brick, wire, cable, metal, and clinker.

3.1.3 River Terrace Deposits

This stratum typically contained firm light orange brown and grey or light grey brown clayey silt. At some locations there was some evidence of possible hydrocarbon contamination.

3.2 Groundwater

Groundwater seepages were encountered at V1, V3, V4, V6 and V7 between 0.30m and 0.80m bgl.

3.3 Evidence of contamination

Hydrocarbon odours were noted at V2, V3, V4, V6, V8 and V10. An oily product was noted to be seeping into trial pit V2 at 0.3m depth.

4. LABORATORY TESTING

Soil samples were submitted for chemical laboratory testing comprising Speciated Total Petroleum Hydrocarbons (TPH-CWG).

4.1 Direct contact with impacted soil by future residents

Targeted soil samples were obtained during the site investigation and were selected to provide coverage of the storage tank farm location.

The results have been compared to the RSK GAC for human health with a residential end use. No samples have been found to exceed the RSK GAC, however a total TPH concentration of 1,420mg/kg in the sample from V2 at 0.3m depth would classify this material as hazardous waste.

Evidence for an oil seepage in the ground was identified at V2, around 0.3m depth. No other positions showed signs of oil seepage.

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5. CONCLUSIONS

Soils in the vicinity of V2 should be investigated further to identify the extent of oil contamination in the ground. Soils excavated from this location should be disposed of as hazardous waste. No evidence for significant impact was identified at any other locations.

Validation should be carried out by a suitably qualified geo-environmental engineer to confirm suitable remediation has been carried out.

We trust that the information discussed above is acceptable and recommend this report be submitted to the NHBC and Local Authority accordingly. Should you require RSK to submit this information on your behalf, please do not hesitate to contact us.

Yours faithfully

For RSK Environment Limited



Adam Davidson

Graduate Geo-environmental Engineer



Andrew James

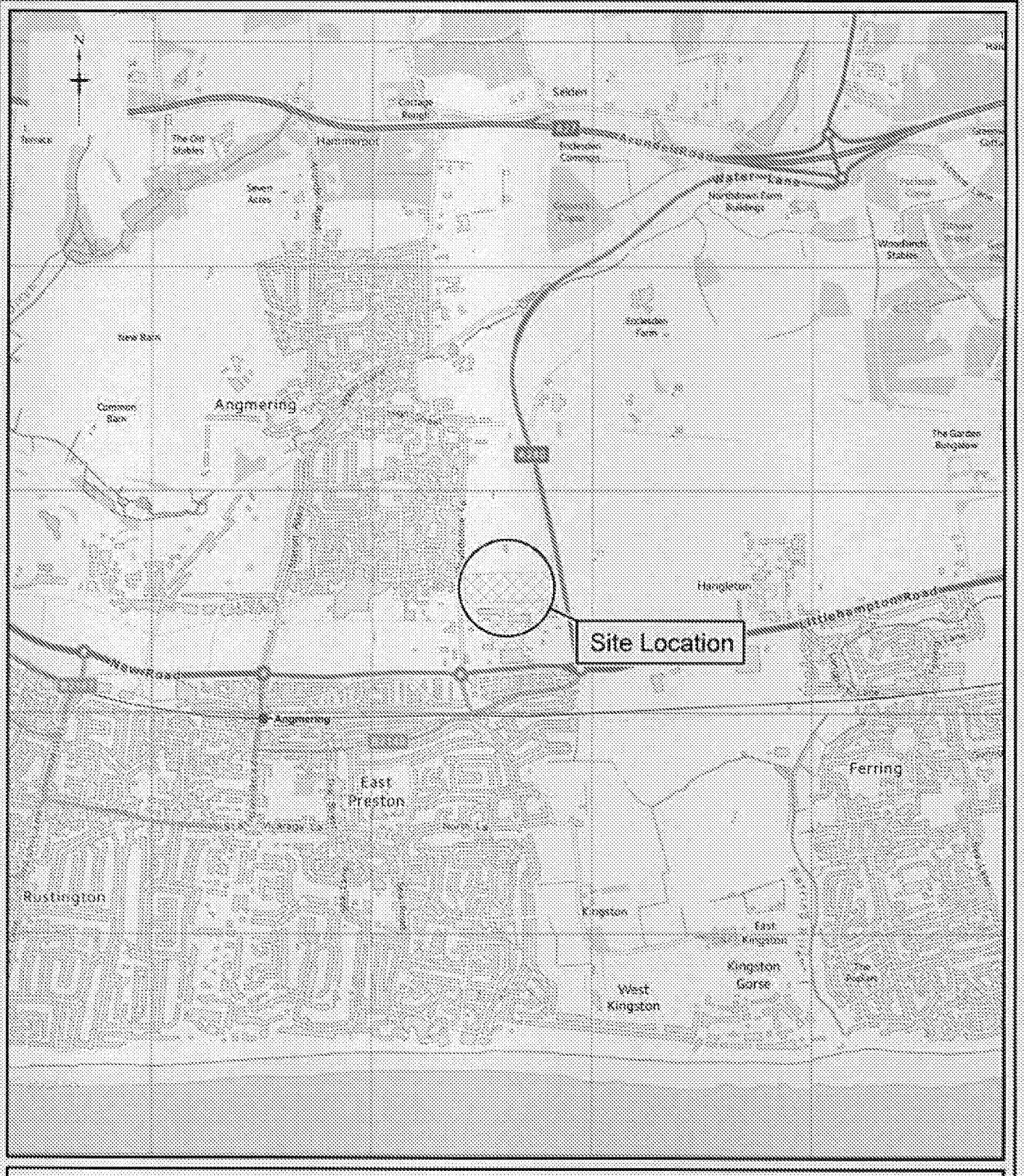
Principal Geo-environmental Engineer

Enc.

Figure 1	Site Location Map
Figure 2	Exploratory Hole Location Plan
Appendix A	Service Constraints
Appendix B	Photographic Log
Appendix C	Trial Pit Logs
Appendix D	Laboratory Certificates
Appendix E	RSK Generic Assessment Criteria

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FIGURES



Contains Ordnance Survey data © Crown copyright and database right 2013

RSK

Client: CALA HOMES (SOUTH HOME COUNTIES) LTD

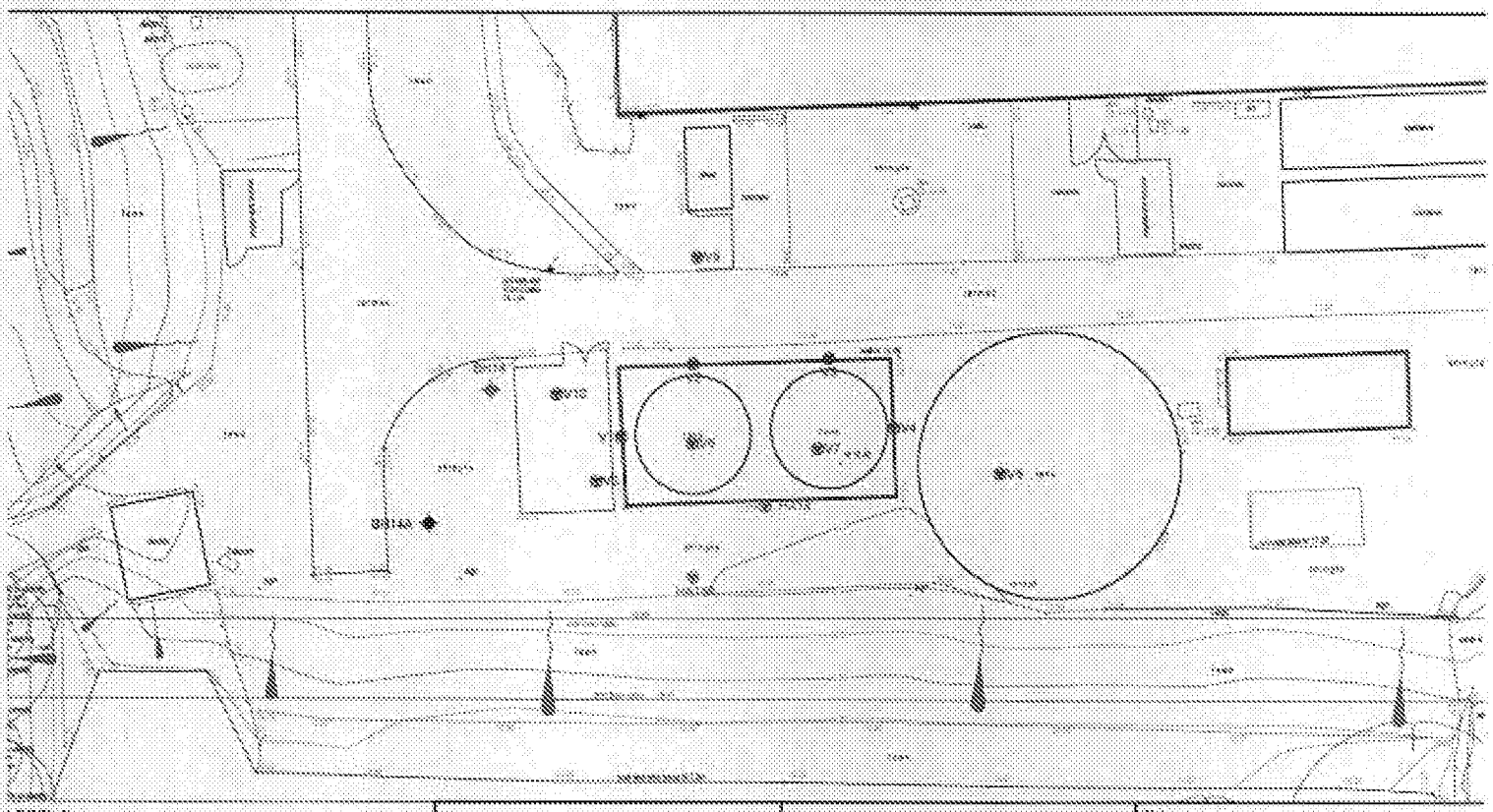
Project Title: WEST END NURSERY, ANGMERING

Drawing Title: SITE LOCATION MAP

Rev	Drawn	Date	Checked	Date	Approved	Date
00	ASC	17.02.16	ARJ	17.02.16	ARJ	17.02.16

Dimensions	Scale	Original Size
m	1:25,000	A4

Project Number	Drawing File	Drawing Number
27621 - L01	27621 - SLP.dwg	FIGURE 1



LEGEND

- Borehole Location - Jan 2015
- Hand Auger Location - Jan 2015
- Borehole Location with Installation - Jan 2015
- Trial Pit Location - May 2015
- Borehole Location - Oct 2015
- Hand Pit Location - Oct 2015
- Validation Trial Pit Location - January/March 2016

N

RSK

CALA HOMES (SOUTH HOME COUNTIES) LTD

WEST END NURSERY, ANGMERING

VALIDATION TRIAL PIT LOCATION PLAN

Drawn	Date	Checked	Date	Approved	Date	Project No.	Drawing No.
ABC	17.02.16	ARJ	17.02.16	ARJ	17.02.16	276271- LD1	276271 LD01.dwg

No.	Date	Amendment	Drawn	Chkd	Appd

Scale	Size	Revision
1:200	A3	-

Description: FIGURE 2

Sht: P1

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APPENDIX A
SERVICE CONSTRAINTS

1. This report and the site investigation carried out in connection with the report (together the "Services") were compiled and carried out by RSK Environment Limited (RSK) for CALA Homes (South Homes Counties) Ltd (the "client") in accordance with the terms of a contract between RSK and the "client". The Services were performed by RSK with the skill and care ordinarily exercised by a reasonable environmental consultant at the time the Services were performed. Further, and in particular, the Services were performed by RSK taking into account the limits of the scope of works required by the client, the time scale involved and the resources, including financial and manpower resources, agreed between RSK and the client.

2. Other than that expressly contained in paragraph 1 above, RSK provides no other representation or warranty whether express or implied, in relation to the Services.

3. Unless otherwise agreed the Services were performed by RSK exclusively for the purposes of the client. RSK is not aware of any interest of or reliance by any party other than the client in or on the Services. Unless expressly provided in writing, RSK does not authorise, consent or condone any party other than the client relying upon the Services. Should this report or any part of this report, or otherwise details of the Services or any part of the Services be made known to any such party, and such party relies thereon that party does so wholly at its own and sole risk and RSK disclaims any liability to such parties. Any such party would be well advised to seek independent advice from a competent environmental consultant and/or lawyer.

4. It is RSK's understanding that this report is to be used for the purpose described in the introduction to the report. That purpose was a significant factor in determining the scope and level of the Services. Should the purpose for which the report is used, or the proposed use of the site change, this report may no longer be valid and any further use of or reliance upon the report in those circumstances by the client without RSK 's review and advice shall be at the client's sole and own risk. Should RSK be requested to review the report after the date hereof, RSK shall be entitled to additional payment at the then existing rates or such other terms as agreed between RSK and the client.

5. The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the report inaccurate or unreliable. The information and conclusions contained in this report should not be relied upon in the future without the written advice of RSK. In the absence of such written advice of RSK, reliance on the report in the future shall be at the client's own and sole risk. Should RSK be requested to review the report in the future, RSK shall be entitled to additional payment at the then existing rate or such other terms as may be agreed between RSK and the client.

6. The observations and conclusions described in this report are based solely upon the Services that were provided pursuant to the agreement between the client and RSK. RSK has not performed any observations, investigations, studies or testing not specifically set out or required by the contract between the client and RSK. RSK is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the Services. For the avoidance of doubt, unless otherwise expressly referred to in the introduction to this report, RSK did not seek to evaluate the presence on or off the site of asbestos, electromagnetic fields, lead paint, heavy metals, radon gas or other radioactive or hazardous materials.

7. The Services are based upon RSK's observations of existing physical conditions at the Site gained from a walk-over survey of the site together with RSK's interpretation of information including documentation, obtained from third parties and from the client on the history and usage of the site. The Services are also based on information and/or analysis provided by independent testing and information services or laboratories upon which RSK was reasonably entitled to rely. The Services clearly are limited by the accuracy of the information, including documentation, reviewed by RSK and the observations possible at the time of the walkover survey. Further RSK was not authorised and did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the client or third parties, including laboratories and information services, during the performance of the Services. RSK is not liable for any inaccurate information or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to RSK and including the doing of any independent investigation of the information provided to RSK save as otherwise provided in the terms of the contract between the client and RSK.

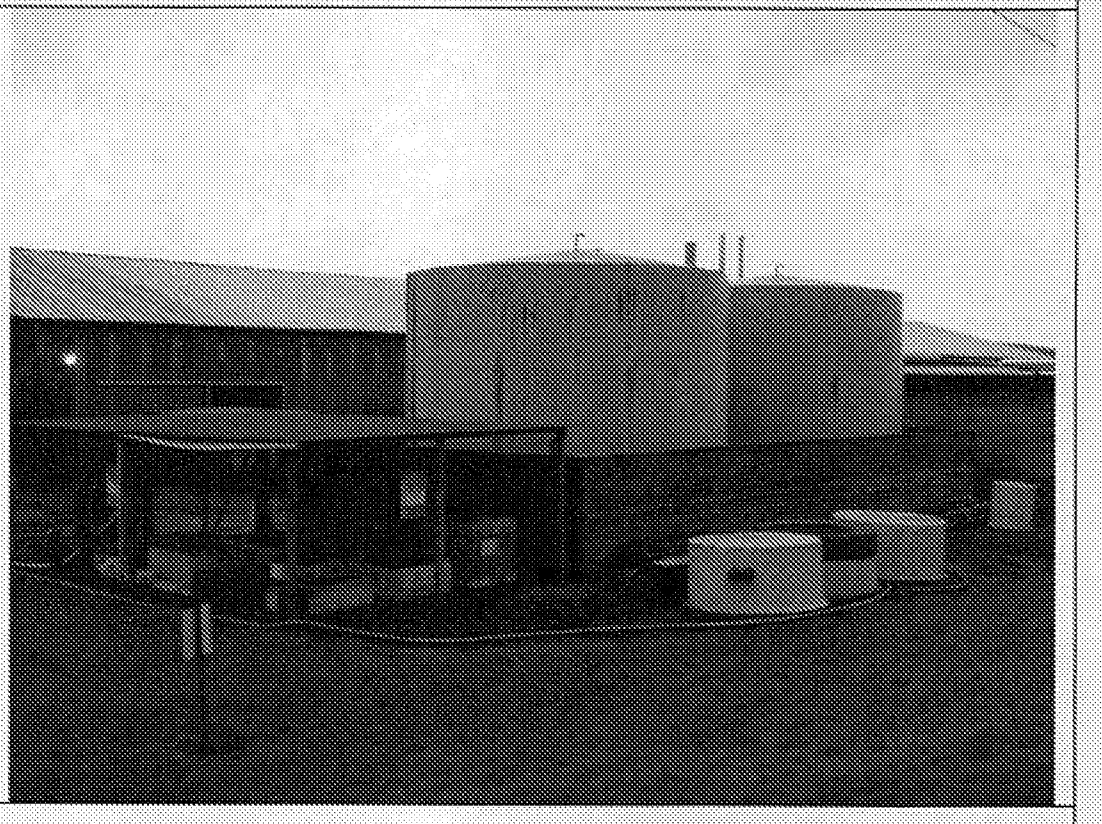
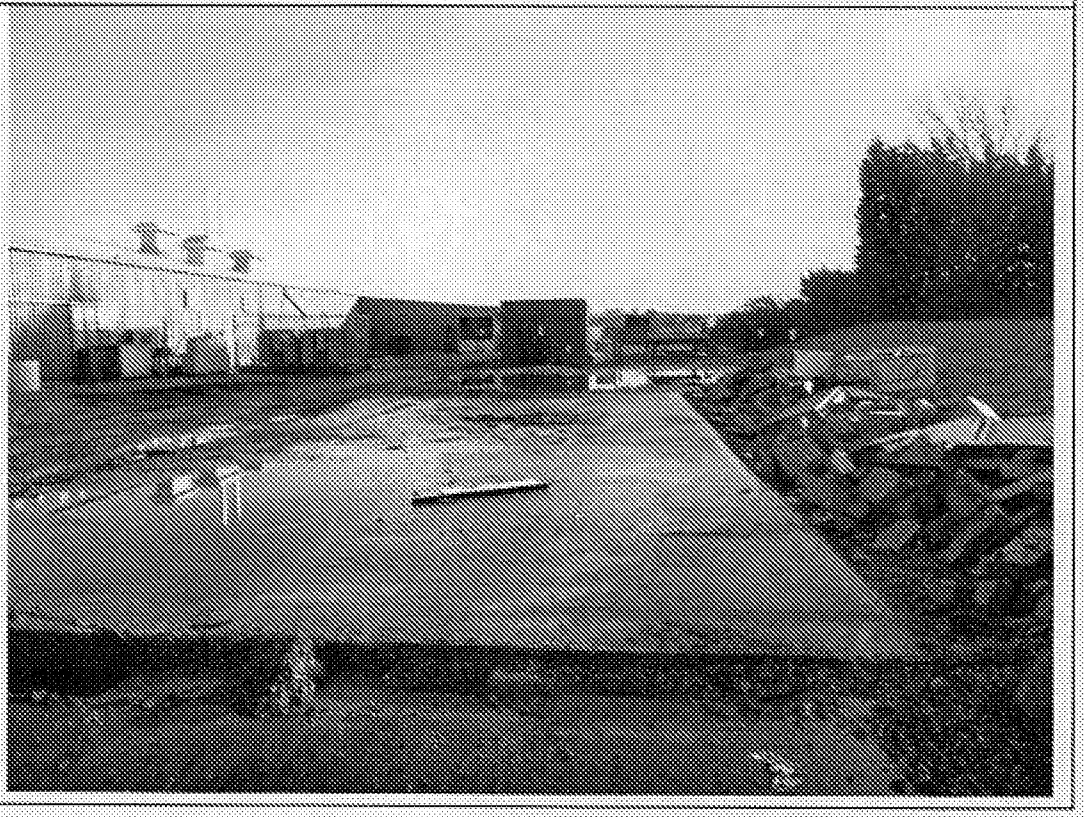
8. The phase II or intrusive environmental site investigation aspects of the Services is a limited sampling of the site at predetermined borehole and soil vapour locations based on the operational configuration of the site. The conclusions given in this report are based on information gathered at the specific test locations and can only be extrapolated to an undefined limited area around those locations. The extent of the limited area depends on the soil and groundwater conditions, together with the position of any current structures and underground facilities and natural and other activities on site. In addition chemical analysis was carried out for a limited number of parameters [as stipulated in the contract between the client and RSK] [based on an understanding of the available operational and historical information,] and it should not be inferred that other chemical species are not present.

9. Any site drawing(s) provided in this report is (are) not meant to be an accurate base plan, but is (are) used to present the general relative locations of features on, and surrounding, the site.

APPENDIX B
PHOTOGRAPHIC LOG

PHOTOGRAPHIC LOG

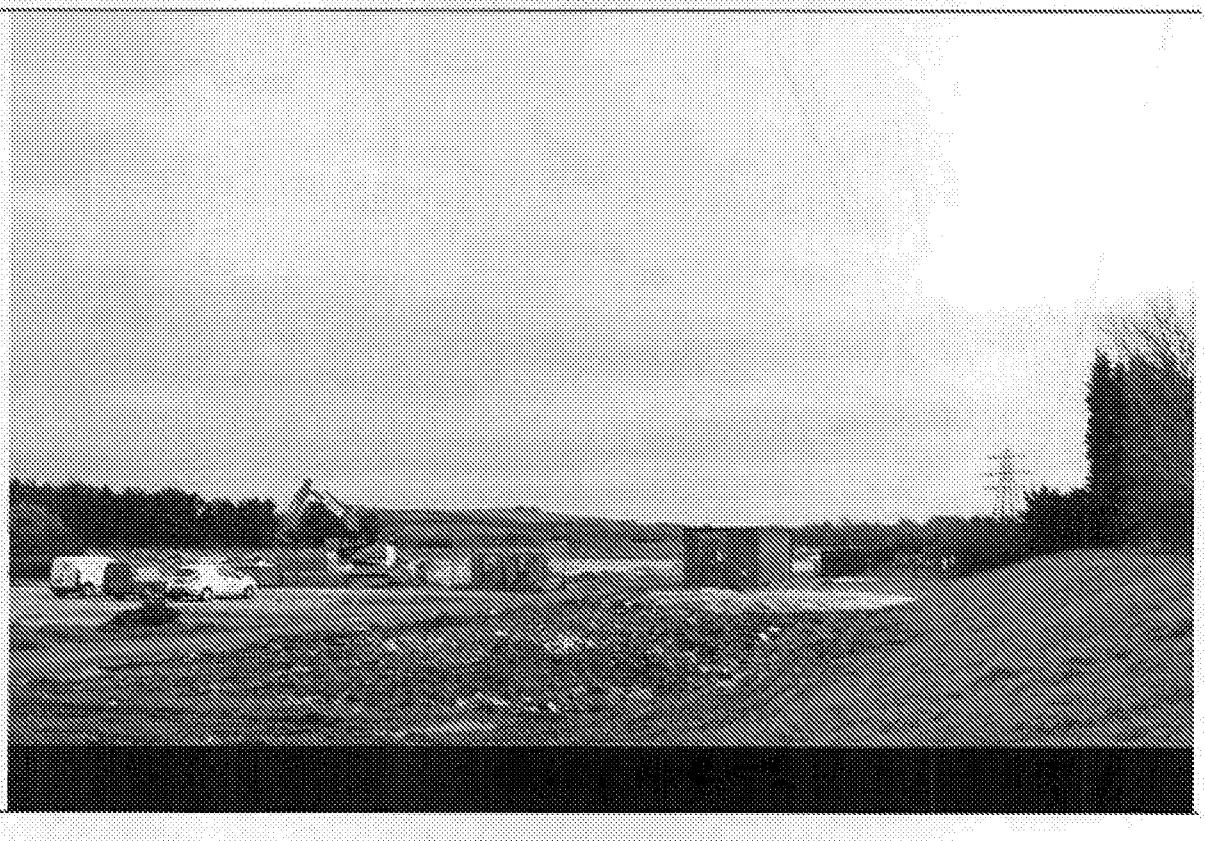
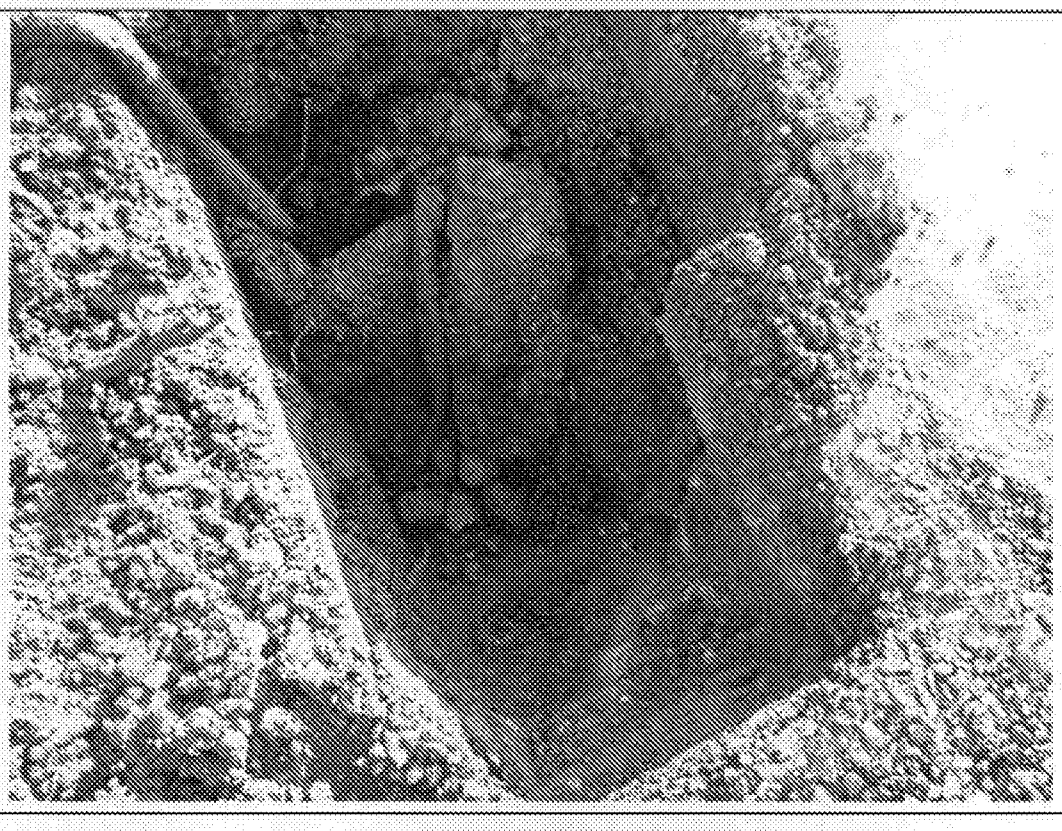
Site Location: Former West End Nursery, Angmering

Photo No. 1 **Date:** 13/01/2015 View looking north east at above ground fuel storage tanks and nitric acid store	
Photo No. 2 **Date:** 25/01/2016 View looking east across the area after tank removal – concrete base still in situ	

ARUN DISTRICT COUNCIL A/94/17/DOC

PHOTOGRAPHIC LOG

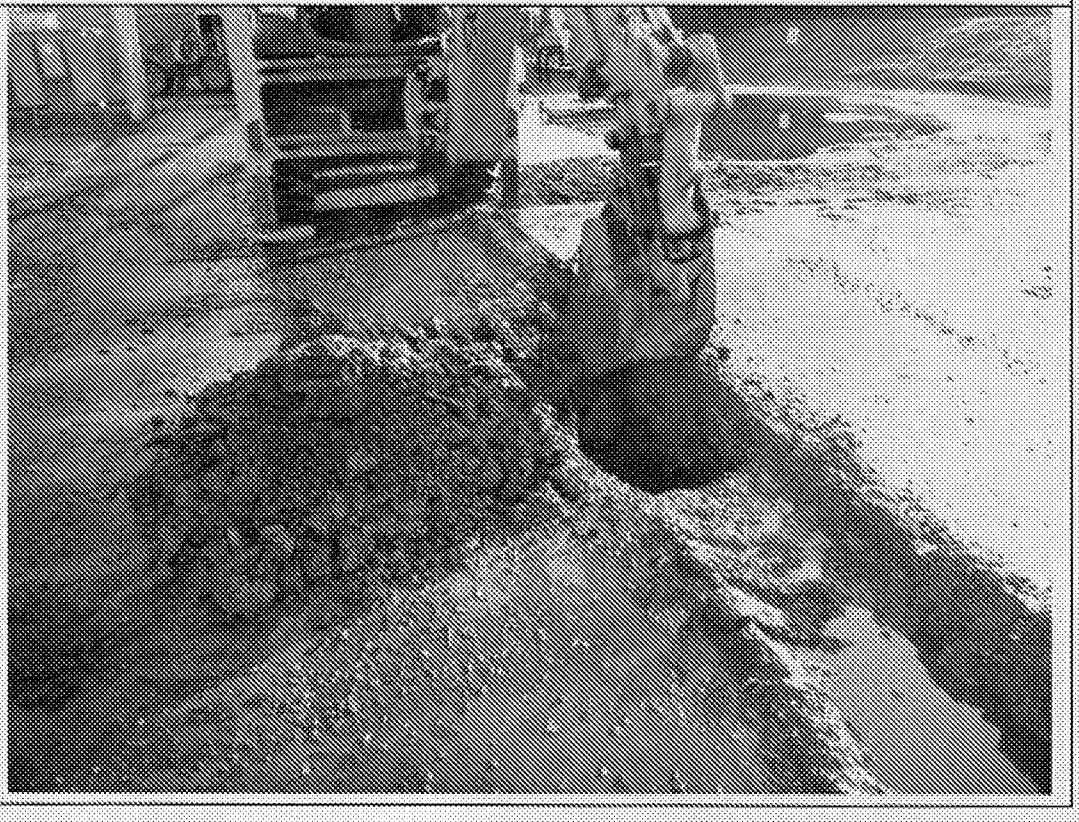
Site Location: Former West End Nursery, Angmering

Photo No. 3 **Date:** 08/03/2016 View looking east across area following removal of concrete base.	
Photo No. 4 **Date:** 25/01/2016 Validation trial pit V2	

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PHOTOGRAPHIC LOG

Site Location: Former West End Nursery, Angmering

Photo No. 5 **Date:** 25/01/2016 Oil identified in V2, seepage around 0.3m depth.	
Photo No. 6 **Date:** 25/01/2016 Excavation of V3.	

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PHOTOGRAPHIC LOG

Site Location: Former West End Nursery, Angmering

Photo No. 7 **Date:** 08/03/2016 Soils encountered in V4.	
Photo No. 8 **Date:** 08/03/2016 Soils encountered in V5.	

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PHOTOGRAPHIC LOG

Site Location: Former West End Nursery, Angmering

Photo No. 9	
Date: 08/03/2016	
Soils encountered in V7.	

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APPENDIX C
TRIAL PIT LOGS

RECORD OF TRIAL PITS

Date of Investigation: 25 January and 8 March 2016

V1

Ground level- 1.00m	MADE GROUND: Grey brown wet slightly sandy clayey flint gravel with much brick and concrete fragments, old wire, cable, metal and ash.
	END OF TRIAL PIT

Remarks
Water seepage from 0.40m filling pit.
Black heavily stained clayey layer at 0.90m
Concrete thickness- AST slab 0.20m, Nitric acid slab 0.10m
Sample taken at 0.80-1.00m
Trial pit terminated due to groundwater and contraints between concrete slabs

V2

Ground level- 0.60m	MADE GROUD: Grey gravelly clay with brick, concrete, metal amd wood fragments. Yellowish brown oily product slow seepage at approximately 0.30m, moderate to strong hydrocarbon odour.
0.70 – 0.80m	MADE GROUND: Grey brown slightly gravelly SILT. Gravel is a little fine to medium flint, no odour.

Remarks
Sample taken at 0.30m
Oil noted at 0.30m
Adjacent concrete road 0.17m thick.

V3

Ground level- 0.60m	MADE GROUND: Grey brown wet clay, sand and gravel with concrete, brick, plastic and wire.
0.60 – 0.80m	MADE GROUND: Light grey brown silt with a little brick/ash.

Remarks
Groundwater seepage at approximately 0.30m with a strong sheen and moderate hydrocarbon odour
Possible product in west corner
Sample taken at 0.30-0.40m

V4

Ground level- 0.10m	MADE GROUND: Yellow medium to coarse SAND.
0.10 – 0.95m	MADE GROUND: Grey brown clayey sand and gravel with much brick, concrete, pipe, wire wool. There is a light to moderate hydrocarbon odour and black staining at approximately 0.50m.
0.95 – 1.10m	Firm grey brown SILT.

Remarks
GW Seepage at approximately 0.80m
Sample taken at 0.40-0.50m

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V5

Ground level- 0.50m	MADE GROUND: Brown grey slightly clayey sand and gravel with fragments of brick, wook, crushed concrete, glass, rope. Gravel is flint and chalk.
0.50 – 0.70m	MADE GROUND: Grey brown and yellow brown sandy CLAY with occasional brick, tarmac and flint.
0.70 – 0.90m	MADE GROUND: Dark grey silty CLAY with moderate organic odour, a little brick and fine fragments of tarmac.
0.90 – 1.00m	Firm light orange brown and light grey clayey SILT.
	END OF TRIAL PIT

Remarks
Sample at 0.30-0.50m and 1.00m

V6

Ground level- 0.80m	MADE GROUND: Brown grey slightly clayey sand and gravel with fragments of brick, wook, crushed concrete, glass, rope. Gravel is flint and chalk. Slight hydrocarbon odour.
0.80 – 1.00m	MADE GROUND: Dark grey silty CLAY with moderate organic odour, a little brick and fine fragments of tarmac.
1.0 – 1.2m	Firm light orange brown and light grey clayey SILT.
	END OF TRIAL PIT

Remarks
Groundwater seepage at 0.70m (no sheen or odour)

Sample at 0.20-0.40m and 1.00-1.20m

V7

Ground level- 0.80m	MADE GROUND: Brown grey slightly clayey sand and gravel with fragments of brick, wook, crushed concrete, glass, rope, old electrical cables and metal frames. Gravel is flint and chalk.
0.80 – 1.10m	MADE GROUND: Dark grey silty CLAY with moderate organic odour, a little brick and fine fragments of tarmac.
1.10 – 1.30m	Firm light orange brown and light grey clayey SILT.
	END OF TRIAL PIT

Remarks
Slight groundwater seepage at 0.60m (very slow and localised)
Sample at 0.30-0.50m and 1.10-1.30m

V8

Ground level- 0.10m	MADE GROUND: Light orange brownish fine to medium SAND.
0.10 – 0.70m	MADE GROUND: Grey slightly sandy gravelly silty CLAY with occasional black staining and slight hydrocarbon odour, occasional brick fragments, crushed concrete, plastic sacking, plastic tubes, wire.
0.70 – 0.80m	MADE GROUND: Grey and yellow brown sandy GRAVEL. Gravel is flint, chalk, crushed concrete and brick.
0.80 – 1.20m	Firm grey becoming g light brown clayey SILT with slight organic and hydrocarbon odour.
	END OF TRIAL PIT

Remarks
Sample at 0.30-0.50m and 1.00m

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V9

Ground level- 0.10m	Grass over topsoil (brown silty clay).
0.10 – 0.60m	MADE GROUND: Brown clayey sand and gravel. Gravel is flint, brick, crushed concrete and mortar.
0.60 – 1.20m	Possible MADE GROUND: Grey silty CLAY with occasional greenish grey fine to medium sand and abundant off white to white fine to cobble sized chalk fragments. Slight organic odour.
1.20 – 1.40m	Firm light orange brown and light grey clayey SILT.
	END OF TRIAL PIT

Remarks
Sample taken at 0.60-0.80m

V10

Ground level- 0.70m	MADE GROUND: Brown sandy gravelly clay with a little black staining and a slight hydrocarbon odour.
0.70 – 1.00m	Firm grey brown SILT. Slight organic odour.
	END OF TRIAL PIT

Remarks
No groundwater encountered
Sample at 0.50m and 0.80-1.00m

APPENDIX D
LABORATORY RESULTS

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 16/01449
Issue Number: 1 **Date:** 24 March, 2016

Client: RSK Environment Ltd Hemel
18 Frogmore Road
Hemel Hempstead
Hertfordshire
UK
HP3 9RT

Project Manager: Andrew James/Nigel Austin/Russell Speight
Project Name: Angmering
Project Ref: 27621
Order No: N/A
Date Samples Received: 11/03/16
Date Instructions Received: 11/03/16
Date Analysis Completed: 24/03/16

Prepared by:

[redacted]

Melanie Marshall
Laboratory Coordinator

Approved by:

[redacted]

Gill Scott
Laboratory Manager

MCERTS
1247

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/01449

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/01449/1	16/01449/2	16/01449/3	16/01449/4	16/01449/5	16/01449/6			Units	Method ref
Client Sample No										
Client Sample ID	V5	V6	V7	V8	V9	V10				
Depth to Top	0.30	0.20	0.30	0.30	1.00	0.50				
Depth To Bottom	0.50	0.40	0.50	0.50						
Date Sampled	08-Mar-16	08-Mar-16	08-Mar-16	08-Mar-16	08-Mar-16	08-Mar-16				
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil				
Sample Matrix Code	4A	4A	4A	4A	4A	4A				
% Stones >10mm$_{A}$	10.7	7.0	6.1	9.1	<0.1	12.5			% w/w	A-T-044
pH$_{D}$	-	-	-	-	-	8.34			pH	A-T-031
Nitrate (water soil 2:1)$_{N}$	-	-	-	-	-	<1			mg/kg	A-T-035

Envirolab Job Number: 16/01449

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/01449/1	16/01449/2	16/01449/3	16/01449/4	16/01449/5	16/01449/6			Units	Method ref
Client Sample No										
Client Sample ID	V5	V6	V7	V8	V9	V10				
Depth to Top	0.30	0.30	0.30	0.30	1.00	0.30				
Depth To Bottom	0.50	0.40	0.50	0.50						
Date Sampled	08-Mar-16	08-Mar-16	08-Mar-16	08-Mar-16	08-Mar-16	08-Mar-16				
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil				
Sample Matrix Code	4A	4A	4A	4A	4A	4A				
TPH CWG										
Ali >C5-C6$_A$	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04			mg/kg	
Ali >C6-C8$_A$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			mg/kg	
Ali >C8-C10$_A$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			mg/kg	
Ali >C10-C12$_A$	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			mg/kg	
Ali >C12-C16$_A$	<0.1	<0.1	<0.1	15.6	<0.1	<0.1			mg/kg	
Ali >C16-C21$_A$	<0.1	<0.1	<0.1	46.0	<0.1	<0.1			mg/kg	
Ali >C21-C35$_A$	<0.1	<0.1	<0.1	1.9	<0.1	<0.1			mg/kg	
Total Aliphatics$_A$	<0.1	<0.1	<0.1	62.5	<0.1	<0.1			mg/kg	
Aro >C5-C7$_A$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			mg/kg	
Aro >C7-C8$_A$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			mg/kg	
Aro >C8-C9$_A$	<0.01	<0.01	0.04	<0.01	<0.01	0.01			mg/kg	
Aro >C9-C10$_A$	<0.01	<0.01	0.04	<0.01	<0.01	0.04			mg/kg	
Aro >C10-C12$_A$	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			mg/kg	
Aro >C12-C16$_A$	<0.1	<0.1	<0.1	4.6	<0.1	1.5			mg/kg	
Aro >C16-C21$_A$	1.2	4.5	2.5	21.7	<0.1	14.8			mg/kg	
Aro >C21-C35$_A$	0.7	5.5	2.8	0.7	<0.1	25.2			mg/kg	
Total Aromatics$_A$	2.0	10.1	5.4	27.2	<0.1	41.5			mg/kg	
TPH (Ali & Aro)$_A$	2.0	10.1	5.4	89.7	<0.1	41.5			mg/kg	
BTEX - Benzene$_A$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			mg/kg	
BTEX - Toluene$_A$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			mg/kg	
BTEX - Ethyl Benzene$_A$	<0.01	<0.01	0.01	<0.01	<0.01	<0.01			mg/kg	
BTEX - m & p Xylene$_A$	<0.01	<0.01	0.01	<0.01	<0.01	<0.01			mg/kg	
BTEX - o Xylene$_A$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			mg/kg	
MTBE$_A$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			mg/kg	

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REPORT NOTES

Notes - Soil chemical analysis
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones and brick and concrete fragments >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis. For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

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All analysis is performed on the sample as received for soil samples which are positive for asbestos and/or if they are from outside the European Union and this supercedes any "D" subscripts.
Superscript "M" indicates method accredited to MCERTS.
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A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

TPH analysis of water by method A-T-007
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Asbestos in soil
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if present as discrete fibres/fragments. Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.
Samples with Matrix Code 7 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations.

Secondary Matrix Codes:
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

IS indicates Insufficient sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

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envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 16/00471
Issue Number: 1 **Date:** 09 February, 2016

Client: RSK Environment Ltd Hemel
18 Frogmore Road
Hemel Hempstead
Hertfordshire
UK
HP3 9RT

Project Manager: Andrew James/Nigel Austin
Project Name: Angmering
Project Ref: 27621
Order No: N/A
Date Samples Received: 27/01/16
Date Instructions Received: 27/01/16
Date Analysis Completed: 09/02/16

Prepared by:

[redacted]

Danielle Brierley
Administrative Assistant

Approved by:

[redacted]

Gill Scott
Laboratory Manager

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/00471

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/00471/1	16/00471/2	16/00471/3	16/00471/4					Units	Method ref
Client Sample No										
Client Sample ID	V1	V2	V3	V4						
Depth to Top	0.80	0.30	0.30	0.40						
Depth To Bottom	1.00		0.40	0.50						
Date Sampled	25-Jan-16	25-Jan-16	25-Jan-16	25-Jan-16						
Sample Type	Soil	Solid	Soil	Soil						
Sample Matrix Code	6A	7	6A	6A						
% Stones >10mm$_A$	11.6	<0.1	7.3	31.0					% w/w	A-[illegible]
pH$_{50}$	7.91	-	-	-					pH	A-[illegible]
Nitrate (water sol 2:1)$_S$	<1	-	-	-					mg/kg	A-[illegible]

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/00471

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/00471/1	16/00471/2	16/00471/3	16/00471/4					Units	Method ref
Client Sample No										
Client Sample ID	V1	V2	V3	V4						
Depth to Top	0.30	0.30	0.30	0.40						
Depth To Bottom	1.00		0.40	0.50						
Date Sampled	25-Jan-16	25-Jan-16	25-Jan-16	25-Jan-16						
Sample Type	Soil	Solid	Soil	Soil						
Sample Matrix Code	6A	7	6A	4A						
TPH CWG										
Ali >C5-C6$_A^*$	<0.01	<0.01	<0.01	<0.01					mg/kg	A-T-0032x
Ali >C6-C8$_A^*$	<0.01	3.27	0.01	<0.01					mg/kg	A-T-0032x
Ali >C8-C10$_A^*$	<0.01	3.33	0.01	<0.01					mg/kg	A-T-0032x
Ali >C10-C12$_A^*$	<0.1	53.8	<0.1	<0.1					mg/kg	A-T-0032x
Ali >C12-C16$_A^*$	<0.1	373	<0.1	<0.1					mg/kg	A-T-0032x
Ali >C16-C21$_A^*$	<0.1	467	<0.1	<0.1					mg/kg	A-T-0032x
Ali >C21-C35$_A^*$	<0.1	119	<0.1	<0.1					mg/kg	A-T-0032x
Total Aliphatics$_A$	<0.1	1050	<0.1	<0.1					mg/kg	A-T-0032x-20x
Aro >C5-C7$_A^*$	<0.01	<0.01	<0.01	<0.01					mg/kg	A-T-0032x
Aro >C7-C8$_A^*$	<0.01	<0.01	<0.01	<0.01					mg/kg	A-T-0032x
Aro >C8-C9$_A^*$	<0.01	0.13	0.02	0.02					mg/kg	A-T-0032x
Aro >C9-C10$_A^*$	<0.01	3.95	0.08	0.10					mg/kg	A-T-0032x
Aro >C10-C12$_A^*$	<0.1	16.9	<0.1	<0.1					mg/kg	A-T-0032x
Aro >C12-C16$_A^*$	<0.1	134	1.8	<0.1					mg/kg	A-T-0032x
Aro >C16-C21$_A^*$	<0.1	169	3.5	3.4					mg/kg	A-T-0032x
Aro >C21-C35$_A^*$	<0.1	48.4	0.7	2.4					mg/kg	A-T-0032x
Total Aromatics$_A$	<0.1	374	5.1	5.9					mg/kg	A-T-0032x-20x
TPH (Ali & Aro)$_A$	<0.1	1430	5.1	5.9					mg/kg	A-T-0032x-20x
BTEX - Benzene$_A^*$	<0.01	<0.01	<0.01	<0.01					mg/kg	A-T-0032x
BTEX - Toluene$_A^*$	<0.01	<0.01	<0.01	<0.01					mg/kg	A-T-0032x
BTEX - Ethyl Benzene$_A^*$	<0.01	0.02	<0.01	<0.01					mg/kg	A-T-0032x
BTEX - m & p Xylene$_A^*$	<0.01	0.07	<0.01	<0.01					mg/kg	A-T-0032x
BTEX - o Xylene$_A^*$	<0.01	0.06	<0.01	<0.01					mg/kg	A-T-0032x
MTBE$_A^*$	<0.01	<0.01	<0.01	<0.01					mg/kg	A-T-0032x

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APPENDIX E
RSK GENERIC ASSESSMENT CRITERIA

Generic assessment criteria for human health: residential scenario with home-grown produce

Background

RSK's generic assessment criteria (GAC) were initially prepared following the publication by the Environment Agency (EA) of soil guideline value (SGV) and toxicological (TOX) reports, and associated publications in 2009[1]. RSK GAC were updated following the publication of GAC by LQM/CIEH in 2009[2]. RSK GAC are periodically revised when updated information on toxicological, land use or receptor parameters is published.

Updates to the RSK GAC: 2015

In 2014, the publication of Category 4 Screening Levels (C4SL)[3,4], as part of the Defra-funded research project SP1010, included modifications to certain exposure assumptions documented within EA Science Report SC050221/SR3 (herein after referred to as SR3)[5] used in the generation of SGVs.

C4SL were published for six substances (cadmium, arsenic, benzene, benzo(a)pyrene, chromium VI and lead) for a sandy loam soil type with 6% soil organic matter, based on a low level of toxicological concern (LLTC; see Section 2.3 of research project report SP1010[3]). Where a C4SL has been published, the RSK GAC duplicates the C4SL published values using all input parameters within the SP1010 final project report[3] and associated appendices[6], and adopts them as GAC for these six substances.

For all other substances the C4SL exposure modifications, with the exception of the "top two" produce type approach taken in the C4SL, have been applied to the current RSK GAC. These include alterations to daily inhalation rates for residential and commercial scenarios, reducing soil adherence factors in children (age classes 1 to 12 only) for residential land use, reducing exposure frequency for dermal contact outdoors for residential land use, and updated produce type consumption rates (90th percentile) based on recent data from the National Diet and Nutrition Survey.

The RSK GAC have also been revised with updated toxicology published by LQM/CIEH in 2015[7], where a C4SL has not been published.

RSK GAC derivation for metals and organic compounds

Model selection

Soil assessment criteria (SAC) were calculated using the Contaminated Land Exposure Assessment (CLEA) tool v1.06, supporting EA guidance[5,8,9] and revised exposure scenarios published for the C4SL[3]. Groundwater assessment criteria (GrAC) protective of human health via the inhalation pathway were derived using the RBCA 1.3b model. RSK has updated the inputs within RBCA to reflect EA guidance[1,5,8,9]. The SAC and GrAC collectively are termed GAC.

Conceptual model

In accordance with SR3[5], the residential with home-grown produce scenario considers risks to a female child between the ages of 0 and 6 years old as the highest risk scenario. In accordance

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with Box 3.1 of SR3[5], the pathways considered for production of the SAC in the residential with home-grown produce scenario are

- direct soil and dust ingestion
- consumption of home-grown produce
- consumption of soil attached to home-grown produce
- dermal contact with soil and indoor dust
- inhalation of indoor and outdoor dust and vapours.

Figure 1 is a conceptual model illustrating these linkages.

In line with guidance in the EA SGV report for cadmium[1], the RSK GAC for cadmium has been derived based on estimates representative of lifetime exposure. Although young children are generally more likely to have higher exposures to soil contaminants, the renal toxicity of cadmium, and the derivation of the TDI_{oral} and TDI_{inh}, are based on considerations of the kidney burden accumulated over 50 years or so. It is therefore reasonable to consider exposure not just in childhood but averaged over a longer period.

The pathway considered in production of the GrAC is the volatilisation of compounds from groundwater and subsequent vapour inhalation by residents while indoors. Figure 2 illustrates this linkage. Although the outdoor air inhalation pathway is also valid, this contributes little to the overall risks owing to the dilution in outdoor air. Within RBCA, the solubility limit of the chemical restricts the extent of volatilisation, which in turn drives the indoor air inhalation pathway. While the same restriction is not built into the CLEA model, the CLEA model output cells are flagged red where the soil saturation limit has been exceeded.

With respect to volatilisation, the CLEA model assumes a simple linear partitioning of a chemical in the soil between the sorbed, dissolved and vapour phase[9]. The upper boundaries of this partitioning are represented by the maximum aqueous solubility and pure saturated vapour concentration of the chemical. The CLEA model estimates saturated soil concentrations where these limits are reached[9]. The CLEA software uses a traffic light system to identify when individual and/or combined assessment criteria exceed the lower of either the aqueous- or vapour-based soil saturation limits. Model output cells are flagged red where the saturated soil concentration has been exceeded and the contribution of the indoor and outdoor vapour pathway to total exposure is greater than 10%. In this case, further consideration of the following is required[9]:

- Free phase contamination may be present.
- Exposure from the vapour pathways will be over-predicted by the model, as in reality the vapour phase concentration will not increase at concentrations above saturation limits
- Where the vapour pathway contribution is greater than 90%, it is unlikely the relevant health criteria value (HCV) will be exceeded at soil concentrations at least a factor of ten higher than the relevant HCV.

Where the vapour pathway is the predominant pathway (contributes greater than 90% of exposure) or the only exposure route considered and the cell is highlighted red (SAC exceeds saturation limit), the risk based on the assumed conceptual model is likely to be negligible as the vapour risk is assumed to be tolerable at maximum possible soil concentrations. In such circumstances, the vapour pathway exposure should be considered based on the presence of free phase or non-aqueous phase liquid sources and the measured concentrations of volatile organic compounds (VOC) in the vapour phase. Screening could be considered based on setting

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the SAC as the modelled soil saturation limits. However, as stated within the CLEA handbook[9], this is likely to not be practical in many cases because of the very low saturation limits and, in any case, is highly conservative.

It should also be noted that for mixtures of compounds, free phase may be present where soil (or groundwater) concentrations are well below saturation limits for individual compounds.

Where the vapour pathway is only one of the exposure pathways considered, an additional approach can then be utilised as detailed within Section 4.12 of the CLEA model handbook[9], which explains how to calculate an effective assessment criterion manually.

SR3[5] states that, as a general rule of thumb, it is recognised that estimating vapour phase concentrations from dissolved and sorbed phase contamination by petroleum hydrocarbons are at least a factor of ten higher than those likely to be measured on-site. RSK has therefore applied an empirical subsurface to indoor air correction factor of 10 into the CLEA model chemical database for all petroleum hydrocarbon fractions (including BTEX, trimethylbenzenes and the polycyclic aromatic hydrocarbons (PAH) naphthalene, acenaphthene and acenaphthylene) to reduce this conservatism.

Input selection

The most up-to-date published chemical and toxicological data was obtained from EA Report SC050021/SR7[10], the EA TOX[1] reports, the C4SL SP1010 project report and associated appendices[3,6] or the 2015 LQM/CIEH report[7]. Where a C4SL has been published, the RSK GAC have duplicated the C4SL published values using all input parameters within the SP1010 final project report[3] and associated appendices[6], and has adopted them as GAC for these six substances. Toxicological and specific chemical parameters for aromatic hydrocarbon C_8–C_9 (styrene), 1,2,4-trimethylbenzene and methyl tertiary-butyl ether (MTBE) were obtained from the CL:AIRE Soil Generic Assessment Criteria report[11].

For TPH, aromatic hydrocarbons C_5–C_8 were not modelled, as this range comprises benzene and toluene, which are modelled separately. The aromatic C_8–C_8 hydrocarbon fraction comprises ethylbenzene, xylene and styrene. As ethylbenzene and xylene are being modelled separately, the physical, chemical and toxicological data for aromatic C_8–C_8 have been taken from styrene.

For the GrAC, owing to the lack of UK-specific data, default information in the RBCA model was used to evaluate MTBE. No published UK data was available for 1,3,5-trimethylbenzene, so information was obtained from the RBCA model. RBCA uses toxicity data for the inhalation pathway in different units to the CLEA model and cannot consider separately the mean daily intake (MDI), occupancy periods or breathing rates. Therefore, the HCV in RBCA was amended to take account of

- amendments to the MDI using Table 3.4 of SR2[8]
- a child weighing 13.3kg (average of 0–6 year old female in accordance with Table 4.6 of SR3[5]) and breathing 11.85m^3 (average daily inhalation rate for a 0–6-year old female in accordance with Table 4.14 of SR3[5]). Inhalation rates used in the derivation of the GrAC have not been updated in line with the 2011 USEPA published values[12]; these will be updated in subsequent revisions of the RSK GAC. The lower inhalation rates presented by the USEPA in 2011 for ages classes 1 to 11 (values are higher for age classes 12 to 18) are not considered to make a significant difference.
- the 50% rule (for petroleum hydrocarbons, trimethylbenzenes and MTBE)[5,9] where MDI data is not available but background exposure is considered important in the overall exposure.

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Physical parameters

For the residential with home-grown produce scenario, the CLEA default building is a small, two-storey terrace house with a concrete ground-bearing slab. The house is assumed to have a 100m^2 private garden consisting of lawn and flowerbeds, incorporating a 20m^2 plot for growing fruit and vegetables consumed by the residents. SR3[5] notes this residential building type to be the most conservative in terms of potential for vapour intrusion. The building parameters used in the production of the RSK GACs are the default CLEA v1.06 inputs presented in Table 3.3 of SR3[3], with a dust loading factor detailed in Section 9.3 of SR3[5]. The parameters for a sandy loam soil type were used in line with Table 4.4 of SR3[5]. This includes a value of 6% for the percentage of soil organic matter (SOM) within the soil. In RSK's experience, this is rather high for many sites. To avoid undertaking site-specific risk assessments for SOM, RSK has produced an additional set of GAC for SOM of 1% and 2.5% for all substances using the CLEA tool.

For the GrAC, the depth to groundwater was taken as 2.5m based on RSK's experience of assessing the volatilisation pathway from groundwater. The GrAC were produced using the input parameters in Table 4.

Summary of modifications to the default CLEA 1.06/SR3[5] input parameters for residential with home-grown produce land-use scenario

In summary, the RSK GAC were produced using the default input parameters for soil properties, the air dispersion model, building properties and the vapour model detailed in SR3[5]. Modifications to the default SR3[5] exposure scenarios based on the C4SL exposure scenarios[3] are presented in Tables 2 and 3 below.

The final selected GAC are presented by pathway in Table 5 and the combined GAC in Table 6.

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Figure 1: Conceptual model for residential scenario with home-grown produce

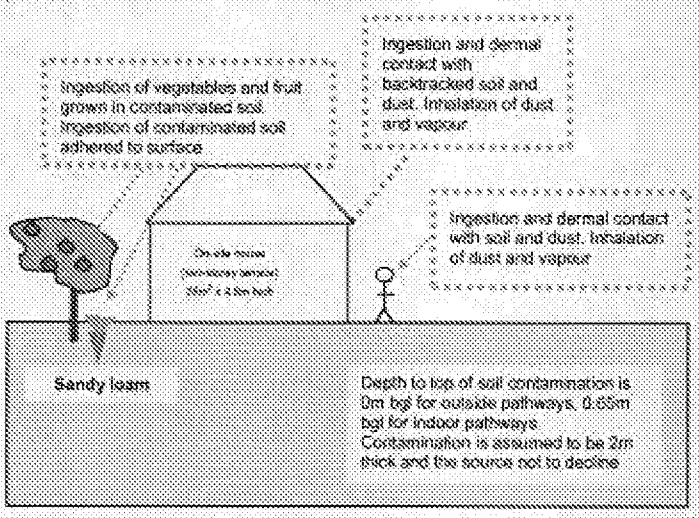


Table 1: Exposure assessment parameters for residential scenario with home-grown produce – inputs for CLEA model

Parameter	Value	Justification
Land use	Residential with homegrown produce	Chosen land use
Receptor	Female child age 1 to 6	Key generic assumption given in Box 3.1, SR3[SC]
Building	Small terraced house	Key generic assumption given in Box 3.1, SR3. Small, two-storey terraced house chosen, as it is the most conservative residential building type in terms of protection from vapor intrusion (Section 3.4.6, SR3)[SC]
Soil type	Sandy Loam	Most common UK soil type (Section 4.3.1, from Table 3.1, SR3)[SC]
Start AC (age class)	1	Range of age classes corresponding to key generic assumption that the critical receptor is a young female child aged 0–6. From Box 3.1, SR3[SC]
End AC (age class)	6	
SOM (%)	6	Representative of sandy loamy soil according to EA guidance note dated January 2009 entitled 'Changes We Have Made to the CLEA Framework Documents'[EA]
	1	To provide SAC for sites where SOM <6% as often observed by RSK
	2.5	
pH	7	Model default

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Table 2: Residential with home-grown produce – modified home-grown produce data

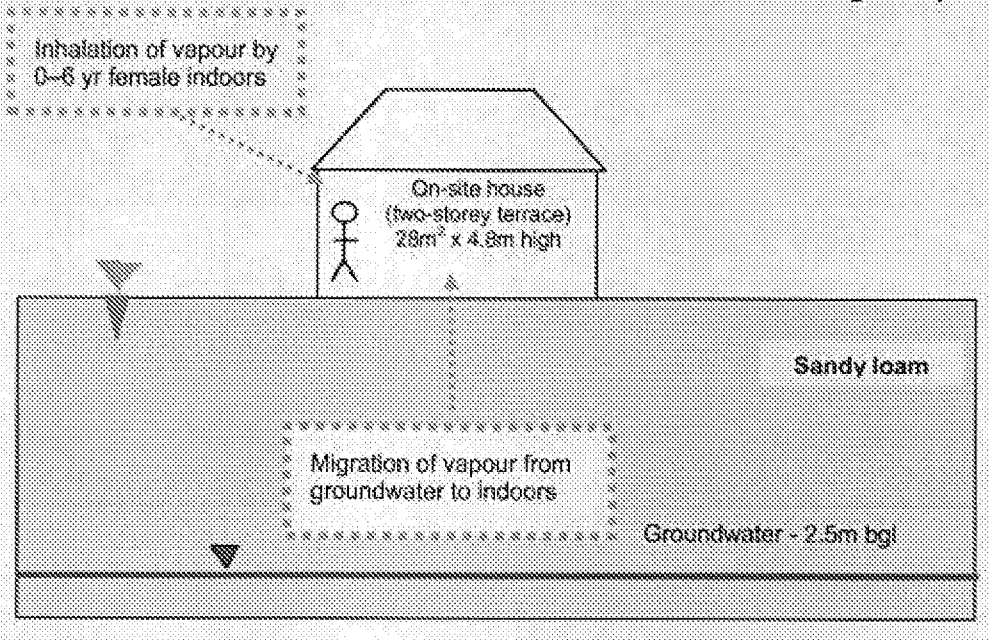
Name	Consumption rate 97.5th percentile (g FW kg^{-1} BW day^{-1}) by age class						Dry weight conversion factor (g DW g^{-1} FW)	Home-grown fraction (average)	Home-grown fraction (high end)	Soil loading factor (g g^{-1} DW)	Preparation correction factor
	1	2	3	4	5	6					
Green vegetables	7.12	5.87	5.87	5.87	4.53	4.53	0.096	0.05	0.33	1.00E-03	2.00E-01
Root vegetables	10.7	2.83	2.83	2.83	2.14	2.14	0.103	0.06	0.4	1.00E-03	1.00E+00
Tuber vegetables	16	6.6	6.6	6.6	4.95	4.95	0.21	0.02	0.13	1.00E-03	1.00E+00
Herbaceous fruit	1.83	3.39	3.39	3.39	2.24	2.24	0.058	0.06	0.4	1.00E-03	6.00E-01
Shrub fruit	2.23	0.46	0.46	0.46	0.19	0.19	0.166	0.09	0.6	1.00E-03	6.00E-01
Tree fruit	3.82	10.3	10.3	10.3	5.16	5.16	0.157	0.04	0.27	1.00E-03	6.00E-01
Justification	Table 3.4, SP1010[3]						Table 6.3, SR3[5]	Table 4.19, SR3[5]		Table 6.3, SR3[5]	

Table 3: Residential with home-grown produce – modified and use and receptor data

Parameter	Unit	Age class					
		1	2	3	4	5	6
EF (soil and dust ingestion)	day yr^{-1}	180	365	365	365	365	365
EF (consumption of home-grown produce)	day yr^{-1}	180	365	365	365	365	365
EF (skin contact, indoor)	day yr^{-1}	180	365	365	365	365	365
EF (skin contact, outdoor)	day yr^{-1}	170	170	170	170	170	170
EF (inhalation of dust and vapour, indoor)	day yr^{-1}	365	365	365	365	365	365
EF (inhalation of dust and vapour, outdoor)	day yr^{-1}	365	365	365	365	365	365
Justification		Table 3.5, SP1010[3]; Table 3.1, SR3[5]					
Soil to skin adherence factor (outdoor)	mg cm^{-2} day^{-1}	0.1	0.1	0.1	0.1	0.1	0.1
Justification		Table 3.5, SP1010[3]					
Inhalation rate	m^3 day^{-1}	5.4	8.0	8.9	10.1	10.1	10.1
Justification		Mean value USEPA, 2011[12]; Table 3.2, SP1010[3]					

Notes: For **cadmium**, the exposure assessment for a residential land use is based on estimates representative of lifetime exposure AC1-16. This is because the TDI_{oral} and TDI_{inh} are based on considerations of the kidney burden accumulated over 50 years. It is therefore reasonable to consider exposure not just in childhood but averaged over a longer period. See the Environment Agency Science Report SC05002/ TOX 3[11], Science Report SC050021/Cadmium SGV[1] and the project report SP1010[3] for more information.

Figure 2: GrAC conceptual model for RBCA residential with home-grown produce scenario



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Table 4: Residential with home-grown produce – RBCA inputs

Parameter	Unit	Value	Justification
Receptor			
Averaging time	Years	6	From Box 3.1, SR3[5]
Receptor weight	kg	13.3	Average of CLEA 0–6 year old female data, Table 4.6, SR3[5]
Exposure duration	Years	6	From Box 3.1, report, SR3[5]
Exposure frequency	Days/yr	350	Weighted using occupancy period of 23 hours per day for 365 days of the year
Soil type – sandy loam			
Total porosity	-	0.53	CLEA value for sandy loam. Parameters for sandy loam from Table 4.4, SR3[5]
Volumetric water content	-	0.33	
Volumetric air content	-	0.20	
Dry bulk density	g cm^{-3}	1.21	
Vertical hydraulic conductivity	cm s^{-1}	3.56E-3	CLEA value for saturated conductivity of sandy loam, Table 4.4, SR3[5]
Vapour permeability	m^2	3.05E-12	Calculated for sandy loam using equations in Appendix 1, SR3[5]
Capillary zone thickness	m	0.1	Professional judgement
Fraction organic carbon	%	0.0348	Representative of sandy loam according to EA guidance note dated January 2009 entitled 'Changes We Have Made to the CLEA Framework Documents'[13]
Building			
Building volume/area ratio	m	4.8	Table 3.3, SR3[5]
Foundation area	m^2	28	
Foundation perimeter	m	22	Calculated assuming building measures 7m x 4m to give 28m^2 foundation area
Building air exchange rate	d^{-1}	12	Table 3.3, SR3[5]
Depth to bottom of foundation slab	m	0.15	
Foundation thickness	m	0.15	
Foundation crack fraction	-	0.0151	Calculated from floor crack area of 423 cm^2 and building footprint of 28m^2 in Table 4.21, SR3[5]
Volumetric water content of cracks	-	0.33	Assumed equal to underlying soil type in assumption that cracks become filled with soil over time. Parameters for sandy loam from Table 4.4, SR3[5]
Volumetric air content of cracks	-	0.2	
Indoor/outdoor differential pressure	Pa	3.1	From Table 3.3, SR3[5]

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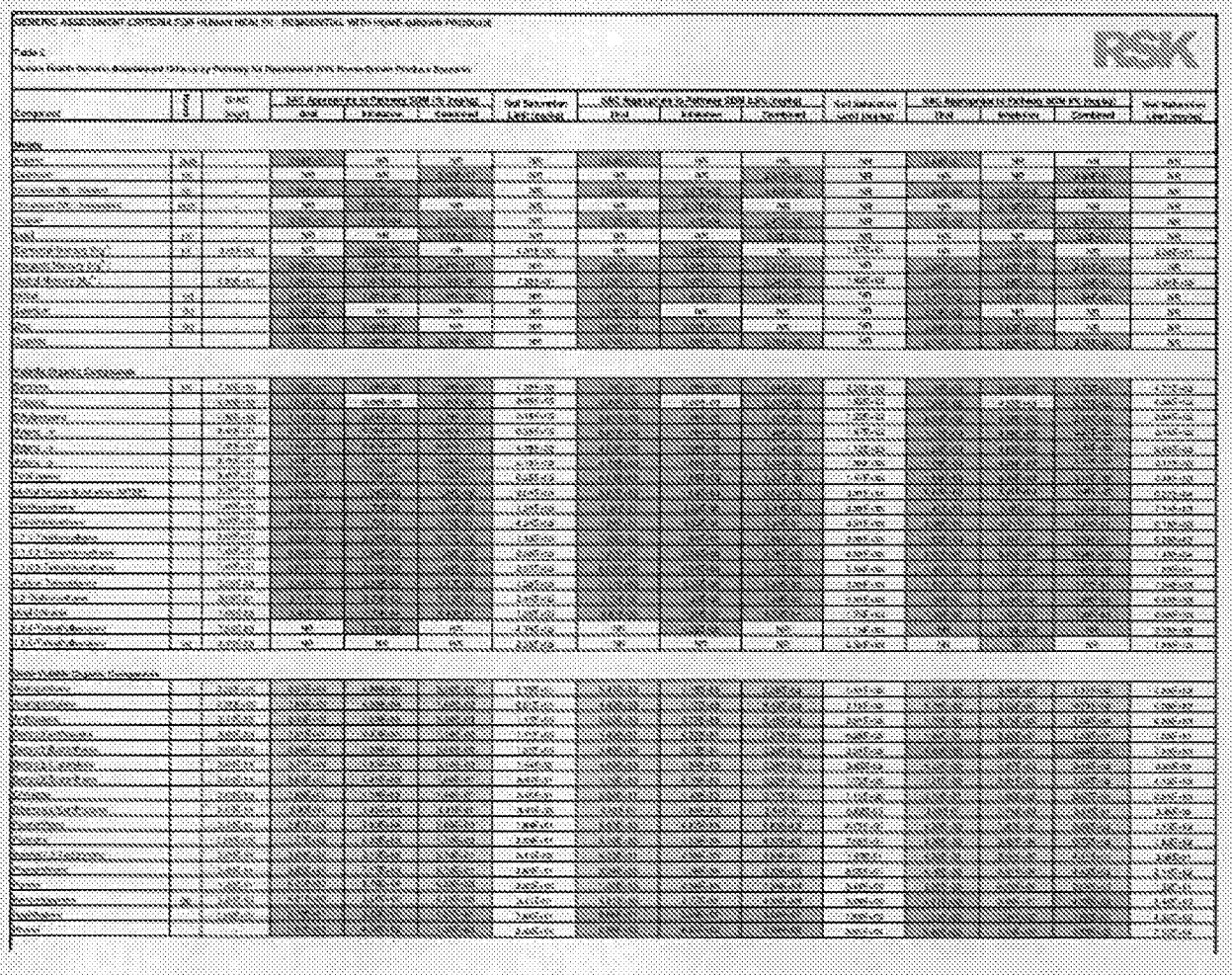


Table 6
Human Health Generic Assessment Criteria for Residential with home-grown produce

Compound	GrAC for Groundwater (mg/l)	SAC for Soil SOM 1% (mg/kg)	SAC for Soil SOM 2.5% (mg/kg)	SAC for Soil SOM 6% (mg/kg)
Metals				
Arsenic	-	37	37	37
Cadmium	-	30	30	30
Chromium (III) - Insoluble	-	910	910	910
Chromium (VI) - Hexavalent	-	21	21	21
Copper	-	2,500	2,500	2,500
Lead	-	200	200	200
Elemental Mercury (Hg^0)	0.0058	0.8	0.9	1.2
Inorganic Mercury (Hg^{++})	-	39	39	39
Methyl Mercury (Hg^{++})	25	10	10	10
Nickel	-	180	180	180
Selenium	-	250	250	250
Zinc	-	3,800	3,800	3,800
Cyanide	-	3.8	3.8	3.8
Volatile Organic Compounds				
Benzene	7.2	1.64	1.64	0.87
Toluene	390	130	330	820
Ethylbenzene	150	50	110	260
Xylene - m	82	38	140	367
Xylene - o	100	61	143	359
Xylene - p	87	57	130	310
Total xylene	84	57	130	310
Methyl tertiary Butyl ether (MTBE)	2000	130	290	510
Dichloroethene	1.8	0.02	0.03	0.08
Tetrachloroethene	3.6	0.2	0.4	0.9
1,1,1-Trichloroethane	26	9	18	36
1,1,1,2-Tetrachloroethane	14	1.2	2.9	6.9
1,1,2,2-Tetrachloroethane	14	1.6	3.5	7.7
Carbon Tetrachloride	0.165	0.026	0.058	0.127
1,2-Dichloroethane	0.3	0.007	0.011	0.018
Vinyl Chloride	0.013	0.0008	0.0009	0.00114
1,2,4-Trimethylbenzene	0.075	1.8	4.3	9.7
1,3,5-Trimethylbenzene	0.047	NR	NR	NR
Semi-Volatile Organic Compounds				
Acenaphthene	3.6	230	540	1,170
Acenaphthylene	4.2	180	440	970
Anthracene	22.00	2,400	5,600	12,300
Benzo(a)anthracene	0.0038	7	11	13
Benzo(b)fluoranthene	0.009	2.6	3.4	3.7
Benzo(g,h,i)perylene	0.00026	310	340	362
Benzo(k)fluoranthene	0.0008	72	92	108
Chrysene	0.38	13	22	72
Dibenz(a,h)anthracene	0.0004	0.24	0.25	0.26
Fluoranthene	0.29	980	980	980
Fluorene	3.0	170	410	922
Indeno(1,2,3-cd)pyrene	0.0004	27	36	41
Phenanthrene	0.17	100	220	440
Pyrene	1.3	630	1,500	2,000
Benzo(a)pyrene	0.0008	5	5	5
Naphthalene	6	13	30	71
Phenol	-	120	310	360
Total Petroleum Hydrocarbons				
Aliphatic hydrocarbons EC_5-EC_6	15	42	78	180
Aliphatic hydrocarbons >EC_6-EC_8	9.4	100	230	530
Aliphatic hydrocarbons >EC_8-EC_{10}	0.23	27	68	164
Aliphatic hydrocarbons >EC_{10}-EC_{12}	0.074	1,000	2,500	6,000
Aliphatic hydrocarbons >EC_{12}-EC_{16}	0.0074	1,000	2,500	6,000
Aliphatic hydrocarbons >EC_{16}-EC_{35}	-	28,000	28,000	28,000
Aliphatic hydrocarbons >EC_{35}-EC_{44}	-	28,000	28,000	28,000
Aromatic hydrocarbons >EC_5-EC_7 (Benzene)	7.4	11	25	56
Aromatic hydrocarbons >EC_7-EC_8	7.4	34	83	192
Aromatic hydrocarbons >EC_8-EC_{10}	2.6	74	174	367
Aromatic hydrocarbons >EC_{10}-EC_{12}	0.8	100	300	900
Aromatic hydrocarbons >EC_{12}-EC_{16}	-	200	600	800
Aromatic hydrocarbons >EC_{16}-EC_{35}	-	900	1,100	1,200
Aromatic hydrocarbons >EC_{35}-EC_{44}	-	900	1,100	1,200
Minerals				
Asbestos		No asbestos detected with ID or <0.001% dry weight		

Notes:
- Generic assessment criteria not calculated owing to low volatility of substance and therefore no pathway, or an absence of toxicological data.
- NAR - SAC for 1,3,5-trimethylbenzene is not calculated owing to the lack of toxicological data. SAC for 1,2,4-trimethylbenzene may be used.
- EC - equivalent carbon, GrAC - groundwater assessment criteria, SAC - soil assessment criteria.
- LOD for weight of asbestos per unit weight of soil calculated on a dry weight basis using PLM, handpicking and gravimetry.

The SAC for organic compounds are dependent on Soil Organic Matter (SOM) (%) present. To obtain SOM from total organic carbon (TOC) (%) divide by 0.58
1% SOM is 0.58% TOC. Dr. Rowell Soil Science: Methods and Applications, Longmans, 1994.

SAC for TPH fractions, aliphatic aromatic hydrocarbons, MTBE, BTEX and trimethylbenzene components were produced using an attenuation factor for the vapour dissolution pathway of 10 to indicate contamination associated with the vapour intrusion pathway, section 10.1.1, SR3.

SAC = X.XXX (GrAC): The SAC has been set as the made calculated SAC with the saturation limit shown in brackets.
RSK has adopted an approach for derivation of soil screening criteria in accordance with UK guidance whereby the concentration presented for each contaminant (generic criteria) has been assessed as the SAC with the corresponding solubility or vapour saturation limit given in brackets.

SAC = X.XXX (S,V,NAPL): For consistency where the GrAC exceeds the solubility limit, SAC has been set at the solubility limit. The GrAC is representative pore concentrations of the chemical are very unlikely to be of sufficient concentration to result in an exceedance of the health criteria value in the event of exposure (i.e. indoor and provided free-phase product is absent).

18 Progress Road
Hemel Hempstead
Hertfordshire
HP3 9RT
UK

[redacted]

Our Ref: 27621L02/jr

24th October 2016

CALA Homes (South Home Counties) Limited
Tilford House
Farnham Business Park
Weydon Lane
Farnham
Surrey, GU9 8QT

For attention of: Mr Gary Biggs

Dear Sirs

RE: BUND VALIDATION WORKS AT FORMER WEST END NURSERY, ANGMERING

1. BACKGROUND

RSK Environment Limited (RSK) was commissioned by CALA Homes (South Home Counties) Limited to carry out validation testing of public open space and selected bunds following remediation works carried out by Keltbray Remediation Ltd (Keltbray). The site was previously occupied by a horticultural nursery growing herbs and historically comprised agricultural fields. A site location map is presented as **Figure 1**.

Several phases of investigation and risk assessment have previously been carried out by RSK. These are outlined in the following reports:

- RSK, 27621- R01(02) 'Geo-environmental Site Investigation', West End Nursery, Angmering, September 2015;
- RSK, 27621- R02 (00) 'Additional Geo-environmental Site Investigation and Remediation', West End Nursery, Angmering, June 2015;
- RSK, 27621- R03 (01) 'Remedial Strategy', West End Nursery, Angmering, January 2016; and
- RSK, 27621- R04 (01) 'Supplementary Geo-environmental Site Assessment', West End Nursery, Angmering, June 2016.

Previous investigations found evidence for asbestos containing materials (ACM) in trial pits TP1-9 (all excavated through the bund materials) and within boreholes BH1, BH4, BH12 and BH15 during the initial ground investigation. Elevated concentrations of hydrocarbons and metals were also identified within bund materials. On this basis a potentially complete pollutant linkage was identified to human health (construction workers and future residents) from asbestos in soil and elevated concentrations of hydrocarbons and metals.

In addition, elevated concentrations of pesticides were identified within shallow soils in the vicinity of HA5 (hand auger hole).

2. REMEDIAL STRATEGY

A Remedial Strategy report (ref: 27621-R03[01]) was produced by RSK and approved by Arun District Council.

The report included the following objectives:

- The placement of a suitable clean cover layer within any private gardens and proposed communal soft landscaped areas in accordance with Section 4.3.3.1 (R03), locally deepened (to the requirements of the Landscape Architect) in the proximity of any proposed deep root-balled shrubs and/or trees. It is noted that tree pits could alternatively be constructed in raised planting beds (set upon areas of hardstanding) in order to break potential contamination pathways with respect to the underlying made ground;
- An asbestos survey suitable for demolition purposes (if not already available) required prior to demolition of the buildings;
- Following decommissioning and demolition of the CHP building, nitric acid store, substations and ASTs, it is recommended that, in the event that any visually impacted materials are observed, an Environmental Engineer be contacted so that appropriate sampling can be implemented to determine any additional remedial and validation requirements;
- Regarding of the bund materials (where required) to form site levels in accordance with the approved development plan, and to facilitate placement of a 'clean' cover layer across the remaining bund materials. Where possible material won as part of the re-grading exercise will be re-used on site in accordance with a materials management plan following the CLAIRE Code of Practice. For example material may be placed beneath 'clean' cover and hardstanding areas in other parts of the site;
- Incorporation of gas protection measures within the proposed buildings: structural barrier comprising suspended or ground-bearing floor slab with appropriate ventilation and a minimum thickness of gas resistant membrane of 2000 gauge, sealed at all joints and penetrations. Detailed design of the gas measures will be required once foundation solutions have been finalised and an implementation report prepared for gas alone against which future verification can be undertaken; and
- Compliance with CAR 2012 through the adoption of safe working procedures with respect to the potential presence of ACM and notification to the HSE.

This validation report has been produced to summarise validation of remedial works to re-grade the bund materials. In order to achieve this objective, the following mitigation measures were recommended:

- Re-grading and movement of the bund material – A small section of the NW bund will need to be excavated to allow for an access road. In order to allow a suitable growing medium cover layer to be placed on bund material, sections of bunds will need to be re-graded, including removal of approximately 1.3m of the top, subject to the proposed levels approved under planning, the excavated materials can be reused beneath the 'clean cap' in other areas of the site;
- It was proposed that clean natural soils within the proposed public open space (POS) area at the centre of the site be excavated and used as a subsoil material for the covering of the soft landscaped areas and bunds. The resultant excavation could then be backfilled with waste soils from the bund re-grading exercise;
- Areas of concern across the site were to be capped with clean site-won subsoil (300mm) and imported certified clean topsoil (300mm), a total of 600mm. A geo-marker layer was recommended to be

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installed at the base of the clean cover layer to provide a visual guide to the extent of the cover layer and act as a warning indicator with respect to waste soils placed below; and

- Areas designated for remediation to be carried out are shown on Figure 2 'Cover Layer Distribution Plan'. The areas targeted for remedial works included any exploratory positions where evidence for soil contamination had been identified through the course of ground investigation. Any soft landscaping identified within these areas was to be subject to the 600mm capping layer.

2.1 Cover Layer

In order to break the identified pollutant linkages, within proposed areas of private gardens and communal soft landscaping, the placement of a suitable clean cover layer will be required. To address potential risks posed from the impacts identified in a sustainable manner, a zoned approach is adopted in relation to the thickness of the clean cover layer as detailed below and summarised on **Figure 2**:

- 600mm in areas of identified impact (remaining bund materials, pesticide hotspot (HA5), and made ground containing asbestos), un-investigated areas considered to potentially be impacted (i.e. made ground extending to the south of the site buildings considered to potentially contain asbestos and soils in the vicinity of the fuel tanks and nitric acid store) and in the central landscaped area;
- 450mm in lower risk areas (i.e. no impact identified during the previous phases of works, no significant un-investigated potential sources identified and distribution of exploratory locations considered appropriate for 'low risk' to be concluded. This zone primarily relates to the footprint of the green house buildings; and
- The frequency of testing for any site-derived or imported materials stockpiled for re-use for private garden areas should be a minimum of one sample for every 50m^3, with a minimum of 3 samples or one sample for every 250m^3 in communal soft landscaping (public open space).

3. REMEDIAL WORKS

Remedial works were carried out by the nominated remedial contractor (Keltbray) and summarised within Keltbray's Completion Report (ref: 6033.CR.LH.08072016v3, dated 30/08/2016). The remedial works were limited to selected areas and predominantly comprised the following:

- Excavation of site-derived natural clean subsoil from the POS area;
- Excavation and processing of waste soils arising from bund re-grading works (NW Bund, SW Bund A, NE Bund).
- Backfilling of processed waste soil arisings from bunds into POS area; and
- Capping of re-graded bund areas and backfilled POS area with clean site-derived subsoil.

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3.1 Public Open Space (POS) Area Investigation

Prior to implementation of remedial works by Keltbray, RSK undertook a series of mechanically excavated trial pits in the POS area to obtain representative soil samples to demonstrate that natural subsoil was suitable for use as a capping material.

On 27th April 2016, five trial pits were mechanically excavated to depths up to 3.2m bgl designated TP POS1 to TP POS5. Photographs of the trial pits are presented in **Appendix B**.

Made ground was identified from surface level to depths of 0.50-1.25m and comprised grey brown sandy gravelly clay with variable proportions of brick, asphalt and glass fragments. Natural soils were encountered beneath the made ground, generally comprising brown to orange brown sandy, slightly gravelly clay or clayey, sandy flint gravel. Trial pit logs are presented in **Appendix C**.

Suspected asbestos containing materials (fragments of cement bound asbestos) were identified at surface level in the vicinity of each trial pit location. No suspected asbestos containing materials were encountered within the trial pits.

Samples of natural soils beneath the made ground were submitted for laboratory testing, at a range of depths between 1.0-2.0m. The testing suite comprised a general suite of analysis and asbestos screening. Results were compared to the RSK human health Generic Assessment Criteria (GAC) for an end-use consisting of residential with private gardens. All determinants were found to be below the respective GAC.

Samples of made ground were not tested since suspected ACM were visible at surface level and extensive laboratory testing of made ground had been carried out across the site and, where present, fragments of suspected ACM have generally been found to comprise cement bound chrysotile asbestos.

Based on the POS investigation described above, natural subsoil materials beneath the made ground were determined to be suitable for re-use on site.

4. VALIDATION WORKS

RSK attended site on 9th and 23rd June plus 7th and 25th July 2016 to undertake validation works of the capping layer placed on the re-graded bunds and POS area.

4.1 Sampling strategy and methodology

In the remediated areas, a series of hand excavated validation trial pits were undertaken to allow inspection of the capping layer and recovery of representative soils for laboratory testing. Trial pits were excavated to the base of the capping layer (i.e. when the bright orange 'geo-marker' geotextile was encountered) or up to a maximum of 600mm depth. Validation locations were targeted to give a good spread across the areas subject to remedial works, whilst working to a sampling ratio of 1 in 250m^3 (for communal soft landscaping, as agreed with Arun District Council).

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4.2 Health and Safety Considerations

Prior to intrusive works, the RSK engineer undertook service clearance works using a Cable Avoidance Tool (CAT) and Genny to identify any potential underground utilities. Precautions were taken to ensure PPE (and RPE where appropriate) was worn by the engineer to prevent any potential exposure to contaminants within the underlying soils.

4.3 Investigation Locations

The following validation pits were carried out:

- NWB V1-8 - 9th June 2016;
- SWB V1-4 - 23rd June 2016;
- POS V1–12 - 7th July 2016;
- NEB V1-4 - 25th July 2016; and
- Additional inspection pits POS V13-16, POS V2A-D, POS V12-A-D - 22nd August 2016.

The exploratory hole records are presented in **Appendix C**.

The locations of the validation trial pits are shown on **Figure 3**. The positions were located approximately by reference to physical features present on the site at the time of investigation and were designed to provide accurate coverage of the capped areas across the bunds and POS to determine the thickness of the capping layer and obtain representative soil samples for laboratory testing.

4.4 Soil Sampling, In-Situ Testing and Laboratory Analysis

Soils obtained for laboratory analysis were collected in a variety of containers appropriate to the testing suite carried out. Samples were stored in accordance with the RSK quality procedures to maintain sample integrity and preservation and to minimise the chance of cross-contamination.

Samples were taken from each pit along with occasional bulk samples for asbestos identification where required. The samples were transported to the laboratory in chilled cool boxes. Laboratory chain of custody forms can be provided if required.

4.5 Limitations

It should be noted that no remedial works had been undertaken on the SW bund B, SE bund or in areas outside of the site hoarding (particularly the western portion of SW bund A).

5. GROUND CONDITIONS

Ground conditions encountered during the validation works are discussed below. Full descriptions of the strata encountered, notes regarding visual or olfactory evidence of contamination, list of samples taken and field observations are included on the exploratory hole records presented in **Appendix C**.

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5.1 Soil

The validation trial pits revealed the thickness of the capping layer and comments on the presence of the 'geo-marker' layer. Results of the validation inspections are summarised in **Table 1** below.

Table 1: Capping layer summary information

Validation Pit	Thickness of Capping Layer (mm)	Geo-marker Encountered (at base of trial pit)
NWBV1	500	Yes
NWBV2	700	No, but observed being placed during construction
NWBV3	300	Yes
NWBV4	400	Yes
NWBV5	750	No, but observed being placed during construction
NWBV6	550	Yes
NWBV7	550	Yes
NWBV8	380	Yes
SWBV1	750	No
SWBV2	800	No
SWBV3	550	Yes
SWBV4	450	Yes
POSV1	600	Yes
POSV2	400	No – Terminated due to Asbestos Containing Material at base
POSV3	650	No
POSV4	650	No
POSV5	650	No
POSV6	600	Yes
POSV7	650	No
POSV8	650	No
POSV9	450	Yes
POSV10	550	Yes
POSV11	650	Yes
POSV12	650	No
NEBV1	650	Yes
NEBV2	700	Yes
NEBV3	750	Yes
NEBV4	800	Yes

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POSV13	650	Yes
POSV14	750	Yes
POSV15	650	Yes
POSV16	850	No

Notes:

1. Validation sample locations highlighted blue contained clean cover subsoil less than 600mm thick.
2. POSV2A-D and POSV12A-D have been excluded from this table since their purpose was to obtain additional samples for asbestos screening and note assess capping layer thickness.

The thickness of the capping layer was found to range from 300mm to 850mm. The geo-marker layer was not identified in all positions, however it is understood that it was present at depths greater than 600mm. RSK witnessed placement of the 'geo-marker' layer by Keltbray during earlier visits while capping of the bunds was still in progress.

5.2 Evidence of contamination

Following the initial validation, asbestos-containing materials were found at surface level in selected areas of the NW bund, NE bund, SW bund A and POS. Laboratory testing confirmed presence of Chrysotile cement from surface samples obtained from the NW bund and POS. Asbestos was also identified in soil samples obtained from POSV2 and POSV12.

A recommendation for hand picking of visible fragments of asbestos from the surface of the bunds was made by RSK and completed by Keltbray (as summarised in Keltbray Completion Report). Additional delineation and soil sampling works were recommended in the vicinity of POSV2 and POSV12.

6. LABORATORY TESTING

Representative soil samples were obtained from each validation trial pit and submitted for chemical laboratory testing comprising:

- Heavy metals (arsenic, cadmium, chromium, copper, nickel, lead, mercury, selenium and zinc);
- pH;
- Speciated total petroleum hydrocarbons (TPH-CWG)
- BTEX (benzene, toluene, ethylbenzene and xylene);
- 16 No. Speciated PAH; and
- Asbestos in soil.

6.1 Direct contact with impacted soil by future residents

The validation criteria are RSK-derived GAC's suitable for a residential with plant uptake end-use for 6% soil organic matter (SOM) in accordance with the Remediation Strategy. Concentrations of potential contaminants did not exceed the GAC within any of the samples for the determinants tested.

Chrysotile asbestos was identified in samples taken from validation trial pits POSV2 and POSV12. Bulk samples of suspected ACM obtained from surface level on the bunds and POS were positive.

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All other soil samples taken described above returned negative results for the presence of asbestos fibres.

7. ADDITIONAL WORKS

Following identification of ACM in several areas across the site on the surface of bunds and within two soil samples (POSV2 and POSV12), Keltbray carried out a series of hand-picking exercises across these areas. RSK reinspected areas after Keltbray had completed hand-picking and were satisfied that visually identifiable asbestos fragments had been removed.

Additional validation trial pits were excavated by RSK on 2nd August 2016 to confirm the extent of asbestos materials in the vicinity of POSV2 and POSV12. Representative soils samples were obtained from the validation pits (POSV12A-D and POSV2A-D) and submitted for laboratory testing to screen for the presence of asbestos fibres. None of the additional soil samples were found to contain asbestos fibres.

8. CONCLUSIONS

Fragments of cement-bound asbestos sampled from surface level at the NW bund, NE bund, SW bund A and POS were handpicked and removed by Keltbray. Where asbestos fibres were identified within soils at POSV2 and POSV12, additional sampling in these areas demonstrated no further evidence for asbestos.

The information on thickness of the capping layer as noted in **Table 1** demonstrates that cover soils range in thickness from 300mm to 850mm. It is understood that topsoil is to be placed in all areas of soft landscaping across the site on top of the subsoil already validated, and it is recommended that particular attention is paid to the areas highlighted above to ensure sufficient topsoil is placed to complete construction of the cover layer to the full thickness of 600mm.

The geo-marker layer was not encountered in all inspection pits however, in these areas, the thickness of the capping layer met or exceeded the recommended thickness and it is understood that the geo-marker layer will be present at depths greater than 600mm.

Additional validation works are recommended following placement of topsoil in areas where the cover layer was less than 600mm.

Further remedial and validation works are required with respect to SW bund B, SE bund and part of the SW bund A that was outside of the hoarding during the initial phase of remedial works.

Following completion of all remedial works on site, a verification report will be produced to summarise the extent of remediation and subsequent validation undertaken.

We trust that the information discussed above is acceptable and recommend this report be submitted to the NHBC and Local Authority accordingly. Should you require RSK to submit this information on your behalf, please do not hesitate to contact us.

ARUN DISTRICT COUNCIL A/94/17/DOC

Yours faithfully

For RSK Environment Limited



Jennifer Russell

Graduate Geo-Environmental Engineer



Andrew James

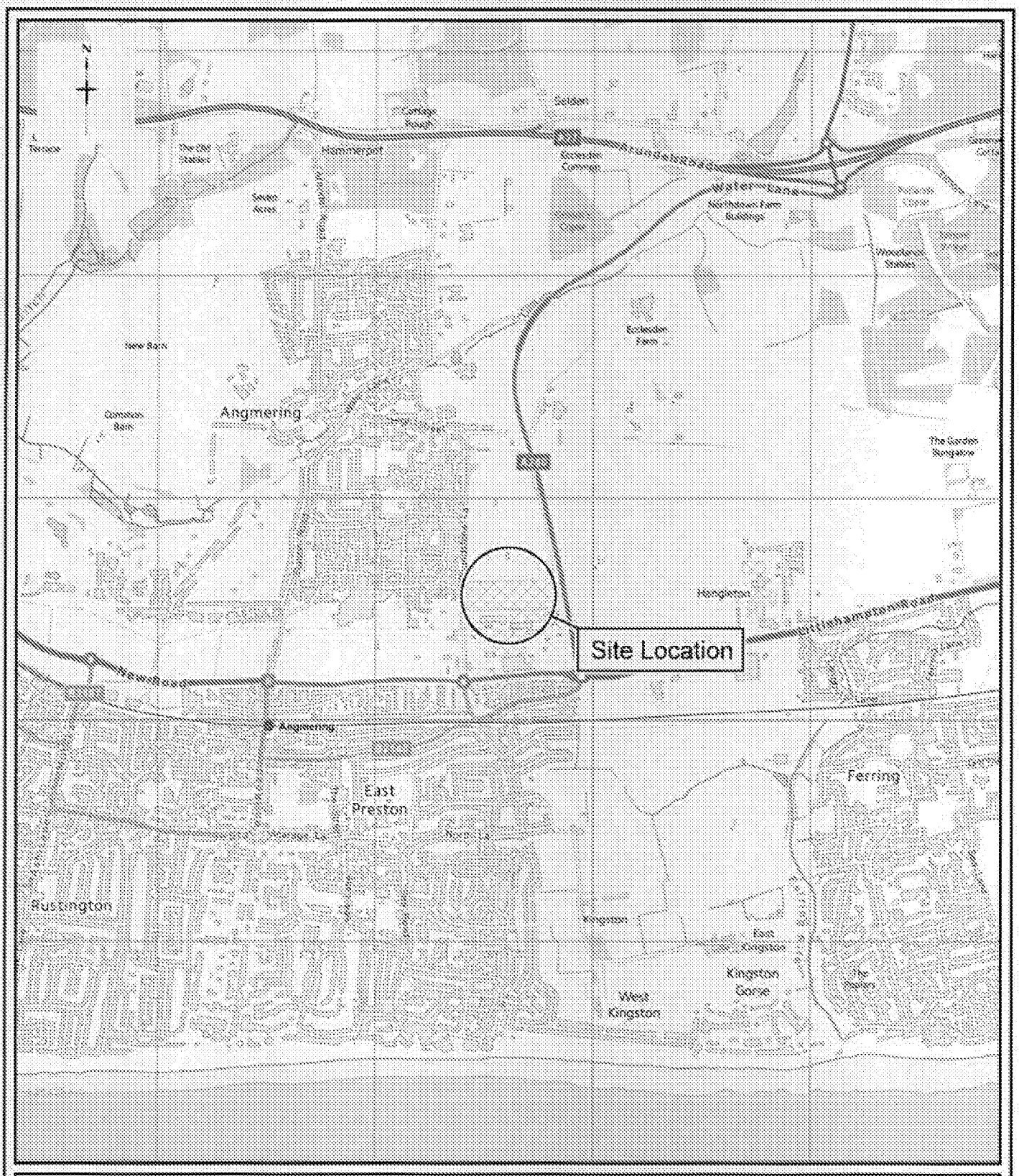
Principal Geo-Environmental Engineer

Figure 1	Site Location Map
Figure 2	Exploratory Hole Location Plan
Figure 3	Validation Location Plan

Appendix A	Service Constraints
Appendix B	Photographic Log
Appendix C	Trial Pit Logs
Appendix D	Laboratory Certificates
Appendix E	RSK Generic Assessment Criteria

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FIGURES



Contains Ordnance Survey data © Crown copyright and database right 2013

RSK

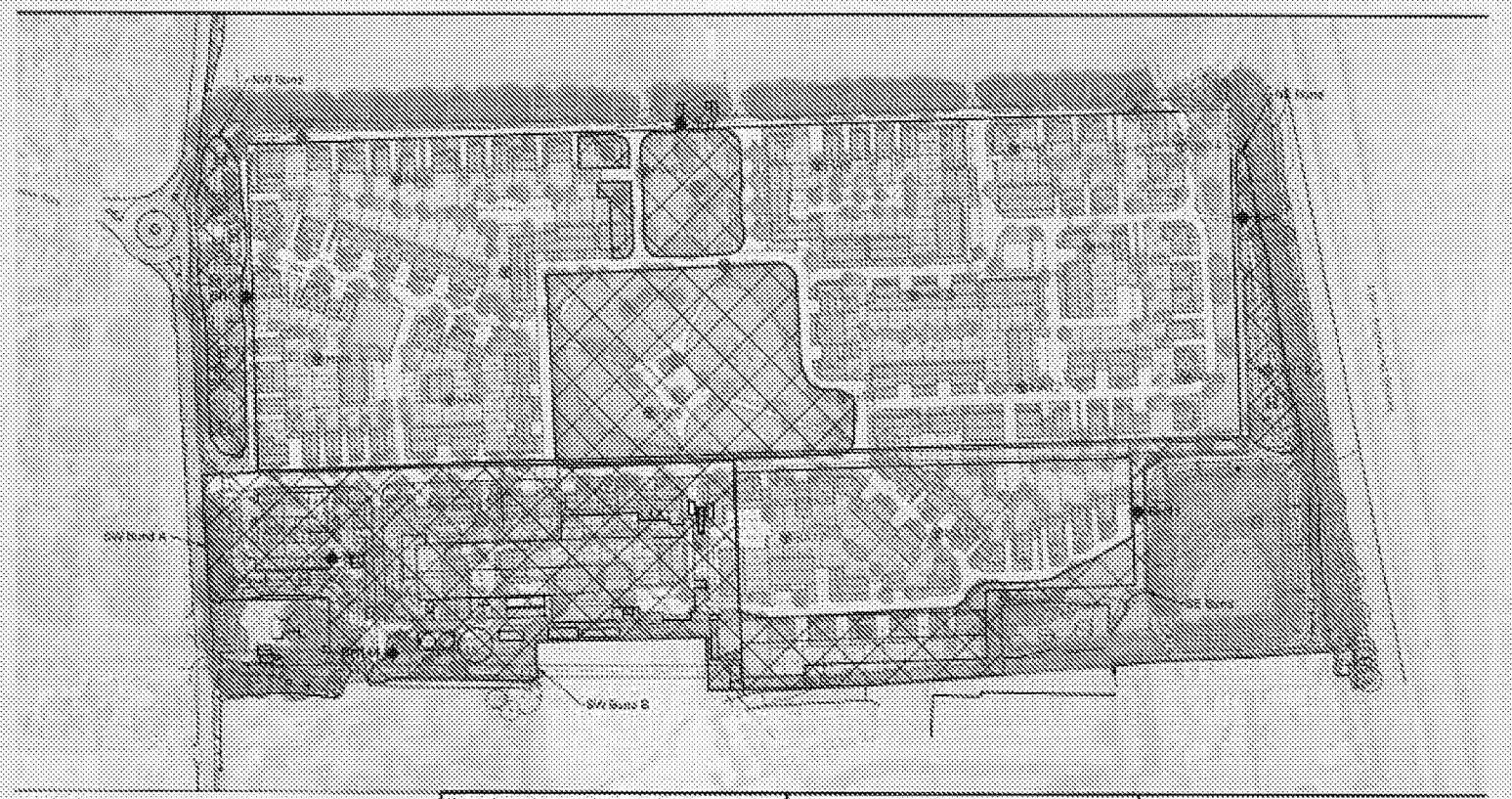
Client: CALA HOMES (SOUTH HOME COUNTIES) LTD

Project Title: WEST END NURSERY, ANGMERING

Drawing Title: SITE LOCATION MAP

Rev	Drawn	Date	Checked	Date	Approved	Date
00	ASC	21.06.16	ARJ	21.06.16	ARJ	21.06.16

Dimensions	Scale	Original Size	Project Number	Drawing File	Drawing Number
m	1:25,000	A4	27621 - L02	27621 - SLP.dwg	FIGURE 1



LEGEND

- Borehole Location - Jan 2015
- Hand Auger Location - Jan 2015
- Borehole Location with Installation - Jan 2015
- Trial Pit Location - May 2015
- Borehole Location - Oct 2015
- Hand Pit Location - Oct 2015
- 600mm Cover Layer Required in Soft Landscaped/Private Gardens.

Note: All other soft landscaping/private gardens require 450mm cover layer. Refer to report 27621 RR3 (00) for further details.

- Impacted Bund Materials
- Potentially Impacted Bund Materials
- Footbeds Hotspot
- Asbestos Containing Materials (ACM) Detected in Made Ground
- Likely Hydrocarbon Hotspot and Potential for Nitric Acid Impacts
- Re-use of Asbestos Impacted Soils or Debris

RSK

Rev	Date	Amendment	Drawn	Check	Auth

Drawn: SAH 06.11.15 | Checked: SRJ 06.11.15 | Approved: SRJ 06.11.15

Scale: 1:1500 | Paper Size: A3 | Datum: m

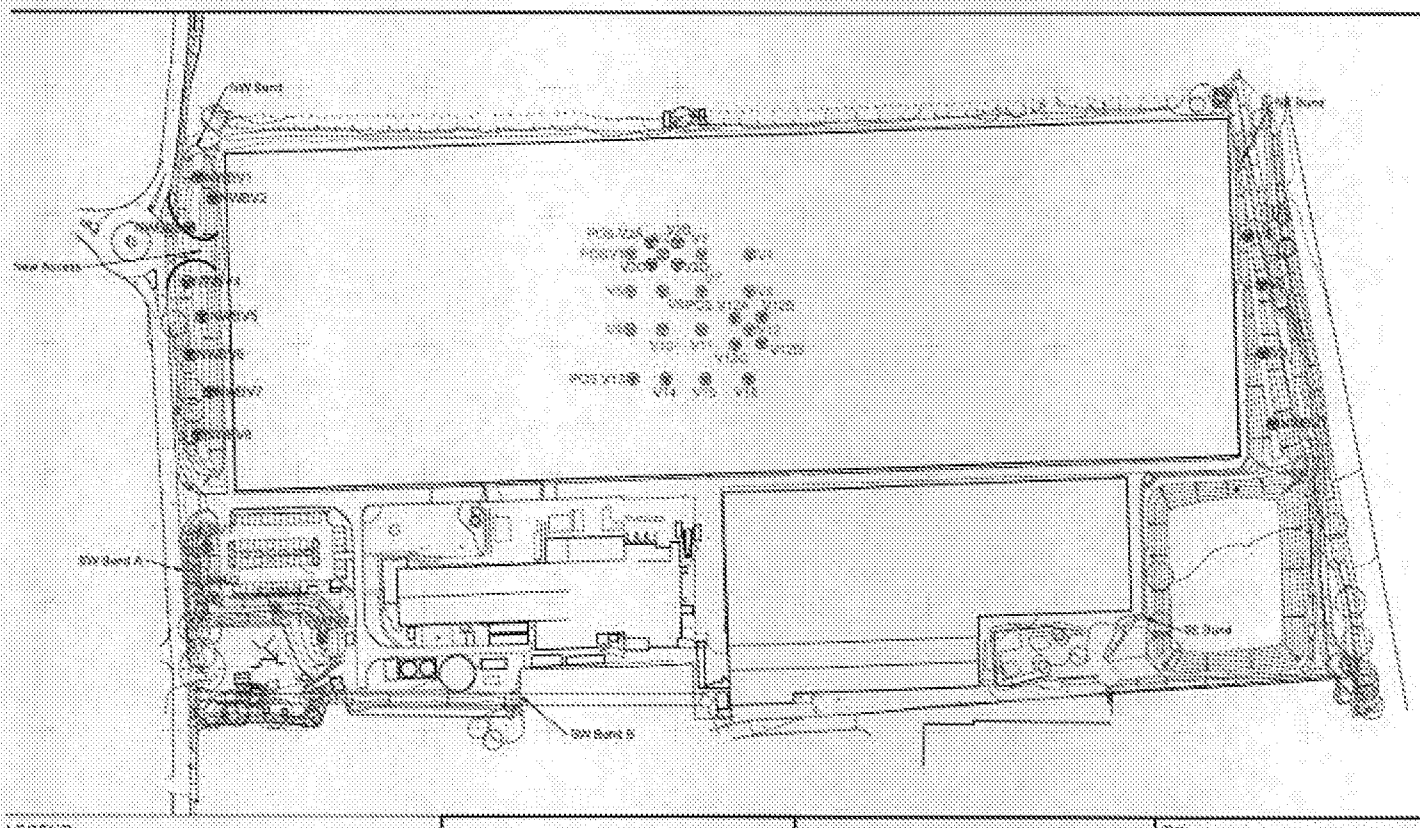
Client: CALA HOMES (SOUTH HOME COUNTIES) LTD

Project Title: WEST END NURSERY, ANGMERING

Drawing Title: PROPOSED DEVELOPMENT PLAN

Project No: 27621 - L02 (00) | Drawing No: 27621-L02-00-dwg

Drawing No: FIGURE 2 | Rev: R1



LEGEND

- Validation Sample Location - Northwest Bund Jun 2018
- Validation Sample Location - Southwest Bund Jun 2018
- Validation Sample Location - Public Open Space 1 Jul 2018
- Validation Sample Location - Northeast Bund Jun 2018
- Validation Sample Location - Public Open Space 22 Aug 2018
- Extent of Bund

RSK

CALA HOMES (SOUTH HOME COUNTIES) LTD

WEST END NURSERY, ANGMERING

VALIDATION LOCATION PLAN

Drawn	Date	Checked	Date	Approved	Date
ASC	21.06.18	SRJ	21.06.18	AMJ	21.06.18

Project No. 278221 - L02

Drawing File 278221-L02f.dwg

No.	Date	Revisions	Drawn	Chkd	Appd

Scale 1:1500

Drawing Size A3

Drawing No. FIGURE 3

Rev. P1

APPENDIX A
SERVICE CONSTRAINTS

1. This report and the site investigation carried out in connection with the report (together the "Services") were compiled and carried out by RSK Environment Limited (RSK) for CALA Homes (South Home Counties) (the "client") in accordance with the terms of a contract between RSK and the "client", dated 09/09/16. The Services were performed by RSK with the skill and care ordinarily exercised by a reasonable environmental consultant at the time the Services were performed. Further, and in particular, the Services were performed by RSK taking into account the limits of the scope of works required by the client, the time scale involved and the resources, including financial and manpower resources, agreed between RSK and the client.

2. Other than that expressly contained in paragraph 1 above, RSK provides no other representation or warranty whether express or implied, in relation to the Services.

3. Unless otherwise agreed in writing the Services were performed by RSK exclusively for the purposes of the client. RSK is not aware of any interest of or reliance by any party other than the client in or on the Services. Unless expressly provided in writing, RSK does not authorise, consent or condone any party other than the client relying upon the Services. Should this report or any part of this report, or otherwise details of the Services or any part of the Services be made known to any such party, and such party relies thereon that party does so wholly at its own and sole risk and RSK disclaims any liability to such parties. **Any such party would be well advised to seek independent advice from a competent environmental consultant and/or lawyer.**

4. It is RSK's understanding that this report is to be used for the purpose described in the introduction to the report. That purpose was a significant factor in determining the scope and level of the Services. Should the purpose for which the report is used, or the proposed use of the site change, this report may no longer be valid and any further use of or reliance upon the report in those circumstances by the client without RSK's review and advice shall be at the client's sole and own risk. Should RSK be requested to review the report after the date of this report, RSK shall be entitled to additional payment at the then existing rates or such other terms as agreed between RSK and the client.

5. The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the report inaccurate or unreliable. The information and conclusions contained in this report should not be relied upon in the future without the written advice of RSK. In the absence of such written advice of RSK, reliance on the report in the future shall be at the client's own and sole risk. Should RSK be requested to review the report in the future, RSK shall be entitled to additional payment at the then existing rate or such other terms as may be agreed between RSK and the client.

6. The observations and conclusions described in this report are based solely upon the Services which were provided pursuant to the agreement between the client and RSK. RSK has not performed any observations, investigations, studies or testing not specifically set out or required by the contract between the client and RSK. RSK is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the Services. For the avoidance of doubt, unless otherwise expressly referred to in the introduction to this report, RSK did not seek to evaluate the presence on or off the site of asbestos, electromagnetic fields, lead paint, heavy metals, radon gas or other radioactive or hazardous materials.

7. The Services are based upon RSK's observations of existing physical conditions at the Site gained from a walk-over survey of the site together with RSK's interpretation of information including documentation, obtained from third parties and from the client on the history and usage of the site. The Services are also based on information and/or analysis provided by independent testing and information services or laboratories upon which RSK was reasonably entitled to rely. The Services clearly are limited by the accuracy of the information, including documentation, reviewed by RSK and the observations possible at the time of the walk-over survey. Further RSK was not authorised and did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the client or third parties, including laboratories and information services, during the performance of the Services. RSK is not liable for any inaccurate information or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to RSK and including the doing of any independent investigation of the information provided to RSK save as otherwise provided in the terms of the contract between the client and RSK.

8. The intrusive environmental site investigation aspects of the Services is a limited sampling of the site at pre-determined borehole and soil vapour locations based on the operational configuration of the site. The conclusions given in this report are based on information gathered at the specific test locations and can only be extrapolated to an undefined limited area around those locations. The extent of the limited area depends on the soil and groundwater conditions, together with the position of any current structures and underground facilities and natural and other activities on site. In addition chemical analysis was carried out for a limited number of parameters [as stipulated in the contract between the client and RSK] [based on an understanding of the available operational and historical information], and it should not be inferred that other chemical species are not present.

9. Any site drawing(s) provided in this report is (are) not meant to be an accurate base plan, but is (are) used to present the general relative locations of features on, and surrounding, the site. Features (boreholes, trial pits etc) annotated on site plans are not drawn to scale but are centred over the approximate location. Such features should not be used for setting out and should be considered indicative only.

APPENDIX B
PHOTOGRAPHIC LOG

PHOTOGRAPHIC LOG

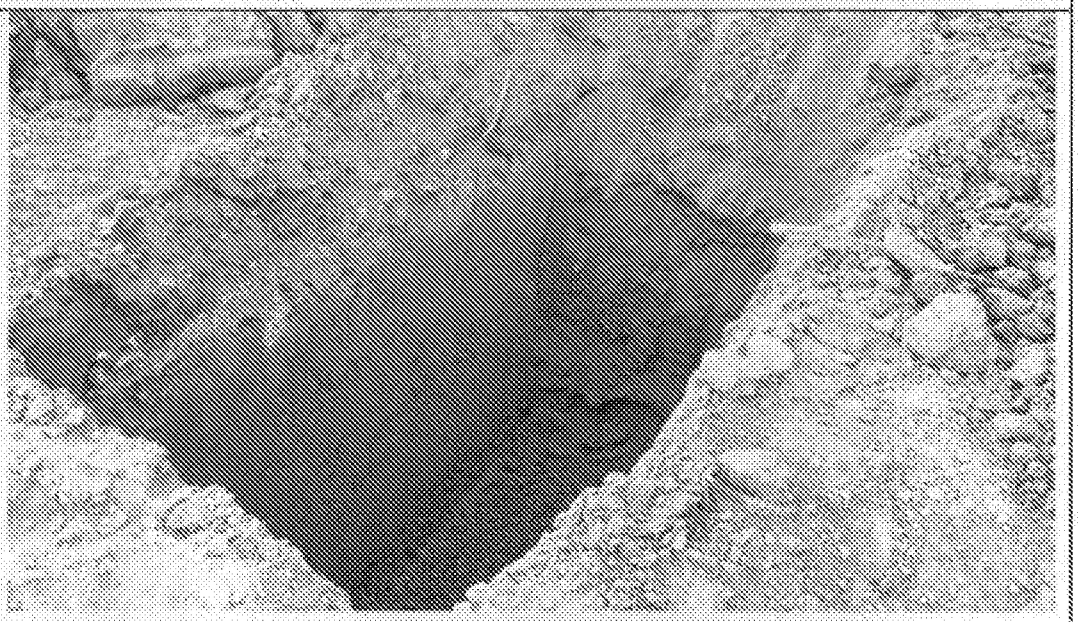
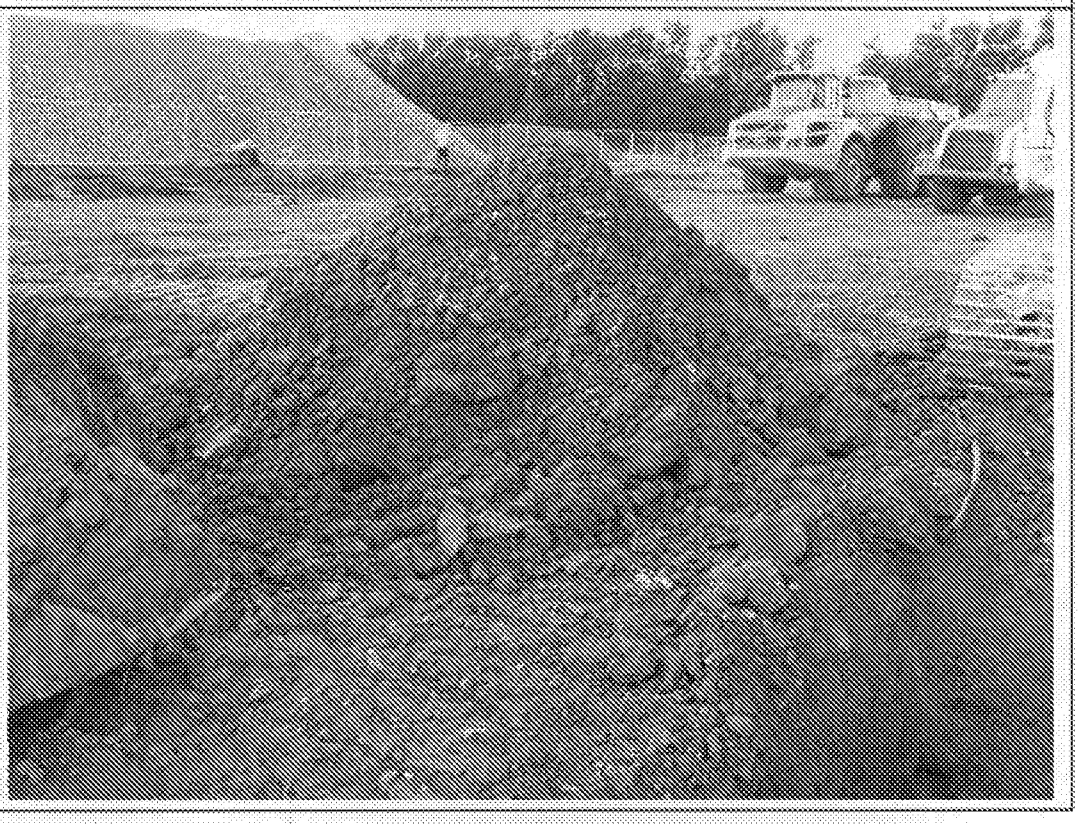
Site Location: West End Nursery

Photo No. 1 **Date:** 27/04/2016 TP POS1	
Photo No. 2 **Date:** 27/04/2016 TP POS2	

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PHOTOGRAPHIC LOG

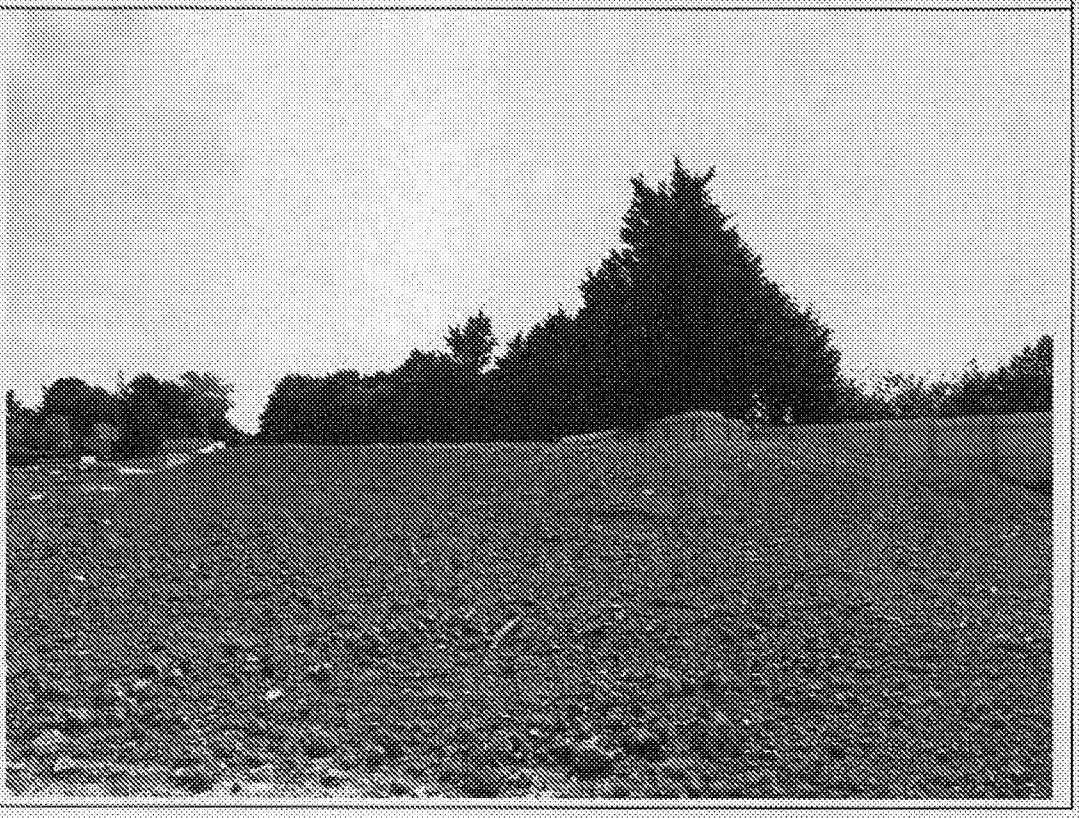
Site Location: West End Nursery

Photo No. 3 **Date:** 27/04/2016 TP POS3	
Photo No. 4 **Date:** 27/04/2016 Soils recovered from TP POS4	

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PHOTOGRAPHIC LOG

Site Location: West End Nursery

Photo No. 5 **Date:** 27/04/2016 TP POS5	
Photo No. 6 **Date:** 27/04/2016 View looking south west towards north west bund (NWB).	

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PHOTOGRAPHIC LOG

Site Location: West End Nursery

Photo No. 7 **Date:** 09/06/2016 View looking north west showing the north west bund.	
Photo No. 8 **Date:** 09/06/2016 NWB V1 dug to a depth of 0.50m.	

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PHOTOGRAPHIC LOG

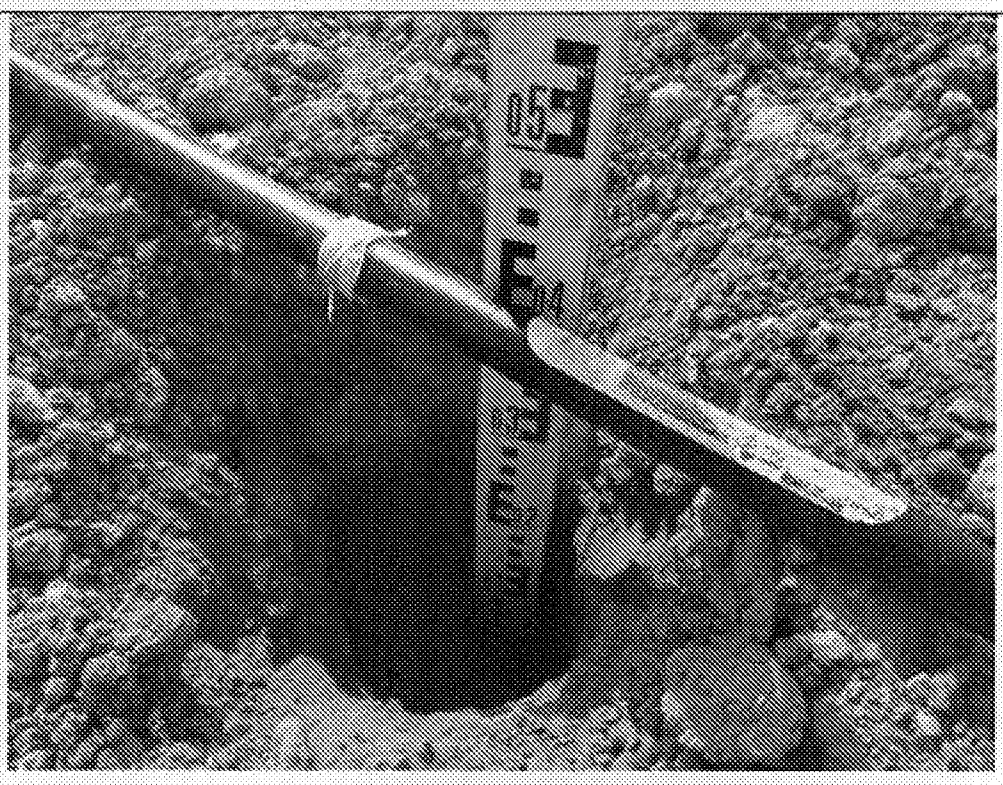
Site Location: West End Nursery, Angmering

Photo No. 9 **Date:** 09/06/2016 NWB V2 dug to a depth of 0.70m.	
Photo No. 10 **Date:** 09/06/2016 NWB V3 dug to a depth of 0.30m.	

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PHOTOGRAPHIC LOG

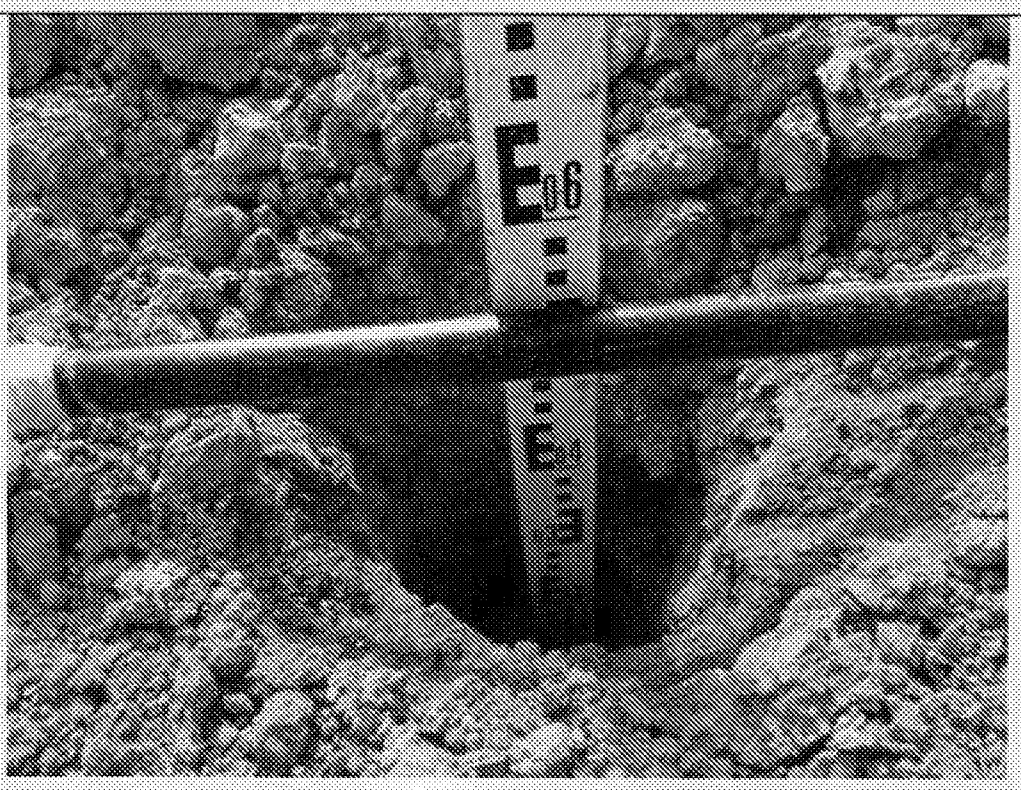
Site Location: West End Nursery, Angmering

Photo No. 11 **Date:** 09/06/2016 NWB V4 dug to a depth of 0.40m.	
Photo No. 12 **Date:** 09/06/2016 NWB V5 dug to a depth of 0.75m.	

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PHOTOGRAPHIC LOG

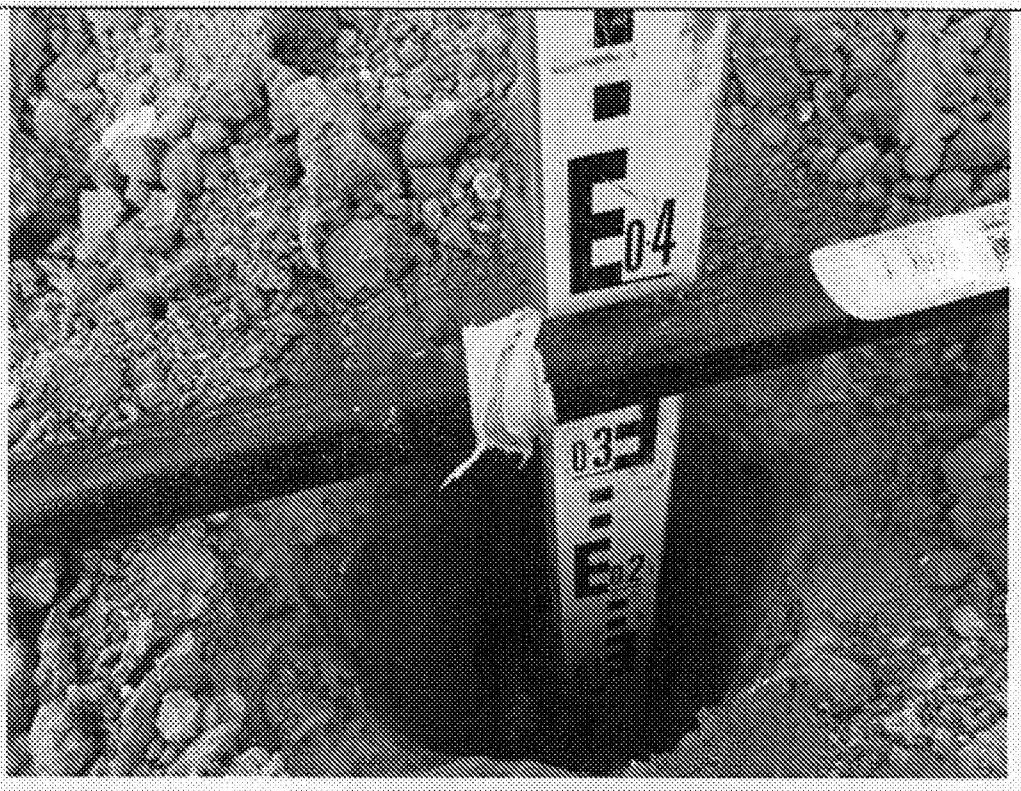
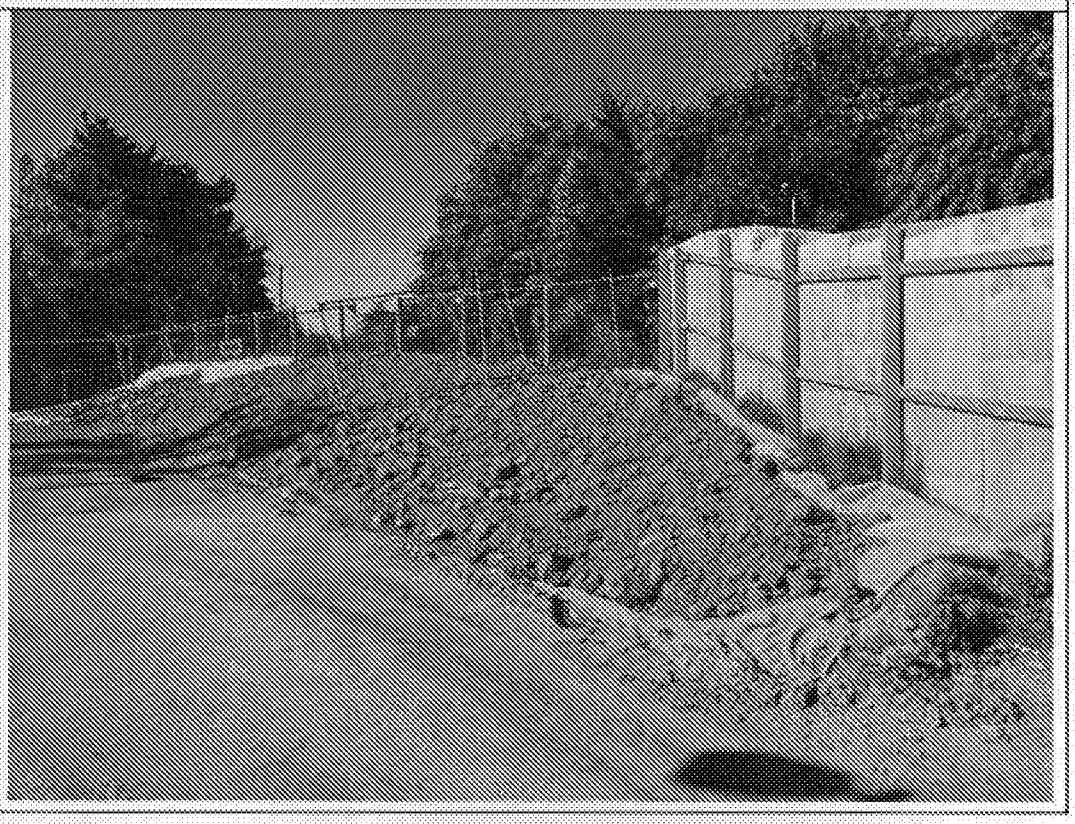
Site Location: West End Nursery, Angmering

Photo No. 13 **Date:** 09/06/2016 NWB V6 dug to a depth of 0.55m.	
Photo No. 14 **Date:** 09/06/2016 NWB V7 dug to a depth of 0.55m.	

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PHOTOGRAPHIC LOG

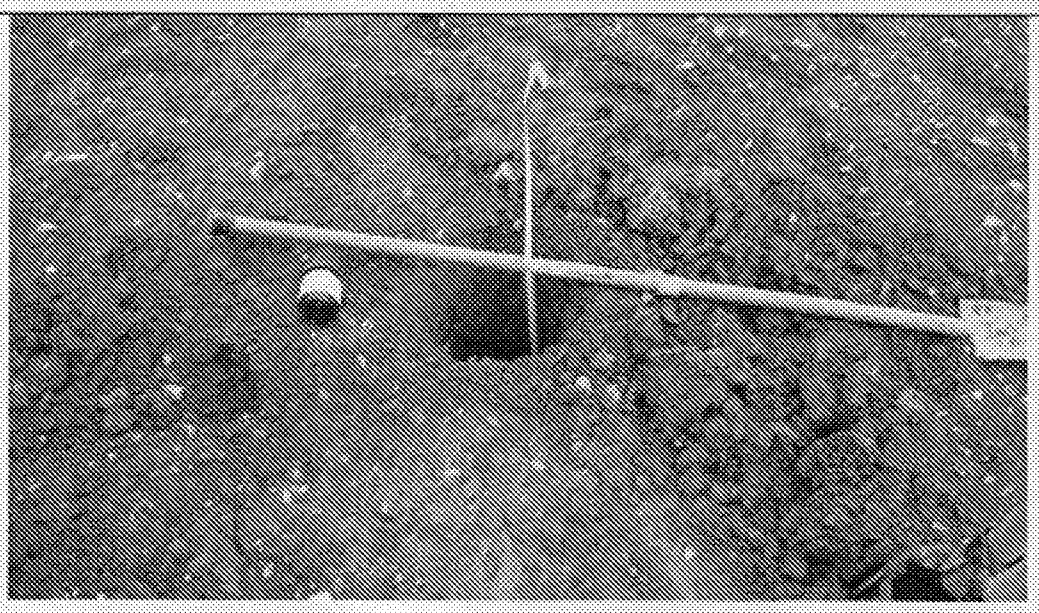
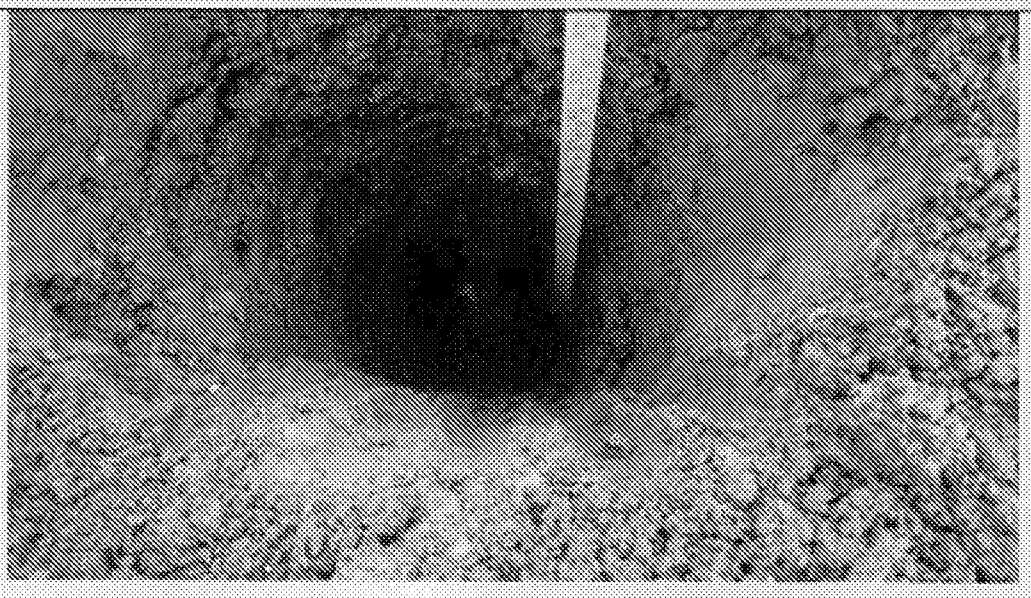
Site Location: West End Nursery, Angmering

Photo No. 15 **Date:** 09/06/2016 NWB V8 dug to a depth of 0.38m.	
Photo No. 16 **Date:** 24/05/2016 Construction of south west bund (SWB).	

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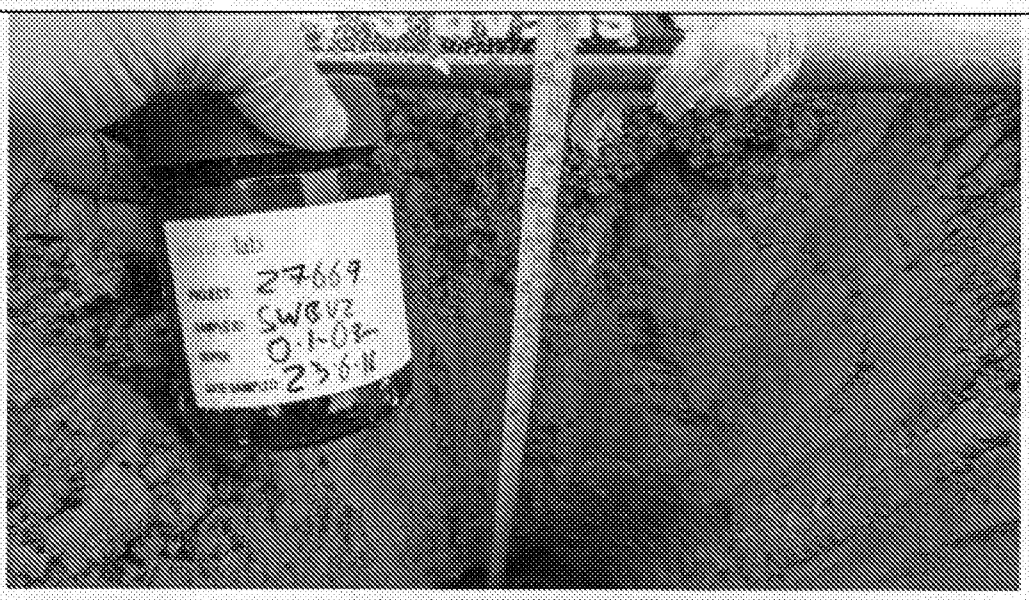
PHOTOGRAPHIC LOG

Site Location: West End Nursery, Angmering

Photo No. 17 **Date:** 23/06/2016 Overview photograph of SWB V1 dug to a depth of 0.75m.	
Photo No. 18 **Date:** 23/06/2016 A closer image of SWB V1.	

PHOTOGRAPHIC LOG

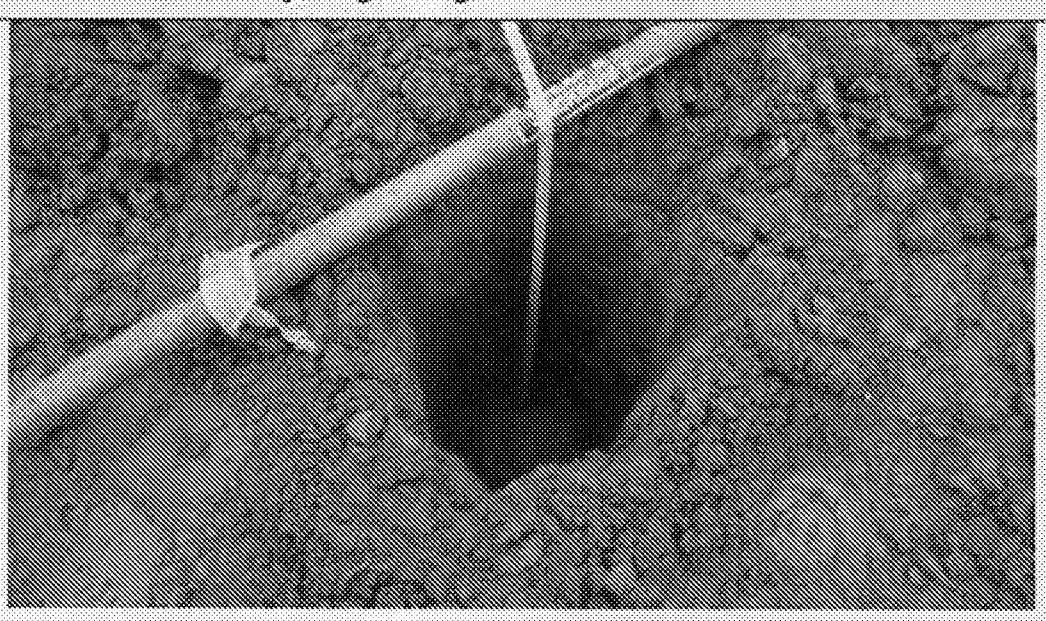
Site Location: West End Nursery, Angmering

Photo No. 19 **Date:** 23/06/2016 Possible ACM found to the west of the car park in between SWB C1 and SWB V2.	
Photo No. 20 **Date:** 23/06/2016 SWB V2 dug to a depth of 0.80m.	

ARUN DISTRICT COUNCIL A/94/17/DOC

PHOTOGRAPHIC LOG

Site Location: West End Nursery, Angmering

Photo No. 21 **Date:** 23/06/2016 Image showing the orange marker layer at the base of SWB V3.	
Photo No. 22 **Date:** 23/06/2016 SWB V3 dug to a depth of 0.55m.	

PHOTOGRAPHIC LOG

Site Location: West End Nursery, Angmering

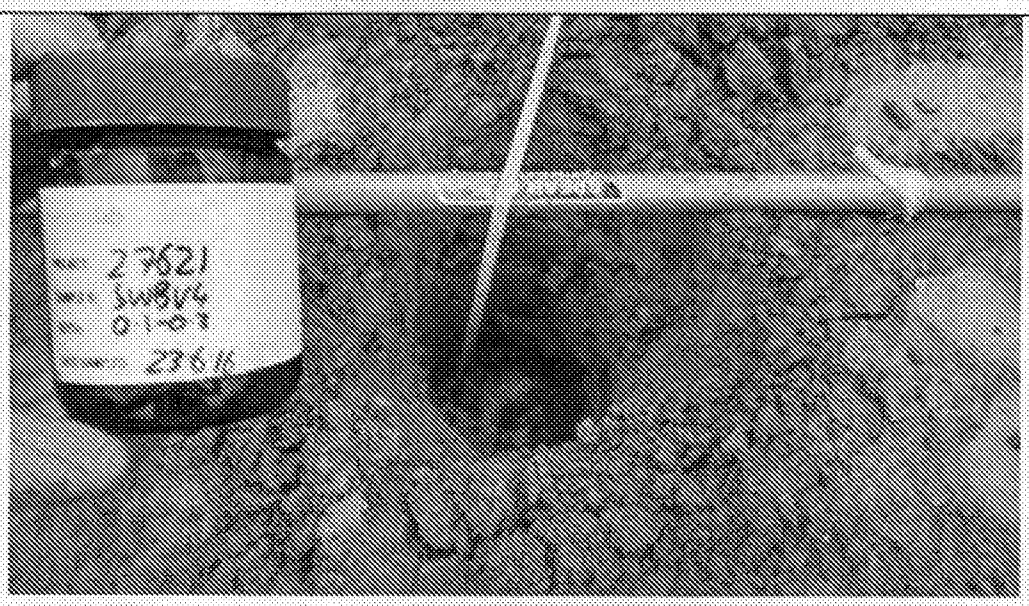
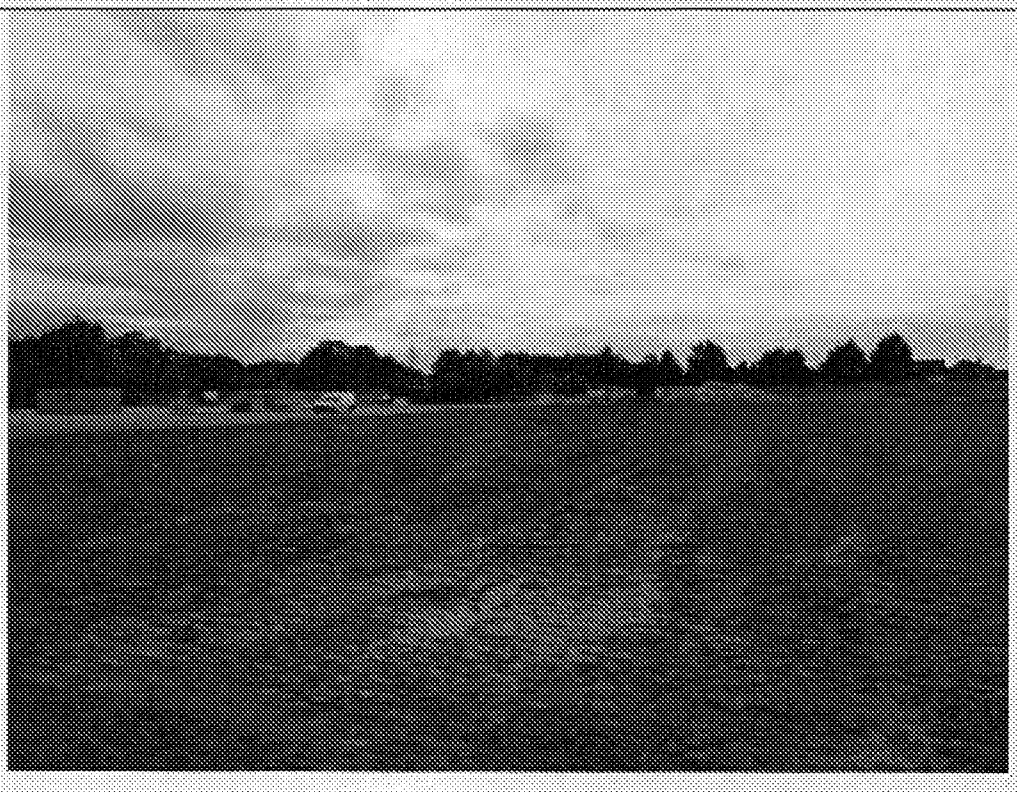
Photo No. 23 **Date:** 23/06/2016 Image showing the orange marker layer encountered at the base of SWB V4.	

Photo No. 24 **Date:** 23/06/2016 SWB V4 dug to a depth of 0.45m.	

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PHOTOGRAPHIC LOG

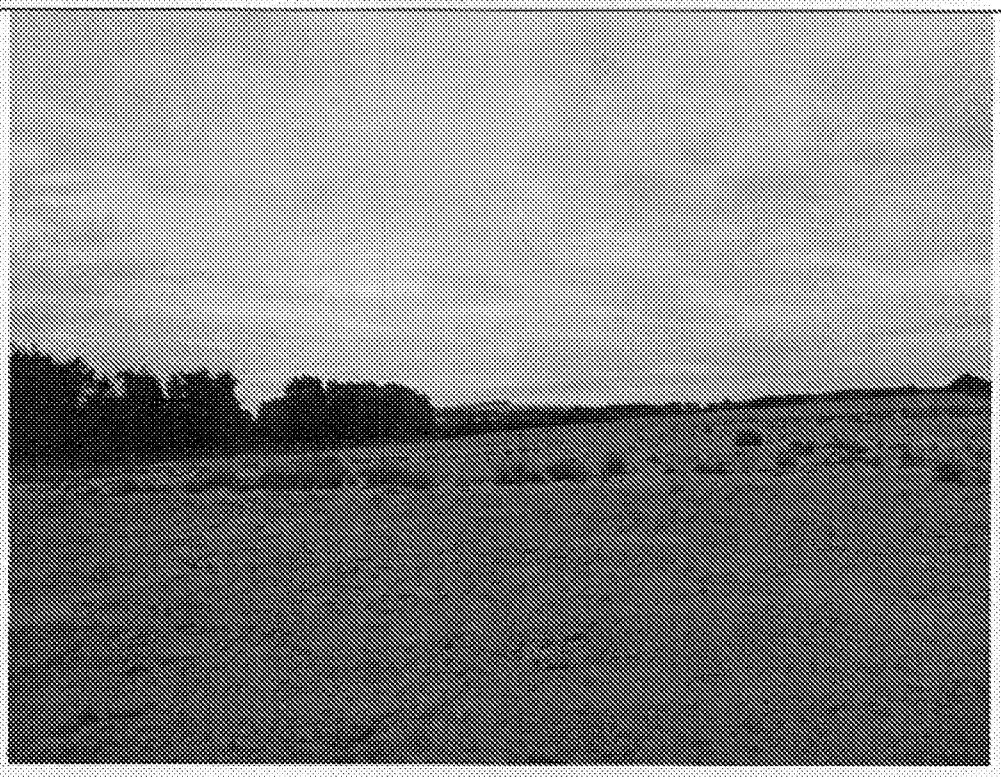
Site Location: West End Nursery, Angmering

Photo No. 25 **Date:** 07/07/2016 Image looking west across the POS, towards the site entrance and the south western bund.	
Photo No. 26 **Date:** 07/07/2016 Image looking north across the POS, towards the small buildings on the boundary of the site.	

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PHOTOGRAPHIC LOG

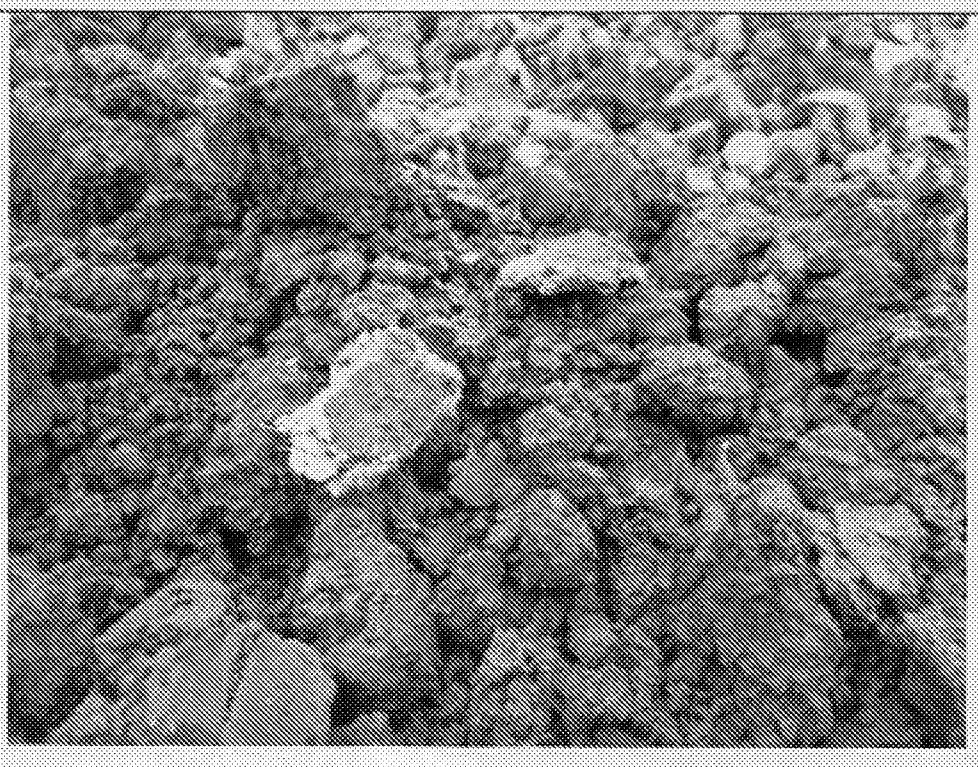
Site Location: West End Nursery, Angmering

Photo No. 27 **Date:** 07/07/2016 Image looking east across the POS, towards the north eastern bund.	
Photo No. 28 **Date:** 07/07/2016 POS V1 to a depth of 0.60m depth with the marker layer found at base.	

ARUN DISTRICT COUNCIL A/94/17/DOC

PHOTOGRAPHIC LOG

Site Location: West End Nursery, Angmering

Photo No. 29 **Date:** 07/07/2016 Cement bound asbestos found at a depth of 0.40m in POS V2.	
Photo No. 30 **Date:** 07/07/2016 POS V2 dug to a depth of 0.40m depth.	

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PHOTOGRAPHIC LOG

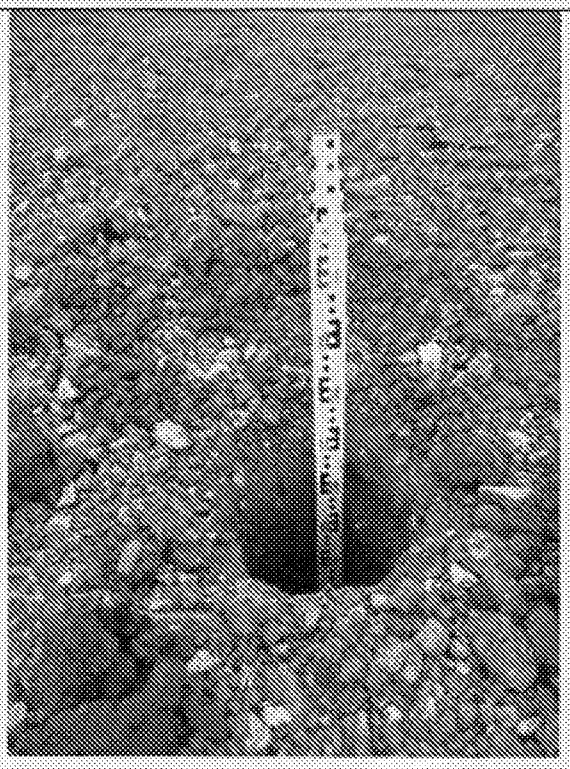
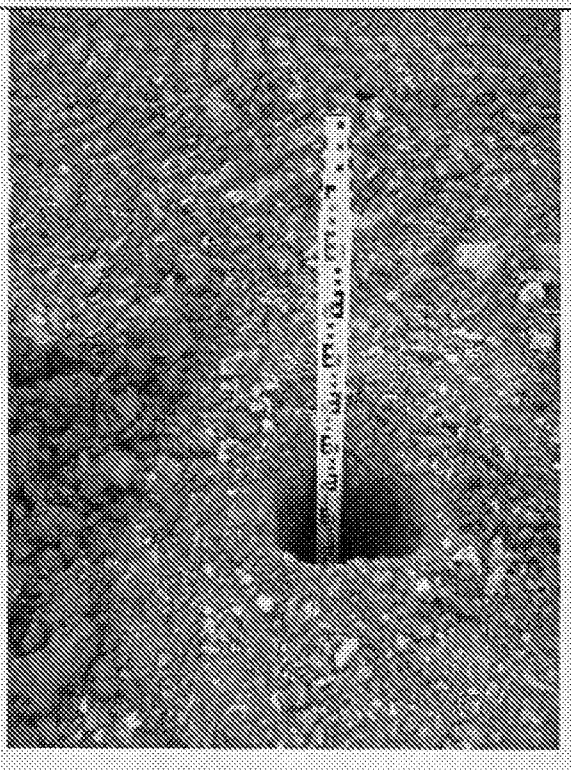
Site Location: West End Nursery, Angmering

Photo No. 31 **Date:** 07/07/2016 POS V3 dug to a depth of 0.60m.	
Photo No. 32 **Date:** 07/07/2016 POS V4 dug to a depth of 0.65m.	

ARUN DISTRICT COUNCIL A/94/17/DOC

PHOTOGRAPHIC LOG

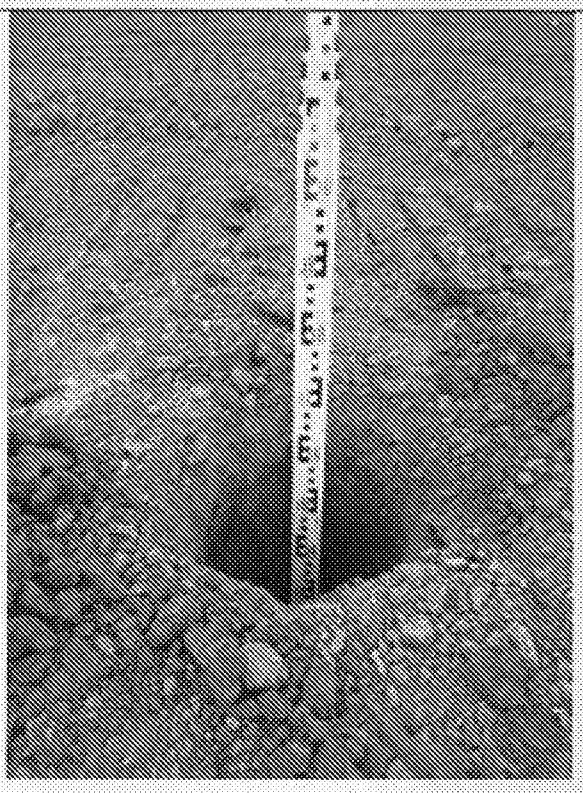
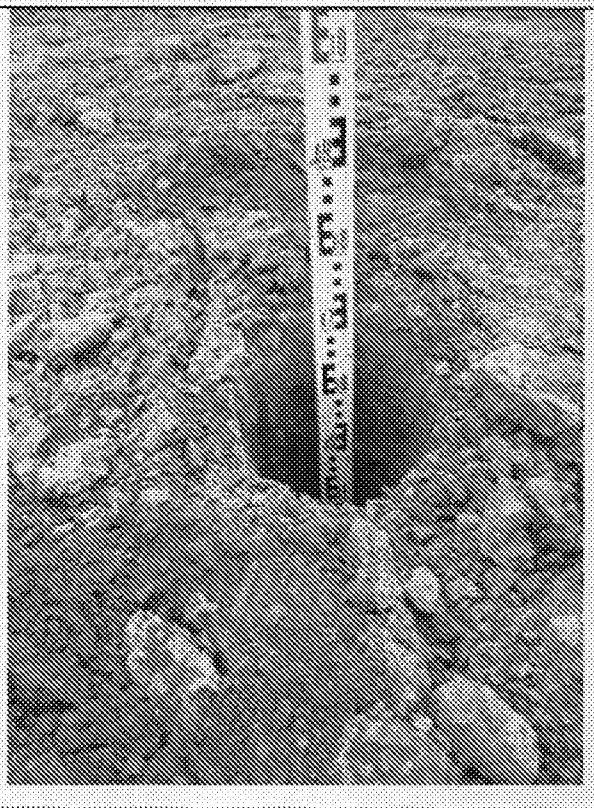
Site Location: West End Nursery, Angmering

Photo No. 33 **Date:** 07/07/2016 POS V5 dug to a depth of 0.65m.	
Photo No. 34 **Date:** 07/07/2016 POS V6 dug to a depth of 0.60m.	

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PHOTOGRAPHIC LOG

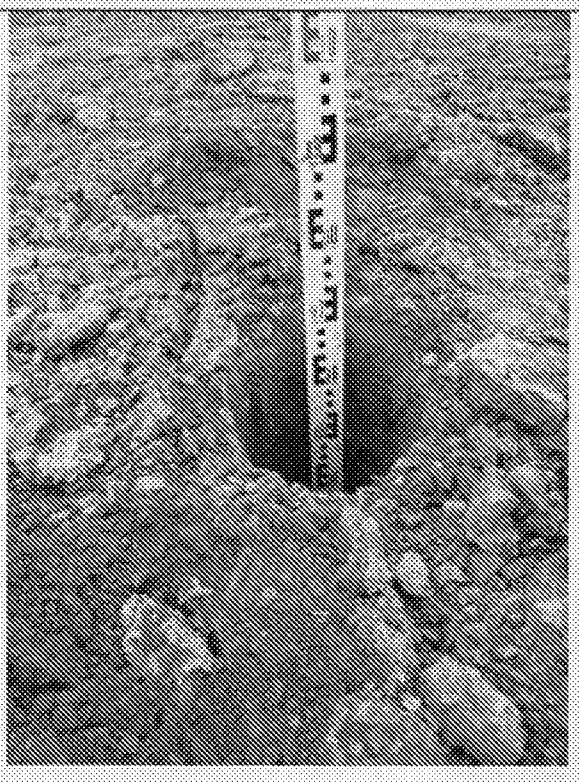
Site Location: West End Nursery, Angmering

Photo No. 35 **Date:** 07/07/2016 POS V7 dug to a depth of 0.65m.	
Photo No. 36 **Date:** 07/07/2016 POS V8 dug to a depth of 0.65m.	

ARUN DISTRICT COUNCIL A/94/17/DOC

PHOTOGRAPHIC LOG

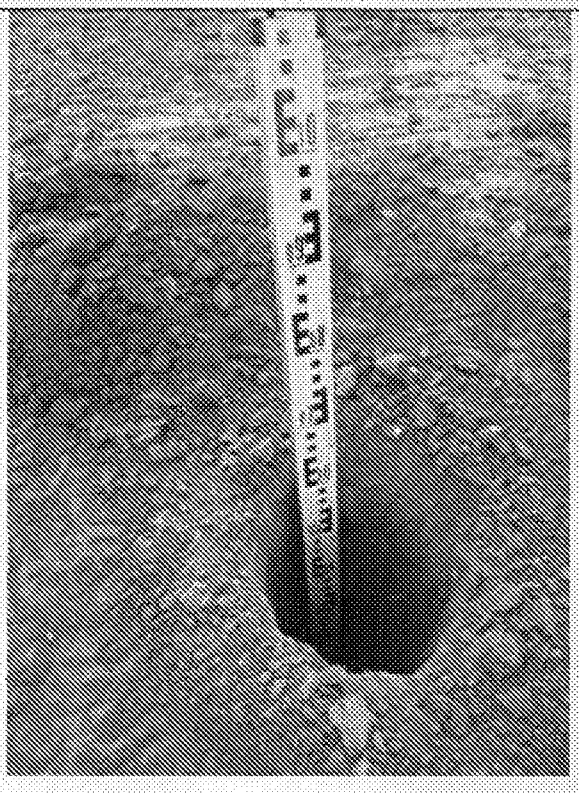
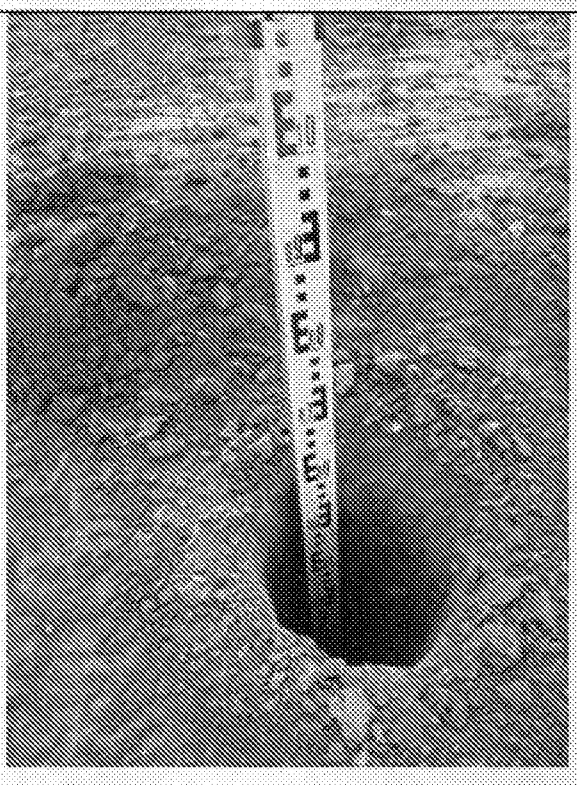
Site Location: West End Nursery, Angmering

Photo No. 37 **Date:** 07/07/2016 POS V9 dug to a depth of 0.45m	
Photo No. 38 **Date:** 07/07/2016 POS V11 dug to a depth of 0.63m.	

ARUN DISTRICT COUNCIL A/94/17/DOC

PHOTOGRAPHIC LOG

Site Location: West End Nursery, Angmering

Photo No. 39 **Date:** 07/07/2016 POS V12 dug to a depth of 0.65m.	
Photo No. 40 **Date:** 07/07/2016 POS V12 dug to a depth of 0.65m.	

ARUN DISTRICT COUNCIL A/94/17/DOC

PHOTOGRAPHIC LOG

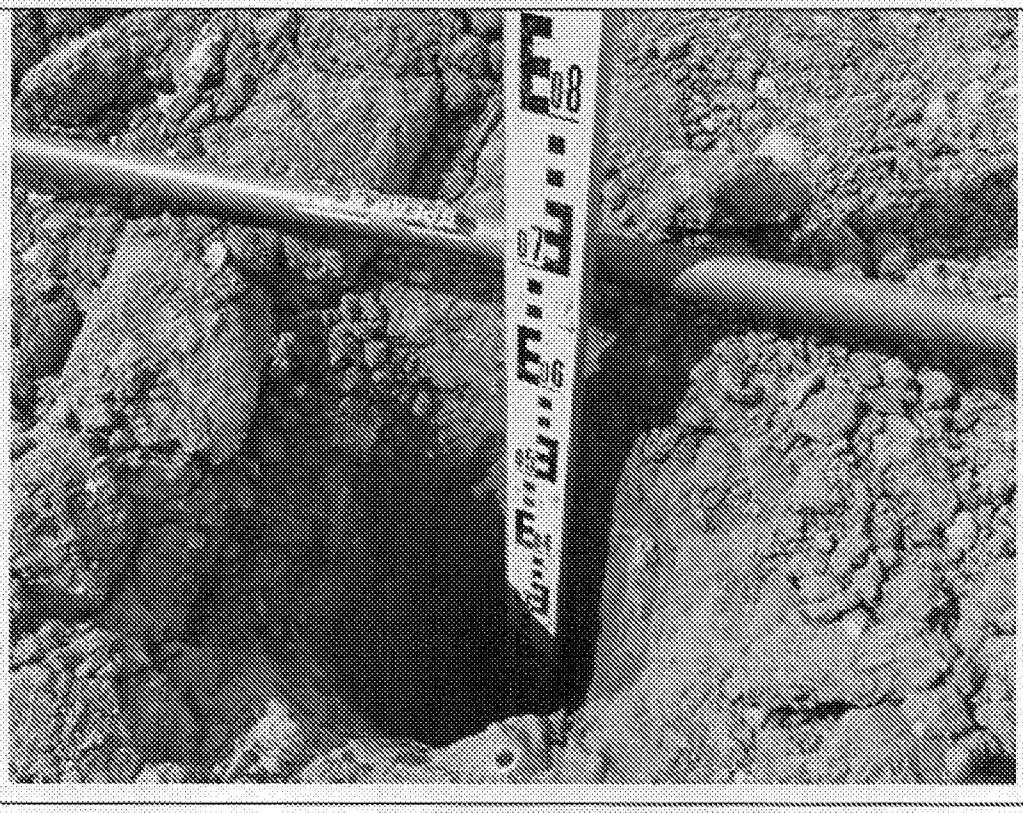
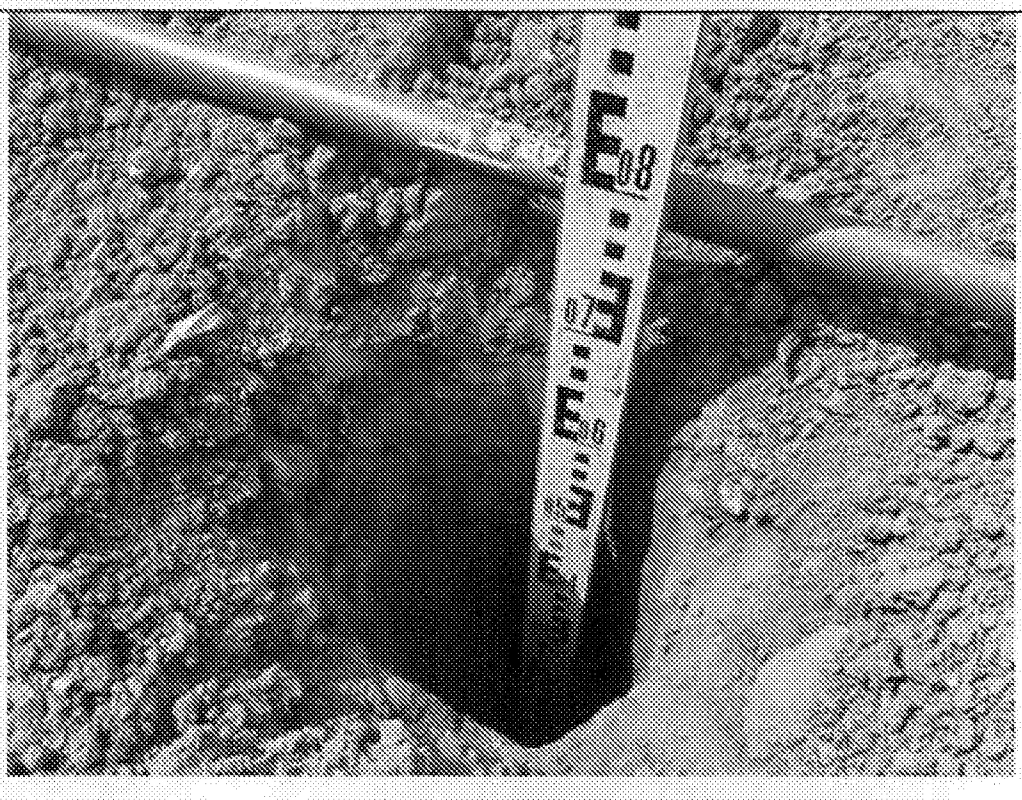
Site Location: West End Nursery, Angmering

Photo No. 41 **Date:** 25/07/2016 Image looking north east showing the north east bund.	
Photo No. 42 **Date:** 25/07/2016 NEB V1 to a depth of 0.65m depth.	

ARUN DISTRICT COUNCIL A/94/17/DOC

PHOTOGRAPHIC LOG

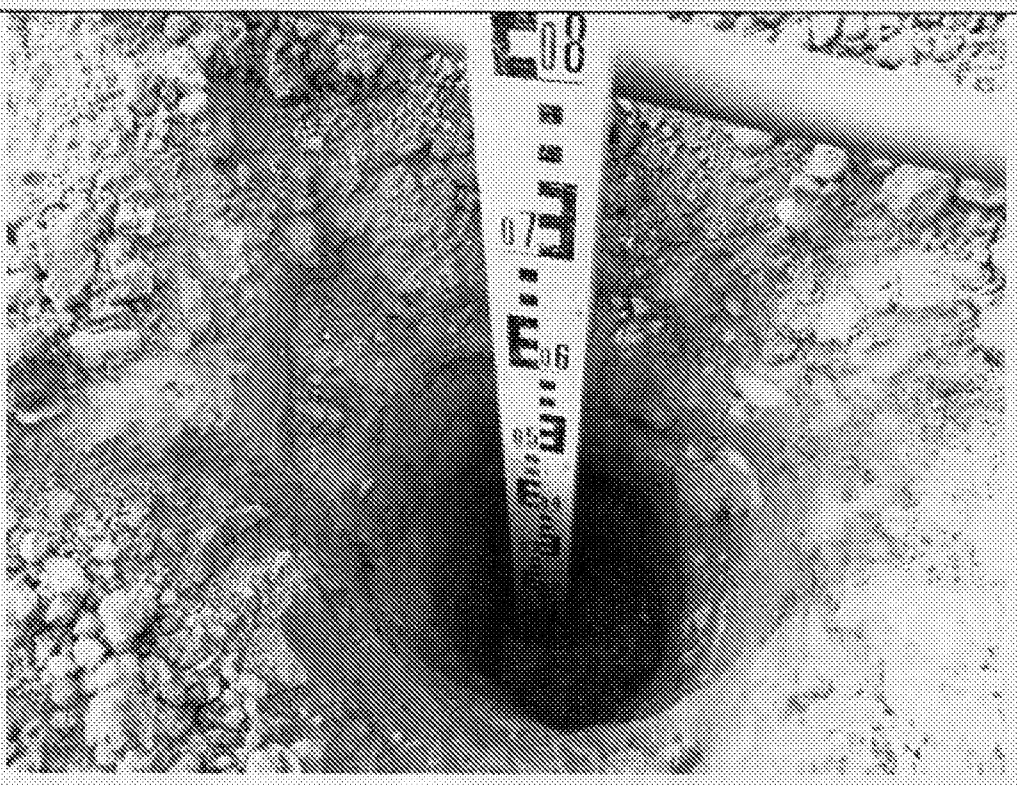
Site Location: West End Nursery, Angmering

Photo No. 43 **Date:** 25/07/2016 NEB V2 dug to a depth of 0.70m.	
Photo No. 44 **Date:** 25/07/2016 NEB V3 dug to a depth of 0.75m.	

ARUN DISTRICT COUNCIL A/94/17/DOC

PHOTOGRAPHIC LOG

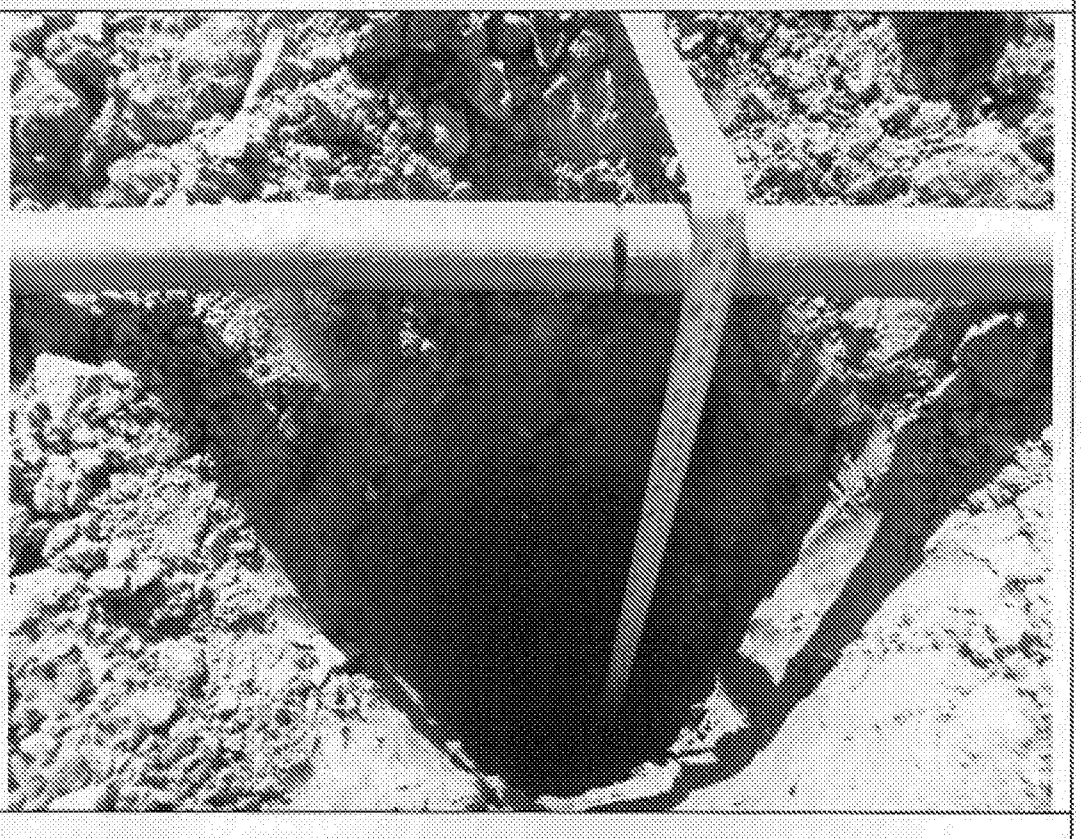
Site Location: West End Nursery, Angmering

Photo No. 45 **Date:** 25/07/2016 NEB V4 dug to a depth of 0.80m.	
Photo No. 46 **Date:** 22/08/2016 View looking east across POS area	

ARUN DISTRICT COUNCIL A/94/17/DOC

PHOTOGRAPHIC LOG

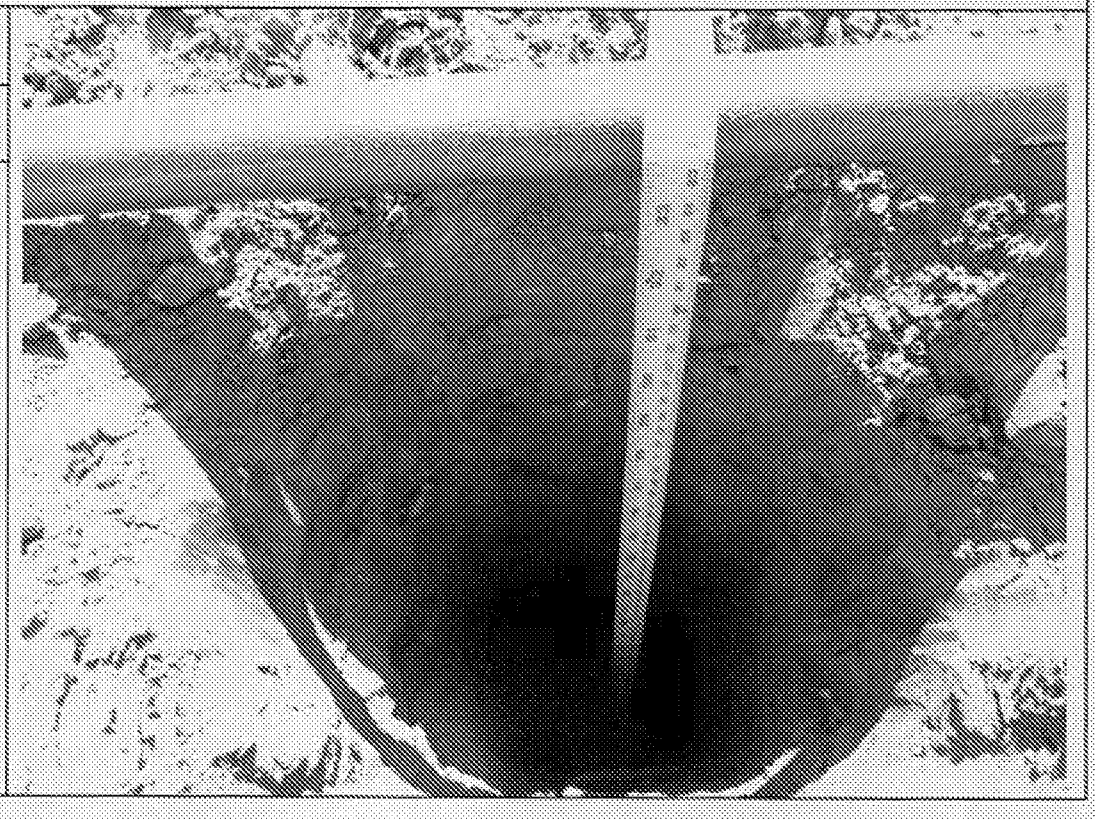
Site Location: West End Nursery, Angmering

Photo No. 47 **Date:** 22/08/2016 POS V13 (capping layer 0.65m)	
Photo No. 48 **Date:** 22/08/2016 POS V14 (capping layer 0.75m)	

ARUN DISTRICT COUNCIL A/94/17/DOC

PHOTOGRAPHIC LOG

Site Location: West End Nursery, Angmering

Photo No. 49 **Date:** 22/08/2016 POS V15 (capping layer 0.65m)	
Photo No. 50 **Date:** 22/08/2016 POS V16 (capping layer 0.85m)	

ARUN DISTRICT COUNCIL A/94/17/DOC

APPENDIX C
TRIAL PIT LOGS

RECORD OF TRIAL PITS

Date of Investigation: 09 June 2016

NWBV1

Ground level- 0.50m	Light brown slightly gravelly, silty CLAY / clayey SILT with rare fragments of fine brick, charcoal, glass, concrete and chalk.
0.50m	Orange marker layer
	END OF TRIAL PIT

Remarks
Disturbed sample at 0.20-0.40m

NWBV2

Ground level- 0.70m	Light brown slightly gravelly, silty CLAY / clayey SILT with rare fragments of charcoal, glass, concrete and chalk.
	END OF TRIAL PIT

Remarks
Side of bund
Disturbed sample at 0.20-0.40m
Orange marker layer not seen in trial pit, but was seen placed during construction.

NWBV3

Ground level- 0.30m	Light brown slightly gravelly, silty CLAY / clayey SILT with rare fragments of fine brick, charcoal, glass, concrete, chalk, black plastic sacking and a fragment of clay pipe.
0.30m	Orange marker layer
	END OF TRIAL PIT

Remarks
Disturbed sample at 0.10-0.30m

NWBV4

Ground level- 0.4m	Light brown slightly gravelly, silty CLAY / clayey SILT with rare fragments of fine brick, charcoal, glass, concrete and chalk.
0.40m	Orange marker layer
	END OF TRIAL PIT

Remarks
Disturbed sample at 0.20-0.4m

NWBV5

Ground level- 0.75m	Light brown slightly gravelly, silty CLAY / clayey SILT with rare fragments of fine brick, charcoal, glass, concrete and chalk.
	END OF TRIAL PIT

Remarks
Disturbed sample at 0.20-0.4m
Orange membrane was not seen but is known to have been placed during construction.

NWBV6

Ground level- 0.55m	Light brown slightly gravelly, silty CLAY / clayey SILT with rare fragments of fine brick, charcoal, glass, concrete and chalk.
0.55m	Orange marker layer
	END OF TRIAL PIT

Remarks
Disturbed sample at 0.20-0.4m

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NWBV7

Ground level- 0.55m	Light brown slightly gravelly, silty CLAY / clayey SILT with occasional fragments of charcoal and rare fragments of fine brick, glass, concrete and chalk.
0.55m	Orange marker layer
	END OF TRIAL PIT

Remarks
Disturbed sample at 0.30-0.50m

NWBV8

Ground level- 0.38m	Light brown slightly gravelly, silty CLAY / clayey SILT with rare fragments of fine brick, charcoal, glass, concrete and chalk.
0.38m	Orange marker layer
	END OF TRIAL PIT

Remarks
Disturbed sample at 0.30m

General Notes:

- A piece of ACM was visible in the shallow soils at the northern boundary toward the top/end of the bund. Reccommendation is to thoroughly hand pick the exposed faces around the boundary.
- Possible fragment of ACM (approx. 5cm length) seen at the surface half way between NWBV7 and NWBV8. Bulk sample NWBB1 obtained.

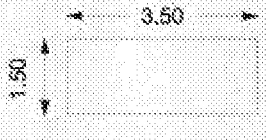
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPPoS1

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	27.04.16	---	---	1 of 1
	End: 27.04.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.00-0.50	1	ES	T+J+V			MADE GROUND: Very stiff reddish brown to greyish brown sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular to rounded fine to medium flint. Occasional asphalt fragments. Rare brick fragments.	(0.75)	
							0.75	
						MADE GROUND: Black asphalt.	1.00	
						Stiff brown slightly sandy CLAY. Sand is fine to coarse.	(1.00)	
1.80-1.80	2	ES	T+J+V					
							2.00	
2.00-2.20	3	ES	T+J+V			Stiff orangish brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular to rounded fine flint.	2.20	
2.50-3.00	3	ES	T+J+V			Stiff orangish brown slightly sandy very gravelly CLAY with a low cobble content. Sand is fine to coarse. Gravel is angular to rounded fine to coarse flint. Cobble is subangular to subrounded flint up to 70mm in size.	(0.90)	
							3.10	

Plan (Not to Scale)



General Remarks

1. 3 fragments of suspected asbestos cement found at surface level within a 5.00m radius - maximum size 100 x 40 x 5mm, average 40 x 40 x 5mm.
2. Trial pit terminated at 3.10m depth.
3. Trial pit remained dry and stable during excavation.
4. Backfilled with arisings.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	EHughes	

ARUN DISTRICT COUNCIL/V/94/17/DOO

GINT_LIBRARY_V8_05.03.8 Library: v8_05 - 1.802008 Projection: v8_05 - Core+Logs 2003 | c:\gi TRIAL PIT LOG | 27621 ANGMERING.GPJ - v8_05 | 18/10/16 - 15:11 | AJ2
Reproduced by RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437588, Fax: 01442 437500, Web: www.rsk.co.uk

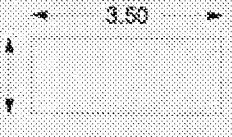
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPPoS2

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	27.04.16	---	---	1 of 1
	End: 27.04.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.00-0.20	1	D				MADE GROUND: Very stiff dark brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to rounded fine to coarse flint. Occasional asphalt fragments and organic remains. Rare brick fragments.	(0.45)	
							0.45	
						Stiff dark orangish brown sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular to rounded fine to coarse flint.	(0.85)	
							1.30	
						Firm orangish brown occasionally mottled dark grey sandy gravelly CLAY with a low cobble content. Sand is fine to coarse. Gravel is angular to rounded fine to coarse flint. Cobble is subrounded flint up to 110mm diameter. Occasional organic remains.	(0.40)	
							1.70	
2.00-3.00	2	ES				Orangish brown sandy very gravelly CLAY with a medium cobble content. Sand is fine to coarse. Gravel is angular to rounded fine to coarse flint. Cobble is subrounded flint up to 80mm diameter.	(1.50)	
							3.20	

Plan (Not to Scale)



General Remarks

1. 3 fragments of suspected asbestos cement found at surface level within a 5.00m radius - maximum size 70 x 40 x 5mm, average 30 x 30 x 5mm.
2. Trial pit terminated at 3.20m depth.
3. Trial pit remained dry and stable during excavation.
4. Backfilled with arisings.

All dimensions in metres

Scale: 1:25

Method Used:	Machine dug	Plant Used:	Tracked excavator	Logged By:	EHughes	Checked By:	

GINT LIBRARY: V8_05.03.8 Libversion: v8_05 - 160804 PVversion: v8_05 - CoreLogs 2003 | Log TRIAL PIT LOG | 27621 ANGMERING.GPJ - v8_05 | 18/10/16 - 18:11 | A3
RSK Environment Ltd 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437600, Fax: 01442 437500, Web: www.rsk.co.uk
ARUN DISTRICT COUNCIL A/94/17/DOC

FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPPoS3

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	End: 27.04.16	---	---	1 of 1

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Stiff brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to subrounded fine to medium flint. Rare brick and glass fragments.	(0.40)	
							0.40	
						MADE GROUND: Light grey and brownish yellow CONCRETE.	0.50	
						MADE GROUND: Stiff brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to subrounded fine to medium flint. Rare brick and glass fragments.	0.60	
						Stiff orangish brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular to rounded fine flint.		
1.80-2.20	1	ES	T+J+V				(2.40)	
						2.80-3.00m : becoming very gravelly with a low cobble content (10%); gravel is subangular to rounded fine to coarse flint, cobble is subangular to subrounded flint upto 150mm in size	3.00	

Plan (Not to Scale)



General Remarks

1. 18 fragments of suspected asbestos cement found at surface level within a 5.00m radius - maximum size 40 x 80 x 5mm, average 40 x 40 x 5mm.
2. Trial pit terminated at 3.00m depth.
3. Trial pit remained dry and stable during excavation.
4. Backfilled with arisings.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	EHughes	

© RSK LIBRARY_V8_09.03.8 Library.vdt_09 - 3/03/04 Polyfoam: v8_09 - ConeLog 3003 | Log TRIAL PIT LOG | 27621 ANGMERING.GPJ - v8_08 | 18/10/16 - 16:11 | AJ2
RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437500, Fax: 01442 437550, Web: www.rsk.co.uk

ARUN DISTRICT COUNCIL V94/17/DOO

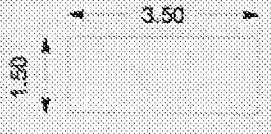
FINAL TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPPoS4

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	27.04.16	---	---	1 of 1
	End: 27.04.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Firm greyish brown sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular to rounded fine to medium flint. Occasional asphalt fragments. Rare brick fragments.	(1.25)	
							1.25	
1.30-1.70	1	ES	T+J+V			Stiff orangish brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular to rounded fine flint.	(0.50)	
							1.75	
2.00-2.50	2	ES	T+J+V			Stiff orangish brown slightly sandy very gravelly CLAY with a low cobble content. Sand is fine to coarse. Gravel is angular to rounded fine to coarse flint. Cobble is subangular to subrounded flint up to 100mm in size.		
2.20-2.40	3	ES	T+J+V				(1.35)	
							3.10	

Plan (Not to Scale)



General Remarks

1. Single fragment of suspected asbestos cement found at surface level within a 5.00m radius - size is 50 x 40 x 5mm.
2. Trial pit terminated at 3.10m depth.
3. Trial pit remained dry and stable during excavation.
4. Backfilled with arisings.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	EHughes	

GINT_LIBRARY_V8_05.03.0.Library.vs8_05 - 1.80004.Pylversion: v8_35 - Cala+Logs 0003 [Log TRIAL PIT LOG] 27621 ANGMERING.GPJ - v8_05 [16/10/16 - 15:11] A4/2.
RSK Environment Ltd, 18 Progress Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437600, Fax: 01442 437650. Web: www.rsk.co.uk.
ARUN DISTRICT COUNCIL/A/94/17/DOC

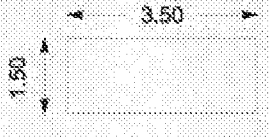
FINAL TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPPoS5

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	27.04.16	---	---	1 of 1
	End: 27.04.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Very stiff dark brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to rounded fine to coarse flint. Occasional asphalt fragments and organic matter. Rare brick fragments.	(0.50)	
							0.50	
						Stiff dark orangish brown sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular to rounded fine to coarse flint.		
1.00-1.50	1	ES	T+J+V				(1.20)	
							1.70	
						Firm orangish brown occasionally mottled dark grey sandy gravelly CLAY with a low cobble content. Sand is fine to coarse. Gravel is angular to rounded fine to coarse flint. Cobble is subrounded flint up to 110mm diameter. Occasional organic remains.		
2.00-2.50	2	ES	T+J+V				(1.20)	
						2.50-2.90m : becoming stiff		
							2.90	
2.90-3.00	3	D				Orangish brown clayey sandy GRAVEL with a medium cobble content. Sand is fine to coarse. Gravel is angular to rounded fine to coarse flint. Cobble is subrounded flint up to 80mm diameter.	3.00	

Plan (Not to Scale)



General Remarks

1. Single fragment of suspected asbestos cement found at surface level within a 5.00m radius - size 115 x 75 x 5mm.
2. Trial pit terminated at 3.00m depth.
3. Trial pit remained dry and stable during excavation.
4. Backfilled with arisings.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	EHughes	

AGS

ARUN DISTRICT COUNCIL A/94/17/DOC
CLIENT_LIBRARY_V8_05.GLB LibVersion: v8_05 - 1.8A2054 ProjVersion: v8_05 - Core+Logs 2003 | Log TRIAL PIT LOG | 27621 ANGMERING.GPJ - v8_05 | 18/10/16 - 16:11 | AD
RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437560. Fax: 01442 437580. Web: www.rsk.co.uk

APPENDIX D
LABORATORY RESULTS

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 16/02575
Issue Number: 1 **Date:** 12 May, 2016

Client:
RSK Environment Ltd Hemel
18 Frogmore Road
Hemel Hempstead
Hertfordshire
UK
HP3 9RT

Project Manager: Andrew James/Edward Hughes/Nigel Austin
Project Name: Land at West End Nursery, Angmering
Project Ref: 27621
Order No: N/A
Date Samples Received: 03/05/16
Date Instructions Received: 03/05/16
Date Analysis Completed: 12/05/16

Prepared by:

[redacted]

Kate Ellison
Administrative Assistant

Approved by:

[redacted]

Gill Walker
Laboratory Manager

MCERTS

UKAS TESTING 1247

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/02575

Client Project Name: Land at West End Nursery, Angmering

Client Project Ref: 27621

Lab Sample ID	16/02575/1	16/02575/2	16/02575/3	16/02575/4	16/02575/5	16/02575/6	16/02575/7	16/02575/8	Units	Method ref
Client Sample No	2	2	1	2	1	1	1	1		
Client Sample ID	TPPoS1	TPPoS2	TPPoS3	TPPoS4	TPPoS5	SV5	SV6	SV7		
Depth to Top	1.50	3.00	1.80	2.00	1.00	0.20	0.15	0.20		
Depth To Bottom	1.80	3.06	2.20	2.50	1.50		0.20	0.30		
Date Sampled	27-Apr-16	27-Apr-16	27-Apr-16	27-Apr-16	27-Apr-16	27-Apr-16	27-Apr-16	27-Apr-16		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - D	Soil - D	Soil - D		
Sample Matrix Code	5	3A	5	3A	3A	1A	1A	1		
% Stones >10mm$_A$	<0.1	53.9	<0.1	45.0	<0.1	-	-	-	% w/w	A-T-044
pH$_D$	7.58	6.87	7.03	7.48	7.13	-	-	-	pH	A-T-057a
Sulphate (water sol 2:1)$_D$	0.05	0.05	0.05	0.01	0.09	-	-	-	g/l	A-T-058a
Sulphate (acid soluble)$_D$	240	<200	<200	<200	370	-	-	-	mg/kg	A-T-058c
Arsenic$_D$	5	3	5	3	5	-	-	-	mg/kg	A-T-064a
Cadmium$_D$	0.6	0.5	0.6	<0.5	0.6	-	-	-	mg/kg	A-T-064a
Copper$_D$	10	8	9	13	10	-	-	-	mg/kg	A-T-064a
Chromium$_D$	24	19	23	13	28	-	-	-	mg/kg	A-T-064a
Lead$_D$	11	4	10	6	12	-	-	-	mg/kg	A-T-064a
Mercury$_D$	<0.17	<0.17	<0.17	<0.17	<0.17	-	-	-	mg/kg	A-T-064a
Nickel$_D$	20	10	16	11	20	-	-	-	mg/kg	A-T-064a
Selenium$_D$	<1	<1	<1	<1	<1	-	-	-	mg/kg	A-T-064a
Zinc$_D$	49	18	39	18	40	-	-	-	mg/kg	A-T-064a

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/02575

Client Project Name: Land at West End Nursery, Angmering

Client Project Ref: 27621

Lab Sample ID	16/02575/1	16/02575/2	16/02575/3	16/02575/4	16/02575/5	16/02575/6	16/02575/7	16/02575/8	Units	Method ref
Client Sample No	2	2	1	2	1	1	1	1		
Client Sample ID	TPPoS1	TPPoS2	TPPoS3	TPPoS4	TPPoS5	SV5	SV6	SV7		
Depth to Top	1.50	2.00	1.80	2.00	1.00	0.20	0.15	0.30		
Depth To Bottom	1.80	3.00	2.20	2.50	1.50		0.20	0.30		
Date Sampled	27-Apr-16	27-Apr-16	27-Apr-16	27-Apr-16	27-Apr-16	27-Apr-16	27-Apr-16	27-Apr-16		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - D	Soil - D	Soil - D		
Sample Matrix Code	5	3A	5	3A	3A	1A	1A	1		
Asbestos in Soil (inc. matrix)										
Asbestos in soil[x]	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD		[illegible]
Asbestos ACM - Suitable for Water Absorption Test?[c]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		[illegible]

ARUN DISTRICT COUNCIL A/94/17/DOC

Lab Sample ID	16/02575/1	16/02575/2	16/02575/3	16/02575/4	16/02575/5	16/02575/6	16/02575/7	16/02575/8	Units	Method ref
Client Sample No	2	2	1	2	1	1	1	1		
Client Sample ID	TPPoS1	TPPoS2	TPPoS3	TPPoS4	TPPoS5	SV5	SV6	SV7		
Depth to Top	1.50	2.00	1.80	2.00	1.50	0.20	0.15	0.20		
Depth To Bottom	1.80	3.00	2.20	2.50	1.50		0.25	0.35		
Date Sampled	27-Apr-16	27-Apr-16	27-Apr-16	27-Apr-16	27-Apr-16	27-Apr-16	27-Apr-16	27-Apr-16		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - D	Soil - D	Soil - D		
Sample Matrix Code	5	3A	5	3A	3A	1A	1A	1		
PAH 16										
Acenaphthene$_4$	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	mg/kg	A-T-0156
Acenaphthylene$_4$	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	mg/kg	A-T-0156
Anthracene$_4$	<0.02	<0.02	<0.02	<0.02	<0.02	-	-	-	mg/kg	A-T-0156
Benzo(a)anthracene$_4$	<0.04	<0.04	<0.04	<0.04	<0.04	-	-	-	mg/kg	A-T-0156
Benzo(a)pyrene$_4$	<0.04	<0.04	<0.04	<0.04	<0.04	-	-	-	mg/kg	A-T-0156
Benzo(b)fluoranthene$_4$	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	mg/kg	A-T-0156
Benzo(ghi)perylene$_4$	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	mg/kg	A-T-0156
Benzo(k)fluoranthene$_4$	<0.07	<0.07	<0.07	<0.07	<0.07	-	-	-	mg/kg	A-T-0156
Chrysene$_4$	<0.06	<0.06	<0.06	<0.06	<0.06	-	-	-	mg/kg	A-T-0156
Dibenzo(ah)anthracene$_4$	<0.04	<0.04	<0.04	<0.04	<0.04	-	-	-	mg/kg	A-T-0156
Fluoranthene$_4$	<0.08	<0.08	<0.08	<0.08	<0.08	-	-	-	mg/kg	A-T-0156
Fluorene$_4$	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	mg/kg	A-T-0156
Indeno(123-cd)pyrene$_4$	<0.03	<0.03	<0.03	<0.03	<0.03	-	-	-	mg/kg	A-T-0156
Naphthalene$_4$	<0.03	<0.03	<0.03	<0.03	<0.03	-	-	-	mg/kg	A-T-0156
Phenanthrene$_4$	<0.03	<0.03	<0.03	<0.03	<0.03	-	-	-	mg/kg	A-T-0156
Pyrene$_4$	<0.07	<0.07	<0.07	<0.07	<0.07	-	-	-	mg/kg	A-T-0156
PAH (total 16)$_4$	<0.08	<0.08	<0.08	<0.08	<0.08	-	-	-	mg/kg	A-T-0156

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/02575

Client Project Name: Land at West End Nursery, Angmering

Client Project Ref: 27621

Lab Sample ID	16/02575/1	16/02575/2	16/02575/3	16/02575/4	16/02575/5	16/02575/6	16/02575/7	16/02575/8	Units	Method ref
Client Sample No	2	2	1	2	1	1	1	1		
Client Sample ID	TPPoS1	TPPoS2	TPPoS3	TPPoS4	TPPoS5	SV5	SV6	SV7		
Depth to Top	1.50	2.00	1.80	2.00	1.50	0.20	0.15	0.20		
Depth To Bottom	1.80	3.00	2.20	2.50	1.50		0.25	0.30		
Date Sampled	27-Apr-16	27-Apr-16	27-Apr-16	27-Apr-16	27-Apr-16	27-Apr-16	27-Apr-16	27-Apr-16		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - D	Soil - D	Soil - D		
Sample Matrix Code	5	3A	5	3A	3A	1A	1A	1		
TPH CWG										
Ali >C5-C6$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	mg/kg	
Ali >C6-C8$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	mg/kg	
Ali >C8-C10$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	mg/kg	
Ali >C10-C12$_A^*$	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	mg/kg	
Ali >C12-C16$_A^*$	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	mg/kg	
Ali >C16-C21$_A^*$	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	mg/kg	
Ali >C21-C35$_A^*$	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	mg/kg	
Total Aliphatics$_A$	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	mg/kg	
Aro >C5-C7$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	mg/kg	
Aro >C7-C8$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	mg/kg	
Aro >C8-C9$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	mg/kg	
Aro >C9-C10$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	mg/kg	
Aro >C10-C12$_A^*$	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	mg/kg	
Aro >C12-C16$_A^*$	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	mg/kg	
Aro >C16-C21$_A^*$	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	mg/kg	
Aro >C21-C35$_A^*$	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	mg/kg	
Total Aromatics$_A$	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	mg/kg	
TPH (Ali & Aro)$_A$	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	mg/kg	
STEX - Benzene$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	mg/kg	
STEX - Toluene$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	mg/kg	
STEX - Ethyl Benzene$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	mg/kg	
STEX - m & p Xylene$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	mg/kg	
STEX - o Xylene$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	mg/kg	
MTBE$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	mg/kg	

ARUN DISTRICT COUNCIL A/94/17/DOC

Lab Sample ID	16/02575/9	16/02575/10	16/02575/11	16/02575/12	16/02575/13	16/02575/14	16/02575/15	16/02575/16	Units	Method ref
Client Sample No	1	1	1	1	1	1	1	1		
Client Sample ID	SV8	HASV1	HASV2	HASV3	HASV4	SWV1	SWV2	SWV9		
Depth to Top	0.20	0.50	0.50	0.50	0.50	0.10	0.15	0.10		
Depth To Bottom	0.25	0.60	0.60	0.70	0.60	0.20	0.25	0.30		
Date Sampled	27-Apr-16	28-Apr-16	28-Apr-16	28-Apr-16	28-Apr-16	28-Apr-16	28-Apr-16	28-Apr-16		
Sample Type	Soil - D	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - D	Soil - D	Soil - D		
Sample Matrix Code	4A	4A	1A	4A	4	SAE	4A	4A		
Asbestos in Soil (inc. matrix)										
Asbestos in soil[x*]	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD		[illegible]
Asbestos ACM - Suitable for Water Absorption Test?[D]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		Gravimetry

ARUN DISTRICT COUNCIL A/94/17/DOC

Lab Sample ID	16/02575/9	16/02575/10	16/02575/11	16/02575/12	16/02575/13	16/02575/14	16/02575/15	16/02575/16	Units	Method ref
Client Sample No	1	1	1	1	1	1	1	1		
Client Sample ID	SV9	HASV1	HASV2	HASV3	HASV4	SWV1	SWV2	SWV3		
Depth to Top	0.20	0.50	0.50	0.50	0.50	0.10	0.15	0.10		
Depth To Bottom	0.25	0.60	0.60	0.70	0.60	0.20	0.25	0.30		
Date Sampled	27-Apr-16	28-Apr-16	28-Apr-16	28-Apr-16	28-Apr-16	28-Apr-16	28-Apr-16	28-Apr-16		
Sample Type	Soil - D	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - D	Soil - D	Soil - D		
Sample Matrix Code	4A	4A	1A	4A	4	8AE	4A	4A		
Pest-c										
Mevinphos$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Dichlorvos$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
alpha-Hexachlorocyclohexane (HCH)$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Diazinon$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
gamma-Hexachlorocyclohexane (HCH / Lindane)$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Heptachlor$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Aldrin$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
beta-Hexachlorocyclohexane (HCH)$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Methyl Parathion$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Malathion$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Fenitrothion$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Heptachlor Epoxide$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Parathion (Ethyl Parathion)$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
o,p-DDE$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
o,p-DDT$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
o,p-Methoxychlor$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
o,p-TDE (DDD)$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
p,p-DDE$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
p,p-DDT$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
p,p-Methoxychlor$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
p,p-TDE (DDD)$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Endosulphan I$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Endosulphan II$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Endosulphan Sulphate$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Endrin$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Ethion$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Dieldrin$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Azinphos-methyl$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon

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Lab Sample ID	16/02575/9	16/02575/10	16/02575/11	16/02575/12	16/02575/13	16/02575/14	16/02575/15	16/02575/16	Units	Method ref
Client Sample No	1	1	1	1	1	1	1	1		
Client Sample ID	SV3	HASV1	HASV2	HASV3	HASV4	SWV1	SWV2	SWV3		
Depth to Top	0.20	0.50	0.50	0.50	0.50	0.10	0.15	0.10		
Depth To Bottom	0.25	0.60	0.60	0.70	0.60	0.20	0.25	0.30		
Date Sampled	27-Apr-16	28-Apr-16	28-Apr-16	28-Apr-16	28-Apr-16	28-Apr-16	28-Apr-16	28-Apr-16		
Sample Type	Soil - D	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - D	Soil - D	Soil - D		
Sample Matrix Code	4A	4A	4A	4A	4	6AE	4A	4A		
Triazine Herbicides (Nitrogen Pesticides)										
Ametryn [A]	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Atraton [A]	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Atrazine [A]	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Prometon [A]	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Prometryn [A]	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Propazine [A]	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Simazine [A]	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Simetryn [A]	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Terbuthylazine [A]	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Terbutryn [A]	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon

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Lab Sample ID	16/02575/17	16/02575/18	16/02575/19						Units	Method ref
Client Sample No	1	1	1							
Client Sample ID	SWV10	SWV11	SWV12							
Depth to Top	0.20	0.20	0.25							
Depth To Bottom		0.40								
Date Sampled	28-Apr-16	28-Apr-16	28-Apr-16							
Sample Type	Soil - ES	Soil - D	Soil - D							
Sample Matrix Code	6E	4A	5A							
Asbestos in Soil (inc. matrix)										
Asbestos in soil[4,2]	NAD	NAD	Crocidolite & Chrysotile							A-Tech
Asbestos Matrix (microscope)[4]	-	-	Loose Fibres							A-Tech
Asbestos ACM - Suitable for Water Absorption Test?[2]	N/A	N/A	N/A							Stoneware
Asbestos in Soil Quantification % (Hand Picking & Weighing)										
Asbestos in soil % composition (hand picking and weighing)[6]	-	-	<0.001						% w/w	A-Tech

ARUN DISTRICT COUNCIL A/94/17/DOC

REPORT NOTES

Notes - Soil chemical analysis
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones and brick and concrete fragments >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis. For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

Notes - General
This report shall not be reproduced, except in full, without written approval from Envirolab.
Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.
All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supersedes any "A" subscripts.
All analysis is performed on the sample as received for soil samples which are positive for asbestos and/or if they are from outside the European Union and this supercedes any "D" subscripts.
Superscript "M" indicates method accredited to MCERTS.
If results are in italic font they are associated with an AQC failure. These are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

TPH analysis of water by method A-T-007
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Asbestos in soil
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if present as discrete fibres/fragments. Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.
Samples with Matrix Code 7 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations.

Secondary Matrix Codes:
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.

ARUN DISTRICT COUNCIL A/94/17/DOC

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 16/03628
Issue Number: 1 **Date:** 04 July, 2016

Client: RSK Environment Ltd Tonbridge
Anerley Court, Half Moon Lane, Hildenborough
Tonbridge
Kent
TN11 9HU

Project Manager: Andrew James/Nigel Austin
Project Name: Angmering
Project Ref: 27621
Order No: N/A
Date Samples Received: 14/06/16
Date Instructions Received: 15/06/16
Date Analysis Completed: 04/07/16

Prepared by:

[redacted]

Kate Ellison
Administrative Assistant

Approved by:

[redacted]

Gill Walker
Laboratory Manager

CERTS
UKAS
1247

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/03628

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/03628/1	16/03628/2	16/03628/3	16/03628/4	16/03628/5	16/03628/6	16/03628/7	16/03628/8	Units	Method ref
Client Sample No										
Client Sample ID	NWB B1	NWB V1	NWB V2	NWB V3	NWB V4	NWB V5	NWB V6	NWB V7		
Depth to Top		0.20	0.20	0.10	0.20	0.20	0.20	0.30		
Depth To Bottom		0.40	0.40	0.50	0.40	0.40	0.40	0.50		
Date Sampled	09-Jun-16	09-Jun-16	09-Jun-16	09-Jun-16	09-Jun-16	09-Jun-16	09-Jun-16	09-Jun-16		
Sample Type	Solid - Fragment / Tile	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	S	4A	1A	4A	1A	5A	5A	4A		
% Stones >10mm$_A^F$	-	<0.1	-	<0.1	2.5	-	3.8	-	% w/w	A/T-004
pH$_D^{MC}$	-	7.75	-	7.61	7.62	-	7.84	-	pH	A/T-005
Sulphate (water sol 2:1)$_D^{MC}$	-	0.10	-	0.10	0.07	-	0.06	-	g/l	A/T-006
Sulphate (acid soluble)$_D^{MC}$	-	450	-	440	320	-	340	-	mg/kg	A/T-006
Arsenic$_D^{MC}$	-	6	-	7	6	-	7	-	mg/kg	A/T-006
Cadmium$_D^{MC}$	-	1.2	-	1.2	1.3	-	1.3	-	mg/kg	A/T-006
Copper$_D^{MC}$	-	46	-	34	19	-	14	-	mg/kg	A/T-006
Chromium$_D^{MC}$	-	24	-	28	30	-	28	-	mg/kg	A/T-006
Lead$_D^{MC}$	-	49	-	71	49	-	34	-	mg/kg	A/T-006
Mercury$_D$	-	<0.17	-	<0.17	<0.17	-	<0.17	-	mg/kg	A/T-006
Nickel$_D^{MC}$	-	17	-	18	22	-	22	-	mg/kg	A/T-006
Selenium$_D$	-	1	-	<1	<1	-	<1	-	mg/kg	A/T-006
Zinc$_D^{MC}$	-	84	-	88	67	-	60	-	mg/kg	A/T-006

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/03628

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/03628/1	16/03628/2	16/03628/3	16/03628/4	16/03628/5	16/03628/6	16/03628/7	16/03628/8	Units	Method ref
Client Sample No										
Client Sample ID	NWB B1	NWB V1	NWB V2	NWB V3	NWB V4	NWB V5	NWB V6	NWB V7		
Depth to Top		0.20	0.20	0.10	0.20	0.20	0.20	0.30		
Depth To Bottom		0.40	0.40	0.50	0.40	0.40	0.40	0.50		
Date Sampled	09-Jun-16	09-Jun-16	09-Jun-16	09-Jun-16	09-Jun-16	09-Jun-16	09-Jun-16	09-Jun-16		
Sample Type	Solid - Fragment / Tile	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	8	4A	1A	4A	1A	5A	5A	4A		
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_a$*	-	NAD	NAD	NAD	NAD	NAD	NAD	NAD		A-T085
Asbestos ACM - Suitable for Water Absorption Test?$_b$	-	N/A	N/A	N/A	N/A	N/A	N/A	N/A		Gravimetry
Bulk Fibre ID (inc. matrix)										
Bulk Fibre Identification$_a$*	Chrysotile	-	-	-	-	-	-	-		A-T085
Bulk Fibre Identification Matrix (visual)$_a$	Cement	-	-	-	-	-	-	-		A-T085
Bulk Fibre Identification - Suitable for Water Absorption Test?$_b$	Yes	-	-	-	-	-	-	-		Gravimetry

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/03628

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/03628/1	16/03628/2	16/03628/3	16/03628/4	16/03628/5	16/03628/6	16/03628/7	16/03628/8	Units	Method ref
Client Sample No										
Client Sample ID	NWB B1	NWB V1	NWB V2	NWB V3	NWB V4	NWB V5	NWB V6	NWB V7		
Depth to Top		0.20	0.20	0.10	0.20	0.20	0.20	0.30		
Depth To Bottom		0.40	0.40	0.50	0.40	0.40	0.40	0.50		
Date Sampled	09-Jun-16	09-Jun-16	09-Jun-16	09-Jun-16	09-Jun-16	09-Jun-16	09-Jun-16	09-Jun-16		
Sample Type	Solid - Fragment / Tile	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	8	4A	1A	4A	1A	5A	5A	4A		
PAH 16										
Acenaphthene$_A^{MC}$	-	<0.01	-	<0.01	<0.01	-	<0.01	-	mg/kg	A/T/S/Mx
Acenaphthylene$_A^{MC}$	-	<0.01	-	<0.01	<0.01	-	<0.01	-	mg/kg	A/T/S/Mx
Anthracene$_A^{MC}$	-	<0.02	-	<0.02	<0.02	-	<0.02	-	mg/kg	A/T/S/Mx
Benzo(a)anthracene$_A^{MC}$	-	<0.04	-	<0.04	<0.04	-	<0.04	-	mg/kg	A/T/S/Mx
Benzo(a)pyrene$_A^{MC}$	-	<0.04	-	<0.04	<0.04	-	<0.04	-	mg/kg	A/T/S/Mx
Benzo(b)fluoranthene$_A^{MC}$	-	<0.05	-	0.07	<0.05	-	<0.05	-	mg/kg	A/T/S/Mx
Benzo(ghi)perylene$_A^{MC}$	-	<0.05	-	<0.05	<0.05	-	<0.05	-	mg/kg	A/T/S/Mx
Benzo(k)fluoranthene$_A^{MC}$	-	<0.07	-	<0.07	<0.07	-	<0.07	-	mg/kg	A/T/S/Mx
Chrysene$_A^{MC}$	-	<0.06	-	<0.06	<0.06	-	<0.06	-	mg/kg	A/T/S/Mx
Dibenzo(ah)anthracene$_A^{MC}$	-	<0.04	-	<0.04	<0.04	-	<0.04	-	mg/kg	A/T/S/Mx
Fluoranthene$_A^{MC}$	-	<0.08	-	<0.08	<0.08	-	<0.08	-	mg/kg	A/T/S/Mx
Fluorene$_A^{MC}$	-	<0.01	-	<0.01	<0.01	-	<0.01	-	mg/kg	A/T/S/Mx
Indeno(123-cd)pyrene$_A^{MC}$	-	<0.03	-	0.05	<0.03	-	<0.03	-	mg/kg	A/T/S/Mx
Naphthalene$_A^{MC}$	-	<0.03	-	<0.03	<0.03	-	<0.03	-	mg/kg	A/T/S/Mx
Phenanthrene$_A^{MC}$	-	<0.03	-	<0.03	<0.03	-	<0.03	-	mg/kg	A/T/S/Mx
Pyrene$_A^{MC}$	-	<0.07	-	<0.07	<0.07	-	<0.07	-	mg/kg	A/T/S/Mx
PAH (total 16)$_A^{MC}$	-	<0.08	-	0.12	<0.08	-	<0.08	-	mg/kg	A/T/S/Mx

Envirolab Job Number: 16/03628

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/03628/1	16/03628/2	16/03628/3	16/03628/4	16/03628/5	16/03628/6	16/03628/7	16/03628/8	Units	Method ref
Client Sample No										
Client Sample ID	NWB B1	NWB V1	NWB V2	NWB V3	NWB V4	NWB V5	NWB V6	NWB V7		
Depth to Top		0.20	0.20	0.10	0.20	0.20	0.20	0.30		
Depth To Bottom		0.40	0.40	0.50	0.40	0.40	0.40	0.50		
Date Sampled	09-Jun-16	09-Jun-16	09-Jun-16	09-Jun-16	09-Jun-16	09-Jun-16	09-Jun-16	09-Jun-16		
Sample Type	Solid - Fragment / Tile	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	B	4A	1A	4A	1A	5A	5A	4A		
TPH CWG										
Ali >C5-C6	-	<0.01	-	<0.01	<0.01	-	<0.01	-	mg/kg	
Ali >C6-C8	-	<0.01	-	<0.01	<0.01	-	<0.01	-	mg/kg	
Ali >C8-C10	-	<0.01	-	<0.01	<0.01	-	<0.01	-	mg/kg	
Ali >C10-C12	-	<0.1	-	<0.1	<0.1	-	<0.1	-	mg/kg	
Ali >C12-C16	-	<0.1	-	<0.1	<0.1	-	<0.1	-	mg/kg	
Ali >C16-C21	-	<0.1	-	<0.1	<0.1	-	<0.1	-	mg/kg	
Ali >C21-C35	-	<0.1	-	<0.1	<0.1	-	<0.1	-	mg/kg	
Total Aliphatics	-	<0.1	-	<0.1	<0.1	-	<0.1	-	mg/kg	
Aro >C5-C7	-	<0.01	-	<0.01	<0.01	-	<0.01	-	mg/kg	
Aro >C7-C8	-	<0.01	-	<0.01	<0.01	-	<0.01	-	mg/kg	
Aro >C8-C9	-	<0.01	-	<0.01	<0.01	-	<0.01	-	mg/kg	
Aro >C9-C10	-	<0.01	-	<0.01	<0.01	-	<0.01	-	mg/kg	
Aro >C10-C12	-	<0.1	-	<0.1	<0.1	-	<0.1	-	mg/kg	
Aro >C12-C16	-	<0.1	-	<0.1	<0.1	-	<0.1	-	mg/kg	
Aro >C16-C21	-	<0.1	-	<0.1	<0.1	-	<0.1	-	mg/kg	
Aro >C21-C35	-	<0.1	-	<0.1	<0.1	-	<0.1	-	mg/kg	
Total Aromatics	-	<0.1	-	<0.1	<0.1	-	<0.1	-	mg/kg	
TPH (Ali & Aro)	-	<0.1	-	<0.1	<0.1	-	<0.1	-	mg/kg	
STEX - Benzene	-	<0.01	-	<0.01	<0.01	-	<0.01	-	mg/kg	
STEX - Toluene	-	<0.01	-	<0.01	<0.01	-	<0.01	-	mg/kg	
STEX - Ethyl Benzene	-	<0.01	-	<0.01	<0.01	-	<0.01	-	mg/kg	
STEX - m & p Xylene	-	<0.01	-	<0.01	<0.01	-	<0.01	-	mg/kg	
STEX - o Xylene	-	<0.01	-	<0.01	<0.01	-	<0.01	-	mg/kg	
MTBE	-	<0.01	-	<0.01	<0.01	-	<0.01	-	mg/kg	

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/03628

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/03628/9								Units	Method ref
Client Sample No										
Client Sample ID	NW8 V8									
Depth to Top	0.30									
Depth To Bottom										
Date Sampled	09-Jun-16									
Sample Type	Soil									
Sample Matrix Code	4A									
% Stones >10mm$_D$	0.8								% w/w	A-T-004
pH$_D$ [NR]	7.66								pH	A-T-007e
Sulphate (water sol 2:1)$_D$ [NR]	0.07								g/l	A-T-008e
Sulphate (acid soluble)$_D$ [NR]	379								mg/kg	A-T-008e
Arsenic$_D$ [NR]	6								mg/kg	A-T-009e
Cadmium$_D$ [NR]	1.2								mg/kg	A-T-009e
Copper$_D$ [NR]	30								mg/kg	A-T-009e
Chromium$_D$ [NR]	25								mg/kg	A-T-009e
Lead$_D$ [NR]	42								mg/kg	A-T-009e
Mercury$_D$	<0.17								mg/kg	A-T-009e
Nickel$_D$ [NR]	18								mg/kg	A-T-009e
Selenium$_D$	<1								mg/kg	A-T-009e
Zinc$_D$ [NR]	70								mg/kg	A-T-009e

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/03628

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/03628/9								Units	Method ref
Client Sample No										
Client Sample ID	NWB V8									
Depth to Top	0.30									
Depth To Bottom										
Date Sampled	09-Jun-16									
Sample Type	Soil									
Sample Matrix Code	4A									
Asbestos in Soil (inc. matrix)										
Asbestos in soil	NAD									
Asbestos ACM - Suitable for Water Absorption Test?	N/A									

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/03628

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/03628/9								Units	Method ref
Client Sample No										
Client Sample ID	NWB V3									
Depth to Top	0.30									
Depth To Bottom										
Date Sampled	09-Jun-16									
Sample Type	Soil									
Sample Matrix Code	4A									
PAH 16										
Acenaphthene$_A^{M*}$	<0.01								mg/kg	A-T-0106
Acenaphthylene$_A^{M*}$	<0.01								mg/kg	A-T-0106
Anthracene$_A^{M*}$	<0.02								mg/kg	A-T-0106
Benzo(a)anthracene$_A^{M*}$	<0.04								mg/kg	A-T-0106
Benzo(a)pyrene$_A^{M*}$	<0.04								mg/kg	A-T-0106
Benzo(b)fluoranthene$_A^{M*}$	<0.05								mg/kg	A-T-0106
Benzo(ghi)perylene$_A^{M*}$	<0.05								mg/kg	A-T-0106
Benzo(k)fluoranthene$_A^{M*}$	<0.07								mg/kg	A-T-0106
Chrysene$_A^{M*}$	<0.06								mg/kg	A-T-0106
Dibenzo(ah)anthracene$_A^{M*}$	<0.04								mg/kg	A-T-0106
Fluoranthene$_A^{M*}$	<0.06								mg/kg	A-T-0106
Fluorene$_A^{M*}$	<0.01								mg/kg	A-T-0106
Indeno(123-cd)pyrene$_A^{M*}$	<0.03								mg/kg	A-T-0106
Naphthalene$_A^{M*}$	<0.03								mg/kg	A-T-0106
Phenanthrene$_A^{M*}$	<0.03								mg/kg	A-T-0106
Pyrene$_A^{M*}$	<0.07								mg/kg	A-T-0106
PAH (total 16)$_A^{M*}$	<0.08								mg/kg	A-T-0106

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/03628

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/03628/9								Units	Method ref
Client Sample No										
Client Sample ID	NWS V8									
Depth to Top	0.30									
Depth To Bottom										
Date Sampled	09-Jun-16									
Sample Type	Soil									
Sample Matrix Code	4A									
TPH CWG										
Ali >C5-C6$_A^*$	<0.01								mg/kg	A-T-0035
Ali >C6-C8$_A^*$	<0.01								mg/kg	A-T-0035
Ali >C8-C10$_A^*$	<0.01								mg/kg	A-T-0035
Ali >C10-C12$_A^*$	<0.1								mg/kg	A-T-0035
Ali >C12-C16$_A^*$	<0.1								mg/kg	A-T-0035
Ali >C16-C21$_A^*$	<0.1								mg/kg	A-T-0035
Ali >C21-C35$_A^*$	<0.1								mg/kg	A-T-0035
Total Aliphatics$_A$	<0.1								mg/kg	A-T-0035-0210
Aro >C5-C7$_A^*$	<0.01								mg/kg	A-T-0035
Aro >C7-C8$_A^*$	<0.01								mg/kg	A-T-0035
Aro >C8-C9$_A^*$	<0.01								mg/kg	A-T-0035
Aro >C9-C10$_A^*$	<0.01								mg/kg	A-T-0035
Aro >C10-C12$_A^*$	<0.1								mg/kg	A-T-0035
Aro >C12-C16$_A^*$	<0.1								mg/kg	A-T-0035
Aro >C16-C21$_A^*$	<0.1								mg/kg	A-T-0035
Aro >C21-C35$_A^*$	<0.1								mg/kg	A-T-0035
Total Aromatics$_A$	<0.1								mg/kg	A-T-0035-0200
TPH (Ali & Aro)$_A$	<0.1								mg/kg	A-T-0035-0220
BTEX - Benzene$_A^*$	<0.01								mg/kg	A-T-0035
BTEX - Toluene$_A^*$	<0.01								mg/kg	A-T-0035
BTEX - Ethyl Benzene$_A^*$	<0.01								mg/kg	A-T-0035
BTEX - m & p Xylene$_A^*$	<0.01								mg/kg	A-T-0035
BTEX - o Xylene$_A^*$	<0.01								mg/kg	A-T-0035
MTBE$_A^*$	<0.01								mg/kg	A-T-0035

ARUN DISTRICT COUNCIL A/94/17/DOC

REPORT NOTES

Notes - Soil chemical analysis
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones and brick and concrete fragments >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis. For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

Notes - General
This report shall not be reproduced, except in full, without written approval from Envirolab.
Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.
All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supersedes any "A" subscripts.
All analysis is performed on the sample as received for soil samples which are positive for asbestos and/or if they are from outside the European Union and this supercedes any "D" subscripts.
Superscript "M" indicates method accredited to MCERTS.
If results are in italic font they are associated with an AQC failure. These are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

TPH analysis of water by method A-T-007
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Asbestos in soil
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if present as discrete fibres/fragments. Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.
Samples with Matrix Code 7 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations.

Secondary Matrix Codes:
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.

ARUN DISTRICT COUNCIL A/94/17/DOC

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 16/03957
Issue Number: 1 **Date:** 06 July, 2016

Client: RSK Environment Ltd Hemel
18 Frogmore Road
Hemel Hempstead
Hertfordshire
UK
HP3 9RT

Project Manager: Andrew James/Edward Hughes/Nigel Austin
Project Name: Angmering
Project Ref: 27621
Order No: N/A
Date Samples Received: 28/06/16
Date Instructions Received: 28/06/16
Date Analysis Completed: 06/07/16

Prepared by:

[redacted]

Danielle Brierley
Administrative Assistant

Approved by:

[redacted]

Gill Walker
Laboratory Manager

MCERTS
UKAS TESTING
1247

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/03957

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/03957/1	16/03957/2	16/03957/3	16/03957/4					Units	Method ref
Client Sample No										
Client Sample ID	SWBV1	SWBV2	SWBV3	SWBV4						
Depth to Top	0.30	0.10	0.20	0.10						
Depth To Bottom	0.50	0.30	0.40	0.30						
Date Sampled	23-Jun-16	23-Jun-16	23-Jun-16	23-Jun-16						
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES						
Sample Matrix Code	S	S	S	S						
% Stones >10mm$_{A}$	<0.1	<0.1	<0.1	<0.1					% w/w	[illegible]
pH$_{D}$	7.72	7.14	6.99	7.28					pH	[illegible]
Sulphate (water sol 2:1)$_{D}$	0.09	0.05	0.09	0.13					g/l	[illegible]
Sulphate (acid soluble)$_{D}$	230	220	320	430					mg/kg	[illegible]
Arsenic$_{D}$	7	8	5	9					mg/kg	[illegible]
Cadmium$_{D}$	1.6	3.4	1.6	2.4					mg/kg	[illegible]
Copper$_{D}$	20	14	9	10					mg/kg	[illegible]
Chromium$_{D}$	27	35	31	29					mg/kg	[illegible]
Lead$_{D}$	27	14	12	14					mg/kg	[illegible]
Mercury$_{D}$	<0.17	<0.17	<0.17	<0.17					mg/kg	[illegible]
Nickel$_{D}$	19	25	21	21					mg/kg	[illegible]
Selenium$_{D}$	<1	3	<1	2					mg/kg	[illegible]
Zinc$_{D}$	51	47	42	43					mg/kg	[illegible]

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/03957

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/03957/1	16/03957/2	16/03957/3	16/03957/4					Units	Method ref
Client Sample No										
Client Sample ID	SWBV1	SWBV2	SWBV3	SWBV4						
Depth to Top	0.30	0.10	0.20	0.10						
Depth To Bottom	0.50	0.30	0.40	0.30						
Date Sampled	23-Jun-16	23-Jun-16	23-Jun-16	23-Jun-16						
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES						
Sample Matrix Code	5	5	3	3						
Asbestos in Soil (inc. matrix)										
Asbestos in soil[a*]	NAD	NAD	NAD	NAD						[illegible]
Asbestos ACM - Suitable for Water Absorption Test?[a]	N/A	N/A	N/A	N/A						Summary

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/03957

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/03957/1	16/03957/2	16/03957/3	16/03957/4					Units	Method ref
Client Sample No										
Client Sample ID	SWBV1	SWBV2	SWBV3	SWBV4						
Depth to Top	0.30	0.10	0.20	0.10						
Depth To Bottom	0.50	0.30	0.40	0.30						
Date Sampled	23-Jun-16	23-Jun-16	23-Jun-16	23-Jun-16						
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES						
Sample Matrix Code	3	3	3	3						
PAH 16										
Acenaphthene$_A^{M*}$	<0.01	<0.01	<0.01	<0.01					mg/kg	A/T/O/W
Acenaphthylene$_A^{M*}$	<0.01	<0.01	<0.01	<0.01					mg/kg	A/T/O/W
Anthracene$_A^{M*}$	<0.02	<0.02	<0.02	<0.02					mg/kg	A/T/O/W
Benzo(a)anthracene$_A^{M*}$	<0.04	<0.04	<0.04	<0.04					mg/kg	A/T/O/W
Benzo(a)pyrene$_A^{M*}$	<0.04	<0.04	<0.04	<0.04					mg/kg	A/T/O/W
Benzo(b)fluoranthene$_A^{M*}$	<0.05	<0.05	<0.05	<0.05					mg/kg	A/T/O/W
Benzo(ghi)perylene$_A^{M*}$	<0.05	<0.05	<0.05	<0.05					mg/kg	A/T/O/W
Benzo(k)fluoranthene$_A^{M*}$	<0.07	<0.07	<0.07	<0.07					mg/kg	A/T/O/W
Chrysene$_A^{M*}$	<0.06	<0.06	<0.06	<0.06					mg/kg	A/T/O/W
Dibenzo(ah)anthracene$_A^{M*}$	<0.04	<0.04	<0.04	<0.04					mg/kg	A/T/O/W
Fluoranthene$_A^{M*}$	<0.08	<0.08	<0.08	<0.08					mg/kg	A/T/O/W
Fluorene$_A^{M*}$	<0.01	<0.01	<0.01	<0.01					mg/kg	A/T/O/W
Indeno(123-cd)pyrene$_A^{M*}$	<0.03	<0.03	<0.03	<0.03					mg/kg	A/T/O/W
Naphthalene$_A^{M*}$	<0.03	<0.03	<0.03	<0.03					mg/kg	A/T/O/W
Phenanthrene$_A^{M*}$	<0.03	<0.03	<0.03	<0.03					mg/kg	A/T/O/W
Pyrene$_A^{M*}$	<0.07	<0.07	<0.07	<0.07					mg/kg	A/T/O/W
PAH (total 16)$_A^{M*}$	<0.08	<0.08	<0.08	<0.08					mg/kg	A/T/O/W

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/03957

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/03957/1	16/03957/2	16/03957/3	16/03957/4					Units	Method ref
Client Sample No										
Client Sample ID	SWBV1	SWBV2	SWBV3	SWBV4						
Depth to Top	0.30	0.10	0.20	0.10						
Depth To Bottom	0.50	0.30	0.40	0.30						
Date Sampled	23-Jun-16	23-Jun-16	23-Jun-16	22-Jun-16						
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES						
Sample Matrix Code	8	8	3	3						
TPH CWG										
Ali >C5-C6$_A^E$	<0.01	<0.01	<0.01	<0.01					mg/kg	A/T-xxxx
Ali >C6-C8$_A^E$	<0.01	<0.01	<0.01	<0.01					mg/kg	A/T-xxxx
Ali >C8-C10$_A^E$	<0.01	<0.01	<0.01	<0.01					mg/kg	A/T-xxxx
Ali >C10-C12$_A^E$	<0.1	<0.1	<0.1	<0.1					mg/kg	A/T-xxxx
Ali >C12-C16$_A^E$	<0.1	<0.1	<0.1	<0.1					mg/kg	A/T-xxxx
Ali >C16-C21$_A^E$	<0.1	<0.1	<0.1	<0.1					mg/kg	A/T-xxxx
Ali >C21-C35$_A^E$	<0.1	<0.1	<0.1	<0.1					mg/kg	A/T-xxxx
Total Aliphatics$_A$	<0.1	<0.1	<0.1	<0.1					mg/kg	A/T-xxxx+xx
Aro >C5-C7$_A^E$	<0.01	<0.01	<0.01	<0.01					mg/kg	A/T-xxxx
Aro >C7-C8$_A^E$	<0.01	<0.01	<0.01	<0.01					mg/kg	A/T-xxxx
Aro >C8-C9$_A^E$	<0.01	<0.01	<0.01	<0.01					mg/kg	A/T-xxxx
Aro >C9-C10$_A^E$	<0.01	<0.01	<0.01	<0.01					mg/kg	A/T-xxxx
Aro >C10-C12$_A^E$	<0.1	<0.1	<0.1	<0.1					mg/kg	A/T-xxxx
Aro >C12-C16$_A^E$	<0.1	<0.1	<0.1	<0.1					mg/kg	A/T-xxxx
Aro >C16-C21$_A^E$	<0.1	<0.1	<0.1	<0.1					mg/kg	A/T-xxxx
Aro >C21-C35$_A^E$	<0.1	<0.1	<0.1	<0.1					mg/kg	A/T-xxxx
Total Aromatics$_A$	<0.1	<0.1	<0.1	<0.1					mg/kg	A/T-xxxx+xx
TPH (Ali & Aro)$_A$	<0.1	<0.1	<0.1	<0.1					mg/kg	A/T-xxxx+xx
BTEX - Benzene$_A^E$	<0.01	<0.01	<0.01	<0.01					mg/kg	A/T-xxxx
BTEX - Toluene$_A^E$	<0.01	<0.01	<0.01	<0.01					mg/kg	A/T-xxxx
BTEX - Ethyl Benzene$_A^E$	<0.01	<0.01	<0.01	<0.01					mg/kg	A/T-xxxx
BTEX - m & p Xylene$_A^E$	<0.01	<0.01	<0.01	<0.01					mg/kg	A/T-xxxx
BTEX - o Xylene$_A^E$	<0.01	<0.01	<0.01	<0.01					mg/kg	A/T-xxxx
MTBE$_A^E$	<0.01	<0.01	<0.01	<0.01					mg/kg	A/T-xxxx

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REPORT NOTES

Notes - Soil chemical analysis
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones and brick and concrete fragments >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis. For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

Notes - General
This report shall not be reproduced, except in full, without written approval from Envirolab.
Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.
All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supersedes any "A" subscripts.
All analysis is performed on the sample as received for soil samples which are positive for asbestos and/or if they are from outside the European Union and this supercedes any "D" subscripts.
Superscript "M" indicates method accredited to MCERTS.
If results are in italic font they are associated with an AQC failure. These are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

TPH analysis of water by method A-T-007
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Asbestos in soil
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if present as discrete fibres/fragments. Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.
Samples with Matrix Code 7 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations.

Secondary Matrix Codes:
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.

ARUN DISTRICT COUNCIL A/94/17/DOC

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT
SUPPLEMENT TO TEST REPORT 16/04244/1

Envirolab Job Number: 16/04244
Issue Number: 2 **Date:** 27 July, 2016

Client: RSK Environment Ltd Hemel
18 Frogmore Road
Hemel Hempstead
Hertfordshire
UK
HP3 9RT

Project Manager: Adam Davidson/Andrew James/Edward Hughes/Nigel Aus

Project Name: West End Nursery, Angmering
Project Ref: 27621
Order No: N/A
Date Samples Received: 11/07/16
Date Instructions Received: 11/07/16
Date Analysis Completed: 27/07/16

Prepared by:

[redacted]

Danielle Brierley
Administrative Assistant

Approved by:

[redacted]

Iain Haslock
Analytical Consultant

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ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/04244

Client Project Name: West End Nursery, Angmering

Client Project Ref: 27621

Lab Sample ID	16/04244/1	16/04244/2	16/04244/3	16/04244/4	16/04244/5	16/04244/6	16/04244/7	16/04244/8	Units	Method ref
Client Sample No	SB									
Client Sample ID	SA1	V1	V2	V3	V4	V5	V6	V7		
Depth to Top	0.00	0.30	0.20	0.20	0.20	0.30	0.20	0.20		
Depth To Bottom		0.40	0.30	0.40	0.40	0.50	0.40	0.40		
Date Sampled	28-Jun-16	07-Jul-16	07-Jul-16	07-Jul-16	07-Jul-16	07-Jul-16	07-Jul-16	07-Jul-16		
Sample Type	Solid - Fragment / Tile	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	8	3A	5A	5A	4A	5A	3A	3A		
% Stones >10mm$_A$*	-	7.3	-	<0.1	0.3	2.0	9.7	0.5	% w/w	A/T-0005
pH$_D$***	-	7.50	-	7.49	7.35	7.58	7.43	7.32	pH	A/T-0010
Sulphate (water sol 2:1)$_D$***	-	0.05	-	0.10	0.12	0.09	0.07	0.10	g/l	A/T-0080
Sulphate (acid soluble)$_D$***	-	<200	-	360	490	290	220	330	mg/kg	A/T-0080
Arsenic$_D$***	-	6	-	6	5	7	5	6	mg/kg	A/T-0044
Cadmium$_D$***	-	1.9	-	1.8	1.7	2.1	1.9	1.8	mg/kg	A/T-0044
Copper$_D$***	-	8	-	11	15	11	10	11	mg/kg	A/T-0044
Chromium$_D$***	-	32	-	26	18	31	27	28	mg/kg	A/T-0044
Lead$_D$***	-	13	-	16	18	17	14	15	mg/kg	A/T-0044
Mercury$_D$	-	<0.17	-	<0.17	<0.17	<0.17	<0.17	<0.17	mg/kg	A/T-0044
Nickel$_D$***	-	23	-	21	14	24	22	22	mg/kg	A/T-0044
Selenium$_D$	-	<1	-	<1	<1	<1	<1	<1	mg/kg	A/T-0044
Zinc$_D$***	-	46	-	50	48	52	47	48	mg/kg	A/T-0044

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/04244

Client Project Name: West End Nursery, Angmering

Client Project Ref: 27621

Lab Sample ID	16/04244/1	16/04244/2	16/04244/3	16/04244/4	16/04244/5	16/04244/6	16/04244/7	16/04244/8	Units	Method ref
Client Sample No	SB									
Client Sample ID	SA1	V1	V2	V3	V4	V5	V6	V7		
Depth to Top	0.00	0.30	0.30	0.30	0.20	0.30	0.20	0.20		
Depth To Bottom		0.40	0.90	0.40	0.40	0.50	0.40	0.40		
Date Sampled	28-Jun-16	07-Jul-16	07-Jul-16	07-Jul-16	07-Jul-16	07-Jul-16	07-Jul-16	07-Jul-16		
Sample Type	Solid - Fragment / Tile	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	S	3A	3A	3A	4A	3A	3A	3A		
Asbestos in Soil (inc. matrix)										
Asbestos in soil[x]	-	NAD	NAD	NAD	NAD	NAD	NAD	NAD		A-T-045
Asbestos ACM - Suitable for Water Absorption Test?[x]	-	N/A	N/A	N/A	N/A	N/A	N/A	N/A		Gravimetry
Bulk Fibre ID (inc. matrix)										
Bulk Fibre Identification[x]	Chrysotile	-	-	-	-	-	-	-		A-T-045
Bulk Fibre Identification Matrix (visual)[x]	Cement	-	-	-	-	-	-	-		A-T-045
Bulk Fibre Identification - Suitable for Water Absorption Test?[x]	Yes	-	-	-	-	-	-	-		Gravimetry

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/04244

Client Project Name: West End Nursery, Angmering

Client Project Ref: 27621

Lab Sample ID	16/04244/1	16/04244/2	16/04244/3	16/04244/4	16/04244/5	16/04244/6	16/04244/7	16/04244/8	Units	Method ref
Client Sample No	SB									
Client Sample ID	SA1	V1	V2	V3	V4	V5	V6	V7		
Depth to Top	0.00	0.30	0.20	0.20	0.20	0.30	0.20	0.20		
Depth To Bottom		0.40	0.30	0.40	0.40	0.50	0.40	0.40		
Date Sampled	25-Jun-16	07-Jul-16	07-Jul-16	07-Jul-16	07-Jul-16	07-Jul-16	07-Jul-16	07-Jul-16		
Sample Type	Solid - Fragment / Tile	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	S	3A	3A	3A	4A	3A	3A	3A		
PAH 16										
Acenaphthene$_A^{M*}$	-	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-0154
Acenaphthylene$_A^{M*}$	-	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-0154
Anthracene$_A^{M*}$	-	<0.02	-	<0.02	<0.02	<0.02	<0.02	<0.02	mg/kg	A-T-0154
Benzo(a)anthracene$_A^{M*}$	-	<0.04	-	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	A-T-0154
Benzo(a)pyrene$_A^{M*}$	-	<0.04	-	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	A-T-0154
Benzo(b)fluoranthene$_A^{M*}$	-	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	A-T-0154
Benzo(ghi)perylene$_A^{M*}$	-	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	A-T-0154
Benzo(k)fluoranthene$_A^{M*}$	-	<0.07	-	<0.07	<0.07	<0.07	<0.07	<0.07	mg/kg	A-T-0154
Chrysene$_A^{M*}$	-	<0.06	-	<0.06	<0.06	<0.06	<0.06	<0.06	mg/kg	A-T-0154
Dibenzo(ah)anthracene$_A^{M*}$	-	<0.04	-	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	A-T-0154
Fluoranthene$_A^{M*}$	-	<0.08	-	<0.08	<0.08	<0.08	<0.08	<0.08	mg/kg	A-T-0154
Fluorene$_A^{M*}$	-	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-0154
Indeno(123-cd)pyrene$_A^{M*}$	-	<0.03	-	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	A-T-0154
Naphthalene$_A^{M*}$	-	<0.03	-	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	A-T-0154
Phenanthrene$_A^{M*}$	-	<0.03	-	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	A-T-0154
Pyrene$_A^{M*}$	-	<0.07	-	<0.07	<0.07	<0.07	<0.07	<0.07	mg/kg	A-T-0154
PAH (total 16)$_A^{M*}$	-	<0.08	-	<0.08	<0.08	<0.08	<0.08	<0.08	mg/kg	A-T-0154

ARUN DISTRICT COUNCIL A/94/17/DOC

Lab Sample ID	16/04244/1	16/04244/2	16/04244/3	16/04244/4	16/04244/5	16/04244/6	16/04244/7	16/04244/8	Units	Method ref
Client Sample No	SB									
Client Sample ID	SA1	V1	V2	V3	V4	V5	V6	V7		
Depth to Top	0.00	0.30	0.20	0.30	0.20	0.30	0.20	0.20		
Depth To Bottom		0.40	0.30	0.40	0.40	0.50	0.40	0.40		
Date Sampled	28-Jun-16	07-Jul-16	07-Jul-16	07-Jul-16	07-Jul-16	07-Jul-16	07-Jul-16	07-Jul-16		
Sample Type	Solid - Fragment / Tile	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	S	3A	3A	3A	4A	3A	3A	3A		
TPH CWG										
Ali >C5-C6$_A$	-	<0.04	-	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	A-T-022x
Ali >C6-C8$_A$	-	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022x
Ali >C8-C10$_A$	-	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022x
Ali >C10-C12$_A$	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-022x
Ali >C12-C16$_A$	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-022x
Ali >C16-C21$_A$	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-022x
Ali >C21-C35$_A$	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-022x
Total Aliphatics$_A$	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-022x-22x
Aro >C5-C7$_A$	-	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022x
Aro >C7-C8$_A$	-	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022x
Aro >C8-C9$_A$	-	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022x
Aro >C9-C10$_A$	-	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022x
Aro >C10-C12$_A$	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-022x
Aro >C12-C16$_A$	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-022x
Aro >C16-C21$_A$	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-022x
Aro >C21-C35$_A$	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-022x
Total Aromatics$_A$	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-022x-22x
TPH (Ali & Aro)$_A$	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-022x-22x
BTEX - Benzene$_A$	-	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022x
BTEX - Toluene$_A$	-	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022x
BTEX - Ethyl Benzene$_A$	-	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022x
BTEX - m & p Xylene$_A$	-	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022x
BTEX - o Xylene$_A$	-	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022x
MTBE$_A$	-	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022x

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Lab Sample ID	16/04244/9	16/04244/10	16/04244/11	16/04244/12	16/04244/13	16/04244/14			Units	Method ref
Client Sample No										
Client Sample ID	V8	V9	V10	V11	V12	V2				
Depth to Top	0.30	0.20	0.20	0.20	0.20	0.40				
Depth To Bottom	0.40	0.40	0.40	0.40	0.40					
Date Sampled	07-Jul-16	07-Jul-16	07-Jul-16	07-Jul-16	07-Jul-16	07-Jul-16				
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES				
Sample Matrix Code	4A	5A	3A	5A	4A	6A				
% Stones >10mm$_A$	9.9	9.8	3.0	<0.1	2.7	-			% w/w	A-T-004x
pH$_D$ MC	7.56	7.31	7.80	7.56	7.41	-			pH	A-T-004x
Sulphate (water sol 2:1)$_D$ MC	0.11	0.05	0.09	0.06	0.10	-			g/l	A-T-004x
Sulphate (acid soluble)$_D$ MC	410	<200	320	330	450	-			mg/kg	A-T-004x
Arsenic$_D$ MC	6	7	7	7	6	-			mg/kg	A-T-004x
Cadmium$_D$ MC	1.6	1.8	1.7	2.0	1.8	-			mg/kg	A-T-004x
Copper$_D$ MC	12	8	11	11	22	-			mg/kg	A-T-004x
Chromium$_D$ MC	17	20	22	28	13	-			mg/kg	A-T-004x
Lead$_D$ MC	17	13	33	18	27	-			mg/kg	A-T-004x
Mercury$_D$	<0.17	<0.17	<0.17	<0.17	<0.17	-			mg/kg	A-T-004x
Nickel$_D$ MC	13	19	19	20	14	-			mg/kg	A-T-004x
Selenium$_D$	<1	<1	<1	<1	<1	-			mg/kg	A-T-004x
Zinc$_D$ MC	51	38	46	49	123	-			mg/kg	A-T-004x

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/04244

Client Project Name: West End Nursery, Angmering

Client Project Ref: 27621

Lab Sample ID	16/04244/9	16/04244/10	16/04244/11	16/04244/12	16/04244/13	16/04244/14			Units	Method ref
Client Sample No										
Client Sample ID	V8	V9	V10	V11	V12	V2				
Depth to Top	0.30	0.20	0.20	0.20	0.20	0.40				
Depth To Bottom	0.40	0.40	0.40	0.40	0.40					
Date Sampled	07-Jul-16	07-Jul-16	07-Jul-16	07-Jul-16	07-Jul-16	07-Jul-16				
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES				
Sample Matrix Code	4A	5A	3A	5A	4A	5A				
Asbestos in Soil (inc. matrix)										
Asbestos in soil[4]	NAD	NAD	NAD	NAD	Chrysotile	Chrysotile				[illegible]
Asbestos Matrix (visual)[4]	-	-	-	-	Cement	-				[illegible]
Asbestos Matrix (microscope)[4]	-	-	-	-	-	Loose Fibres				[illegible]
Asbestos ACM - Suitable for Water Absorption Test?[4]	N/A	N/A	N/A	N/A	Yes	N/A				[illegible]

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/04244

Client Project Name: West End Nursery, Angmering

Client Project Ref: 27621

Lab Sample ID	16/04244/9	16/04244/10	16/04344/11	16/04344/12	16/04244/13	16/04244/14			Units	Method ref
Client Sample No										
Client Sample ID	V9	V9	V10	V11	V12	V2				
Depth to Top	0.20	0.20	0.20	0.20	0.20	0.40				
Depth To Bottom	0.40	0.40	0.40	0.40	0.40					
Date Sampled	07-Jul-16	07-Jul-16	07-Jul-16	07-Jul-16	07-Jul-16	07-Jul-16				
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES				
Sample Matrix Code	4A	3A	3A	5A	4A	6A				
PAH 16										
Acenaphthene$_A^{M2}$	<0.01	<0.01	<0.01	<0.01	<0.01	-			mg/kg	A-T-016e
Acenaphthylene$_A^{M2}$	<0.01	<0.01	<0.01	<0.01	<0.01	-			mg/kg	A-T-016e
Anthracene$_A^{M2}$	<0.02	<0.02	<0.02	<0.02	<0.02	-			mg/kg	A-T-016e
Benzo(a)anthracene$_A^{M2}$	0.07	<0.04	<0.04	<0.04	<0.04	-			mg/kg	A-T-016e
Benzo(a)pyrene$_A^{M2}$	0.06	<0.04	<0.04	<0.04	<0.04	-			mg/kg	A-T-016e
Benzo(b)fluoranthene$_A^{M2}$	<0.05	<0.05	<0.05	<0.05	<0.05	-			mg/kg	A-T-016e
Benzo(ghi)perylene$_A^{M2}$	<0.05	<0.05	<0.05	<0.05	<0.05	-			mg/kg	A-T-016e
Benzo(k)fluoranthene$_A^{M2}$	<0.07	<0.07	<0.07	<0.07	<0.07	-			mg/kg	A-T-016e
Chrysene$_A^{M2}$	<0.06	<0.06	<0.06	<0.06	<0.06	-			mg/kg	A-T-016e
Dibenzo(ah)anthracene$_A^{M2}$	<0.04	<0.04	<0.04	<0.04	<0.04	-			mg/kg	A-T-016e
Fluoranthene$_A^{M2}$	0.14	<0.08	<0.08	<0.08	<0.08	-			mg/kg	A-T-016e
Fluorene$_A^{M2}$	<0.01	<0.01	<0.01	<0.01	<0.01	-			mg/kg	A-T-016e
Indeno(123-cd)pyrene$_A^{M2}$	0.05	<0.03	<0.03	<0.03	<0.03	-			mg/kg	A-T-016e
Naphthalene$_A^{M2}$	<0.03	<0.03	<0.03	<0.03	<0.03	-			mg/kg	A-T-016e
Phenanthrene$_A^{M2}$	0.08	<0.03	<0.03	<0.03	<0.03	-			mg/kg	A-T-016e
Pyrene$_A^{M2}$	0.11	<0.07	<0.07	<0.07	<0.07	-			mg/kg	A-T-016e
PAH (total 16)$_A^{M2}$	0.59	<0.08	<0.08	<0.08	<0.08	-			mg/kg	A-T-016e

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/04244

Client Project Name: West End Nursery, Angmering

Client Project Ref: 27621

Lab Sample ID	16/04244/9	16/04244/10	16/04244/11	16/04244/12	16/04244/13	16/04244/14			Units	Method ref
Client Sample No										
Client Sample ID	V8	V9	V10	V11	V12	V2				
Depth to Top	0.20	0.20	0.20	0.20	0.20	0.40				
Depth To Bottom	0.40	0.40	0.40	0.40	0.40					
Date Sampled	07-Jul-16	07-Jul-16	07-Jul-16	07-Jul-16	07-Jul-16	07-Jul-16				
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES				
Sample Matrix Code	4A	5A	3A	5A	4A	5A				
TPH CWG										
Ali >C5-C6$_A^*$	<0.04	<0.04	<0.04	<0.04	<0.04	-			mg/kg	A-T-022x
Ali >C6-C8$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	-			mg/kg	A-T-022x
Ali >C8-C10$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	-			mg/kg	A-T-022x
Ali >C10-C12$_A^*$	<0.1	<0.1	<0.1	<0.1	<0.1	-			mg/kg	A-T-022x
Ali >C12-C16$_A^*$	<0.1	<0.1	<0.1	<0.1	<0.1	-			mg/kg	A-T-022x
Ali >C16-C21$_A^*$	<0.1	<0.1	<0.1	<0.1	<0.1	-			mg/kg	A-T-022x
Ali >C21-C35$_A^*$	<0.1	<0.1	<0.1	<0.1	<0.1	-			mg/kg	A-T-022x
Total Aliphatics$_A$	<0.1	<0.1	<0.1	<0.1	<0.1	-			mg/kg	A-T-022x-22x
Aro >C5-C7$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	-			mg/kg	A-T-022x
Aro >C7-C8$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	-			mg/kg	A-T-022x
Aro >C8-C9$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	-			mg/kg	A-T-022x
Aro >C9-C10$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	-			mg/kg	A-T-022x
Aro >C10-C12$_A^*$	<0.1	<0.1	<0.1	<0.1	<0.1	-			mg/kg	A-T-022x
Aro >C12-C16$_A^*$	<0.1	<0.1	<0.1	<0.1	<0.1	-			mg/kg	A-T-022x
Aro >C16-C21$_A^*$	<0.1	<0.1	<0.1	1.4	0.3	-			mg/kg	A-T-022x
Aro >C21-C35$_A^*$	<0.1	<0.1	<0.1	0.3	<0.1	-			mg/kg	A-T-022x
Total Aromatics$_A$	<0.1	<0.1	<0.1	1.8	0.3	-			mg/kg	A-T-022x-22x
TPH (Ali & Aro)$_A$	<0.1	<0.1	<0.1	1.8	0.3	-			mg/kg	A-T-022x-22x
BTEX - Benzene$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	-			mg/kg	A-T-022x
BTEX - Toluene$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	-			mg/kg	A-T-022x
BTEX - Ethyl Benzene$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	-			mg/kg	A-T-022x
BTEX - m & p Xylene$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	-			mg/kg	A-T-022x
BTEX - o Xylene$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	-			mg/kg	A-T-022x
MTBE$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	-			mg/kg	A-T-022x

REPORT NOTES

Notes - Soil chemical analysis
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones and brick and concrete fragments >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis. For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

Notes - General
This report shall not be reproduced, except in full, without written approval from Envirolab.
Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.
All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supersedes any "A" subscripts.
All analysis is performed on the sample as received for soil samples which are positive for asbestos and/or if they are from outside the European Union and this supersedes any "D" subscripts.
Superscript "M" indicates method accredited to MCERTS.
If results are in italic font they are associated with an AQC failure. These are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

TPH analysis of water by method A-T-007
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Asbestos in soil
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if present as discrete fibres/fragments. Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.

ARUN DISTRICT COUNCIL A/94/17/DOC

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 16/04624
Issue Number: 1 **Date:** 09 August, 2016

Client: RSK Environment Ltd Hemel
18 Frogmore Road
Hemel Hempstead
Hertfordshire
UK
HP3 9RT

Project Manager: Andrew James/Nigel Austin
Project Name: West End Nursery, Angmering
Project Ref: 27621
Order No: N/A
Date Samples Received: 27/07/16
Date Instructions Received: 27/07/16
Date Analysis Completed: 08/08/16

Prepared by:

[redacted]

Melanie Marshall
Laboratory Coordinator

Approved by:

[redacted]

John Gustafson
Director

MCERTS
UKAS TESTING
3247

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/04624

Client Project Name: West End Nursery, Angmering

Client Project Ref: 27621

Lab Sample ID	16/04624/1	16/04624/2	16/04624/3	16/04624/4					Units	Method ref
Client Sample No										
Client Sample ID	NEBV1	NEBV2	NEBV3	NEBV4						
Depth to Top	0.30	0.30	0.30	0.30						
Depth To Bottom	0.40	0.40	0.40	0.40						
Date Sampled	25-Jul-16	25-Jul-16	25-Jul-16	25-Jul-16						
Sample Type	Soil	Soil	Soil	Soil						
Sample Matrix Code	3A	3A	3	3A						
% Stones >10mm$_A$*	9.1	<0.1	<0.1	10.4					% w/w	A-T-004
pH$_D$**	7.41	7.45	7.59	7.25					pH	A-T-101e
Sulphate (water sol 2:1)$_D$**	0.09	0.09	0.05	0.09					g/l	A-T-108e
Sulphate (acid soluble)$_D$**	310	340	290	330					mg/kg	A-T-108e
Arsenic$_D$**	5	6	5	5					mg/kg	A-T-204e
Cadmium$_D$**	1.4	1.4	1.2	1.3					mg/kg	A-T-204e
Copper$_D$**	14	13	9	10					mg/kg	A-T-204e
Chromium$_D$**	22	26	19	20					mg/kg	A-T-204e
Lead$_D$**	16	20	18	17					mg/kg	A-T-204e
Mercury$_D$	<0.17	<0.17	<0.17	<0.17					mg/kg	A-T-204e
Nickel$_D$**	18	20	14	15					mg/kg	A-T-204e
Selenium$_D$	<1	<1	<1	<1					mg/kg	A-T-204e
Zinc$_D$**	43	55	41	43					mg/kg	A-T-204e

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/04624

Client Project Name: West End Nursery, Angmering

Client Project Ref: 27621

Lab Sample ID	16/04624/1	16/04624/2	16/04624/3	16/04624/4					Units	Method ref
Client Sample No										
Client Sample ID	NEBV1	NEBV2	NEBV3	NEBV4						
Depth to Top	0.30	0.30	0.30	0.30						
Depth To Bottom	0.40	0.40	0.40	0.40						
Date Sampled	25-Jul-16	25-Jul-16	25-Jul-16	25-Jul-16						
Sample Type	Soil	Soil	Soil	Soil						
Sample Matrix Code	SA	SA	3	SA						
Asbestos in Soil (inc. matrix)										
Asbestos in soil[#]	NAD	NAD	NAD	NAD						[illegible]
Asbestos ACM - Suitable for Water Absorption Test?[#]	N/A	N/A	N/A	N/A						[illegible]

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/04624

Client Project Name: West End Nursery, Angmering

Client Project Ref: 27621

Lab Sample ID	16/04624/1	16/04624/2	16/04624/3	16/04624/4					Units	Method ref
Client Sample No										
Client Sample ID	NEBV1	NEBV2	NEBV3	NEBV4						
Depth to Top	0.30	0.30	0.30	0.30						
Depth To Bottom	0.40	0.40	0.40	0.40						
Date Sampled	25-Jul-16	25-Jul-16	25-Jul-16	25-Jul-16						
Sample Type	Soil	Soil	Soil	Soil						
Sample Matrix Code	5A	5A	3	6A						
PAH 16										
Acenaphthene$_A^{MX}$	<0.01	<0.01	<0.01	<0.01					mg/kg	A-T-0156
Acenaphthylene$_A^{MX}$	<0.01	<0.01	<0.01	<0.01					mg/kg	A-T-0156
Anthracene$_A^{MX}$	<0.02	<0.02	<0.02	<0.02					mg/kg	A-T-0156
Benzo(a)anthracene$_A^{MX}$	<0.04	<0.04	<0.04	<0.04					mg/kg	A-T-0156
Benzo(a)pyrene$_A^{MX}$	<0.04	<0.04	<0.04	<0.04					mg/kg	A-T-0156
Benzo(b)fluoranthene$_A^{MX}$	<0.05	<0.05	<0.05	<0.05					mg/kg	A-T-0156
Benzo(ghi)perylene$_A^{MX}$	<0.05	<0.05	<0.05	<0.05					mg/kg	A-T-0156
Benzo(k)fluoranthene$_A^{MX}$	<0.07	<0.07	<0.07	<0.07					mg/kg	A-T-0156
Chrysene$_A^{MX}$	<0.06	<0.06	<0.06	<0.06					mg/kg	A-T-0156
Dibenzo(ah)anthracene$_A^{MX}$	<0.04	<0.04	<0.04	<0.04					mg/kg	A-T-0156
Fluoranthene$_A^{MX}$	<0.08	<0.08	<0.08	<0.08					mg/kg	A-T-0156
Fluorene$_A^{MX}$	<0.01	<0.01	<0.01	<0.01					mg/kg	A-T-0156
Indeno(123-cd)pyrene$_A^{MX}$	<0.03	<0.03	<0.03	<0.03					mg/kg	A-T-0156
Naphthalene$_A^{MX}$	<0.03	<0.03	<0.03	<0.03					mg/kg	A-T-0156
Phenanthrene$_A^{MX}$	<0.03	<0.03	<0.03	<0.03					mg/kg	A-T-0156
Pyrene$_A^{MX}$	<0.07	<0.07	<0.07	<0.07					mg/kg	A-T-0156
PAH (total 16)$_A^{MX}$	<0.08	<0.08	<0.08	<0.08					mg/kg	A-T-0156

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/04624

Client Project Name: West End Nursery, Angmering

Client Project Ref: 27621

Lab Sample ID	16/04624/1	16/04624/2	16/04624/3	16/04624/4					Units	Method ref
Client Sample No										
Client Sample ID	NEBV1	NEBV2	NEBV3	NEBV4						
Depth to Top	0.30	0.30	0.30	0.30						
Depth To Bottom	0.40	0.40	0.40	0.40						
Date Sampled	25-Jul-16	25-Jul-16	25-Jul-16	25-Jul-16						
Sample Type	Soil	Soil	Soil	Soil						
Sample Matrix Code	SA	SA	3	SA						
TPH CWG										
Ali >C5-C6$_A^*$	<0.01	<0.01	<0.01	<0.01					mg/kg	A-T-0004
Ali >C6-C8$_A^*$	<0.01	<0.01	<0.01	<0.01					mg/kg	A-T-0005
Ali >C8-C10$_A^*$	<0.01	<0.01	<0.01	<0.01					mg/kg	A-T-0006
Ali >C10-C12$_A^*$	<0.1	<0.1	<0.1	<0.1					mg/kg	A-T-0007
Ali >C12-C16$_A^*$	<0.1	<0.1	<0.1	<0.1					mg/kg	A-T-0008
Ali >C16-C21$_A^*$	<0.1	<0.1	<0.1	<0.1					mg/kg	A-T-0009
Ali >C21-C35$_A^*$	<0.1	<0.1	<0.1	<0.1					mg/kg	A-T-0010
Total Aliphatics$_A$	<0.1	<0.1	<0.1	<0.1					mg/kg	A-T-0003-0012
Aro >C5-C7$_A^*$	<0.01	<0.01	<0.01	<0.01					mg/kg	A-T-0014
Aro >C7-C8$_A^*$	<0.01	<0.01	<0.01	<0.01					mg/kg	A-T-0015
Aro >C8-C9$_A^*$	<0.01	<0.01	<0.01	<0.01					mg/kg	A-T-0016
Aro >C9-C10$_A^*$	<0.01	<0.01	<0.01	<0.01					mg/kg	A-T-0017
Aro >C10-C12$_A^*$	<0.1	<0.1	<0.1	<0.1					mg/kg	A-T-0018
Aro >C12-C16$_A^*$	<0.1	<0.1	<0.1	<0.1					mg/kg	A-T-0019
Aro >C16-C21$_A^*$	<0.1	<0.1	<0.1	<0.1					mg/kg	A-T-0020
Aro >C21-C35$_A^*$	<0.1	<0.1	<0.1	<0.1					mg/kg	A-T-0021
Total Aromatics$_A$	<0.1	<0.1	<0.1	<0.1					mg/kg	A-T-0013-0022
TPH (Ali & Aro)$_A$	<0.1	<0.1	<0.1	<0.1					mg/kg	A-T-0023-0024
BTEX - Benzene$_A^*$	<0.01	<0.01	<0.01	<0.01					mg/kg	A-T-0025
BTEX - Toluene$_A^*$	<0.01	<0.01	<0.01	<0.01					mg/kg	A-T-0026
BTEX - Ethyl Benzene$_A^*$	<0.01	<0.01	<0.01	<0.01					mg/kg	A-T-0027
BTEX - m & p Xylene$_A^*$	<0.01	<0.01	<0.01	<0.01					mg/kg	A-T-0028
BTEX - o Xylene$_A^*$	<0.01	<0.01	<0.01	<0.01					mg/kg	A-T-0029
MTBE$_A^*$	<0.01	<0.01	<0.01	<0.01					mg/kg	A-T-0030

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REPORT NOTES

Notes - Soil chemical analysis
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones and brick and concrete fragments >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis. For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

Notes - General
This report shall not be reproduced, except in full, without written approval from Envirolab.
Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.
All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supersedes any "A" subscripts.
All analysis is performed on the sample as received for soil samples which are positive for asbestos and/or if they are from outside the European Union and this supercedes any "D" subscripts.
Superscript "M" indicates method accredited to MCERTS.
If results are in italic font they are associated with an AQC failure. These are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

TPH analysis of water by method A-T-007
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Asbestos in soil
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if present as discrete fibres/fragments. Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.

ARUN DISTRICT COUNCIL A/94/17/DOC

envirolab
Units 7 & 8 Sandpits Business Park
Moltram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 16/05298
Issue Number: 1 **Date:** 05 September, 2016

Client: RSK Environment Ltd Hemel
18 Frogmore Road
Hemel Hempstead
Hertfordshire
UK
HP3 9RT

Project Manager: Andrew James/Edward Hughes/Nigel Austin
Project Name: Angmering
Project Ref: 27621
Order No: N/A
Date Samples Received: 24/08/16
Date Instructions Received: 24/08/16
Date Analysis Completed: 04/09/16

Prepared by:

[redacted]

Danielle Brierley
Administrative Assistant

Approved by:

[redacted]

Iain Haslock
Analytical Consultant

UKAS TESTING
1247

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/05298

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/05298/1	16/05298/2	16/05298/3	16/05298/4	16/05298/5	16/05298/6	16/05298/7	16/05298/8	Units	Method ref
Client Sample No										
Client Sample ID	POSV13	POSV14	POSV15	POSV16	POSV2A	POSV2B	POSV2C	POSV2D		
Depth to Top	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30		
Depth To Bottom	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40		
Date Sampled	22-Aug-16	22-Aug-16	22-Aug-16	23-Aug-16	22-Aug-16	22-Aug-16	22-Aug-16	22-Aug-16		
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	3A	3A	3	3A	3A	3A	3	3A		
Asbestos in Soil (inc. matrix)										
Asbestos in soil[4,5]	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD		[illegible]
Asbestos ACM - Suitable for Water Absorption Test?[5]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		Gravimetry

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/05298

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/05298/9	16/05298/10	16/05298/11	16/05298/12					Units	Method ref
Client Sample No										
Client Sample ID	POSV12A	POSV12B	POSV12C	POSV12D						
Depth to Top	0.30	0.30	0.30	0.30						
Depth To Bottom	0.40	0.40	0.40	0.40						
Date Sampled	22-Aug-16	22-Aug-16	22-Aug-16	22-Aug-16						
Sample Type	Soil	Soil	Soil	Soil						
Sample Matrix Code	3A	3A	3A	3A						
Asbestos in Soil (inc. matrix)										
Asbestos in soil[3,4]	NAD	NAD	NAD	NAD						[illegible]
Asbestos ACM - Suitable for Water Absorption Test?[3]	N/A	N/A	N/A	N/A						[illegible]

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REPORT NOTES

Notes - Soil chemical analysis
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'. For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

Notes - General
This report shall not be reproduced, except in full, without written approval from Envirolab.
Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.
All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supersedes any "A" subscripts.
All analysis is performed on the sample as received for soil samples which are positive for asbestos and/or if they are from outside the European Union and this supercedes any "D" subscripts.
Superscript "M" indicates method accredited to MCERTS.
If results are in italic font they are associated with an AQC failure. These are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

TPH analysis of water by method A-T-007
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Asbestos in soil
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if present as discrete fibres/fragments. Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.

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APPENDIX E
RSK GENERIC ASSESSMENT CRITERIA

Generic assessment criteria for human health: residential scenario with home-grown produce

Background

RSK's generic assessment criteria (GAC) were initially prepared following the publication by the Environment Agency (EA) of soil guideline value (SGV) and toxicological (TOX) reports, and associated publications in 2009[1]. RSK GAC were updated following the publication of GAC by LQM/CIEH in 2009[2]. RSK GAC are periodically revised when updated information on toxicological, land use or receptor parameters is published.

Updates to the RSK GAC: 2015

In 2014, the publication of Category 4 Screening Levels (C4SL)[3,4], as part of the Defra-funded research project SP1010, included modifications to certain exposure assumptions documented within EA Science Report SC050221/SR3 (herein after referred to as SR3)[5] used in the generation of SGVs.

C4SL were published for six substances (cadmium, arsenic, benzene, benzo(a)pyrene, chromium VI and lead) for a sandy loam soil type with 6% soil organic matter, based on a low level of toxicological concern (LLTC; see Section 2.3 of research project report SP1010[3]). Where a C4SL has been published, the RSK GAC duplicates the C4SL published values using all input parameters within the SP1010 final project report[3] and associated appendices[6], and adopts them as GAC for these six substances.

For all other substances the C4SL exposure modifications, with the exception of the "top two" produce type approach taken in the C4SL, have been applied to the current RSK GAC. These include alterations to daily inhalation rates for residential and commercial scenarios, reducing soil adherence factors in children (age classes 1 to 12 only) for residential land use, reducing exposure frequency for dermal contact outdoors for residential land use, and updated produce type consumption rates (90th percentile) based on recent data from the National Diet and Nutrition Survey.

The RSK GAC have also been revised with updated toxicology published by LQM/CIEH in 2015[7], where a C4SL has not been published.

RSK GAC derivation for metals and organic compounds

Model selection

Soil assessment criteria (SAC) were calculated using the Contaminated Land Exposure Assessment (CLEA) tool v1.06, supporting EA guidance[5,8,9] and revised exposure scenarios published for the C4SL[3]. Groundwater assessment criteria (GrAC) protective of human health via the inhalation pathway were derived using the RBCA 1.3b model. RSK has updated the inputs within RBCA to reflect EA guidance[1,5,8,9]. The SAC and GrAC collectively are termed GAC.

Conceptual model

In accordance with SR3[5], the residential with home-grown produce scenario considers risks to a female child between the ages of 0 and 6 years old as the highest risk scenario. In accordance

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with Box 3.1 of SR3[5], the pathways considered for production of the SAC in the residential with home-grown produce scenario are

- direct soil and dust ingestion
- consumption of home-grown produce
- consumption of soil attached to home-grown produce
- dermal contact with soil and indoor dust
- inhalation of indoor and outdoor dust and vapours.

Figure 1 is a conceptual model illustrating these linkages.

In line with guidance in the EA SGV report for cadmium[1], the RSK GAC for cadmium has been derived based on estimates representative of lifetime exposure. Although young children are generally more likely to have higher exposures to soil contaminants, the renal toxicity of cadmium, and the derivation of the TDI_{oral} and TDI_{inh}, are based on considerations of the kidney burden accumulated over 50 years or so. It is therefore reasonable to consider exposure not just in childhood but averaged over a longer period.

The pathway considered in production of the GrAC is the volatilisation of compounds from groundwater and subsequent vapour inhalation by residents while indoors. Figure 2 illustrates this linkage. Although the outdoor air inhalation pathway is also valid, this contributes little to the overall risks owing to the dilution in outdoor air. Within RBCA, the solubility limit of the chemical restricts the extent of volatilisation, which in turn drives the indoor air inhalation pathway. While the same restriction is not built into the CLEA model, the CLEA model output cells are flagged red where the soil saturation limit has been exceeded.

With respect to volatilisation, the CLEA model assumes a simple linear partitioning of a chemical in the soil between the sorbed, dissolved and vapour phase[9]. The upper boundaries of this partitioning are represented by the maximum aqueous solubility and pure saturated vapour concentration of the chemical. The CLEA model estimates saturated soil concentrations where these limits are reached[9]. The CLEA software uses a traffic light system to identify when individual and/or combined assessment criteria exceed the lower of either the aqueous- or vapour-based soil saturation limits. Model output cells are flagged red where the saturated soil concentration has been exceeded and the contribution of the indoor and outdoor vapour pathway to total exposure is greater than 10%. In this case, further consideration of the following is required[9]:

- Free phase contamination may be present.
- Exposure from the vapour pathways will be over-predicted by the model, as in reality the vapour phase concentration will not increase at concentrations above saturation limits.
- Where the vapour pathway contribution is greater than 90%, it is unlikely the relevant health criteria value (HCV) will be exceeded at soil concentrations at least a factor of ten higher than the relevant HCV.

Where the vapour pathway is the predominant pathway (contributes greater than 90% of exposure) or the only exposure route considered and the cell is highlighted red (SAC exceeds saturation limit), the risk based on the assumed conceptual model is likely to be negligible as the vapour risk is assumed to be tolerable at maximum possible soil concentrations. In such circumstances, the vapour pathway exposure should be considered based on the presence of free phase or non-aqueous phase liquid sources and the measured concentrations of volatile organic compounds (VOC) in the vapour phase. Screening could be considered based on setting

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the SAC as the modelled soil saturation limits. However, as stated within the CLEA handbook[9], this is likely to not be practical in many cases because of the very low saturation limits and, in any case, is highly conservative.

It should also be noted that for mixtures of compounds, free phase may be present where soil (or groundwater) concentrations are well below saturation limits for individual compounds.

Where the vapour pathway is only one of the exposure pathways considered, an additional approach can then be utilised as detailed within Section 4.12 of the CLEA model handbook[9], which explains how to calculate an effective assessment criterion manually.

SR3[5] states that, as a general rule of thumb, it is recognised that estimating vapour phase concentrations from dissolved and sorbed phase contamination by petroleum hydrocarbons are at least a factor of ten higher than those likely to be measured on-site. RSK has therefore applied an empirical subsurface to indoor air correction factor of 10 into the CLEA model chemical database for all petroleum hydrocarbon fractions (including BTEX, trimethylbenzenes and the polycyclic aromatic hydrocarbons (PAH) naphthalene, acenaphthene and acenaphthylene) to reduce this conservatism.

Input selection

The most up-to-date published chemical and toxicological data was obtained from EA Report SC050021/SR7[10], the EA TOX[1] reports, the C4SL SP1010 project report and associated appendices[3,6] or the 2015 LQM/CIEH report[7]. Where a C4SL has been published, the RSK GAC have duplicated the C4SL published values using all input parameters within the SP1010 final project report[3] and associated appendices[6], and has adopted them as GAC for these six substances. Toxicological and specific chemical parameters for aromatic hydrocarbon C_8–C_9 (styrene), 1,2,4-trimethylbenzene and methyl tertiary-butyl ether (MTBE) were obtained from the CL:AIRE Soil Generic Assessment Criteria report[11].

For TPH, aromatic hydrocarbons C_5–C_8 were not modelled, as this range comprises benzene and toluene, which are modelled separately. The aromatic C_8–C_9 hydrocarbon fraction comprises ethylbenzene, xylene and styrene. As ethylbenzene and xylene are being modelled separately, the physical, chemical and toxicological data for aromatic C_8–C_9 have been taken from styrene.

For the GrAC, owing to the lack of UK-specific data, default information in the RBCA model was used to evaluate MTBE. No published UK data was available for 1,3,5-trimethylbenzene, so information was obtained from the RBCA model. RBCA uses toxicity data for the inhalation pathway in different units to the CLEA model and cannot consider separately the mean daily intake (MDI), occupancy periods or breathing rates. Therefore, the HCV in RBCA was amended to take account of

- amendments to the MDI using Table 3.4 of SR2[8]
- a child weighing 13.3kg (average of 0–6 year old female in accordance with Table 4.6 of SR3[5]) and breathing 11.65m^3 (average daily inhalation rate for a 0–6-year old female in accordance with Table 4.14 of SR3[5]). Inhalation rates used in the derivation of the GrAC have not been updated in line with the 2011 USEPA published values[12]; these will be updated in subsequent revisions of the RSK GAC. The lower inhalation rates presented by the USEPA in 2011 for ages classes 1 to 11 (values are higher for age classes 12 to 18) are not considered to make a significant difference.
- the 50% rule (for petroleum hydrocarbons, trimethylbenzenes and MTBE)[8,9] where MDI data is not available but background exposure is considered important in the overall exposure.

Physical parameters

For the residential with home-grown produce scenario, the CLEA default building is a small, two-storey terrace house with a concrete ground-bearing slab. The house is assumed to have a 100m^2 private garden consisting of lawn and flowerbeds, incorporating a 20m^2 plot for growing fruit and vegetables consumed by the residents. SR3[5] notes this residential building type to be the most conservative in terms of potential for vapour intrusion. The building parameters used in the production of the RSK GACs are the default CLEA v1.06 inputs presented in Table 3.3 of SR3[3], with a dust loading factor detailed in Section 9.3 of SR3[5]. The parameters for a sandy loam soil type were used in line with Table 4.4 of SR3[5]. This includes a value of 6% for the percentage of soil organic matter (SOM) within the soil. In RSK's experience, this is rather high for many sites. To avoid undertaking site-specific risk assessments for SOM, RSK has produced an additional set of GAC for SOM of 1% and 2.5% for all substances using the CLEA tool.

For the GrAC, the depth to groundwater was taken as 2.5m based on RSK's experience of assessing the volatilisation pathway from groundwater. The GrAC were produced using the input parameters in Table 4.

Summary of modifications to the default CLEA 1.06/SR3[5] input parameters for residential with home-grown produce land-use scenario

In summary, the RSK GAC were produced using the default input parameters for soil properties, the air dispersion model, building properties and the vapour model detailed in SR3[5]. Modifications to the default SR3[5] exposure scenarios based on the C4SL exposure scenarios[3] are presented in Tables 2 and 3 below.

The final selected GAC are presented by pathway in Table 5 and the combined GAC in Table 6.

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Figure 1: Conceptual model for residential scenario with home-grown produce

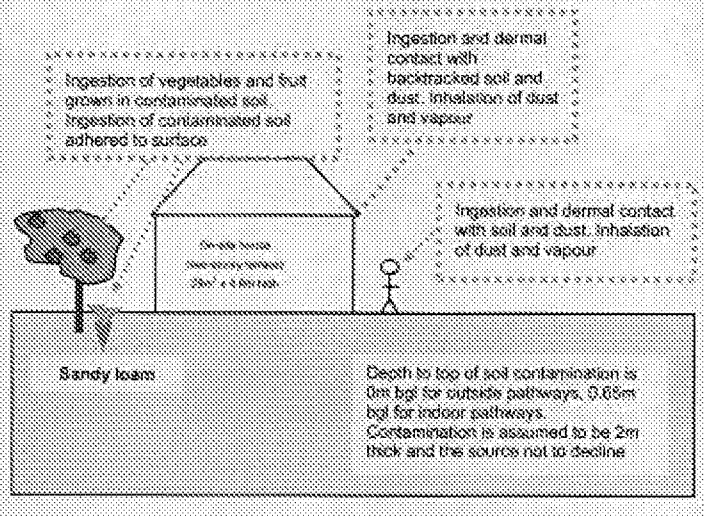


Table 1: Exposure assessment parameters for residential scenario with home-grown produce – inputs for CLEA model

Parameter	Value	Justification
Land use	Residential with homegrown produce	Chosen land use
Receptor	Female child age 1 to 6	Key generic assumption given in Box 3.1, SR3[20]
Building	Small terraced house	Key generic assumption given in Box 3.1, SR3. Small, two-storey terraced house chosen, as it is the most conservative residential building type in terms of protection from vapor intrusion (Section 3.4.8, SR3)[20]
Soil type	Sandy Loam	Most common UK soil type (Section 4.3.1, Inset Table 3.1, SR3)[20]
Start AC (age class)	1	Range of age classes corresponding to key generic assumption that the critical receptor is a young female child aged 0–6. From Box 3.1, SR3[20]
End AC (age class)	6	
SOM (%)	6	Representative of sandy loamy soil according to EA guidance note dated January 2009 entitled 'Changes We Have Made to the CLEA Framework Documents'[21]
	1	To provide SAC for sites where SOM <6% as often observed by RSK
	2.5	
pH	7	Model default

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Table 2: Residential with home-grown produce – modified home-grown produce data

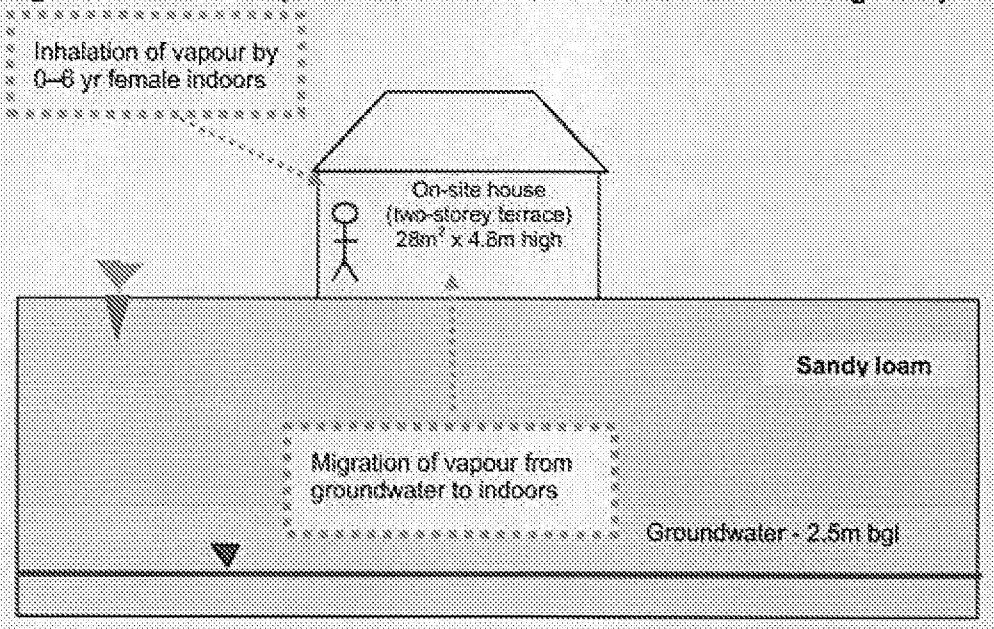
Name	Consumption rate 90th percentile (g FW kg^{-1} BW day^{-1}) by age class						Dry weight conversion factor (g DW g^{-1} FW)	Home-grown fraction (average)	Home-grown fraction (high end)	Soil loading factor (g g^{-1} DW)	Preparation correction factor
	1	2	3	4	5	6					
Green vegetables	7.12	5.87	5.87	5.87	4.53	4.53	0.096	0.05	0.33	1.00E-03	2.00E-01
Root vegetables	10.7	2.83	2.83	2.83	2.14	2.14	0.103	0.06	0.4	1.00E-03	1.00E+00
Tuber vegetables	16	6.6	6.6	6.6	4.95	4.95	0.21	0.02	0.13	1.00E-03	1.00E+00
Herbaceous fruit	1.83	3.39	3.39	3.39	2.24	2.24	0.058	0.06	0.4	1.00E-03	6.00E-01
Shrub fruit	2.23	0.46	0.46	0.46	0.19	0.19	0.166	0.09	0.6	1.00E-03	6.00E-01
Tree fruit	3.82	10.3	10.3	10.3	5.16	5.16	0.157	0.04	0.27	1.00E-03	6.00E-01
Justification	Table 3.4, SP1010[3]						Table 6.3, SR3[5]	Table 4.19, SR3[5]		Table 6.3, SR3[5]	

Table 3: Residential with home-grown produce – modified and use and receptor data

Parameter	Unit	Age class					
		1	2	3	4	5	6
EF (soil and dust ingestion)	day yr^{-1}	180	365	365	365	365	365
EF (consumption of home-grown produce)	day yr^{-1}	180	365	365	365	365	365
EF (skin contact, indoor)	day yr^{-1}	180	365	365	365	365	365
EF (skin contact, outdoor)	day yr^{-1}	170	170	170	170	170	170
EF (inhalation of dust and vapour, indoor)	day yr^{-1}	365	365	365	365	365	365
EF (inhalation of dust and vapour, outdoor)	day yr^{-1}	365	365	365	365	365	365
Justification		Table 3.5, SP1010[3]; Table 3.1, SR3[5]					
Soil to skin adherence factor (outdoor)	mg cm^{-2} day^{-1}	0.1	0.1	0.1	0.1	0.1	0.1
Justification		Table 3.5, SP1010[3]					
Inhalation rate	m^3 day^{-1}	5.4	8.0	8.9	10.1	10.1	10.1
Justification		Mean value USEPA, 2011[1,2]; Table 3.2, SP1010[3]					
Notes: For **cadmium**, the exposure assessment for a residential land use is based on estimates representative of lifetime exposure AC1-18. This is because the TDI_{oral} and TDI_{inh} are based on considerations of the kidney burden accumulated over 50 years. It is therefore reasonable to consider exposure not just in childhood but averaged over a longer period. See the Environment Agency Science Report SC05002/ TOX 3[1], Science Report SC050021/Cadmium SGV[1] and the project report SP1010[3] for more information.							

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Figure 2: GrAC conceptual model for RBCA residential with home-grown produce scenario



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Table 4: Residential with home-grown produce – RBCA inputs

Parameter	Unit	Value	Justification
Receptor			
Averaging time	Years	6	From Box 3.1, SR3[5]
Receptor weight	kg	13.3	Average of CLEA 0–6 year old female data, Table 4.6, SR3[5]
Exposure duration	Years	6	From Box 3.1, report, SR3[5]
Exposure frequency	Days/yr	350	Weighted using occupancy period of 23 hours per day for 365 days of the year
Soil type – sandy loam			
Total porosity	-	0.53	CLEA value for sandy loam. Parameters for sandy loam from Table 4.4, SR3[5]
Volumetric water content	-	0.33	
Volumetric air content	-	0.20	
Dry bulk density	g cm^{-3}	1.21	
Vertical hydraulic conductivity	cm s^{-1}	3.56E-3	CLEA value for saturated conductivity of sandy loam, Table 4.4, SR3[5]
Vapour permeability	m^2	3.05E-12	Calculated for sandy loam using equations in Appendix 1, SR3[5]
Capillary zone thickness	m	0.1	Professional judgement
Fraction organic carbon	%	0.0348	Representative of sandy loam according to EA guidance note dated January 2009 entitled 'Changes We Have Made to the CLEA Framework Documents'[13]
Building			
Building volume/area ratio	m	4.8	Table 3.3, SR3[5]
Foundation area	m^2	28	
Foundation perimeter	m	22	Calculated assuming building measures 7m x 4m to give 28m^2 foundation area
Building air exchange rate	d^{-1}	12	Table 3.3, SR3[5]
Depth to bottom of foundation slab	m	0.15	
Foundation thickness	m	0.15	
Foundation crack fraction	-	0.0151	Calculated from floor crack area of 423 cm^2 and building footprint of 28m^2 in Table 4.21, SR3[5]
Volumetric water content of cracks	-	0.33	Assumed equal to underlying soil type in assumption that cracks become filled with soil over time. Parameters for sandy loam from Table 4.4, SR3[5]
Volumetric air content of cracks	-	0.2	
Indoor/outdoor differential pressure	Pa	3.1	From Table 3.3, SR3[5]

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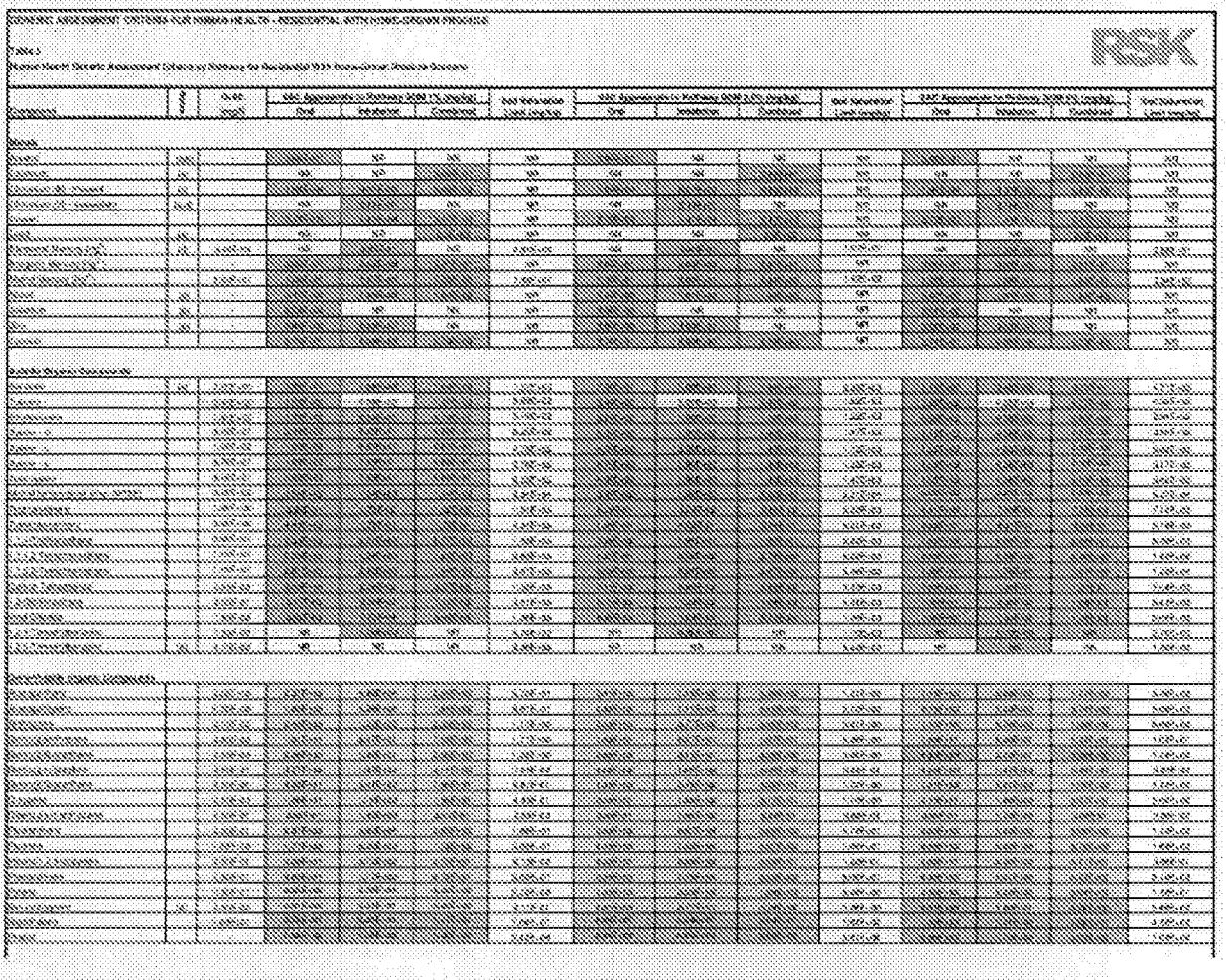
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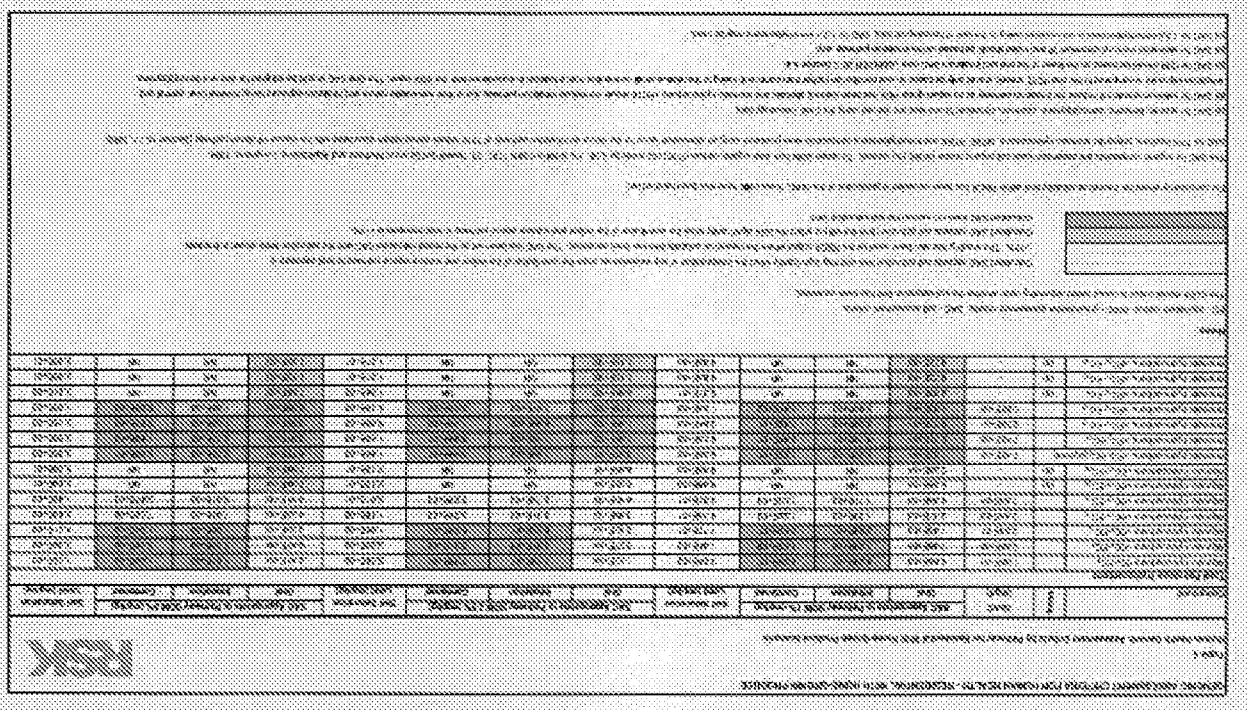


Table 6
Human Health Generic Assessment Criteria for Residential with home-grown produce

Compound	GrAC for Groundwater (mg/l)	SAC for Soil SOM 1% (mg/kg)	SAC for Soil SOM 2.5% (mg/kg)	SAC for Soil SOM 6% (mg/kg)
Metals				
Arsenic	-	37	37	37
Cadmium	-	30	30	30
Chromium (III) - trivalent	-	910	910	910
Chromium (VI) - hexavalent	-	21	21	21
Copper	-	2,500	2,500	2,500
Lead	-	200	200	200
Elemental Mercury (Hg^0)	0.0004	0.2	0.6	1.2
Inorganic Mercury (Hg^{2+})	-	36	35	32
Methyl Mercury (Hg^{2+})	38	10	15	13
Nickel	-	180	180	180
Selenium	-	268	268	268
Zinc	-	3,900	3,900	3,900
Cyanide	-	2.8	3.6	3.8
Volatile Organic Compounds				
Benzene	7.2	1.84	1.84	0.57
Toluene	870	130	300	390
Ethylbenzene	300	90	110	200
Xylene - m	94	59	146	287
Xylene - o	100	61	143	332
Xylene - p	87	57	133	310
Total xylene	94	57	133	310
Methyl tertiary Butyl ether (MTBE)	2200	120	250	510
Dichloroethene	1.8	0.03	0.03	0.09
Tetrachloroethene	3.6	0.2	0.6	0.9
1,1,1-Trichloroethane	28	2	18	38
1,1,1,2 Tetrachloroethane	14	1.2	2.6	6.6
1,1,2,2-Tetrachloroethane	14	1.6	3.5	7.7
Carbon Tetrachloride	0.969	0.096	0.096	0.127
1,2 Dichloroethane	0.3	0.007	0.011	0.019
Vinyl Chloride	0.019	0.0008	0.0008	0.0014
1,2,4-Trimethylbenzene	0.078	1.8	4.3	9.7
1,3,5-Trimethylbenzene	0.047	1.8	NR	NR
Semi-Volatile Organic Compounds				
Acenaphthene	3.9	200	340	1,170
Acenaphthylene	4.2	180	440	870
Anthracene	0.023	2,400	5,300	10,900
Benzo(a)anthracene	0.0092	7	11	13
Benzo(b)fluoranthene	0.009	2.6	3.3	3.7
Benzo(k)fluoranthene	0.009	315	340	360
Benzo(g,h,i)perylene	0.0026	77	80	138
Chrysene	0.015	15	22	27
Dibenz(a,h)anthracene	0.0025	0.24	0.28	0.30
Fluoranthene	0.63	280	580	900
Fluorene	2.8	170	410	880
Indeno(1,2,3-cd)pyrene	0.0092	27	36	41
Phenanthrene	0.95	190	320	440
Pyrene	0.13	620	1,340	2,240
Benzo(a)pyrene	0.0037	3	3	3
Naphthalene	1.8	13	30	75
Phenol	-	120	210	360
Total Petroleum Hydrocarbons				
Aliphatic hydrocarbons EC_5-EC_6	10	42	78	180
Aliphatic hydrocarbons >EC_6-EC_8	9.8	100	230	520
Aliphatic hydrocarbons >EC_8-EC_{10}	0.93	27	65	154
Aliphatic hydrocarbons >EC_{10}-EC_{12}	0.164	130 (NR)	300 (NR)	700 (NR)
Aliphatic hydrocarbons >EC_{12}-EC_{16}	0.00039	1,500 (NR)	2,200 (NR)	13,000 (NR)
Aliphatic hydrocarbons >EC_{16}-EC_{35}	-	34,000 (NR)	76,000 (NR)	78,000
Aliphatic hydrocarbons >EC_{35}-EC_{44}	-	34,000 (NR)	76,000 (NR)	78,000
Aromatic hydrocarbons >EC_5-EC_7 (benzene)	7.4	11	25	56
Aromatic hydrocarbons >EC_7-EC_8	7.4	34	83	189
Aromatic hydrocarbons >EC_8-EC_{10}	2.6	74	174	367
Aromatic hydrocarbons >EC_{10}-EC_{12}	0.8	138	330	600
Aromatic hydrocarbons >EC_{12}-EC_{16}	-	303	503	850
Aromatic hydrocarbons >EC_{16}-EC_{35}	-	908	1,100	1,200
Aromatic hydrocarbons >EC_{35}-EC_{44}	-	908	1,100	1,200
Minerals				
Asbestos	-	No asbestos detected with 10 or <0.001% dry weight*		

Notes:

- Generic assessment criteria not derived owing to low volatility of substance and therefore no pathway, or an absence of toxicological data.
- NR - SAC for 1,3,5-trimethylbenzene is not recorded owing to the lack of toxicological data. SAC for 1,2,4-trimethylbenzene may be used.
- GAC - appropriate criterion, GrAC - groundwater assessment criteria, SAC - soil assessment criteria.
- * LOD for weight of asbestos per unit weight of soil calculated on a dry weight basis using PLM, Nonpolarising and gravimetry.

The SAC for organic compounds are dependent on Soil Organic Matter (SOM) (%) content. To obtain SOM from total organic carbon (TOC) (%) divide by 0.58.
1% SOM = 0.58% TOC. BL Rowell Soil Science: Methods and Applications, Longhorne, 1994.

SAC for TPH fractions, phenylene aromatic hydrocarbons, MTBE, BTEX and monocyclic aromatic compounds were produced using an attenuation factor for the vapour inhalation pathway of 10 to reduce concentrations associated with the vapour inhalation pathway, section 10.1.1, SR3.

SAC is Saturation limit - The SAC has been set as the lesser calculated SAC and the saturation limit shown in brackets.
CIRIA has adopted an approach for petroleum hydrocarbons in accordance with SCR/CIEH whereby the concentration modelled for each petroleum hydrocarbon fraction has been calculated as the GAC with the corresponding solubility or vapour saturation limits given in brackets.

SAC is NR(NAPL) - For consistency where the GrAC exceeds the solubility limit, SAC has been set at the solubility limit. The GrAC is conservative since concentrations at this threshold are very unlikely to be at sufficient concentration to result in an exceedance of the target criteria value at the point of exposure (i.e. indoor air) provided free phase product is absent.

18 Frogmore Road
Hemel Hempstead
Hertfordshire
HP3 9RT
UK

[redacted]

Our Ref: 27621L04/eh

20th October 2016

CALA Homes (South Home Counties) Limited
Tilford House
Farnham Business Park
Weydon Lane
Farnham
Surrey, GU9 8QT

For attention of: Mr Gary Biggs

Dear Sir

RE: ASBESTOS DELINEATION WORKS AT FORMER WEST END NURSERY, ANGMERING PHASE 1 – PLOTS 1 to 19

1. BACKGROUND

RSK Environment Limited (RSK) was commissioned by CALA Homes (South Home Counties) Limited to carry out delineation of asbestos in soils in the gardens of Plots 1-19. The site was previously occupied by a garden nursery growing plants and herbs.

Several phases of investigation and risk assessment have previously been carried out by RSK. These are outlined in the following reports:

- RSK, 27621- R01(02) 'Geo-environmental Site Investigation', West End Nursery, Angmering, September 2015;
- RSK, 27621- R02 (00) 'Additional Geo-environmental Site Investigation and Remediation', West End Nursery, Angmering, June 2015;
- RSK, 27621- R03 (01) 'Remedial Strategy', West End Nursery, Angmering, January 2016;
- RSK, 27621- R04 (01) 'Supplementary Geo-environmental Site Assessment', West End Nursery, Angmering, June 2016;

The previous buildings on site have been demolished since the completion of the initial investigation. After site clearance, evidence for cement-bound asbestos has been identified at surface level across much of the site. During remedial works by Keltbray, a walkover survey of the site was completed to provide further information on spread of asbestos impact. Additional pockets of made ground containing asbestos were identified within shallow soils during groundworks, particularly in the northwestern area of the site (Phase 1).

INVESTORS IN PEOPLE

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2. SITE WORKS

To provide further information on asbestos impact within Phase 1, RSK carried out intrusive investigation work on 31st August and 7th September 2016 to undertake delineation works for Plots 1-19. The objective of the works was to identify made ground and presence of asbestos within each plot.

2.1 Sampling strategy and methods

The techniques adopted for the investigation have been chosen considering the anticipated ground conditions, existing land use and the proposed development. Mechanically excavated trial pits were considered to be the most appropriate to provide suitable recovery of soils.

2.2 Health and safety considerations

Prior to intrusive works, the RSK engineer inspected service plans and undertook a service clearance using a cable avoidance tool and signal generator to identify any potential underground utilities.

2.3 Investigation locations

Plots 1 – 14 comprised testing under each house and rear garden area, and Plots 15-17, and 19 comprised testing within rear gardens only. It was not possible to investigate Plot 18 due to access constraints.

The exploratory hole records are presented in **Appendix C**.

The locations of the intrusive investigations are shown on **Figure 2**. The investigation pits were located in the vicinity of survey markers, provided by CALA for each plot.

2.4 Soil sampling and laboratory analysis

Soils collected for laboratory analysis were collected in a variety of containers appropriate to the anticipated testing suite required. Samples were stored in accordance with the RSK quality procedures to maintain sample integrity and preservation and to minimise the chance of cross contamination.

56 samples were taken and are recorded together with their depths on the laboratory certificates in **Appendix D**. The samples were transported to the laboratory in chilled cool boxes. Laboratory chain of custody forms can be provided if required. All samples were analysed for asbestos fibres.

3. GROUND CONDITIONS

The results of the intrusive investigation and subsequent laboratory analysis undertaken are detailed below. The descriptions of the strata encountered, notes regarding visual evidence of potential asbestos cement, list of samples taken and field observations are included on the exploratory hole records presented in **Appendix C**.

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3.1 Soil

The exploratory holes revealed that the site is underlain by a variable thickness of made ground over River Terrace Deposits encountered at depth. For the purpose of discussion, the ground conditions are summarised in **Table 1** and the strata discussed in later subsections.

Table 1: General succession of strata encountered

Strata	Exploratory holes encountered	Depth to top of stratum m bgl	Thickness (m)
Made Ground	All	Ground level	0.15 – 1.10
River Terrace Deposits	All, except TPP14H and TPP19G	0.70 – 1.20	Proven to 1.05

3.1.1 Made ground

The made ground typically comprised reworked River Terrace Deposits with variable proportions of concrete, brick, plastic fragments, plastic pipe, metal, and glass. Frequent disused black plastic irrigation pipes were found at depths between 0.10m and 0.60m.

3.1.2 River Terrace Deposits

This stratum typically comprised stiff orangish brown sandy clay with fine to medium sand.

3.1.3 Groundwater

No groundwater was encountered within the trial pits. Residual water was noted within the disused black irrigation pipes identified at various depths.

3.1.4 Visual evidence of suspected cement bound asbestos

Fragments of suspected cement bound asbestos were noted within made ground in TPP13G, TPP13H, TPP14G, TPP15G and TPP19G.

4. LABORATORY TESTING

Soil samples were submitted for laboratory analysis to screen for asbestos in soils.

4.1 Laboratory testing results

The results from the laboratory testing indicated that soils obtained from TPP12G at 0.10-0.20m and TPP17G at 0.20-0.30m tested positive for loose chrysotile fibres, and TPP17G 0.40-0.50m tested positive for loose amosite fibres.

5. CONCLUSIONS

On the basis of the results discussed above, it is recommended that made ground be removed and 600mm of clean cover should be placed in Plots 12-15, 17 and 19. Access was not possible to Plot 18

ARUN DISTRICT COUNCIL A/94/17/DOC

therefore it would be prudent to make allowance for capping in this area based on results from the surrounding area. A watching brief should be kept in place during groundworks in phase 1, as the possibility of further asbestos cannot be discounted. Further delineation works on the remainder of phase 1 will be completed in due course.

We trust that the information discussed above is acceptable and recommend this report be submitted to the NHBC and Local Authority accordingly. Should you require RSK to submit this information on your behalf, please do not hesitate to contact us.

Yours faithfully
For RSK Environment Limited

[redacted]

Edward Hughes
Graduate Geo-environmental Consultant

[redacted]

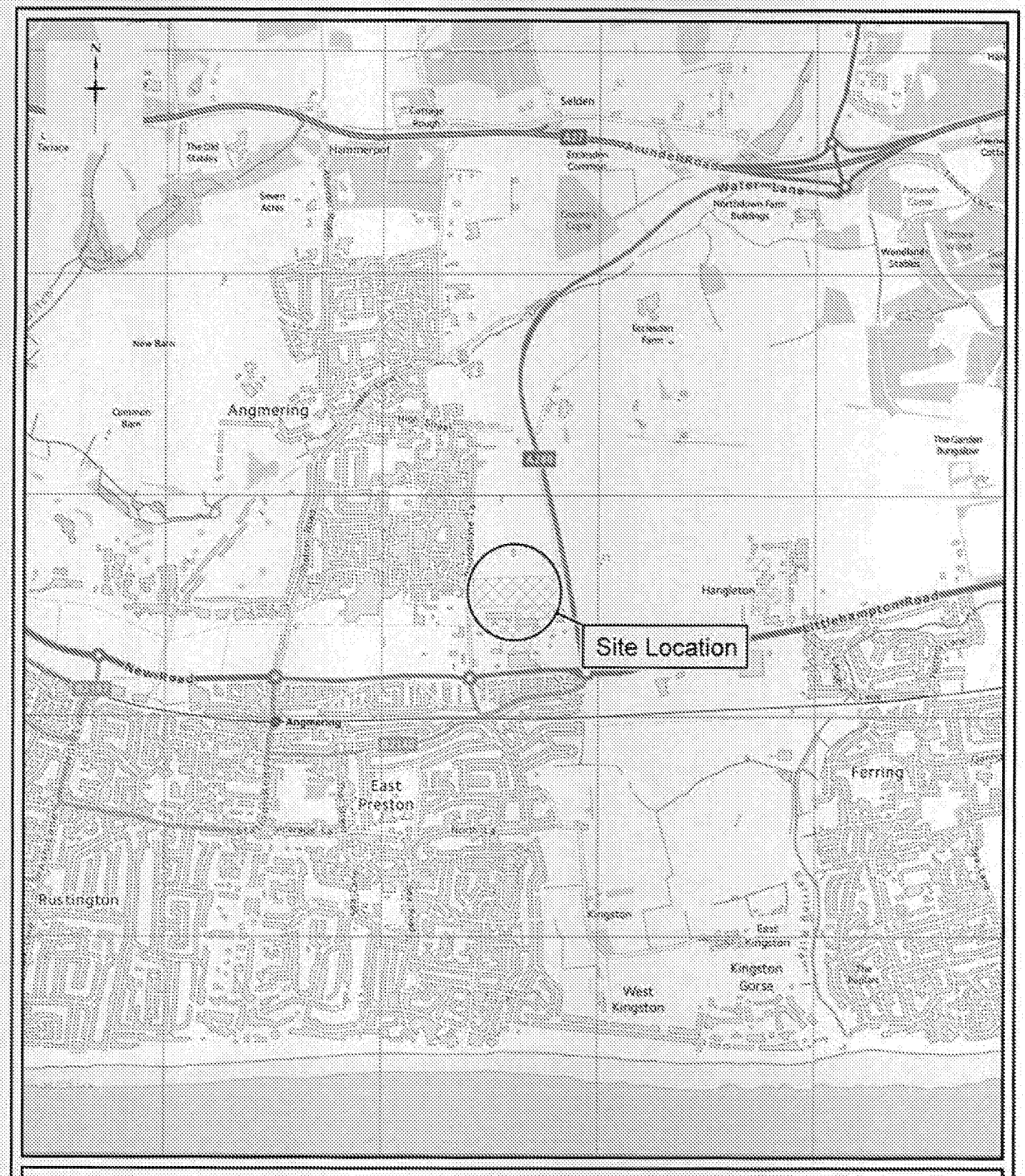
Andrew James
Principal Geo-environmental Consultant

Enc.

Figure 1	Site location map
Figure 2	Exploratory hole location plan
Appendix A	Service constraints
Appendix B	Photographic log
Appendix C	Trial pit logs
Appendix D	Laboratory certificates

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FIGURES



Contains Ordnance Survey data © Crown copyright and database right 2013

RSK
18 Progress Road
Hemel Hempstead
Hertfordshire
HP3 9RT
United Kingdom
Tel: +44 (0) 1442 437600
Fax: +44 (0) 1442 437660
Email: info@rsk.co.uk
Web: www.rsk.co.uk

Client: CALA HOMES (SOUTH HOME COUNTIES) LTD

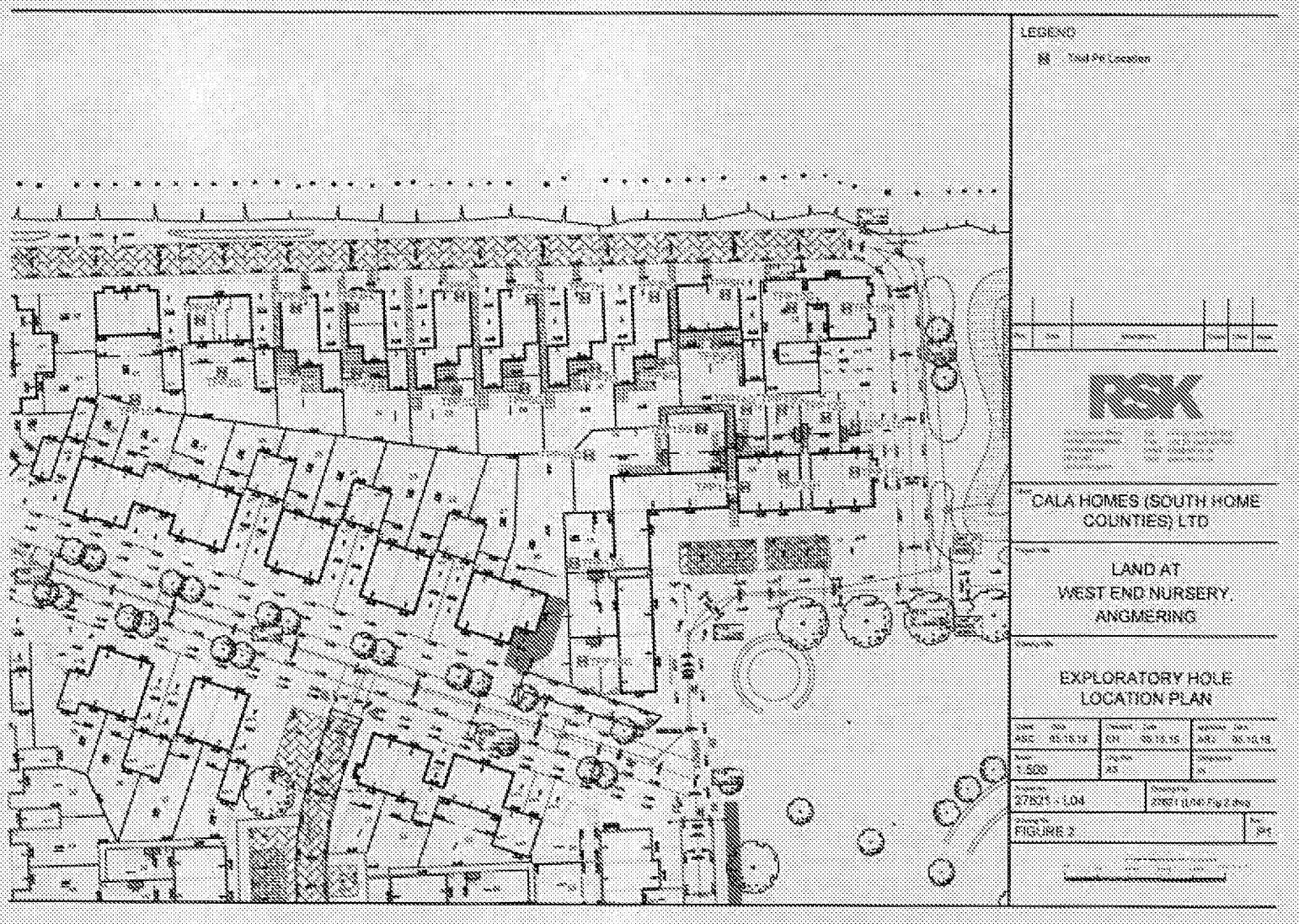
Project Title: WEST END NURSERY, ANGMERING

Drawing Title: SITE LOCATION MAP

Rev	Drawn	Date	Checked	Date	Approved	Date
00	ASC	10.10.16	ARJ	10.10.16	ARJ	10.10.16

Dimensions	Scale	Original Size	Project Number	Drawing File	Drawing Number
m	1:25,000	A4	27621 - L04	27621 - SLP.dwg	FIGURE 1

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APPENDIX A

SERVICE CONSTRAINTS

1. This report and the site investigation carried out in connection with the report (together the "Services") were compiled and carried out by RSK Environment Limited (RSK) for CALA Homes (South Counties) (the "client") in accordance with the terms of a contract between RSK and the "client", dated October 2016. The Services were performed by RSK with the skill and care ordinarily exercised by a reasonable environmental consultant at the time the Services were performed. Further, and in particular, the Services were performed by RSK taking into account the limits of the scope of works required by the client, the time scale involved and the resources, including financial and manpower resources, agreed between RSK and the client.

2. Other than that expressly contained in paragraph 1 above, RSK provides no other representation or warranty whether express or implied, in relation to the Services.

3. Unless otherwise agreed in writing the Services were performed by RSK exclusively for the purposes of the client. RSK is not aware of any interest of or reliance by any party other than the client in or on the Services. Unless expressly provided in writing, RSK does not authorise, consent or condone any party other than the client relying upon the Services. Should this report or any part of this report, or otherwise details of the Services or any part of the Services be made known to any such party, and such party relies thereon that party does so wholly at its own and sole risk and RSK disclaims any liability to such parties. **Any such party would be well advised to seek independent advice from a competent environmental consultant and/or lawyer.**

4. It is RSK's understanding that this report is to be used for the purpose described in the introduction to the report. That purpose was a significant factor in determining the scope and level of the Services. Should the purpose for which the report is used, or the proposed use of the site change, this report may no longer be valid and any further use of or reliance upon the report in those circumstances by the client without RSK 's review and advice shall be at the client's sole and own risk. Should RSK be requested to review the report after the date of this report, RSK shall be entitled to additional payment at the then existing rates or such other terms as agreed between RSK and the client.

5. The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the report inaccurate or unreliable. The information and conclusions contained in this report should not be relied upon in the future without the written advice of RSK. In the absence of such written advice of RSK, reliance on the report in the future shall be at the client's own and sole risk. Should RSK be requested to review the report in the future, RSK shall be entitled to additional payment at the then existing rate or such other terms as may be agreed between RSK and the client.

6. The observations and conclusions described in this report are based solely upon the Services which were provided pursuant to the agreement between the client and RSK. RSK has not performed any observations, investigations, studies or testing not specifically set out or required by the contract between the client and RSK. RSK is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the Services. For the avoidance of doubt, unless otherwise expressly referred to in the introduction to this report, RSK did not seek to evaluate the presence on or off the site of asbestos, electromagnetic fields, lead paint, heavy metals, radon gas or other radioactive or hazardous materials.

7. The Services are based upon RSK's observations of existing physical conditions at the Site gained from a walk-over survey of the site together with RSK's interpretation of information including documentation, obtained from third parties and from the client on the history and usage of the site. The Services are also based on information and/or analysis provided by independent testing and information services or laboratories upon which RSK was reasonably entitled to rely. The Services clearly are limited by the accuracy of the information, including documentation, reviewed by RSK and the observations possible at the time of the walk-over survey. Further RSK was not authorised and did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the client or third parties, including laboratories and information services, during the performance of the Services. RSK is not liable for any inaccurate information or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to RSK and including the doing of any independent investigation of the information provided to RSK save as otherwise provided in the terms of the contract between the client and RSK.

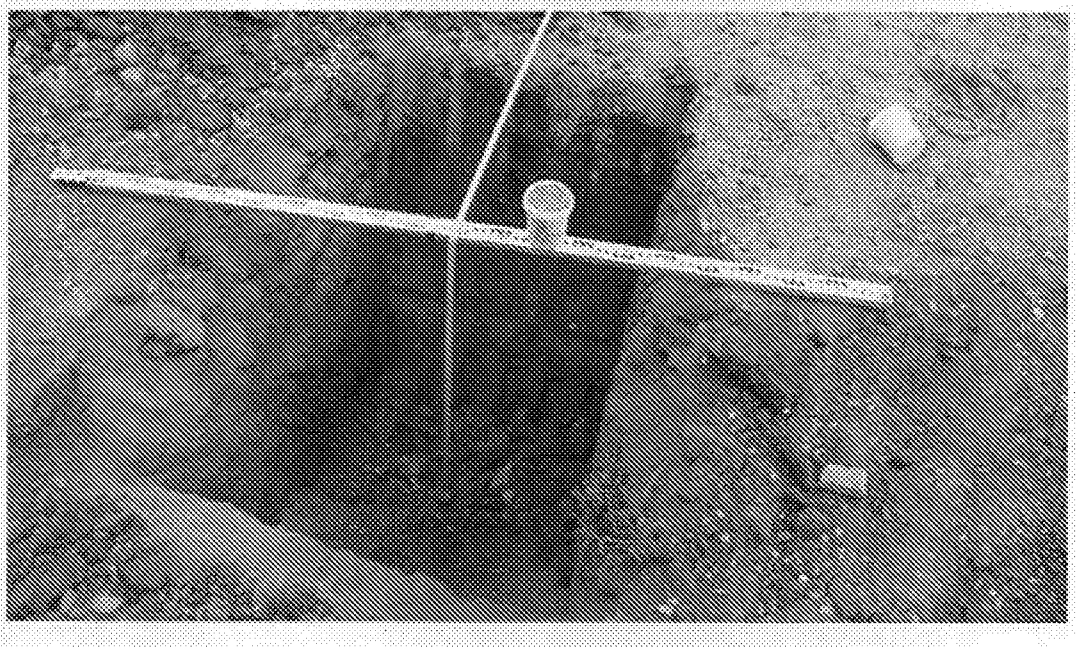
8. The intrusive environmental site investigation aspects of the Services is a limited sampling of the site at pre-determined borehole and soil vapour locations based on the operational configuration of the site. The conclusions given in this report are based on information gathered at the specific test locations and can only be extrapolated to an undefined limited area around those locations. The extent of the limited area depends on the soil and groundwater conditions, together with the position of any current structures and underground facilities and natural and other activities on site. In addition chemical analysis was carried out for a limited number of parameters [as stipulated in the contract between the client and RSK] [based on an understanding of the available operational and historical information], and it should not be inferred that other chemical species are not present.

9. Any site drawing(s) provided in this report is (are) not meant to be an accurate base plan, but is (are) used to present the general relative locations of features on, and surrounding, the site. Features (boreholes, trial pits etc) annotated on site plans are not drawn to scale but are centred over the approximate location. Such features should not be used for setting out and should be considered indicative only.

APPENDIX B
PHOTOGRAPHIC LOG

PHOTOGRAPHIC LOG

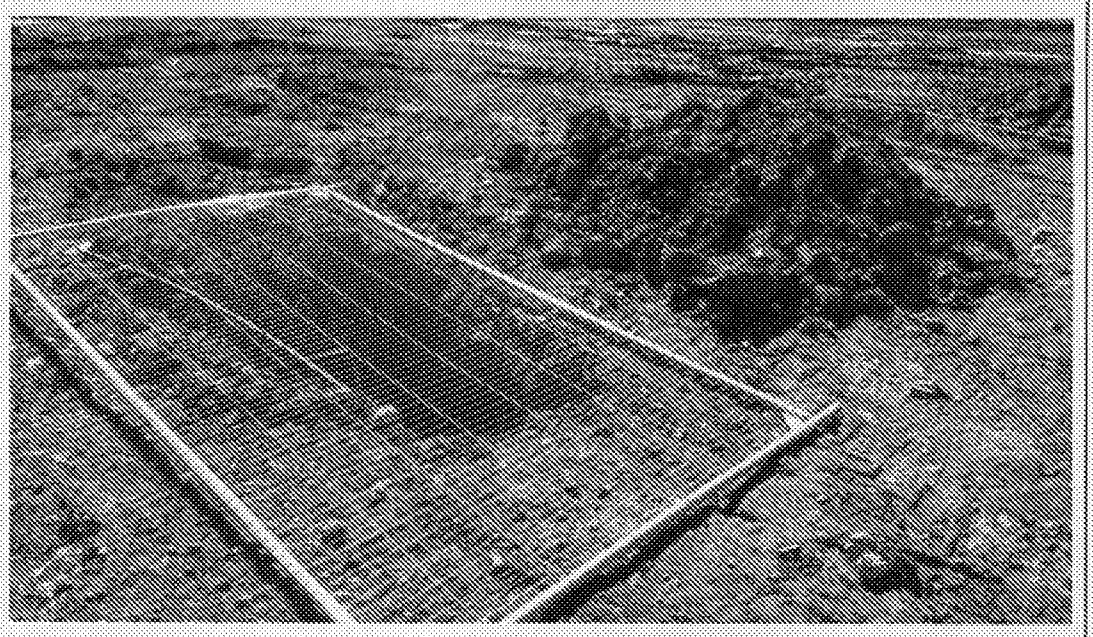
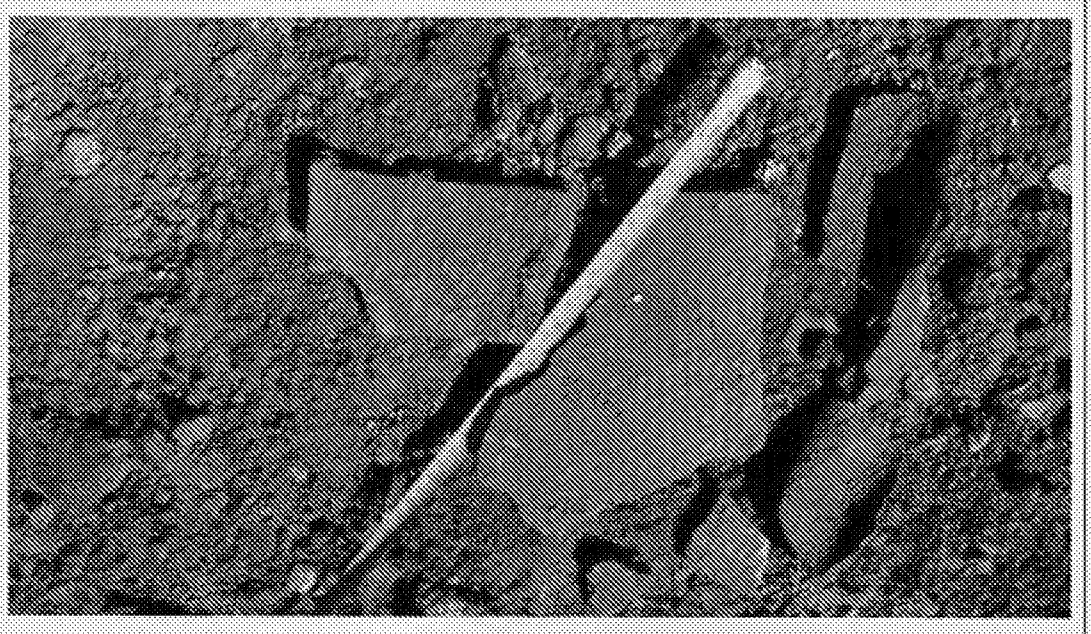
Site Location: West End Nursery

Photo No. 1 **Date:** 31/08/2016 TPP4G	
Photo No. 2 **Date:** 31/08/2016 TPP7G	

ARUN DISTRICT COUNCIL A/94/17/DOC

PHOTOGRAPHIC LOG

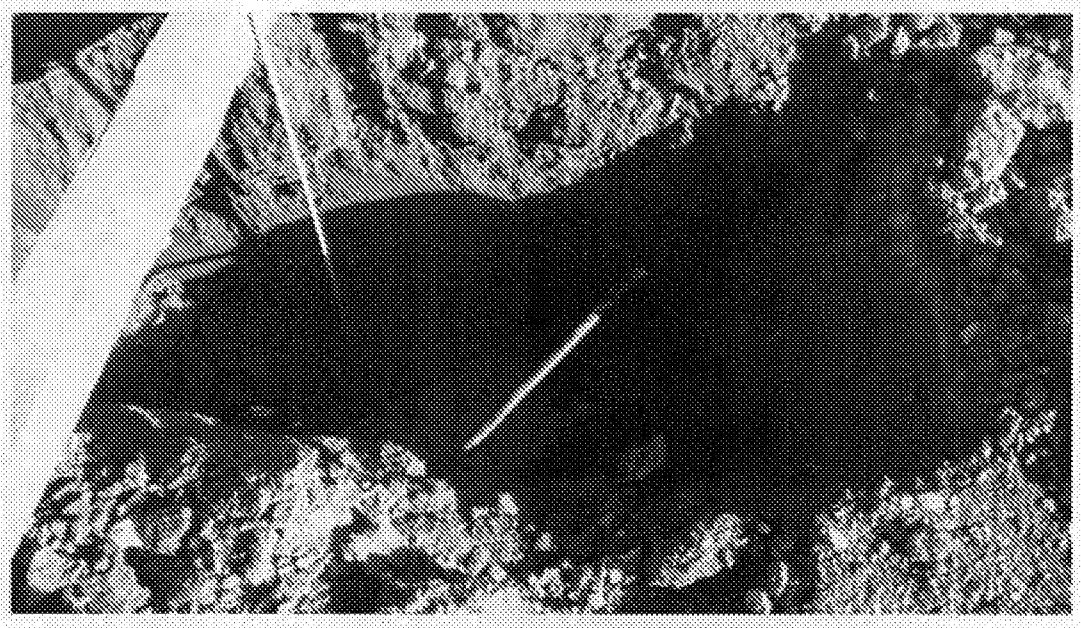
Site Location: West End Nursery

Photo No. 3 **Date:** 07/09/2016 TPP13G	
Photo No. 4 **Date:** 07/09/2016 Asbestos cement fragments found in spoil from TPP13G.	

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PHOTOGRAPHIC LOG

Site Location: West End Nursery

Photo No. 5 **Date:** 07/09/2016 General site vista from TPP17G	
Photo No. 6 **Date:** 07/09/2016 Disused large plastic pipe at base of TPP17G	

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APPENDIX C
TRIAL PIT LOGS

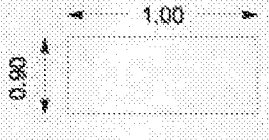
FINAL TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP1G

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	31.08.16	—	—	1 of 1
	End: 31.08.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Stiff orangish brown sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is angular to rounded fine to coarse flint.	(0.35)	
						0.30m : disused black plastic irrigation pipe.	0.35	
						Stiff orangish brown sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is angular to rounded fine to coarse flint. (RIVER TERRACE DEPOSITS)	(0.75)	
0.90-1.00	1	D						
						Trial pit terminated at 1.10m depth.	1.10	

Plan (Not to Scale)



General Remarks

1. Trial pit remained dry and stable during excavation.
2. Backfilled with arisings on completion.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	EHughes	

AGS

GINT_LIBRARY_V8_05.01.B | LibVersion: v8_38 - | Lib0004 FnVersion: v8_03 - Core+Logs 0003 | Log TRIAL PIT LOG | 27621 ANGMERING.GPJ - v8_05 | 26/09/16 - 16:14 | ER11.
RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437600, Fax: 01442 437600, Web: www.rsk.co.uk.
ARUN DISTRICT COUNCIL/94/17/DOC

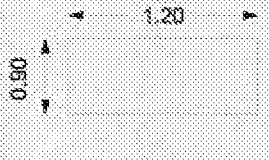
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP2G

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	31.08.16	---	---	1 of 1
	End: 31.08.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20-0.30	1	D				MADE GROUND: Stiff orangish brown sandy gravelly CLAY. Sand is fine to medium. Gravel is angular to rounded fine to coarse flint, brick, concrete and chalk.	(0.55)	
						0.30m : re-bar.		
							0.55	
0.60-0.70	2	D				Stiff orangish brown sandy CLAY. Sand is fine to medium. (RIVER TERRACE DEPOSITS)	(0.45)	
							1.00	
						Trial pit terminated at 1.00m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit remained dry and stable during excavation.
2. Backfilled with arisings on completion.

All dimensions in metres Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	EHughes	

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RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437600, Fax: 01442 437620, Web: www.rsk.co.uk
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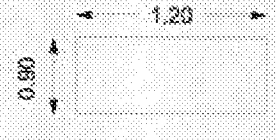
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP2H

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	31.08.16	---	---	1 of 1
	End: 31.08.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Stiff friable brown sandy gravelly CLAY. Sand is fine to medium. Gravel is angular to rounded fine to coarse flint, concrete and chalk.	(0.60)	
							0.60	
0.70-0.80	1	D				Stiff friable orangish brown sandy CLAY. Sand is fine to medium.	(0.60)	
							1.20	
						Trial pit terminated at 1.20m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit remained dry and stable during excavation.
2. Backfilled with arisings on completion.

All dimensions in metres | Scale: 1:25

Method Used:	Machine dug	Plant Used:	Tracked excavator	Logged By:	EHughes	Checked By:	

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RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437600, Fax: 01442 437550, Web: www.rsk.co.uk
ARUN DISTRICT COUNCIL WR/94/17/DOC

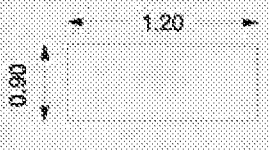
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP3G

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	31.08.16	---	---	1 of 1
	End: 31.08.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20-0.30	1	D				MADE GROUND: Light brown clayey gravelly SAND. Sand is fine to medium. Gravel is angular to rounded fine to coarse flint, chalk and some brick. 0.10m : disused black plastic irrigation pipe.	0.20	
						Stiff friable orangish brown slightly sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is angular to rounded fine to coarse flint. (RIVER TERRACE DEPOSITS)	(0.93)	
						Trial pit terminated at 1.13m depth.	1.13	

Plan (Not to Scale)



General Remarks

1. Trial pit remained dry and stable during excavation.
2. Backfilled with arisings on completion.

All dimensions in metres Scale: 1:25

Method Used:	Machine dug	Plant Used:	Tracked excavator	Logged By:	EHughes	Checked By:	

ARUN DISTRICT COUNCIL 16/94/17/DOC

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RSK Environment Ltd, 16 Progress Road, Home Hamgsstead, Hertfordshire, HP3 9RT. Tel: 01442 437600, Fax: 01442 437500, Web: www.rsk.co.uk

FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP3H

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	31.08.16	---	---	1 of 1
	End: 31.08.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Brown clayey very gravelly SAND. Sand is fine to medium. Gravel is angular to rounded fine to coarse flint and some hard plastic.	0.25	
0.30-0.35	1	D				0.20m : disused black plastic irrigation pipe.		
						Stiff friable orangish brown sandy very gravelly CLAY. Sand is fine to medium. Gravel is angular to rounded fine to coarse flint. (RIVER TERRACE DEPOSITS)		
0.60-0.70	2	D					(0.87)	
							1.12	
						Trial pit terminated at 1.12m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit remained dry and stable during excavation.
2. Backfilled with arisings on completion.

All dimensions in metres Scale: 1:25

Method Used:	Machine dug	Plant Used:	Tracked excavator	Logged By:	EHughes	Checked By:

GINT LIBRARY: V8_05.GLB Lib/version: v8_05 - Lib2008 Pr/Version: v8_03 - Comp+Logs 0803 | Log TRIAL PIT LOG | 27621 ANGMERING.GPJ - v8_05 | 29/09/16 - 16:14 | EXT:
RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437600, Fax: 01442 437500, Web: www.rsk.co.uk.
ARUN DISTRICT COUNCIL/94/17/DOO

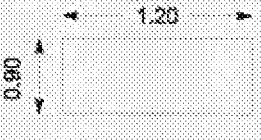
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP4G

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	31.08.16	---	---	1 of 1
	End: 31.08.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20-0.30	1	D				MADE GROUND: Brown clayey gravelly SAND. Sand is fine to coarse. Gravel is angular to rounded fine to coarse flint and some brick. 0.10m : disused black plastic irrigation pipe. 0.30-0.40m : becoming dark brownish grey.	(0.40)	
0.45-0.55	2	D				Stiff friable orangish brown sandy CLAY. Sand is fine to medium. (RIVER TERRACE DEPOSITS)	0.40	
							(0.70)	
						Trial pit terminated at 1.10m depth.	1.10	

Plan (Not to Scale)



General Remarks

1. Trial pit remained dry and stable during excavation.
2. Backfilled with arisings on completion.

All dimensions in metres

Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	EHughes	

GINT LIBRARY_V8_05.03.3 Library: v8_05 - 1.40004 Prototype: v8_03 - Cala+Logs 2003 | L:\g_TRIAL PIT LOG\27621 ANGMERING.GPJ - v8_03 | 29/09/16 - 16:14 | EH
RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437600, Fax: 01442 437800, Web: www.rsk.co.uk
ARUN DISTRICT COUNCIL/A/94/17/DOC

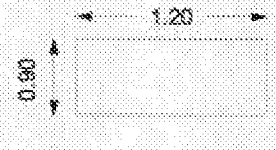
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP4H

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	31.08.16	---	---	1 of 1
	End: 31.08.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Brown clayey gravelly SAND. Sand is fine to coarse. Gravel is angular to rounded fine to coarse flint and some brick. Rare concrete slab up to 120mm.	(0.40)	
0.30-0.40	1	D				0.20-0.40m : becoming dark brownish grey very clayey very gravelly sand.	0.40	
						0.35m : disused black plastic irrigation pipe.		
0.50-0.60	2	D				Stiff friable orangish brown sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is angular to rounded fine to coarse flint. (RIVER TERRACE DEPOSITS)	(0.90)	
						Trial pit terminated at 1.30m depth.	1.30	

Plan (Not to Scale)



General Remarks

1. Trial pit remained dry and stable during excavation.
2. Backfilled with arisings on completion.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	EHughes	

GINT_LIBRARY_V8_05.01.0 Libversion: v8_135 - LandSim PiVersion: v8_28 - Comp=Logs 0003 | Log TRIAL PIT LOG | 27621 ANGMERING.GPJ - v8_03 | 29/09/16 - 16:14 | EHH
RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437808, Fax: 01442 437850. Web: www.rsk.co.uk
ARUN DISTRICT COUNCIL 94/17/DOC

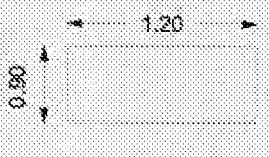
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP5G

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	31.08.16	---	---	1 of 1
	End: 31.08.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Brown clayey gravelly SAND. Sand is fine to coarse. Gravel is angular to rounded fine to coarse flint and some brick.	(0.40)	
0.30-0.40	1	D					0.40	
0.45-0.55	2	D				Stiff friable orangish brown sandy CLAY. Sand is fine to medium. (RIVER TERRACE DEPOSITS)	(0.85)	
						Trial pit terminated at 1.25m depth.	1.25	

Plan (Not to Scale)



General Remarks

1. Trial pit remained dry and stable during excavation.
2. Backfilled with arisings on completion.

All dimensions in metres Scale: 1:25

Method Used:	Machine dug	Plant Used:	Tracked excavator	Logged By:	EHughes	Checked By:	

ARUN DISTRICT COUNCIL A/94/17/OUT

GINT_LIBRARY_V8_05.GLB Library: v8_05 - 1.30.004 Prj Version: v8_05 - Connections 0023 | Log TRIAL PIT LOG | 27621 ANGMERING.GPJ - v8_05 | 29/09/16 - 16:14 | EH1.
RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437800. Fax: 01442 437900. Web: www.rsk.co.uk.

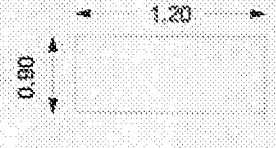
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP5H

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	31.08.16	---	---	1 of 1
	End: 31.08.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Brown clayey gravelly SAND. Sand is fine to coarse. Gravel is angular to rounded fine to coarse flint and some brick.	(0.40)	
0.30-0.40	1	D				0.30-0.40m : becoming dark brownish grey.	0.40	
0.45-0.55	2	D				Stiff friable orangish brown sandy CLAY. Sand is fine to medium. (RIVER TERRACE DEPOSITS)	(0.83)	
						Trial pit terminated at 1.23m depth.	1.23	

Plan (Not to Scale)



General Remarks

1. Trial pit remained dry and stable during excavation.
2. Backfilled with arisings on completion.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	EHughes	

GINT LIBRARY_V8_30.GLB Database: v8_30 - 1.00004 Polyhouse: v8_06 - Cala+Logs 3003 | Log FINAL PIT LOG | 27621 ENGINEERING.GPJ - v8_06 | 29/09/16 - 16:14 | Env.
RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437600, Fax: 01442 437399, Web: www.rsk.co.uk.
ARUN DISTRICT COUNCIL/94/17/DOC

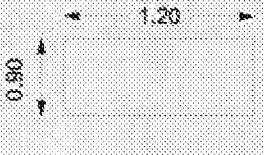
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP6G

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	31.08.16	---	---	1 of 1
	End: 31.08.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Brown clayey gravelly SAND. Sand is fine to coarse. Gravel is angular to rounded fine to coarse flint, some brick. Rare concrete cobbles up to 250mm.	(0.45)	
0.35-0.40	1	D						
						0.40-0.45m : disused black plastic irrigation pipe.	0.45	
0.50-0.60	2	D				Stiff friable orangish brown sandy CLAY. Sand is fine to medium. (RIVER TERRACE DEPOSITS)		
							(0.65)	
							1.10	
						Trial pit terminated at 1.10m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit remained dry and stable during excavation.
2. Backfilled with arisings on completion.

All dimensions in metres Scale: 1:25

Method Used:	Machine dug	Plant Used:	Tracked excavator	Logged By:	EHughes	Checked By:	

GINT LIBRARY_V8_05.GLB Library: v8_05 - Log2004 Prj version: v8_05 - Core Logs 0603 | Log TRIAL PIT LOG | 27621 ANGMERING.GPJ - v8_05 | 29/09/16 - 16:14 | 8241
RSK Environment Ltd, 18 Fragmore Road, Hemel Hempstead, Hertfordshire, HP3 8RT. Tel: 01442 437800. Fax: 01442 437850. Web: www.rsk.co.uk
ARUN DISTRICT COUNCIL/WA/94/17/DOC

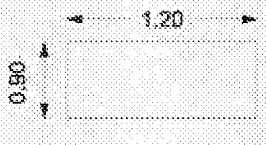
FINAL TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP6H

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	31.08.16	---	---	1 of 1
	End: 31.08.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Brown clayey gravelly SAND. Sand is fine to coarse. Gravel is angular to rounded fine to coarse flint, concrete and some glass.		
						0.10m : disused black plastic irrigation pipe.	(0.60)	
0.40-0.50	1	D				0.40-0.50m : becoming dark brownish grey.		
						0.55-0.60m : disused black plastic irrigation pipe.	0.60	
0.60-0.70	2	D				Stiff friable orangish brown sandy CLAY. Sand is fine to medium.		
							(0.65)	
							1.25	
						Trial pit terminated at 1.25m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit remained stable during excavation.
2. Seepage from disused pipe in north east corner and seepage from disused pipe on south side.
3. Backfilled with arisings on completion.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	EHughes	

GINT LIBRARY_V8_05.GLB Library: v8_05 - Lib0004 PolVersion: v8_05 - Comp.spp 3503 | Log TRIAL PIT LOG | 27621 ANGMERING.GPJ - v8_05 | 29/09/16 - 16:14 | EH1.
RSK Environmental Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 232550. Fax: 01442 437580. Web: www.rsk.co.uk
ARUN DISTRICT COUNCIL/16/94/17/DOC

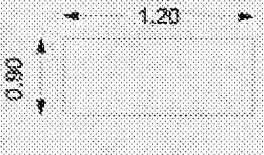
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP7G

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	31.08.16	---	---	1 of 1
	End: 31.08.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10-0.20	1	D				MADE GROUND: Brown clayey gravelly SAND. Sand is fine to coarse. Gravel is angular to rounded fine to coarse flint and concrete.		
						0.20-0.25m : disused black plastic irrigation pipe.	0.25	
0.40-0.50	2	D				Stiff orangish brown sandy CLAY. Sand is fine to medium. (RIVER TERRACE DEPOSITS)		
							(0.85)	
						Trial pit terminated at 1.10m depth.	1.10	

Plan (Not to Scale)



General Remarks

1. Trial pit remained dry and stable during excavation.
2. Backfilled with arisings on completion.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	EHughes	

GINT_LIBRARY_V8_05.GLB Library: v8_05 - LogCore 0003 | Log TRIAL PIT LOG | 27621 ANGMERING.GPJ - v8_05 | 29/09/16 - 16:18 | EH1
RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437820, Fax: 01442 437850, Web: www.rsk.co.uk
ARUN DISTRICT COUNCIL/V/94/17/DOC

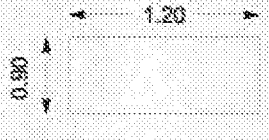
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP7H

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	31.08.16	---	---	1 of 1
	End: 31.08.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Brown clayey gravelly SAND. Sand is fine to coarse. Gravel is angular to rounded fine to coarse brick and concrete.		
						0.30m : disused black plastic irrigation pipe.	(0.70)	
0.40-0.50	1	D						
							0.70	
0.75-0.80	2	D				Stiff friable orangish brown sandy CLAY. Sand is fine to medium. (RIVER TERRACE DEPOSITS)	(0.70)	
							1.40	
						Trial pit terminated at 1.40m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit remained dry and stable during excavation.
2. Backfilled with arisings on completion.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	EHughes	

ARUN DISTRICT COUNCIL/V94/17/DOC

GDPT_LIBRARY_V8_05_00.GLB Library.vsb_05 - Library.vsb_05 - Documents (UK) | Log TRIAL PIT | 27621 ANGMERING.GPJ - v8_05 | 23/09/16 - 16:13 | En1.
RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437500. Fax: 01442 437500. Web: www.rsk.co.uk

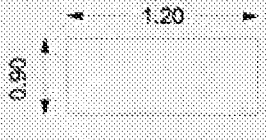
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP8G

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	31.08.16	----	----	1 of 1
	End: 31.08.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20-0.30	1	D				MADE GROUND: Brown clayey gravelly SAND. Sand is fine to coarse. Gravel is angular to rounded fine to coarse brick and concrete.	(0.70)	
						0.55-0.60m : becoming dark brownish grey 0.60-0.65m : layer of crushed fine to coarse gravel-sized chalk.	0.70	
0.70	2	D				Stiff friable orangish brown sandy CLAY. Sand is fine to medium. (RIVER TERRACE DEPOSITS)	(0.50)	
						Trial pit terminated at 1.20m depth.	1.20	

Plan (Not to Scale)



General Remarks

1. Backfilled with arisings on completion.

All dimensions in metres Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	EHughes	

GINT_LIBRARY_V8_03.03.8 Library: v8_03 - Log2004 Preview: v8_05 - Custom Logs 2003 | Log TRIAL PIT LOG | 27621 ABOSBERING.GPJ - v8_05 | 30/09/16 - 16:16 | En1
RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 307500, Fax: 01442 307600. Web: www.rsk.co.uk
ARUN DISTRICT COUNCIL/V94/17/DOO

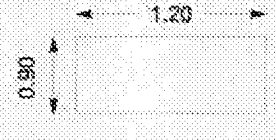
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP8H

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	31.08.16	---	---	1 of 1
	End: 31.08.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Brown clayey gravelly SAND. Sand is fine to coarse. Gravel is angular to rounded fine to coarse brick and concrete. 0.10m : re-bar. 0.20m : disused black plastic irrigation pipe.	0.25	
						MADE GROUND: Stiff brown sandy CLAY. Sand is fine to medium.	0.50	
0.50-0.60	1	D				MADE GROUND: Stiff dark brownish grey sandy very gravelly CLAY. Sand is fine to coarse. Gravel is angular to rounded fine to coarse flint and some polystyrene.	0.60	
0.65-0.75	2	D				Stiff friable orangish brown sandy CLAY. Sand is fine to medium. (RIVER TERRACE DEPOSITS)	(0.60)	
						Trial pit terminated at 1.20m depth.	1.20	

Plan (Not to Scale)



General Remarks

1. Backfilled with arisings on completion.

All dimensions in metres. Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	EHughes	

RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437599, Fax: 01442 437598, Web: www.rsk.co.uk
ARUN DISTRICT COUNCIL/94/17/DOC

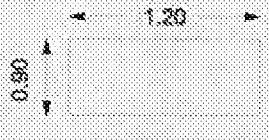
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP9G

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	31.08.16	---	---	1 of 1
	End: 31.08.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20	1	D				MADE GROUND: Brown clayey gravelly SAND. Sand is fine to coarse. Gravel is angular to rounded fine to coarse brick and concrete.	(0.80)	
0.50	2	D				0.60-0.70m : cast iron pipe in north east corner into west face.		
						0.75-0.80m : chalk cobble up to 75mm. 0.76-0.80m : cast iron pipe in north west corner.	0.80	
						Stiff friable orangish brown sandy CLAY. Sand is fine to medium. (RIVER TERRACE DEPOSITS)	(0.40)	
						Trial pit terminated at 1.20m depth.	1.20	

Plan (Not to Scale)



General Remarks

1. Backfilled with arisings on completion.

All dimensions in metres

Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	EHughes	

GINT LIBRARY_V8_05.GLB Library: v8_05 - Lib2004 Professional: v8_05 - CoreLogs 3003 | Log TRIAL PIT LOG | 27621 ANGMERING.GPJ - v8_05 | 29/09/16 - 16:14 | E:\1\
RSK Environment Ltd, 18 Fragmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437600, Fax: 01442 437650, Web: www.rsk.co.uk
ARUN DISTRICT COUNCIL/W/94/17/DOC

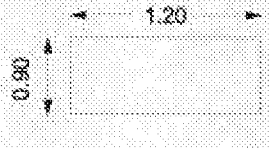
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP9H

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	31.08.16	---	---	1 of 1
	End: 31.08.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Brown clayey gravelly SAND. Sand is fine to coarse. Gravel is angular to rounded fine to coarse brick and concrete.	0.25	
						MADE GROUND: Stiff brown CLAY. 0.30m : disused black plastic irrigation pipe.	0.50	
0.40-0.45	1	D						
0.50-0.60	2	D				MADE GROUND: Stiff greyish brown ASPHALT/very gravelly CLAY. Three suspected asbestos cement fragments.	0.60	
						Stiff friable orangish brown sandy CLAY. (RIVER TERRACE DEPOSITS)	(0.60)	
						Trial pit terminated at 1.20m depth.	1.20	

Plan (Not to Scale)



General Remarks

1. Backfilled with arisings on completion.

All dimensions in metres

Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	EHughes	

GINT_LIBRARY_V8_05.03.3 Iteration: v8_05 - L802004 Polyversion: v8_05 - Core Logs 0003 | Log TRIAL PIT LOG (27621 ANGMERING.GPJ - v8_05 | 29/09/16 - 16:14 | EH1.
RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437600, Fax: 01442 437500, Web: www.rsk.co.uk.
ARUN DISTRICT COUNCIL/V94/17/DOC

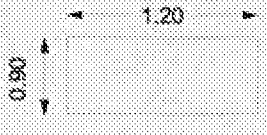
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP10G

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	31.08.16	---	---	1 of 1
	End: 31.08.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.30	1	D				MADE GROUND: Brown clayey gravelly SAND. Sand is fine to coarse. Gravel is angular to rounded fine to coarse brick and concrete. 0.20m : disused black plastic irrigation pipe.	(0.50)	
							0.50	
0.60	2	D				MADE GROUND: Stiff dark brownish grey sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to rounded fine to coarse flint.	0.60	
						Stiff friable orangish brown sandy CLAY. Sand is fine to medium. (RIVER TERRACE DEPOSITS)	(0.65)	
							1.25	
						Trial pit terminated at 1.25m depth.		

Plan (Not to Scale)



General Remarks

1. Backfilled with arisings on completion.

All dimensions in metres

Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	EHughes	

C:\RSK_LIBRARY_V8_05.03.3.1\Version: v8_05 - 1.00.004 PyVersion: v8_05 - Core\Logs 0303 [Log TRIAL PIT LOG [27621 ANGMERING.GPJ - v8_05 [23/09/16 - 16:14] EH1
RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437280, Fax: 01442 437281, Web: www.rsk.co.uk
ARUN DISTRICT COUNCIL - A/94/17/DOC

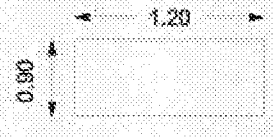
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP10H

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	31.08.16	---	---	1 of 1
	End: 31.08.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10	1	B				MADE GROUND: Brown clayey gravelly SAND. Sand is fine to coarse. Gravel is angular to rounded fine to coarse brick, concrete and some glass. 0.20m : disused black plastic irrigation pipe.	(0.50)	
							0.50	
0.60	2	D				MADE GROUND: Stiff dark brownish grey sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to rounded fine to coarse flint. Occasional pockets of hydrogel droplets and topsoil.	(0.30)	
							0.80	
						Stiff friable orangish brown sandy CLAY. Sand is fine to medium. (RIVER TERRACE DEPOSITS)	(0.40)	
							1.20	
						Trial pit terminated at 1.20m depth.		

Plan (Not to Scale)



General Remarks

1. Backfilled with arisings on completion.

All dimensions in metres

Scale: 1:25

Method	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	EHughes	

ARUN DISTRICT COUNCIL/94/17/DOC

GINT LIBRARY_V8_05.GLB Library: v8_05 - Lib2004 Pdf version: v8_05 - Cont+Logs 2003 | Log TRIAL PIT LOG | 27621 ANGMERING.GPJ - v8_05 | 24/08/16 - 15:14 | EH1
RSK Environmental Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437300, Fax: 01442 437500, Web: www.rsk.co.uk

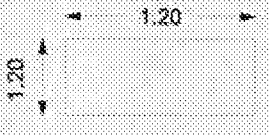
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP11G

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	31.08.16	---	---	1 of 1
	End: 31.08.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10-0.20	1	D				MADE GROUND: Brown clayey gravelly SAND. Sand is fine to coarse. Gravel is angular to rounded fine to coarse brick, concrete and some glass.	0.25	
						0.20m : disused black plastic irrigation pipe.		
0.50	2	D				Stiff orangish brown sandy gravelly CLAY. Sand is fine to medium. Gravel is angular fine to coarse flint. (RIVER TERRACE DEPOSITS)		
						0.75-1.05m : concrete strip (old pipe run?) steps out 0.30m.	(1.05)	
						Trial pit terminsted at 1.30m depth.	1.30	

Plan (Not to Scale)



General Remarks

1. Backfilled with arisings on completion.

All dimensions in metres

Scale: 1:25

Method Used: Machine dug

Plant Used: Tracked excavator

Logged By: EHughes

Checked By:

GINT_LIBRARY_V8_05.GLB Library: v8_25 - L62004.Pid Version: v8_05 - Core-Log 3000 | Log TRIAL PIT LOG | 27621 ANGMERING.GPJ - v8_05 | 20/09/16 - 16:11 | EH1
RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437600, Fax: 01442 437500, Web: www.rsk.co.uk
ARUN DISTRICT COUNCIL/94/17/DOO

FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP11H

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	31.08.16	---	---	1 of 1
	End: 31.08.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Stiff brown sandy very gravelly CLAY. Sand is fine to coarse. Gravel is angular to rounded fine to coarse flint.	0.15	
0.20	1	D				Stiff friable orangish brown sandy CLAY. Sand is fine to coarse. (RIVER TERRACE DEPOSITS)		
0.50	2	D					(0.90)	
							1.05	
						Trial pit terminated at 1.05m depth.		

Plan (Not to Scale)



General Remarks

1. Backfilled with arisings on completion.

All dimensions in metres

Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	EHughes	

ARUN DISTRICT COUNCIL V94/17/DOC
RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437500. Fax: 01442 437500. Web: www.rsk.co.uk
GINT LIBRARY_V8_05.GLB Lib Version: v8_05 - Lib2004 PrjVersion: v8_05 - Core+Logs 0803 | Log [TRIAL PIT LOG | 27621 ANGMERING.GPJ - v8_05 | 23/09/16 - 16:14 | Err]

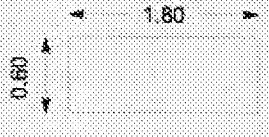
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP12G

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	07.09.16	---	---	1 of 1
	End: 07.09.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10-0.20	1	D				MADE GROUND: Stiff orangish brown and brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular to rounded fine to coarse flint, with some concrete and glass. Rare half brick and metal pipe. 0.10m : disused black plastic irrigation pipe. 0.40-1.00m : clay with just coarse gravel-sized chalk and cobbles up to 110mm (no flint or man-made materials).	(1.00)	
0.40-0.50	2	D						
							1.00	
						Stiff friable orangish brown slightly sandy CLAY. Sand is fine. (RIVER TERRACE DEPOSITS)	1.20	
						Trial pit terminated at 1.20m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit dry and stable.
2. Backfilled with arisings upon completion.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	EHughes	

GINT_USRARY_V8_05.03.3 Liberation: v8_05 : 8.00.04 Pdfversion: v8_05 : Core+Logs 0003] Log TRIAL PIT LOG] 27621 ANGMERING.GPJ - v8_05] 28/09/16 - 16:14] EH:
RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437600, Fax: 01442 437650, Web: www.rsk.co.uk
ARUN DISTRICT COUNCIL/WW/94/17/DOC

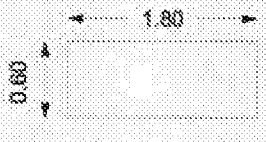
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP13G

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	07.09.16	---	---	1 of 1
	End: 07.09.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20-0.40	1	D				MADE GROUND: Stiff orangish brown and brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular to rounded fine to coarse flint, with some concrete and glass. Rare half brick and metal pipe. Frequent fine gravel size white friable pellets.	(1.00)	
							1.00	
1.00-1.10	2	D				Stiff friable orangish brown slightly sandy CLAY. Sand is fine. (RIVER TERRACE DEPOSITS)	(0.30)	
							1.30	
						Trial pit terminated at 1.30m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit dry and stable.
2. Backfilled with arisings upon completion.
3. 6 suspected ACM cement fragments found in top 0.40m of trial pit. Size range is 40-190mm.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	EHughes	

ARUN DISTRICT COUNCIL

GINT LIBRARY_V8_05.GLB Library: v8_05 - L30004 Project: v8_05 - Core+Logs 0303 | LOG TRIAL PIT LOG | 27621 ANGMERING.GPJ - v8_05 | 28/09/16 - 16:14 | EH1.
RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437580. Fax: 01442 437582. Web: www.rsk.co.uk

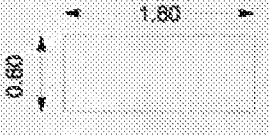
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP13H

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	07.09.16	---	---	1 of 1
	End: 07.09.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.30-0.40	1	D				MADE GROUND: Stiff orangish brown and brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular to rounded fine to coarse flint, with some concrete and glass. Rare half brick and metal pipe. Frequent fine gravel size white friable pellets.		
0.50-0.60	2	D					(1.00)	
							1.00	
						Stiff friable orangish brown slightly sandy CLAY. Sand is fine. (RIVER TERRACE DEPOSITS)	1.10	
						Trial pit terminated at 1.10m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit dry and stable.
2. Backfilled with arisings upon completion.
3. 5 suspected ACM cement fragments found in arisings. Size range is 50-130mm.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	EHughes	

C:\RSK_LIBRARY_V8_05.03.3.18\Version_v8_05 - Updated Polyfusion_v8_05 - Current.cgd (2003) | Log TRIAL PIT LOG | 27621 ANGMERING.GPJ - v8_016 | 28/03/2018 - 18:19 | EH1
RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437600. Fax: 01442 437650. Web: www.rsk.co.uk
ARUN DISTRICT COUNCIL - A/94/17/DOC

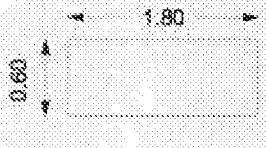
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP14G

Contract Ref:	Start: 07.09.16	Ground Level:	Co-ordinates:	Sheet:
27621	End: 07.09.16	---	---	1 of 1

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10-0.20	1	D				MADE GROUND: Loose light grey sandy GRAVEL with a medium cobble content. Sand is fine to coarse. Gravel is angular to rounded fine to coarse concrete, flint and brick. Cobbles are angular to rounded concrete, flint and brick up to 150mm.	0.25	
0.40-0.60	2	D				MADE GROUND: Stiff orangish brown and brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular to rounded fine to coarse flint, with some concrete and glass. Rare half brick and metal pipe.	(0.75)	
						0.80-1.00m : chalk, cobbles and fine to coarse gravels in east, south and west faces of trial pit. Disused concrete pipe runs east-west along north face of trial pit.	1.00	
						Stiff friable slightly sandy CLAY. Sand is fine to medium. (RIVER TERRACE DEPOSITS)	1.20	
						Trial pit terminated at 1.20m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit dry and stable.
2. Backfilled with arisings upon completion.
3. 3 suspected ACM cement fragments. Size range is 75-85mm.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	EHughes	

AGS

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RSK Environment Ltd, 16 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437600, Fax: 01442 437500, Web: www.rsk.co.uk
GINT LIBRARY: V8_03.GLB Library Version: V8_05 - 1.00.00.04 PdfVersion: v8_05 - Core1.dgs 0003 | Log TRIAL PIT LOG | 27621 ANGMERING.GPJ - v8_05 | 23/09/16 - 16:16 | EH1

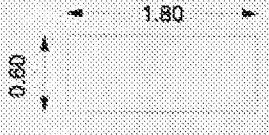
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP14H

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	07.09.16	---	---	1 of 1
	End: 07.09.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: CONCRETE crush.	0.20	
0.30-0.40	1	D				MADE GROUND: Stiff orangish brown and brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular to rounded fine to coarse flint, with some concrete and glass.		
						0.60-0.70m : two disused grey plastic water pipes.	(0.90)	
						Trial pit terminated at 1.10m depth.	1.10	

Plan (Not to Scale)



General Remarks

1. Trial pit dry and stable.
2. Backfilled with arisings upon completion.
3. No suspected ACM cement fragments found.
4. Broken disused grey plastic pipe leaked water at substantial rate, filling trial pit from 1.05m depth to 0.80m depth in 20 minutes.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	EHughes	

RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437550, Web: www.rsk.co.uk
GINT LIBRARY: V9.00.01.0 Library: v9_25 - Landfill Professional - v9_05 - Comp Logs 0923 [Log TRIAL PIT LOG] 27621 ANGMERING.GPJ - v9_05 [26/09/16 - 16:15] Errl:
ARUN DISTRICT COUNCIL 0/94/17/DOC

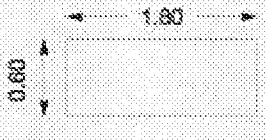
FINAL TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP15G

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	07.09.16	---	---	1 of 1
	End: 07.09.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10-0.30	1	D				MADE GROUND: Firm brown sandy gravelly CLAY. Sand is fine to coarse pinkish orange and grey. Gravel is angular to rounded fine to coarse flint, concrete and brick.	(0.45)	
							0.45	
0.45-0.55	2	D				MADE GROUND: Yellow CONCRETE and firm friable brown and dark brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to rounded fine to coarse flint, concrete and glass.	0.50	
							0.70	
						MADE GROUND: Firm friable brown and dark brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to rounded fine to coarse flint, concrete and glass. 0.50m : single suspected ACM cement piece observed in-situ, measures 94x112x5mm in size. 0.60-0.70m : chalk, fine to coarse gravel and cobbles to 100mm.	(0.50)	
							1.20	
						Stiff friable orangish brown slightly sandy CLAY. Sand is fine to medium. Trial pit terminated at 1.20m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit dry and stable.
2. Backfilled with arisings upon completion.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	EHughes	

AGS

Gint Library: V8_05.03.8 Library.ve: v8_03 - 1/4/2004 ProVersion: v8_03 - Comp Logs 5003 | Job TRIAL PIT LOG | 27621 ANGMERING.GPJ - v8_03 | 23/09/16 - 16:16 | En1.
RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437599, Fax: 01442 437500, Web: www.rsk.co.uk.
ARUN DISTRICT COUNCIL/V/94/17/DOC

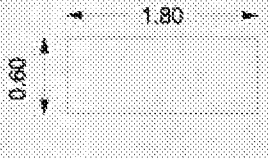
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP16G

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	07.09.16	---	---	1 of 1
	End: 07.09.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.00-0.10	1	D				MADE GROUND: Loose pinkish orange and grey slightly clayey SAND. Sand is fine to medium.	0.10	
						MADE GROUND: Firm brown gravelly CLAY. Gravel is angular to rounded fine to coarse flint, concrete and brick. 0.15m : disused black plastic irrigation pipe.	(0.30)	
0.40-0.50	2	D				MADE GROUND: Dark grey CLAY.	0.40	
						Stiff friable orangish brown slightly sandy CLAY. Sand is fine to coarse.	0.50	
							(0.60)	
						Trial pit terminated at 1.10m depth.	1.10	

Plan (Not to Scale)



General Remarks

1. Trial pit dry and stable.
2. Backfilled with arisings upon completion.
3. No suspected ACM cement fragments found.

All dimensions in metres

Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	EHughes	

ARUN DISTRICT COUNCIL/A/94/17/DOC
GDP_LIBRARY_V8_05.GLB Library: v8_05 - Job:0004 Prj/Version: v8_05 - Cons+Logs:0003 | Log TRIAL PIT LOG | 27621 ANGMERING.GPJ - v8_05 | 08/09/16 - 16:16 | EHH
RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437500, Fax: 01442 437550, Web: www.rsk.co.uk

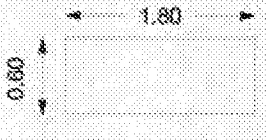
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP17G

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	07.09.16	---	---	1 of 1
	End: 07.09.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20-0.30	1	D				MADE GROUND: Stiff friable brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to rounded fine to coarse flint, brick, concrete and glass.	(0.40)	
0.40-0.50	2	D				0.35m : disused black plastic irrigation pipe.	0.40	
						Firm orangish brown and brown sandy CLAY. Sand is fine to medium. 0.50m : disused black plastic irrigation pipe.	(0.60)	
						0.90m : disused black plastic irrigation pipe. 0.90-1.00m : single 0.40m diameter disused gray plastic water pipe.	1.00	
						Trial pit terminated at 1.00m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit dry and stable.
2. Backfilled with arisings upon completion.
3. No suspected ACM cement fragments found.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	EHughes	

C:\RSK LIBRARY_V6_05.GLB Library: v6_05 - Lib3004 Pp Version: v6_05 - Core+4.008.3003 | Log TRIAL PIT LOG | 27621 ANGMERING.GPJ - v6_03 | 28/09/16 - 16:16 | En1.
RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437500, Fax: 01442 437500, Web: www.rsk.co.uk.
ARUN DISTRICT COUNCIL/94/17/DOO

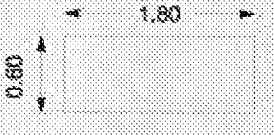
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP19G

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	07.09.16	---	---	1 of 1
	End: 07.09.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20-0.30	1	D				MADE GROUND: Stiff friable brown and orangish brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to rounded fine to medium flint, concrete and glass. Rare black plastic fragments.		
0.45-0.60	2	D					(1.25)	
						0.75m : orange geotextile.		
							1.25	
						Trial pit terminated at 1.25m depth.		

Plan (Not to Scale)



General Remarks

All dimensions in metres

Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	EHughes	

ARUN DISTRICT COUNCIL A/94/17/DOC

C:\LIBRARY_V8_05.01.3 Library: v8_35 : LibDOM Pyversion: v8_35 - CoverLogs 2003 | Log TRIAL PIT LOG | 27621 ANGMERING.GPJ - v8_04.3 | 26/09/16 - 16:16 | Ex1.
Rsk Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437600, Fax: 01442 437650, Web: www.rsk.co.uk

APPENDIX D
LABORATORY RESULTS

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 16/05501
Issue Number: 1 **Date:** 06 September, 2016

Client: RSK Environment Ltd Romsey
Unit 18 Basepoint Abbey Enterprise Centre
Premier Way
Romsey
Hampshire
SO51 9AQ

Project Manager: Ed Hughes
Project Name: Land at West End Nursery, Angmering
Project Ref: 27621
Order No: N/A
Date Samples Received: 02/09/16
Date Instructions Received: 02/09/16
Date Analysis Completed: 06/09/16

Prepared by:

[redacted]

Kate Ellison
Administrative Assistant

Approved by:

[redacted]

Iain Haslock
Analytical Consultant

UKAS TESTING
1247

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/05501

Client Project Name: Land at West End Nursery, Angmering

Client Project Ref: 27621

Lab Sample ID	16/05501/1	16/05501/2	16/05501/3	16/05501/4	16/05501/5	16/05501/6	16/05501/7	16/05501/8	Units	Method ref
Client Sample No	1	1	2	1	1	2	1	1		
Client Sample ID	TPP1G	TPP2G	TPP2G	TPP2H	TPP3H	TPP3H	TPP3G	TPP4H		
Depth to Top	0.00	0.20	0.60	0.70	0.30	0.60	0.30	0.30		
Depth To Bottom	1.00	0.30	0.70	0.80	0.35	0.70	0.30	0.40		
Date Sampled	31-Aug-16	31-Aug-16	31-Aug-16	31-Aug-16	31-Aug-16	31-Aug-16	31-Aug-16	31-Aug-16		
Sample Type	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D		
Sample Matrix Code	1	4	4	1	2	4A	2	2A		
Asbestos in Soil (inc. matrix)										
Asbestos in soil,#	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD		[illegible]
Asbestos ACM - Suitable for Water Absorption Test?o	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		Gravimetry

Envirolab Job Number: 16/05501

Client Project Name: Land at West End Nursery, Angmering

Client Project Ref: 27621

Lab Sample ID	16/05501/9	16/05501/10	16/05501/11	16/05501/12	16/05501/13	16/05501/14	16/05501/15	16/05501/16	Units	Method ref
Client Sample No	2	1	2	1	2	1	2	1		
Client Sample ID	TPP4H	TPP4G	TPP4G	TPP5H	TPP5H	TPP5G	TPP5G	TPP6H		
Depth to Top	0.50	0.20	0.45	0.30	0.45	0.30	0.45	0.40		
Depth To Bottom	0.60	0.30	0.55	0.40	0.55	0.40	0.55	0.50		
Date Sampled	31-Aug-16	31-Aug-16	31-Aug-16	31-Aug-16	31-Aug-16	31-Aug-16	31-Aug-16	31-Aug-16		
Sample Type	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D		
Sample Matrix Code	1A	2A	2A	2A	2A	4	2A	2		
Asbestos in Soil (inc. matrix)										
Asbestos in soil,#	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD		[illegible]
Asbestos ACM - Suitable for Water Absorption Test?o	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		Gravimetry

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/05501

Client Project Name: Land at West End Nursery, Angmering

Client Project Ref: 27621

Lab Sample ID	16/05501/17	16/05501/18	16/05501/19	16/05501/20	16/05501/21	16/05501/22	16/05501/23	16/05501/24	Units	Method ref
Client Sample No	2	1	2	1	2	1	2	1		
Client Sample ID	TPP6H	TPP6G	TPP6G	TPP7G	TPP7G	TPP7H	TPP7H	TPP8G		
Depth to Top	0.60	0.35	0.50	0.10	0.40	0.40	0.75	0.30		
Depth To Bottom	0.70	0.40	0.60	0.30	0.50	0.50	0.80	0.30		
Date Sampled	31-Aug-16	31-Aug-16	31-Aug-16	31-Aug-16	31-Aug-16	31-Aug-16	31-Aug-16	31-Aug-16		
Sample Type	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D		
Sample Matrix Code	2A	2A	2	2A	2	2A	2	2A		
Asbestos in Soil (inc. matrix)										
Asbestos in soil,*	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD		
Asbestos ACM - Suitable for Water Absorption Test?☆	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		

Envirolab Job Number: 16/05501

Client Project Name: Land at West End Nursery, Angmering

Client Project Ref: 27621

Lab Sample ID	16/05501/25	16/05501/26	16/05501/27	16/05501/28	16/05501/29	16/05501/30	16/05501/31	16/05501/32	Units	Method ref
Client Sample No	2	1	2	1	2	1	2	1		
Client Sample ID	TPP8G	TPP9H	TPP9N	TPP9H	TPP9H	TPP9G	TPP9G	TPP10H		
Depth to Top	0.70	0.50	0.65	0.40	0.50	0.20	0.50	0.10		
Depth To Bottom		0.60	0.75	0.45	0.60					
Date Sampled	31-Aug-16	31-Aug-16	31-Aug-16	31-Aug-16	31-Aug-16	31-Aug-16	31-Aug-16	31-Aug-16		
Sample Type	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D		
Sample Matrix Code	3	2A	2	2	2A	4	5	4A		
Asbestos in Soil (inc. matrix)										
Asbestos in soil,*	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD		
Asbestos ACM - Suitable for Water Absorption Test?☆	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/05501

Client Project Name: Land at West End Nursery, Angmering

Client Project Ref: 27621

Lab Sample ID	16/05501/33	16/05501/34	16/05501/35	16/05501/36	16/05501/37	16/05501/38	16/05501/39		Units	Method ref
Client Sample No	2	1	2	1	2	1	2			
Client Sample ID	TPP10H	TPP10G	TPP10G	TPP11G	TPP11G	TPP11H	TPP11H			
Depth to Top	0.60	0.30	0.60	0.15	0.50	0.20	0.50			
Depth To Bottom				0.20						
Date Sampled	31-Aug-16	31-Aug-16	31-Aug-16	31-Aug-16	31-Aug-16	31-Aug-16	31-Aug-16			
Sample Type	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D			
Sample Matrix Code	4	3	4	4A	4A	4A	4			
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_s$*	NAD	NAD	NAD	NAD	NAD	NAD	NAD			[illegible]
Asbestos ACM - Suitable for Water Absorption Test?$_o$	N/A	N/A	N/A	N/A	N/A	N/A	N/A			[illegible]

ARUN DISTRICT COUNCIL A/94/17/DOC

envirolab

REPORT NOTES

Notes - Soil chemical analysis
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'. For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

Notes - General
This report shall not be reproduced, except in full, without written approval from Envirolab.
Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.
All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supersedes any "A" subscripts.
All analysis is performed on the sample as received for soil samples which are positive for asbestos and/or if they are from outside the European Union and this supercedes any "D" subscripts.
Superscript "M" indicates method accredited to MCERTS.
If results are in italic font they are associated with an AQC failure. These are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

TPH analysis of water by method A-T-007
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Asbestos in soil
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if present as discrete fibres/fragments. Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.

ARUN DISTRICT COUNCIL A/94/17/DOC

envirolab
Units 7 & 8 Sandpits Business Park
Moltram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 16/05665
Issue Number: 1 **Date:** 14 September, 2016

Client:
RSK Environment Ltd Romsey
Unit 18 Basepoint Abbey Enterprise Centre
Premier Way
Romsey
Hampshire
SO51 9AQ

Project Manager: Ed Hughes
Project Name: Land at West End Nursery, Angmering
Project Ref: 27621
Order No: N/A
Date Samples Received: 09/09/16
Date Instructions Received: 09/09/16
Date Analysis Completed: 12/09/16

Prepared by:

[redacted]

Kate Ellison
Administrative Assistant

Approved by:

[redacted]

John Gustafson
Director

UKAS
TESTING
1247

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/05665

Client Project Name: Land at West End Nursery, Angmering

Client Project Ref: 27621

Lab Sample ID	16/05665/1	16/05665/2	16/05665/3	16/05665/4	16/05665/5	16/05665/6	16/05665/7	16/05665/8	Units	Method ref
Client Sample No	1	2	1	2	1	2	1	2		
Client Sample ID	TPP12G	TPP12G	TPP13G	TPP13G	TPP13H	TPP13H	TPP14G	TPP14G		
Depth to Top	0.10	0.40	0.20	1.00	0.30	0.50	0.10	0.40		
Depth To Bottom	0.20	0.50	0.40	1.10	0.40	0.60	0.20	0.60		
Date Sampled	07-Sep-16	07-Sep-16	07-Sep-16	07-Sep-16	07-Sep-16	07-Sep-16	07-Sep-16	07-Sep-16		
Sample Type	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D		
Sample Matrix Code	S	S	SA	S	S	SA	4A	S		
Asbestos in Soil (inc. matrix)										
Asbestos in soil[x]*	Chrysotile	NAD	NAD	NAD	NAD	NAD	NAD	NAD		
Asbestos Matrix (microscope)[x]	Loose Fibres	-	-	-	-	-	-	-		
Asbestos ACM - Suitable for Water Absorption Test?[x]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		

Envirolab Job Number: 16/05665

Client Project Name: Land at West End Nursery, Angmering

Client Project Ref: 27621

Lab Sample ID	16/05665/9	16/05665/10	16/05665/11	16/05665/12	16/05665/13	16/05665/14	16/05665/15	16/05665/16	Units	Method ref
Client Sample No	1	1	2	1	2	1	2	1		
Client Sample ID	TPP14H	TPP15G	TPP15G	TPP16G	TPP16G	TPP17G	TPP17G	TPP19G		
Depth to Top	0.30	0.10	0.45	0.00	0.40	0.20	0.40	0.20		
Depth To Bottom	0.40	0.30	0.55	0.10	0.50	0.30	0.50	0.30		
Date Sampled	07-Sep-16	07-Sep-16	07-Sep-16	07-Sep-16	07-Sep-16	07-Sep-16	07-Sep-16	07-Sep-16		
Sample Type	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D		
Sample Matrix Code	SA	SA	SAB	S	4A	S	SA	SA		
Asbestos in Soil (inc. matrix)										
Asbestos in soil[x]*	NAD	NAD	NAD	NAD	NAD	Chrysotile	Amosite	NAD		
Asbestos Matrix (microscope)[x]	-	-	-	-	-	Loose Fibres	Loose Fibres	-		
Asbestos ACM - Suitable for Water Absorption Test?[x]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/05665

Client Project Name: Land at West End Nursery, Angmering

Client Project Ref: 27621

Lab Sample ID	16/05665-17								Units	Method ref
Client Sample No	2									
Client Sample ID	TPP19G									
Depth to Top	0.45									
Depth To Bottom	0.60									
Date Sampled	07-Sep-16									
Sample Type	Soil - D									
Sample Matrix Code	SA									
Asbestos in Soil (inc. matrix)										
Asbestos in soil[x]	NAD									[illegible]
Asbestos ACM - Suitable for Water Absorption Test?[x]	N/A									Gravimetry

ARUN DISTRICT COUNCIL A/94/17/DOC

REPORT NOTES

General:
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Analytical results reflect the quality of the sample at the time of analysis only.
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Soil chemical analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Asbestos:
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed.
Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

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1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.
Secondary Matrix Codes:
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:
IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve

Please contact us if you need any further information.

ARUN DISTRICT COUNCIL A/94/17/DOC

18 Progmore Road
Hemel Hempstead
Hertfordshire
HP3 9RT
UK

Telephone: +44 (0)1442 437500
Fax: +44 (0)1442 437563
www.rsk.co.uk

Our Ref: 27621L05/EH
9th February 2017

Mr Gary Biggs
CALA Homes (South Home Counties) Limited
Tilford House
Farnham Business Park
Weydon Lane
Farnham
Surrey
GU9 8QT

Dear Mr Biggs,

ASBESTOS DELINEATION WORKS AT FORMER WEST END NURSERY, ANGMERING PHASE 1A – PLOTS 18 AND 20 TO 64

1 BACKGROUND

RSK Environment Limited (RSK) was commissioned by CALA Homes (South Home Counties) Limited to carry out delineation of potential asbestos containing materials within soils in the gardens of Plots 18 and 20 to 64 at the above mentioned site. The site was previously occupied by a garden nursery growing plants and herbs together with associated buildings and infrastructure.

Several preceding phases of site investigation and associated risk assessment have been carried out at the site by RSK. These are outlined in the following reports:

- RSK, 27621- R01(02) 'Geo-environmental Site Investigation', West End Nursery, Angmering, September 2015;
- RSK, 27621- R02(00) 'Additional Geo-environmental Site Investigation and Remediation', West End Nursery, Angmering, June 2015;
- RSK, 27621- R03(01) 'Remedial Strategy', West End Nursery, Angmering, January 2016; and
- RSK, 27621- R04(01) 'Supplementary Geo-environmental Site Assessment', West End Nursery, Angmering, June 2016;

Previous onsite buildings and infrastructure have been demolished since the completion of the initial site investigation. Following site clearance, evidence of suspected cement-bound asbestos was identified at the ground surface across much of the site. During subsequent remedial works undertaken by Keltbray, suspected asbestos containing materials were also identified with shallow made ground deposits, particularly in the north west of the site within the Phase 1 development area.

ARUN DISTRICT COUNCIL A/94/17/DOC

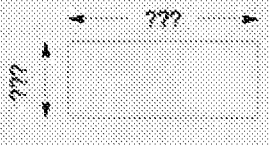
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP56

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	25.10.16	---	---	1 of 1
	End: 25.10.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Brown slightly clayey gravelly SAND. Gravel is angular to subrounded fine to coarse fragments of brick, concrete and flint.	0.10	
						MADE GROUND: Firm to stiff slightly sandy gravelly CLAY. Gravel is fine to coarse fragments of brick, concrete and flint. 0.20-0.40m : boulder-sized concrete breeze blocks	(0.40)	
0.50-0.60	01	D				MADE GROUND: Greyish brown sandy GRAVEL. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse flint and fragments of brick, concrete and occasional brick pottery.	0.50	
							(0.40)	
						Firm brown slightly sandy CLAY. (RIVER TERRACE DEPOSITS)	0.90	
						Trial pit terminated at 1.00m depth.	1.00	

Plan (Not to Scale)



General Remarks

1. Trial pit remained dry and stable during excavation.
2. Backfilled with arisings.

All dimensions in metres Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	CLatimer	

ARUN DISTRICT COUNCIL/94/17/DOC
GINT_LIBRARY_V8_05.03.0 | LibVersion: v8_28 - 1.26004 Polyversion: v8_06 - ConstLogs 0003 | Log TRIAL PIT LOG | 27621 ANGMERING.GPJ - v8_06 | 28/2/2017 - 15:38 | PCS
RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437500, Fax: 01442 437580, Web: www.rsk.co.uk

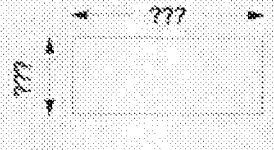
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP55

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	25.10.16	---	---	1 of 1
	End: 25.10.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Brown slightly clayey gravelly SAND. Gravel is angular to subrounded fine to coarse fragments of brick, concrete and flint.	0.10	
						MADE GROUND: Brown slightly clayey gravelly SAND. Gravel is angular to subrounded fine to coarse fragments of flint, brick , concrete and rare glass.	0.30	
0.40-0.50	D1	D				MADE GROUND: Soft to firm slightly sandy CLAY with gravels of angular to subrounded fine to coarse flint with rare concrete and brick. 0.30m : disused plastic pipe fragment	(0.70)	
						0.80-0.90m : pocket of dark grey and black firm to stiff CLAY with occasional subangular to subrounded fine to medium gravel. Slight organic odour.	1.00	
						Trial pit terminated at 1.00m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit remained dry and stable during excavation.
2. Backfilled with arisings.

All dimensions in metres | Scale: 1:25

Method Used:	Machine dug	Plant Used:	Tracked excavator	Logged By:	CLatimer	Checked By:	

ARUN DISTRICT COUNCIL/A/94/17/DOC
RSK Environmental Ltd, 16 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437530, Fax: 01442 437662, Web: www.rsk.co.uk
RSK_LIBRARY_V8_05.01.8 | Version: v8_20 - 13/08/04 Pr | Version: v8_05 - Content: 2003 | Log_TRIAL PIT LOG | 27621 ANGMERING.GPJ < v8_05 | 09/02/17 - 16:38 | RS2.

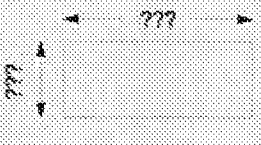
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP54

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	25.10.16	---	---	1 of 1
	End: 25.10.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Brown slightly clayey gravelly SAND. Gravel is angular to subrounded fine to coarse fragments of brick, concrete and flint.	0.10	
0.40-0.50	D1	D				MADE GROUND: Firm slightly sandy CLAY with angular to subrounded fine to coarse flint, brick and concrete gravel.	(0.80)	
						0.70-0.80m : 2 whole bricks		
						Firm slightly sandy CLAY with occasional fine to medium flint gravel. (RIVER TERRACE DEPOSITS)	0.90 1.00	
						Trial pit terminated at 1.00m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit remained dry and stable during excavation.
2. Backfilled with arisings.

All dimensions in metres

Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	CLatimer	

AGS

GEOT_UBP64KY_V8_05.GLB 1.0Version v8_05 - 1.02004 Polyvision v8_05 - Core+Logs 0003 | Log TRIAL PIT LOG | 27621 ANGMERING.GPJ - v8_05 | 09/03/17 - 18:38 | PG2
RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437500, Fax: 01442 437580, Web: www.rsk.co.uk
ARUN DISTRICT COUNCIL/94/17/DOC

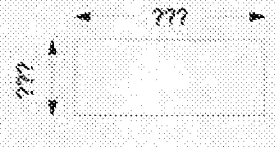
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP53

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	25.10.16	---	---	1 of 1
	End: 25.10.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Brown sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to rounded fine to coarse brick, flint and concrete.	0.20	
						0.10-0.50m : pocket of yellowish cream sand with angular fine to coarse flint gravel	(0.40)	
0.40-0.50	D1	D				Reworked natural firm brown slightly sandy CLAY with occasional angular to subrounded coarse chalk gravel.	0.60	
						Firm brown slightly sandy CLAY. (RIVER TERRACE DEPOSITS)	(0.45)	
							1.05	
						Trial pit terminated at 1.05m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit remained dry and stable during excavation.
2. Backfilled with arisings.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	CLatimer	

ARUN DISTRICT COUNCIL A/94/17/DOC

GINT LIBRARY: V8_05.GLB | Version: v8_05 - 1.800004 Polyversion: v8_05 - CoreLog 2003 | Log TRIAL PIT LOG | 27621 ANGMERING.GPJ - v8_05 | 06/03/2017 - 15:39 | PG2.
RSK Environmental Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437500, Fax: 01442 437556). Web: www.rsk.co.uk.

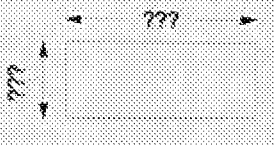
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP52

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	25.10.16	---	---	1 of 1
	End: 25.10.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADEGROUND: Friable brown sandy CLAY.		
						0.10-0.20m : (only in north face of trial pit) historic brick foundation	0.20	
						Firm friable brown slightly sandy CLAY with angular to subrounded fine to coarse flint gravel.		
0.40-0.50	D1	D					(0.80)	
						Trial pit terminated at 1.00m depth.	1.00	

Plan (Not to Scale)



General Remarks

1. Trial pit remained dry and stable during excavation.
2. Backfilled with arisings.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	CLatimer	

GINT LIBRARY_V8_05.GLB | LibVersion: v8_05 - LX0004 PrjVersion: v8_05 - CoreLogs 0003 | Log TRIAL PIT LOG | 27621 ANGMERING.GPJ - v8_05 | 08/02/17 - 15:38 | PG2
RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437550. Fax: 01442 437500. Web: www.rsk.co.uk
ARUN DISTRICT COUNCIL/94/17/DOC

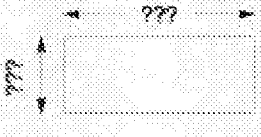
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP51

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	25.10.16	---	---	1 of 1
	End: 25.10.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Brown sandy gravelly CLAY. Sand is coarse. Gravel is angular to subrounded fine to coarse fragments of brick and flint with occasional charcoal and concrete.		
						0.30m : pocket of yellow coarse sand	(0.60)	
0.40-0.50	D1	B					0.60	
						Firm brown slightly sandy CLAY with rare angular to subrounded fine to medium flint gravel. (RIVER TERRACE DEPOSITS)	(0.40)	
							1.00	
						Trial pit terminated at 1.00m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit remained dry and stable during excavation.
2. Backfilled with arisings.
3. ** a record of the stability of the sides of the excavation **
4. ** a comment on the weather conditions **
5. ** a record of the method of backfilling **

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	CLatimer	

Created by LIBRARY_V8_05.03.18 | Version: V8_09 - 1.0030.04 Polyversion: V8_05 - Core+1.0029.0003 | Log TRIAL PIT LOG | 27621 ANGMERING.GPJ - V8_05 | 08/02/17 - 15:38 | PG2.
RSK Environmental Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437500, Fax: 01442 437550, Web: www.rsk.co.uk
ARUN DISTRICT COUNCIL/V94/17/DOC

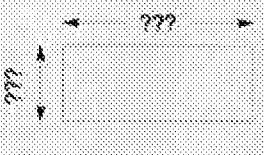
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP50

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	25.10.16	---	---	1 of 1
	End: 25.10.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.45-0.50	D1	D				MADE GROUND: Brown clayey gravelly SAND. Sand is fine. Gravel is subangular to rounded fine to medium flint, with rare brick and asbestos fragments upto 30mm in size. 0.15m : disused black plastic irrigation pipe 0.30m : 0.38m long x 0.28m diameter cylindrical concrete block with rebar - suspected small pile/fence post footing 0.50m : 1.00m long x 0.40m wide sheet of worked metal	(0.90)	
							0.90	
						Firm orangish brown slightly sandy CLAY. Sand is fine. (RIVER TERRACE DEPOSITS)	1.10	
						Trial pit terminated at 1.10m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit remained dry and stable during excavation.
2. Backfilled with arisings.

All dimensions in metres | Scale: 1:25

Method Used:	Machine dug	Plant Used:	Tracked excavator	Logged By:	EHughes	Checked By:	

GINT LIBRARY_V8_05.03.01 Library: v8_05 - Library Version: v8_05 - Core+Logs 0003 | Log TRIAL PIT LOG | 27621 ANGMERING.GPJ - v8_05 | 28/02/17 - 18:38 | PG2
RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437600, Fax: 01442 437500, Web: www.rsk.co.uk
ARUN DISTRICT COUNCIL/94/17/DOC

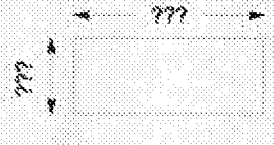
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP41

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	25.10.16	---	---	1 of 1
	End: 25.10.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Light brownish grey mottled brown slightly gravelly CLAY. Gravel is subangular to rounded fine to medium flint with rare brick.		
						0.20m : disused black plastic irrigation pipe		
0.40	D1	D				0.35-0.40m : disused grey plastic pipe		
							(1.10)	
							1.10	
						Trial pit terminated at 1.10m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit remained dry and stable during excavation.
2. Some drips from disused black irrigation pipe.
3. Backfilled with arisings.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	EHughes	

ARUN DISTRICT COUNCIL/A/94/17/DOC

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RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437588, Fax: 01442 437588, Web: www.rsk.co.uk

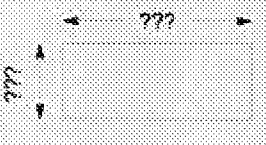
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP40

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	25.10.16	---	---	1 of 1
	End: 25.10.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Orangish brown slightly clayey slightly gravelly SAND. Sand is fine. Gravel is subangular to subrounded fine to medium brick and flint.	(0.50)	
0.40	D1	D				0.40-0.45m : disused grey plastic pipe along south face of trial pit 0.45-0.50m : disused grey plastic pipe crosses trial pit from south wall to north wall	0.50	
0.55-0.60	ES2	ES	Tub+Jar+Vial			(In south face only) MADE GROUND: Black fine SAND (probable plant feed).	(0.40)	
							0.90	
						MADE GROUND: Soft to firm greyish brown mottled reddish brown gravelly CLAY. Gravel is subangular to subrounded fine to medium flint and bitumen.	1.10	
						Trial pit terminated at 1.10m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit remained stable during excavation.
2. Water leak from broken plastic pipe.
3. Two fragments of suspected asbestos cement found on surface near trial pit - removed for safe disposal.
4. Backfilled with arisings.

All dimensions in metres | Scale: 1:25

Method Used:	Machine dug	Plant Used:	Tracked excavator	Logged By:	EHughes	Checked By:	

AGS

GINT LIBRARY: V8_05.GLB Library: v8_03 - Lib0004 Prj Version: v8_05 - Core+Logs 0003 | Log TRIAL PIT LOG | 27621 ANGMERING.GPJ - v8_05 | 30/3/2017 - 15:38 | A32. RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437600, Fax: 01442 437660, Web: www.rsk.co.uk

ARUN DISTRICT COUNCIL/A/94/17/OUT

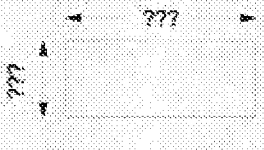
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP39

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	25.10.16	---	---	1 of 1
	End: 25.10.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Brown clayey gravelly SAND. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse flint with occasional brick, bitumen, rare glass, suspected asbestos cement upto 40mm and rare metal and charcoal.	(0.40)	
						0.15m : disused black plastic irrigation pipe	0.40	
0.40-0.45	D1	D				MADE GROUND: Soft brown mottled reddish brown gravelly CLAY. Gravel is subangular to subrounded fine to medium flint and bitumen.	(0.70)	
						Trial pit terminated at 1.10m depth.	1.10	

Plan (Not to Scale)



General Remarks

1. Trial pit remained dry and stable during excavation.
2. Backfilled with arisings.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	EHughes	

Gint - UBKDATA_V8_05.GLB Library: v8_05 - 1.00.03 Preferences: v8_05 - Core+1.ggs 0203 | Log TRIAL PIT LOG | 27621 ANGMERING.GPJ - v8_05 | 06/02/17 - 19:38 | PG2.
RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437599, Fax: 01442 437598. Web: www.rsk.co.uk.
ARUN DISTRICT COUNCIL/A/94/17/DOC

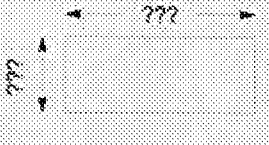
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP38

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	25.10.16	---	---	1 of 1
	End: 25.10.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Firm orangish brown and dark grey sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to rounded fine to medium flint, bitumen and brick.	(0.40)	
							0.40	
0.40-0.45	D1	D				MADE GROUND: Stiff greyish brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to rounded fine to coarse flint, bitumen, occasional brick, rare glass and rare suspected asbestos cement fragments upto 57mm in size.	(0.30)	
							0.70	
						MADE GROUND: Soft to firm brown gravelly CLAY. Gravel is subangular to subrounded fine to medium bitumen and flint.	(0.50)	
							1.20	
						Trial pit terminated at 1.20m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit remained dry and stable during excavation.
2. Backfilled with arisings.

All dimensions in metres

Scale: 1:25

Method Used:	Machine dug	Plant Used:	Tracked excavator	Logged By:	EHughes	Checked By:	

GINT LIBRARY: V8_25.GLB Version: v8_03 - Core+Logs 5003 | Log TRIAL PIT LOG | 27621 ANGMERING.GPJ | v8_05 | 28/02/17 - 15:38 | HO2
RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437600. Fax: 01442 437500. Web: www.rsk.co.uk
ARUN DISTRICT COUNCIL/94/17/DOC

FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP37

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	25.10.16	---	---	1 of 1
	End: 25.10.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Greyish brown sandy gravelly SILT. Sand is fine to coarse. Gravel is angular to rounded fine to coarse flint, brick, occasional concrete and bitumen and rare glass and suspected asbestos fragments.	(0.80)	
0.40-0.50	D1	B				0.40m : disused black plastic irrigation pipe 0.45m : disused grey plastic pipe		
							0.80	
						MADE GROUND: Soft to firm orangish brown very gravelly CLAY. Gravel is subangular to rounded fine to coarse bitumen and flint.	(0.35)	
							1.15	
						Trial pit terminated at 1.15m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit remained dry and stable during excavation.
2. Suspected asbestos cement fragments found within top unit.
3. Backfilled with arisings.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	EHughes	

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RSK Environmental Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 428580. Fax: 01442 428580. Web: www.rsk.co.uk

C:\...\LIBRARY_V6_15.GLB Library: V6_15 - 1.00.004 Preferences: V6_09 - Current.pgs 9.00.01 | Log: TRIAL PIT (LOG) | 27621 ANGMERING.GPJ - V6_09 | 09/03/2017 - 15:08 | P30.

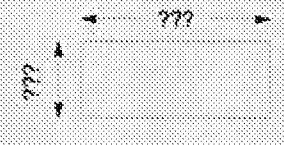
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP36

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	25.10.16	---	---	1 of 1
	End: 25.10.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Greyish brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to rounded fine to coarse flint, brick, suspected asbestos cement, concrete and rare glass, wood and plastic.	(0.90)	
0.50	D1	D					0.90	
						Firm orangish brown slightly gravelly CLAY. Gravel is subrounded fine to medium flint. (RIVER TERRACE DEPOSITS)	1.10	
						Trial pit terminated at 1.10m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit remained dry and stable during excavation.
2. Suspected asbestos cement fragments found within top unit.
3. Backfilled with arisings.

All dimensions in metres | Scale: 1:25

Method Used:	Machine dug	Plant Used:	Tracked excavator	Logged By:	EHughes	Checked By:	

GINT_LIBRARY_V8_05.GLB Library: v8_03 - L60004 Project: v8_05 - Core Logs 0003 | Log TRIAL PIT LOG | 27621 ANGMERING.GPJ - v8_05 | 08/03/17 - 15:38 | PG2
RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437600, Fax: 01442 437500, Web: www.rsk.co.uk.
ARUN DISTRICT COUNCIL/94/17/DOC

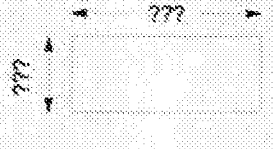
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP35

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	25.10.16	---	---	1 of 1
	End: 25.10.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Dark brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to rounded fine to coarse flint and rare brick, metal, plastic and glass.	(0.40)	
							0.40	
0.40-0.45	D1	D				Firm orangish brown sandy slightly gravelly CLAY. Sand is fine. Gravel is subangular to subrounded fine to coarse flint. (RIVER TERRACE DEPOSITS)	(0.80)	
							1.00	
						Trial pit terminated at 1.00m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit remained dry and stable during excavation.
2. Backfilled with arisings.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	EHughes	

GINT LIBRARY: V8_05.GLB LibVersion: v8_05 - Lib0004 PrjVersion: v8_05 - CoreLog8 0003 | Log FINAL PIT LOG | 27621 ANGMERING.GPJ - v8_05 | 08/03/17 - 15:36 | PG2.
RSK Environment Ltd, 18 Progress Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437600, Fax: 01442 437500, Web: www.rsk.co.uk.
ARUN DISTRICT COUNCIL A/94/17/DOC

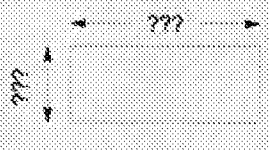
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP29

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	25.10.16	---	---	1 of 1
	End: 25.10.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10-0.20	D1	D				MADE GROUND: Friable slightly sandy slightly gravelly CLAY. Sand is fine. Gravel is subangular to subrounded fine to coarse flint, occasional concrete and rare brick, glass and black plastic bag.	(0.35)	
							0.35	
						Friable slightly sandy slightly gravelly CLAY. Sand is fine. Gravel is subangular to subrounded fine to coarse flint. (RIVER TERRACE DEPOSITS)	0.50	
						Trial pit terminated at 0.50m depth.		

Plan (Not to Scale)



General Remarks

1. Ground level already reduced by 0.45m prior to trial pit excavation.
2. Trial pit remained dry and stable during excavation.
3. Backfilled with arisings.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	EHughes	

C:\RSK_LIBRARY_v8_05.GLB | Universal_v8_05 - US5004.Prj Version: v8_36 - CoreLog 6003 | Log TRIAL PIT LOG | 27621 ANGMERING.GPJ - v8_35 | 09/02/17 - 15:38 | PG2.
RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437600. Fax: 01442 437620. Web: www.rsk.co.uk
ARUN DISTRICT COUNCIL/94/17/DOC

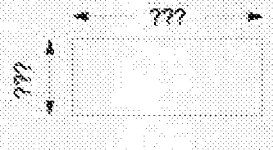
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP28

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	25.10.16	---	---	1 of 1
	End: 25.10.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10	D1	D				MADE GROUND: Brown and black slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to rounded fine to coarse flint, bitumen and brick.	0.15	
						Greyish brown friable slightly gravelly clayey SAND. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse flint. (RIVER TERRACE DEPOSITS)	(0.35)	
						Trial pit terminated at 0.50m depth.	0.50	

Plan (Not to Scale)



General Remarks

1. Ground level already reduced by about 0.40m prior to trial pit excavation.
2. Trial pit remained dry and stable during excavation.
3. Backfilled with arisings.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	CLatimer	

RSK GEMMAR: V8_05.03.B | dVersion: v8_03 - 16/02/04 | sVersion: v8_05 - Client Logs 0203 | Log TRIAL PIT 1.003 127828 AKNMERRIES.GPJ - v8_05 | 08/02/17 - 15:38 | P32
RSK Environment Ltd, 16 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437600, Fax: 01442 437580, Web: www.rsk.co.uk.
ARUN DISTRICT COUNCIL/A/94/17/DOC

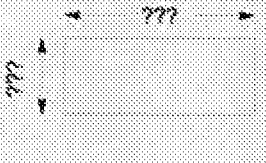
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP27

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	25.10.16	---	---	1 of 1
	End: 25.10.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Stiff brown gravelly CLAY with a low cobble content. Gravel is very angular to rounded fine to coarse flint, glass and brick. Cobbles are subangular concrete upto 270mm in size.	(0.50)	
0.30	D1	D				0.30m : Four suspected asbestos cement fragments upto 50mm in size.	0.50	
0.40-0.50	D2	D				MADE GROUND: Fine to coarse glass brick, concrete and rare bitumen fragments.	(0.40)	
						Trial pit terminated at 0.90m depth.	0.90	

Plan (Not to Scale)



General Remarks

1. Trial pit remained dry and stable during excavation.
2. Glass reported to client on site, they decided to leave it for the time being.
3. Four suspected asbestos cement fragments found at 0.30m depth.
4. Backfilled with arisings.

All dimensions in metres | Scale: 1:25

Method Used:	Machine dug	Plant Used:	Tracked excavator	Logged By:	EHughes	Checked By:	

AGS

ARUN DISTRICT COUNCIL - 94/17/OOO
C:\RSK_LIBRARY_V8_05\8.8 Library\v8_05 - L30004 Prjversion: v8_05 - CoreLogg 8303 | Log TRIAL PIT LOG | 27621 ANDMEBNG.GPJ - v8_05 | 08/02/17 - 15:38 | PG2.
RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437600, Fax: 01442 437500, Web: www.rsk.co.uk

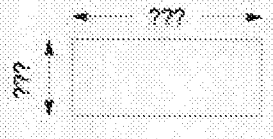
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP26

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	25.10.16	---	---	1 of 1
	End: 25.10.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Soft to firm slightly gravelly sandy CLAY. Gravel is angular to subrounded flint, chalk and rare brick fragments.		
						0.20m : disused black irrigation pipe		
							(0.70)	
0.40-0.50	D1	D						
							0.70	
						Firm to stiff slightly sandy CLAY. (RIVER TERRACE DEPOSITS)	(0.30)	
							1.00	
						Trial pit terminated at 1.00m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit remained dry and stable during excavation.
2. Backfilled with arisings.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	CLatimer	

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RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437500, Fax: 01442 437550, Web: www.rsk.co.uk.
ARUN DISTRICT COUNCIL A/94/17/DOC

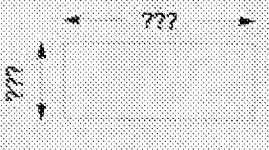
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP25

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	25.10.16	---	---	1 of 1
	End: 25.10.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Brown slightly gravelly clayey SAND. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse fragments of bitumen, chalk brick and flint. 0.20m : black plastic irrigation pipe	(0.45)	
0.40-0.45	D1	D					0.45	
						Firm to stiff brown sandy CLAY. (RIVER TERRACE DEPOSITS)	(0.55)	
							1.00	
						Trial pit terminated at 1.00m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit remained dry and stable during excavation.
2. Backfilled with arisings.

All dimensions in metres

Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	CLatimer	

ARUN DISTRICT COUNCIL

GINT LIBRARY: V8_05.03.3 | Version: v8_05 - Locked | Version: v8_05 - Core+Logs 0003 | Log TRIAL PIT LOG | 27621 ANGMERING.GPJ - v8_05 | 09/02/17 - 15:38 | RG2
RSK Environment Ltd, 16 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437500. Fax: 01442 437500. Web: www.rsk.co.uk

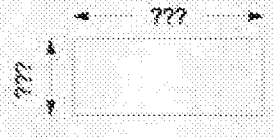
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP24

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	25.10.16	---	---	1 of 1
	End: 25.10.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse flint, rare brick and rare concrete.	(0.50)	
0.40-0.50	D1	D				0.40m : angular to subangular fine to coarse chalk gravel	0.50	
						Firm brown silty CLAY. (RIVER TERRACE DEPOSITS)	(0.50)	
						Trial pit terminated at 1.00m depth.	1.00	

Plan (Not to Scale)



General Remarks

1. Trial pit remained dry and stable during excavation.
2. Backfilled with arisings.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	CLatimer	

ARUN DISTRICT COUNCIL/A/94/17/DOC
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RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437600, Fax: 01442 437550, Web: www.rsk.co.uk.

FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP23

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	25.10.16	---	---	1 of 1
	End: 25.10.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse fragments of concrete, flint and occasional brick.		
						0.10-0.20m : disused black plastic irrigation pipe	(0.55)	
0.40-0.50	D1	D						
						0.50m : occasional angular to subangular fine to very coarse fragments of chalk gravel	0.55	
						Firm brown CLAY. (RIVER TERRACE DEPOSITS)	(0.45)	
							1.00	
						Trial pit terminated at 1.00m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit remained dry and stable during excavation.
2. Backfilled with arisings.

All dimensions in metres Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	CLatimer	

ARUN DISTRICT COUNCIL\LIBRARY_V8_06.GLB Lv.version: v8_06 - Lv.00004 Polyhorizon: v8_06 - Core-Logs 0003 | Log TRIAL PIT LOG | 27621 ANGMERING.GPJ - v8_06 | 08/02/17 - 15:38 | PG2
RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437810, Fax: 01442 437830. Web: www.rsk.co.uk.
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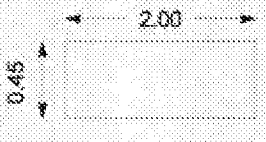
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP22

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	25.10.16	---	---	1 of 1
	End: 25.10.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Firm brown gravelly CLAY. Gravel is angular to rounded fine to coarse flint, bitumen and rare brick.		
						0.20-0.30m : disused grey plastic pipe	(0.50)	
0.40-0.50	D1	D					0.50	
						Firm orangish brown CLAY. (RIVER TERRACE DEPOSITS)	(0.60)	
							1.10	
						Trial pit terminated at 1.10m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit remained stable during excavation.
2. Much water out of disused grey plastic pipe.
3. Backfilled with arisings.

All dimensions in metres | Scale: 1:25

Method Used:	Machine dug	Plant Used:	Tracked excavator	Logged By:	EHughes	Checked By:	

AGS

ARUN DISTRICT COUNCIL/WSP/17/DOC/0

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RSK Environmental Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437600, Fax: 01442 437620, Web: www.rsk.co.uk

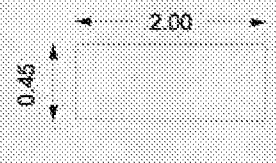
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP21

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	25.10.16	---	---	1 of 1
	End: 25.10.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Stiff dark brown gravelly SILT. Gravel is angular to rounded fine to coarse flint and brick.	0.20	
						0.18-0.20m : disused grey plastic pipe		
0.30-0.40	D1	D				Light red fine to coarse SAND. (RIVER TERRACE DEPOSITS)	0.40	
						Firm orangish brown CLAY. (RIVER TERRACE DEPOSITS)	(0.60)	
						Trial pit terminated at 1.00m depth.	1.00	

Plan (Not to Scale)



General Remarks

1. Trial pit remained stable during excavation.
2. Much water out of disused grey plastic pipe.
3. Backfilled with arisings.

All dimensions in metres

Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	EHughes	

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RSK Environmental Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437500. Fax: 01442 437500. Web: www.rsk.co.uk
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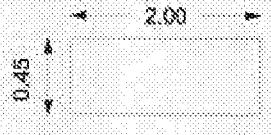
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP20

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	25.10.16	---	---	1 of 1
	End: 25.10.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.40-0.50	D1	D				MADE GROUND: Brown gravelly SILT with a low cobble content. Gravel is angular to rounded fine to coarse fine, brick, some glass, some plastic, rare reinforced concrete. Cobbles are subrounded flint upto 70mm in size.	(0.80)	
						0.70m : occasional angular to subangular medium to coarse chalk gravel	0.80	
						Stiff brown CLAY. (RIVER TERRACE DEPOSITS)	1.05	
						Trial pit terminated at 1.05m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit remained dry and stable during excavation.
2. Backfilled with arisings.

All dimensions in metres Scale: 1:25

Method Used:	Machine dug	Plant Used:	Tracked excavator	Logged By:	EHughes	Checked By:	

GINT LIBRARY: V8_05.GLB | Version: v8_05 - Lib0004 PrjVersion: v8_05 - Core+Logs 0003 | Log TRIAL PIT LOG | 27621 ANGMERING.GPJ - v8_28 | 08/03/17 - 15:38 | PG2.
RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437500. Fax: 01442 437500. Web: www.rsk.co.uk.
ARUN DISTRICT COUNCIL/A/94/17/DOC

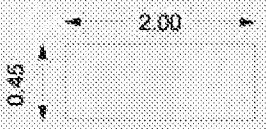
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP18

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	25.10.16	---	---	1 of 1
	End: 25.10.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Very stiff dark brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to rounded fine to coarse flint, brick, rare plastic and bitumen.		
						0.20-0.28m : rounded bitumen cobble 80mm in size	(0.60)	
0.40	D1	D				0.40m : becoming firm		
							0.60	
						Dark greyish brown CLAY. (RIVER TERRACE DEPOSITS)	0.65	
						0.60m : orange geotextile	(0.35)	
						Firm orangish brown CLAY. (RIVER TERRACE DEPOSITS)	1.00	
						Trial pit terminated at 1.00m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit remained dry and stable during excavation.
2. Backfilled with arisings.

All dimensions in metres Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	EHughes	

GINT LIBRARY_V8_05.GLB Universion: v8_05 - L23004.PrjVersion: v8_05 - Core+Logs 0003 | Log TRIAL PIT LOG | 27621 ANGMERING.GPJ - v8_05 | 08/03/17 - 15:39 | PC2.
RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437500. Fax: 01442 437500. Web: www.rsk.co.uk
ARUN DISTRICT COUNCIL/V94/17/DOC

APPENDIX C
TRIAL PIT LOGS

PHOTOGRAPHIC LOG

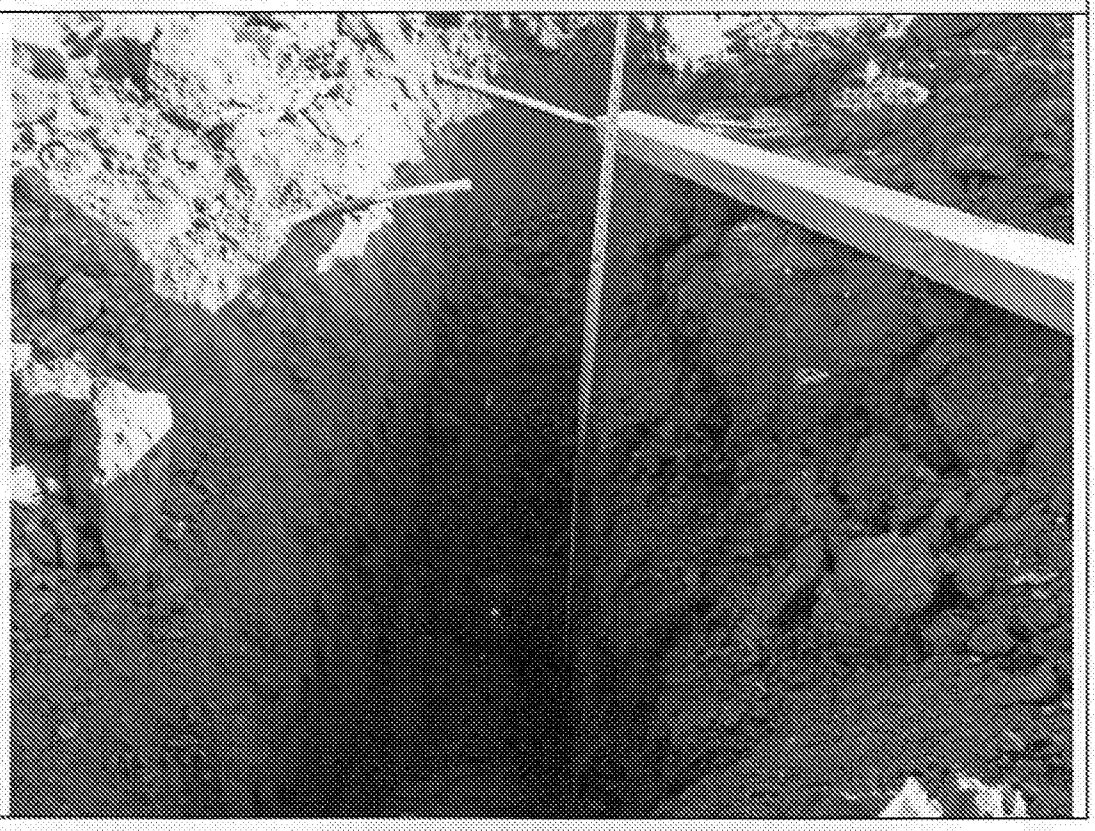
Site Location: West End Nursery

Photo No. 9 **Date:** 25/10/2016 TPP53	
Photo No. 10 **Date:** 25/10/2016 TPP58	

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PHOTOGRAPHIC LOG

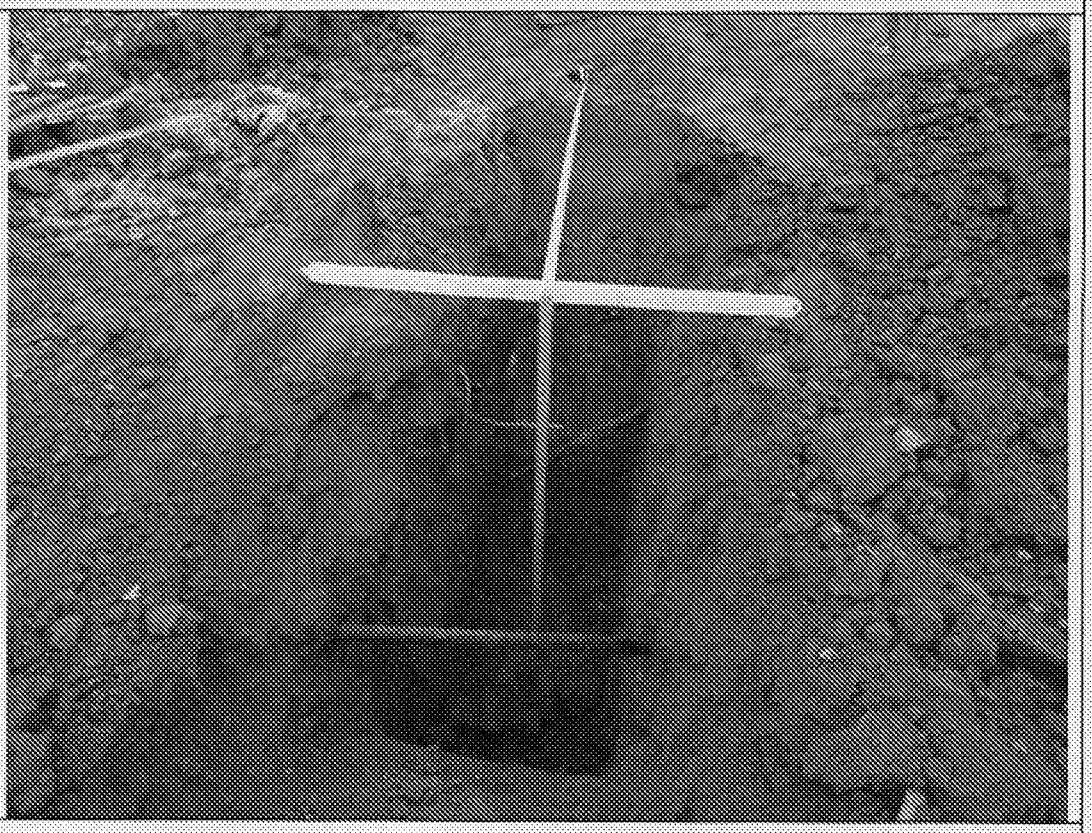
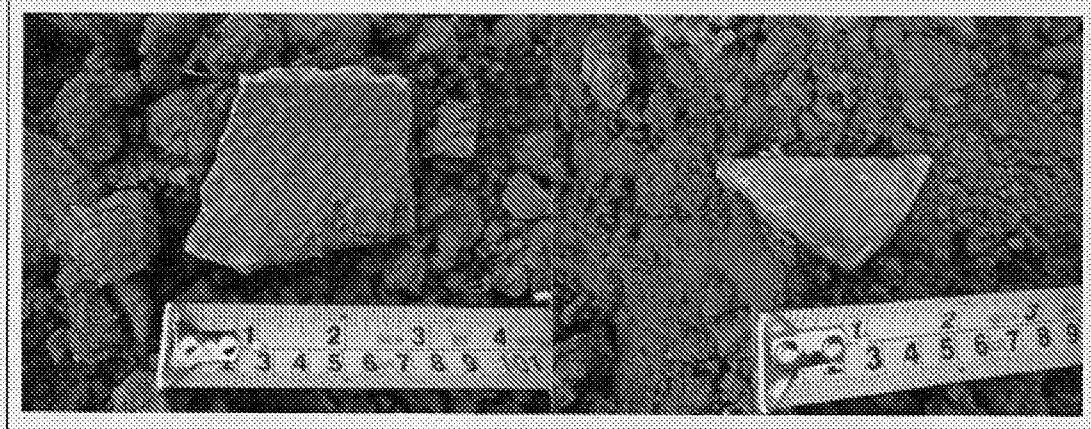
Site Location: West End Nursery

Photo No. 7 **Date:** 26/10/2016 TPP44	
Photo No. 8 **Date:** 25/10/2016 TPP50	

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PHOTOGRAPHIC LOG

Site Location: West End Nursery

Photo No. 5 **Date:** 25/10/2016 TPP37	
Photo No. 6 **Date:** 25/10/2016 Two suspected asbestos cement fragments found near TPP40	

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PHOTOGRAPHIC LOG

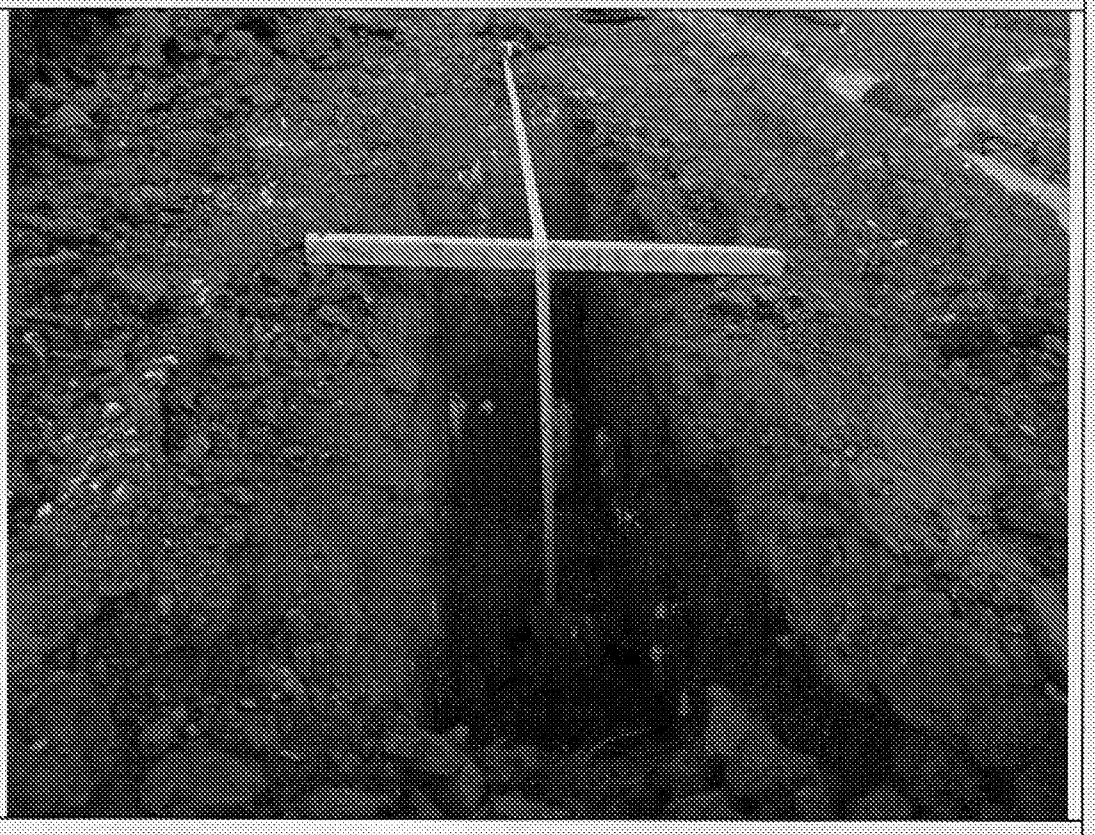
Site Location: West End Nursery

Photo No. 3 **Date:** 25/10/2016 Access to area near Plots 30-31 obstructed due to construction materials and building	
Photo No. 4 **Date:** 25/10/2016 Levels near Plots 33-34 raised with concrete crush – unable to excavate	

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PHOTOGRAPHIC LOG

Site Location: West End Nursery

Photo No. 1 **Date:** 25/10/2016 Depth of TPP18 – represents typical depth of trial pits	
Photo No. 2 **Date:** 25/10/2016 Glass layer in TPP27	

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APPENDIX B
PHOTOGRAPHIC LOG

APPENDIX A

SERVICE CONSTRAINTS

1. This report and the site investigation carried out in connection with the report (together the "Services") were compiled and carried out by RSK Environment Limited (RSK) for CALA Homes (South Counties) (the "client") in accordance with the terms of a contract between RSK and the "client", dated October 2016. The Services were performed by RSK with the skill and care ordinarily exercised by a reasonable environmental consultant at the time the Services were performed. Further, and in particular, the Services were performed by RSK taking into account the limits of the scope of works required by the client, the time scale involved and the resources, including financial and manpower resources, agreed between RSK and the client.

2. Other than that expressly contained in paragraph 1 above, RSK provides no other representation or warranty whether express or implied, in relation to the Services.

3. Unless otherwise agreed in writing the Services were performed by RSK exclusively for the purposes of the client. RSK is not aware of any interest of or reliance by any party other than the client in or on the Services. Unless expressly provided in writing, RSK does not authorise, consent or condone any party other than the client relying upon the Services. Should this report or any part of this report, or otherwise details of the Services or any part of the Services be made known to any such party, and such party relies thereon that party does so wholly at its own and sole risk and RSK disclaims any liability to such parties. **Any such party would be well advised to seek independent advice from a competent environmental consultant and/or lawyer.**

4. It is RSK's understanding that this report is to be used for the purpose described in the introduction to the report. That purpose was a significant factor in determining the scope and level of the Services. Should the purpose for which the report is used, or the proposed use of the site change, this report may no longer be valid and any further use of or reliance upon the report in those circumstances by the client without RSK 's review and advice shall be at the client's sole and own risk. Should RSK be requested to review the report after the date of this report, RSK shall be entitled to additional payment at the then existing rates or such other terms as agreed between RSK and the client.

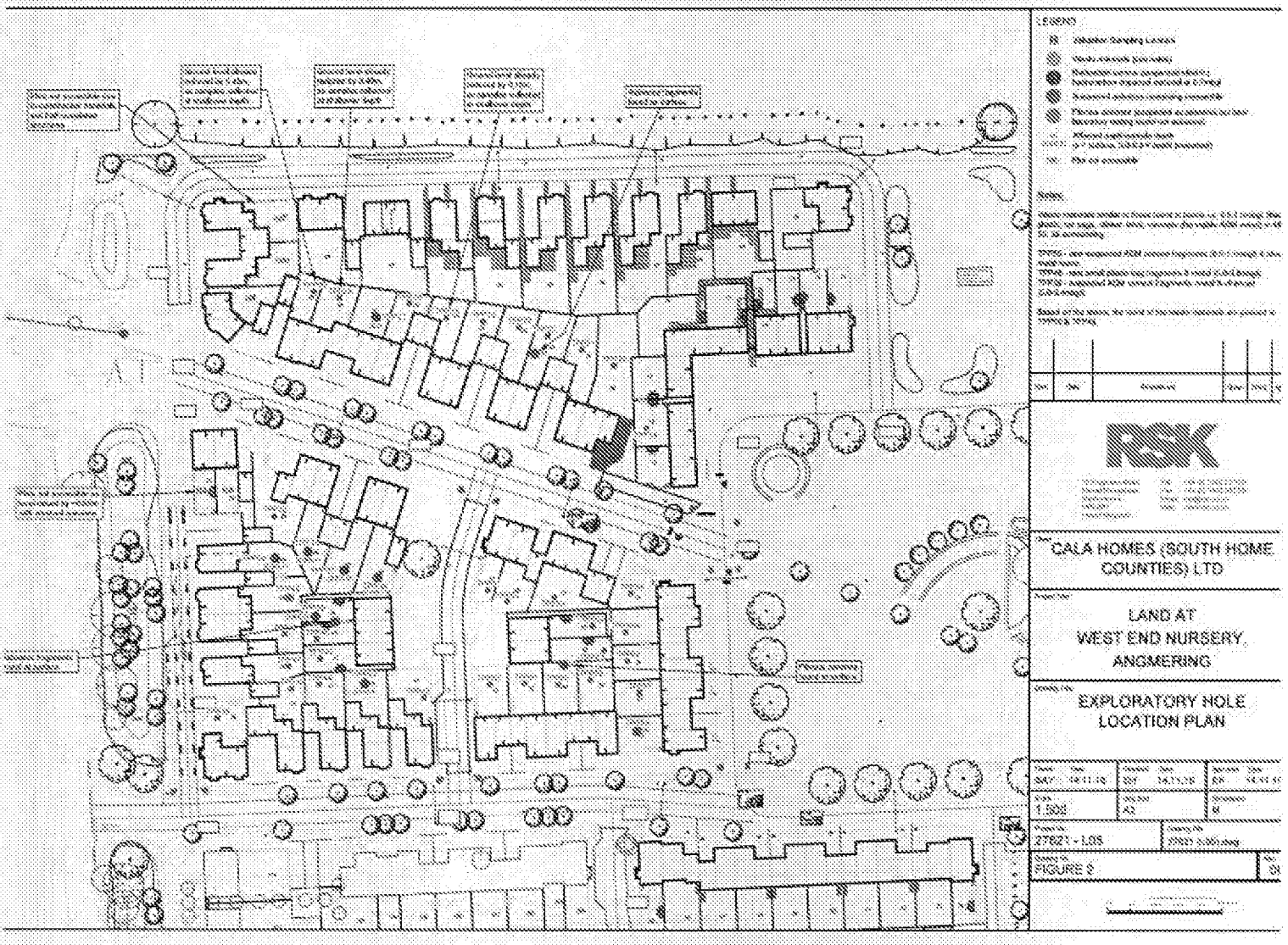
5. The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the report inaccurate or unreliable. The information and conclusions contained in this report should not be relied upon in the future without the written advice of RSK. In the absence of such written advice of RSK, reliance on the report in the future shall be at the client's own and sole risk. Should RSK be requested to review the report in the future, RSK shall be entitled to additional payment at the then existing rate or such other terms as may be agreed between RSK and the client.

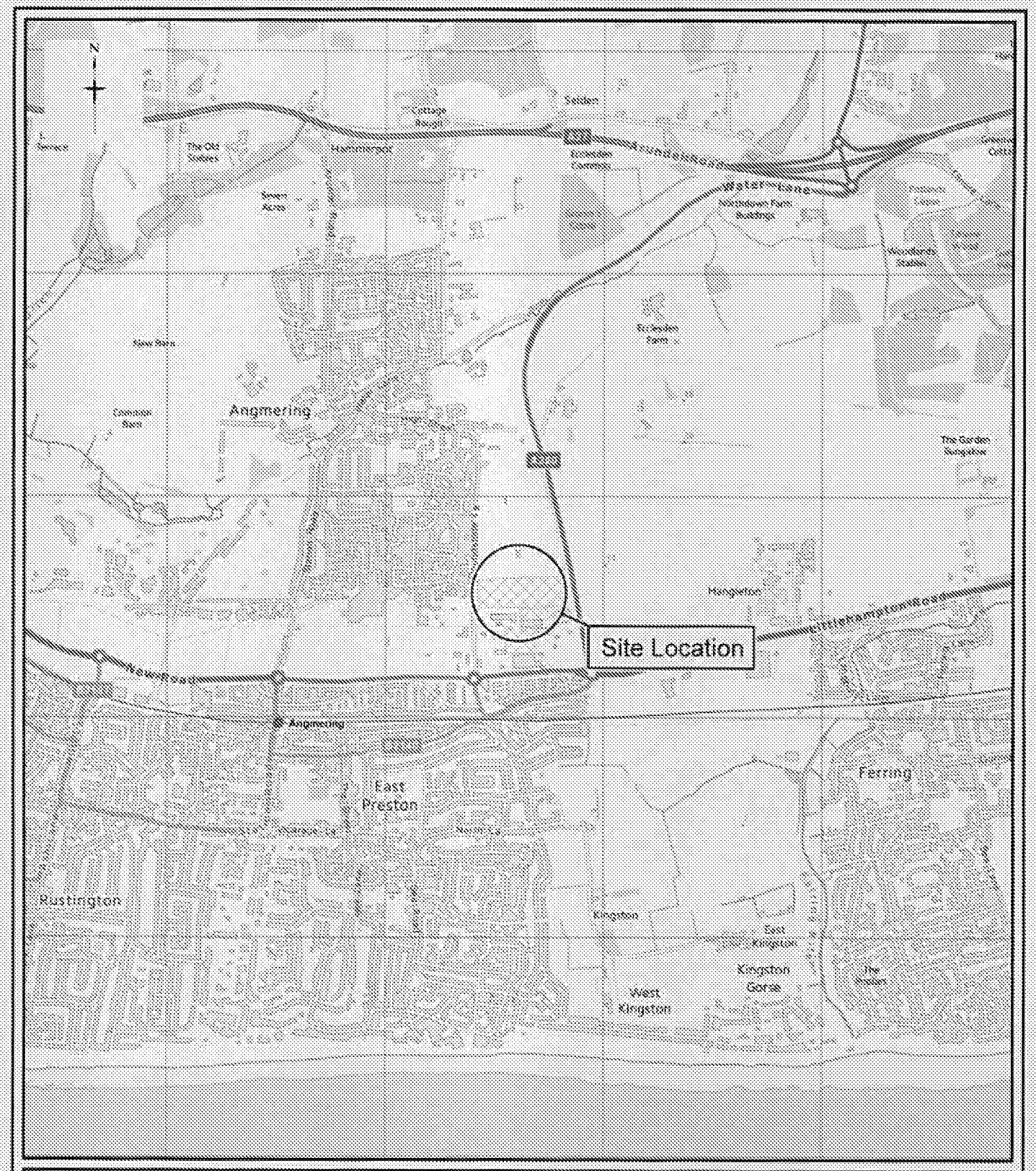
6. The observations and conclusions described in this report are based solely upon the Services which were provided pursuant to the agreement between the client and RSK. RSK has not performed any observations, investigations, studies or testing not specifically set out or required by the contract between the client and RSK. RSK is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the Services. For the avoidance of doubt, unless otherwise expressly referred to in the introduction to this report, RSK did not seek to evaluate the presence on or off the site of asbestos, electromagnetic fields, lead paint, heavy metals, radon gas or other radioactive or hazardous materials.

7. The Services are based upon RSK's observations of existing physical conditions at the Site gained from a walk-over survey of the site together with RSK's interpretation of information including documentation, obtained from third parties and from the client on the history and usage of the site. The Services are also based on information and/or analysis provided by independent testing and information services or laboratories upon which RSK was reasonably entitled to rely. The Services clearly are limited by the accuracy of the information, including documentation, reviewed by RSK and the observations possible at the time of the walk-over survey. Further RSK was not authorised and did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the client or third parties, including laboratories and information services, during the performance of the Services. RSK is not liable for any inaccurate information or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to RSK and including the doing of any independent investigation of the information provided to RSK save as otherwise provided in the terms of the contract between the client and RSK.

8. The intrusive environmental site investigation aspects of the Services is a limited sampling of the site at pre-determined borehole and soil vapour locations based on the operational configuration of the site. The conclusions given in this report are based on information gathered at the specific test locations and can only be extrapolated to an undefined limited area around those locations. The extent of the limited area depends on the soil and groundwater conditions, together with the position of any current structures and underground facilities and natural and other activities on site. In addition chemical analysis was carried out for a limited number of parameters [as stipulated in the contract between the client and RSK] [based on an understanding of the available operational and historical information], and it should not be inferred that other chemical species are not present.

9. Any site drawing(s) provided in this report is (are) not meant to be an accurate base plan, but is (are) used to present the general relative locations of features on, and surrounding, the site. Features (boreholes, trial pits etc) annotated on site plans are not drawn to scale but are centred over the approximate location. Such features should not be used for setting out and should be considered indicative only.


LEGEND
RSK
CALA HOMES (SOUTH HOME COUNTIES) LTD
LAND AT
WEST END NURSERY,
ANGMERING
EXPLORATORY HOLE
LOCATION PLAN
1:500
27621 - L05
FIGURE 2



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RSK

18 Progress Road
Hemel Hempstead
Hertfordshire
HP2 7AT
United Kingdom

Tel: +44 (0) 1442 437500
Fax: +44 (0) 1442 437599
Email: info@rsk.co.uk
Web: www.rsk.co.uk

Client: CALA HOMES (SOUTH HOME COUNTIES) LTD

Project Title: WEST END NURSERY, ANGMERING

Drawing Title: SITE LOCATION MAP

Rev	Drawn	Date	Checked	Date	Approved	Date
00	ASC	05.10.16	ARJ	05.10.16	ARJ	05.10.16

Dimensions	Scale	Original Size
m	1:25,000	A4

Project Number	Drawing File	Drawing Number
27621 - L05	27621 - SLP.dwg	FIGURE 1

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FIGURES

5 CONCLUSIONS

On the basis of the results discussed above, it is recommended that 600 mm of clean cover should be placed in the gardens of plots 27, 36-39, 43, 47, 48, 49, 50 and 61 where asbestos containing material have been found to be present. A 450 mm cover layer required across the gardens of all other plots in Phase 1A.

It is recommended that handpicking for ACM at the ground surface also be completed across plots 22, 27 and 39, followed by removal of the upper 0.2m of the existing ground profile through these plots.

A watching brief should be kept in place during groundworks in Phase 1A, as the possibility of further asbestos cannot be discounted. Further delineation works on the remainder of Phase 1B will be completed in due course.

We trust that the information discussed above is acceptable and recommend this report be submitted to the NHBC and Local Authority accordingly. Should you require RSK to submit this information on your behalf, please do not hesitate to contact us.

Yours sincerely,
For RSK Environment Limited

[redacted]

Edward Hughes
Graduate Geo-environmental Consultant

[redacted]

Andrew Kent
Associate Director

Enc.

Figure 1	Site location map
Figure 2	Exploratory hole location plan
Appendix A	Service constraints
Appendix B	Photographic log
Appendix C	Trial pit logs
Appendix D	Laboratory certificates

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4 LABORATORY TESTING

Representative soil samples collected during the investigation were submitted for an array of laboratory testing, primarily with a view to screening samples for the presence of asbestos containing materials.

4.1 Laboratory testing results

The majority of the samples submitted for analysis returned negative asbestos screens with the exception of those detailed in **Table 2** below:

Table 2: Samples returning positive asbestos screen

Exploratory Hole	Depth Range	Asbestos Species	Presenting As	Quantified?
Plot 36	0.50	Chrysotile	Loose Fibres	No
Plot 39	0.40 - 0.45	Chrysotile	Loose Fibres	No
Plot 47	0.40 - 0.50	Amosite	Loose Insulation	<0.001%
Plot 48	0.40 - 0.50	Chrysotile	Loose Fibres	No
Plot 49	0.50 - 0.60	Chrysotile	Cement	No
Plot 50	0.45 - 0.50	Amosite	Loose Fibres	No
Plot 61	0.50 - 0.60	Chrysotile	Loose Fibres	No

Prior to redevelopment works commencing at the site, extensive sampling and analysis, including asbestos quantification testing was completed in order for the sites existing Remedial Strategy to be prepared (RSK report ref: 27621- R03 (01), January 2016). Within the previous geo-environmental reports prepared for the site, potential risks posed to groundworkers and neighbouring residents during the construction phases at the site were assessed and protection measures associated with the identified risks detailed in the Remedial Strategy for the site.

Protection measures implemented included the use of respiratory protective equipment (RPE) where required (dust masks with P3 filter), damping down of soils and works in high risk areas (i.e. bunds) conducted by appropriately licensed contractors under a detailed method statement (including specifying any requirements for air monitoring if deemed applicable) and all ground workers to have asbestos awareness training.

Based on frequency of asbestos testing already undertaken in this area of the site and in accordance with the protection measures already in place to protect construction workers and neighbouring residents, only one of the soil sample encountered during this phase of works was submitted for asbestos quantification analysis: To confirm whether the quantification results in this area are of a similar magnitude to that previously encountered (previous results ranged from <0.001 and 7.214 %, with the highest concentrations reported in the bund materials, RSK report ref: 27621 R04, December 2015).

The representative suspected asbestos containing cement fragment from Plot 27 tested positive for chrysotile cement, however the fragment from Plot 58 did not contain asbestos.

sample of this material was collected. This was subsequently tested for a standard suite of 9 Metals, TPH CWG and PAH 16, the results of which were below levels of concern for all contaminants.

3 GROUND CONDITIONS

The results of the intrusive investigation and subsequent laboratory analysis undertaken are detailed below. The descriptions of the strata encountered, notes regarding visual evidence of suspected asbestos containing materials, list of samples taken and field observations are included on the exploratory hole records presented in **Appendix C**.

The exploratory holes revealed that the site is underlain by a variable thickness of made ground overlying River Terrace Deposits. For the purpose of discussion, the ground conditions are summarised in **Table 1** and the strata discussed in later subsections.

Table 1: General succession of strata encountered

Strata	Exploratory holes encountered	Depth to top of stratum m bgl	Thickness (m)
Made Ground	All locations except Plots 52, 62 and 64	Ground level	0.10 – 1.10
River Terrace Deposits	All locations except Plots 27, 37, 38, 40 41, 55, and Plot 19 Garden	0.70 – 1.20	Proven to 1.05

3.1 Made ground

The made ground typically comprised reworked River Terrace Deposits with variable proportions of concrete, brick, plastic fragments, plastic pipe, metal, and glass. Frequent disused black plastic irrigation pipes were encountered at depths ranging from 0.10m to 0.60m.

A large quantity of glass fragments were encountered at a depth of 0.50m in Plot 27.

3.2 River Terrace Deposits

This stratum typically comprised stiff orangish brown sandy clay with fine to medium sand, and occasional flint or chalk gravel.

3.3 Groundwater

No groundwater was encountered within the trial pits. Residual perched water was noted within the disused black irrigation pipes identified at various depths within the made ground deposits.

3.4 Visual evidence of suspected cement bound asbestos

Fragments of suspected cement bonded asbestos were noted within made ground deposits encountered in Plots 27, 36, 37, 38, 39 and 50.

Fragments of suspected cement bonded asbestos were also noted on the surface adjacent to the locales of Plots 40 and 58.

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2 SITE WORKS

To provide further information on the presence of suspected asbestos containing materials across the Phase 1A area, RSK carried out intrusive investigation works on 25th and 26th October 2016 to delineate the area of Plots 18 and 20 to 64. The objective of the work was to assess made ground deposits and screen for potential asbestos containing materials within the footprint of each plot. Exploratory holes advanced as part of these works were annotated as TPP followed by the relevant number.

2.1 Sampling strategy and methods

The techniques adopted for the investigation have been chosen considering the anticipated ground conditions, existing land use and the proposed development. Mechanically excavated trial pits were considered to be the most appropriate method of investigation in order to provide suitable recovery of soils and allow for a thorough visual inspection of the ground.

2.2 Health and safety considerations

Prior to intrusive works, the RSK engineer inspected service plans and undertook a service clearance using a cable avoidance tool and signal generator to identify any potential underground utilities.

2.3 Investigation locations

In the vicinity of each plot, a single trial pit was excavated to target the footprint of the proposed rear garden. It was not possible to investigate the footprint of Plots 30 to 34 due to access constraints.

The exploratory hole records are presented in **Appendix C**.

The locations of the exploratory holes are shown on **Figure 2** with the investigation pits located in the vicinity of half-completed houses and footings.

2.4 Soil sampling and laboratory analysis

Soils collected for laboratory analysis were collected in a variety of containers appropriate to the anticipated testing suite required. Samples were stored in accordance with the RSK quality procedures to maintain sample integrity and preservation and to minimise the chance of cross contamination.

A soil sample was collected from each accessible plot, with a total of 41 representative soil samples collected. The samples collected are recorded together with their depths on the laboratory certificates in **Appendix D**.

All samples were analysed for an asbestos screen, to confirm the presence or absence of asbestos fibres or asbestos containing materials.

Suspected asbestos cement was observed at a number of locations across the Phase 1A area as shown on **Figure 2**. Eight samples of the suspected asbestos cement were collected during the works with two representative samples subsequently submitted for analysis by means of bulk identification.

A loose black fine sand was encountered in the vicinity ofPlot 40 at a depth of 0.55m to 0.60mbgl. As materials exhibiting this colouration hadnot been encountered previously at the site, an environmental

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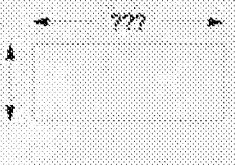
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	**Cala Homes (South Home Counties) Ltd**	**TPP57**

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	**25.10.16**	**---**	**---**	**1 of 1**
	End: **25.10.16**			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Brown slightly clayey gravelly SAND. Gravel is angular to subrounded fine to coarse fragments of brick, concrete and flint.	0.10	
0.40-0.50	D1	D				MADE GROUND: Firm to stiff slightly sandy friable CLAY, with occasional cobble-sized fragments of brick and concrete and angular to subrounded fine to coarse flint gravel.	(0.50)	
							0.60	
						Firm to stiff brown slightly sandy CLAY. (RIVER TERRACE DEPOSITS)	(0.50)	
							1.10	

Plan (Not to Scale)



General Remarks

1. Trial pit remained dry and stable during excavation.
2. Backfilled with arisings.

All dimensions in metres Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Tracked excavator**	**CLatimer**	

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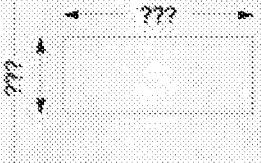
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP58

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	25.10.16	---	---	1 of 1
	End: 25.10.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.00	ES1	ES	Tub: ACM frag			MADE GROUND: Brown clayey slightly gravelly SAND. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse fragments of brick, flint and occasional concrete	0.10	
0.40-0.50	D2	D				MADEGROUND: Firm to stiff brown slightly sandy CLAY with angular to subrounded fine to coarse flint gravel.	(0.90)	
0.70-0.80	ES3	ES	Jar+Vial			0.70m : concrete breeze block and redundant cable (possible electric); hydrocarbon odours and black staining, with clay becoming soft - environmental sample collected	1.00	
						Firm to stiff brown CLAY. (RIVER TERRACE DEPOSITS)	(0.30)	
						1.00m : concrete obstruction in north side of trial pit, so pit extended further southwards	1.30	
						Trial pit terminated at 1.00m depth on the north side of the trial pit, and 1.30m depth on the south side.		

Plan (Not to Scale)



General Remarks

1. Trial pit remained dry and stable during excavation.
2. Backfilled with arisings.
3. Suspected asbestos cement fragments at surface; samples taken for analysis.

All dimensions in metres Scale: 1:25

Method Used:	Machine dug	Plant Used:	Tracked excavator	Logged By:	CLatimer	Checked By:	

AGS

ARUN DISTRICT COUNCIL 94/17/DOG

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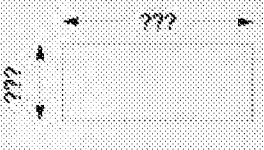
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP59

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	25.10.16	---	---	1 of 1
	End: 25.10.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Brown slightly clayey gravelly SAND. Sand is coarse. Gravel is angular to subrounded fine to coarse fragments of brick, concrete, flint and occasional brick pottery.	0.20	
0.40-0.50	D1	B				Reworked natural: firm brown slightly sandy CLAY with occasional angular to subrounded fine to coarse flint gravel. 0.20m : disused black plastic irrigation pipe and plastic fragments	(0.50)	
						0.60m : occasional angular to subrounded fine to coarse chalk gravel	0.70	
						Firm brown slightly sandy CLAY with occasional angular to rounded fine to coarse flint gravel. (RIVER TERRACE DEPOSITS)	(0.30)	
						Trial pit terminated at 1.00m depth.	1.00	

Plan (Not to Scale)



General Remarks

1. Trial pit remained dry and stable during excavation.
2. Backfilled with arisings.

All dimensions in metres Scale: 1:25

Method Used:	Machine dug	Plant Used:	Tracked excavator	Logged By:	CLatimer	Checked By:	

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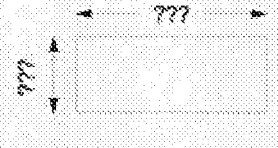
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP60

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	25.10.16	---	---	1 of 1
	End: 25.10.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Brown sandy CLAY with frequent gravel. Sand is coarse. Gravel is angular to subrounded fine to coarse fragments of brick, flint and rare concrete paving slab.	(0.65)	
						0.40m : disused grey plastic pipe		
0.50-0.60	D1	D				0.50m : pocket of reddish brown coarse sand	0.65	
						Firm brown slightly sandy CLAY with occasional angular to subrounded fine to coarse flint gravel. (RIVER TERRACE DEPOSITS)	(0.35)	
							1.00	
						Trial pit terminated at 1.00m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit remained dry and stable during excavation.
2. Backfilled with arisings.

All dimensions in metres Scale: 1:25

Method Used:	Machine dug	Plant Used:	Tracked excavator	Logged By:	CLatimer	Checked By:	

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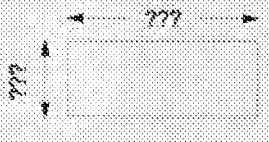
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP61

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	25.10.16	---	---	1 of 1
	End: 25.10.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Brown slightly sandy CLAY with frequent angular to subrounded fine to coarse gravel sized fragments of brick, flint and rare glass.	0.10	
						MADEGROUND: Firm brown silty gravelly slightly sandy CLAY. Gravel is angular to subrounded fine to coarse fragments of flint.	(0.40)	
							0.50	
0.50-0.60	D1	D				MADEGROUND: Firm brown silty gravelly slightly sandy CLAY. Gravel is angular to subrounded fine to coarse fragments of flint with frequent chalk. 0.50m : Pocket of yellow coarse sand	(0.50)	
							1.00	
						Trial pit terminated at 1.00m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit remained dry and stable during excavation.
2. Backfilled with arisings.

All dimensions in metres | Scale: 1:25

Method Used:	Machine dug	Plant Used:	Tracked excavator	Logged By:	CLatimer	Checked By:	

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RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437830. Fax: 01442 437839. Web: www.rsk.co.uk

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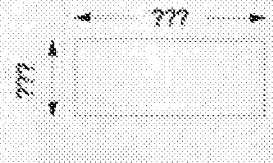
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP62

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	25.10.16	---	---	1 of 1
	End: 25.10.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Stiff friable brown slightly sandy CLAY with occasional angular to rounded fine to coarse flint gravel. (RIVER TERRACE DEPOSITS)	(0.70)	
0.40-0.50	D1	D					0.70	
						Firm to stiff brown slightly sandy CLAY with occasional angular to rounded fine to coarse flint and chalk gravel. (RIVER TERRACE DEPOSITS)	(0.40)	
							1.10	
						Trial pit terminated at 1.10m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit remained dry and stable during excavation.
2. Backfilled with arisings.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	Tracked excavator	CLatimer	

ARUN DISTRICT COUNCIL/94/17/DOC

RSK Environmental Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437600, Fax: 01442 437560, Web: www.rsk.co.uk
K:\27621\GPR\ARW_V8_05-09-16.GDT | Advanced_v8_35 - 1.4.0.0 | Preferences: v8_20 - CoreLog 2003 | Log TRIAL PIT LOG | 27621 ANGMERING.GPJ - v8_06 | 09/02/2017 - 15:36 | PC2

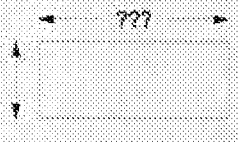
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP63

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	25.10.16	---	---	1 of 1
	End: 25.10.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Soft to firm brown slightly sandy gravelly CLAY. Gravel is angular to subrounded fine to coarse fragments of brick, flint and occasional bitumen. 0.20-0.60m : In centre of pit, possible concrete fence post or pile.	(0.70)	
0.50-0.60	D1	D					0.70	
						Firm to stiff brown slightly sandy CLAY with occasional angular to subrounded fine to coarse flint gravel. (RIVER TERRACE DEPOSITS)	(0.40)	
							1.10	
						Trial pit terminated at 1.10m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit remained dry and stable during excavation.
2. Backfilled with arisings.

All dimensions in metres | Scale: 1:25

Method Used:	Machine dug	Plant Used:	Tracked excavator	Logged By:	CLatimer	Checked By:	

GINT_LIBRARY_V8_05.GLB Library: v8_05 - 1.00.04 Prj Version: v8_05 - Core Logs 0603 | Log TRIAL PIT LOG | 27621 ANGMERING.GPJ - v8_05 | 08/02/17 - 15:38 | P22
RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437500, Fax: 01442 437500, Web: www.rsk.co.uk.
ARUN DISTRICT COUNCIL/A/94/17/DOC

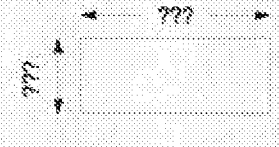
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TPP64

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	25.10.16	---	---	1 of 1
	End: 25.10.16			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADEGROUND: Firm to stiff brown slightly sandy CLAY with occasional angular to subrounded fine to coarse flint gravel.		
						0.20m : disused black plastic irrigation pipe	(0.60)	
						0.40m : angular to subrounded fine to coarse chalk gravel		
0.50-0.60	D1	D					0.60	
						Firm friable brown slightly sandy CLAY with rare angular to rounded fine to medium flint gravel. (RIVER TERRACE DEPOSITS)	(0.40)	
							1.00	
						Trial pit terminated at 1.00m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit remained dry and stable during excavation.
2. Backfilled with arisings.

All dimensions in metres Scale: 1:25

Method Used:	Machine dug	Plant Used:	Tracked excavator	Logged By:	CLatimer	Checked By:	

GINT LIBRARY_V8_25.GLB Library: v8_23 - 1/3/2004 Polyversion: v8_23 - Current Page 0003 | Log TRIAL PIT LOG | 27621 ANGMERING.GPJ - v8_005 | 08/03/17 - 16:39 | PG3.
RSK Environmental Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437820, Fax: 01442 437580, Web: www.rsk.co.uk.
ARUN DISTRICT COUNCIL/A/94/17/DOO

APPENDIX D
LABORATORY RESULTS

envirolab
Units 7 & 8 Sandpits Business Park
Moltram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 16/06871
Issue Number: 1 **Date:** 10 November, 2016

Client: RSK Environment Ltd Southampton
Unit 26
Basepoint Abbey Enterprise Centre
Premier Way
Romsey,
Hampshire
UK
SO51 9AQ

Project Manager: Andrew James/Catherine Latimer/Ed Hughes
Project Name: Angmering
Project Ref: 27621
Order No: N/A
Date Samples Received: 27/10/16
Date Instructions Received: 28/10/16
Date Analysis Completed: 10/11/16

Prepared by:

[redacted]

Danielle Brierley
Administrative Assistant

Approved by:

[redacted]

Gill Walker
Laboratory Manager

MCERTS
1247

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/06871

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/06871/1	16/06871/2	16/06871/3	16/06871/4	16/06871/5	16/06871/6	16/06871/7	16/06871/8	Units	Method ref
Client Sample No	1				1		1	1		
Client Sample ID	TPP18	TPP20	TPP21	TPP22	TPP23	TPP24	TPP25	TPP26		
Depth to Top	0.40	0.40	0.30	0.40	0.40	0.40	0.40	0.40		
Depth To Bottom		0.50	0.40	0.50	0.50	0.50	0.45	0.50		
Date Sampled	25-Oct-16	25-Oct-16	25-Oct-16	25-Oct-16	25-Oct-16	25-Oct-16	25-Oct-16	25-Oct-16		
Sample Type	Soil - D	Soil	Soil	Soil	Soil - D	Soil	Soil - D	Soil - D		
Sample Matrix Code	3A	4A	5A	6A	6A	4A	4A	4A		
Asbestos in Soil (inc. matrix)										
Asbestos in soil,*	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD		[illegible]
Asbestos ACM - Suitable for Water Absorption Test?	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		

Envirolab Job Number: 16/06871

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/06871/9	16/06871/10	16/06871/11	16/06871/12	16/06871/13	16/06871/14	16/06871/15	16/06871/16	Units	Method ref
Client Sample No					1	1		1		
Client Sample ID	TPP27	TPP28	TPP29	TPP35	TPP36	TPP38	TPP39	TPP37		
Depth to Top	0.40	0.10	0.10	0.40	0.50	0.00	0.40	0.40		
Depth To Bottom	0.50		0.20	0.45			0.45	0.50		
Date Sampled	25-Oct-16	25-Oct-16	25-Oct-16	25-Oct-16	25-Oct-16	25-Oct-16	25-Oct-16	25-Oct-16		
Sample Type	Soil	Soil	Soil	Soil	Soil - D	Soil - D	Soil	Soil - D		
Sample Matrix Code	4A	4A	6A	6A	6A	6A	4A	4A		
Asbestos in Soil (inc. matrix)										
Asbestos in soil,^{s}	NAD	NAD	NAD	NAD	Chrysotile	NAD	Chrysotile	NAD		[illegible]
Asbestos Matrix (microscope)$_{s}$	-	-	-	-	Loose Fibres	-	Loose Fibres	-		[illegible]
Asbestos ACM - Suitable for Water Absorption Test?	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/06871

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/06871/18	16/06871/19	16/06871/20	16/06871/21	16/06871/22	16/06871/23	16/06871/24	16/06871/25	Units	Method ref
Client Sample No		1								
Client Sample ID	TPP40	TPP41	TPP42	TPP43	TPP44	TPP45	TPP46	TPP47		
Depth to Top	0.55	0.40	0.50	0.40	0.40	0.50	0.40	0.40		
Depth To Bottom	0.60		0.60	0.50	0.50	0.60	0.50	0.50		
Date Sampled	25-Oct-16	25-Oct-16	26-Oct-16	26-Oct-16	26-Oct-16	26-Oct-16	26-Oct-16	26-Oct-16		
Sample Type	Soil	Soil - D	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	4A	6A	6A	6A	6A	6A	6A	4A		
% Stones >10mm$_A$	<0.1	-	-	-	-	-	-	-	% w/w	A-T-044
pH$_C$ MX	5.22	-	-	-	-	-	-	-	pH	A-T-037x
Sulphate (water sol 2:1)$_D$ MX	0.10	-	-	-	-	-	-	-	g/l	A-T-038x
Sulphate (acid soluble)$_E$ MX	530	-	-	-	-	-	-	-	mg/kg	A-T-038x
Arsenic$_G$ MX	19	-	-	-	-	-	-	-	mg/kg	A-T-022x
Cadmium$_G$ MX	1.5	-	-	-	-	-	-	-	mg/kg	A-T-022x
Copper$_G$ MX	64	-	-	-	-	-	-	-	mg/kg	A-T-022x
Chromium$_G$ MX	9	-	-	-	-	-	-	-	mg/kg	A-T-022x
Lead$_G$ MX	24	-	-	-	-	-	-	-	mg/kg	A-T-022x
Mercury$_G$	<0.17	-	-	-	-	-	-	-	mg/kg	A-T-022x
Nickel$_G$ MX	39	-	-	-	-	-	-	-	mg/kg	A-T-022x
Selenium$_G$	2	-	-	-	-	-	-	-	mg/kg	A-T-022x
Zinc$_G$ MX	130	-	-	-	-	-	-	-	mg/kg	A-T-022x

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/06871

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/06871/18	16/06871/19	16/06871/20	16/06871/21	16/06871/22	16/06871/23	16/06871/24	16/06871/25	Units	Method ref
Client Sample No		1								
Client Sample ID	TPP40	TPP41	TPP42	TPP43	TPP44	TPP45	TPP46	TPP47		
Depth to Top	0.55	0.40	0.50	0.40	0.40	0.50	0.40	0.40		
Depth To Bottom	0.60		0.60	0.50	0.50	0.60	0.50	0.50		
Date Sampled	25-Oct-16	25-Oct-16	26-Oct-16	26-Oct-16	25-Oct-16	26-Oct-16	26-Oct-16	26-Oct-16		
Sample Type	Soil	Soil - D	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	4A	6A	6A	6A	6A	6A	6A	4A		
Asbestos in Soil (inc. matrix)										
Asbestos in soil[#]	NAD	NAD	NAD	NAD	NAD	NAD	NAD	Amosite		A/T/001
Asbestos Matrix (microscope)[A]	-	-	-	-	-	-	-	Loose Insulation		A/T/001
Asbestos ACM - Suitable for Water Absorption Test?	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Asbestos in Soil Quantification % (Hand Picking & Weighing)										
Asbestos in soil % composition (hand picking and weighing)[A]	-	-	-	-	-	-	-	<0.001	% w/w	A/T/001

Envirolab Job Number: 16/06871

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/06871/18	16/06871/19	16/06871/20	16/06871/21	16/06871/22	16/06871/23	16/06871/24	16/06871/25	Units	Method ref
Client Sample No		1								
Client Sample ID	TPP40	TPP41	TPP42	TPP43	TPP44	TPP45	TPP46	TPP47		
Depth to Top	0.55	0.40	0.50	0.40	0.40	0.50	0.40	0.40		
Depth To Bottom	0.60		0.60	0.50	0.50	0.60	0.50	0.50		
Date Sampled	25-Oct-16	25-Oct-16	26-Oct-16	26-Oct-16	26-Oct-16	26-Oct-16	26-Oct-16	26-Oct-16		
Sample Type	Soil	Soil - D	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	4A	6A	6A	6A	6A	6A	6A	4A		
PAH 16										
Acenaphthene$_A^{M*}$	<0.01	"	"	"	"	"	"	"	mg/kg	A-T-0156
Acenaphthylene$_A^{M*}$	<0.01	"	"	"	"	"	"	"	mg/kg	A-T-0156
Anthracene$_A^{M*}$	<0.02	"	"	"	"	"	"	"	mg/kg	A-T-0156
Benzo(a)anthracene$_A^{M*}$	0.06	"	"	"	"	"	"	"	mg/kg	A-T-0156
Benzo(a)pyrene$_A^{M*}$	0.07	"	"	"	"	"	"	"	mg/kg	A-T-0156
Benzo(b)fluoranthene$_A^{M*}$	<0.05	"	"	"	"	"	"	"	mg/kg	A-T-0156
Benzo(ghi)perylene$_A^{M*}$	<0.05	"	"	"	"	"	"	"	mg/kg	A-T-0156
Benzo(k)fluoranthene$_A^{M*}$	<0.07	"	"	"	"	"	"	"	mg/kg	A-T-0156
Chrysene$_A^{M*}$	<0.06	"	"	"	"	"	"	"	mg/kg	A-T-0156
Dibenzo(ah)anthracene$_A^{M*}$	<0.04	"	"	"	"	"	"	"	mg/kg	A-T-0156
Fluoranthene$_A^{M*}$	<0.08	"	"	"	"	"	"	"	mg/kg	A-T-0156
Fluorene$_A^{M*}$	<0.01	"	"	"	"	"	"	"	mg/kg	A-T-0156
Indeno(123-cd)pyrene$_A^{M*}$	0.04	"	"	"	"	"	"	"	mg/kg	A-T-0156
Naphthalene$_A^{M*}$	<0.03	"	"	"	"	"	"	"	mg/kg	A-T-0156
Phenanthrene$_A^{M*}$	0.06	"	"	"	"	"	"	"	mg/kg	A-T-0156
Pyrene$_A^{M*}$	<0.07	"	"	"	"	"	"	"	mg/kg	A-T-0156
PAH (total 16)$_A^{M*}$	0.21	"	"	"	"	"	"	"	mg/kg	A-T-0156

Envirolab Job Number: 16/06871

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/06871/18	16/06871/19	16/06871/20	16/06871/21	16/06871/22	16/06871/23	16/06871/24	16/06871/25	Units	Method ref
Client Sample No		1								
Client Sample ID	TPP40	TPP41	TPP42	TPP43	TPP44	TPP45	TPP46	TPP47		
Depth to Top	0.55	0.40	0.50	0.40	0.40	0.55	0.45	0.40		
Depth To Bottom	0.60		0.60	0.50	0.50	0.60	0.50	0.50		
Date Sampled	25-Oct-16	25-Oct-16	26-Oct-16	26-Oct-16	26-Oct-16	26-Oct-16	26-Oct-16	26-Oct-16		
Sample Type	Soil	Soil - D	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	4A	5A	5A	5A	5A	5A	5A	4A		
TPH CWG										
Ali >C5-C6$_A$	<0.02	-	-	-	-	-	-	-	mg/kg	A-T-0005
Ali >C6-C8$_A$	<0.01	-	-	-	-	-	-	-	mg/kg	A-T-0005
Ali >C8-C10$_A$	<0.01	-	-	-	-	-	-	-	mg/kg	A-T-0005
Ali >C10-C12$_A$	<0.1	-	-	-	-	-	-	-	mg/kg	A-T-0005
Ali >C12-C16$_A$	<0.1	-	-	-	-	-	-	-	mg/kg	A-T-0005
Ali >C16-C21$_A$	<0.1	-	-	-	-	-	-	-	mg/kg	A-T-0005
Ali >C21-C35$_A$	<0.1	-	-	-	-	-	-	-	mg/kg	A-T-0005
Total Aliphatics$_A$	<0.1	-	-	-	-	-	-	-	mg/kg	A-T-0005
Aro >C5-C7$_A$	<0.01	-	-	-	-	-	-	-	mg/kg	A-T-0005
Aro >C7-C8$_A$	<0.01	-	-	-	-	-	-	-	mg/kg	A-T-0005
Aro >C8-C9$_A$	<0.01	-	-	-	-	-	-	-	mg/kg	A-T-0005
Aro >C9-C10$_A$	<0.01	-	-	-	-	-	-	-	mg/kg	A-T-0005
Aro >C10-C12$_A$	<0.1	-	-	-	-	-	-	-	mg/kg	A-T-0005
Aro >C12-C16$_A$	<0.1	-	-	-	-	-	-	-	mg/kg	A-T-0005
Aro >C16-C21$_A$	<0.1	-	-	-	-	-	-	-	mg/kg	A-T-0005
Aro >C21-C35$_A$	<0.1	-	-	-	-	-	-	-	mg/kg	A-T-0005
Total Aromatics$_A$	<0.1	-	-	-	-	-	-	-	mg/kg	A-T-0005
TPH (Ali & Aro)$_A$	<0.1	-	-	-	-	-	-	-	mg/kg	A-T-0005
BTEX - Benzene$_A$	<0.01	-	-	-	-	-	-	-	mg/kg	A-T-0005
BTEX - Toluene$_A$	<0.01	-	-	-	-	-	-	-	mg/kg	A-T-0005
BTEX - Ethyl Benzene$_A$	<0.01	-	-	-	-	-	-	-	mg/kg	A-T-0005
BTEX - m & p Xylene$_A$	<0.01	-	-	-	-	-	-	-	mg/kg	A-T-0005
BTEX - o Xylene$_A$	<0.01	-	-	-	-	-	-	-	mg/kg	A-T-0005
MTBE$_A$	<0.01	-	-	-	-	-	-	-	mg/kg	A-T-0005

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/06871

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/06871/26	16/06871/27	16/06871/28	16/06871/29	16/06871/30	16/06871/31	16/06871/32	16/06871/33	Units	Method ref
Client Sample No										
Client Sample ID	TPP48	TPP49	TPP50	TPPS1	TPPS2	TPPS3	TPPS4	TPPS5		
Depth to Top	0.40	0.50	0.45	0.40	0.40	0.40	0.40	0.40		
Depth To Bottom	0.50	0.60	0.50	0.50	0.50	0.50	0.50	0.50		
Date Sampled	25-Oct-16	25-Oct-16	25-Oct-16	25-Oct-16	25-Oct-16	25-Oct-16	25-Oct-16	25-Oct-16		
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	4A	4A	4A	6A	4A	6A	3A	3A		
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_A$*	Chrysotile	Chrysotile	Amosite	NAD	NAD	NAD	NAD	NAD		A-T-048
Asbestos Matrix (visual)$_A$	-	Cement	-	-	-	-	-	-		A-T-049
Asbestos Matrix (microscope)$_A$	Loose Fibres	Cement	Loose Fibres	-	-	-	-	-		A-T-049
Asbestos ACM - Suitable for Water Absorption Test?	N/A	No	No	N/A	N/A	N/A	N/A	N/A		

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/06871

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/06871/34	16/06871/35	16/06871/36	16/06871/38	16/06871/39	16/06871/40	16/06871/41	16/06871/42	Units	Method ref
Client Sample No										
Client Sample ID	TPPS6	TPPS7	TPPS8	TPPS9	TPP60	TPP61	TPP62	TPP63		
Depth to Top	0.50	0.40	0.40	0.40	0.50	0.50	0.40	0.50		
Depth To Bottom	0.60	0.50	0.650	0.50	0.60	0.60	0.50	0.60		
Date Sampled	25-Oct-16	25-Oct-16	25-Oct-16	25-Oct-16	25-Oct-16	25-Oct-16	25-Oct-16	25-Oct-16		
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	4AB	6A	6A	3A	5A	6A	6A	6A		
Asbestos in Soil (inc. matrix)										
Asbestos in soil[a]	NAD	NAD	NAD	NAD	NAD	Chrysotile	NAD	NAD		A-T-001
Asbestos Matrix (microscope)[a]	-	-	-	-	-	Loose Fibres	-	-		A-T-001
Asbestos ACM - Suitable for Water Absorption Test?	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		

ARUN DISTRICT COUNCIL A/94/17/DOC

envirolab

Envirolab Job Number: 16/06871

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/06871/43	16/06871/44	16/06871/46						Units	Method ref
Client Sample No										
Client Sample ID	TPP84	TPP27	TPP58 Cement							
Depth to Top	0.50	0.30								
Depth To Bottom	0.60									
Date Sampled	25-Oct-16	25-Oct-16	25-Oct-16							
Sample Type	Soil	Solid - Fragment / Tile	Solid - Fragment / Tile							
Sample Matrix Code	4A	8	8							
Asbestos in Soil (inc. matrix)										
Asbestos in soil[A]	NAD	-	-							A/T-003
Asbestos ACM - Suitable for Water Absorption Test?	N/A	-	-							
Bulk Fibre ID (inc. matrix)										
Bulk Fibre Identification[A]	-	Chrysotile	NAD							A/T-003
Bulk Fibre Identification Matrix (visual)[A]	-	Cement	-							A/T-003
Bulk Fibre Identification - Suitable for Water Absorption Test?[D]	-	Yes	N/A							Summary

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REPORT NOTES

General:
This report shall not be reproduced, except in full, without written approval from Envirolab.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure. These are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Soil chemical analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Asbestos:
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264: Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.
Secondary Matrix Codes:
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:
IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve

Please contact us if you need any further information.

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APPENDIX C
REGULATORY CORRESPONDANCE

ARUN DISTRICT COUNCIL A/94/17/DOC

Catherine Latimer

From: Matthew Kennet[redacted]
Sent: 30 June 2016 11:37
To: Catherine Latimer
Subject: RE: Angmering Clarifications

Hi Cathy,

We agree that a frequency of 250m^3 is sufficient coverage for validation purposes in the public open space areas.

thanks

Matthew Kennett
Pollution Officer
Environmental Health Department
[redacted]
Arun Civic Centre, Maltravers Road, Littlehampton BN17 5LF
http://www.arun.gov.uk/eh
ARUN

From: [redacted]
Sent: 30 June 2016 10:47
To: Matthew Kennett
Cc: ajames@rsk.co.uk
Subject: FW: Angmering Clarifications

Hi Matthew,

Our client Cala Homes have requested we get in touch to discuss the below comment you made in regards to the validation sample coverage of the public open space areas proposed at the Angmering site.

Based on Figure 6 included within the recent remedial strategy report (27621 R03 (01), there is approximately 21 942m^2 of public open space areas which requires a 600mm capping layer to be placed upon it. This would equate to 53 validation samples in total assuming a 250m^3 frequency. This calculation includes the bunded areas for which I have calculated the number of samples required per bund for your information:

NW bund area = 2009.09m^2 * 0.6 m^2 – 5 samples
SWA bund area = 1379 m^2 *0.6 m^2 - 4 samples
SWB bund area = 482 m^2 *0.6 m^2 – 2 samples
NE bund area = 1482 m^2 * 0.6 m^2 – 4 samples
SE bund area = 137 m^2 *0.6 m^2 – 1 sample
(All rounded up to the nearest whole number)

There is approximately 10 127m^2 of public open space requiring a 450mm capping layer to placed upon it this would equate to 19 validation samples from these areas in total.

On review we consider that a frequency of 250m^3 is sufficient coverage for validation purposes in the public open space areas. Please confirm whether you are in agreement with this?

If you have any questions please do not hesitate to contact myself or Andrew James.

Kind regards,

Cathy

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Cathy Latimer
Senior Geo-Environmental Consultant

RSK
Unit 18, Basepoint Abbey Enterprise Centre, Premier Way, Romsey, Hampshire, SO51 9AQ, UK

[redacted]

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From: Matthew Kennett [redacted]
Sent: 25 April 2016 14:04
To: Gary Biggs
Subject: RE: Angmering Clarifications

Hi Gary,

The method statement and risk assessments are acceptable.

The Deployment Form that I have had seen details 1 in 250m3 for asbestos control, the remedial strategy details 1 in 50m3 for verification. How many samples at 1 in 50m3 do you anticipate in the communal landscaping. If 1 in 250m3 provides sufficient coverage/information then it would be acceptable.

thanks

Matthew Kennett
Pollution Officer
Environmental Health Department
[redacted]
Arun Civic Centre, Maltravers Road, Littlehampton BN17 5LF
http://www.arun.gov.uk/eh

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Catherine Latimer

From: Matthew Kennett [redacted]
Sent: 28 February 2017 09:07
To: Catherine Latimer
Subject: RE: Angmering PP-05292458

Hi Cathy,

If it is covered in the verification report that will be fine,

thanks

Matthew Kennett
Pollution Officer
Environmental Health Department
[redacted]
Arun Civic Centre, Maltravers Road, Littlehampton BN17 5LF
http://www.arun.gov.uk/eh
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From: [redacted]
Sent: 27 February 2017 19:02
To: Matthew Kennett
Cc: [redacted]
Subject: RE: Angmering PP-05292458

Hi Matthew,

Thank you for your time yesterday. As discussed the site manager at Angmering has concerns regarding any investigation works being undertaken in the southwest bund B at the Angmering site due to its proximity to neighbouring residents. We had discussed during our last meeting undertaking some hand pits in this area to check if the bund contained asbestos containing materials.

Given the site managers concerns and that they have now confirmed they will be unable to cap this area due to the over head cables, we propose to assume a worst case scenario and fence this area off from the public and plant prickly vegetation to deter trespassers. Photographic evidence confirming these measures have been incorporated shall be included in the verification report for this area of the site.

Please let me know if you have any issues or questions associated with this approach.

Kind regards,

Cathy

Cathy Latimer
Principal Geo-Environmental Consultant
(Please note I work Monday to Thursday, should you have any urgent queries on a Friday please call the Southampton office number)

RSK
Unit 26, Basepoint Abbey Enterprise Centre, Premier Way, Romsey, Hampshire, SO51 9AQ, UK
[redacted]
http://www.rsk.co.uk

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APPENDIX D
RSK GUIDELINE VALUES

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Generic assessment criteria for human health: residential scenario with home-grown produce

Background

RSK's generic assessment criteria (GAC) were initially prepared following the publication by the Environment Agency (EA) of soil guideline value (SGV) and toxicological (TOX) reports, and associated publications in 2009[1]. RSK GAC were updated following the publication of GAC by LQM/CIEH in 2009[2]. RSK GAC are periodically revised when updated information on toxicological, land use or receptor parameters is published.

Updates to the RSK GAC: 2015

In 2014, the publication of Category 4 Screening Levels (C4SL)[3,4], as part of the Defra-funded research project SP1010, included modifications to certain exposure assumptions documented within EA Science Report SC050221/SR3 (herein after referred to as SR3)[5] used in the generation of SGVs.

C4SL were published for six substances (cadmium, arsenic, benzene, benzo(a)pyrene, chromium VI and lead) for a sandy loam soil type with 6% soil organic matter, based on a low level of toxicological concern (LLTC; see Section 2.3 of research project report SP1010[3]). Where a C4SL has been published, the RSK GAC duplicates the C4SL published values using all input parameters within the SP1010 final project report[3] and associated appendices[6], and adopts them as GAC for these six substances.

For all other substances the C4SL exposure modifications, with the exception of the "top two" produce type approach taken in the C4SL, have been applied to the current RSK GAC. These include alterations to daily inhalation rates for residential and commercial scenarios, reducing soil adherence factors in children (age classes 1 to 12 only) for residential land use, reducing exposure frequency for dermal contact outdoors for residential land use, and updated produce type consumption rates (90th percentile) based on recent data from the National Diet and Nutrition Survey.

The RSK GAC have also been revised with updated toxicology published by LQM/CIEH in 2015[7], where a C4SL has not been published.

RSK GAC derivation for metals and organic compounds

Model selection

Soil assessment criteria (SAC) were calculated using the Contaminated Land Exposure Assessment (CLEA) tool v1.06, supporting EA guidance[5,8,9] and revised exposure scenarios published for the C4SL[3]. Groundwater assessment criteria (GrAC) protective of human health via the inhalation pathway were derived using the RBCA 1.3b model. RSK has updated the inputs within RBCA to reflect EA guidance[1,5,8,9]. The SAC and GrAC collectively are termed GAC.

Conceptual model

In accordance with SR3[5], the residential with home-grown produce scenario considers risks to a female child between the ages of 0 and 6 years old as the highest risk scenario. In accordance

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with Box 3.1 of SR3[5], the pathways considered for production of the SAC in the residential with home-grown produce scenario are

- direct soil and dust ingestion
- consumption of home-grown produce
- consumption of soil attached to home-grown produce
- dermal contact with soil and indoor dust
- inhalation of indoor and outdoor dust and vapours.

Figure 1 is a conceptual model illustrating these linkages.

In line with guidance in the EA SGV report for cadmium[1], the RSK GAC for cadmium has been derived based on estimates representative of lifetime exposure. Although young children are generally more likely to have higher exposures to soil contaminants, the renal toxicity of cadmium, and the derivation of the TDI_{oral} and TDI_{inh}, are based on considerations of the kidney burden accumulated over 50 years or so. It is therefore reasonable to consider exposure not just in childhood but averaged over a longer period.

The pathway considered in production of the GrAC is the volatilisation of compounds from groundwater and subsequent vapour inhalation by residents while indoors. Figure 2 illustrates this linkage. Although the outdoor air inhalation pathway is also valid, this contributes little to the overall risks owing to the dilution in outdoor air. Within RBCA, the solubility limit of the chemical restricts the extent of volatilisation, which in turn drives the indoor air inhalation pathway. While the same restriction is not built into the CLEA model, the CLEA model output cells are flagged red where the soil saturation limit has been exceeded.

With respect to volatilisation, the CLEA model assumes a simple linear partitioning of a chemical in the soil between the sorbed, dissolved and vapour phase[9]. The upper boundaries of this partitioning are represented by the maximum aqueous solubility and pure saturated vapour concentration of the chemical. The CLEA model estimates saturated soil concentrations where these limits are reached[9]. The CLEA software uses a traffic light system to identify when individual and/or combined assessment criteria exceed the lower of either the aqueous- or vapour-based soil saturation limits. Model output cells are flagged red where the saturated soil concentration has been exceeded and the contribution of the indoor and outdoor vapour pathway to total exposure is greater than 10%. In this case, further consideration of the following is required[9]:

- Free phase contamination may be present.
- Exposure from the vapour pathways will be over-predicted by the model, as in reality the vapour phase concentration will not increase at concentrations above saturation limits
- Where the vapour pathway contribution is greater than 90%, it is unlikely the relevant health criteria value (HCV) will be exceeded at soil concentrations at least a factor of ten higher than the relevant HCV.

Where the vapour pathway is the predominant pathway (contributes greater than 90% of exposure) or the only exposure route considered and the cell is highlighted red (SAC exceeds saturation limit), the risk based on the assumed conceptual model is likely to be negligible as the vapour risk is assumed to be tolerable at maximum possible soil concentrations. In such circumstances, the vapour pathway exposure should be considered based on the presence of free phase or non-aqueous phase liquid sources and the measured concentrations of volatile organic compounds (VOC) in the vapour phase. Screening could be considered based on setting

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the SAC as the modelled soil saturation limits. However, as stated within the CLEA handbook[9], this is likely to not be practical in many cases because of the very low saturation limits and, in any case, is highly conservative.

It should also be noted that for mixtures of compounds, free phase may be present where soil (or groundwater) concentrations are well below saturation limits for individual compounds.

Where the vapour pathway is only one of the exposure pathways considered, an additional approach can then be utilised as detailed within Section 4.12 of the CLEA model handbook[9], which explains how to calculate an effective assessment criterion manually.

SR3[5] states that, as a general rule of thumb, it is recognised that estimating vapour phase concentrations from dissolved and sorbed phase contamination by petroleum hydrocarbons are at least a factor of ten higher than those likely to be measured on-site. RSK has therefore applied an empirical subsurface to indoor air correction factor of 10 into the CLEA model chemical database for all petroleum hydrocarbon fractions (including BTEX, trimethylbenzenes and the polycyclic aromatic hydrocarbons (PAH) naphthalene, acenaphthene and acenaphthylene) to reduce this conservatism.

Input selection

The most up-to-date published chemical and toxicological data was obtained from EA Report SC050021/SR7[10], the EA TOX[1] reports, the C4SL SP1010 project report and associated appendices[3,6] or the 2015 LQM/CIEH report[7]. Where a C4SL has been published, the RSK GAC have duplicated the C4SL published values using all input parameters within the SP1010 final project report[3] and associated appendices[6], and has adopted them as GAC for these six substances. Toxicological and specific chemical parameters for aromatic hydrocarbon C_8–C_9 (styrene), 1,2,4-trimethylbenzene and methyl tertiary-butyl ether (MTBE) were obtained from the CL:AIRE Soil Generic Assessment Criteria report[11].

For TPH, aromatic hydrocarbons C_5–C_8 were not modelled, as this range comprises benzene and toluene, which are modelled separately. The aromatic C_8–C_9 hydrocarbon fraction comprises ethylbenzene, xylene and styrene. As ethylbenzene and xylene are being modelled separately, the physical, chemical and toxicological data for aromatic C_8–C_9 have been taken from styrene.

For the GrAC, owing to the lack of UK-specific data, default information in the RBCA model was used to evaluate MTBE. No published UK data was available for 1,3,5-trimethylbenzene, so information was obtained from the RBCA model. RBCA uses toxicity data for the inhalation pathway in different units to the CLEA model and cannot consider separately the mean daily intake (MDI), occupancy periods or breathing rates. Therefore, the HCV in RBCA was amended to take account of

- amendments to the MDI using Table 3.4 of SR2[8]
- a child weighing 13.3kg (average of 0–6 year old female in accordance with Table 4.6 of SR3[5]) and breathing 11.85m^3 (average daily inhalation rate for a 0–6-year old female in accordance with Table 4.14 of SR3[5]). Inhalation rates used in the derivation of the GrAC have not been updated in line with the 2011 USEPA published values[12]; these will be updated in subsequent revisions of the RSK GAC. The lower inhalation rates presented by the USEPA in 2011 for ages classes 1 to 11 (values are higher for age classes 12 to 18) are not considered to make a significant difference.
- the 50% rule (for petroleum hydrocarbons, trimethylbenzenes and MTBE)[8,9] where MDI data is not available but background exposure is considered important in the overall exposure.

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Physical parameters

For the residential with home-grown produce scenario, the CLEA default building is a small, two-storey terrace house with a concrete ground-bearing slab. The house is assumed to have a 100m^2 private garden consisting of lawn and flowerbeds, incorporating a 20m^2 plot for growing fruit and vegetables consumed by the residents. SR3[5] notes this residential building type to be the most conservative in terms of potential for vapour intrusion. The building parameters used in the production of the RSK GACs are the default CLEA v1.06 inputs presented in Table 3.3 of SR3[3], with a dust loading factor detailed in Section 9.3 of SR3[5]. The parameters for a sandy loam soil type were used in line with Table 4.4 of SR3[5]. This includes a value of 6% for the percentage of soil organic matter (SOM) within the soil. In RSK's experience, this is rather high for many sites. To avoid undertaking site-specific risk assessments for SOM, RSK has produced an additional set of GAC for SOM of 1% and 2.5% for all substances using the CLEA tool.

For the GrAC, the depth to groundwater was taken as 2.5m based on RSK's experience of assessing the volatilisation pathway from groundwater. The GrAC were produced using the input parameters in Table 4.

Summary of modifications to the default CLEA 1.06/SR3[5] input parameters for residential with home-grown produce land-use scenario

In summary, the RSK GAC were produced using the default input parameters for soil properties, the air dispersion model, building properties and the vapour model detailed in SR3[5]. Modifications to the default SR3[5] exposure scenarios based on the C4SL exposure scenarios[3] are presented in Tables 2 and 3 below.

The final selected GAC are presented by pathway in Table 5 and the combined GAC in Table 6.

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Figure 1: Conceptual model for residential scenario with home-grown produce

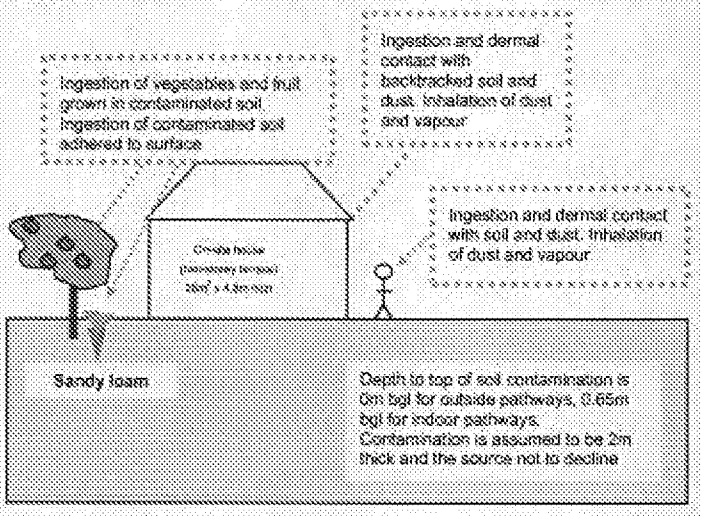


Table 1: Exposure assessment parameters for residential scenario with home-grown produce – inputs for CLEA model

Parameter	Value	Justification
Land use	Residential with homegrown produce	Chosen land use
Receptor	Female child age 1 to 6	Key generic assumption given in Box 3.1, SR3[SR]
Building	Small terraced house	Key generic assumption given in Box 3.1, SR3. Small, two-storey terraced house chosen, as it is the most conservative residential building type in terms of protection from vapor intrusion (Section 3.4.6, SR3)[SR]
Soil type	Sandy Loam	Most common UK soil type (Section 4.3.1, from Table 3.1, SR3)[SR]
Start AC (age class)	1	Range of age classes corresponding to key generic assumption that the critical receptor is a young female child aged 0–6. From Box 3.1, SR3[SR]
End AC (age class)	6	
SOM (%)	6	Representative of sandy loamy soil according to EA guidance note dated January 2009 entitled 'Changes We Have Made to the CLEA Framework Documents'[EA]
	1	To provide SAC for sites where SOM <6% as often observed by RSK
	2.5	
pH	7	Model default

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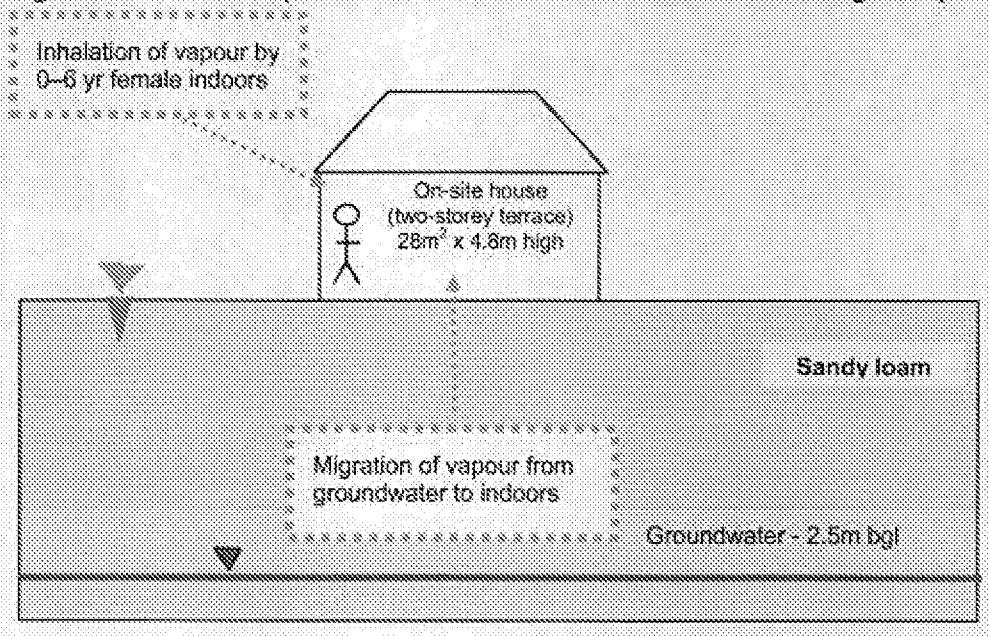
Table 2: Residential with home-grown produce – modified home-grown produce data

Name	Consumption rate 90th percentile (g FW kg^{-1} BW day^{-1}) by age class						Dry weight conversion factor (g DW g^{-1} FW)	Home-grown fraction (average)	Home-grown fraction (high end)	Soil loading factor (g g^{-1} DW)	Preparation correction factor
	1	2	3	4	5	6					
Green vegetables	7.12	5.87	5.87	5.87	4.53	4.53	0.096	0.05	0.33	1.00E-03	2.00E-01
Root vegetables	10.7	2.83	2.83	2.83	2.14	2.14	0.103	0.06	0.4	1.00E-03	1.00E+00
Tuber vegetables	16	6.6	6.6	6.6	4.95	4.95	0.21	0.02	0.13	1.00E-03	1.00E+00
Herbaceous fruit	1.83	3.39	3.39	3.39	2.24	2.24	0.058	0.06	0.4	1.00E-03	6.00E-01
Shrub fruit	2.23	0.46	0.46	0.46	0.19	0.19	0.166	0.09	0.6	1.00E-03	6.00E-01
Tree fruit	3.82	10.3	10.3	10.3	5.16	5.16	0.157	0.04	0.27	1.00E-03	6.00E-01
Justification	Table 3.4, SP1010[3]						Table 6.3, SR3[5]	Table 4.19, SR3[5]		Table 6.3, SR3[5]	

Table 3: Residential with home-grown produce – modified and use and receptor data

Parameter	Unit	Age class					
		1	2	3	4	5	6
EF (soil and dust ingestion)	day yr^{-1}	180	365	365	365	365	365
EF (consumption of home-grown produce)	day yr^{-1}	180	365	365	365	365	365
EF (skin contact, indoor)	day yr^{-1}	180	365	365	365	365	365
EF (skin contact, outdoor)	day yr^{-1}	170	170	170	170	170	170
EF (inhalation of dust and vapour, indoor)	day yr^{-1}	365	365	365	365	365	365
EF (inhalation of dust and vapour, outdoor)	day yr^{-1}	365	365	365	365	365	365
Justification		Table 3.5, SP1010[3]; Table 3.1, SR3[5]					
Soil to skin adherence factor (outdoor)	mg cm^{-2} day^{-1}	0.1	0.1	0.1	0.1	0.1	0.1
Justification		Table 3.5, SP1010[3]					
Inhalation rate	m^3 day^{-1}	5.4	8.0	8.9	10.1	10.1	10.1
Justification		Mean value USEPA, 2011[12]; Table 3.2, SP1010[3]					
Notes: For **cadmium**, the exposure assessment for a residential land use is based on estimates representative of lifetime exposure AC1-18. This is because the TDI_{0-8} and TDI_{8+} are based on considerations of the kidney burden accumulated over 50 years. It is therefore reasonable to consider exposure not just in childhood but averaged over a longer period. See the Environment Agency Science Report SC050021/ TOX 3[11], Science Report SC050021/Cadmium SGV[13] and the project report SP1010[3] for more information.							

Figure 2: GrAC conceptual model for RBCA residential with home-grown produce scenario



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Table 4: Residential with home-grown produce – RBCA inputs

Parameter	Unit	Value	Justification
Receptor			
Averaging time	Years	6	From Box 3.1, SR3[5]
Receptor weight	kg	13.3	Average of CLEA 0–6 year old female data, Table 4.6, SR3[5]
Exposure duration	Years	6	From Box 3.1, report, SR3[5]
Exposure frequency	Days/yr	350	Weighted using occupancy period of 23 hours per day for 365 days of the year
Soil type – sandy loam			
Total porosity	-	0.53	CLEA value for sandy loam. Parameters for sandy loam from Table 4.4, SR3[5]
Volumetric water content	-	0.33	
Volumetric air content	-	0.20	
Dry bulk density	g cm^{-3}	1.21	
Vertical hydraulic conductivity	cm s^{-1}	3.56E-3	CLEA value for saturated conductivity of sandy loam, Table 4.4, SR3[5]
Vapour permeability	m^2	3.05E-12	Calculated for sandy loam using equations in Appendix 1, SR3[5]
Capillary zone thickness	m	0.1	Professional judgement
Fraction organic carbon	%	0.0348	Representative of sandy loam according to EA guidance note dated January 2009 entitled 'Changes We Have Made to the CLEA Framework Documents'[13]
Building			
Building volume/area ratio	m	4.8	Table 3.3, SR3[5]
Foundation area	m^2	28	
Foundation perimeter	m	22	Calculated assuming building measures 7m x 4m to give 28m^2 foundation area
Building air exchange rate	d^{-1}	12	Table 3.3, SR3[5]
Depth to bottom of foundation slab	m	0.15	
Foundation thickness	m	0.15	
Foundation crack fraction	-	0.0151	Calculated from floor crack area of 423 cm^2 and building footprint of 28m^2 in Table 4.21, SR3[5]
Volumetric water content of cracks	-	0.33	Assumed equal to underlying soil type in assumption that cracks become filled with soil over time. Parameters for sandy loam from Table 4.4, SR3[5]
Volumetric air content of cracks	-	0.2	
Indoor/outdoor differential pressure	Pa	3.1	From Table 3.3, SR3[5]

ARUN DISTRICT COUNCIL A/94/17/DOC

References

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13. Environment Agency (2009). 'Changes made to the CLEA framework documents after the three-month evaluation period in 2008', released January 2009.

ARUN DISTRICT COUNCIL A/94/17/DOC

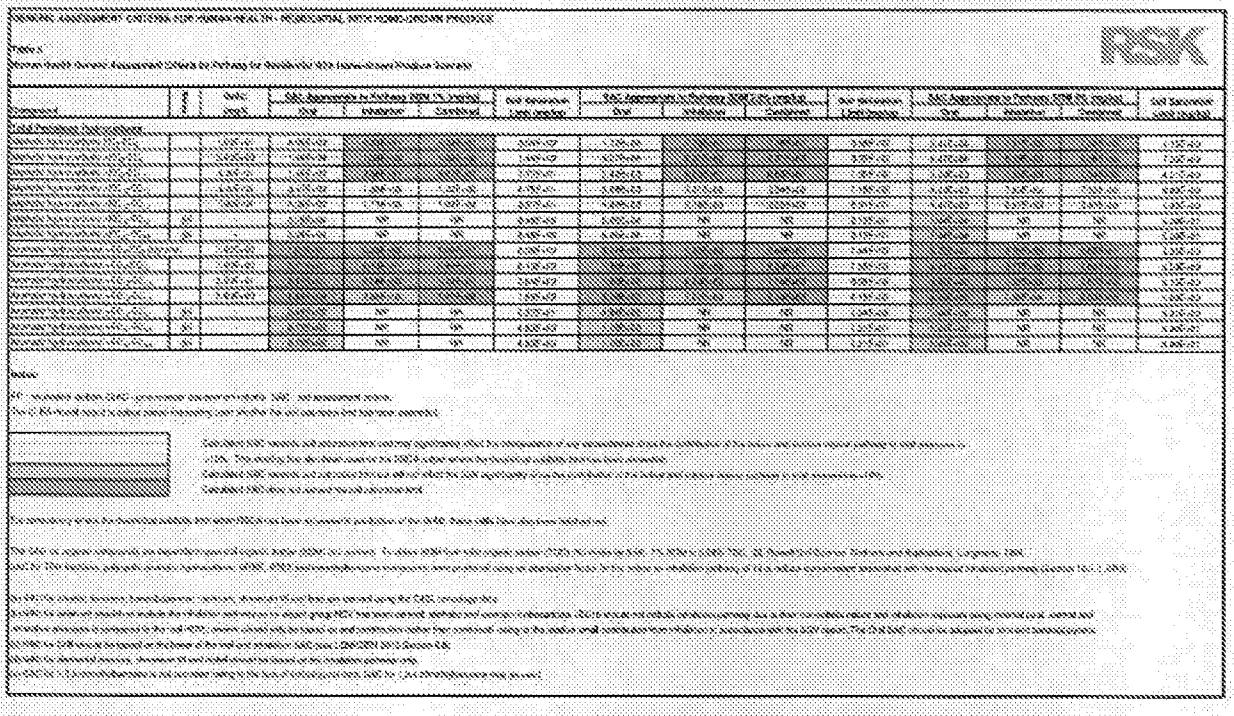


Table 6
Human Health Generic Assessment Criteria for Residential with home-grown produce

Compound	GrAC for Groundwater (mg/l)	SAC for Soil SOM 1% (mg/kg)	SAC for Soil SOM 2.5% (mg/kg)	SAC for Soil SOM 6% (mg/kg)
Metals				
Arsenic	-	37	37	37
Cadmium	-	30	30	30
Chromium (III) - trivalent	-	810	810	810
Chromium (VI) - hexavalent	-	33	33	33
Copper	-	8,508	8,508	8,508
Lead	-	200	200	200
Elemental Mercury (Hg^0)	0.0004	0.5	0.6	1.9
Inorganic Mercury (Hg^{2+})	-	38	38	38
Methyl Mercury (Hg^{2+})	20	10	10	10
Nickel	-	130	130	130
Selenium	-	250	250	250
Zinc	-	3,800	3,800	3,800
Cyanide	-	3.8	3.8	3.8
Volatile Organic Compounds				
Benzene	7.2	0.20	0.41	0.87
Toluene	530	130	300	680
Ethylbenzene	190	60	110	260
Xylene - m	84	68	140	327
Xylene - o	130	61	140	326
Xylene - p	97	57	130	310
Total xylene	84	57	130	310
Methyl tertiary Butyl ether (MTBE)	2300	120	260	615
Trichloroethene	1.8	0.03	0.03	0.08
Tetrachloroethene	3.5	0.2	0.4	0.9
1,1,1-Trichloroethane	26	9	18	39
1,1,1,2-Tetrachloroethane	14	3.2	6.8	15.5
1,1,2,2-Tetrachloroethane	14	1.6	3.5	7.7
Carbon Tetrachloride	0.255	0.028	0.056	0.127
1,2-Dichloroethane	0.3	0.007	0.011	0.019
Vinyl Chloride	0.019	0.0006	0.0009	0.0014
1,3,4-Trimethylbenzene	0.075	1.8	4.3	9.7
1,3,5-Trimethylbenzene	0.047	NR	NR	NR
Semi-Volatile Organic Compounds				
Acenaphthene	2.1	220	540	1,170
Acenaphthylene	4.3	180	420	970
Anthracene	0.021	2,430	5,300	10,880
Benzo(a)anthracene	0.0038	7	11	13
Benzo(b)fluoranthene	0.0015	2.6	3.3	3.7
Benzo(g,h,i)perylene	0.00026	310	340	360
Benzo(k)fluoranthene	0.0015	77	90	100
Chrysene	0.0015	15	22	37
Dibenz(a,h)anthracene	0.0015	0.24	0.28	0.30
Fluoranthene	0.081	560	560	920
Fluorene	1.4	170	410	960
Indeno(1,2,3-cd)pyrene	0.00086	27	36	41
Phenanthrene	0.53	100	220	440
Pyrene	0.081	560	1,240	2,740
Benzo(a)pyrene	0.0015	5	5	5
Naphthalene	18	23	56	74
Phenol		120	210	390
Total Petroleum Hydrocarbons				
Aliphatic hydrocarbons EC_5-EC_6	10	52	78	180
Aliphatic hydrocarbons >EC_6-EC_8	5.6	100	230	530
Aliphatic hydrocarbons >EC_8-EC_{10}	0.23	27	65	154
Aliphatic hydrocarbons >EC_{10}-EC_{12}	0.054	130	330	780
Aliphatic hydrocarbons >EC_{12}-EC_{16}	0.0074	1,000	2,500	5,900
Aliphatic hydrocarbons >EC_{16}-EC_{35}	-	32,000	79,000	79,000
Aliphatic hydrocarbons >EC_{35}-EC_{44}	-	32,000	79,000	79,000
Aromatic hydrocarbons >EC_5-EC_7 (Benzene)	7.4	11	25	58
Aromatic hydrocarbons >EC_7-EC_8	7.4	34	83	196
Aromatic hydrocarbons >EC_8-EC_{10}	35	74	174	387
Aromatic hydrocarbons >EC_{10}-EC_{12}	5.6	139	330	800
Aromatic hydrocarbons >EC_{12}-EC_{16}	-	293	689	800
Aromatic hydrocarbons >EC_{16}-EC_{21}	-	800	1,102	1,200
Aromatic hydrocarbons >EC_{21}-EC_{35}	-	800	1,102	1,200
Minerals				
Asbestos	-	No asbestos detected with ID or <0.001% dry weight		

Notes:
- Generic assessment criteria not calculated owing to low volatility of substance and therefore no pathway, or an absence of toxicological data.
- SAC for 1,2,4-trimethylbenzene is not modelled owing to the lack of toxicological data. SAC for 1,3,5-trimethylbenzene may be used.
- EC - equivalent carbon, GrAC - groundwater assessment criteria, SAC - soil assessment criteria.
- ID - for weight of asbestos per unit weight of soil calculated on a dry weight basis using PLM, re-weighing and gravimetry.

The SAC for organic compounds are dependent on Soil Organic Matter (SOM) (%) content. To obtain SOM from total organic carbon (TOC) (%) divide by 0.58.
1% SOM is 0.58% TOC. (St. Arnold, Soil Science: Methods and Applications, Longhorne, 1994).

SAC for TPH fractions, polycyclic aromatic hydrocarbons, MTBE, BTEX and trimethylbenzene compounds were produced using an attenuation factor for the indoor air inhalation pathway of 10 to reduce concentrations associated with the vapour inhalation pathway, section 10.1.1, SR3.

GRAC EXCEEDANCE: The GAC has been set as the lower saturated GAC with the saturation limit applied in principle.
RSK has adopted an approach for petroleum hydrocarbons in accordance with LQM/CIEH whereby the concentration modelled for each petroleum hydrocarbon fraction has been calculated as the GAC with the corresponding solubility or vapour saturation limits given in brackets.

SAC EXCEEDANCE: For compounds where the GAC exceeds the solubility limit, the SAC has been set at the solubility limit. The SAC is conservative since concentrations of the chemical are very unlikely to be at sufficient concentration to result in an exceedance of the health criteria value at the point of exposure (i.e. indoor air) or present free phase product is present.

APPENDIX E
TRIAL PIT LOGS AND PHOTOGRAPHIC LOG (NW BUND)

ARUN DISTRICT COUNCIL A/94/17/DOC

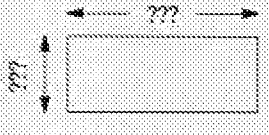
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	**Cala Homes (South Home Counties) Ltd**	**TP101A**

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	**28.2.17**	**---**	**---**	**1 of 1**
	End: **28.2.17**			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Firm orangey brown slightly sandy gravelly CLAY. Gravels are fine to coarse and angular to subrounded of flint and rare limestone. (REWORKED RIVER TERRACE DEPOSITS)	(0.70)	
0.50	1	BS	T,J+V				0.70	

Plan (Not to Scale)



General Remarks

1. No geomembrane encountered during works.
2. Trial pit backfilled with arisings upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**Hand tools**	**CLewis**	

I:\RSK\LIBRARY\VA 05.03.13.lib\Version v6.05 - Lib6004 PdfVersion v6.05 - Core+Logs 0003 | Log TRIAL PIT LOG | [TRIAL PIT LOG] [TRIAL ANGMERINGLOG]? - v6_05 | 64017 - 09/5/17 CLA
RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437536, Fax: 01442 437538, Web: www.rsk.co.uk
ARUN DISTRICT COUNCIL A/94/17/DOC

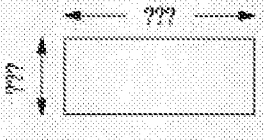
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	**Cala Homes (South Home Counties) Ltd**	**TP102A**

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	**28.2.17**	**—**	**—**	**1** of **1**
	End: **28.2.17**			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.50	1	ES	T,J+V			Firm orangey brown slightly sandy gravelly CLAY. Gravels are fine to coarse and angular to subrounded of flint and rare limestone. (REWORKED RIVER TERRACE DEPOSITS)	(0.65)	
							0.65	

Plan (Not to Scale)



General Remarks

1. No geomembrane encountered during works.
2. Trial pit backfilled with arisings upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**Hand tools**	**CLewis**	

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RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437536, Fax: 01442 437538, Web: www.rsk.co.uk
ARUN DISTRICT COUNCIL A/94/17/DOC

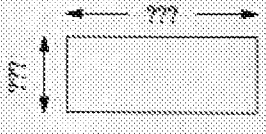
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	Cala Homes (South Home Counties) Ltd	TP103A

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	28.2.17	---	---	1 of 1
	End: 28.2.17			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Firm orangey brown slightly sandy gravelly CLAY. Gravels are fine to coarse and angular to subrounded of flint and rare limestone. (REWORKED RIVER TERRACE DEPOSITS)	(0.70)	
0.60	1	ES	T,J-V				0.70	

Plan (Not to Scale)



General Remarks

1. No geomembrane encountered during works.
2. Trial pit backfilled with arisings upon completion.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	Hand tools	CLewis	

AGS

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RSK Environment Ltd, 14 Progress Road, Hemel Hempstead, Hertfordshire, HP3 9XT. Tel: 01442 437588, Fax: 01442 437550, Web: www.rsk.co.uk.

ARUN DISTRICT COUNCIL A/94/17/DOC

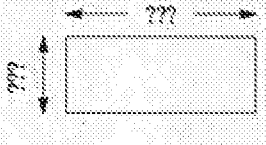
FINAL
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land at West End Nursery, Angmering	**Cala Homes (South Home Counties) Ltd**	**TP104A**

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
27621	**28.2.17**	**----**	**----**	**1 of 1**
	End: **28.2.17**			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.70	1	ES	T,J-V			Firm orangey brown slightly sandy gravelly CLAY. Gravels are fine to coarse and angular to subrounded of flint and rare limestone. (REWORKED RIVER TERRACE DEPOSITS)	(0.80)	
							0.80	

Plan (Not to Scale)



General Remarks

1. No geomembrane encountered during works.
2. Trial pit backfilled with arisings upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**Hand tools**	**CLewis**	

ARUN DISTRICT COUNCIL/A/94/17/DOC

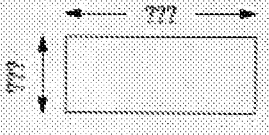
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FINAL
TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Land at West End Nursery, Angmering		**Cala Homes (South Home Counties) Ltd**		**TP105A**
Contract Ref:	Start: **28.2.17**	Ground Level:	Co-ordinates:	Sheet:
27621	End: **28.2.17**	---	---	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Firm orangey brown slightly sandy gravelly CLAY. Gravels are fine to coarse and angular to subrounded of flint and rare limestone. (REWORKED RIVER TERRACE DEPOSITS)	(0.65)	
0.60	1	ES	T,J-V				0.65	

Plan (Not to Scale)



General Remarks

1. No geomembrane encountered during works.
2. Trial pit backfilled with arisings upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**Hand tools**	**CLewis**	

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RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 337500, Fax: 01442 337550, Web: www.rsk.co.uk
ARUN DISTRICT COUNCIL/A/94/17/DOC

APPENDIX F
LABORATORY CERTIFICATES

ARUN DISTRICT COUNCIL A/94/17/DOC

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 16/02575
Issue Number: 1 **Date:** 12 May, 2016

Client: RSK Environment Ltd Hemel
18 Frogmore Road
Hemel Hempstead
Hertfordshire
UK
HP3 9RT

Project Manager: Andrew James/Edward Hughes/Nigel Austin
Project Name: Land at West End Nursery, Angmering
Project Ref: 27621
Order No: N/A
Date Samples Received: 03/05/16
Date Instructions Received: 03/05/16
Date Analysis Completed: 12/05/16

Prepared by:

[redacted]

Kate Ellison
Administrative Assistant

Approved by:

[redacted]

Gill Walker
Laboratory Manager

ARUN DISTRICT COUNCIL A/94/17/DOC

Lab Sample ID	16/02575/1	16/02575/2	16/02575/3	16/02575/4	16/02575/5	16/02575/6	16/02575/7	16/02575/8	Units	Method ref
Client Sample No	2	2	1	2	1	1	1	1		
Client Sample ID	TPPoS1	TPPoS2	TPPoS3	TPPoS4	TPPoS5	SV5	SV6	SV7		
Depth to Top	1.50	2.00	1.80	2.00	1.00	0.20	0.15	0.20		
Depth To Bottom	1.80	3.00	2.20	2.50	1.50		0.20	0.30		
Date Sampled	27-Apr-16	27-Apr-16	27-Apr-16	27-Apr-16	27-Apr-16	27-Apr-16	27-Apr-16	27-Apr-16		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - D	Soil - D	Soil - D		
Sample Matrix Code	3	3A	3	3A	3A	1A	1A	1		
% Stones >10mm$_D$*	<0.1	53.9	<0.1	45.0	<0.1	-	-	-	% w/w	A/T/005
pH$_D$^{MC}	7.58	8.37	7.03	7.48	7.13	-	-	-	pH	A/T/015x
Sulphate (water soil 2:1)$_D$^{MC}	0.03	0.03	0.05	0.01	0.09	-	-	-	g/l	A/T/025x
Sulphate (acid soluble)$_D$^{MC}	240	<200	<200	<200	370	-	-	-	mg/kg	A/T/025x
Arsenic$_D$^{MC}	5	3	5	3	5	-	-	-	mg/kg	A/T/045x
Cadmium$_D$^{MC}	0.6	0.6	0.6	<0.5	0.6	-	-	-	mg/kg	A/T/045x
Copper$_D$^{MC}	10	8	9	13	10	-	-	-	mg/kg	A/T/045x
Chromium$_D$^{MC}	24	10	23	13	29	-	-	-	mg/kg	A/T/045x
Lead$_D$^{MC}	11	4	10	6	12	-	-	-	mg/kg	A/T/045x
Mercury$_D$	<0.17	<0.17	<0.17	<0.17	<0.17	-	-	-	mg/kg	A/T/045x
Nickel$_D$^{MC}	20	10	16	11	20	-	-	-	mg/kg	A/T/045x
Selenium$_D$	<1	<1	<1	<1	<1	-	-	-	mg/kg	A/T/045x
Zinc$_D$^{MC}	40	18	39	18	40	-	-	-	mg/kg	A/T/045x

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/02575

Client Project Name: Land at West End Nursery, Angmering

Client Project Ref: 27621

Lab Sample ID	16/02575/1	16/02575/2	16/02575/3	16/02575/4	16/02575/5	16/02575/6	16/02575/7	16/02575/8	Units	Method ref
Client Sample No	2	2	1	2	1	1	1	1		
Client Sample ID	TPPoS1	TPPoS2	TPPoS3	TPPoS4	TPPoS5	SV5	SV6	SV7		
Depth to Top	1.50	2.00	1.80	2.50	1.00	0.20	0.15	0.20		
Depth To Bottom	1.80	3.00	2.20	2.50	1.50		0.20	0.30		
Date Sampled	27-Apr-16	27-Apr-16	27-Apr-16	27-Apr-16	27-Apr-16	27-Apr-16	27-Apr-16	27-Apr-16		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - D	Soil - D	Soil - D		
Sample Matrix Code	8	3A	5	3A	3A	1A	1A	1		
Asbestos in Soil (inc. matrix)										
Asbestos in soil[A]	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD		[illegible]
Asbestos ACM - Suitable for Water Absorption Test?[D]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		[illegible]

Envirolab Job Number: 16/02575

Client Project Name: Land at West End Nursery, Angmering

Client Project Ref: 27621

Lab Sample ID	16/02575/1	16/02575/2	16/02575/3	16/02575/4	16/02575/5	16/02575/6	16/02575/7	16/02575/8	Units	Method ref
Client Sample No	3	2	1	8	1	1	1	1		
Client Sample ID	TPPoS1	TPPoS2	TPPoS3	TPPoS4	TPPoS5	SV5	SV6	SV7		
Depth to Top	1.50	2.80	1.80	2.00	1.00	0.20	0.15	0.30		
Depth To Bottom	1.80	3.00	2.20	2.50	1.50		0.20	0.30		
Date Sampled	27-Apr-16	27-Apr-16	27-Apr-16	27-Apr-16	27-Apr-16	27-Apr-16	27-Apr-16	27-Apr-16		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - D	Soil - D	Soil - D		
Sample Matrix Code	S	3A	S	3A	3A	1A	1A	1		
PAH 16										
Acenaphthene$_A^{MC}$	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	mg/kg	A/T/ORG
Acenaphthylene$_A^{MC}$	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	mg/kg	A/T/ORG
Anthracene$_A^{MC}$	<0.02	<0.02	<0.02	<0.02	<0.02	-	-	-	mg/kg	A/T/ORG
Benzo(a)anthracene$_A^{MC}$	<0.04	<0.04	<0.04	<0.04	<0.04	-	-	-	mg/kg	A/T/ORG
Benzo(a)pyrene$_A^{MC}$	<0.04	<0.04	<0.04	<0.04	<0.04	-	-	-	mg/kg	A/T/ORG
Benzo(b)fluoranthene$_A^{MC}$	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	mg/kg	A/T/ORG
Benzo(ghi)perylene$_A^{MC}$	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	mg/kg	A/T/ORG
Benzo(k)fluoranthene$_A^{MC}$	<0.07	<0.07	<0.07	<0.07	<0.07	-	-	-	mg/kg	A/T/ORG
Chrysene$_A^{MC}$	<0.06	<0.06	<0.06	<0.06	<0.06	-	-	-	mg/kg	A/T/ORG
Dibenzo(ah)anthracene$_A^{MC}$	<0.04	<0.04	<0.04	<0.04	<0.04	-	-	-	mg/kg	A/T/ORG
Fluoranthene$_A^{MC}$	<0.08	<0.08	<0.08	<0.08	<0.08	-	-	-	mg/kg	A/T/ORG
Fluorene$_A^{MC}$	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	mg/kg	A/T/ORG
Indeno(123-cd)pyrene$_A^{MC}$	<0.03	<0.03	<0.03	<0.03	<0.03	-	-	-	mg/kg	A/T/ORG
Naphthalene$_A^{MC}$	<0.03	<0.03	<0.03	<0.03	<0.03	-	-	-	mg/kg	A/T/ORG
Phenanthrene$_A^{MC}$	<0.03	<0.03	<0.03	<0.03	<0.03	-	-	-	mg/kg	A/T/ORG
Pyrene$_A^{MC}$	<0.07	<0.07	<0.07	<0.07	<0.07	-	-	-	mg/kg	A/T/ORG
PAH (total 16)$_A^{MC}$	<0.08	<0.08	<0.08	<0.08	<0.08	-	-	-	mg/kg	A/T/ORG

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/02575

Client Project Name: Land at West End Nursery, Angmering

Client Project Ref: 27621

Lab Sample ID	16/02575/1	16/02575/2	16/02575/3	16/02575/4	16/02575/5	16/02575/6	16/02575/7	16/02575/8	Units	Method ref
Client Sample No	2	2	1	2	1	1	1	1		
Client Sample ID	TPPoS1	TPPoS2	TPPoS3	TPPoS4	TPPoS5	SV5	SV6	SV7		
Depth to Top	1.50	2.00	1.80	2.00	1.00	0.00	0.15	0.20		
Depth To Bottom	1.80	3.00	2.20	2.50	1.50		0.20	0.30		
Date Sampled	27-Apr-16	27-Apr-16	27-Apr-16	27-Apr-16	27-Apr-16	27-Apr-16	27-Apr-16	27-Apr-16		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - D	Soil - D	Soil - D		
Sample Matrix Code	5	3A	5	3A	3A	1A	1A	1		
TPH CWG										
Ali >C5-C6$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	mg/kg	A-T-0004
Ali >C6-C8$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	mg/kg	A-T-0004
Ali >C8-C10$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	mg/kg	A-T-0004
Ali >C10-C12$_A^*$	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	mg/kg	A-T-0004
Ali >C12-C16$_A^*$	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	mg/kg	A-T-0004
Ali >C16-C21$_A^*$	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	mg/kg	A-T-0004
Ali >C21-C35$_A^*$	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	mg/kg	A-T-0004
Total Aliphatics$_A$	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	mg/kg	A-T-0004+22e
Aro >C5-C7$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	mg/kg	A-T-0004
Aro >C7-C8$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	mg/kg	A-T-0004
Aro >C8-C9$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	mg/kg	A-T-0004
Aro >C9-C10$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	mg/kg	A-T-0004
Aro >C10-C12$_A^*$	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	mg/kg	A-T-0004
Aro >C12-C16$_A^*$	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	mg/kg	A-T-0004
Aro >C16-C21$_A^*$	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	mg/kg	A-T-0004
Aro >C21-C35$_A^*$	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	mg/kg	A-T-0004
Total Aromatics$_A$	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	mg/kg	A-T-0004+22e
TPH (Ali & Aro)$_A$	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	mg/kg	A-T-0004+22e
BTEX - Benzene$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	mg/kg	A-T-0004
BTEX - Toluene$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	mg/kg	A-T-0004
BTEX - Ethyl Benzene$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	mg/kg	A-T-0004
BTEX - m & p Xylene$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	mg/kg	A-T-0004
BTEX - o Xylene$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	mg/kg	A-T-0004
MTBE$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	mg/kg	A-T-0004

ARUN DISTRICT COUNCIL A/94/17/DOC

Lab Sample ID	16/02575/9	16/02575/10	16/02575/11	16/02575/12	16/02575/13	16/02575/14	16/02575/15	16/02575/16	Units	Method ref
Client Sample No	1	1	1	1	1	1	1	1		
Client Sample ID	SV8	HASV1	HASV2	HASV3	HASV4	SWV1	SWV2	SWV3		
Depth to Top	0.20	0.50	0.50	0.50	0.50	0.10	0.15	0.10		
Depth To Bottom	0.25	0.60	0.60	0.70	0.60	0.20	0.25	0.30		
Date Sampled	27-Apr-16	28-Apr-16	28-Apr-16	28-Apr-16	28-Apr-16	28-Apr-16	28-Apr-16	28-Apr-16		
Sample Type	Soil - D	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - D	Soil - D	Soil - D		
Sample Matrix Code	4A	4A	4A	4A	4	SAE	4A	4A		
Asbestos in Soil (inc. matrix)										
Asbestos in soil[a,f]	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD		[illegible]
Asbestos ACM - Suitable for Water Absorption Test?[b]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		Secretary

ARUN DISTRICT COUNCIL A/94/17/DOC

Lab Sample ID	16/02575/9	16/02575/10	16/02575/11	16/02575/12	16/02575/13	16/02575/14	16/02575/15	16/02575/16	Units	Method ref
Client Sample No	1	1	1	1	1	1	1	1		
Client Sample ID	SV8	HASV1	HASV2	HASV3	HASV4	SWV1	SWV2	SWV3		
Depth to Top	0.20	0.50	0.50	0.50	0.50	0.10	0.15	0.10		
Depth To Bottom	0.25	0.60	0.60	0.70	0.60	0.20	0.25	0.30		
Date Sampled	27-Apr-16	28-Apr-16	28-Apr-16	28-Apr-16	28-Apr-16	28-Apr-16	28-Apr-16	28-Apr-16		
Sample Type	Soil - D	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - D	Soil - D	Soil - D		
Sample Matrix Code	4A	4A	1A	4A	4	SAE	4A	4A		
Pest-c										
Mevinphos$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Dichlorvos$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
alpha-Hexachlorocyclohexane (HCH)$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Diazinon$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
gamma-Hexachlorocyclohexane (HCH / Lindane)$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Heptachlor$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Aldrin$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
beta-Hexachlorocyclohexane (HCH)$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Methyl Parathion$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Malathion$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Fenitrothion$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Heptachlor Epoxide$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Parathion (Ethyl Parathion)$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
p,p-DDE$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
p,p-DDT$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
p,p-Methoxychlor$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
p,p-TDE (DDD)$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
o,p-DDE$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
o,p-DDT$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
o,p-Methoxychlor$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
o,p-TDE (DDD)$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Endosulphan I$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Endosulphan II$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Endosulphan Sulphate$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Endrin$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Ethion$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Dieldrin$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Azinphos-methyl$_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon

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Lab Sample ID	16/02575/9	16/02575/10	16/02575/11	16/02575/12	16/02575/13	16/02575/14	16/02575/15	16/02575/16	Units	Method ref
Client Sample No	1	1	1	1	1	1	1	1		
Client Sample ID	SV8	HASV1	HASV2	HASV3	HASV4	SWV1	SWV2	SWV9		
Depth to Top	0.20	0.50	0.50	0.50	0.50	0.10	0.15	0.10		
Depth To Bottom	0.25	0.60	0.60	0.70	0.60	0.20	0.25	0.30		
Date Sampled	27-Apr-16	28-Apr-16	28-Apr-16	28-Apr-16	28-Apr-16	28-Apr-16	28-Apr-16	28-Apr-16		
Sample Type	Soil - D	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - D	Soil - D	Soil - D		
Sample Matrix Code	4A	4A	1A	4A	4	6AE	4A	4A		
Triazine Herbicides (Nitrogen Pesticides)										
Ametryn $_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Atraton $_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Atrazine $_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Prometon $_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Prometryn $_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Propazine $_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Simazine $_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Simetryn $_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Terbuthylazine $_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon
Terbutryn $_A$	-	<50	<50	<50	<50	-	-	-	µg/kg	Subcon

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Lab Sample ID	16/02575/17	16/02575/18	16/02575/19						Units	Method ref
Client Sample No	1	1	1							
Client Sample ID	SWV10	SWV11	SWV12							
Depth to Top	0.20	0.20	0.25							
Depth To Bottom		0.40								
Date Sampled	28-Apr-16	28-Apr-16	28-Apr-16							
Sample Type	Soil - ES	Soil - D	Soil - D							
Sample Matrix Code	6E	4A	5A							
Asbestos in Soil (inc. matrix)										
Asbestos in soil[A#]	NAD	NAD	Crocidolite & Chrysotile							[illegible]
Asbestos Matrix (microscope)[A]	-	-	Loose Fibres							[illegible]
Asbestos ACM - Suitable for Water Absorption Test?[D]	N/A	N/A	N/A							Secondary
Asbestos in Soil Quantification % (Hand Picking & Weighing)										
Asbestos in soil % composition (hand picking and weighing)[D]	-	-	<0.001						% w/w	[illegible]

ARUN DISTRICT COUNCIL A/94/17/DOC

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REPORT NOTES

Notes - Soil chemical analysis
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones and brick and concrete fragments >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis. For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

Notes - General
This report shall not be reproduced, except in full, without written approval from Envirolab.
Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.
All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supersedes any "A" subscripts.
All analysis is performed on the sample as received for soil samples which are positive for asbestos and/or if they are from outside the European Union and this supercedes any "D" subscripts.
Superscript "M" indicates method accredited to MCERTS.
If results are in italic font they are associated with an AQC failure. These are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

TPH analysis of water by method A-T-007
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Asbestos in soil
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if present as discrete fibres/fragments. Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.
Samples with Matrix Code 7 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations.

Secondary Matrix Codes:
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.

ARUN DISTRICT COUNCIL A/94/17/DOC

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 16/00471
Issue Number: 1 **Date:** 09 February, 2016

Client: RSK Environment Ltd Hemel
18 Frogmore Road
Hemel Hempstead
Hertfordshire
UK
HP3 9RT

Project Manager: Andrew James/Nigel Austin
Project Name: Angmering
Project Ref: 27621
Order No: N/A
Date Samples Received: 27/01/16
Date Instructions Received: 27/01/16
Date Analysis Completed: 09/02/16

Prepared by:

[redacted]

Danielle Brierley
Administrative Assistant

Approved by:

[redacted]

Gill Scott
Laboratory Manager

MCERTS
UKAS
1247

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/00471

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/00471/1	16/00471/2	16/00471/3	16/00471/4					Units	Method ref
Client Sample No										
Client Sample ID	V1	V2	V3	V4						
Depth to Top	0.00	0.30	0.30	0.40						
Depth To Bottom	1.00		0.40	0.50						
Date Sampled	25-Jan-16	25-Jan-16	25-Jan-16	25-Jan-16						
Sample Type	Soil	Solid	Soil	Soil						
Sample Matrix Code	6A	7	6A	4A						
% Stones >10mm$_A$*	11.6	<0.1	7.3	31.0					% w/w	A-T-004
pH$_D$ MC*	7.91	-	-	-					pH	A-T-001*
Nitrate (water sol 2:1)$_D$	<1	-	-	-					mg/kg	A-T-005*

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/00471

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/00471/1	16/00471/2	16/00471/3	16/00471/4					Units	Method ref
Client Sample No										
Client Sample ID	V1	V2	V3	V4						
Depth to Top	0.80	0.30	0.30	0.40						
Depth To Bottom	1.00		0.40	0.50						
Date Sampled	25-Jan-16	25-Jan-16	25-Jan-16	25-Jan-16						
Sample Type	Soil	Solid	Soil	Soil						
Sample Matrix Code	5A	7	5A	4A						
TPH CWG										
Ali >C5-C6$_A$	<0.01	<0.01	<0.01	<0.01					mg/kg	A-T-0004
Ali >C6-C8$_A$	<0.01	0.27	0.01	<0.01					mg/kg	A-T-0004
Ali >C8-C10$_A$	<0.01	3.23	0.01	<0.01					mg/kg	A-T-0004
Ali >C10-C12$_A$	<0.1	83.8	<0.1	<0.1					mg/kg	A-T-0004
Ali >C12-C16$_A$	<0.1	373	<0.1	<0.1					mg/kg	A-T-0004
Ali >C16-C21$_A$	<0.1	467	<0.1	<0.1					mg/kg	A-T-0004
Ali >C21-C35$_A$	<0.1	119	<0.1	<0.1					mg/kg	A-T-0004
Total Aliphatics$_A$	<0.1	1053	<0.1	<0.1					mg/kg	A-T-0004+33a
Aro >C5-C7$_A$	<0.01	<0.01	<0.01	<0.01					mg/kg	A-T-0004
Aro >C7-C8$_A$	<0.01	<0.01	<0.01	<0.01					mg/kg	A-T-0004
Aro >C8-C9$_A$	<0.01	0.13	0.02	0.02					mg/kg	A-T-0004
Aro >C9-C10$_A$	<0.01	3.35	0.08	0.10					mg/kg	A-T-0004
Aro >C10-C12$_A$	<0.1	16.9	<0.1	<0.1					mg/kg	A-T-0004
Aro >C12-C16$_A$	<0.1	134	1.8	<0.1					mg/kg	A-T-0004
Aro >C16-C21$_A$	<0.1	168	3.5	3.4					mg/kg	A-T-0004
Aro >C21-C35$_A$	<0.1	49.4	0.7	2.4					mg/kg	A-T-0004
Total Aromatics$_A$	<0.1	374	5.1	5.9					mg/kg	A-T-0004+33a
TPH (Ali & Aro)$_A$	<0.1	1428	5.1	5.9					mg/kg	A-T-0004+33a
BTEX - Benzene$_A$	<0.01	<0.01	<0.01	<0.01					mg/kg	A-T-0004
BTEX - Toluene$_A$	<0.01	<0.01	<0.01	<0.01					mg/kg	A-T-0004
BTEX - Ethyl Benzene$_A$	<0.01	0.02	<0.01	<0.01					mg/kg	A-T-0004
BTEX - m & p Xylene$_A$	<0.01	0.07	<0.01	<0.01					mg/kg	A-T-0004
BTEX - o Xylene$_A$	<0.01	0.06	<0.01	<0.01					mg/kg	A-T-0004
MTBE$_A$	<0.01	<0.01	<0.01	<0.01					mg/kg	A-T-0004

ARUN DISTRICT COUNCIL A/94/17/DOC

REPORT NOTES

Notes - Soil chemical analysis
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones and brick and concrete fragments >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis. For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

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All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supersedes any "A" subscripts.
All analysis is performed on the sample as received for soil samples which are positive for asbestos and/or if they are from outside the European Union and this supercedes any "D" subscripts.
Superscript "M" indicates method accredited to MCERTS.
If results are in italic font they are associated with an AQC failure. These are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

TPH analysis of water by method A-T-007
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Asbestos in soil
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if present as discrete fibres/fragments. Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.
Samples with Matrix Code 7 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations.

Secondary Matrix Codes:
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

IS indicates Insufficient sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.

ARUN DISTRICT COUNCIL A/94/17/DOC

envirolab
Units 7 & 9 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 16/01449
Issue Number: 1 **Date:** 24 March, 2016

Client: RSK Environment Ltd Hemel
18 Frogmore Road
Hemel Hempstead
Hertfordshire
UK
HP3 9RT

Project Manager: Andrew James/Nigel Austin/Russell Speight
Project Name: Angmering
Project Ref: 27621
Order No: N/A
Date Samples Received: 11/03/16
Date Instructions Received: 11/03/16
Date Analysis Completed: 24/03/16

Prepared by:

[redacted]

Melanie Marshall
Laboratory Coordinator

Approved by:

[redacted]

Gill Scott
Laboratory Manager

MCERTS
UKAS
3247

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/01449

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/01449/1	16/01449/2	16/01449/3	16/01449/4	16/01449/5	16/01449/6			Units	Method ref
Client Sample No										
Client Sample ID	V5	V6	V7	V8	V9	V10				
Depth to Top	0.30	0.20	0.30	0.30	1.00	0.50				
Depth To Bottom	0.50	0.40	0.50	0.50						
Date Sampled	08-Mar-16	08-Mar-16	08-Mar-16	08-Mar-16	08-Mar-16	08-Mar-16				
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil				
Sample Matrix Code	4A	4A	4A	4A	4A	4A				
% Stones >10mm$_a$	10.7	7.0	6.1	9.1	<0.1	12.5			% w/w	A-T-344
pH$_{2.5}$	-	-	-	-	-	9.34			pH	A-T-021a
Nitrate (water soil 2:1)$_a$	-	-	-	-	-	<1			mg/kg	A-T-038a

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/01449

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/01449/1	16/01449/2	16/01449/3	16/01449/4	16/01449/5	16/01449/6			Units	Method ref
Client Sample No										
Client Sample ID	V5	V6	V7	V8	V9	V10				
Depth to Top	0.30	0.30	0.30	0.30	1.00	0.50				
Depth To Bottom	0.50	0.40	0.50	0.50						
Date Sampled	08-Mar-16	08-Mar-16	08-Mar-16	08-Mar-16	08-Mar-16	08-Mar-16				
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil				
Sample Matrix Code	4A	4A	4A	4A	4A	4A				
TPH CWG										
Ali >C5-C6$_A^*$	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04			mg/kg	A-T-002x
Ali >C6-C8$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			mg/kg	A-T-002x
Ali >C8-C10$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			mg/kg	A-T-002x
Ali >C10-C12$_A^*$	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			mg/kg	A-T-002x
Ali >C12-C16$_A^*$	<0.1	<0.1	<0.1	15.8	<0.1	<0.1			mg/kg	A-T-002x
Ali >C16-C21$_A^*$	<0.1	<0.1	<0.1	46.0	<0.1	<0.1			mg/kg	A-T-002x
Ali >C21-C35$_A^*$	<0.1	<0.1	<0.1	1.9	<0.1	<0.1			mg/kg	A-T-002x
Total Aliphatics$_A$	<0.1	<0.1	<0.1	62.5	<0.1	<0.1			mg/kg	A-T-002x+23x
Aro >C5-C7$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			mg/kg	A-T-002x
Aro >C7-C8$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			mg/kg	A-T-002x
Aro >C8-C9$_A^*$	<0.01	<0.01	0.04	<0.01	<0.01	0.01			mg/kg	A-T-002x
Aro >C9-C10$_A^*$	<0.01	<0.01	0.04	<0.01	<0.01	0.04			mg/kg	A-T-002x
Aro >C10-C12$_A^*$	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			mg/kg	A-T-002x
Aro >C12-C16$_A^*$	<0.1	<0.1	<0.1	4.6	<0.1	1.5			mg/kg	A-T-002x
Aro >C16-C21$_A^*$	1.3	4.5	2.5	21.7	<0.1	14.8			mg/kg	A-T-002x
Aro >C21-C35$_A^*$	0.7	5.5	2.8	0.7	<0.1	25.2			mg/kg	A-T-002x
Total Aromatics$_A$	2.0	10.1	5.4	27.2	<0.1	41.5			mg/kg	A-T-002x+23x
TPH (Ali & Aro)$_A$	2.0	10.1	5.4	89.7	<0.1	41.5			mg/kg	A-T-002x+23x
BTEX - Benzene$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			mg/kg	A-T-002x
BTEX - Toluene$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			mg/kg	A-T-002x
BTEX - Ethyl Benzene$_A^*$	<0.01	<0.01	0.01	<0.01	<0.01	<0.01			mg/kg	A-T-002x
BTEX - m & p Xylene$_A^*$	<0.01	<0.01	0.01	<0.01	<0.01	<0.01			mg/kg	A-T-002x
BTEX - o Xylene$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			mg/kg	A-T-002x
MTBE$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			mg/kg	A-T-002x

ARUN DISTRICT COUNCIL A/94/17/DOC

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REPORT NOTES

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ARUN DISTRICT COUNCIL A/94/17/DOC

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 16/03628
Issue Number: 1 **Date:** 04 July, 2016

Client:
RSK Environment Ltd Tonbridge
Anerley Court, Half Moon Lane, Hildenborough
Tonbridge
Kent
TN11 9HU

Project Manager: Andrew James/Nigel Austin
Project Name: Angmering
Project Ref: 27621
Order No: N/A
Date Samples Received: 14/06/16
Date Instructions Received: 15/06/16
Date Analysis Completed: 04/07/16

Prepared by:

[redacted]

Kate Ellison
Administrative Assistant

Approved by:

[redacted]

Gill Walker
Laboratory Manager

MCERTS 1247

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/03628

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/03628/1	16/03628/2	16/03628/3	16/03628/4	16/03628/5	16/03628/6	16/03628/7	16/03628/8	Units	Method ref
Client Sample No										
Client Sample ID	NWB S1	NWB V1	NWB V2	NWB V3	NWB V4	NWB V5	NWB V6	NWB V7		
Depth to Top		0.20	0.20	0.10	0.20	0.20	0.20	0.30		
Depth To Bottom		0.40	0.40	0.50	0.40	0.40	0.40	0.50		
Date Sampled	09-Jun-16	09-Jun-16	09-Jun-16	09-Jun-16	09-Jun-16	09-Jun-16	09-Jun-16	09-Jun-16		
Sample Type	Solid - Fragment / Tile	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	8	4A	1A	4A	1A	5A	5A	4A		
% Stones >10mm$_A$	-	<0.1	-	<0.1	2.5	-	3.8	-	% w/w	A-T-002
pH$_D$	-	7.79	-	7.61	7.62	-	7.64	-	pH	A-T-021a
Sulphate (water sol 2:1)$_D$	-	0.10	-	0.10	0.07	-	0.06	-	g/l	A-T-028a
Sulphate (acid soluble)$_D$	-	450	-	440	300	-	240	-	mg/kg	A-T-028a
Arsenic$_D$	-	8	-	7	8	-	7	-	mg/kg	A-T-030a
Cadmium$_D$	-	1.2	-	1.2	1.3	-	1.3	-	mg/kg	A-T-030a
Copper$_D$	-	46	-	34	19	-	14	-	mg/kg	A-T-030a
Chromium$_D$	-	24	-	28	30	-	28	-	mg/kg	A-T-030a
Lead$_D$	-	48	-	71	48	-	34	-	mg/kg	A-T-030a
Mercury$_D$	-	<0.17	-	<0.17	<0.17	-	<0.17	-	mg/kg	A-T-030a
Nickel$_D$	-	17	-	18	22	-	22	-	mg/kg	A-T-030a
Selenium$_D$	-	1	-	<1	<1	-	<1	-	mg/kg	A-T-030a
Zinc$_D$	-	84	-	88	67	-	50	-	mg/kg	A-T-030a

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/03628

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/03628/1	16/03628/2	16/03628/3	16/03628/4	16/03628/5	16/03628/6	16/03628/7	16/03628/8	Units	Method ref
Client Sample No										
Client Sample ID	NWB B1	NWB V1	NWB V2	NWB V3	NWB V4	NWB V5	NWB V6	NWB V7		
Depth to Top		0.30	0.20	0.10	0.20	0.20	0.20	0.30		
Depth To Bottom		0.40	0.40	0.50	0.40	0.40	0.40	0.50		
Date Sampled	09-Jun-16	09-Jun-16	09-Jun-16	09-Jun-16	09-Jun-16	09-Jun-16	09-Jun-16	09-Jun-16		
Sample Type	Solid - Fragment / Tile	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	B	4A	1A	4A	1A	5A	5A	4A		
Asbestos in Soil (inc. matrix)										
Asbestos in soil	-	NAD	NAD	NAD	NAD	NAD	NAD	NAD		[illegible]
Asbestos ACM - Suitable for Water Absorption Test?	-	N/A	N/A	N/A	N/A	N/A	N/A	N/A		Gravimetry
Bulk Fibre ID (inc. matrix)										
Bulk Fibre Identification	Chrysotile	-	-	-	-	-	-	-		[illegible]
Bulk Fibre Identification Matrix (visual)	Cement	-	-	-	-	-	-	-		[illegible]
Bulk Fibre Identification - Suitable for Water Absorption Test?	Yes	-	-	-	-	-	-	-		Gravimetry

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/03628

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/03628/1	16/03628/2	16/03628/3	16/03628/4	16/03628/5	16/03628/6	16/03628/7	16/03628/8	Units	Method ref
Client Sample No										
Client Sample ID	NWB B1	NWB V1	NWB V2	NWB V3	NWB V4	NWB V5	NWB V6	NWB V7		
Depth to Top		0.20	0.30	0.10	0.20	0.20	0.20	0.30		
Depth To Bottom		0.40	0.40	0.50	0.40	0.40	0.40	0.50		
Date Sampled	09-Jun-16	09-Jun-16	09-Jun-16	09-Jun-16	09-Jun-16	09-Jun-16	09-Jun-16	09-Jun-16		
Sample Type	Solid - Fragment / Tile	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	8	4A	1A	4A	1A	5A	5A	4A		
PAH 16										
Acenaphthene$_A^{MX}$	-	<0.01	-	<0.01	<0.01	-	<0.01	-	mg/kg	A/T-016a
Acenaphthylene$_A^{MX}$	-	<0.01	-	<0.01	<0.01	-	<0.01	-	mg/kg	A/T-016a
Anthracene$_A^{MX}$	-	<0.02	-	<0.02	<0.02	-	<0.02	-	mg/kg	A/T-016a
Benzo(a)anthracene$_A^{MX}$	-	<0.04	-	<0.04	<0.04	-	<0.04	-	mg/kg	A/T-016a
Benzo(a)pyrene$_A^{MX}$	-	<0.04	-	<0.04	<0.04	-	<0.04	-	mg/kg	A/T-016a
Benzo(b)fluoranthene$_A^{MX}$	-	<0.05	-	0.07	<0.05	-	<0.05	-	mg/kg	A/T-016a
Benzo(ghi)perylene$_A^{MX}$	-	<0.05	-	<0.05	<0.05	-	<0.05	-	mg/kg	A/T-016a
Benzo(k)fluoranthene$_A^{MX}$	-	<0.07	-	<0.07	<0.07	-	<0.07	-	mg/kg	A/T-016a
Chrysene$_A^{MX}$	-	<0.06	-	<0.06	<0.06	-	<0.06	-	mg/kg	A/T-016a
Dibenzo(ah)anthracene$_A^{MX}$	-	<0.04	-	<0.04	<0.04	-	<0.04	-	mg/kg	A/T-016a
Fluoranthene$_A^{MX}$	-	<0.08	-	<0.08	<0.08	-	<0.08	-	mg/kg	A/T-016a
Fluorene$_A^{MX}$	-	<0.01	-	<0.01	<0.01	-	<0.01	-	mg/kg	A/T-016a
Indeno(123-cd)pyrene$_A^{MX}$	-	<0.03	-	0.05	<0.03	-	<0.03	-	mg/kg	A/T-016a
Naphthalene$_A^{MX}$	-	<0.03	-	<0.03	<0.03	-	<0.03	-	mg/kg	A/T-016a
Phenanthrene$_A^{MX}$	-	<0.03	-	<0.03	<0.03	-	<0.03	-	mg/kg	A/T-016a
Pyrene$_A^{MX}$	-	<0.07	-	<0.07	<0.07	-	<0.07	-	mg/kg	A/T-016a
PAH (total 16)$_A^{MX}$	-	<0.08	-	0.12	<0.08	-	<0.08	-	mg/kg	A/T-016a

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/03628

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/03628/1	16/03628/2	16/03628/3	16/03628/4	16/03628/5	16/03628/6	16/03628/7	16/03628/8	Units	Method ref
Client Sample No										
Client Sample ID	NWB B1	NWB V1	NWB V2	NWB V3	NWB V4	NWB V5	NWB V6	NWB V7		
Depth to Top		0.20	0.20	0.10	0.20	0.20	0.20	0.30		
Depth To Bottom		0.40	0.40	0.50	0.40	0.40	0.40	0.50		
Date Sampled	09-Jun-16	09-Jun-16	09-Jun-16	09-Jun-16	09-Jun-16	09-Jun-16	09-Jun-16	09-Jun-16		
Sample Type	Solid - Fragment / Tile	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	8	4A	1A	4A	1A	5A	5A	4A		
TPH CWG										
Ali >C5-C6$_A$	-	<0.01	-	<0.01	<0.01	-	<0.01	-	mg/kg	
Ali >C6-C8$_A$	-	<0.01	-	<0.01	<0.01	-	<0.01	-	mg/kg	
Ali >C8-C10$_A$	-	<0.01	-	<0.01	<0.01	-	<0.01	-	mg/kg	
Ali >C10-C12$_A$	-	<0.1	-	<0.1	<0.1	-	<0.1	-	mg/kg	
Ali >C12-C16$_A$	-	<0.1	-	<0.1	<0.1	-	<0.1	-	mg/kg	
Ali >C16-C21$_A$	-	<0.1	-	<0.1	<0.1	-	<0.1	-	mg/kg	
Ali >C21-C35$_A$	-	<0.1	-	<0.1	<0.1	-	<0.1	-	mg/kg	
Total Aliphatics$_A$	-	<0.1	-	<0.1	<0.1	-	<0.1	-	mg/kg	
Aro >C5-C7$_A$	-	<0.01	-	<0.01	<0.01	-	<0.01	-	mg/kg	
Aro >C7-C8$_A$	-	<0.01	-	<0.01	<0.01	-	<0.01	-	mg/kg	
Aro >C8-C9$_A$	-	<0.01	-	<0.01	<0.01	-	<0.01	-	mg/kg	
Aro >C9-C10$_A$	-	<0.01	-	<0.01	<0.01	-	<0.01	-	mg/kg	
Aro >C10-C12$_A$	-	<0.1	-	<0.1	<0.1	-	<0.1	-	mg/kg	
Aro >C12-C16$_A$	-	<0.1	-	<0.1	<0.1	-	<0.1	-	mg/kg	
Aro >C16-C21$_A$	-	<0.1	-	<0.1	<0.1	-	<0.1	-	mg/kg	
Aro >C21-C35$_A$	-	<0.1	-	<0.1	<0.1	-	<0.1	-	mg/kg	
Total Aromatics$_A$	-	<0.1	-	<0.1	<0.1	-	<0.1	-	mg/kg	
TPH (Ali & Aro)$_A$	-	<0.1	-	<0.1	<0.1	-	<0.1	-	mg/kg	
BTEX - Benzene$_A$	-	<0.01	-	<0.01	<0.01	-	<0.01	-	mg/kg	
BTEX - Toluene$_A$	-	<0.01	-	<0.01	<0.01	-	<0.01	-	mg/kg	
BTEX - Ethyl Benzene$_A$	-	<0.01	-	<0.01	<0.01	-	<0.01	-	mg/kg	
BTEX - m & p Xylene$_A$	-	<0.01	-	<0.01	<0.01	-	<0.01	-	mg/kg	
BTEX - o Xylene$_A$	-	<0.01	-	<0.01	<0.01	-	<0.01	-	mg/kg	
MTBE$_A$	-	<0.01	-	<0.01	<0.01	-	<0.01	-	mg/kg	

Envirolab Job Number: 16/03628

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/03628/9								Units	Method ref
Client Sample No										
Client Sample ID	NWB VS									
Depth to Top	0.30									
Depth To Bottom										
Date Sampled	09-Jun-16									
Sample Type	Soil									
Sample Matrix Code	4A									
% Stones >10mm$_D$	0.8								% w/w	A-T-004
pH$_D$	7.66								pH	A-T-005
Sulphate (water sol 2:1)$_D$	0.07								g/l	A-T-006
Sulphate (acid soluble)$_D$	370								mg/kg	A-T-006
Arsenic$_D$	8								mg/kg	A-T-008
Cadmium$_D$	1.2								mg/kg	A-T-008
Copper$_D$	20								mg/kg	A-T-008
Chromium$_D$	35								mg/kg	A-T-008
Lead$_D$	42								mg/kg	A-T-008
Mercury$_D$	<0.17								mg/kg	A-T-008
Nickel$_D$	18								mg/kg	A-T-008
Selenium$_D$	<1								mg/kg	A-T-008
Zinc$_D$	70								mg/kg	A-T-008

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/03628

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/03628/9								Units	Method ref
Client Sample No										
Client Sample ID	NWB V8									
Depth to Top	0.30									
Depth To Bottom										
Date Sampled	09-Jun-16									
Sample Type	Soil									
Sample Matrix Code	4A									
Asbestos in Soil (inc. matrix)										
Asbestos in soil[4]	NAD									[illegible]
Asbestos ACM - Suitable for Water Absorption Test?[5]	N/A									Gravimetry

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/03628

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/03628/9								Units	Method ref
Client Sample No										
Client Sample ID	NWS V8									
Depth to Top	0.30									
Depth To Bottom										
Date Sampled	09-Jun-16									
Sample Type	Soil									
Sample Matrix Code	4A									
PAH 16										
Acenaphthene$_A^{NX}$	<0.01								mg/kg	A-T-016x
Acenaphthylene$_A^{NX}$	<0.01								mg/kg	A-T-016x
Anthracene$_A^{NX}$	<0.02								mg/kg	A-T-016x
Benzo(a)anthracene$_A^{NX}$	<0.04								mg/kg	A-T-016x
Benzo(a)pyrene$_A^{NX}$	<0.04								mg/kg	A-T-016x
Benzo(b)fluoranthene$_A^{NX}$	<0.03								mg/kg	A-T-016x
Benzo(ghi)perylene$_A^{NX}$	<0.05								mg/kg	A-T-016x
Benzo(k)fluoranthene$_A^{NX}$	<0.07								mg/kg	A-T-016x
Chrysene$_A^{NX}$	<0.06								mg/kg	A-T-016x
Dibenzo(ah)anthracene$_A^{NX}$	<0.04								mg/kg	A-T-016x
Fluoranthene$_A^{NX}$	<0.08								mg/kg	A-T-016x
Fluorene$_A^{NX}$	<0.01								mg/kg	A-T-016x
Indeno(123-cd)pyrene$_A^{NX}$	<0.03								mg/kg	A-T-016x
Naphthalene$_A^{NX}$	<0.03								mg/kg	A-T-016x
Phenanthrene$_A^{NX}$	<0.03								mg/kg	A-T-016x
Pyrene$_A^{NX}$	<0.07								mg/kg	A-T-016x
PAH (total 16)$_A^{NX}$	<0.08								mg/kg	A-T-016x

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/03628

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/03628/9								Units	Method ref
Client Sample No										
Client Sample ID	NWB V8									
Depth to Top	0.30									
Depth To Bottom										
Date Sampled	09-Jun-16									
Sample Type	Soil									
Sample Matrix Code	4A									
TPH CWG										
Ali >C5-C6$_A^*$	<0.01								mg/kg	A-T-0059
Ali >C6-C8$_A^*$	<0.01								mg/kg	A-T-0059
Ali >C8-C10$_A^*$	<0.01								mg/kg	A-T-0059
Ali >C10-C12$_A^*$	<0.1								mg/kg	A-T-0059
Ali >C12-C16$_A^*$	<0.1								mg/kg	A-T-0059
Ali >C16-C21$_A^*$	<0.1								mg/kg	A-T-0059
Ali >C21-C35$_A^*$	<0.1								mg/kg	A-T-0059
Total Aliphatics$_A$	<0.1								mg/kg	A-T-0059+220
Aro >C5-C7$_A^*$	<0.01								mg/kg	A-T-0059
Aro >C7-C8$_A^*$	<0.01								mg/kg	A-T-0059
Aro >C8-C9$_A^*$	<0.01								mg/kg	A-T-0059
Aro >C9-C10$_A^*$	<0.01								mg/kg	A-T-0059
Aro >C10-C12$_A^*$	<0.1								mg/kg	A-T-0059
Aro >C12-C16$_A^*$	<0.1								mg/kg	A-T-0059
Aro >C16-C21$_A^*$	<0.1								mg/kg	A-T-0059
Aro >C21-C35$_A^*$	<0.1								mg/kg	A-T-0059
Total Aromatics$_A$	<0.1								mg/kg	A-T-0059+220
TPH (Ali & Aro)$_A$	<0.1								mg/kg	A-T-0059+220
BTEX - Benzene$_A^*$	<0.01								mg/kg	A-T-0059
BTEX - Toluene$_A^*$	<0.01								mg/kg	A-T-0059
BTEX - Ethyl Benzene$_A^*$	<0.01								mg/kg	A-T-0059
BTEX - m & p Xylene$_A^*$	<0.01								mg/kg	A-T-0059
BTEX - o Xylene$_A^*$	<0.01								mg/kg	A-T-0059
MTBE$_A^*$	<0.01								mg/kg	A-T-0059

ARUN DISTRICT COUNCIL A/94/17/DOC

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REPORT NOTES

Notes - Soil chemical analysis
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones and brick and concrete fragments >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis. For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

Notes - General
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Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.
All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supersedes any "A" subscripts.
All analysis is performed on the sample as received for soil samples which are positive for asbestos and/or if they are from outside the European Union and this supercedes any "D" subscripts.
Superscript "M" indicates method accredited to MCERTS.
If results are in italic font they are associated with an AQC failure. These are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

TPH analysis of water by method A-T-007
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Asbestos in soil
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if present as discrete fibres/fragments. Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.
Samples with Matrix Code 7 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations.

Secondary Matrix Codes:
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.

ARUN DISTRICT COUNCIL A/94/17/DOC

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 16/05298
Issue Number: 1 **Date:** 05 September, 2016

Client: RSK Environment Ltd Hemel
18 Frogmore Road
Hemel Hempstead
Hertfordshire
UK
HP3 9RT

Project Manager: Andrew James/Edward Hughes/Nigel Austin
Project Name: Angmering
Project Ref: 27621
Order No: N/A
Date Samples Received: 24/08/16
Date Instructions Received: 24/08/16
Date Analysis Completed: 04/09/16

Prepared by:

[redacted]

Danielle Brierley
Administrative Assistant

Approved by:

[redacted]

Iain Haslock
Analytical Consultant

1247

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/05298

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/05298/1	16/05298/2	16/05298/3	16/05298/4	16/05298/5	16/05298/6	16/05298/7	16/05298/8	Units	Method ref
Client Sample No										
Client Sample ID	POSV13	POSV14	POSV15	POSV16	POSV2A	POSV2B	POSV2C	POSV2D		
Depth to Top	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30		
Depth To Bottom	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40		
Date Sampled	22-Aug-16	22-Aug-16	22-Aug-16	22-Aug-16	23-Aug-16	22-Aug-16	22-Aug-16	22-Aug-16		
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	3A	3A	3	3A	3A	3A	3	3A		
Asbestos in Soil (inc. matrix)										
Asbestos in soil,*	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD		[illegible]
Asbestos ACM - Suitable for Water Absorption Test?¤	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		Gravimetry

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/05298

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/05298/9	16/05298/10	16/05298/11	16/05298/12					Units	Method ref
Client Sample No										
Client Sample ID	POSV12A	POSV12B	POSV12C	POSV12D						
Depth to Top	0.30	0.30	0.30	0.30						
Depth To Bottom	0.40	0.40	0.40	0.40						
Date Sampled	22-Aug-16	22-Aug-16	22-Aug-16	22-Aug-16						
Sample Type	Soil	Soil	Soil	Soil						
Sample Matrix Code	3A	3A	3A	3A						
Asbestos in Soil (inc. matrix)										
Asbestos in soil[3]	NAD	NAD	NAD	NAD						[illegible]
Asbestos ACM - Suitable for Water Absorption Test?[3]	N/A	N/A	N/A	N/A						Gravimetric

ARUN DISTRICT COUNCIL A/94/17/DOC

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REPORT NOTES

Notes - Soil chemical analysis
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'. For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

Notes - General
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Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.
All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supersedes any "A" subscripts.
All analysis is performed on the sample as received for soil samples which are positive for asbestos and/or if they are from outside the European Union and this supercedes any "D" subscripts.
Superscript "M" indicates method accredited to MCERTS.
If results are in italic font they are associated with an AQC failure. These are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

TPH analysis of water by method A-T-007
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Asbestos in soil
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if present as discrete fibres/fragments. Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
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Please contact us if you need any further information.

ARUN DISTRICT COUNCIL A/94/17/DOC

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Units 7 & 8 Sandpits Business Park
Moltram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 16/05665
Issue Number: 1 **Date:** 14 September, 2016

Client: RSK Environment Ltd Romsey
Unit 18 Basepoint Abbey Enterprise Centre
Premier Way
Romsey
Hampshire
SO51 9AQ

Project Manager: Ed Hughes
Project Name: Land at West End Nursery, Angmering
Project Ref: 27621
Order No: N/A
Date Samples Received: 09/09/16
Date Instructions Received: 09/09/16
Date Analysis Completed: 12/09/16

Prepared by:

[redacted]

Kate Ellison
Administrative Assistant

Approved by:

[redacted]

John Gustafson
Director

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/05665

Client Project Name: Land at West End Nursery, Angmering

Client Project Ref: 27621

Lab Sample ID	16/05665/1	16/05665/2	16/05665/3	16/05665/4	16/05665/5	16/05665/6	16/05665/7	16/05665/8	Units	Method ref
Client Sample No	1	2	1	2	1	2	1	2		
Client Sample ID	TPP12G	TPP12G	TPP13G	TPP13G	TPP13H	TPP13H	TPP14G	TPP14G		
Depth to Top	0.10	0.40	0.20	1.00	0.30	0.50	0.10	0.40		
Depth To Bottom	0.20	0.50	0.40	1.10	0.40	0.60	0.30	0.60		
Date Sampled	07-Sep-16	07-Sep-16	07-Sep-16	07-Sep-16	07-Sep-16	07-Sep-16	07-Sep-16	07-Sep-16		
Sample Type	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D		
Sample Matrix Code	S	S	SA	S	S	SA	4A	S		
Asbestos in Soil (inc. matrix)										
Asbestos in soil[a,2]	Chrysotile	NAD	NAD	NAD	NAD	NAD	NAD	NAD		A-T-003
Asbestos Matrix (microscope)[a]	Loose Fibres	-	-	-	-	-	-	-		A-T-003
Asbestos ACM - Suitable for Water Absorption Test?[b]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		Gravimetry

Envirolab Job Number: 16/05665

Client Project Name: Land at West End Nursery, Angmering

Client Project Ref: 27621

Lab Sample ID	16/05665/9	16/05665/10	16/05665/11	16/05665/12	16/05665/13	16/05665/14	16/05665/15	16/05665/16	Units	Method ref
Client Sample No	1	1	2	1	2	1	2	1		
Client Sample ID	TPP14H	TPP15G	TPP15G	TPP16G	TPP16G	TPP17G	TPP17G	TPP19G		
Depth to Top	0.30	0.10	0.40	0.00	0.40	0.20	0.40	0.20		
Depth To Bottom	0.40	0.30	0.55	0.10	0.50	0.30	0.50	0.30		
Date Sampled	07-Sep-16	07-Sep-16	07-Sep-16	07-Sep-16	07-Sep-16	07-Sep-16	07-Sep-16	07-Sep-16		
Sample Type	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D		
Sample Matrix Code	SA	SA	SAB	S	4A	S	SA	SA		
Asbestos in Soil (inc. matrix)										
Asbestos in soil[a,2]	NAD	NAD	NAD	NAD	NAD	Chrysotile	Amosite	NAD		A-T-003
Asbestos Matrix (microscope)[a]	-	-	-	-	-	Loose Fibres	Loose Fibres	-		A-T-003
Asbestos ACM - Suitable for Water Absorption Test?[b]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		Gravimetry

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/05665

Client Project Name: Land at West End Nursery, Angmering

Client Project Ref: 27621

Lab Sample ID	16/05665/17								Units	Method ref
Client Sample No	2									
Client Sample ID	TPP19G									
Depth to Top	0.45									
Depth To Bottom	0.60									
Date Sampled	07-Sep-16									
Sample Type	Soil - D									
Sample Matrix Code	SA									
Asbestos in Soil (inc. matrix)										
Asbestos in soil,$^{\alpha}$	NAD									
Asbestos ACM - Suitable for Water Absorption Test?$_{\alpha}$	N/A									

ARUN DISTRICT COUNCIL A/94/17/DOC

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REPORT NOTES

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Soil chemical analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Asbestos:
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed.
Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.
Secondary Matrix Codes:
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal.
E = contains roots/twigs.

Key:
IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve

Please contact us if you need any further information.

ARUN DISTRICT COUNCIL A/94/17/DOC

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 16/06871
Issue Number: 1 **Date:** 10 November, 2016

Client:
RSK Environment Ltd Southampton
Unit 26
Basepoint Abbey Enterprise Centre
Premier Way
Romsey,
Hampshire
UK
SO51 9AQ

Project Manager: Andrew James/Catherine Latimer/Ed Hughes
Project Name: Angmering
Project Ref: 27621
Order No: N/A
Date Samples Received: 27/10/16
Date Instructions Received: 28/10/16
Date Analysis Completed: 10/11/16

Prepared by:

[redacted]

Danielle Brierley
Administrative Assistant

Approved by:

[redacted]

Gill Walker
Laboratory Manager

MCERTS
URAS
1347

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/06871

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/06871/1	16/06871/2	16/06871/3	16/06871/4	16/06871/5	16/06871/6	16/06871/7	16/06871/8	Units	Method ref
Client Sample No	1				1		1	1		
Client Sample ID	TPP19	TPP20	TPP21	TPP22	TPP23	TPP24	TPP25	TPP26		
Depth to Top	0.40	0.40	0.30	0.40	0.40	0.40	0.40	0.40		
Depth To Bottom		0.50	0.40	0.50	0.50	0.50	0.45	0.50		
Date Sampled	25-Oct-16	25-Oct-16	25-Oct-16	25-Oct-16	25-Oct-16	25-Oct-16	25-Oct-16	25-Oct-16		
Sample Type	Soil - D	Soil	Soil	Soil	Soil - D	Soil	Soil - D	Soil - D		
Sample Matrix Code	SA	4A	SA	SA	SA	4A	4A	4A		
Asbestos in Soil (inc. matrix)										
Asbestos in soil,*	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD		[illegible]
Asbestos ACM - Suitable for Water Absorption Test?	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		

Envirolab Job Number: 16/06871

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/06871/9	16/06871/10	16/06871/11	16/06871/12	16/06871/13	16/06871/14	16/06871/15	16/06871/16	Units	Method ref
Client Sample No					1	1		1		
Client Sample ID	TPP27	TPP28	TPP29	TPP35	TPP36	TPP38	TPP39	TPP37		
Depth to Top	0.40	0.10	0.10	0.40	0.50	0.00	0.40	0.40		
Depth To Bottom	0.50		0.30	0.45			0.45	0.50		
Date Sampled	25-Oct-16	25-Oct-16	25-Oct-16	25-Oct-16	25-Oct-16	25-Oct-16	25-Oct-16	25-Oct-16		
Sample Type	Soil	Soil	Soil	Soil	Soil - D	Soil - D	Soil	Soil - D		
Sample Matrix Code	4A	4A	6A	6A	6A	6A	4A	4A		
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_A^*$	NAD	NAD	NAD	NAD	Chrysotile	NAD	Chrysotile	NAD		A-T-005
Asbestos Matrix (microscope)$_A$	-	-	-	-	Loose Fibres	-	Loose Fibres	-		A-T-005
Asbestos ACM - Suitable for Water Absorption Test?	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/06871

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/06871/18	16/06871/19	16/06871/20	16/06871/21	16/06871/22	16/06871/23	16/06871/24	16/06871/25	Units	Method ref
Client Sample No		1								
Client Sample ID	TPP40	TPP41	TPP42	TPP43	TPP44	TPP45	TPP46	TPP47		
Depth to Top	0.55	0.40	0.50	0.40	0.40	0.50	0.40	0.40		
Depth To Bottom	0.60		0.60	0.50	0.50	0.60	0.50	0.50		
Date Sampled	25-Oct-16	25-Oct-16	26-Oct-16	26-Oct-16	26-Oct-16	26-Oct-16	26-Oct-16	26-Oct-16		
Sample Type	Soil	Soil - D	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	4A	5A	6A	6A	6A	6A	6A	4A		
% Stones >10mm$_A$	<0.1	-	-	-	-	-	-	-	% w/w	A-T-002
pH$_D$ NR	8.22	-	-	-	-	-	-	-	pH	A-T-001x
Sulphate (water sol 2:1)$_D$ NR	0.10	-	-	-	-	-	-	-	g/l	A-T-008x
Sulphate (acid soluble)$_D$ NR	530	-	-	-	-	-	-	-	mg/kg	A-T-008x
Arsenic$_D$ NR	18	-	-	-	-	-	-	-	mg/kg	A-T-029x
Cadmium$_D$ NR	1.8	-	-	-	-	-	-	-	mg/kg	A-T-029x
Copper$_D$ NR	64	-	-	-	-	-	-	-	mg/kg	A-T-029x
Chromium$_D$ NR	9	-	-	-	-	-	-	-	mg/kg	A-T-029x
Lead$_D$ NR	24	-	-	-	-	-	-	-	mg/kg	A-T-029x
Mercury$_D$	<0.17	-	-	-	-	-	-	-	mg/kg	A-T-029x
Nickel$_D$ NR	33	-	-	-	-	-	-	-	mg/kg	A-T-029x
Selenium$_D$	2	-	-	-	-	-	-	-	mg/kg	A-T-029x
Zinc$_D$ NR	130	-	-	-	-	-	-	-	mg/kg	A-T-029x

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 16/06871

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/06871/18	16/06871/19	16/06871/20	16/06871/21	16/06871/22	16/06871/23	16/06871/24	16/06871/25	Units	Method ref
Client Sample No		†								
Client Sample ID	TPP40	TPP41	TPP42	TPP43	TPP44	TPP45	TPP46	TPP47		
Depth to Top	0.55	0.40	0.50	0.40	0.40	0.50	0.40	0.40		
Depth To Bottom	0.60		0.60	0.50	0.50	0.60	0.50	0.50		
Date Sampled	25-Oct-16	25-Oct-16	26-Oct-16	26-Oct-16	26-Oct-16	26-Oct-16	26-Oct-16	26-Oct-16		
Sample Type	Soil	Soil - D	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	4A	6A	6A	6A	6A	6A	6A	4A		
Asbestos in Soil (inc. matrix)										
Asbestos in soil	NAD	NAD	NAD	NAD	NAD	NAD	NAD	Amosite		[illegible]
Asbestos Matrix (microscope)	-	-	-	-	-	-	-	Loose Insulation		[illegible]
Asbestos ACM - Suitable for Water Absorption Test?	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Asbestos in Soil Quantification % (Hand Picking & Weighing)										
Asbestos in soil % composition (hand picking and weighing)	-	-	-	-	-	-	-	<0.001	% w/w	[illegible]

Envirolab Job Number: 16/06871

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/06871/18	16/06871/19	16/06871/20	16/06871/21	16/06871/22	16/06871/23	16/06871/24	16/06871/25	Units	Method ref
Client Sample No		1								
Client Sample ID	TPP40	TPP41	TPP42	TPP43	TPP44	TPP45	TPP46	TPP47		
Depth to Top	0.55	0.40	0.50	0.40	0.40	0.50	0.40	0.40		
Depth To Bottom	0.60		0.60	0.50	0.50	0.60	0.50	0.50		
Date Sampled	25-Oct-16	25-Oct-16	26-Oct-16	26-Oct-16	26-Oct-16	26-Oct-16	26-Oct-16	26-Oct-16		
Sample Type	Soil	Soil - D	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	4A	6A	6A	6A	6A	6A	6A	4A		
PAH 16										
Acenaphthene$_A^{MC}$	<0.01	-	-	-	-	-	-	-	mg/kg	A-T-0156
Acenaphthylene$_A^{MC}$	<0.01	-	-	-	-	-	-	-	mg/kg	A-T-0156
Anthracene$_A^{MC}$	<0.02	-	-	-	-	-	-	-	mg/kg	A-T-0156
Benzo(a)anthracene$_A^{MC}$	0.06	-	-	-	-	-	-	-	mg/kg	A-T-0156
Benzo(a)pyrene$_A^{MC}$	0.07	-	-	-	-	-	-	-	mg/kg	A-T-0156
Benzo(b)fluoranthene$_A^{MC}$	<0.05	-	-	-	-	-	-	-	mg/kg	A-T-0156
Benzo(ghi)perylene$_A^{MC}$	<0.05	-	-	-	-	-	-	-	mg/kg	A-T-0156
Benzo(k)fluoranthene$_A^{MC}$	<0.07	-	-	-	-	-	-	-	mg/kg	A-T-0156
Chrysene$_A^{MC}$	<0.06	-	-	-	-	-	-	-	mg/kg	A-T-0156
Dibenzo(ah)anthracene$_A^{MC}$	<0.04	-	-	-	-	-	-	-	mg/kg	A-T-0156
Fluoranthene$_A^{MC}$	<0.08	-	-	-	-	-	-	-	mg/kg	A-T-0156
Fluorene$_A^{MC}$	<0.01	-	-	-	-	-	-	-	mg/kg	A-T-0156
Indeno(123-cd)pyrene$_A^{MC}$	0.04	-	-	-	-	-	-	-	mg/kg	A-T-0156
Naphthalene$_A^{MC}$	<0.03	-	-	-	-	-	-	-	mg/kg	A-T-0156
Phenanthrene$_A^{MC}$	0.05	-	-	-	-	-	-	-	mg/kg	A-T-0156
Pyrene$_A^{MC}$	<0.07	-	-	-	-	-	-	-	mg/kg	A-T-0156
PAH (total 16)$_A^{MC}$	0.21	-	-	-	-	-	-	-	mg/kg	A-T-0156

Envirolab Job Number: 16/06871

Client Project Name: Angmering

Client Project Ref: 27521

Lab Sample ID	16/06871/18	16/06871/19	16/06871/20	16/06871/21	16/06871/22	16/06871/23	16/06871/24	16/06871/25	Units	Method ref
Client Sample No		1								
Client Sample ID	TPP48	TPP41	TPP42	TPP43	TPP44	TPP45	TPP46	TPP47		
Depth to Top	0.35	0.30	0.30	0.40	0.40	0.30	0.40	0.40		
Depth To Bottom	0.60		0.50	0.50	0.50	0.50	0.50	0.50		
Date Sampled	25-Oct-16	25-Oct-16	26-Oct-16	26-Oct-16	26-Oct-16	26-Oct-16	26-Oct-16	26-Oct-16		
Sample Type	Soil	Soil - D	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	4A	5A	5A	5A	5A	5A	5A	4A		
TPH CWG										
Ali >C5-C6$_A$	<0.02	-	-	-	-	-	-	-	mg/kg	A-T-002x
Ali >C6-C8$_A$	<0.01	-	-	-	-	-	-	-	mg/kg	A-T-002x
Ali >C8-C10$_A$	<0.01	-	-	-	-	-	-	-	mg/kg	A-T-002x
Ali >C10-C12$_A$	<0.1	-	-	-	-	-	-	-	mg/kg	A-T-002x
Ali >C12-C16$_A$	<0.1	-	-	-	-	-	-	-	mg/kg	A-T-002x
Ali >C16-C21$_A$	<0.1	-	-	-	-	-	-	-	mg/kg	A-T-002x
Ali >C21-C35$_A$	<0.1	-	-	-	-	-	-	-	mg/kg	A-T-002x
Total Aliphatics$_A$	<0.1	-	-	-	-	-	-	-	mg/kg	A-T-002x
Aro >C5-C7$_A$	<0.01	-	-	-	-	-	-	-	mg/kg	A-T-002x
Aro >C7-C8$_A$	<0.01	-	-	-	-	-	-	-	mg/kg	A-T-002x
Aro >C8-C9$_A$	<0.01	-	-	-	-	-	-	-	mg/kg	A-T-002x
Aro >C9-C10$_A$	<0.01	-	-	-	-	-	-	-	mg/kg	A-T-002x
Aro >C10-C12$_A$	<0.1	-	-	-	-	-	-	-	mg/kg	A-T-002x
Aro >C12-C16$_A$	<0.1	-	-	-	-	-	-	-	mg/kg	A-T-002x
Aro >C16-C21$_A$	<0.1	-	-	-	-	-	-	-	mg/kg	A-T-002x
Aro >C21-C35$_A$	<0.1	-	-	-	-	-	-	-	mg/kg	A-T-002x
Total Aromatics$_A$	<0.1	-	-	-	-	-	-	-	mg/kg	A-T-002x
TPH (Ali & Aro)$_A$	<0.1	-	-	-	-	-	-	-	mg/kg	A-T-002x
BTEX - Benzene$_A$	<0.01	-	-	-	-	-	-	-	mg/kg	A-T-002x
BTEX - Toluene$_A$	<0.01	-	-	-	-	-	-	-	mg/kg	A-T-002x
BTEX - Ethyl Benzene$_A$	<0.01	-	-	-	-	-	-	-	mg/kg	A-T-002x
BTEX - m & p Xylene$_A$	<0.01	-	-	-	-	-	-	-	mg/kg	A-T-002x
BTEX - o Xylene$_A$	<0.01	-	-	-	-	-	-	-	mg/kg	A-T-002x
MTBE$_A$	<0.01	-	-	-	-	-	-	-	mg/kg	A-T-002x

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Envirolab Job Number: 16/06871

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/06871/26	16/06871/27	16/06871/28	16/06871/29	16/06871/30	16/06871/31	16/06871/32	16/06871/33	Units	Method ref
Client Sample No										
Client Sample ID	TPP48	TPP49	TPP50	TPP51	TPP52	TPP53	TPP54	TPP55		
Depth to Top	0.40	0.50	0.45	0.40	0.40	0.40	0.40	0.40		
Depth To Bottom	0.50	0.60	0.50	0.50	0.50	0.50	0.50	0.50		
Date Sampled	25-Oct-16	25-Oct-16	25-Oct-16	25-Oct-16	25-Oct-16	25-Oct-16	25-Oct-16	25-Oct-16		
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	4A	4A	4A	5A	4A	6A	3A	3A		
Asbestos in Soil (inc. matrix)										
Asbestos in soil[4]	Chrysotile	Chrysotile	Amosite	NAD	NAD	NAD	NAD	NAD		A-T-005
Asbestos Matrix (visual)[4]	-	Cement	-	-	-	-	-	-		A-T-005
Asbestos Matrix (microscope)[4]	Loose Fibres	Cement	Loose Fibres	-	-	-	-	-		A-T-005
Asbestos ACM - Suitable for Water Absorption Test?	N/A	No	No	N/A	N/A	N/A	N/A	N/A		

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Envirolab Job Number: 16/06871

Client Project Name: Angmering

Client Project Ref: 27521

Lab Sample ID	16/06871/34	16/06871/35	16/06871/36	16/06871/38	16/06871/39	16/06871/40	16/06871/41	16/06871/42	Units	Method ref
Client Sample No										
Client Sample ID	TPPS6	TPPS7	TPPS8	TPPS9	TPP60	TPP61	TPP62	TPPS3		
Depth to Top	0.50	0.40	0.40	0.40	0.50	0.50	0.40	0.50		
Depth To Bottom	0.60	0.50	0.850	0.50	0.60	0.60	0.50	0.60		
Date Sampled	25-Oct-16	25-Oct-16	25-Oct-16	25-Oct-16	25-Oct-16	25-Oct-16	25-Oct-16	25-Oct-16		
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	4AB	4A	6A	3A	5A	6A	6A	6A		
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_A^*$	NAD	NAD	NAD	NAD	NAD	Chrysotile	NAD	NAD		A-T-045
Asbestos Matrix (microscope)$_A$	-	-	-	-	-	Loose Fibres	-	-		A-T-045
Asbestos ACM - Suitable for Water Absorption Test?	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		

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Envirolab Job Number: 16/06871

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	16/06871/43	16/06871/44	16/06871/46						Units	Method ref
Client Sample No										
Client Sample ID	TPP64	TPP27	TPP58 Cement							
Depth to Top	0.50	0.30								
Depth To Bottom	0.50									
Date Sampled	25-Oct-16	25-Oct-16	25-Oct-16							
Sample Type	Soil	Solid - Fragment / Tile	Solid - Fragment / Tile							
Sample Matrix Code	4A	8	8							
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_A$*	NAD	-	-							In-house
Asbestos ACM - Suitable for Water Absorption Test?	N/A	-	-							
Bulk Fibre ID (inc. matrix)										
Bulk Fibre Identification$_A$*	-	Chrysotile	NAD							In-house
Bulk Fibre Identification Matrix (visual)$_A$	-	Cement	-							In-house
Bulk Fibre Identification - Suitable for Water Absorption Test?$_D$	-	Yes	N/A							Gravimetry

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REPORT NOTES

General:
This report shall not be reproduced, except in full, without written approval from Envirolab.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure. These are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Soil chemical analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Asbestos:
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed.
Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.
Secondary Matrix Codes:
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:
IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve

Please contact us if you need any further information.

ARUN DISTRICT COUNCIL A/94/17/DOC

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Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT
SUPPLEMENT TO TEST REPORT 17/01531/1

Envirolab Job Number: 17/01531
Issue Number: 2 **Date:** 27 March, 2017

Client: RSK Environment Ltd Hemel
18 Frogmore Road
Hemel Hempstead
Hertfordshire
UK
HP3 9RT

Project Manager: Catherine Latimer/Craig Lewis/Nigel Austin
Project Name: Angmering
Project Ref: 27621
Order No: N/A
Date Samples Received: 02/03/17
Date Instructions Received: 02/03/17
Date Analysis Completed: 25/03/17

Prepared by:

[redacted]
Kate Keningale
Administrative Assistant

Approved by:

[redacted]
Lianne Bromiley
Senior Client Service Manager

ARUN DISTRICT COUNCIL A/94/17/DOC

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Envirolab Job Number: 17/01531 **Client Project Name: Angmering**

Client Project Ref: 27621

Lab Sample ID	17/01531/1	17/01531/2	17/01531/3	17/01531/4	17/01531/5				Units	Method ref
Client Sample No										
Client Sample ID	TP101A	TP102A	TP103A	TP104A	TP105A					
Depth to Top	0.50	0.50	0.60	0.70	0.60					
Depth To Bottom										
Date Sampled	28-Feb-17	28-Feb-17	28-Feb-17	28-Feb-17	28-Feb-17					
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES					
Sample Matrix Code	3AD	3A	3A	3A	6A					
% Stones >10mm$_A$*	9.3	4.6	2.4	1.7	6.8				% w/w	A/T-005
pH$_D$^{MC}	8.23	7.97	7.98	8.20	7.94				pH	A/T-005
Sulphate (water sol 2:1)$_E$^{MC}	0.11	0.08	0.09	0.07	0.08				g/l	A/T-005
Sulphate (acid soluble)$_D$^{MC}	370	250	340	310	290				mg/kg	A/T-005
Arsenic$_D$^{MC}	7	8	7	7	7				mg/kg	A/T-005
Cadmium$_D$^{MC}	2.0	2.1	2.1	2.1	2.1				mg/kg	A/T-005
Copper$_A$^{MC}	13	10	13	13	11				mg/kg	A/T-005
Chromium$_D$^{MC}	32	31	29	29	28				mg/kg	A/T-005
Chromium (hexavalent)$_D$	<1	<1	<1	<1	<1				mg/kg	A/T-005
Lead$_A$^{MC}	26	17	23	26	16				mg/kg	A/T-005
Mercury$_D$	<0.17	<0.17	<0.17	<0.17	<0.17				mg/kg	A/T-005
Nickel$_D$^{MC}	23	23	22	22	23				mg/kg	A/T-005
Selenium$_D$	<1	<1	<1	<1	<1				mg/kg	A/T-005
Zinc$_D$^{MC}	63	54	56	56	53				mg/kg	A/T-005

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Envirolab Job Number: 17/01531

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	17/01531/1	17/01531/2	17/01531/3	17/01531/4	17/01531/5				Units	Method ref
Client Sample No										
Client Sample ID	TP101A	TP102A	TP103A	TP104A	TP105A					
Depth to Top	0.50	0.50	0.50	0.70	0.60					
Depth To Bottom										
Date Sampled	28-Feb-17	28-Feb-17	28-Feb-17	28-Feb-17	28-Feb-17					
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES					
Sample Matrix Code	3AD	3A	3A	3A	5A					
Asbestos in Soil (inc. matrix)										
Asbestos in soil[4]	NAD	NAD	NAD	NAD	NAD					+-1-no
Asbestos ACM - Suitable for Water Absorption Test?	N/A	N/A	N/A	N/A	N/A					

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Envirolab Job Number: 17/01531

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	17/01531/1	17/01531/2	17/01531/3	17/01531/4	17/01531/5				Units	Method ref
Client Sample No										
Client Sample ID	TP101A	TP102A	TP103A	TP104A	TP105A					
Depth to Top	0.50	0.50	0.60	0.70	0.60					
Depth To Bottom										
Date Sampled	28-Feb-17	28-Feb-17	28-Feb-17	28-Feb-17	28-Feb-17					
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES					
Sample Matrix Code	3AD	3A	3A	3A	6A					
PAH 16										
Acenaphthene$_A^M$	<0.01	<0.01	<0.01	<0.01	<0.01				mg/kg	
Acenaphthylene$_A^M$	<0.01	<0.01	<0.01	<0.01	<0.01				mg/kg	
Anthracene$_A^M$	<0.02	<0.02	<0.02	<0.02	<0.02				mg/kg	
Benzo(a)anthracene$_A^M$	<0.04	<0.04	<0.04	<0.04	<0.04				mg/kg	
Benzo(a)pyrene$_A^M$	<0.04	<0.04	<0.04	<0.04	<0.04				mg/kg	
Benzo(b)fluoranthene$_A^M$	<0.05	<0.05	<0.05	<0.05	<0.05				mg/kg	
Benzo(ghi)perylene$_A^M$	<0.05	<0.05	<0.05	<0.05	<0.05				mg/kg	
Benzo(k)fluoranthene$_A^M$	<0.07	<0.07	<0.07	<0.07	<0.07				mg/kg	
Chrysene$_A^M$	<0.06	<0.06	<0.06	<0.06	<0.06				mg/kg	
Dibenzo(ah)anthracene$_A^M$	<0.04	<0.04	<0.04	<0.04	<0.04				mg/kg	
Fluoranthene$_A^M$	<0.08	<0.08	<0.08	<0.08	<0.08				mg/kg	
Fluorene$_A^M$	<0.01	<0.01	<0.01	<0.01	<0.01				mg/kg	
Indeno(123-cd)pyrene$_A^M$	<0.03	<0.03	<0.03	<0.03	<0.03				mg/kg	
Naphthalene$_A^M$	<0.03	<0.03	<0.03	<0.03	<0.03				mg/kg	
Phenanthrene$_A^M$	<0.03	<0.03	<0.03	<0.03	0.03				mg/kg	
Pyrene$_A^M$	<0.07	<0.07	<0.07	<0.07	<0.07				mg/kg	
PAH (total 16)$_A^M$	<0.08	<0.08	<0.08	<0.08	<0.08				mg/kg	

ARUN DISTRICT COUNCIL A/94/17/DOC

Envirolab Job Number: 17/01531

Client Project Name: Angmering

Client Project Ref: 27621

Lab Sample ID	17/01531/1	17/01531/2	17/01531/3	17/01531/4	17/01531/5				Units	Method ref
Client Sample No										
Client Sample ID	TP101A	TP102A	TP103A	TP104A	TP105A					
Depth to Top	0.50	0.50	0.60	0.70	0.60					
Depth To Bottom										
Date Sampled	28-Feb-17	28-Feb-17	28-Feb-17	28-Feb-17	28-Feb-17					
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES					
Sample Matrix Code	3AD	3A	3A	3A	6A					
TPH CWG										
Ali >C5-C6$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01				mg/kg	A-T-022x
Ali >C6-C8$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01				mg/kg	A-T-022x
Ali >C8-C10$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01				mg/kg	A-T-022x
Ali >C10-C12$_A^*$	<0.1	<0.1	<0.1	<0.1	<0.1				mg/kg	A-T-022x
Ali >C12-C16$_A^*$	<0.1	<0.1	<0.1	<0.1	<0.1				mg/kg	A-T-022x
Ali >C16-C21$_A^*$	<0.1	<0.1	<0.1	<0.1	<0.1				mg/kg	A-T-022x
Ali >C21-C35$_A^*$	<0.1	<0.1	<0.1	<0.1	<0.1				mg/kg	A-T-022x
Total Aliphatics$_A$	<0.1	<0.1	<0.1	<0.1	<0.1				mg/kg	A-T-022x
Aro >C5-C7$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01				mg/kg	A-T-022x
Aro >C7-C8$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01				mg/kg	A-T-022x
Aro >C8-C9$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01				mg/kg	A-T-022x
Aro >C9-C10$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01				mg/kg	A-T-022x
Aro >C10-C12$_A^*$	<0.1	<0.1	<0.1	<0.1	<0.1				mg/kg	A-T-022x
Aro >C12-C16$_A^*$	<0.1	<0.1	<0.1	<0.1	<0.1				mg/kg	A-T-022x
Aro >C16-C21$_A^*$	<0.1	<0.1	<0.1	<0.1	<0.1				mg/kg	A-T-022x
Aro >C21-C35$_A^*$	<0.1	<0.1	<0.1	<0.1	<0.1				mg/kg	A-T-022x
Total Aromatics$_A$	<0.1	<0.1	<0.1	<0.1	<0.1				mg/kg	A-T-022x
TPH (Ali & Aro)$_A$	<0.1	<0.1	<0.1	<0.1	<0.1				mg/kg	A-T-022x
BTEX - Benzene$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01				mg/kg	A-T-022x
BTEX - Toluene$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01				mg/kg	A-T-022x
BTEX - Ethyl Benzene$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01				mg/kg	A-T-022x
BTEX - m & p Xylene$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01				mg/kg	A-T-022x
BTEX - o Xylene$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01				mg/kg	A-T-022x
MTBE$_A^*$	<0.01	<0.01	<0.01	<0.01	<0.01				mg/kg	A-T-022x

ARUN DISTRICT COUNCIL A/94/17/DOC

envirolab

REPORT NOTES

General:
This report shall not be reproduced, except in full, without written approval from Envirolab.
All samples contained within this report, and any received with the same delivery, will be disposed of one month after the date of this report.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure. These are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Soil chemical analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts.
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Asbestos:
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed.
Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.
Secondary Matrix Codes:
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

Key:
IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve

Please contact us if you need any further information.

ARUN DISTRICT COUNCIL A/94/17/DOC

APPENDIX G
IMPORTED SOILS INFORMATION

ARUN DISTRICT COUNCIL A/94/17/DOC

BLAZE
CONSTRUCTION LTD

93 Leigh Road, Eastleigh, Hampshire, SO50 9DQ.
[redacted]
Building & Civil Engineering

Our Ref: 23571/CH/CD/609

Email

01st March 2017,

FAO Mr. S Lee
CALA Homes (South Home Counties) Limited
Tilford House
Farnham Business Park
Weydon Lane
Farnham
Surrey
GU9 8QT

Dear Sir

Re: Contract at Angmering

With reference to the above contract we attach certificate for imported topsoil for the bund.

Assuring you of our best attention at all times.

Yours faithfully,

[redacted]

Chas Howe
BLAZE CONSTRUCTION LTD

Enc

cc: Miss Elaine Broderick, Mr Sean Alger

ARUN DISTRICT COUNCIL A/94/17/DOC

Info

From: Caleb McIntyre [redacted]
Sent: 27 February 2017 13:32
To: Info
Subject: BS3882 Topsoil
Attachments: BS3882 Batch 4 OCLA16637sk.pdf

Good afternoon Paul

Further to our discussions please find attached BS3882 Cert for the soil being delivered to your site tomorrow.

Kind Regards

Caleb McIntyre | Eurogreen | 07880 358770

EUROGREEN ENVIRONMENTAL

[redacted]

GREENWASTE RECYCLING & LANDSCAPING SUPPLIES

ARUN DISTRICT COUNCIL A/94/17/DOC

[redacted] [redacted] [redacted]

Client Address:	Eurogreen, North Barn Farm, Titmore Lane, Worthing, West Sussex, BN12 6NZ
Our ref:	OCLA16637sk
Client Ref:	Verbal Caleb
Date:	21 October 2016

OEMAchem Ltd
Unit 4 Westwood Court
Brune Road, Totton,
Southampton
SO40 3WX

Soil Analysis Test against BS 3882

Sampled	10/10/2016	Report No	16-08988
Received	11/10/2016	Sample ref	76756
Product	Soil	Location	
Sampled By	Client	Site	Batch Four

Table 1 : Soil Texture (% m/m)

Texture	Method	Sample	Multipurpose Topsoil Range	Specific Purpose Range				
				Acidic	Calcareous	Low Fertility	Low fertility Acidic	Low fertility Calcareous
Clay Content	5.05	17		5 to 35				
Silt Content	5.05	37		0 to 65				
Sand Content	5.05	39		30 to 85				
Soil Texture Class	5.05	Sandy Silt Loam		Note; See soil texture triangle in BS3882:2015 for allowed soils				

Table 2 :Mass Loss on ignition (%)

	Method	Sample	Multipurpose Topsoil Range	Specific Purpose Range				
				Acidic	Calcareous	Low Fertility	Low fertility Acidic	Low fertility Calcareous
Clay (5 – 20 %)	6.07	5.66	3 to 20	3 to 30	3 to 20	3 to 30	3 to 30	2 to 20
Clay (20 – 35%)	-		5 to 30	5 to 30	5 to 20	3 to 30	3 to 30	2 to 20

Table 3: Maximum Coarse Fragment Content (% (m/m))

	Sample	Multipurpose Topsoil Range	Specific Purpose Range				
			Acidic	Calcareous	Low Fertility	Low fertility Acidic	Low fertility Calcareous
> 2 mm	7	0 – 30					
> 20 mm	<1	0 – 10					
> 50 mm	<1	0					

Table 4: Chemical Analysis (air-dried, sieved (< 2 mm) soil)

Analyte	Method	Sample	Multipurpose Topsoil Range			Specific Purpose Range		
				Acidic	Calcareous	Low Fertility	Low fertility Acidic	Low fertility Calcareous
Soil pH Value	5.03	7.7	5.5 – 8.5	3.5 – 5.5	7.5 – 9.0	3.5 – 9.0	3.5 – 5.5	7.5 – 9.0
Carbonate (%)	6.07	2.6	--	--	>1	--		>1

ARUN DISTRICT COUNCIL A/94/17/DOC

[redacted] [redacted] [redacted]

Table 5: Available Plant Nutrient Content

	Method	Sample	Multipurpose Topsoil Range	Specific Purpose Range				
				Acidic	Calcareous	Low Fertility	Low fertility Acidic	Low fertility Calcareous
Nitrogen % m/m		0.4	>0.15	>0.15	>0.15	-	-	-
Extractable Phosphate mg/l	6.08	93	16 - 140	16 - 140	16 - 140	<20	<20	<20
Extractable Potassium mg/l	6.08	369	121 - 1500	121 - 1500	121 - 1500	-	-	-
Extractable Magnesium	6.08	213	51 - 600	51 - 600	51 - 600	-	-	-
Carbon:Nitrogen ratio	6.08	15:1	< 20:1	< 20:1	< 20:1	<35:1	<35:1	<20:1
Soil Electrical Conductivity		2870	3300					
Exchangeable sodium percentage % *	6.08	N/A	< 15					

* *Need be measured only if the electrical conductivity is greater than 2800*

Table 6: Phytotoxic Contaminants (by soil pH) (mg/kg) analyses carried out on air dried samples

	Method	Sample	Multipurpose and specific purpose topsoils		
Soil pH Range			< 6.0	6.0 – 7.0	> 7.0
Zinc	6.08	111	< 200	< 200	< 300
Copper	6.08	26	< 100	< 135	< 200
Nickel	6.08	18.5	< 60	< 75	< 110

Table 7: Additional Physical characteristics

	Method	Sample	Multipurpose and specific purpose topsoils
Plastics	6.01	<0.01	0.25%
Sharps	6.07	0	0%
Total Visible contaminants	--	<0.01	<0.5%

Comments (including details of weeds and other visable contaminants - all commnets are beyond the scope of our accreditation

This sample does meet the requirements of BS3882 and is compliant to the following:

	Multipurpose Topsoil Range	Specific Purpose Range				
		Acidic	Calcareous	Low Fertility	Low fertility Acidic	Low fertility Calcareous
Compliant:	YES	NO	YES	No	No	No

Mark Chiverton
Managing Directo
Oemachem Ltd [redacted]

EUROGREEN
ENVIRONMENTAL

CONVEYANCE WASTE
TRANSFER NOTE
Note No. 1325

SUPPLIERS OF: COMPOST | TOPSOIL | SAND | LOAM | WOODCHIP | INERT MARINE | AGGREGATES

Collected From:

Date:

Customer Name:

Time:

Site Address:

Description of material:

Cubic Metres Collected:

Tonnes Collected: 2.0

EWC Code(s):

Vehicle Reg. No:

Company Name Receiving Waste/Material:

Address:

Driver Signature: [redacted]

Customer Signature: [redacted]

Customer ordering vehicle: on the public highway as an activity on their own responsibility

I confirm that I have fulfilled my duty to apply the waste hierarchy as required by Regulation 12 of the Waste (England and Wales) Regulations 2011.

Certified that the above particulars are true and relate to the Waste/Material being conveyed in the vehicle described, which Waste/Material is being conveyed in pursuance of a trade or agreement for the sale thereof made by the customer named or not.

CARRIER REG. NO: CBDU58167

North Bath Farm, Stroud Lane, Worthing, West Sussex, BN13 3NX

EUROGREEN
ENVIRONMENTAL

CONVEYANCE WASTE
TRANSFER NOTE
Note No. 1326

SUPPLIERS OF: COMPOST | TOPSOIL | SAND | LOAM | WOODCHIP | INERT MARINE | AGGREGATES

Collected From:

Date:

Customer Name:

Time:

Site Address:

Description of material:

Cubic Metres Collected:

Tonnes Collected: 2.0

EWC Code(s):

Vehicle Reg. No:

Company Name Receiving Waste/Material:

Address:

Driver Signature: [redacted]

Customer Signature: [redacted]

Customer ordering vehicle: on the public highway as an activity on their own responsibility

I confirm that I have fulfilled my duty to apply the waste hierarchy as required by Regulation 12 of the Waste (England and Wales) Regulations 2011.

Certified that the above particulars are true and relate to the Waste/Material being conveyed in the vehicle described, which Waste/Material is being conveyed in pursuance of a trade or agreement for the sale thereof made by the customer named or not.

CARRIER REG. NO: CBDU58167

North Bath Farm, Stroud Lane, Worthing, West Sussex, BN13 3NX

ARUN DISTRICT COUNCIL A/94/17/DOC

EUROGREEN
ENVIRONMENTAL

CONVEYANCE WASTE
TRANSFER NOTE
Note No. 1327

SUPPLIES OF: COMPOST TOPSOIL TIMB LOGS WOODCHIP HORSE MANURE AGGREGATES

Collection From: Date:

Customer Name: Time:

Site Address:

Description of material:

Order Number Delivered: Tonnes Collected:

Ref/ Contact:

Vehicle Reg. No:

Company Name Receiving Waste Material:

Address:

Driver Signature: [redacted] Customer Signature: [redacted]

Customer signing confirms all the points together as to waiving on their own responsibility

I confirm that I have fulfilled my duty of care in the waste hierarchy as requested by Regulation 12 of the Waste (England and Wales) Regulations 2011.

I confirm that the above particulars are true and relate to the Waste Materials being conveyed in the vehicle described, which Waste Material is being conveyed in pursuance of a sale or agreement for the said material made by the sales owner or him

CARRIER REG. NO: CBDU94187

North Bank Farm, Tinwood Lane, Worthing, West Sussex, BN13 3NU

EUROGREEN
ENVIRONMENTAL

CONVEYANCE WASTE
TRANSFER NOTE
Note No. 1352

SUPPLIES OF: COMPOST TOPSOIL TIMB LOGS WOODCHIP HORSE MANURE AGGREGATES

Collected From: Date:

Customer Name: Time:

Site Address:

Description of material:

Order Number Delivered: Tonnes Collected:

EWC Code(s):

Vehicle Reg. No:

Company Name Receiving Waste Material:

Address:

Driver Signature: [redacted] Customer Signature: [redacted]

Customer signing confirms all the points together as to waiving on their own responsibility

I confirm that I have fulfilled my duty of care in the waste hierarchy as requested by Regulation 12 of the Waste (England and Wales) Regulations 2011.

I confirm that the above particulars are true and relate to the Waste Materials being conveyed in the vehicle described, which Waste Material is being conveyed in pursuance of a sale or agreement for the said material made by the sales owner or him

CARRIER REG. NO: CBDU94187

North Bank Farm, Tinwood Lane, Worthing, West Sussex, BN13 3NU

EUROGREEN ENVIRONMENTAL

CONVEYANCE WASTE TRANSFER NOTE

Note No. 1593

SUPPLIERS OF COMPOST TOPSOIL TURF LOGS WOODCHIP BRICK RUBBLE AGGREGATES

Customer Name: ..... Date: .....

Customer Address: ..... Time: .....

Site Address: .....

Description of Material: .....

Cubic Metres Collected: ..... Tonnes Collected: .....

EWC Code(s): .....

Vehicle Reg. No: .....

Company Name Requiring Waste Material: .....

Address: .....

Driver Signature: [redacted] Customer Signature: [redacted]

Customers ordering vehicles off the public highway do so entirely at their own responsibility

I confirm that I have fulfilled my duty to apply the waste hierarchy, as required by Regulation 12 of the Waste (England and Wales) Regulations 2011.

I certify that the above particulars are true and relate to the Waste Materials being conveyed in the vehicle described, which Waste Materials is being conveyed in pursuance of a sale or agreement for the sale thereof made by the above-named or not.

CARRIER REG. NO: CBDU58167

Waste Trans Form, Stroud Lane, Warninglid, West Sussex, RH17 5TW

EUROGREEN ENVIRONMENTAL

CONVEYANCE WASTE TRANSFER NOTE

Note No. 1331

SUPPLIER OF | COMPANY | TYPE(S) | TONS | LOAD | WORKSHOP | ROUTE NUMBER | AGGREGATES

Collected From: [redacted] Date: [redacted]

Customer Name: [redacted] Time: [redacted]

Site Address: [redacted]

Description of material: [redacted]

Duties Metres Collected: [redacted] Tonnes Collected: [redacted]

EWC Code(s): [redacted]

Vehicle Reg. No: [redacted]

Company name Receiving Waste/Materials: [redacted]

Address: [redacted]

Driver Signature: [redacted] Customer Signature: [redacted]

I confirm that I have fulfilled my duty to apply the waste hierarchy as required by Regulation 12 of the Waste (England and Wales) Regulations 2011.

Certified that the above particulars are true and relate to the Waste/Materials being conveyed in the vehicle described, which Waste/Material is being conveyed in pursuance of a sale or agreement for the sale thereof made by the Customer named or not.

CARRIER REG. NO. CBDU59757

North Barn Farm, Tinwood Lane, Wisborough, West Sussex, PH13 0NZ

EUROGREEN ENVIRONMENTAL

CONVEYANCE WASTE TRANSFER NOTE

Note No: 1316

SUPPLIERS OF: COMPOST TOPSOIL TURF LOGS WOODCHIP HORSE MANURE AGGREGATES

Collected From: EUROGREEN Date: 28-02-17

Customer Name: BLAZE CONSTRUCTION Time:

Site Address: TITNORE LANE, WORTHING

Description of material: TOPSOIL

Cubic Metres Collected: /

Tonnes Collected: 20

EWC Code(s):

Vehicle Reg. No: WN61 JXK

Company Name Receiving Waste/Material: BLAZE CONSTRUCTION

Address: C/O CALA HOMES, ROUNDSTONE LANE, ANGMERING BN16 4AX

Driver Signature: [redacted]

Customer Signature: [redacted]

Customers ordering vehicles off the public highway do so entirely on their own responsibility

I confirm that I have fulfilled my duty to apply the waste hierarchy as requested by Regulation 12 of the Waste (England and Wales) Regulations 2011.

Certified that the above particulars are true and relate to the Waste/Materials being conveyed in the vehicle described, which Waste/Material is being conveyed in pursuance of: a sale or agreement for the sale thereof made by the cubic metre or ton.

CARRIER REG. NO: CBDU58167

North Barn Farm, Titnore Lane, Worthing, West Sussex, BN12 6NZ

ARUN DISTRICT COUNCIL A/94/17/DOC

EUROGREEN ENVIRONMENTAL

CONVEYANCE WASTE TRANSFER NOTE

Note No: 1317

SUPPLIERS OF: COMPOST TOPSOIL TURF LOGS WOODCHIP HORSE MANURE AGGREGATES

Collected From: EUROGREEN Date: 28-02-17

Customer Name: BLAZE CONSTRUCTION Time:

Site Address: TITNORE LANE, WORTHING

Description of material: TOPSOIL

Cubic Metres Collected: /

Tonnes Collected: 20

EWC Code(s):

Vehicle Reg. No: WN61 JXK

Company Name Receiving Waste/Material: BLAZE CONSTRUCTION

Address: C/O CALA HOMES, ROUNDSTONE LANE, ANGMERING, BN16 4AX

Driver Signature: [redacted]

Customer Signature: [redacted]

Customers ordering vehicles off the public highway do so entirely on their own responsibility

I confirm that I have fulfilled my duty to apply the waste hierarchy as requested by Regulation 12 of the Waste (England and Wales) Regulations 2011.

Certified that the above particulars are true and relate to the Waste/Materials being conveyed in the vehicle described, which Waste/Material is being conveyed in pursuance of: a sale or agreement for the [illegible] thereof made by the cubic metre or ton.

CARRIER REG. NO: CBDU58167

ARUN DISTRICT COUNCIL A/94/17/DOC

EUROGREEN ENVIRONMENTAL

CONVEYANCE WASTE TRANSFER NOTE

Note No: 1318

SUPPLIERS OF: COMPOST TOPSOIL TURF LOGS WOODCHIP HORSE MANURE AGGREGATES

Collected From: EUROGREEN Date: 28-02-17

Customer Name: BLAZE CONSTRUCTION Time:

Site Address: TITNORE LANE

WORTHING

Description of material: TOPSOIL

Cubic Metres Collected:

Tonnes Collected: 20

EWC Code(s):

Vehicle Reg. No: MN61 JXK

Company Name Receiving Waste/Material: BLAZE CONSTRUCTION

Address: C/O CALA HOMES, ROUNDSTONE LANE

ANGMERING, BN16 4AX

Driver Signature: [redacted]

Customer Signature [redacted]

Customers ordering vehicles off the public highway do so entirely on their own responsibility

I confirm that I have fulfilled my duty to apply the waste hierarchy as requested by Regulation 12 of the Waste (England and Wales) Regulations 2011.

Certified that the above particulars are true and relate to the Waste/Materials being conveyed in the vehicle described, which Waste/Material is being conveyed in pursuance of: a sale or agreement for the ...e thereof made by the cubic metre or ton.

CARRIER REG. NO: CBDU58167

North Barn Farm, Titnore Lane, Worthing, West Sussex, BN12 6NZ

ARUN DISTRICT COUNCIL A/94/17/DOC

EUROGREEN ENVIRONMENTAL

CONVEYANCE WASTE TRANSFER NOTE

Note No: 1319

SUPPLIERS OF: COMPOST TOPSOIL TURF LOGS WOODCHIP HORSE MANURE AGGREGATES

Collected From: EUROGREEN Date: 28-02-17

Customer Name: BLAZE CONSTRUCTION Time:

Site Address: TITNORE LANE,
WORTHING

Description of material: TOPSOIL

Cubic Metres Collected: —

Tonnes Collected: 20

EWC Code(s):

Vehicle Reg. No: WN61 JXK

Company Name Receiving Waste/Material: BLAZE CONSTRUCTION

Address: C/O CALA HOMES ROUNDSTONE LANE,
ANGMERING BN16 4AX

Driver Signature: [redacted]

Customer Signature [redacted]

Customers [redacted] entirely on their own responsibility

I confirm that I have fulfilled my duty to apply the waste hierarchy as requested by Regulation 12 of the Waste (England and Wales) Regulations 2011.

Certified that the above particulars are true and relate to the Waste/Materials being conveyed in the vehicle described, which Waste/Material is being conveyed in pursuance of: a sale or agreement for the [illegible] thereof made by the cubic metre or ton.

CARRIER REG. NO: CBDU58167

ARUN DISTRICT COUNCIL A/94/17/DOC

EUROGREEN ENVIRONMENTAL

CONVEYANCE WASTE TRANSFER NOTE

Note No: 1320

SUPPLIERS OF: COMPOST TOPSOIL TURF LOGS WOODCHIP HORSE MANURE AGGREGATES

Collected From: EUROGREEN Date: 28-02-17

Customer Name: BLAZE CONSTRUCTION Time:

Site Address: TITNORE LANE,
WORTHING

Description of material: TOPSOIL

Cubic Metres Collected: /

Tonnes Collected: 20

EWC Code(s):

Vehicle Reg. No: LN14 JXK

Company Name Receiving Waste/Material: BLAZE CONSTRUCTION

Address: C/O CALA HOMES, ROUNDSTONE LANE,
ANGMERING BN16 4AX

Driver Signature: [redacted]

Customer Signature [redacted]

Customers ordering vehicles on the public highway do so entirely on their own responsibility

I confirm that I have fulfilled my duty to apply the waste hierarchy as requested by Regulation 12 of the Waste (England and Wales) Regulations 2011.

Certified that the above particulars are true and relate to the Waste/Materials being conveyed in the vehicle described, which Waste/Material is being conveyed in pursuance of: a sale or agreement for the ...e thereof made by the cubic metre or ton.

CARRIER REG. NO: CBDU58167

ARUN DISTRICT COUNCIL A/94/17/DOC

EUROGREEN ENVIRONMENTAL

CONVEYANCE WASTE TRANSFER NOTE

Note No: 1321

SUPPLIERS OF: COMPOST TOPSOIL TURF LOGS WOODCHIP HORSE MANURE AGGREGATES

Collected From: EUROGREEN Date: 28-02-17

Customer Name: BLAZE CONSTRUCTION Time:

Site Address: TITNORE LANE,
WORTHING

Description of material: TOPSOIL

Cubic Metres Collected:

Tonnes Collected: 20

EWC Code(s):

Vehicle Reg. No: WN61 JXK

Company Name Receiving Waste/Material: BLAZE CONSTRUCTION

Address: C/O CALA HOMES, ROUNDSTONE LANE,
ANGMERING BN16 4AX

Driver Signature: [redacted]

Custome Signature [redacted]

Customers ordering vehicles off the public highway do so entirely on their own responsibility

I confirm that I have fulfilled my duty to apply the waste hierarchy as requested by Regulation 12 of the Waste (England and Wales) Regulations 2011.

Certified that the above particulars are true and relate to the Waste/Materials being conveyed in the vehicle described, which Waste/Material is being conveyed in pursuance of: a sale or agreement for the sale thereof made by the cubic metre or ton.

CARRIER REG. NO: CBDU58167

North Barn Farm, Titnore Lane, Worthing, West Sussex, BN12 6NZ

ARUN DISTRICT COUNCIL A/94/17/DOC

EUROGREEN ENVIRONMENTAL

CONVEYANCE WASTE TRANSFER NOTE

Note No: 1322

SUPPLIERS OF: COMPOST TOPSOIL TURF LOGS WOODCHIP HORSE MANURE AGGREGATES

Collected From: EUROGREEN Date: 28-02-17

Customer Name: BLAZE CONSTRUCTION Time:

Site Address: TITNORE LANE,

WORTHING

Description of material: TOPSOIL

Cubic Metres Collected: /

Tonnes Collected: 20

EWC Code(s):

Vehicle Reg. No: WN61JXK

Company Name Receiving Waste/Material: BLAZE CONSTRUCTION

Address: C/O CALA HOMES ROUNDSTONE LANE

ANGMERING BN16 4AX

Driver Signature: [redacted]

Customer Signature: [redacted]

Customers ordering vehicles off the public highway do so entirely on their own responsibility

I confirm that I have fulfilled my duty to apply the waste hierarchy as requested by Regulation 12 of the Waste (England and Wales) Regulations 2011.

Certified that the above particulars are true and relate to the Waste/Materials being conveyed in the vehicle described, which Waste/Material is being conveyed in pursuance of: a sale or agreement for the sale thereof made by the cubic metre or ton.

CARRIER REG. NO: CBDU58167

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EUROGREEN ENVIRONMENTAL

CONVEYANCE WASTE TRANSFER NOTE

Note No: 1323

SUPPLIERS OF: COMPOST TOPSOIL TURF LOGS WOODCHIP HORSE MANURE AGGREGATES

Collected From: EUROGREEN Date: 28-02-17

Customer Name: BLAZE CONSTRUCTION Time:

Site Address: TITNORE LANE

WORTHING

Description of material: TOPSOIL

Cubic Metres Collected: /

Tonnes Collected: 20

EWC Code(s):

Vehicle Reg. No: WN61 JXK

Company Name Receiving Waste/Material: BLAZE CONSTRUCTION

Address: C/O CALA HOMES ROUNDSTONE LANE

ANGMERING BN16 4AX

Driver Signature: [redacted]

Customer Signature: [redacted]

Customers ordering vehicles off the public highway do so entirely on their own responsibility

I confirm that I have fulfilled my duty to apply the waste hierarchy as requested by Regulation 12 of the Waste (England and Wales) Regulations 2011.

Certified that the above particulars are true and relate to the Waste/Materials being conveyed in the vehicle described, which Waste/Material is being conveyed in pursuance of: a sale or agreement for the ...le thereof made by the cubic metre or ton.

CARRIER REG. NO: CBDU58167

ARUN DISTRICT COUNCIL A/94/17/DOC

EUROGREEN ENVIRONMENTAL

CONVEYANCE WASTE TRANSFER NOTE

Note No: 1324

SUPPLIERS OF: COMPOST TOPSOIL TURF LOGS WOODCHIP HORSE MANURE AGGREGATES

Collected From: EUROGREEN Date: 22-02-17

Customer Name: BLAZE CONSTRUCTION Time:

Site Address: TITNORE LANE

WORTHING

Description of material: TOPSOIL

Cubic Metres Collected: /

Tonnes Collected: 20

EWC Code(s):

Vehicle Reg. No: MN61 JXK

Company Name Receiving Waste/Material: BLAZE CONSTRUCTION

Address: C/O CALA HOMES, ROWNSTONE LANE

ANGMERING BN16 4AX

Driver Signature: [redacted]

Customer Signature: [redacted]

Customers ordering vehicles off the public highway do so entirely on their own responsibility

I confirm that I have fulfilled my duty to apply the waste hierarchy as requested by Regulation 12 of the Waste (England and Wales) Regulations 2011.

Certified that the above particulars are true and relate to the Waste/Materials being conveyed in the vehicle described, which Waste/Material is being conveyed in pursuance of: a sale or agreement for the ...le thereof made by the cubic metre or ton.

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EUROGREEN ENVIRONMENTAL

CONVEYANCE WASTE TRANSFER NOTE

Note No: 1586

SUPPLIERS OF: COMPOST TOPSOIL TURF LOGS WOODCHIP HORSE MANURE AGGREGATES

Collected From: ..... Date: .....

Customer Name: ..... Time: .....

Site Address: .....

.....

Description of material: .....

.....

Cubic Metres Collected: [ ]

Tonnes Collected: [ ]

EWC Code(s): .....

Vehicle Reg. No: .....

Company Name Receiving Waste/Material: .....

Address: .....

.....

Drive[redacted]

Signa[redacted] .....

Customer Signature: [redacted]

Customers ordering vehicles off the public highway do so entirely on their own responsibility

I confirm that I have fulfilled my duty to apply the waste hierarchy as requested by Regulation 12 of the Waste (England and Wales) Regulations 2011.

Certified that the above particulars are true and relate to the Waste/Materials being conveyed in the vehicle described, which Waste/Material is being conveyed in pursuance of: a sale or agreement for the sale thereof made by the cubic metre or ton.

CARRIER REG. NO: CBDU58167

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CONVEYANCE WASTE TRANSFER NOTE

Note No: 1587

SUPPLIERS OF: COMPOST TOPSOIL TURF LOGS WOODCHIP HORSE MANURE AGGREGATES

Collected From: ..... Date: .....

Customer Name: ..... Time: .....

Site Address: .....

.....

Description of material: .....

.....

Cubic Metres Collected: Tonnes Collected:

EWC Code(s): .....

Vehicle Reg. No: .....

Company Name Receiving Waste/Material: .....

Address: .....

.....

Driver Signature: [redacted] Customer Signature: [redacted]

Customers ordering vehicles off the public highway do so entirely on their own responsibility

I confirm that I have fulfilled my duty to apply the waste hierarchy as requested by Regulation 12 of the Waste (England and Wales) Regulations 2011.

Certified that the above particulars are true and relate to the Waste/Materials being conveyed in the vehicle described, which Waste/Material is being conveyed in pursuance of: a sale or agreement for the sale thereof made by the cubic metre or ton.

CARRIER REG. NO: CBDU58167

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CONVEYANCE WASTE TRANSFER NOTE

Note No: 1588

SUPPLIERS OF: COMPOST TOPSOIL TURF LOGS WOODCHIP HORSE MANURE AGGREGATES

Collected From: Eurogreen Ltd Date: 27-2-19

Customer Name: Arun Construction Time: 10.52

Site Address: Old Arcon

Description of material: Concrete Rubble

Cubic Metres Collected:

Tonnes Collected:

EWC Code(s):

Vehicle Reg. No: [redacted]

Company Name Receiving Waste/Material:

Address:

Driver Signature: [redacted]

Customer Signature: [redacted]

Customers ordering vehicles off the public highway do so entirely on their own responsibility

I confirm that I have fulfilled my duty to apply the waste hierarchy as requested by Regulation 12 of the Waste (England and Wales) Regulations 2011.

Certified that the above particulars are true and relate to the Waste/Materials being conveyed in the vehicle described, which Waste/Material is being conveyed in pursuance of: a sale or agreement for the sale thereof made by the cubic metre or ton.

CARRIER REG. NO: CBDU58167

North Barn Farm, Titnore Lane, Worthing, West Sussex, BN12 6NZ

EUROGREEN ENVIRONMENTAL

CONVEYANCE WASTE TRANSFER NOTE

Note No: 1589

SUPPLIERS OF: COMPOST TOPSOIL TURF LOGS WOODCHIP HORSE MANURE AGGREGATES

Collected From: Date:

Customer Name: Time:

Site Address:

Description of material:

Cubic Metres Collected:

Tonnes Collected:

EWC Code(s):

Vehicle Reg. No:

Company Name Receiving Waste/Material:

Address:

Driver Signa[redacted]

Custome Signature[redacted]

Customers ordering vehicles off the public highway do so entirely on their own responsibility

I confirm that I have fulfilled my duty to apply the waste hierarchy as requested by Regulation 12 of the Waste (England and Wales) Regulations 2011.

Certified that the above particulars are true and relate to the Waste/Materials being conveyed in the vehicle described, which Waste/Material is being conveyed in pursuance of: a sale or agreement for the sale thereof made by the cubic metre or ton.

CARRIER REG. NO: CBDU58167

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CONVEYANCE WASTE TRANSFER NOTE

Note No: 1590

SUPPLIERS OF: COMPOST TOPSOIL TURF LOGS WOODCHIP HORSE MANURE AGGREGATES

Collected From: ..... Date: .....

Customer Name: ..... Time: .....

Site Address: .....

.....

Description of material: .....

.....

Cubic Metres Collected: [ ]

Tonnes Collected: [ ]

EWC Code(s): .....

Vehicle Reg. No: .....

Company Name Receiving Waste/Material: .....

Address: .....

.....

Drive[redacted]

Signa[redacted]

Custome[redacted]

Signatur[redacted]

Customers ordering vehicles off the public highway do so entirely on their own responsibility

I confirm that I have fulfilled my duty to apply the waste hierarchy as requested by Regulation 12 of the Waste (England and Wales) Regulations 2011.

Certified that the above particulars are true and relate to the Waste/Materials being conveyed in the vehicle described, which Waste/Material is being conveyed in pursuance of: a sale or agreement for the sale thereof made by the cubic metre or ton.

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CONVEYANCE WASTE TRANSFER NOTE

Note No: 1591

SUPPLIERS OF: COMPOST TOPSOIL TURF LOGS WOODCHIP HORSE MANURE AGGREGATES

Collected From: ..... Date: .....

Customer Name: ..... Time: .....

Site Address: .....

.....

Description of material: .....

.....

Cubic Metres Collected: | Tonnes Collected:

EWC Code(s): .....

Vehicle Reg. No: .....

Company Name Receiving Waste/Material: .....

Address: .....

.....

Driver Signature: ..... Customer Signature: .....

Customers ordering vehicles off the public highway do so entirely on their own responsibility

I confirm that I have fulfilled my duty to apply the waste hierarchy as requested by Regulation 12 of the Waste (England and Wales) Regulations 2011.

Certified that the above particulars are true and relate to the Waste/Materials being conveyed in the vehicle described, which Waste/Material is being conveyed in pursuance of: a sale or agreement for the sale thereof made by the cubic metre or ton.

CARRIER REG. NO: CBDU58167

North Barn Farm, Titnore Lane, Worthing, West Sussex, BN12 6NZ

APPENDIX H
PHOTOGRAPHIC LOG – ASBESTOS HOTSPOT VOLATILE SAMPLING WORKS

ARUN DISTRICT COUNCIL A/94/17/DOC

PHOTOGRAPHIC LOG

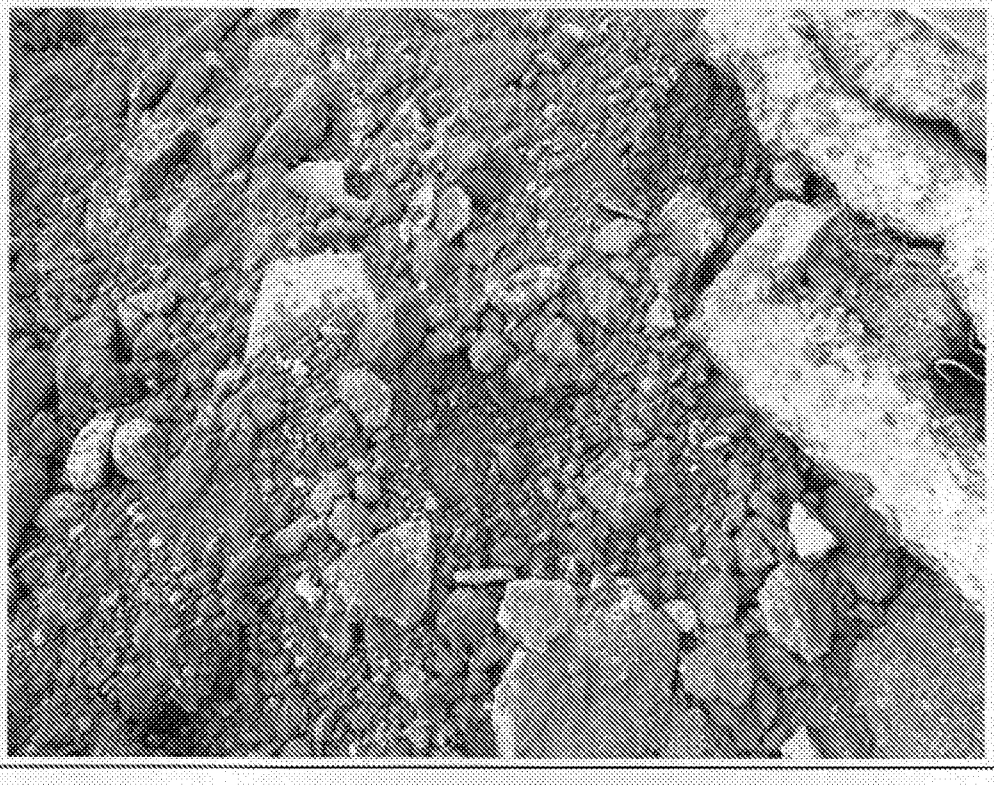
Site Location: Former West End Nursery, Angmering

Photo No. 1 **Date:** 12.4.17 View to the north east of excavated asbestos hotspot material within Keltbray processing area	
Photo No. 2 **Date:** 12.4.17 View to the north west of excavated asbestos hotspot material within Keltbray processing area, all stockpiles observed to be clearly labelled in accordance with the sites MMP	

ARUN DISTRICT COUNCIL A/94/17/DOC

PHOTOGRAPHIC LOG

Site Location:

Photo No. 3	
Date: 12.4.17	
Close up representative view of excavated asbestos hotspot materials including fragments of ACM concrete tiles.	

ARUN DISTRICT COUNCIL A/94/17/DOC