

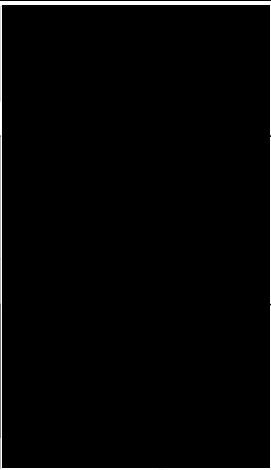
**REMEDIATION STRATEGY
AND VERIFICATION PLAN
FOR A SITE
AT
FORMER EASTLEIGH POLICE
STATION, LEIGH ROAD,
EASTLEIGH, HAMPSHIRE**



REPORT STATUS SHEET

Client:	Hamberley Development Limited
Report Title:	Remediation Strategy and Verification Plan for site at Former Eastleigh Police Station, Leigh Road, Eastleigh, Hampshire SO50 9DG
Report Number:	AG2854B-19-AK05
Report Status:	Validated Issue 2
Date:	March 2022
Detail of changes:	Addition of Discovery Strategy



		Date	Signed for and on behalf of Applied Geology
Report Author	F Downing BSc (Hons) Graduate Geologist	01/03/2022	
Checked	A P Smith BSc (Hons) PGDip FGS Principal Engineering Geologist	01/03/2022	
Authorised	J B Cartwright BEng (Hons) MSc FGS Managing Director	01/03/2022	

CONTENTS

1.0	INTRODUCTION	1
1.1	Objectives and Scope of Works	1
1.2	Existing Reports	1
2.0	SITE DETAILS	2
2.1	Site Description and Setting	2
2.2	Proposed Development	2
2.3	Summary of Previous Reports Findings	2
3.0	SCOPE OF REMEDIATION WORKS.....	3
3.1	Objectives.....	3
3.2	Organisations Involved.....	4
3.3	Remedial Strategy Design	4
3.4	Proposed Remediation Strategy	5
3.4.1	Removal of USTs and Above Ground Generator and Associated Tank.....	5
3.4.2	Sampling Beneath Existing Buildings.....	7
3.4.3	Supplementary Testing of Proposed Landscaped Areas	7
3.4.4	Discovery Strategy During Groundworks	8
3.4.5	Import of Topsoil for Landscaping	8
3.4.6	Further Groundwater Testing	9
3.4.7	Gas Protection Measures/Vapour Monitoring	9
3.4.8	Water Supply Pipes	9
3.4.9	Soil Management, Re-use and Disposal	10
4.0	VERIFICATION REPORT	10
5.0	UNEXPECTED CONDITIONS.....	10
6.0	THIRD PARTY CONTACTS.....	11

GENERAL NOTES

APPENDICES

APPENDIX A	DRAWINGS
	• Site Location Plan (AG2854B-19-01) • Exploratory Hole Location Plan (AG2854B-19-02) • Proposed Development Layout, Ref. 1186PL-RDT-ZZ-ZZ-DR-A-0100 REV PL6
APPENDIX B	VALIDATION CRITERIA
APPENDIX C	TOPSOIL IMPORT CRITERIA

1.0 INTRODUCTION

1.1 Objectives and Scope of Works

An area of land at the former Eastleigh Police Station in Hampshire is being considered for redevelopment by Hamberley Development Limited (the Client). The proposals for the site comprise the redevelopment of the former Eastleigh Police Station site, to provide an 80-bedroom care home, 5 close care apartments and a new block of 9 residential apartments.

Applied Geology was appointed by Hamberley Development Limited to derive a remedial strategy and validation criteria to assist in preparation and redevelopment of the site.

This Remediation Strategy and Verification Plan presents the proposed scope of the remedial work to be undertaken and the verification process to satisfy Planning Condition 8 (Planning Permission Ref. F/19/85332).

This risk assessment and subsequent remediation target levels are based on the requirement to ensure that following remediation, the site would be suitable for use, not be determined as Contaminated Land under the Part IIA system and as the remediation is taking place as a result of a change of use, the requirements of the National Planning Policy Framework (NPPF) apply.

This report has been prepared in accordance with guidance within the Contaminated Land Report 11 'Model Procedures for the Management of Land Contamination – Part 2, DRAFT 2v2', January 2008.

This document will need to be agreed with the relevant regulatory bodies (Local Authority) prior to implementation.

1.2 Existing Reports

Applied Geology has previously undertaken a ground investigation across the site and subsequently produced a number of reports, as follows:

- Phase 1 Desk Study report for site at Former Eastleigh Police Station, Leigh Road, Eastleigh, Hampshire SO50 9DG, Ref. AG2854-18-AE61-Issue 2, dated March 2019.
- Report on Ground Investigation at Former Eastleigh Police Station, Leigh Road, Eastleigh, Hampshire SO50 9DG, Ref. AG2854A-18-AH24-Issue 2, dated March 2019.
- Letter Report on Falling Head Permeability Tests, Ref. AG2854A-18-AH71, dated March 2019.
- Letter Report on Supplementary Investigation- Foundation Inspection Pits, Ref. AG2854B-19-AJ88, dated February 2020.

This report should be read in conjunction with the previous Applied Geology reports listed above for full details of the works undertaken to date, together with a full assessment of the findings. However, a brief summary of the key findings of these reports is presented in Section 2.2 below.

2.0 SITE DETAILS

2.1 Site Description and Setting

The site is located off Toynbee Road in Eastleigh, Hampshire, approximately 450m west of Eastleigh train station and 1.3km east of Junction 13 of the M3. The Ordnance Survey grid reference for the centre of the site is 445250,119167, as shown on the Site Location Plan (AG2854B-19-01), which can be found in Appendix A of this report.

The site is irregular in plan shape and covers an area of approximately 0.7ha.

Site inspection/walkovers have previously been undertaken by Applied Geology on three occasions, during the various phases of investigation. At the time of the walkovers and subsequent intrusive works, the site remained an active Police Station until the foundation inspection pits were undertaken in January 2020 when the site was vacant. There were various permanent and temporary buildings on site of variable sizes, predominantly located within the western half of the site. Asphalt hardstanding and compact gravel utilised as car parking were present within the central and north-eastern corners of the site, respectively. An area of overgrown shrubs, brambles and woodland was noted within the south-eastern corner of the site, whilst a maintained grassed lawn was located within the north-western corner of the site.

During the original walkover a generator containing a fuel tank (suspected diesel) was located along the southern boundary of the site adjacent to the main Police Station building. The generator was noted to stand on a concrete plinth that showed no signs of distress or contamination. Furthermore, two Underground Storage Tanks (USTs), previously identified by the petroleum officer, with one used for diesel and then other for super unleaded petroleum spirit, remained present within the central regions of the site. Documents received following site fieldwork indicated the USTs have been concrete slurry filled, however, during fieldwork the tanks were observed to be sand infilled near surface (the manhole covers were lifted and sand infill was visible).

2.2 Proposed Development

The proposals for the site comprise the redevelopment of the Former Eastleigh Police Station site comprising demolition of two semi-detached former police houses to the rear of the site and detached former police house to the centre of the site, demolition of outbuildings and partial demolition of Former Police Station building (removal of rear extensions) to provide an 80 bedroom care home (Use Class C2), 5 close care apartments (Use Class C2) and a new block of 9 residential apartments (Use Class C3), with widening of the footpath on Toynbee Road, and associated access works, parking, tree planting, landscaping and provision of site infrastructure. A plan illustrating the proposed redevelopment (Drawing No. 1186PL RDT ZZ ZZ DR A 0100 rev PL6, by RDT Architects), dated June 2018 can be found in Appendix A of this report.

2.3 Summary of Previous Reports Findings

A summary of the key conclusions from the previous reports is present below:

- Hardstanding was recorded across much of the central part of the site and a gravel car parking area was present in the eastern region. Made Ground was encountered beneath hardstanding, up to 1.50m thick, and comprised a

mixture of cohesive and granular material containing anthropogenic inclusions of brick, concrete ash and asphalt. In areas of existing soft landscaping, Topsoil was present from surface up to depths of between 0.30m and 0.40m bgl. In these locations Made Ground was absent.

- Strata considered to be River Terrace Deposits were encountered in all locations below either the Made Ground or Topsoil. Where the base of the River Terrace Deposits was proven, the underlying Wittering Formation was encountered.
- Generally, no visual evidence of gross contamination was noted. However, weak to moderate odours of asphalt or possible hydrocarbons were recorded within the Made Ground of DCS3, DCS4, DCS5 and DCS6. DCS5 and DCS6 were both located within proximity of the two USTs.
- Environmental Samples (ES) of the Made Ground and Topsoil were screened on site using a PID to determine the presence of VOCs within the soils. The screening typically returned results of between <0.1 and 0.7ppm within the Made Ground and Topsoil. These concentrations were considered to be negligible.
- From the soil testing undertaken, three exceedances of PAHs were recorded. These all referred to Benzo[a]pyrene with exceedances in DCS6 at 0.30m bgl, CP1 at 0.40m bgl and CP2 at 0.30m bgl, all within the upper layer of Made Ground where surface asphalt hardstanding was broken out using a mechanical breaker. As such, it was considered that asphalt fragments were the probable cause of the elevated Benzo[a]pyrene identified.
- Asbestos was not detected in any of the samples tested.
- The presence of hydrocarbons was recorded within samples taken from within close proximity to the USTs and generator, interpreted by the laboratory to probably be PAHs/heavy oil, however, the concentrations were all below screening values for a residential without plant uptake end use.
- The results of chemical testing on groundwater samples identified all contaminants tested for to be below the limit of detection or significantly below relevant threshold criteria. Specifically, it was noted that in DCS6, in close proximity to the USTs, no hydrocarbons were detected in the groundwater tested.
- No gas protection measures were considered necessary. However, it was noted that should significant hydrocarbon impacted soils be encountered during removal of the USTs and associated infrastructure then this may need to be re-assessed and consideration given to the use of hydrocarbon resistant membranes, at least for some parts of the development.

3.0 SCOPE OF REMEDIATION WORKS

3.1 Objectives

The objectives for the remediation scheme at the site are as follows:

- To ensure the site condition is suitable for the proposed future use, in this case for a care home, close care apartments and residential apartments;
- Address Regulator requirements in order to satisfy likely Planning Conditions;
- To ensure that, post remediation, the risks from land contamination to the future users of the land and neighbouring land are minimised, together with those to Controlled Waters, property and ecological systems, and to ensure the

development can be carried out safely without unacceptable risks to workers, neighbours and other off-site receptors.

3.2 Organisations Involved

Details of organisations involved and their roles are as follows:

Client	Hamberley Development Limited
Project Manager	Fed3 Projects
Main Contractor	To be confirmed
Demolition Contractor	To be confirmed
Remediation Contractor	To be confirmed
Geo-environmental/ Geotechnical Consultant	Applied Geology Ltd
Local Authority	Eastleigh Borough Council Environmental Health – Simon Downs
Environment Agency	Currently not known if a specific Consultee

At this stage details of appointed contractors or programme for the works are not finalised. Validation of relevant aspects of the work will need to be coordinated with relevant contractors at appropriate times as works proceed.

3.3 Remedial Strategy Design

The site investigations to date have identified the localised presence of elevated Benzo[a]pyrene concentrations at shallow depths, considered to be typically associated with overlying asphalt. In other areas, all contamination concentrations have been recorded below the threshold criteria. Where elevated concentrations of contaminants remain present in proposed garden/landscaping areas, an appropriate cover layer will be required to break the pollutant linkage. The thickness of this will depend on supplementary testing and be subject to specific agreement with the Local Authority.

As an alternative to a cover layer, it was suggested that consideration could be given to local removal of the source. In order to determine the best approach, supplementary shallow soil sampling was recommended following demolition of the existing buildings to better delineate any affected areas. The aim of this was that the results could potentially enable the site to be zoned such that the remedial action in different areas can be defined.

Whilst no Asbestos Containing Materials (ACM) were encountered, either visually on site or during laboratory analysis, it is understood that ACM is present within the fabric of the existing site structures. As such, it is recommended that a suitably qualified asbestos consultant is contacted to undertake the necessary surveys prior to demolition and that any asbestos removal is carried out by specialists in accordance with relevant regulations. Upon their recommendation, compliance monitoring and watching briefs may be required as part of the demolition process.

As no sampling and testing has been possible to date under the existing buildings, it is proposed that a visual inspection for the presence of olfactory evidence of contamination and a grid of sampling with associated chemical testing (to include

asbestos testing) will be undertaken following/during the demolition work to identify the presence of any other localised hotspots of contamination. Should additional areas of localised contamination be identified, further assessment would be undertaken to determine potential risks and the conclusions would be discussed with the Local Authority prior to confirming any necessary suitable remedial actions (e.g. local removal or a cover layer).

The two USTs present centrally on site have previously been decommissioned and infilled with cement slurry or sand (or a combination of both). The condition of the above-ground generator containing a fuel tank is unknown, but it is assumed to have been in use at the time of the original ground investigation and is assumed to have contained fuel (probably diesel). The report recommended that a watching brief should be undertaken during the removal of the USTs and above ground generator/tank for signs of any hydrocarbon contamination within the localised area. During this exercise, should any contamination be identified then soils may need to be tested and validated.

3.4 Proposed Remediation Strategy

Based on the findings of the previous site investigations, the following remedial works and subsequent validation is considered necessary. A copy of the Exploratory Hole Location Plan showing the sampling locations of previous investigations, Dwg No. AG2854B-19-02, is included in Appendix A for reference.

3.4.1 Removal of USTs and Above Ground Generator and Associated Tank

Works will be undertaken to expose and remove the former underground tanks and above ground fuel tanks/generator. Dependent on details of programme and contracts, these works may be undertaken at different times.

The existing drainage system and any underground tanks and associated pipework etc. encountered will be subject to controlled decommissioning, decontamination and removal in accordance with relevant guidance detailed within: 'Prevention of Groundwater Pollution from Underground Fuel Storage Tanks' (Environment Agency, 2016). However, it is understood that the underground tanks have been infilled with concrete slurry (or sand) and, therefore, once confirmed, may be pulled with no further degassing testing, certification or decommissioning. All redundant pipework/underground infrastructure associated with the tanks will also be removed. Where they contain any residual fuel, this will be purged, if possible, prior to removal. Demolition activities will be undertaken in a manner to prevent spills and leaks of fuel, oils etc. The above ground fuel tank/generator and associated pipework will be appropriately drained by a specialist and the tank removed from site for reprocessing or disposal.

Any free phase hydrocarbons encountered during excavations will be removed from the surface of any perched groundwater, if present, and treated or disposed of according to current legislation, prior to excavation of contaminated soil. Should perched water containing hydrocarbons be encountered in the excavation, then this will be tankered away for appropriate disposal. In the unlikely event that larger volumes are encountered, it may be appropriate to consider specialist on-site treatment. If testing of the perched water is required by the receiving company (Water Authority or waste courier) prior to disposal, the Contractor will undertake the required testing.

Petroleum hydrocarbon and VOC hotspots may potentially be present associated with tanks, pipework and drains. A PID will be used to screen samples during excavation works and the results recorded. Those samples recording the highest PID results will be scheduled for laboratory analysis. During all tank excavations and hotspot/hydrocarbon excavation, the geo-environmental engineer will be present to inspect for suspect material and oversee effective segregation, stockpiling and validation of soils.

Given the expected limited volumes of soils potentially impacted with hydrocarbons, the likely remedial option will be excavation and removal from site, with the soils placed straight into vehicles for removal off-site. If the soil has to be temporarily stored on-site, it will either be retained within the excavation or placed on an appropriately bunded membrane or lined skip and covered whilst awaiting disposal. Appropriate waste classification testing, and if necessary, WAC testing will be undertaken by the remediation contractor. The remediation contractor will arrange for disposal and provide all relevant disposal information to Applied Geology for the Validation Report. Hydrocarbon-impacted soils could possibly be sent to a soil treatment facility rather than to landfill.

Validation of the removal of the hotspots will be achieved by the chemical analysis of samples recovered from the sides and base of hotspot excavations. Samples will be taken from each side and the base of the excavation at varying depths within the depth range at which any contamination is identified. Should the excavation be greater than 5m by 5m in size (in plan view), additional samples at a rate of one per 5m, will be taken from the sides and base and sent for laboratory testing. The samples will be tested for a specific suite of testing dependant on the source contaminant identified within that area by the various ground investigation reports and visual/olfactory evidence, though likely to comprise speciated TPH (TPHCWG method + BTEX) and PAH as a minimum, plus potentially a VOC suite.

The results of the testing will be compared to the relevant Validation Criteria as provided in Appendix B (*NB validation criteria for Benzene based on outdoor air inhalation pathway*). The excavation will be deemed validated providing all concentrations are recorded below the Validation Criteria. Should any concentrations be recorded above the validation criteria, then further excavation and source removal will be undertaken at this location and further sampling and testing undertaken. This process will continue until all results comply with the validation criteria. Once the excavation has been validated, it will be backfilled with a suitable inert material (anticipated to be site-won crushed concrete, suitable site won material or inert imported material) and appropriately compacted.

It is considered unlikely that contamination, if present, will extend off-site beneath the adjacent roads/buildings. However, should contamination extend towards site boundaries, the excavation will be extended to safe engineering limits considering the stability of the ground and the possibility of undermining adjacent infrastructure. These safe limits will be decided by the contractor undertaking the excavation. If it is not possible to fully remove all hydrocarbon contamination, validation samples will be taken at the limit of the excavation and these values reported.

Any free phase hydrocarbons encountered during excavations will be removed from the surface of the groundwater and treated or disposed of according to current legislation, prior to excavation of contaminated soil. Should perched water containing hydrocarbons be encountered in the excavation, then this will be tankered away for disposal.

It should be noted that if the values above are significantly exceeded then consideration will be given to either more detailed site-specific human health and /or groundwater modelling or localised soil removal, depending on the volume of soil affected and the engineering limits on extending the excavation. The geo-environmental engineer will make a judgement at the time of excavation based on the visual extent of contamination, PID readings and conditions of the tanks on removal.

The groundworks/remediation contractor will be required to produce a detailed method statement for the tank area remediation for agreement by Applied Geology.

Should further tanks be encountered, the contents of any tanks will be investigated and tested by suitably qualified specialist/subcontractors. All uncharted tanks are to be reported to the geo-environmental engineer immediately on discovery and protected. The contents of any tanks are to be disposed of off-site by a specialist contractor to a suitably licenced facility. Additional tanks, if encountered, will also require removal, excavation and validation in accordance with this strategy.

3.4.2 Sampling Beneath Existing Buildings

Following demolition of the existing buildings on site, an inspection of the exposed soils will be undertaken by a suitably qualified Geoenvironmental Engineer to inspect for the presence of any visual or olfactory evidence of contamination. A PID will also be used to screen samples and assist in identifying any areas of potential concern.

Should any areas of contamination be suspected then either targeted samples will be collected for this location and sent to the laboratory for chemical analysis for comparison against the original ground investigation screening criteria, or the suspected soils will be excavated and the resulting excavation sampled, tested and compared to the validation criteria.

In addition to the visual inspection, should no contamination be suspected, considering the size of the existing buildings in relation to the size of the site, additional soil samples will be collected on a grid basis, and these samples will be tested for the presence of a broad range of contaminants in general accordance with the analysis suite undertaken as part of the original ground investigation (ie metals suite, speciated PAH, TPH, asbestos). VOCs would also be added to this suite of testing should it be warranted based on site observations and PID readings.

The results of this testing will be compared to the relevant assessment criteria adopted as part of the original ground investigation. Should any exceedance be identified, the remedial strategy will be reviewed to establish whether remedial actions are considered necessary (e.g. localised cover layers, localised removal).

Backfill of any excavations will comprise suitably clean imported material or clean site-won geotechnically suitable material from other areas of the site subject to compliance with relevant Waste Management Regulations. Any imported material will be required to meet the import criteria set out in Appendix C.

3.4.3 Supplementary Testing of Proposed Landscaped Areas

The ground investigations to date have identified the localised presence of elevated PAH concentrations, specifically Benzo[a]pyrene, at shallow depths, considered likely to be associated with overlying asphalt. In order to better delineate affected areas and

address areas not currently investigated, it is proposed the supplementary shallow sampling is carried out in areas of proposed landscaping, to be taken from arbitrary locations, considering the size of the proposed landscaped areas. The samples will be tested for a speciated PAH suite.

The result of the testing will be compared to the relevant screening criteria (Residential without plant uptake, assuming 2.5% SOM) as used in the previous ground investigation report. The results of this testing will then be added to those of the previous ground investigation and a revised assessment produced. Depending on the findings of this assessment, either localised hotspot removal or the installation of a 'clean' cover layer will be required in landscaped and garden areas.

The results of the supplementary investigation and the resulting assessment will be discussed with the Local Authority for agreement and an amendment to this remedial strategy issued, if required.

3.4.4 Discovery Strategy During Groundworks

A watching brief is recommended during the groundworks so that any previously unidentified gross contamination encountered during the redevelopment of the site can be recorded by the Site Manager and reported to the geo-environmental engineer. Should any revisions be proposed to current remediation strategy these will be discussed with the Local Authority as appropriate and notified in writing.

It is envisaged that soils excavated as part of the construction could comprise both inert, non-hazardous and hazardous wastes and therefore the watching brief could also extend to assisting appropriate segregation and classification of arisings intended for disposal. All hazardous wastes should be disposed off-site by a suitably licensed contractor in accordance with all current waste legislation.

3.4.5 Import of Topsoil for Landscaping

Depending on the outcome of the proposed supplementary testing, a cover layer may be required in the areas of landscaping in order to break the pollutant linkage. If/where required, the thickness of cover layer would be calculated based on the exceedances of contaminants identified for the previous and supplementary investigations. This may comprise only Topsoil or a mixture of Topsoil and other inert material.

Any imported cover layer material or Topsoil imported for general growing purposes used in the landscaped areas will need to be tested for an appropriate suite of contaminants depending on the nature of the donor site, to determine its suitability for use. If the donor site cannot be identified or if supplied testing is not suitable, the imported material will be tested for the following contaminants: arsenic, cadmium, chromium (trivalent and hexavalent), copper, lead, mercury, nickel, selenium, zinc, phenols (total), pH, speciated Polyaromatic Hydrocarbons (PAH), TPH (CWG ali/aro split), asbestos screen and organic matter. A testing regime of one sample per 50m³ of imported material will be sent for laboratory testing.

The results from the cover layer testing will be compared to the cover layer Import Criteria as set out in Appendix C.

These criteria are based on 6% Soil Organic Matter (SOM). Should the SOM of the topsoil imported be below 6%, the screening values may need to be altered.

Any imported topsoil may also be required to comply with other aspects of BS3882:2015 'Specification for Topsoil' or the requirements of the Landscape Architect. It is recommended that this, or any requirements, are confirmed with the Landscape Architect prior to importing any topsoil.

If all concentrations are less than the relevant criteria, the cover later material/ Topsoil will 'pass'. If any of the concentrations are above the criteria, the soil will be rejected or, if marginal, the results will be discussed with the Local Authority to agree the required action.

3.4.6 Further Groundwater Testing

Further groundwater sampling was recommended prior to demolition to confirm the findings from the initial site investigation. Following the issue of the ground investigation report, and prior to the issue of this remedial strategy, a further round of groundwater sampling has been undertaken. The samples were tested for phenols (total), speciated Polyaromatic Hydrocarbons (PAH), TPH (CWG ali/aro split), VOCs and SVOCs. The results of the testing indicated that all the determinands tested for were below the laboratory detection limit in all four samples. These results together with a full assessment will be reported along with the results of the proposed supplementary soil sampling undertaken post-demolition.

Should any significant hydrocarbon contamination be identified following removal of the USTs, further groundwater sampling and testing may be required. This would be agreed with the Regulators as appropriate.

3.4.7 Gas Protection Measures/Vapour Monitoring

The previous ground investigation report recommended that no special precautions against ground gas were required. However, due to the presence of USTs, a potential residual risk of VOCs may locally exist. Should significant hydrocarbon impacted soils be encountered during removal of the underground fuel tanks and associated infrastructure, further vapour/gas monitoring may need to be undertaken and/or consideration be given to the use of hydrocarbon resistant vapour membranes in this part of the site.

3.4.8 Water Supply Pipes

It is considered likely that where water supply pipes are installed as part of the development through the area of the USTs, then protection measures are likely to be required by the local Water Authority. Whilst there is no evidence to suggest that protection measures are necessary elsewhere on site, based on our experience it is likely that the Water Authority may require similar measures in other areas. Early liaison is recommended. It should also be noted that the full suite of testing required by the UKWIR guidance has not been undertaken as part of the site investigations and such testing may be required by the Water Authority once the pipeline routes are known.

3.4.9 Soil Management, Re-use and Disposal

An options appraisal will be carried out by the remediation contractors to determine the most cost-effective remedial solution considering the overall cut/fill requirements for the development and engineering re-use of the material.

If not covered by remediation permit, a Material Management Plan (MMP) may be required to re-use treated soil, alternatively, soil may be disposed off-site at a licensed facility. However, considering the likely small volumes, it may be suitable to seek a U1 exemption.

4.0 VERIFICATION REPORT

It is envisaged that the remedial measures outlined in Sections 3.4.1 to 3.4.5 above will be undertaken as part of an enabling/remediation phase of works. A verification report will be produced on completion of these remedial works, which will provide details on the following:

- Extent and depths of excavations;
- Photographic records/site diaries;
- Results of any site screening (PID etc);
- Records of material movement (volumes, origin, disposal destination, waste classification testing);
- Validation chemical testing and interpretation;
- Specific Method Statement to be provided to Applied Geology by Specialist Contractor once appointed. Copies of any Waste Transfer notes supplied will be included within the final Verification report.

A report detailing any asbestos removal works will be produced by other parties and is not within the scope of the Applied Geology works.

Should gas/vapour membrane or protected water supply pipes be required, these will be installed and validated by others during the construction phase and a separate validation report(s) be produced.

At this stage, it is not confirmed whether a specific cover layer will be required, though it is envisaged that some clean Topsoil will be imported as part of the final landscaping. If a cover layer is deemed necessary following supplementary sampling, analysis and risk assessment, cover layer validation will be carried out at a rate to be agreed with the Local Authority. This would typically involve hand excavation through the cover layer to visually and physically confirm that it has been placed to a minimum of the agreed thickness. In the event this is required, physical and photographic records of the inspections would be taken and produced in a separate Validation Report. Where cover layers are not deemed necessary, a Validation Report confirming the nature and condition of imported Topsoil for general landscaping purposes would be produced.

5.0 UNEXPECTED CONDITIONS

Should conditions differ significantly from those anticipated on removal of the tanks, the Local Authority will be notified, and a revised strategy will be formulated to deal

with the contamination. In this situation, an alternative remediation approach may be required.

Should any previously unidentified gross contamination be encountered during the redevelopment of the site, it should be recorded by the Site Manager and reported to Applied Geology. Should any revisions be proposed to current remediation strategies or methods these will be discussed with Eastleigh Borough Council as appropriate and notified in writing.

6.0 THIRD PARTY CONTACTS

This Remediation Strategy and Verification Plan will need to be submitted to the following statutory authorities for prior approval and to support discharge of relevant planning conditions:

Eastleigh Borough Council

Environmental Health,
Eastleigh House,
Upper Market Street,
Eastleigh,
SO50 9YN
Contact – Simon Downs

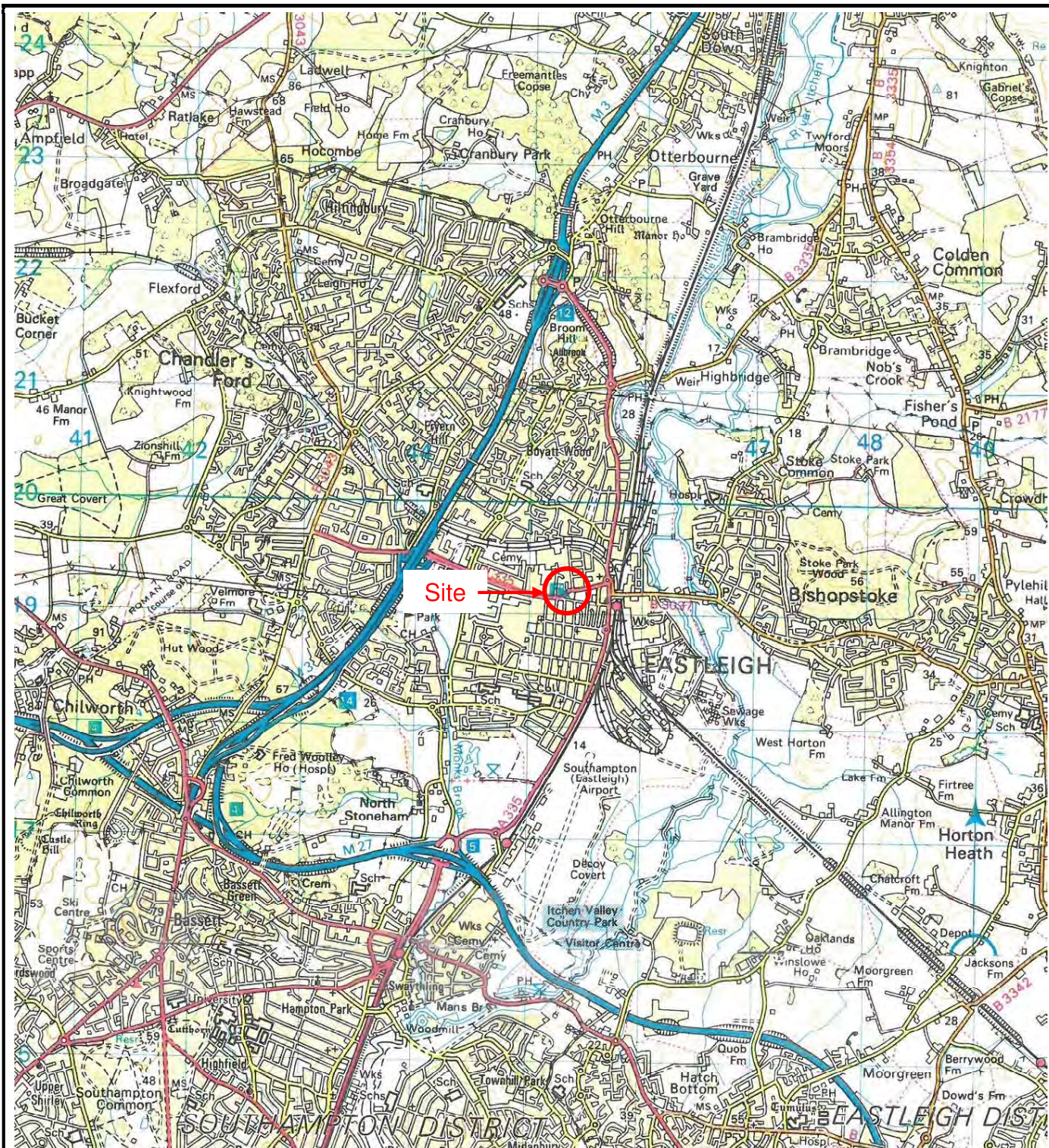
Applied Geology Limited
The Old Barn
Church Farm
Fulbrook Lane
Sherbourne
Warwick
CV35 8AR

Tel: 02476 511822

GENERAL NOTES

- A) This report is based on the site terrain and ground conditions revealed by the various field investigations undertaken and also any other relevant data for the site including previous site investigation reports (if available) and desk study data. There may be special conditions appertaining to the site, however, which have not been revealed by the investigations and which have not, therefore, been taken into account in the report. The report may be subject to amendment in the light of additional information becoming available.
- B) Where any data supplied by the Client or other external source has been used it has been assumed that the information is correct. No responsibility can be accepted by Applied Geology for inaccuracies within this data.
- C) The copyright of this report and other plans and documents prepared by Applied Geology is owned by Applied Geology and no such report, plan or document may be reproduced, published or adapted without the written consent of Applied Geology. Complete copies of the report may, however, be made and distributed by the Client as an expedient in dealing with matters related to its submission.
- D) This report is prepared and written in the context of the proposals stated in the introduction to the report and should not be used in a differing context. Furthermore, new information, improved practices and legislation may necessitate an alteration to the report in whole or in part after its submission. Therefore with any change in circumstances or after the expiry of one year from the date of the report, the report should be referred to Applied Geology for re-assessment and if necessary, re-appraisal.
- E) The work was undertaken and this report was prepared for the sole internal use and reliance of the Client. This report shall not be relied upon or transferred to any other parties without the express written authorisation of Applied Geology. If an unauthorised third party comes into possession of this report they rely on it at their peril and Applied Geology owes them no duty of care and skill.
- F) Ground conditions should be monitored during the construction of the works and the recommendations of the report re-evaluated in the light of this data by the supervising geotechnical or geo-environmental engineers.

APPENDIX A



Reproduced from the Ordnance Survey Map with permission of the Controller of Her Majesty's Stationery Office, Crown Copyright* LICENCE No: 100055022

APPLIED GEOLOGY

Unit 23
Abbey Park
Stareton
Kenilworth
CV8 2LY

Tel: 02476 511822
email: admin@appliedgeology.co.uk

Client:

HAMBERLEY DEVELOPMENT LTD

Project:

FORMER EASTLEIGH POLICE STATION,
LEIGH ROAD, EASTLEIGH, HAMPSHIRE,
SO50 9DG

Drawn By:

FD

Checked By:

AS

Paper Size:

A4

Scale:

1:50,000

Date:

24.02.2020

NGR:

445250 119167

Title:

SITE LOCATION PLAN

Drawing No:

AG2854B-19-01

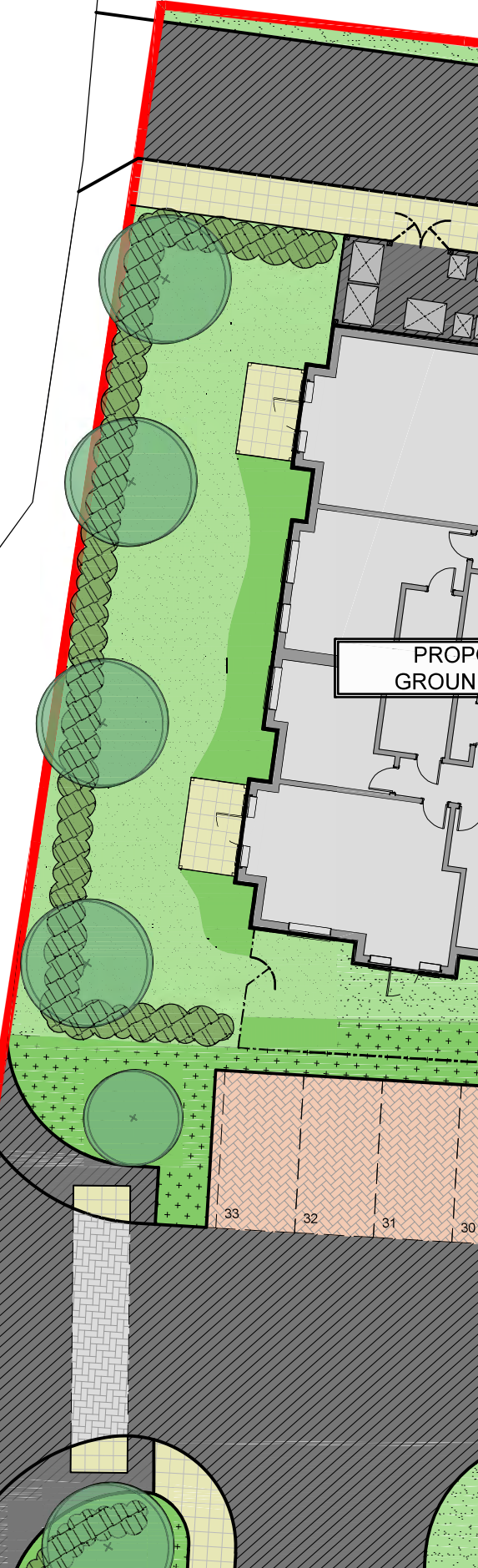
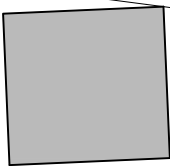
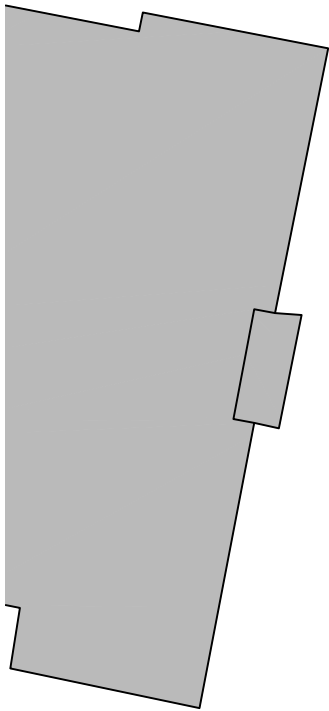
Revision:

0



TOYNBEE ROAD

PROPOSED
GROUND



33

32

31

30

APPENDIX B

Validation Criteria for Source Removal			
Site:		Former Eastleigh Police Station	
Job No:		AG2854B-19	
Land Use:		Residential without plant uptake	
Exploratory Hole Reference Depth (m) Strata	Units	Maximum Concentration	Provenance
Total PAH	mg/kg	1000	To address cumulative hazard
Benzene	mg/kg	72	LQM/CIEH S4UL (2015)
Ethylbenzene	mg/kg	1000	Target set at a lower level than that derived by LQM/CIEH S4UL to achieve betterment and protection of the development
M&p Xylene	mg/kg	1000	Target set at a lower level than that derived by LQM/CIEH S4UL to achieve betterment and protection of the development
o-Xylene	mg/kg	1000	Target set at a lower level than that derived by LQM/CIEH S4UL to achieve betterment and protection of the development
EC5-6 Aliphatic	mg/kg	2500	Target set at a lower level than that derived by LQM/CIEH S4UL to achieve betterment and protection of the development
EC5-7 Aromatic	mg/kg	2500	Target set at a lower level than that derived by LQM/CIEH S4UL to achieve betterment and protection of the development
Total TPH		5000	To address cumulative hazard, odour, visual and aesthetic issues

APPENDIX C

Topsoil Import Criteria

Site: Former Eastleigh Police Station
Job No: AG2854B-19

Land Use: Residential with plant uptake

Exploratory Hole Reference Depth (m) Strata	Units	Maximum value (6% SOM)	Source/Justification
Arsenic	mg/kg	37	LQM/CIEH S4UL (2015)
Boron	mg/kg	290	LQM/CIEH S4UL (2015)
Cadmium	mg/kg	11	LQM/CIEH S4UL (2015)
Chromium	mg/kg	910	LQM/CIEH S4UL (2015)
Chromium (Hexavalent)	mg/kg	6	LQM/CIEH S4UL (2015)
Copper	mg/kg	100	BS3882
Lead	mg/kg	200	C4SL (2014)
Mercury	mg/kg	40	LQM/CIEH S4UL (2015)
Nickel	mg/kg	130	LQM/CIEH S4UL (2015)
Selenium	mg/kg	250	LQM/CIEH S4UL (2015)
Vanadium	mg/kg	410	LQM/CIEH S4UL (2015)
Zinc	mg/kg	200	BS3882
Naphthalene	mg/kg	13	LQM/CIEH S4UL (2015)
Acenaphthylene	mg/kg	*	LQM/CIEH S4UL (2015)
Acenaphthene	mg/kg	920	LQM/CIEH S4UL (2015)
Fluorene	mg/kg	860	LQM/CIEH S4UL (2015)
Phenanthrene	mg/kg	440	LQM/CIEH S4UL (2015)
Anthracene	mg/kg	*	-
Fluoranthene	mg/kg	890	LQM/CIEH S4UL (2015)
Pyrene	mg/kg	*	LQM/CIEH S4UL (2015)
Benzo[a]anthracene	mg/kg	13	LQM/CIEH S4UL (2015)
Chrysene	mg/kg	27	LQM/CIEH S4UL (2015)
Benzo[b]fluoranthene	mg/kg	3.7	LQM/CIEH S4UL (2015)
Benzo[k]fluoranthene	mg/kg	100	LQM/CIEH S4UL (2015)
Benzo[a]pyrene	mg/kg	3.0	LQM/CIEH S4UL (2015)
Dibenzo[a,h]anthracene	mg/kg	0.30	LQM/CIEH S4UL (2015)
Indeno[1,2,3-cd]pyrene	mg/kg	41	LQM/CIEH S4UL (2015)
Benzo[g,h,i]perylene	mg/kg	350	LQM/CIEH S4UL (2015)
Total PAH	mg/kg	1000	-
Phenol	mg/kg	380	LQM/CIEH S4UL (2015)
Benzene	mg/kg	0.37	LQM/CIEH S4UL (2015)
Toluene	mg/kg	660	LQM/CIEH S4UL (2015)
Ethylbenzene	mg/kg	260	LQM/CIEH S4UL (2015)
m&p Xylene	mg/kg	310	LQM/CIEH S4UL (2015)
o-Xylene	mg/kg	330	LQM/CIEH S4UL (2015)
Aliphatic TPH >C5-C6	mg/kg	160	LQM/CIEH S4UL (2015)
Aliphatic TPH >C6-C8	mg/kg	530	LQM/CIEH S4UL (2015)
Aliphatic TPH >C8-C10	mg/kg	150	LQM/CIEH S4UL (2015)
Aliphatic TPH >C10-C12	mg/kg	760	LQM/CIEH S4UL (2015)
Aliphatic TPH >C12-C16	mg/kg	*	-
Aliphatic TPH >C16-C21	mg/kg	*	-
Aliphatic TPH >C21-C35	mg/kg	*	-
Aliphatic TPH >C35-C44	mg/kg	*	-
Aromatic TPH >C5-C7	mg/kg	300	LQM/CIEH S4UL (2015)
Aromatic TPH >C7-C8	mg/kg	660	LQM/CIEH S4UL (2015)
Aromatic TPH >C8-C10	mg/kg	190	LQM/CIEH S4UL (2015)
Aromatic TPH >C10-C12	mg/kg	380	LQM/CIEH S4UL (2015)
Aromatic TPH >C12-C16	mg/kg	660	LQM/CIEH S4UL (2015)
Aromatic TPH >C16-C21	mg/kg	930	LQM/CIEH S4UL (2015)
Aromatic TPH >C21-C35	mg/kg	*	-
Aromatic TPH >C35-C44	mg/kg	*	-
Total Petroleum Hydrocarbons	mg/kg	1000	-
Asbestos		<0.001	Below reportable detection limits

Testing should be based on the donor site and its historical use.

* Individual PAH compounds and TPH fractions have S4UL's in excess of 1000mg/kg, therefore no specific limits are proposed as overall limits of 1000mg/kg TPH and 1000mg/kg PAH are to be adhered to.
LQM/CIEH S4UL Reference No. S4UL3159 (2015)