

VALIDATION REPORT – AREA 7A

Site:	Cherryfield Drive, Kirkby
References:	18-528-R4-1
Date:	22 July 2026
Client:	Westshield Limited





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QUALITY ASSURANCE

Report references

18-528-R4-1

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APPENDIX VII: GEOTECHNICAL TESTING RESULTS

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DRAWINGS LIST – E3P

18-528-001 – Site Location Plan
18-528-002 – Proposed Development Plan
18-528-020 – Ground Gas Zoning Plan
18-528-043 – Validation Reporting Phasing Plan
18-528-032 – Topsoil Sample Location Plan – Area 7A
18-528-036 – Remediation Sampling Plan – Chemical – Area 7A
18-528-037 – Remediation Sampling Plan – Geotechnical – Area 7A
18-528-038 – NDG Testing Location Plan – Area 7A

DRAWINGS LIST – COOPERS

7887/Fd/01 to 04 – Foundation Plan

DRAWINGS LIST – WESTSHIELD

Area 7A – CBR Testing Location Plan
Area 7A – Reduced Level Dig Survey
Area 7A – As Built Survey - Base of Natural
Area 7A – As Built Survey - Formation



1. INTRODUCTION

1.1. BACKGROUND

This report details the remediation and enabling works operations that were undertaken by Westshield under the supervision of E3P to facilitate the preparation of the low-rise residential development at the site known as Cherryfield Drive, a parcel of land located to the south of Cherryfield Drive, Kirkby, Liverpool, L32 8RX, herein referred to as “the site”.

This report has been prepared to document the completion of all necessary land remediation and enabling works within Area 7A of the site (Plots D115-D162), and to record any variations in ground conditions or previously unidentified sources of potential contamination, environmental impacts, or potential nuisances to the wider environment.

Westshield appointed E3P on behalf of Barrett and David Wilson Homes (BDW Trading) as an independent Geoenvironmental Consultant for the site remediation, preparation/enabling and validation works, and the subsequent production of suitably detailed reports to ensure the satisfaction of the relevant planning conditions and geotechnical engineering requirements for Building Control, warranty providers and the future adoption of infrastructure by the Highways Authority and statutory service providers.

1.2. SITE DETAILS

Site Address	Cherryfield Drive, Kirkby, Liverpool, L32 8RX
National Grid Reference	E 341100, N 398150
Site Area	22.51 Ha

All acronyms used within this report are defined in the glossary presented in APPENDIX II.

A site location plan is presented as Drawing 18-528-001 in APPENDIX III.

1.3. PROPOSED DEVELOPMENT

Barrett and David Wilson Homes intend to construct a low-rise residential development of circa 807 plots with associated gardens, estate roads, and infrastructure.

The proposed development plan is presented as Drawing 18-528-002 in APPENDIX III, with a snapshot presented in Figure 1.1.

The location of Area 7A is presented in the Validation Reporting Phasing Plan (18-528-043) in APPENDIX III, with a snapshot presented in Figure 1.2.



Figure 1.1 Proposed Development Plan

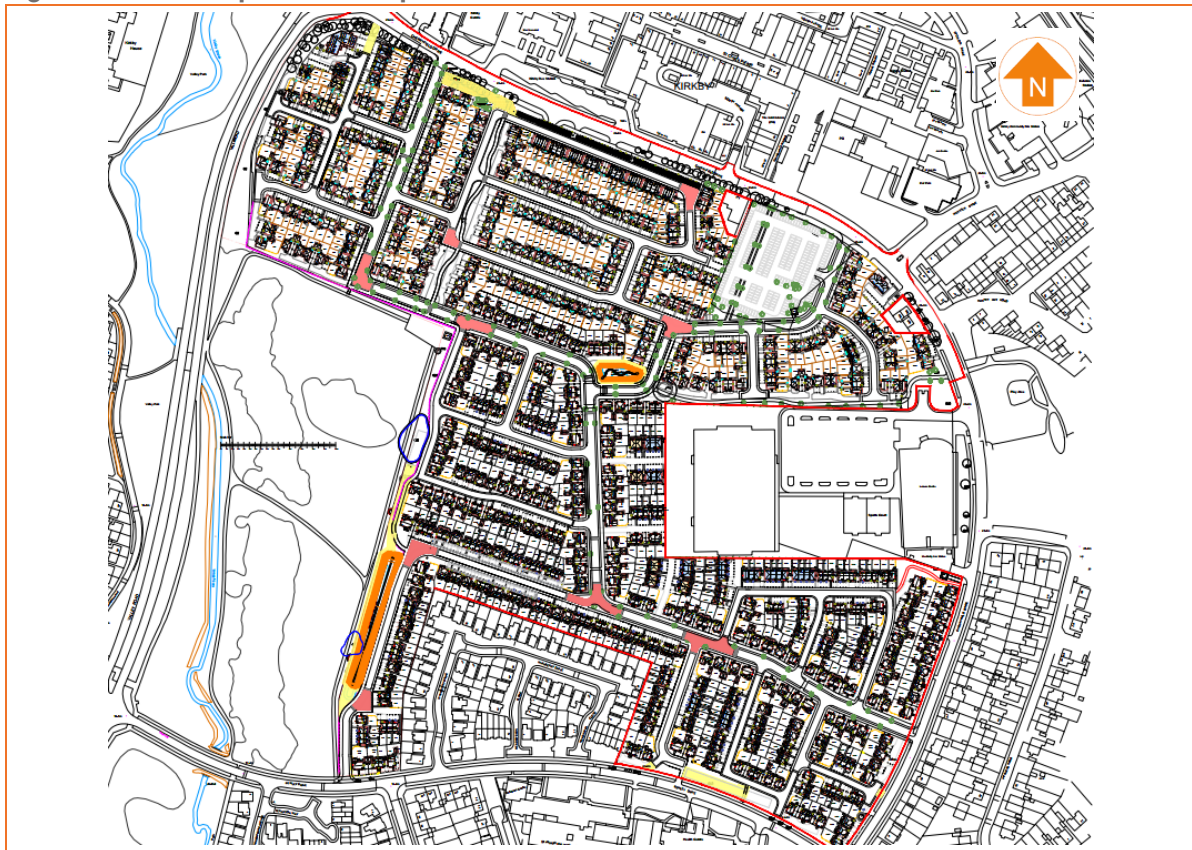
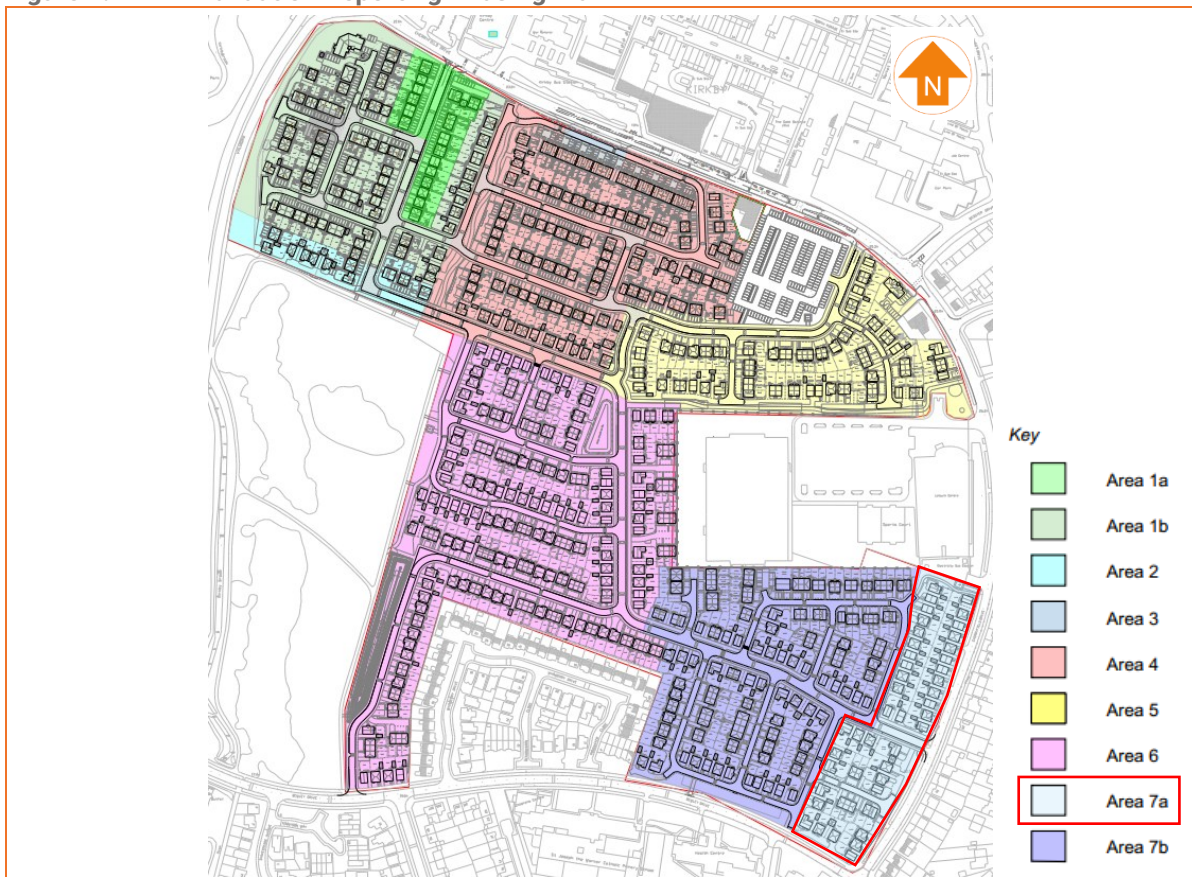


Figure 1.2 Validation Reporting Phasing Plan





1.4. SUMMARY OF PARTIES INVOLVED

FUNCTION/INTEREST	NAME OF PARTY
Local Planning Authority	Knowsley Metropolitan borough Council (KMBC)
Developer	BDW Trading
Geotechnical Consultant	E3P
Main Contractor	BDW Trading
Remediation/Enabling Works Contractor	Westshield Limited
Human Health Regulator	KMBC
Controlled Waters and Waste Regulator	Environment Agency (EA)
Highways Adoption Authority	KMBC
Civil Engineer	TBC
Infrastructure Adoptions Authorities	KMBC
Minerals Regulation Authority	KMBC
Building Control Inspector	LABC
Warranty Provider	NHBC

1.5. PREVIOUS WORKS

E3P have been provided with previous reports prepared for the site. E3P is of the understanding that the client does not have reliance on these previous reports.

Table 1.1 Summary of Previous Reports

AUTHOR	TITLE	REFERENCE	CLIENT	DATE
Clancy Consulting	Preliminary Geo-environmental Appraisal Report for Phase 2 Site, Cherryfield Drive, Knowsley	Ref: 10/1519/001	Knowsley Metropolitan Borough Council	May 2020
	Geo-Environmental Appraisal Report for Knowsley Community College, Liverpool	Ref: 10/1533/001	Knowsley Metropolitan Borough Council	July 2020
Resource & Environmental Consultants Ltd	Geo-environmental Site Assessment	Ref: 45759Fp1r0	Knowsley Metropolitan Borough Council	September 2014
ALM Consult Limited	Interpretative Report	Ref: 30090/11	Knowsley Metropolitan Borough Council	September 2015
	Hazardous Gas Risk Assessment	Ref: 30090/11/2	Knowsley Metropolitan Borough Council	December 2015
ESG	Factual Report on Ground Investigation	Ref: F5013-15	2020 Knowsley Limited	February 2016
Ian Farmer Associates	Factual Report on Ground Investigation	Ref: 41989	St Modwen Developments Limited	March 2017
RPS	Due Diligence Information for Land Development	-	St Modwen Developments Limited	June 2017
Atkins	Phase 1 Geo-Environmental Desk Study	Ref: 5145660	St. Modwen (Kirkby 2) Development Ltd	December 2016



AUTHOR	TITLE	REFERENCE	CLIENT	DATE
Buro Happold	Ground Engineering Site Appraisal	Ref: 021706	-	December 2006
Buro Happold	Geoenvironmental and Geotechnical Interpretative Report: Phase 1 Ground Investigation (GDO 205 Landfill)	Ref: 021706	-	November 2007
Cundall	Geotechnical Due Diligence Brief	Ref: 1028732.SPC.GL.001	Barratt Developments Plc	June 2021

In addition to the above, E3P has completed the following geoenvironmental assessments for the site:

- E3P – Phase I & II Geoenvironmental Site Assessment. Ref: Report 15-280-R1-6, dated November 2024, Prepared for Barratt and David Wilson Homes;
- E3P – Ground Gas Addendum Report. Ref: Report 15-280-R3-2, dated November 2025, Prepared for Barratt and David Wilson Homes;
- E3P – Remediation and Enabling Works Strategy. Ref: Report 15-280-R2-7, dated November 2025, Prepared for Barratt and David Wilson Homes;
- E3P – Asbestos in Soils Risk Assessment. Ref: 15-280-R4-1, dated July 2025. Prepared for Barratt and David Wilson Homes.
- E3P – Water Pipeline Risk Assessment. Ref: 15-280-R5-1, dated March 2026. Prepared for Barratt and David Wilson Homes.
- E3P – Gas Cut-Off Barrier Specification. Ref: 15-280-L4-3, dated June 2026. Prepared for Barratt and David Wilson Homes.
- E3P – Supplementary Site Investigation. Ref: 15-280-L5-1, dated April 2026. Prepared for Barratt and David Wilson Homes.
- E3P – Geotechnical Design Report and Earthworks Specification. Ref: 15-280-R6-1, dated June 2026. Prepared for Barratt and David Wilson Homes.
- E3P – Technical Statement of Design – Gas Cut-Off Barrier. Ref: 15-280-L7-1, dated June 2026. Prepared for Barratt and David Wilson Homes.
- E3P – CL:AIRE Materials Management Plan. Ref: 18-528-R1-2, dated July 2026. Prepared for Westshield Limited.
- E3P – Waste Management and Recovery Strategy. Ref: 18-528-R2-1, dated February 2026. Prepared for Westshield Limited.
- E3P - Landfill Boundary Ground Investigation. Ref: 18-528-L1-1, dated June 2026. Prepared for Westshield Limited.



1.6. REGULATORY CORRESPONDENCE

BDW Trading has consulted with the appropriate regulatory bodies throughout.

The site was granted planning permission on the 14th May 2024 with conditions for the demolition of existing buildings and the construction of 800 dwellings; with associated infrastructure, landscaping, and access under planning application 24/00068/FUL

The planning application 24/00068/FUL, dated 14th May 2024, also confirmed the acceptance of the Remediation and Enabling Works Strategy by KMBC.

1.7. SUMMARY OF REMEDIATION, ENABLING WORKS AND GEOTECHNICAL ENGINEERING WORKS

The proposed remediation activities were detailed within the E3P Remediation and Enabling Works Strategy (15-280-R2-7; dated November 2025) and supplementary supporting documents provided by E3P.

This report has been prepared to document the completion of all necessary land remediation and enabling works within Area 7A of the site (Plots D115-D162), and to record any variations in ground conditions or previously unidentified sources of potential contamination, environmental impacts, or potential nuisances to the wider environment.

The Remediation and Enabling Works elements are summarised below:

- RE-1 – Further Assessment of Deep Made Ground
- RE-2 – Watching Brief Beneath Current Buildings On-Site
- RE-3 – Pre-commencement Regulatory Compliance
- RE-4 – Environment and Nuisance Control
- RE-5 – Risk to Infrastructure
- RE-6 – Identification, Isolation and Treatment of Invasive Species.
- RE-7 – Site Clearance Operations
- RE-8 – Recovery of Natural Topsoil
- RE-9 – Delineation, Excavation and Treatment of Identified Asbestos Impact
- RE-10 - Delineation, Excavation and Treatment and Disposal of Naphthalene and Dibutyl phthalate
- RE-11 – Excavation, Delineation & Validation of Mercury Hotspots
- RE-12 – Delineation and Validation of TPH Impacted Soils
- RE-13 – Excavation, Breaking and Processing of All Above- and Below-Ground Structures
- RE-14 – Delineation, Excavation and Treatment of Infilled Historical & Present Ponds



- RE-15 – Removal of Deleterious Materials
- RE-16 – Investigation and Removal of Historic USTs
- RE-17 – Electricity Substation
- RE-18 – Historically Deposited Ash Fill
- RE-19 – Importation of Bulk Fill
- RE-20 – Post Remediation Ground Gas Assessment
- RE-21 – Preparation of Garden for Cover System
- RE-22 – Provision of Subsoil
- RE-23 – Provision of Topsoil
- RE-24 – Independent Validation: Watching Brief
- RE-25 – Waste Soils Surplus to Requirements
- RE-26 – Validation of Materials for Potable Water Supply Infrastructure
- RE-27 – Remedial Verification Report

The relevant Geotechnical Engineering Works elements to Area 7A are summarised below:

- GE-1 – Pre Commencement Remediation Contractor Requirements
- GE-2 – Further Assessment of Deep Made Ground
- GE-3 – Excavation, Breaking and Processing of All Above and Below Ground Structures
- GE-4 – Cut- and-Filling of Made Ground to Development Levels
- GE-5 – Placement and Compaction of Upfill Material to Facilitate Ground Improvement by VSC
- GE-6 – Construction of Temporary Working Platform
- GE-7 – Replacement of Materials, Geotechnical Engineering Requirements
- GE-8 – Preparation of Ground for Vibro Stone Columns within Tree Influence
- GE-9 – Deep Fill Assessment
- GE-10 – Delineation, Excavation and Treatment of Infilled Historical & Present Ponds
- GE-11 – Removal of Potential Highwalls Beneath Plot Footprints



1.8. BUILD PHASE MITIGATION AND MANAGEMENT

A second phase of works will be required to ensure the proposed development is constructed in a manner that incorporates the required mitigation measures to ensure the development is compliant with UK Building Regulations and the Local Authority Planning requirements.

These obligations are specified in more detail within Section 4.



2. REMEDIATION AND SITE-ENABLING WORKS VALIDATION

The focus of the remediation and enabling works are to address the contaminant issues previously identified within the site investigations that presented an unacceptable risk to human health following the redevelopment of the site.

For completeness, each of these activities has been discussed below within the context of the actual remediation works that were undertaken on-site.

The Remediation & Site Enabling works within Area 7A commenced in January 2026 and were completed by June 2026.

2.1. RE-1 – FURTHER ASSESSMENT OF DEEP MADE GROUND

Date of Works Undertaken	N/A
Overview of Works	Background Further investigation is required to delineate and fully characterise the Made Ground in the central sector of the site to address geotechnical uncertainties and finalise the foundation solution. Overview of Works N/A – the deep Made Ground is located in Area 6 (central sector) and will be reported under a separate cover.

2.2. RE-2 – WATCHING BRIEF BENEATH CURRENT BUILDINGS ON-SITE

Date of Works Undertaken	N/A
Overview of Works	Background When access is available in the north-west of the site, following demolition of existing buildings, a watching brief is recommended. Overview of Works N/A – no buildings were present within Area 7A.

2.3. RE-3 – PRE-COMMENCEMENT REGULATORY COMPLIANCE

Date of Works Undertaken	Prior to commencement
Overview of Works	The site was granted planning permission on the 14th May 2024 with conditions for the demolition of existing buildings and the construction of 800 dwellings; with associated infrastructure, landscaping, and access under planning application 24/00068/FUL. The planning application 24/00068/FUL, dated 14th May 2024, also confirmed the acceptance of the Remediation and Enabling Works Strategy by KMBC.



Westshield registered for a LAPC Part B License under the reference LAPPC16-02-v1, to aid their completion of the remedial works.

E3P has prepared a CL:AIRE DoW CoP MMP for the re-use of materials on Site of Origin; Ref: 18-528-R1-2, dated July 2026. QP Declaration Ref: Cherryfield Drive, Kirkby - 2026-07-13 14:59:48.

2.4. RE-4 – ENVIRONMENT AND NUISANCE CONTROL

Date of Works Undertaken	Throughout
Photographs	Plates 1-3
Overview of Works	During remediation, works were restricted to between 8.00 am and 5.30 pm. Fencing was erected around the site boundary with appropriate health and safety signage. A road sweeper was present to keep the access roads, Cherryfield Drive, and Bewley Drive clean and clear of debris during the importation of materials to the site. Dust monitoring was completed during the remediation and enabling works; monitoring records are available from Westshield on request.

2.5. RE-5 – RISK TO INFRASTRUCTURE

Date of Works Undertaken	Throughout
Photographs	Plate 4
Overview of Works	Background Site works should be completed in a manner that ensures no risk of disturbance to the adjacent infrastructure. Overview of Works Works were conducted in such a way that the surrounding infrastructure, including roads and buildings, were not impacted during the duration of the works.

2.6. RE-6 – IDENTIFICATION, ISOLATION AND TREATMENT OF INVASIVE SPECIES

Date of Works Undertaken	N/A
Overview of Works	N/A – no invasive species were identified within Area 7A during the duration of the works.



2.7. RE-7 – SITE CLEARANCE OPERATIONS

Date of Works Undertaken	Throughout
Photographs	Plates 5
Overview of Works	Background Post-demolition general site clearance and provision of welfare, offices and site security are to be determined as per the contract requirements. Overview of Works Welfare, offices, and site security were provided by Westshield throughout the works. No above-ground hardstanding was encountered within Area 7A. Trees were removed by a specialist contractor, shredded and subsequently disposed of off-site at a licensed waste facility. Throughout the enabling works, scrap metal and general waste were separated from demolition materials and placed into allocated skips for subsequent disposal off-site at a licensed waste facility.

2.8. RE-8 – RECOVERY OF NATURAL TOPSOIL

Date of Works Undertaken	January-June 2026
Photographs	Plate 6-7
Chemical Testing	i2 Report: 26-007706 (TS-Dw-101-116)
Overview of Works	Background The site investigation report and subsequent surveys identified limited areas of the subject site where natural organic soils (topsoil) are present at the near surface. Overview of Works The initial topsoil strip was completed within the wider Area 7A and 7B in January-February 2026, with the material segregated and temporarily stockpiled in the central part of Area 7B. A total volume of 8,900 m³ of topsoil was recovered from Areas 7A and 7B. Chemical validation samples were taken from topsoil stockpiles within the central part of Area 7B on 12th February 2026. A Topsoil Sample Location Plan is presented as Drawing 18-528-032 in APPENDIX III. Results of the chemical analysis identified exceedances for asbestos, heavy metals, and non-volatile PAHs within twelve of sixteen samples submitted for analysis. As such, these materials were deemed unsuitable for re-use on-site and required exporting for off-site disposal at a licensed waste facility. Results of the chemical analysis are presented in APPENDIX VI. The topsoil was subsequently removed by Westshield for off-site disposal at a licenced waste facility on the week commencing 22nd March 2026. Waste



tickets, weekly tracking records and waste consignment notes are available upon request from Westshield.

2.9. RE-9 - DELINEATION, EXCAVATION AND TREATMENT OF IDENTIFIED ASBESTOS IMPACT

Date of Works Undertaken	N/A
Overview of Works	Background Detectable asbestos fibres and suspected asbestos sheeting (one location) have been identified in discreet locations; however, due to the nature and age of the filled material, it must be assumed that trace fibres are present throughout the Made Ground. Overview of Works N/A – no asbestos hotspots or visual ACMs were identified within Area 7A. Asbestos-related validation works will be reported under a separate cover.

2.10. RE-10 - DELINEATION, EXCAVATION, TREATMENT AND DISPOSAL OF NAPHTHALENE AND DIBUTYL PHTHALATE

Date of Works Undertaken	N/A
Overview of Works	Background Elevated Naphthalene has been identified within TP1101 at 0.90 m and elevated Dibutyl phthalate within WS111 at 2.50 m. It is considered that this material represents an unacceptable risk associated with volatilisation to indoor air. Overview of Works N/A - no naphthalene or dibutyl phthalate hotspots were identified within Area 7A. The Naphthalene hotspot TP1101 at 0.90 m (HS101) was located in Area 1A (northwest sector) and will be reported under a separate cover. The Dibutyl phthalate hotspot WS111 at 2.50 m (HS102) was located in Area 6 (central sector) and will be reported under a separate cover.

2.11. RE-11 - EXCAVATION, DELINEATION, & VALIDATION OF MERCURY HOTSPOTS

Date of Works Undertaken	N/A
Overview of Works	Background Elevated concentrations of mercury have been identified within TP118 at 0.50 m and TP141 at 1.00 m. This presents a potential volatilisation to indoor air risk and are considered to be localised hotspots within this Made Ground strata.



Overview of Works

N/A - TP118 at 0.50 m (HS117) and TP141 at 1.00 m (HS103) are located in Area 6 (central sector) Area 5 (eastern sector), respectively, and will be reported under a separate cover.

2.12. RE-12 - DELINEATION, & VALIDATION OF TPH IMPACTED SOILS

Date of Works Undertaken	N/A
Overview of Works	Background Elevated concentrations of heavy-end Total Petroleum Hydrocarbons (C21 – C35) have been identified at concentrations exceeding the GAC within TP202 at 1.00 m bgl towards the south west of the north western parcel. It is recommended that a watching brief is completed during earthworks in this location, with delineation and further sampling to determine the extent of impact present at this location. Overview of Works N/A – TP202 at 1.00 m bgl (HS105) was located in Area 2 (southwest part of northwestern parcel), and will be reported under a separate cover.

2.13. RE-13 – EXCAVATION, BREAKING AND PROCESSING OF ALL ABOVE- AND BELOW-GROUND STRUCTURES

Date of Works Undertaken	February 2026
Photographs	Plates 8-9
Chemical Testing	I2 Report: 26-011256 (SW-6F2-101) I2 Report: 26-021744 (SW-6F2-102 to SW-6F2-104)
Geotechnical Testing	Murray Rix Report: 26002-109 (SW-6F2-101) Murray Rix Report: 26002-173 (SW-6F2-102 to SW-6F2-104)
Overview of Works	Area 7A underwent a turnover of Made Ground throughout February 2026, with relic services and concrete obstructions encountered. All oversized materials were excavated using controlled mechanical techniques under the strict control of the Westshield site manager and under part-time supervision of E3P. Oversized brick and concrete were processed to be utilised within the new proposed development. Any steel reinforcements present within the concrete hardstanding, or waste in the form of wood, scrap metal and plastic were removed prior to the crushing of the demolition material stockpiles and were placed into allocated skips for subsequent disposal. Four chemical samples were obtained of site-won crush to meet the sampling frequency outlined in the Remediation and Enabling Works Strategy.



Results of the chemical analysis identified minor exceedances for non-volatile PAHs (benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, and dibenzo(a,h)anthracene) within two samples (SW-6F2-101 and SW-6F2-103) when compared to the relevant GACs (Hardstanding and >600 mm of cover), with primary exposure pathways related to dermal contact and ingestion. Therefore, these materials were placed beneath hardstanding in order to break the pathways to future end users.

A Remediation Sample Plan denoting the location of chemical samples is presented as Drawing 18-528-036 in APPENDIX III.

Results of the chemical analysis are presented in APPENDIX VI.

Grading certificates classified the site-won fill material as 6F2, with materials being subsequently engineered in line with the geotechnical engineering and performance specification, as provided by E3P in Section 6 of E3P Remediation and Enabling Works Strategy.

A Remediation Sample Plan denoting the location of geotechnical samples is presented as Drawing 18-528-037 in APPENDIX III.

Results of the geotechnical analysis are presented in APPENDIX VII.

2.14. RE-14 – DELINEATION, EXCAVATION, AND TREATMENT OF INFILLED HISTORICAL & PRESENT PONDS

Date of Works Undertaken	N/A
Overview of Works	Background Prior to the commencement of the main earthworks (where possible), all known former infilled ponds and a pond identified at the northwest should be clearly identified and demarked and investigated to assess the nature of materials and the extent of any deleterious elements. Overview of Works N/A – no former infilled or present ponds were identified within Area 7A.

2.15. RE-15 – REMOVAL OF DELETERIOUS MATERIAL

Date of Works Undertaken	February 2026
Overview of Works	Area 7A underwent a turnover of Made Ground throughout February 2026, with relic services and concrete obstructions encountered. All oversized materials were excavated using controlled mechanical techniques under the strict control of the Westshield site manager and under part-time supervision of E3P. Oversized brick and concrete were processed to be utilised within the new proposed development. No deleterious materials were identified within Area 7A.



2.16. RE-16 – INVESTIGATION AND REMOVAL OF HISTORIC USTS

Date of Works Undertaken	N/A
Overview of Works	Background During the remediation and enabling works, further investigation within the areas of historically mapped tanks will be required to confirm the presence and the exact location of any underground storage tanks (USTs). It is understood one tank has been filled with concrete with six filled with RG22 hard foam. Overview of Works N/A – the former petrol station and USTs were located within Area 3 (northern sector), and will be reported under a separate cover.

2.17. RE-17 – ELECTRICITY SUBSTATION

Date of Works Undertaken	N/A
Overview of Works	Background Following the demolition of the current Electricity Substations and when access allows, soils in the vicinity of the electricity substations should undergo chemical analysis for PCBs. Should PCBs be identified, the Local Authority will be notified, and a remedial plan will be agreed prior to any works carried out in this area. Overview of Works N/A – no electricity substations are located within Area 7A. The current electricity substations are located within Area 4 (northern sector) and Area 5 (eastern sector), and will be reported under a separate cover.

2.18. RE-18 – HISTORICALLY DEPOSITED ASH FILL

Date of Works Undertaken	N/A
Overview of Works	Background The review of desk study information and site investigation has identified an area of the central and northern sectors of the site to have been backfilled in the 1950s and 1960s with incinerated ash deposits. This material needs to be lifted and sorted with unsuitable and deleterious elements to be segregated and removed. The material will be subject to analysis and testing to confirm the engineering type in accordance with the geotechnical specification. Overview of Works N/A – no historically deposited ash fill deposits have been encountered within Area 7A. These deposits have been encountered within Area 4 (northern sector), Area 5 (eastern sector), and Area 6 (central sector), and will be reported under a separate cover.



2.19. RE-19 – IMPORTATION OF BULK FILL

Date of Works Undertaken	January-June 2026
Photographs	Plates 10-12
Chemical Testing	I2 Report: 26-002258 (6F2-101, Killshaw) I2 Report: 26-002807 (6F2-102, Cheshire Soils) I2 Report: 26-004801 (6F2-103 to 6F2-105, SED, Maher, Kirkby Skips) I2 Report: 26-005642 (6F2-106, Pheonix) I2 Report: 26-009444 (6F2-107, Mainsway) I2 Report: 26-011267 (6F2-108 to 6F2-109, Mainsway) I2 Report: 26-011873 (6F2-110 to 6F2-111, Fox Brothers and URNW) I2 Report: 26-018701 (6F2-112 to 6F2-114, Maher)
Geotechnical Testing	Murray Rix Report: 26002-56 (6F2-101, Killshaw) Murray Rix Report: 26002-67 (6F2-102, Cheshire Soils) Murray Rix Report: 26002-68 (6F2-103 to 6F2-105, SED, Maher, Kirkby Skips) Murray Rix Report: 26002-69 (6F2-106, Pheonix) Murray Rix Report: 26002-114 (6F2-107, Mainsway) Murray Rix Report: 26002-128 (6F2-108 to 6F2-109, Mainsway) Murray Rix Report: 26002-129 (6F2-110 to 6F2-111, Fox Brothers and URNW) Murray Rix Report: 26002-148 (6F2-112 to 6F2-114, Maher)
Overview of Works	Background Where there is a net shortfall of material required to achieve the proposed ground levels, it will be necessary to import natural inert soils and aggregate as per the engineering requirements. Imported material must be certified as suitable for use in strict accordance with the E3P chemical and geotechnical performance criteria. Overview of Works Natural inert soils were not required to be imported onto the site. Imported fill was used on-site in the form of 6F2 material from hauliers Killshaw, Cheshire Soils, SED, Maher, Kirkby Skips, Pheonix, Mainsway, Fox Brothers, and URNW. As of 30th June 2026, approximately 11,653 m³ of 6F2 has been imported to the site to be used as upfill within roads and temporary working platforms. Fourteen chemical samples were obtained from imported crush to meet the sampling frequency outlined in the Remediation and Enabling Works Strategy. Results of the chemical analysis identified minor exceedances for heavy metals (lead and nickel) within one sample (6F2-106), and non-volatile PAHs (benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, and dibenzo(a,h)anthracene) within three samples (6F2-103, 6F2-104, and 6F2-111), when compared to the relevant GACs (Hardstanding and >600 mm of cover), with primary exposure pathways related to dermal contact and ingestion. In addition, asbestos in the form of chrysotile loose fibres at concentrations <0.001% (i.e. trace detection) were identified within three samples (6F2-101, 6F2-104, and 6F2-114) with primary exposure pathways related to the inhalation of fibres/dust. Therefore, these materials were placed beneath hardstanding in order to break the pathways to future end users. A Remediation Sample Plan denoting the location of chemical samples is presented as Drawing 18-528-036 in APPENDIX III.



Results of the chemical analysis are presented in APPENDIX VI.

Grading certificates classified the majority of imported fill material as 6F2 (on Site of Origin), with materials been subsequently engineered in line with the geotechnical engineering and performance specification, as provided by E3P in Section 6 of E3P Remediation and Enabling Works Strategy. It is noted that samples 6F2-102 to 6F2-104 and 6F2-106 did not comply with the advised grading specification for a 6F2 material. However, consultation with the testing laboratory confirmed that this was due to a sampling error, and the materials would in fact meet the 6F2 classification.

A Remediation Sample Plan denoting the location of geotechnical samples is presented as Drawing 18-528-037 in APPENDIX III.

Results of the geotechnical analysis are presented in APPENDIX VII.

2.20. RE-20 – POST REMEDIATION GROUND GAS ASSESSMENT

Date of Works Undertaken	N/A
Overview of Works	Background The GSV for methane is currently within a CS4 classification in WS201. This borehole is located adjacent to the north of the off-site landfill. In addition, Made Ground with a hydrocarbon odour and decaying timber was noted. The flux box tests and surface emissions survey identified elevated concentrations of methane and carbon dioxide in the vicinity of WS201. Given the observed gas concentrations within the adjacent landfill, a gas cut-off barrier is considered to be required along the boundary with the landfill to interrupt potential gas migration pathways laterally within the ground, and reduce the ground gas concentrations in this area of the site. The gas cut-off barrier will need to be designed and installed by a suitably qualified specialist and validated through a programme of post remediation monitoring. Made Ground deposits within the vicinity of WS201 will require excavation to their full depth and all deleterious and putrescible materials removed for off-site disposal. Overview of Works N/A – WS201 is located in Area 2 (southwest part of northwestern sector), and will be reported under a separate cover. Based on the ground gas monitoring completed to date, all plots within Area 7A are currently classified as Characteristic Situation 1 (CS1) and gas protection measures are not considered to be required.



2.21. RE-21 – PREPARATION OF GARDEN FOR COVER SYSTEM

Date of Works Undertaken	Throughout
Overview of Works	Background As part of the land remediation works, garden areas will be prepared in a manner that will facilitate the placement of the clean cover system during the development phase of the works. The preparation of the areas requiring clean cover is critical in ensuring delivery of the site in a manner that will ensure no risk to the proposed end-users. Overview of Works Across Area 7A, all gardens were prepared to 750 mm below finished level to allow the placement of a clean cover system. Levels of the gardens to regrade level will be brought to the intended elevation via site-won subsoil, and site-won and imported topsoil. Westshield has produced As Built drawings for the site (Drawings Ref: Area 7A – As Built Survey – Base of Natural; and Area 7A – As Built Survey - Formation), which is presented in APPENDIX III. Interim validation letter reports pertaining to cover system depth validations will be reported under separate covers.

2.22. RE-22 – PROVISION OF SUBSOIL

Date of Works Undertaken	To be Completed
Overview of Works	Background The shallow natural drift deposits (predominantly granular and cohesive soils) are deemed suitable for use within the upper 600 mm of clean cover to residential gardens and areas of soft landscaping. It is therefore deemed viable to re-use materials that are cut as part of the wider earthworks (regulated by an MMP) to generate the required volumes of material. Overview of Works The provision of subsoil is currently outstanding. Interim validation letter reports pertaining provision of topsoil will be reported under separate covers.

2.23. RE-23 – PROVISION OF TOPSOIL

Date of Works Undertaken	To be Completed
Overview of Works	Background Topsoil will be recovered, where possible; however, it is likely that there will be a requirement to import suitable material for use within the proposed development.



Overview of Works

See Section 2.8 for details on the “RE:8 – Recovery of Natural Topsoil” from within Area 7A.

The provision of topsoil is currently outstanding.

Interim validation letter reports pertaining provision of topsoil will be reported under separate covers.

2.24. RE-24 – INDEPENDENT VALIDATION: WATCHING BRIEF

Date of Works Undertaken	January-June 2026
Overview of Works	Background Given the site history and potential contamination sources identified within the ICSM, a degree of uncertainty remains with regard to the potential for as yet unidentified contamination impact within the near-surface soils and groundwater. It will therefore be necessary to instigate the site-wide remediation and enabling works under the supervision of a suitably qualified and independent specialist. The specialist is required to attend site as and when appropriate to monitor works, record ground conditions and fully investigate all potential sources of as yet unidentified contamination. Overview of Works Throughout the remediation and enabling works completed by Westshield, E3P has maintained a full- and part-time watching brief in which site visits were undertaken to monitor works, record ground conditions and fully investigate all potential sources of as yet unidentified contamination. To date, an E3P engineer has attended site on 56 occasions, with full time attendance undertaken between 7th and 29th January 2026, and part-time attendance undertaken between 2nd February and 30th June 2026.

2.25. RE-25 – WASTE SOILS SURPLUS TO REQUIREMENTS

Date of Works Undertaken	Throughout
Overview of Works	Background In the event that a surplus of excavation material is present on-site, this, in most cases, will be deemed to be a waste in accordance with the Waste Framework Directive (Article 3(1) Waste Framework Directive 2008/98/EE). The waste producer – but ultimately, the landowner – is responsible for the compliant disposal of such materials. Overview of Works Mixed general waste, and timber/vegetation chippings were removed to a licensed waste facility.



Across the development, the earthworks have been designed to be in balance. As such, soils generated from excavation activities (cut) have been re-used on-site within the earthworks balance in areas requiring upfill. As such, no surplus soil generation was created.

The exception to the above is where the site-won topsoil deposits recovered from within Areas 7A and 7B were determined to be unsuitable for re-use within the development.

Approximately 8,900 m³ of non-hazardous soil (topsoil) was removed off-site from Areas 7A and 7B to a licensed waste facility. Waste tickets, weekly tracking records and waste consignment notes are available upon request from Westshield.

2.26. RE-26 – VALIDATION OF MATERIALS FOR POTABLE WATER SUPPLY INFRASTRUCTURE

Date of Works Undertaken	Throughout
Chemical Testing	I2 Report: 26-011256 (SW-6F2-101) I2 Report: 26-021744 (SW-6F2-102 to SW-6F2-104) I2 Report: 26-002258 (6F2-101, Killshaw) I2 Report: 26-002807 (6F2-102, Cheshire Soils) I2 Report: 26-004801 (6F2-103 to 6F2-105, SED, Maher, Kirkby Skips) I2 Report: 26-005642 (6F2-106, Pheonix) I2 Report: 26-009444 (6F2-107, Mainsway) I2 Report: 26-011267 (6F2-108 to 6F2-109, Mainsway) I2 Report: 26-011873 (6F2-110 to 6F2-111, Fox Brothers and URNW) I2 Report: 26-018701 (6F2-112 to 6F2-114, Maher)
Overview of Works	A post-remediation UKWIR risk assessment has been completed using existing ground materials that have been used during the upfill works across the site, in which the pipe will be laid. Exceedances of PE pipeline thresholds for hydrocarbons C10-C16, and C16-C40 have been noted within and outside of pipeline depth; as such, barrier pipe will be required for all areas of the site.

2.27. RE-27 – REMEDIAL VERIFICATION REPORT

Date of Works Undertaken	January-June 2026
Overview of Works	This validation report covers all remediation and enabling works completed up to June 2026. Phased validation reports pertaining to other areas of the site, and specific remedial actions (i.e. asbestos, petrol station), as well as the validation of gardens and gas membrane installations will be reported under separate covers.



3. GEOTECHNICAL ENGINEERING WORKS VALIDATION

3.1. GE-1– PRE COMMENCEMENT REMEDIATION CONTRACTOR REQUIREMENTS

Date of Works Undertaken	Throughout
Geotechnical Testing	E3P Murray Rix Report: 25005-124 (WS-D320-F 1.50-2.00 m, WS-D294-N-3.50-4.00 m, WS-D294-E 2.50-3.00 m, WS-T106-F 3.50-4.00 m, WS-D268-S 3.40-4.00 m, and TT Plot D265-D266 4.60 m) Murray Rix Report: 26002-64 (TP Plots D105-D106 Garage, TP Plot D103, TP Plots D123-D124, TP Plots D10, and TP Plot D08) Murray Rix Report: 26002-72 (TP Plot B152 1.50 m, TP Plot B133 1.00 m, and TP Plot B134 1.20 m) Murray Rix Report: 26002-73 (TP305 2.00 m, TP320 1.20 m, and TP324 1.00 m) Murray Rix Report: 26002-94 (TP311 1.80 m, TP314 2.20 m, and TP326 1.50 m) Murray Rix Report: 26002-108 (TP Plot 294D Garage 2.00 m) Westshield CTS Report: 393830.5.1.1 (Sample no. 621284) CTS Report: 399287.6.1.1 (Sample no. 629311) CTS Report: 399287.6.1.2 (Sample no. 629316) CTS Report: 399287.6.1.3 (Sample no. 629317) CTS Report: 399287.7.1.1 (Sample no. 629311) CTS Report: 399287.7.1.2 (Sample no. 629316) CTS Report: 399287.7.1.3 (Sample no. 629317) CTS Report: 399412.4.1.1 (Sample no. 629329) CTS Report: 404334.2.1.1 (Sample no. 637129) CTS Report: 404334.2.1.2 (Sample no. 637180) CTS Report: 404334.3.1.2 (Sample no. 637180)
Overview of Works	Prior to the start of the enabling works, E3P undertook a series of trial pits across the site as part of a phase of supplementary site investigation, in order to obtain geotechnical samples of the material intended to be used to raise levels within the development. Samples were taken from selective trial pits at depths ranging between 1.00 m and 4.60 m bgl. During the initial phases of enabling works, Westshield obtained geotechnical samples of the material intended to be used to raise levels within the development from on-site stockpiles generated as part of cut/fill activities. As part of the assessment of the deep Made Ground within the central sector (Area 6), E3P undertook a series of trial pits and obtained geotechnical samples of the material intended to be used to raise levels within the development. Samples were taken from selective trial pits at depths ranging between 1.00 m and 2.20 m bgl. Geotechnical testing comprised of particle size distribution tests (PSD), and soil density / moisture content relationship (OMC/DD 4.5 kg rammer). PSD results determined the soils to predominantly consist of Class 2A/2B materials, with localised occurrences of Class 1A/1B and Class 2C.



Soil density / moisture content relationship testing determined an optimum water content ranging between 6% and 19%, with a maximum dry density ranging between 1.45 mg/m³ and 2.11 mg/m³.

All testing on-site testing has been completed in line with Section 6 of the Remediation and Enabling Works Strategy.

Results of the geotechnical analysis are presented in APPENDIX VII.

3.2. GE-2– FURTHER ASSESSMENT OF DEEP MADE GROUND

Date of Works Undertaken	N/A
Overview of Works	Background Further investigation is required to delineate and identify the full depth of the Made Ground in the central sector of the site to address geotechnical uncertainties and to allow the foundation solution to be finalised. Overview of Works N/A – the deep Made Ground is located in Area 6 (central sector) and will be reported under a separate cover.

3.3. GE-3– EXCAVATION, BREAKING AND PROCESSING OF ALL ABOVE AND BELOW GROUND STRUCTURES

Date of Works Undertaken	February 2026
Photographs	Plates 8-9
Chemical Testing	I2 Report: 26-011256 (SW-6F2-101) I2 Report: 26-021744 (SW-6F2-102 to SW-6F2-104)
Geotechnical Testing	Murray Rix Report: 26002-109 (SW-6F2-101) Murray Rix Report: 26002-173 (SW-6F2-102 to SW-6F2-104)
Overview of Works	Area 7A underwent a turnover of Made Ground throughout February 2026, with relic services and concrete obstructions encountered. All oversized materials were excavated using controlled mechanical techniques under the strict control of the Westshield site manager and under part-time supervision of E3P. Oversized brick and concrete were processed to be utilised within the new proposed development. Any steel reinforcements present within the concrete hardstanding, or waste in the form of wood, scrap metal and plastic, were removed prior to the crushing of the demolition material stockpiles and were placed into allocated skips for subsequent disposal. Four chemical samples were obtained of site-won crush to meet the sampling frequency outlined in the Remediation and Enabling Works Strategy.



Results of the chemical analysis identified minor exceedances for non-volatile PAHs (benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, and dibenzo(a,h)anthracene) within two samples (SW-6F2-101 and SW-6F2-103) when compared to the relevant GACs (Hardstanding and >600 mm of cover), with primary exposure pathways related to dermal contact and ingestion. Therefore, these materials were placed beneath hardstanding in order to break the pathways to future end users.

A Remediation Sample Plan denoting the location of chemical samples is presented as Drawing 18-528-036 in APPENDIX III.

Results of the chemical analysis are presented in APPENDIX VI.

Grading certificates classified the site-won fill material as 6F2, with materials being subsequently engineered in line with the geotechnical engineering and performance specification, as provided by E3P in Section 6 of E3P Remediation and Enabling Works Strategy.

A Remediation Sample Plan denoting the location of geotechnical samples is presented as Drawing 18-528-037 in APPENDIX III.

Results of the geotechnical analysis are presented in APPENDIX VII.

3.4. GE-4 – CUT-AND-FILLING OF MADE GROUND TO DEVELOPMENT LEVELS

Date of Works Undertaken	January-June 2026
Photographs	Plates 13-22
Chemical Testing	I2 Report: 26-007687 (SW-MG-101) I2 Report: 26-012706 (TP303, TP307, TP312, and TP327) I2 Report: 26-03256 (SW-MG-122) I2 Report: 26-026103 (SW-NF-101 to SW-NF-103) I2 Report: 26-033295 (SW-NF-107 to SW-NF-109)
Geotechnical Testing	Murray Rix Report: 26002-73 (TP305, TP320, and TP324) Murray Rix Report: 26002-94 (TP311, TP314, and TP326) Murray Rix Report: 26002-224 (SW-MG-122) Murray Rix Report: 26002-189 (SW-NF-101 to SW-NF-105) Murray Rix Report: 26002-223 (SW-NF-107 to SW-NF-109)
In-Situ Testing	CTS Report: 407439.1.1.1 CTS Report: 409411.3.1.1 CTS Report: 415468.1.1.1 CTS Report: 415718.3.1.1
Overview of Works	In order to provide the final development platform, there was a requirement to undertake a significant cut and fill of the both the Made Ground and Natural materials on-site. Only site-won materials were used to build the final development levels. The site was subject to a process of enabling earthworks completed by Westshield, under part time supervision of E3P. All unsuitable materials were removed in their entirety and extreme care was taken within areas of cut to not disturb the underlying stratum.



Where the proposed enabling works levels required the current landform to be cut, extreme care was taken so as not to disturb the underlying stratum prior to the placement of the appropriate platform, in compliance with the E3P geotechnical engineering and performance specification, as provided by E3P in Section 6 of E3P Remediation and Enabling Works Strategy. Where the development levels required material to be filled, site-won Made Ground, natural clays, and sands were utilised. Where there was a shortfall of material, natural material was utilised to build up levels. Upfill materials were sorted in a controlled manner prior to replacement, in accordance with the requirements of the specification for the intended land use.

All site-won Made Ground soils were tested at 1 per 1000 m³, with leachate analysis tested at 1 per 2000 m³, and site-won natural soils were tested at 1 per 2000 m³ frequency in accordance with the agreed specification.

Site-won Made Ground deposits sourced from Area 6 were utilised as upfill within Area 7A.

Chemical analysis of upfill sourced from Area 6 recorded minor exceedances against relevant GACs (Hardstanding and >600 mm of Cover) for heavy metals (arsenic and lead), and non-volatile PAHs (Benzo(b)fluoranthene, benzo(a)pyrene, and dibenzo(a,h)anthracene), with primary exposure pathways related to dermal contact and ingestion.

Chemical analysis of upfill sourced from Area 6 recorded elevated concentrations of total mercury within two samples of site-won Made Ground (SW-MG-101 and TP327). Mercury speciation analysis on these samples confirmed that there were no exceedances for elemental mercury; as such, the primary exposure pathways related to dermal contact and ingestion.

Chemical analysis of upfill sourced from Area 6 identified asbestos in the form of chrysotile loose fibres at trace concentrations (<0.001%) with one sample of site-won Made Ground (SW-MG-101); and in the form of chrysotile and amosite loose fibrous debris at a concentration of 0.05% within one sample of site-won Made Ground (TP307), with primary exposure pathways related to the inhalation of dust/fibres. Materials within the vicinity of TP307 were deemed unsuitable for re-use due to the elevated concentration of asbestos, and a hotspot delineation and excavation was proposed to remove the impacted materials; these works are currently on-going due to the location being overlain by a temporary stockpile of site-won natural fill deposits, and will be reported under a separate cover.

Minor detections of VOCs and SVOCs were also identified within two samples of site-won Made Ground (TP303 and TP327); however, no exceedances were recorded.

Leachate analysis of upfill sourced from Area 6 recorded minor exceedances of the EQS thresholds for fluoranthene, copper, nickel, and zinc; however, due to the low mobility of the determinants, there is considered to be a low risk to residential end users and the wider environment.

The heavy metal, non-volatile PAH and asbestos impacted materials (excluding TP307) were used as upfill and placed at depths >1.00 m bgl before being overlain with naturally occurring inert superficial deposits, in accordance with the Asbestos CSM as outlined within the E3P Remediation and Enabling Works Strategy. As such, any risk to human health is mitigated by the installation of a



chemically suitable cover system within all proposed garden areas and areas of soft landscaping; additionally, where hardstanding is present (plots, driveways, and roads) the pathway is cut. Therefore, no risk will be present, and the soils are deemed suitable for re-use.

Chemical analysis of natural upfill sourced from Area 7A (SW-NF-101 to SW-NF-103, and SW-NF-107 to SW-NF-109) did not identify any exceedances of relevant GACs, and these soils are deemed suitable for re-use.

A Remediation Sample Plan denoting the location of chemical samples is presented as Drawing 18-528-036 in APPENDIX III.

Results of the chemical analysis are presented in APPENDIX VI.

Grading certificates classified the materials to vary between Class 2C, 2A/2B, and 1B, with materials being subsequently engineered in line with the geotechnical engineering and performance specification, as provided by E3P in Section 6 of E3P Remediation and Enabling Works Strategy.

A Remediation Sample Plan denoting the location of geotechnical samples is presented as Drawing 18-528-037 in APPENDIX III.

Results of the geotechnical analysis are presented in APPENDIX VII.

Fill materials were placed and nominally compacted in a manner that accords with the geotechnical engineering and performance specification, as provided by E3P in Section 6 of E3P Remediation and Enabling Works Strategy; and contamination compliance criteria, in order to prepare the site for a VSC foundation solution.

Nuclear Density Gauge (NDG) tests were completed throughout the upfill layers, with the materials generally meeting the testing requirements of the geotechnical specification (in-situ density >95% compaction for all in-situ materials), with results presented within APPENDIX VIII. The NDG test locations are presented on the E3P drawing 18-528-038 in APPENDIX III.

Westshield has produced As Built drawings for the site (Drawings Ref: Area 7A – As Built Survey – Base of Natural; and Area 7A – As Built Survey - Formation), which is presented in APPENDIX III.

3.5. GE-5 – PLACEMENT AND COMPACTION OF UPFILL MATERIAL TO FACILITATE GROUND IMPROVEMENT BY VSC

Date of Works Undertaken	January-June 2026
Geotechnical Testing	Murray Rix Report: 26002-73 (TP305, TP320, and TP324) Murray Rix Report: 26002-94 (TP311, TP314, and TP326) Murray Rix Report: 26002-224 (SW-MG-122) Murray Rix Report: 26002-189 (SW-NF-101 to SW-NF-105) Murray Rix Report: 26002-223 (SW-NF-107 to SW-NF-109)
In-Situ Testing	CTS Report: 407439.1.1.1 CTS Report: 409411.3.1.1 CTS Report: 415468.1.1.1



	CTS Report: 415718.3.1.1
Overview of Works	Where the development levels required material to be filled, site-derived natural clays and sands and imported 6F2 materials were sorted in a controlled manner prior to replacement, in accordance with the requirements of the specification for the intended land use. Nuclear Density Gauge (NDG) tests were completed throughout the upfill layers, with the materials generally meeting the testing requirements of the geotechnical specification (in-situ density >95% compaction for all in-situ materials), with results presented within APPENDIX VIII. The NDG test locations are presented on the E3P drawing 18-528-038 in APPENDIX III. Westshield has produced As Built drawings for the site (Drawings Ref: Area 7A – As Built Survey – Base of Natural; and Area 7A – As Built Survey - Formation), which is presented in APPENDIX III.

3.6. GE-6 – CONSTRUCTION OF TEMPORARY WORKING PLATFORM

Date of Works Undertaken	January-June 2026
Chemical Testing	I2 Report: 26-011256 (SW-6F2-101) I2 Report: 26-021744 (SW-6F2-102 to SW-6F2-104) I2 Report: 26-002258 (6F2-101, Killshaw) I2 Report: 26-002807 (6F2-102, Cheshire Soils) I2 Report: 26-004801 (6F2-103 to 6F2-105, SED, Maher, Kirkby Skips) I2 Report: 26-005642 (6F2-106, Pheonix) I2 Report: 26-009444 (6F2-107, Mainsway) I2 Report: 26-011267 (6F2-108 to 6F2-109, Mainsway) I2 Report: 26-011873 (6F2-110 to 6F2-111, Fox Brothers and URNW) I2 Report: 26-018701 (6F2-112 to 6F2-114, Maher)
Geotechnical Testing	Murray Rix Report: 26002-109 (SW-6F2-101) Murray Rix Report: 26002-173 (SW-6F2-102 to SW-6F2-104) Murray Rix Report: 26002-56 (6F2-101, Killshaw) Murray Rix Report: 26002-67 (6F2-102, Cheshire Soils) Murray Rix Report: 26002-68 (6F2-103 to 6F2-105, SED, Maher, Kirkby Skips) Murray Rix Report: 26002-69 (6F2-106, Pheonix) Murray Rix Report: 26002-114 (6F2-107, Mainsway) Murray Rix Report: 26002-128 (6F2-108 to 6F2-109, Mainsway) Murray Rix Report: 26002-129 (6F2-110 to 6F2-111, Fox Brothers and URNW) Murray Rix Report: 26002-148 (6F2-112 to 6F2-114, Maher)
In-Situ Testing	CTS Report: 414598.1.1.1 CTS Report: 414598.1.1.2 CTS Report: 414598.1.1.3 CTS Report: 414598.1.1.4 CTS Report: 414598.1.1.5 CTS Report: 414598.1.1.6 CTS Report: 414598.1.1.7 CTS Report: 414598.1.1.8 CTS Report: 414598.1.1.9 CTS Report: 414598.1.1.10 CTS Report: 414598.1.1.11



Overview Works

of Background

Where plots are to be prepared in a manner that will facilitate ground improvement by Vibro-stone column or a driven pile, a temporary working platform will be constructed.

Overview of Works

A temporary working platform was constructed, comprising 300 mm of 6F2 from site-won and imported crushed material. Imported fill was used on-site in the form of 6F2 material from hauliers Killshaw, Cheshire Soils, SED, Maher, Kirkby Skips, Pheonix, Mainsway, Fox Brothers, and URNW. As of 30th June 2026, approximately 11,653 m³ of 6F2 has been imported to the site to be used as upfill within roads and temporary working platforms.

Four chemical samples were obtained of site-won crush to meet the sampling frequency outlined in the Remediation and Enabling Works Strategy.

Results of the chemical analysis identified minor exceedances for non-volatile PAHs (benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, and dibenzo(a,h)anthracene) within two samples (SW-6F2-101 and SW-6F2-103) when compared to the relevant GACs (Hardstanding and >600 mm of cover), with primary exposure pathways related to dermal contact and ingestion. Therefore, these materials were placed beneath hardstanding in order to break the pathways to future end users.

Fourteen chemical samples were obtained from imported crush to meet the sampling frequency outlined in the Remediation and Enabling Works Strategy.

Results of the chemical analysis identified minor exceedances for heavy metals (lead and nickel) within one sample (6F2-106), and non-volatile PAHs (benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, and dibenzo(a,h)anthracene) within three samples (6F2-103, 6F2-104, and 6F2-111), when compared to the relevant GACs (Hardstanding and >600 mm of cover), with primary exposure pathways related to dermal contact and ingestion. In addition, asbestos in the form of chrysotile loose fibres at concentrations <0.001% (i.e. trace detection) were identified within three samples (6F2-101, 6F2-104, and 6F2-114) with primary exposure pathways related to the inhalation of fibres/dust. Therefore, these materials were placed beneath hardstanding in order to break the pathways to future end users.

A Remediation Sample Plan denoting the location of chemical samples is presented as Drawing 18-528-036 in APPENDIX III.

Results of the chemical analysis are presented in APPENDIX VI.

Grading certificates classified the site-won fill material as 6F2, with materials been subsequently engineered in line with the geotechnical engineering and performance specification, as provided by E3P in Section 6 of E3P Remediation and Enabling Works Strategy.

Grading certificates classified the majority of imported fill material as 6F2 (on Site of Origin), with materials been subsequently engineered in line with the geotechnical engineering and performance specification, as provided by E3P in Section 6 of E3P Remediation and Enabling Works Strategy. It is noted that samples 6F2-102 to 6F2-104 and 6F2-106 did not comply with the advised grading specification for a 6F2 material. However, consultation with the testing



laboratory confirmed that this was due to a sampling error, and the materials would in fact meet the 6F2 classification.

A Remediation Sample Plan denoting the location of geotechnical samples is presented as Drawing 18-528-037 in APPENDIX III.

Results of the geotechnical analysis are presented in APPENDIX VII.

Westshield had full-time supervision with E3P providing part-time supervision of the following:

- CBR plate load tests to be completed on roads and piling mats;
- Geotechnical testing of the site-won material was undertaken for PSD; and,
- CBR tests were undertaken beneath roads and plots to ensure compaction of 5%.

The results of the CBR tests confirm that all locations met the compaction specification, with certificates presented in APPENDIX VIII. The location of CBRs is presented within the Westshield drawing ref: Area 7A – CBR Testing Location Plan in APPENDIX III.

3.7. GE-7 – REPLACEMENT OF MATERIALS, GEOTECHNICAL ENGINEERING REQUIREMENTS

Date of Works Undertaken	January-June 2026
Geotechnical Testing	Murray Rix Report: 26002-73 (TP305, TP320, and TP324) Murray Rix Report: 26002-94 (TP311, TP314, and TP326) Murray Rix Report: 26002-224 (SW-MG-122) Murray Rix Report: 26002-189 (SW-NF-101 to SW-NF-105) Murray Rix Report: 26002-223 (SW-NF-107 to SW-NF-109)
In-Situ Testing	NDGs: CTS Report: 407439.1.1.1 CTS Report: 409411.3.1.1 CTS Report: 415468.1.1.1 CTS Report: 415718.3.1.1 CBRs: CTS Report: 414598.1.1.1 CTS Report: 414598.1.1.2 CTS Report: 414598.1.1.3 CTS Report: 414598.1.1.4 CTS Report: 414598.1.1.5 CTS Report: 414598.1.1.6 CTS Report: 414598.1.1.7 CTS Report: 414598.1.1.8 CTS Report: 414598.1.1.9 CTS Report: 414598.1.1.10 CTS Report: 414598.1.1.11
Overview of Works	To achieve the proposed Enabling Works Levels (EWLs), Westshield undertook a process of cut/fill works including the careful selection of materials from within areas of reduced level excavation (cut) prior to placement in a manner that accords with the geotechnical engineering and performance specification,



as provided by E3P in Section 6 of E3P Remediation and Enabling Works Strategy; and contamination compliance criteria.

A general turnover to a maximum depth of 2.80 m bgl was required within Area 7A as part of these works to remove constraints to construction. Where applicable, all voids were backfilled with materials in accordance with the E3P geotechnical engineering and performance specification, as provided by E3P in Section 6 of E3P Remediation and Enabling Works Strategy.

Plots requiring a VSC solution were left between 875 mm (Plots D115 to D127) and 1050 mm (Plots D128 to D162) below the finished level, whilst gardens were finished to 750 mm below finished level.

Westshield has produced a Reduce Level Dig Survey drawing for the site (Drawing Ref: Area 7A – Reduce Level Dig Survey), which is presented in APPENDIX III.

When re-engineering Made Ground to fill voids or after turnover, the general fill was placed and compacted in 200-250 mm layers and tracked/rolled back in using earth moving plant to compact under the full-time supervision of Westshield and part-time supervision of E3P.

Nuclear Density Gauge (NDG) tests were completed throughout the upfill layers, with the materials generally meeting the testing requirements of the geotechnical specification (in-situ density >95% compaction for all in-situ materials), with results presented within APPENDIX VIII. The NDG test locations are presented on the E3P drawing 18-528-038 in APPENDIX III.

Westshield had full-time supervision with E3P providing part-time supervision of the following:

- CBR plate load tests to be completed on roads and piling mats;
- Geotechnical testing of the site-won material was undertaken for PSD; and,
- CBR tests were undertaken beneath roads and plots to ensure compaction of 5%.

The results of the CBR tests confirm that all locations met the compaction specification, with certificates presented in APPENDIX VIII. The location of CBRs is presented within the Westshield drawing ref: Area 7A – CBR Testing Location Plan in APPENDIX III.

3.8. GE-8– PREPARATION OF GROUND FOR VIBRO STONE COLUMNS WITHIN TREE INFLUENCE

Date of Works Undertaken	January-June 2026
Photographs	Plates 13-22
Overview of Works	Background Where trees are present, or within their total zone of influence, the contractor must ensure that all cohesive soils are removed to the required depth with the subsequent replacement with a granular blanket to fully mitigate the potential for volumetric instability in the clay soils.



Overview of Works

Coopers have completed the FZP for the site (Drawing 7887/Fd/01, Sheets 1 to 4, dated May 2026, presented in APPENDIX III), which should be read in conjunction with this validation report.

The Coopers FZP denotes that all plots (Plots D115-D162) within Area 7A are affected by tree influence; therefore, will require all cohesive material to be removed and replaced with suitable granular material in line with NHBC guidance and recommendations.

Clay removal was undertaken within the footprint of the above mentioned plots under the full-time supervision of Westshield, with E3P providing a watching brief under part-time supervision. Clays were removed in line with the Coopers FZP and replaced with natural granular fills and/or non-heave affected clays recovered from the site, placed and engineered in line with E3Ps geotechnical engineering and performance specification, as provided by E3P in Section 6 of E3P Remediation and Enabling Works Strategy.

Westshield has produced As Built drawings for the site (Drawings Ref: Area 7A – As Built Survey – Base of Natural; and Area 7A – As Built Survey - Formation), which is presented in APPENDIX III.

3.9. GE-9– DEEP FILL ASSESSMENT

Date of Works Undertaken	N/A
Overview of Works	Background Where material upfill is proposed on compressible materials, predictive settlement modelling is required to determine the long-term potential for surcharge to induce consolidation within the underlying stratum. Where settlement exceeds the prescribed limits, Ground Engineering works are required to be designed by a specialist to ensure no long-term risk of subsidence to structures and infrastructure. Overview of Works N/A – no material upfill on compressible materials was undertaken within Area 7A.

3.10. GE-10– DELINEATION, EXCAVATION AND TREATMENT OF INFILLED HISTORICAL AND PRESENT PONDS

Date of Works Undertaken	N/A
Overview of Works	Background Prior to the commencement of the main earthworks (where possible), all known former infilled ponds and a pond identified at the northwest should be clearly identified and demarked and investigated to assess the nature of materials and the extent of any deleterious elements. Overview of Works N/A – no former infilled or present ponds were identified within Area 7A.



3.11. GE-11– REMOVAL OF POTENTIAL HIGHWALLS BENEATH PLOT FOOTPRINTS

Date of Works Undertaken	N/A
Overview of Works	Background During the E3P Supplementary Site Investigation 2026, potential highwall features associated with deep Made Ground deposits and former cut and fill works to provide a level development platform in the central sector were identified. During the process of cut/fill earthworks, remedial works comprising the controlled removal and regrading of the existing Made Ground highwall will be required in order to facilitate the creation of a stable and level development platform. Overview of Works N/A – the deep Made Ground and potential highwall features are located in Area 6 (central sector) and will be reported under a separate cover.



4. SECOND PHASE MITIGATION AND MANAGEMENT

4.1. COVER SYSTEM

This document details the construction works that are required to ensure full compliance with the remediation and enabling works strategy, regulatory authorities, building control, and warranty providers.

The following should be implemented during the build phase of the development:

- Chemical validation of site-won and imported topsoil for use within soft landscaping.
- Chemical validation of site-won subsoil, and any additional subsoil imported for use within soft landscaping.
- Placement and depth validation of subsoil (site-won and/or imported) within soft landscaping.
- Placement and depth validation of topsoil (site-won and/or imported) within soft landscaping.
- Installation and validation of ground gas protection measures (where required). A Ground Gas Zoning Plan is included as Drawing 18-528-020 in APPENDIX III.

This section covers the build phase requirements with regard to cover systems for soft landscaping however, in relation to any further build phase validation items such as ground gas mitigation, this will be reported under a separate cover (Gas Protection Design Report).

4.2. PLACEMENT OF COVER SYSTEM

The remediation and enabling works strategy for the site, concerning the health of the future site users, includes the provision of a chemically suitable clean material to be installed in all soft landscaped areas. The construction of the clean cover/placement of clean material shall be in accordance with Table 4.1.

Table 4.1 Construction and Validation of the Cover System

LANDSCAPE TYPE	DEPTH		BREAK LAYER Y/N/TYPE	VALIDATION FREQUENCY	TESTING SUITE	VALIDATION DOCUMENT
	TOPSOIL	SUBSOIL				
Back garden	150	450	Y – Made Ground N – Natural Stata	1 per plot	A/B/C/D	Depth Validation Letters
Front garden	150	150	N	1 per 4 plots	A/B/C/D	
LEAP (parkland)	Minimum 300 mm clean cover		N	1 per 625 m ²	A/B/C/D	
Functional POS	Minimum 300 mm clean cover		N	1 per 2000 m ²	A/B/C/D	
Non-Functional POS	N/A		N/A	N/A	A/B/C/D	N/A



In accordance with the current requirements of the regulatory authorities, validation samples will be collected from all materials that are to be imported or re-used on-site to confirm the proposed development will pose no unacceptable risk to human health or the wider environ.

It is recommended that in the areas of known infilled ground across the site, a break layer is included to limit any cross contamination with any observed Made Ground. Where earthworks provide a cut of material into natural deposits, a break layer can be omitted.

Subsoil and topsoil shall be free from deleterious materials, including building materials (e.g. bricks, concrete, plaster), timber, plastics, glass, metal fragments, and other unsuitable elements listed in BS 3882:2007. Compliance will be assessed visually during sampling and inspection of the cover system to confirm the absence of these contaminants. BS 3882 testing will not be undertaken to verify compliance.

Initial testing of site-won sub-soil to classify its re-use on-site has been completed as part of the remediation works undertaken. Therefore, further analysis of sub-soil will be required to achieve the testing frequencies outlined within the remediation strategy and in the event of the importation of additional material during construction.

Testing requirements for topsoil and sub-soil are presented in Table 4.2.

Table 4.2 Specification for Chemical Testing

MATERIAL USE	TESTING FREQUENCY	SUITE OF ANALYSIS
Subsoil Greenfield Source (450 mm Garden Cover)	1 Sample per 200 m ³ (minimum 3 from source)	A/B/C/D
Subsoil Brownfield Source (450 mm Garden Cover)	1 Sample per 50 m ³ (minimum 6 from source)	A/B/C/D
Topsoil Greenfield Source (150 mm Garden Cover)	1 Sample per 200 m ³ (minimum 3 from source)	A/B/C/D
Topsoil Brownfield Source (150 mm Garden Cover)	1 Sample per 50 m ³ (minimum 6 from source)	A/B/C/D
General Engineering Fill (Class 1 and 2 Soil)	1 Sample per 1000 m ³	A/B/C/D

Notes:

Suites of Analysis:

- A. Speciated PAH.
- B. Speciated TPH (C5-C35).
- C. Asbestos (ID).
- D. CLEA Inorganic Heavy Metals.

4.3. PROCEDURE FOR PLACEMENT OF CHEMICALLY SUITABLE COVER SYSTEM

Garden and landscaped areas need to be backfilled with validated subsoil, and topsoil in line with Table 4.1.

Topsoil is required to be confirmed as chemically suitable before placement. Where subsoil is not placed during remediation and enabling works, E3P will be required to return to the site and undertake independent validation of the correct placement of subsoil.

The placement of clean material in soft landscaping will be undertaken during the build phase works of the project.



The placement of subsoil and corresponding validation will be documented within the Garden Validation Letters (to be issued on completion of the contractor's works).

If proposed utilities are to be placed within the cover system, the clean cover should be placed before installation of these utilities.

If natural superficial deposits are encountered, excavation can cease here.

E3P will collect photographic evidence of the placement of certified topsoil and subsoil on completion of construction works. This element will also be checked by the Building Control Officer as part of the site completion before issuing a CML certificate.

The garden Validation procedure is detailed in Table 4.3.

Table 4.3 **Garden Validation Procedure**

PROCEDURE	METHOD
Chemical Validation	Imported subsoil and topsoil will need to be chemically analysed to confirm suitability for use with the proposed cover system before installation and completion of the garden systems. E3P will issue an email to the appropriate party with an assessment of the chemical suitability of both subsoil and topsoil. If acceptable, the materials can be installed to the required depth at which time the plot will be deemed complete following a validation procedure by a suitability qualified E3P engineer.
Trial Holes	Trial holes are deemed necessary for all plots given that the 600 mm cover system will need to be placed on each plot during the build phase.
Validation	Photographic evidence will be taken by E3P of the topsoil placement demonstrating the depth of topsoil and practical completion of works are required for each and every plot. For plots where subsoil depths require validation by E3P during the build phase, photographs will be taken and collated by E3P. It should be noted that cover systems should be installed as late as possible in the build programme to reduce the risk of cross-contamination.
Validation Certificate	Once the photographs of the placement of topsoil (over the clean material) have been provided, E3P will issue a plot-specific validation certificate to demonstrate that the required subsoil and topsoil have been placed in the required garden plots along with the chemical analysis.
Completion Report	Upon completion of all garden and landscaped areas within the development, a Completion Report will be issued providing the confirmation that all remediation requirements have been achieved.

Figure 4.1 provides an example of a garden validation certificate that will be required for each plot.



Figure 4.1 Example of Plot Cover System Validation

Plot Validation		20 / 20 (100%)
Plot Validation 1		5 / 5 (100%)
Plot Number	117	
Is Plot Ready	Yes	
Installation Standard	Pass	
Depth of Cover System Materials (record the depth and support with Photo down the hole)	1000	
		
Photo 1	Photo 2	
Depth of Topsoil (mm)	150	
Depth of Subsoil (mm)	850	
Depth of Cover System at Ground Level (Photo)	☒	
		
Photo 3		
Depth of Cover System in Relation to Plot (Ensure the whole plot can be seen in the photo)	☒	
		
Photo 4		
Soil suitable	Yes	
Geotextile membrane present	N/A	

END OF REPORT

Appendix I: Limitations





GENERAL

This report and any associated works (together comprising the "Services") were compiled and carried out by E3P for the client (as present in Section 1) under the E3P "Terms of Business" or with those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed and outlined in the body of the report.

Unless explicitly agreed otherwise, in writing, this report has been prepared under E3P Standard Terms and Business as included within our proposal to the Client.

Project-specific appointment documents may be agreed upon at our discretion and a charge may be levied for both the time to review and finalise appointment documents and also for associated changes to the appointment terms. E3P reserves the right to amend the fee should any changes to the appointment terms create an increased risk to E3P.

The report needs to be considered in light of the proposal and associated limitations of scope. The report needs to be read in full and isolated sections cannot be used without full reference to other elements of the report and any previous works referenced within the report.

PHASE 1 GEOENVIRONMENTAL AND PRELIMINARY RISK ASSESSMENTS

Coverage: This section covers reports with the following titles or combination of titles: Phase 1; Desktop Study; Geoenvironmental Assessment; Development Appraisal; Preliminary Environmental Risk Assessment; Constraints Report; Due Diligence Report; Geotechnical Development Review; Environmental Statement; Environmental Chapter; Baseline Environmental Assessment; Project Scope Summary Report (PSSR), Program Environmental Impact Report (PEIR), Geotechnical Development Risk Register; Agricultural Land Assessment; Mineral Safeguarding Assessment; Desk Top Coal Mining Risk Assessment; Hydrogeological Appraisal; Construction Environmental Management Plan; and Site Water Management Plan.

The works undertaken to prepare this report comprised a study of available and easily documented information from a variety of sources (including the Client), together with (where appropriate) a brief walkover inspection of the Site and correspondence with relevant authorities and other interested parties. Due to the short timescales associated with these projects' responses may not have been received from all parties. E3P cannot be held responsible for any disclosures that are provided post-production of our report and will not automatically update our report.

The opinions given in this report have been dictated by the finite data on which they are based and are relevant only for the purpose for which the report was commissioned. The information reviewed should not be considered exhaustive and has been accepted in good faith as providing true and representative data pertaining to site conditions. Should additional information become available which may affect the opinions expressed in this report, E3P reserves the right to review such information and, if warranted, to modify the opinions accordingly.

It should be noted that any risks identified in this report are perceived risks based on the information reviewed. Actual risks can only be assessed following intrusive investigations of the site.

Where mention has been made to the identification of Japanese Knotweed and other invasive plant species and asbestos or asbestos-containing materials, this is for indicative purposes only and does not constitute or replace full and proper surveys completed by suitably qualified and experienced specialists in these fields.

E3P does not warrant work/data undertaken/provided by others.



INTRUSIVE INVESTIGATION REPORTS

Coverage: The following report titles (or combination) may cover this category of work: Geoenvironmental Site Investigation; Geotechnical Assessment; GIR (Ground Investigation Reports); Preliminary Environmental And Geotechnical Risk Assessment; Preliminary Summary; Coal Mining Risk Assessment, Ground Gas Addendum; and, Geotechnical Risk Register.

The investigation has been undertaken to provide information concerning either:

- The type and degree of contamination present at the site in order to allow a generic quantitative risk assessment to be undertaken; or
- Information on the soil properties present at the site to allow for geotechnical development constraints to be considered.

The scope of the investigation was selected on the basis of the specific development and land use scenario proposed by the Client and may be inappropriate to another form of development or scheme. If the development layout was not known at the time of the investigation the report findings may need revisiting once the development layout is confirmed.

Unless otherwise specified in the scope of works, 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 (intrusive and sample locations 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.

For contamination purposes, the objectives of the investigation are limited to establishing the risks associated with potential contamination sources with the potential to cause harm to human health, building materials, the environment (including adjacent land), or controlled waters.

For geotechnical investigations, the purpose is to broadly consider potential development constraints associated with the physical property of the soils underlying the site within the context of the proposed future or continued use of the site, as stated within the report.

The amount of exploratory work, soil property testing and chemical testing undertaken has necessarily been restricted by various factors which may include accessibility, the presence of services; existing buildings; current site usage or short timescales. The exploratory holes completed assess only a small percentage of the area in relation to the overall size of the Site, and as such can only provide a general indication of conditions.

The number of sampling points and the methods of sampling and testing do not preclude the possible existence of contamination where concentrations may be significantly higher than those actually encountered or ground conditions that vary from those identified. In addition, there may be exceptional ground conditions elsewhere on the site which have not been disclosed by this investigation and which have therefore not been taken into account in this report

The inspection, testing and monitoring records relate specifically to the investigation points and the timeframe that the works were undertaken. They will also be limited by the techniques employed. As part of this assessment, E3P has used reasonable skill and care to extrapolate conditions between these points based on assumptions to develop our interpretation and conclusions.

The assumption made in forming our conclusions is that the ground and groundwater conditions (both chemically and physically) are the same as have been encountered during the works undertaken at the specific points of investigation and at the time of the investigation.

Conditions can change between investigation points both spatially and over time and these interpretations should therefore be considered indicative. The assessment of extreme weather events and their impact on ground conditions is not within the scope of E3P's work

The risk assessment and opinions provided are based on currently available guidance relating to acceptable contamination concentrations; no liability can be accepted for the retrospective effects of



any future changes or amendments to these values. Specific assumptions associated with the risk assessment process have been outlined within the body or associated appendix of the report.

Additional investigations may be required in order to satisfy relevant planning conditions or to resolve any engineering and environmental issues.

Where soil contamination concentrations recorded as part of this investigation are used for commentary on the potential waste classification of soils for disposal purposes, these should be classed as indicative only. Due consideration should be given to the variability of contaminant concentrations taken from targeted samples versus bulk excavated soils and the potential variability of contaminant concentrations between sampling locations. Where major waste disposal operations are considered, targeted waste classification investigations should be designed and the waste classification and any subsequent disposal option agreed upon with licenced subcontractors and/or the relevant regulators.

The results of the asbestos testing are factually reported and interpretation is given as to how this relates to the previous use of the site, the types of ground encountered and site conceptualisation. This does not however constitute a formal asbestos assessment. These results should be treated cautiously and should not be relied upon to provide detailed and representative information on the delineation, type and extent of bulk ACMs and/or trace loose asbestos fibres within the soil matrix at the site.

If costs have been included in relation to additional site works, and/or site remediation works these must be considered as indicative only and must be confirmed by a qualified quantity surveyor.

EUROCODE 7: GEOTECHNICAL DESIGN

On 1st April 2010, BS EN 1997-1:2004 (Eurocode 7: Geotechnical Design – Part 1) became the mandatory baseline standard for geotechnical ground investigations.

In terms of geotechnical design for foundations, slopes, retaining walls, and earthworks, EC7 sets guidance on design procedures including specific guidance on the numbers and spacings of boreholes for geotechnical design, there are limits to methods of ground investigation and the quality of data obtained and there are also prescriptive methods of assessing soil strengths and methods of design. Unless otherwise explicitly stated, the work has not been undertaken in accordance with EC7. A standard geotechnical interpretative report will not meet the requirements of the Geotechnical Design Report (GDR) under Eurocode 7. The GDR can only be prepared following confirmation of all structural loads and serviceability requirements. The report is likely to represent a Ground Investigation Report (GIR) under the Eurocode 7 guidance.

DETAILED QUANTITATIVE RISK ASSESSMENTS AND REMEDIATION AND ENABLING WORK STRATEGY REPORTS

These reports build upon previous report versions and associated notes. The scope of the investigation, further testing and monitoring and associated risk assessments were selected based on the specific development and land use scenario proposed by the Client and may not be appropriate to another form of development or scheme layout. The risk assessment and opinions provided are based on currently available approaches in the generation of Site Specific Assessment Criteria relating to contamination concentrations and are not considered to represent a risk in a specific land use scenario to a specific receptor. No liability can be accepted for the retrospective effects of any future changes or amendments to these values, associated models, or associated guidance.

The outputs of the Detailed Quantitative Risk Assessments are based upon the manipulation of standard risk assessment models. These are our interpretation of the risk assessment criteria.

Before adoption on-site, assessment criteria will need to be discussed and agreed upon with the Regulatory Authorities prior to adoption on site. The regulatory discussion and engagement process may result in an alternative interpretation being determined and agreed. The process and timescales



associated with the Regulatory Authority engagement are not within the control of E3P. All costs and programmes presented as a result of this process should be validated by a quantity surveyor and should be presumed to be indicative.

E3P does not accept liability for any subcontract work that has not been completed in strict accordance with an approved E3P Remediation and Enabling Works Strategy.

GEOTECHNICAL DESIGN REPORT (GDR)

The GDR can only be prepared following confirmation of all structural loads and serviceability requirements. All the relevant information needs to be provided to allow for a GDR to be produced.

MONITORING (INCLUDING REMEDIATION MONITORING REPORTS AND BUILD PHASE MITIGATION)

These reports are factual and comprise monitoring, normally groundwater and ground gas and data provided by contractors as part of earthworks or remedial works.

The data is presented and will be compared with assessment criteria.

Appendix II: Glossary





ACM	Asbestos-containing material	MMP	Materials management plan
ADS	Acoustic design statement	ND	Not detected
AST	Above-ground storage tank	NDP	Nuclear density probe
BGS	British Geological Survey	NMP	Noise Management Plan
BSI	British Standards Institute	NPSE	Noise Policy Statement For England
BTEX	Benzene, toluene, ethylbenzene, xylenes	NR	Not recorded
MRA	Mining Remediation Authority	PAH	Polycyclic aromatic hydrocarbon
CBR	California bearing ratio	PCB	Polychlorinated biphenyl
CIEH	Chartered Institute of Environmental Health	PI	Plasticity index
CIRIA	Construction Industry Research Association	PID	Photo ionisation detector
CLEA	Contaminated land exposure assessment	POS	Public open space
CML	Council of Mortgage Lenders	PPE	Personnel protective equipment
CoC	Contaminants of concern	ProPG	Professional practice guidance
CSM	Conceptual site model	QA	Quality assurance
DNAPL	Dense non-aqueous phase liquid (chlorinated solvents, PCB)	SGV	Soil guideline value
DWS	Drinking water standard	SPH	Separate-phase hydrocarbon
EA	Environment Agency	SPT	Standard penetration test
EQS	Environmental quality standard	SVOC	Semi-volatile organic compound
FFL	Finished floor level	TPH	Total and speciated petroleum hydrocarbon
GAC	General assessment criteria	TPH CWG	Total Petroleum Hydrocarbon (Criteria Working Group)
GL	Ground level	UKWIR	United Kingdom Water Infrastructure Risk
GSV	Gas screening value	UST	Underground storage tank
HCV	Health criteria value	VCC	Vibro-concrete column
ICSM	Initial conceptual site model	VOC	Volatile organic compound
LEL	Lower explosive limit	VRSC	Vibro-replacement stone columns
LMRL	Lower method reporting limit	VSC	Vibro-stone columns
LNAPL	Light non-aqueous phase liquid (petrol, diesel, kerosene)	WHO	World Health Organisation
MCV	Moisture condition value	WRAP	Waste and Resources Action Programme
MIBK	Methyl isobutyl ketone	WTE	Water table elevation
m	Metres	ppm	Parts per million



km	Kilometres	mg/m³	Milligram per metre cubed
% v/v	Percent volume in air	m bgl	Metres below ground level
mb	Millibars (atmospheric pressure)	m bcl	Metre below cover level
l/hr	Litres per hour	mAOD	Metres above ordnance datum (sea level)
µg/l	Micrograms per litre (parts per billion)	kN/m²	Kilonewtons per metre squared
ppb	Parts per billion	µm	Micrometre
mg/kg	Milligrams per kilogram (parts per million)	SSRT	Site Specific Remediation Target
PSD	Particle Size Distribution	DD	Dry Density
CL:AI RE	Contaminated Land: Applications in Real Environments	Mc	Moisture Content
ρ	Bulk Density	GPR	Ground Penetrating Radar
NDP	Nuclear Density Probe	FFL	Finished Floor Level
LEL	Lower Explosive Limit	UKWIR	UK Water Industry Research
CIRIA	Construction Industry Research and Information Association	LOD	Limit of Detection
PFAS	Per- and Poly-Fluorinated Substances	PFOA	Perfluorooctanoic Acid