BROWNFIELD SOLUTIONS LTD

GEO-ENVIRONMENTAL ENGINEERING EXCELLENCE

KENT COUNTY COUNCIL

Folkestone LUF2, Kent

Factual Ground Investigation Report

LN/C5608/13087

May 2024

www.brownfield-solutions.com

PROJECT QUALITY CONTROL DATA SHEET

Site Name:	Folkestone LUF2, Kent		
Document Name:	Factual Ground Investigation Report		
Reference:	LN/C5608/13087		
Status:	-	16/05/2024	Interim.

Issued By:	**Client:**	**Engineer:**
Brownfield Solutions Ltd Unit 5 Alfred Court Saxon Business Park Stoke Prior Bromsgrove Worcestershire B60 4AD Tel: 01215 729014 brownfield-solutions.com	Kent County Council County Hall Sessions House County Road Maidstone Kent ME14 1XQ	AECOM Limited Sunley House 4 Bedford Park Surrey Croydon CRO 2AP
	Contact: Benjamin Cuddihee	Contact: Luke Dalton

Written by:	Checked by:	Approved by:
[redacted]		
L.Nyamayaro MESci (Hons) Graduate Project Engineer	J Wheaton BSc (Hons) FGS Senior Project Engineer	M Rawlings BSc (Hons) MSc CGeol Associate

CONTENTS

DRAWINGS

Drawing Number	Rev	Title
C5608/01	-	Site Location Plan
C5608/02	-	Exploratory Hole Location Plan
C5608/03	-	Trial Hole Plan & Cross Sections

APPENDICIES

Appendix	Title
Photographs	Photographic Volume
Appendix A	Exploratory Hole Logs
Appendix B	Chemical Testing Results
Appendix C	Geotechnical Testing Results
Appendix D	Groundwater Monitoring Results

1.0 INTRODUCTION

1.1 Context

This factual report describes a ground investigation carried out by Brownfield Solutions Limited (BSL) for Kent County Council under technical supervision and instruction by AECOM Limited on a site along sections of the main roads in Folkestone, Kent.

This report has been completed in general accordance with the following guidance:

- BS 10175:2011+A2:2017 Investigation of Potentially Contaminated Sites.
- BS5930: 2015+A1:2020 Code of Practice for Ground Investigations.

1.2 Proposed Development

The project seeks to 'level up' Folkestone's town centre by supporting active travel, creating a high-quality environment that supports civic pride and reverses years of disparity in investment by transforming the fortunes of the towns primary retail areas. The scheme involves changes to the existing highway alignment and public spaces to improve user experience and create a cyclist and pedestrian-friendly environment.

The proposed development is for the redevelopment of existing highway alignment and public spaces within Folkestone's Town Centre including road realignment and reconstruction, landscaping, inclusion of urban design features, relocation and installation of services, and decommissioning of two pedestrian subways.

1.3 Scope

The scope of the investigation is to examine existing and proposed sections of the highway and public spaces to determine the geotechnical, geo-environmental, geological and or hydrogeological ground conditions as well as the presence of services. The main works on-site relate to road realignments, reconstruction, pedestrian ramp structure and their foundations and earthworks, as well as informing the permitting / contaminated land assessment.

1.4 Limitations

BSL have used reasonable skill, care and diligence for the investigation of the site and the production of this report. There may be other conditions prevailing on the site which are outside the scope of work and have not been highlighted, therefore have not been considered by this report. Responsibility cannot be accepted for such site conditions not revealed by this report.

This report has been prepared for the sole use and reliance of the Client, Kent County Council. No other third parties may rely upon or reproduce the contents of this report without the written permission of Brownfield Solutions Ltd (BSL). If any unauthorised third party comes into possession of this report, then they rely on it at their own risk and BSL do not owe them any Duty of Care.

The groundwater results described are only representative of the dates on which they were recorded, and levels may vary seasonally (e.g. due to changes in weather).

Notwithstanding site observations concerning the presence or otherwise of archaeological issues, asbestos-containing materials (ACM) or invasive weeds (e.g. Japanese knotweed), this report does not constitute a formal survey of these potential issues.

The site plans enclosed in this report should not be scaled off. Any site boundary line depicted on plans does not imply legal ownership of land.

2.0 THE SITE

2.1 Location

The site is located along sections of several main roads in Folkestone, Kent, centred on National Grid Reference 622808, 136173 as shown on the Site Location Plan, Drawing No. C5608/01. The main areas / road that comprise the site are as follows:

- Shorncliffe Road.
- Cheriton Road and Cheriton Gardens.
- Middelburg Square.
- Shellons Street.
- Foresters Way, including Foresters Way Car Park.
- Coach Station (off Bouverie Square).
- Sandgate Road.
- Guildhall Street North.
- Gloucester Place / Oxford Terrace.

2.2 Site Description

The main site features and potential issues identified during this survey are tabulated below:

Feature	Description
Site Area	The site covers approximately 4 km.
Site Access	As the site is predominantly along roadways, access to the site is along the roadways themselves. The exceptions to this are the Foresters Way Car Park, accessible from Foresters Way, and the coach station, accessible typically to buses only, off Bouverie Square.
Current Land Use and Site Features	The site comprises the several working areas, which are described in detail below: **Shorncliffe Road:** The working area is the eastern end of Shorncliffe Road. The area comprises a set of parking bays along the northern side of the road, outside residential properties. A section of cobbles are present to the east of the working area. **Cheriton Road / Cheriton Gardens:** The working areas are along the majority of Cheriton Road, as well as the northern end of Cheriton Gardens. Work areas are in roadways and footways, in primarily residential areas. HP01 is adjacent to a railway line, which runs overhead above Cheriton Road. TP01 is present in a pedestrian area to the front of South Kent Community Church. TP03 is present in a wide pedestrian area on the northern side of Cheriton Road. HP03 is found within the flower bed in a pedestrian area in the eastern end of Cheriton Road. Both TP05 and BH02 are present at the front elevation of a nursery and adjacent to a pedestrian subway. **Middelburg Square:** This is a ring road to the south of Cheriton Road and Cheriton Gardens. In the centre of the ring road, a large multi-storey office building with associated multi-level car park is present. The working areas are found along the south-western and north-eastern sections of roadway along Middelburg Square. BH01 is present to the south-western corner of the office building, within the hatched area of the access road, and adjacent to a pedestrian subway. TP04 is found within the grass verges to the northern side of the ring road and CC05,06,07 is along the inner lane of the ring road in the south-west. In the north-east of Middelburg Square, CC10 is present within the outer lane of the ring road.

Feature	Description
	Shellons Street / Foresters Way: These two one-way traffic roads are found adjacent to each other with Foresters Way car park and bus stop facilities separating them in the north. A main pedestrian route with grass verges exists in the south. A supermarket is present to the south-east of Shellons Street. At the north-eastern end of the two roads is a small, vegetated roundabout where HP08 is located. Other working areas are found along the roads, within the car park and on the grass verges. **Coach Station:** The station is an active bus terminal to the north-east of Bouverie Square. A locked barrier is present in the south of the bus station however buses access the station from the access path in the north east of the station, off Middelburg Square. The working areas are found within the bus station and on footways which is currently surfaced in concrete. A large multi-storey shopping centre is present to the east of the station. **Sandgate Road:** The working area is found in the western end of Sandgate Road, in the area surfaced in block paving. The area is located within a very busy part of Sandgate Road in the town centre, accessible only to pedestrians. Retail buildings exist either side of the road. **Guildhall Street North:** The working area is present at the end of Guildhall Street North, in front of the Christians Catholic Church. **Gloucester Place / Oxford Terrace:** HP06 is the only working area located on Oxford Terrace off Gloucester Place. The road is flanked by retail buildings with residential flats above in the north and a furniture shop to the south.
Potential Sources of Gross Contamination	None identified across the site. The site is primarily roadways, or car / coach parking.
Vegetation	There are mature/semi-mature trees and grass verges along sections of the majority of the roadways. Flower beds are present off Cheriton Road at the junction with Connaught Road, as well as at the Cheriton Road / Shorncliffe Road junction, and at the northern end of the Cheriton Road working area. Some small flower beds are also present adjacent to the coach station terminal.
Topography	The majority of the roads are generally flat. However, there is a gentle slope downwards to the north-east along Shellons Street / Foresters Way. A gentle downward slope is also present on Cheriton Road towards the south-east and on Middelburg Square in a south-west to north-east direction.
Site Boundaries	The roadways are predominantly bound by residential and commercial buildings including a supermarket along Shellons Road, a large shopping centre along Middelburg Square and South Kent Community Church in the most northern part of Cheriton Road.
Surrounding Area	The site forms a large section of Folkestone town centre, set within a mixed commercial and residential area to the north, east and west, with Folkestone harbour and the sea front found to the south/south-east.

3.0 METHOD OF INVESTIGATION

3.1 Objectives

The scope and the aim of the fieldwork was specified by AECOM Limited, as detailed in the provided document Folkestone – A Brighter Future GI Specification 60702364-ACM-VGT-ALL_ZZ_ZZ_ZZ-SP-GE-0001_P02 dated December 2023.

The aim of the fieldwork was to:

- Investigate ground conditions on the site.
- Investigate the presence and location of services along the roadways and grass verges.
- Undertake infiltration testing to assess the infiltration potential of the below ground soils.
- Install standpipes to allow future groundwater monitoring.
- Obtain samples for contamination screening.
- Obtain geotechnical information including ground conditions at the site and geotechnical parameters to inform scheme design.

3.1 Site Works

The following site works have been undertaken as part of the intrusive investigation between the dates of 25th March and 17th April 2024

Method	No.	Range Depths (m bgl)	Purpose
Trial pits – Mini excavator	7	0.75 – 2.10	Establish general ground conditions and gain good coverage. Obtain samples for contamination and geotechnical and testing. Facilitate infiltration testing – see below.
Infiltration tests – Excavator and water bowser/IBC	9	1.00 – 2.00	Obtain infiltration rates for drainage design at approximately 1.00m and 2.00m bgl.
Vacuum Excavated / Hand-dug Trial pits	13	0.25 – 1.30	To expose and identify underground services along the roadways and grass verges. TH06 excavated again in alternative locations (TH06A and TH06B) in an attempt to identify additional services.
Window sample boreholes – Tracked Window Sampling Drilling Rig	2	3.00	Establish general ground conditions on site. Allow Standard Penetration Tests (SPTs) to be carried out and obtain samples for contamination and geotechnical and testing. Installation of water monitoring wells.
Dynamic sampling and Rotary cored boreholes – Tracked Rotary Drilling Rig	3	18.00 – 30.00	Establish general ground conditions on site. Allow Standard Penetration Tests (SPTs) to be carried out and obtain samples for contamination and geotechnical and testing. Obtain rock core for geotechnical testing and parameters for foundation design. Installation of water monitoring wells.
Concrete Coring	15	0.03 – 0.40	To obtain undisturbed cores of the road surface and make observation of the thickness and makeup. Allow for completion of Lightweight Deflectometer Testing – see below.
Lightweight Deflectometer Testing (LWD)	10	0.11 – 0.37	Obtain indicative CBR values for pavement design purposes.

Method	No.	Range Depths (m bgl)	Purpose
Hand-dug Pits	9	0.15 – 1.20	Establish general ground conditions and gain good coverage. Obtain samples for contamination and geotechnical and testing.

The surveyed locations of the exploratory holes are indicated on the Exploratory Hole Location Plan, Drawing No C5608/02. The exploratory hole logs are presented in Appendix A.

The exploratory holes were logged by an experienced geo-environmental engineer in general accordance with the following guidance:

- BS 5930:2015+A1:2020 Code of Practice for Site Investigations.
- BS EN 14688-1:2018 Geotechnical Investigation and Testing – Identification and classification of soil.
- BS EN ISO 14689:2018 Geotechnical investigation and testing – Identification and classification of rock'.

The vacuum excavated trial pits were undertaken in order to identify and classify the utilities that were indicated to be present beneath the roadways, footways and grass verges across the site. A total of 13 No. locations were completed to depths of between 0.25m and 1.30m bgl. Once the excavations were completed, details of any identified services were recorded, including colour, diameter, material type and assumed service type. Presence of ducting, warning tapes, sand surrounds etc were also noted. These details are presented on the Trial Hole Plan & Cross Sections drawings, drawing no. C5608/03.

3.2 Sampling

During the drilling of the exploratory holes, representative samples were taken at regular intervals to assist in the identification of the soils and to allow subsequent laboratory testing. These were stored and transported in general accordance with BS 10175:2011+A2:2017.

The type of sample was dependent upon the stratum and the purpose of analysis in accordance with current environmental and geotechnical guidance.

The distribution of samples taken across the site is recorded on the exploratory logs and a summary of the samples taken is presented in the table below:

Type	Number
Environmental (ES)	127
Disturbed (D)	63
Bulk (B)	45
Rock core (C)	11
Asphalt core (AC)	13
Concrete core (CC)	9

3.3 Laboratory Testing

Laboratory testing was scheduled by AECOM. The chemical laboratory testing results are presented in Appendix B. The geotechnical laboratory testing results are presented in Appendix C. Note that geotechnical and groundwater testing results are in progress or yet to be completed, and the report will be updated to include these once completed.

3.4 In-Situ Testing

Lightweight Deflectometer (LWD) testing was completed within 10 road core holes. The results of the testing are presented in Appendix C. A summary of the results is presented below:

Location	Depth (m)	Estimated CBR (%)
CC04	0.34	4.3
CC05	0.35	4.3
CC06	0.37	6.4
CC07	0.35	2.3
CC08	0.23	14.2
CC10	0.34	3.9
CC11	0.50	20.7
CC12	0.20	47.5
CC15	0.37	2.6
CC16	0.11	11.0

In locations CC01, 02, 13 and 14, LWDs could not be completed due to the road cores breaking part-way down. In CC09, the LWD was not completed due to encountering drainage pipe in the base of the core. CC03 was not completed due to limited access.

3.5 Infiltration Testing

Infiltration tests were completed within the machine-dug trial pits (TP01 – TP07), at approximately 1.00m and/or 2.00m bgl to assess the infiltration rates. The full results are presented in Appendix C, and summarised in the table below:

Location	Depth (m)	Infiltration Rate (m/s)		BRE Compliant?	
TP01	2.00	$5.39x10^{-7}$		No	
TP02	1.00	$2.47x10^{-5}$		Yes	
TP02	2.00	$1.33x10^{-5}$		No*	
TP03	1.00	$8.81x10^{-6}$		No*	
TP03	2.00	$1.41x10^{-5}$		No*	
TP04	2.00	$1.15x10^{-6}$		No	
TP06	1.00	$5.46x10^{-6}$		No	
TP06	2.00	$2.42x10^{-5}$	$2.18x10^{-5}$	Yes	No*
TP07	1.00	$6.87x10^{-7}$		No	

No infiltration testing was completed in TP05, due to the presence of a large concrete slab in the base of the pit.

The test undertaking TP02 at 2.00m bgl is indicated to be not compliant with BRE 365 as there was insufficient time to drain past 25% effective depth. However, the infiltration rate was inferred and it indicated that the effective depth would have reached 25% in approximately 220 minutes, and would likely be compliant if tested for a longer duration. For TP03 at 1.00m bgl, the rate was inferred based on the 25% effective depth being reached in approximately 300 minutes, for TP03 at 2.00m bgl, 215 minutes and for TP06 at 2.00m (Test 2), 150 minutes.

3.6 Monitoring

Water monitoring standpipes were installed in all five boreholes.

Standpipes were constructed in accordance with the relevant guidance. A summary of the installation construction is presented in the table below:

Location and Depth	Internal Diameter Pipe	Response Zone (m bgl)
BH01 26.00m	19mm PVC	17.00 - 19.00
BH01 26.00m	50mm HDPE	0.70 - 1.70
BH02 18.00m	50mm HDPE	15.00 - 17.00
BH03 30.00m	50mm HDPE	18.50 - 21.50
WS01 3.00m	50mm HDPE	2.00 - 3.00
WS02 3.00m	50mm HDPE	2.50 - 3.00

Following site works, the boreholes with groundwater were developed on 25th April 2024 according to the GI specification by purging each borehole until at least one of the following conditions applied:

- At least three well volumes of water have been removed from the well.
- Pumped water appears clear.
- Pumped water is of constant quality and parameters stabilise.
- Well has been pumped dry.

A summary of the well details and purging is presented in the table below:

Location	Internal Diameter Pipe	Depth to Groundwater (m)	Borehole Base (m)	Well Volume (l)	Volume Purged (l)
BH01	19mm PVC	NGW	1.63	NA	NA
BH01	50mm HDPE	NGW	19.03	NA	NA
BH02	50mm HDPE	15.05	17.11	16.48	50
BH03	50mm HDPE	16.10	20.47	52.44	160
WS01	50mm HDPE	2.93	2.97	0.32	NA[1]
WS02	50mm HDPE	NGW	2.91	NA	NA

NGW - No Groundwater Encountered.
NA - Not Applicable.
[1] Insufficient volume of water in well to purge.

In this instance, where applicable boreholes were purged by removing at least three well volumes of water using inertia tubing. Following development of the wells, data loggers were installed in the boreholes in which evidence of groundwater were noted (BH02 and BH03). No groundwater was recorded in wells WS01, WS02 and BH01, and therefore no dataloggers were installed during this visit.

Groundwater samples are programmed to be obtained on two of the groundwater monitoring visits. These are upcoming, and have not yet been completed. Once the groundwater testing is completed, this report will be updated to include the testing results.

Groundwater level monitoring is underway. Interim water monitoring results are presented in Appendix D of this report.

4.0 REFERENCES

Association of Ground Investigation Specialists. 'Guidelines for Good Practice in Site Investigation'. Issue 2, March 2006.

BS 1377 'Method of Test for Soils for Civil Engineering Purposes'. 1990.

BS 5930:2015+A1:2020 'Code of Practice for Site Investigations'. 2020.

BS 10175:2011+A2 'Investigation of Potentially Contaminated sites - code of practice'. 2017.

BS EN ISO 14688 'Geotechnical investigation and testing – Identification and classification of soil'. 2018.

BS EN ISO 14689 'Geotechnical investigation and testing – Identification and classification of rock'. 2018.

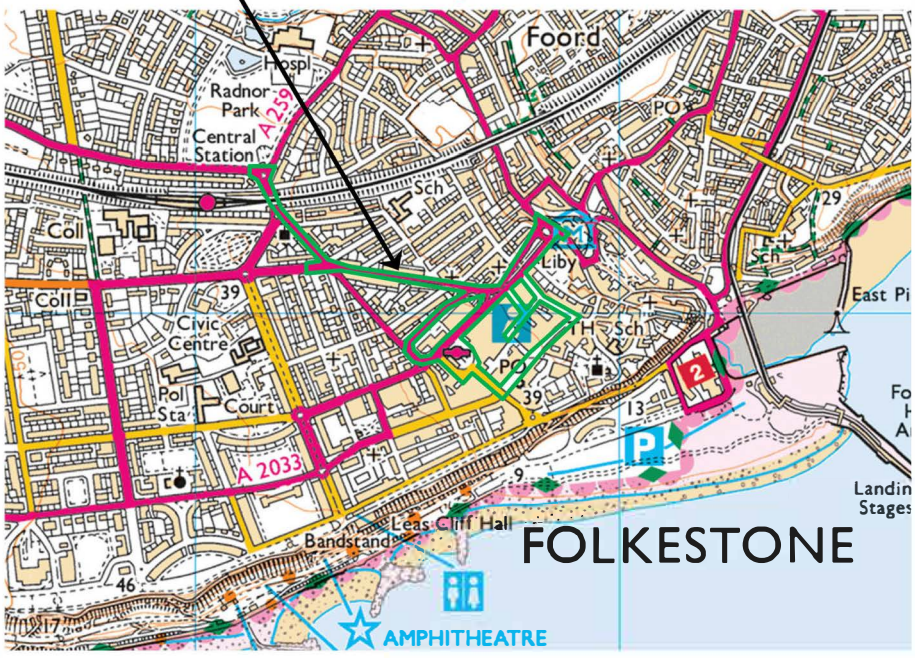
BS EN ISO 17892 'Geotechnical investigation and testing. Laboratory testing of soil.' Parts 1-12 :2018.

DRAWINGS

SITE LOCATION

NEAREST POSTCODE: CT20 1BU

SITE ENTRANCE. WHAT THREE WORDS
/// COMPLY.FREELY.DRAGGING



REV	DATE	DESCRIPTION	BY	CKD

BROWNFIELD SOLUTIONS LTD

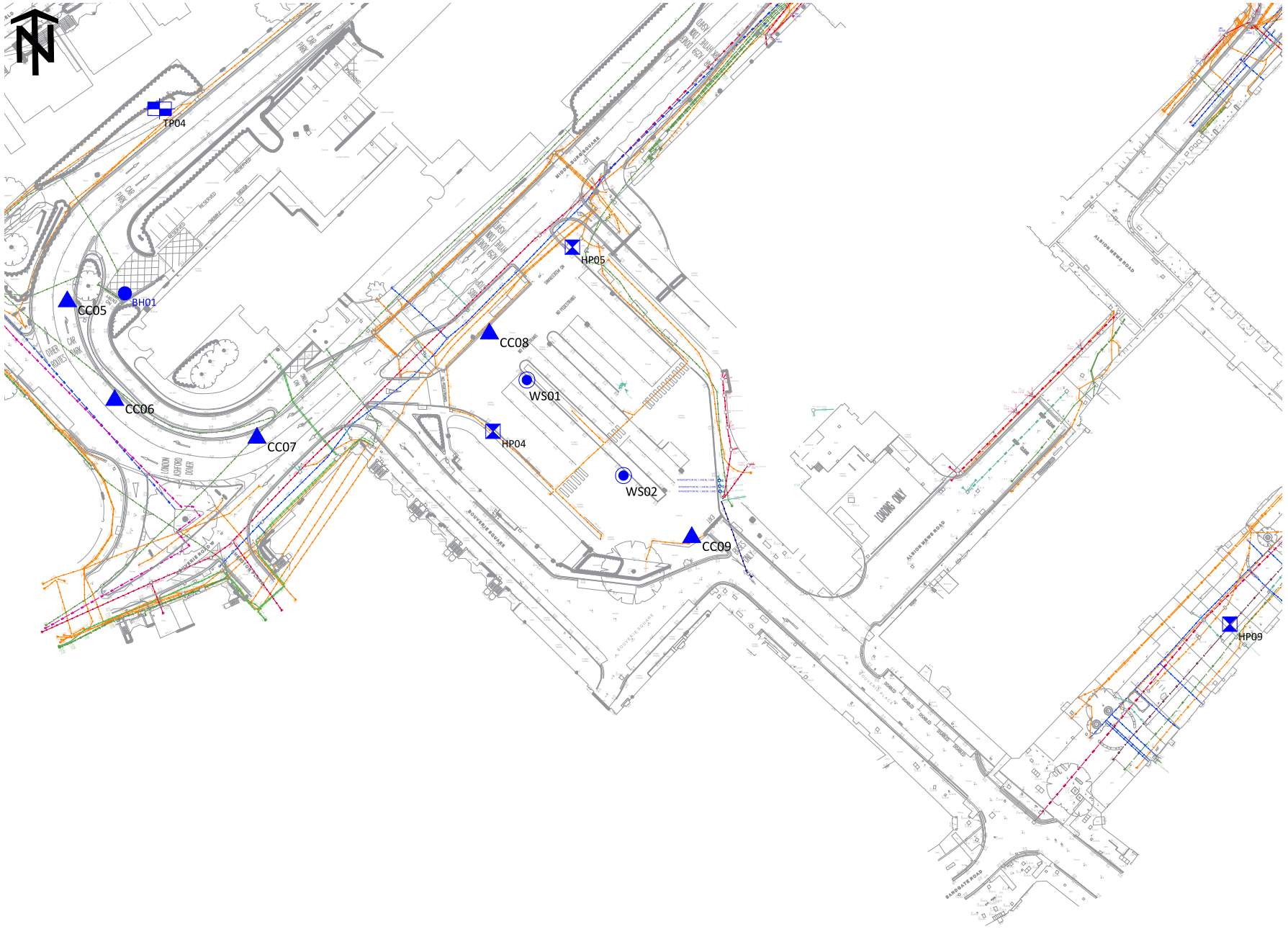
CLIENT
KENT COUNTY COUNCIL

PROJECT TITLE
FOLKESTONE LUF2, KENT

DRAWING TITLE
SITE LOCATION PLAN

DRAWING No.	REVISION	SCALE	DATE
C5608/01	-	NTS	16/05/24

DRAWN BY	CHECKED BY
LN	JW



KEY

- APPROXIMATE SITE BOUNDARY
- HPXX — HAND EXCAVATED TRIAL PIT
- TPXX — TRIAL PIT
- TTXX — TRIAL TRENCH
- WSXX — WINDOW SAMPLE BOREHOLE
- BHXX — ROTARY BOREHOLE
- CCXX — CONCRETE CORE / LWD
- BOREHOLE INSTALLATION (CIRCLE LOCATION)

NOTES

1. ALL DIMENSIONS TO BE CHECKED ON SITE BEFORE COMMENCING WORKS. ANY DISCREPANCIES ARE TO BE REPORTED TO THE ARCHITECT & ENGINEER FOR VERIFICATION. FIGURED DIMENSIONS ONLY ARE TO BE TAKEN FROM THIS DRAWING.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ENGINEERS REPORTS. THIS DRAWING IS COPYRIGHT OF BSL.
3. DRAWING NOT FOR CONSTRUCTION PURPOSES.

REV	DATE	DESCRIPTION	BY	CKD

BROWNFIELD SOLUTIONS LTD

CLIENT
KENT COUNTY COUNCIL

PROJECT TITLE
FOLKESTONE LUF2, KENT

DRAWING TITLE
EXPLORATORY HOLE LOCATION PLAN (SHEET 4)

DRAWING No.	REVISION	SCALE	DATE
C5608/02	-	NTS	01/05/24

DRAWN BY	CHECKED BY
JW	DRAFT

PHOTO 1

PHOTO 2

PHOTO 3

PHOTO 4

Photo Descriptions

PHOTO NO.	DETAILS
1	Road surface before coring
2	Road surface after reinstatement
3	Inside the core hole
4	Extracted core

REV	DATE	DESCRIPTION	BY	CKD

BROWNFIELD SOLUTIONS LTD
GEO-ENVIRONMENTAL ENGINEERING EXCELLENCE

CLIENT
KENT COUNTY COUNCIL

PROJECT TITLE
FOLKESTONE LUF2, KENT

TITLE
CONCRETE CORE 08

Associated Document Ref No.
LN/C5608/13087

COMPLIED BY
LN

CHECKED BY
JW

PHOTO 1

PHOTO 2

PHOTO 3

PHOTO 4

Photo Descriptions

PHOTO NO.	DETAILS
1	Road surface before coring
2	Road surface after reinstatement
3	Inside the core hole
4	Extracted core

REV	DATE	DESCRIPTION	BY	CKD

BROWNFIELD SOLUTIONS LTD
GEO-ENVIRONMENTAL ENGINEERING EXCELLENCE

CLIENT
KENT COUNTY COUNCIL

PROJECT TITLE
FOLKESTONE LUF2, KENT

TITLE
CONCRETE CORE 09

Associated Document Ref No.
LN/C5608/13087

COMPLIED BY
LN

CHECKED BY
JW

PHOTO 1

PHOTO 2

PHOTO 3

PHOTO 4

Photo Descriptions

PHOTO NO.	DETAILS
1	BH03 – Precondition
2	BH03 - Postcondition
3	WS01 - Precondition
4	WS01 - Postcondition

REV	DATE	DESCRIPTION	BY	CKD

BROWNFIELD SOLUTIONS LTD
GEO-ENVIRONMENTAL ENGINEERING EXCELLENCE

CLIENT
KENT COUNTY COUNCIL

PROJECT TITLE
FOLKESTONE LUF2, KENT

TITLE
PRE AND POST CONDITION SURVEY

Associated Document Ref No.
LN/C5608/13087

COMPLIED BY
LN

CHECKED BY
JW

PHOTO 1

PHOTO 2

PHOTO 3

PHOTO 4

Photo Descriptions

PHOTO NO.	DETAILS
1	WS02 – Precondition
2	WS02 – Postcondition
3	TP01 – Precondition
4	TP01 – Postcondition

REV	DATE	DESCRIPTION	BY	CKD

BROWNFIELD SOLUTIONS LTD
GEO-ENVIRONMENTAL ENGINEERING EXCELLENCE

CLIENT
KENT COUNTY COUNCIL

PROJECT TITLE
FOLKESTONE LUF2, KENT

TITLE
PRE AND POST CONDITION SURVEY

Associated Document Ref No.
LN/C5608/13087

COMPLIED BY
LN

CHECKED BY
JW

PHOTO 1

PHOTO 2

PHOTO 3

PHOTO 4

Photo Descriptions

PHOTO NO.	DETAILS
1	CC08 – Precondition
2	CC08 - Postcondition
3	CC09 - Precondition
4	CC09 - Postcondition

REV	DATE	DESCRIPTION	BY	CKD

BROWNFIELD SOLUTIONS LTD
GEO-ENVIRONMENTAL ENGINEERING EXCELLENCE

CLIENT
KENT COUNTY COUNCIL

PROJECT TITLE
FOLKESTONE LUF2, KENT

TITLE
PRE AND POST CONDITION SURVEY

Associated Document Ref No.
LN/C5608/13087

COMPLIED BY
LN

CHECKED BY
JW

PHOTO 1

PHOTO 2

PHOTO 3

PHOTO 4

Photo Descriptions

PHOTO NO.	DETAILS
1	HP04 – Precondition
2	HP04– Postcondition
3	HP05 – Precondition
4	HP05 – Postcondition

REV	DATE	DESCRIPTION	BY	CKD

BROWNFIELD SOLUTIONS LTD
GEO-ENVIRONMENTAL ENGINEERING EXCELLENCE

CLIENT
KENT COUNTY COUNCIL

PROJECT TITLE
FOLKESTONE LUF2, KENT

TITLE
PRE AND POST CONDITION SURVEY

Associated Document Ref No.
LN/C5608/13087

COMPLIED BY
LN

CHECKED BY
JW

Borehole Log

		Window Sampler No.	CC08
		Sheet 1 of 1	
PROJECT NO:	C5608	**CO-ORDS:**	622604E, 135922N
PROJECT NAME:	FOLKESTONE LUF2, KENT	**LEVEL:**	38.92m OD
CLIENT:	KENT COUNTY COUNCIL	**DATES:**	02/04/24

Hole Type	Scale	Logged	Checked
WS	1:30	LN	JW

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.00-0.23	C		0.06	38.86		MADE GROUND: Concrete
					0.23	38.68		MADE GROUND: CBGM base
								Brown sandy gravel (sub-base) encountered below 0.23m bgl.
								End of Borehole at 0.23m

1.0
2.0
3.0
4.0
5.0
6.0

Remarks

1. Location scanned and cleared using GPR techniques and CAT and Genny.
2. Core located in the bus station.
3. Location cored to 0.23m bgl, through all surfacing.
4. LWD testing carried out at 0.23m bgl.
5. Location reinstated with hardstanding upon completion.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

Borehole Log

Window Sampler No.
CC09
Sheet 1 of 1

PROJECT NO:	C5608	**CO-ORDS:**	622649E, 135877N
PROJECT NAME:	FOLKESTONE LUF2, KENT	**LEVEL:**	37.88m OD
CLIENT:	KENT COUNTY COUNCIL	**DATES:**	02/04/24

Hole Type	Scale	Logged	Checked
WS	1:30	LN	JW

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.00-0.40	C		0.05	37.83		MADE GROUND: Concrete MADE GROUND: CBGM base
					0.40	37.48		*Location terminated at 0.40m bgl due to water drainage pipe at base.* End of Borehole at 0.40m

1.0
2.0
3.0
4.0
5.0
6.0

Remarks

1. Location scanned and cleared using GPR techniques and CAT and Genny.
2. Core located in the bus station.
3. Location terminated at 0.40m bgl due to damaged disused drainage pipe.
4. Location reinstated with hardstanding upon completion.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

Trial Pit Log

No.
HP04
Sheet 1 of 1

PROJECT NO:	C5608	**CO-ORDS:**	622605E, 135900N
PROJECT NAME:	FOLKESTONE LUF2, KENT	**LEVEL:**	39.02m OD
CLIENT:	KENT COUNTY COUNCIL	**DATES:**	05/04/24

Hole Type	Scale	Logged	Checked
TP	1:25	CO	JW

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description
	Depth (m)	Type	Results				
				0.05	38.98		MADE GROUND: Asphalt.
							MADE GROUND: Concrete and brick cobble. Cobbles are subangular up to 110mm in diameter.
	0.30	ES		0.30	38.72		
		ES					MADE GROUND: Greyish brown sandy gravel with low cobble content. Sand is fine to coarse. Gravel is angular to subrounded, fine to medium of brick, concrete and quartzite. Cobbles are subangular of brick.
		PID	0.0PPM				
	0.50	HSV	104kPa	0.50	38.52		
	0.55	D					
		ES		0.65	38.38		
		PID	0.0PPM				
	0.65-1.20	B					MADE GROUND: Firm dark grey gravelly slightly sandy clay. Sand is fine to medium. Gravel is subangular, fine to medium of brick, concrete and quartzite.
	0.75	D					
		HSV	71kPa				
	1.00	ES					Firm brown slightly sandy CLAY. Sand is fine to medium.
		ES					
		PID	0.0PPM				
	1.20	ES		1.20	37.83		
		PID	0.0PPM				End of Trial Pit at 1.20m

1.0
2.0
3.0
4.0
5.0

Remarks

1. Location scanned and cleared using GPR techniques and CAT and Genny.
2. Hand dug inspection pit excavated to 1.20m bgl.
3. No groundwater encountered.
4. Location backfilled with arisings and hardstanding upon completion.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

Trial Pit Log

No.
HP05
Sheet 1 of 1

PROJECT NO:	C5608	**CO-ORDS:**	622622E, 135941N
PROJECT NAME:	FOLKESTONE LUF2, KENT	**LEVEL:**	39.17m OD
CLIENT:	KENT COUNTY COUNCIL	**DATES:**	05/04/24

Hole Type	Scale	Logged	Checked
TP	1:25	LN	JW

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description
	Depth (m)	Type	Results				
				0.05	39.12		MADE GROUND: Concrete paving slab.
							MADE GROUND: Asphalt.
				0.25	38.92		
	0.30	ES					MADE GROUND: Concrete.
		PID	0.0PPM	0.35	38.83		
	0.45-0.70	B		0.45	38.72		MADE GROUND: Medium dense brown gravelly sand. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of quartzite and concrete fragments.
	0.50	D					
		ES					
		PID	0.0PPM				
	0.60	ES		0.70	38.48		
		PID	0.0PPM				MADE GROUND: Medium dense black slightly clayey gravelly sand. Sand is fine to medium. Gravel is sub-angular to sub-rounded fine to coarse of quartzite, brick and concrete fragments.
	0.70-1.00	B					
	0.75	D					
		HSV	79kPa	1.00	38.17		
	0.80	ES					MADE GROUND: Firm dark brown slightly gravelly sandy clay. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of quartzite, chalk and brick.
		PID	0.0PPM				
	1.00	ES					*Location terminated at 1.00m bgl due to concrete at base.*
		PID	0.0PPM				End of Trial Pit at 1.00m

1.0
2.0
3.0
4.0
5.0

Remarks

1. Location scanned and cleared using GPR techniques and CAT and Genny.
2. Hand dug inspection pit excavated to 1.00m bgl.
3. No groundwater encountered.
4. Location terminated at 1.00m bgl due to concrete at base.
5. Location backfilled with arisings and hardstanding upon completion.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

Borehole Log

Window Sampler No.
WS01
Sheet 1 of 1

PROJECT NO:	C5608	**CO-ORDS:**	622612E, 135911N
PROJECT NAME:	FOLKESTONE LUF2, KENT	**LEVEL:**	38.78m OD
CLIENT:	KENT COUNTY COUNCIL	**DATES:**	02/04/24

Hole Type	Scale	Logged	Checked
WS	1:30	LN	JW

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description
		Depth (m)	Type	Results				
								MADE GROUND: Concrete reinforced with one-directional metal rebar.
		0.20-0.40	B		0.20	38.58		
		0.30	ES					MADE GROUND: Dense reddish brown sandy gravel with low cobble content. Sand is fine to coarse. Gravel is angular to sub-angular fine to coarse of brick and concrete fragments. Cobbles are angular up to 100mm of brick.
			PID	0.0PPM	0.40	38.38		
		0.40-0.65	B					
		0.50	D					
			ES		0.65	38.13		
			PID	0.0PPM				MADE GROUND: Soft dark grey slightly gravelly silty clay. Gravel is angular to sub-angular fine to coarse of brick, quartzite and charcoal fragments.
			HSV	59kPa				
		0.60	ES					
			PID	0.0PPM				Soft brown slightly sandy silty CLAY. Sand is fine to medium.
		0.65-1.20	B					
		0.70	ES					
			PID	0.0PPM	1.20	37.58		
		0.75	D					Soft brown mottled dark grey slightly gravelly sandy CLAY. Sand is medium to coarse. Gravel is sub-angular to sub-rounded fine to coarse of chert and quartzite.
			HSV	19kPa				
		1.00	ES					
			PID	0.0PPM				
		1.20	SPT	N=6 (0,0/1,1,1,3)				
					1.70	37.08		
		1.50	D					Dense brown slightly silty SAND. Sand is fine to coarse.
		1.60	ES					
			PID	0.0PPM				
		2.00	ES					
			SPT	N=40 (7,8/10,10,10,10)				
			PID	0.0PPM				
		2.20	D					
					2.50	36.28		
		2.60	ES					Dense greenish brown SAND. Sand is fine to coarse.
			PID	0.0PPM				
		2.70	D					
		2.80	ES					
			PID	0.0PPM				
		3.00	SPT	N≥50 (10,12/50 for 295mm)	3.00	35.78		End of Borehole at 3.00m

1.0
2.0
3.0
4.0
5.0
6.0

Remarks

1. Location scanned and cleared using GPR techniques and CAT and Genny.
2. Hand dug inspection pit excavated to 1.20m bgl.
3. No groundwater encountered.
4. Location terminated at 3.00m bgl due to refusal.
5. Monitoring well installed to 3.00m bgl. 0.00m to 2.00m bgl plain pipe. 2.00m to 3.00m bgl slotted pipe. Bentonite seal between 0.00m and 2.00m bgl.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

Borehole Log

PROJECT NO:	C5608	**CO-ORDS:**	622633E, 135890N
PROJECT NAME:	FOLKESTONE LUF2, KENT	**LEVEL:**	38.50m OD
CLIENT:	KENT COUNTY COUNCIL	**DATES:**	02/04/24

Window Sampler No.	
WS02	
Sheet 1 of 1	
Hole Type	
WS	
Scale	
1:30	
Logged	**Checked**
LN	JW

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.20-0.45	B		0.20	38.30		MADE GROUND: Concrete reinforced with one-directional metal rebar.
		0.30	ES					
			PID	0.0PPM				
		0.50	D		0.45	38.05		MADE GROUND: Dense reddish brown sandy gravel with low cobble content. Sand is fine to coarse. Gravel is angular to sub-angular fine to coarse of brick and concrete fragments. Cobbles are angular up to 100mm of brick.
			ES		0.55	37.95		
			ES					MADE GROUND: Soft dark grey slightly gravelly silty clay. Gravel is angular to sub-angular fine to coarse of brick and quartzite.
			PID	0.0PPM				
		0.55-1.20	B					
		0.75	D					Soft light brown slightly gravelly silty CLAY. Gravel is sub-angular to sub-rounded fine to coarse fine to coarse of chert and quartzite.
			HSV	11kPa				
		1.00	ES					
			PID	0.0PPM				
		1.20	SPT	N=6 (1,1/1,1,2,2)				
		1.30	D					
		1.30-2.00	B					
		1.50	ES					
			PID	0.0PPM				
		2.00	SPT	N=32 (6,7/7,8,8,9)				
					2.20	6.30		Stiff brown slightly gravelly CLAY. Gravel is sub-angular to sub-rounded fine to coarse of chert and quartzite.
		2.30	D					
					2.50	6.00		Medium dense slightly silty SAND. Sand is fine to coarse.
		2.60	ES					
			PID	0.0PPM				
		2.70	D					
		3.00	ES		3.00	5.50		*Location terminated at 3.00m bgl due to detected magnetic anomaly.*
			PID	0.0PPM				End of Borehole at 3.00m

1.0
2.0
3.0
4.0
5.0
6.0

Remarks

1. Location scanned and cleared using GPR techniques and CAT and Genny.
2. Hand dug inspection pit excavated to 1.20m bgl.
3. No groundwater encountered.
4. Location terminated at 3.00m bgl due to magnetic anomaly detected using down-hole magnetometer screening methods.
5. Monitoring well installed to 3.00m bgl. 0.00m to 2.50m bgl plain pipe. 2.50m to 3.00m bgl slotted pipe. Bentonite seal between 0.00m and 2.50m bgl.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

APPENDIX B

Chemical Test Results

Brownfield Solutions Ltd
William Smith House
173 - 183 Witton Street
Northwich
Cheshire
CW9 5LP

e: j.wheaton@brownfield-solutions.co.uk

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 24-013177

Project / Site name:	Folkestone LUF2 Kent	**Samples received on:**	08/04/2024
Your job number:	C5608	**Samples instructed on/ Analysis started on:**	09/04/2024
Your order number:	C5608 5168 JW	**Analysis completed by:**	16/04/2024
Report Issue Number:	1	**Report issued on:**	16/04/2024
Samples Analysed:	10 soil samples - 1 leachate sample		

[redacted]

Dominika Liana
Junior Reporting Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

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

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 24-013177
Project / Site name: Folkestone LUF2 Kent
Your Order No: C5608 5168 JW

Lab Sample Number				165904	165905	165906	165907	165908
Sample Reference				WS01	WS02	BH01	BH01	BH01
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.50	0.30	0.44	1.00
Date Sampled				02/04/2024	02/04/2024	02/04/2024	02/04/2024	03/04/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	16	19	9.8	12	16
Total mass of sample received	kg	0.1	NONE	0.8	0.4	0.4	0.2	0.4
Asbestos								
Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	-
Asbestos Analyst ID	N/A	N/A	N/A	MMI	EC	MMI	MMI	-
General Inorganics								
pH (L099)	pH Units	N/A	MCERTS	7.9	8.5	9.7	8.2	7.3
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO_4	mg/kg	50	MCERTS	590	460	570	4200	1700
Water Soluble Sulphate as SO_4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	700	560	100	1300	110
Water Soluble SO_4 16hr extraction (2:1)	mg/l	1.25	MCERTS	352	278	49.9	634	55.7
Sulphide	mg/kg	1	MCERTS	3.9	13	< 1.0	20	< 1.0
Elemental Sulphur	mg/kg	5	MCERTS	250	120	15	280	7.9
Ammoniacal Nitrogen as N	mg/kg	0.5	MCERTS	5.3	-	1.1	-	-
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	1.5	0.9	0.1	0.5	0.2
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.11	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.07	< 0.05	0.09	0.42	< 0.05
Pyrene	mg/kg	0.05	MCERTS	0.06	< 0.05	0.08	0.35	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.25	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.28	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	0.34	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.28	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.18	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.18	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	< 0.80	< 0.80	2.4	< 0.80

Analytical Report Number: 24-013177
Project / Site name: Folkestone LUF2 Kent
Your Order No: C5608 5168 JW

Lab Sample Number				165904	165905	165906	165907	165908
Sample Reference				WS01	WS02	BH01	BH01	BH01
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.50	0.30	0.44	1.00
Date Sampled				02/04/2024	02/04/2024	02/04/2024	02/04/2024	03/04/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	9.6	13	7.6	26	24
Boron (water soluble)	mg/kg	0.2	MCERTS	0.5	0.4	0.3	1	0.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (III)	mg/kg	1	NONE	32	34	27	45	40
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	32	34	27	45	40
Copper (aqua regia extractable)	mg/kg	1	MCERTS	14	14	5.5	9.6	5.5
Lead (aqua regia extractable)	mg/kg	1	MCERTS	49	49	17	27	8.3
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	23	28	23	30	21
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	45	50	37	54	37
Petroleum Hydrocarbons								
TPHCWG - Aliphatic >C5 - C6 HS_1D_AL	mg/kg	0.02	NONE	-	-	-	< 0.020	-
TPHCWG - Aliphatic >C6 - C8 HS_1D_AL	mg/kg	0.02	NONE	-	-	-	< 0.020	-
TPHCWG - Aliphatic >C8 - C10 HS_1D_AL	mg/kg	0.05	NONE	-	-	-	< 0.050	-
TPHCWG - Aliphatic >C10 - C12 EH_CU_1D_AL	mg/kg	1	MCERTS	-	-	-	< 1.0	-
TPHCWG - Aliphatic >C12 - C16 EH_CU_1D_AL	mg/kg	2	MCERTS	-	-	-	< 2.0	-
TPHCWG - Aliphatic >C16 - C21 EH_CU_1D_AL	mg/kg	8	MCERTS	-	-	-	< 8.0	-
TPHCWG - Aliphatic >C21 - C35 EH_CU_1D_AL	mg/kg	8	MCERTS	-	-	-	< 8.0	-
TPHCWG - Aliphatic >C5 - C35 EH_CU+HS_1D_AL	mg/kg	10	NONE	-	-	-	< 10	-
TPHCWG - Aromatic >EC5 - EC7 HS_1D_AR	mg/kg	0.01	NONE	-	-	-	< 0.010	-
TPHCWG - Aromatic >EC7 - EC8 HS_1D_AR	mg/kg	0.01	NONE	-	-	-	< 0.010	-
TPHCWG - Aromatic >EC8 - EC10 HS_1D_AR	mg/kg	0.05	NONE	-	-	-	< 0.050	-
TPHCWG - Aromatic >EC10 - EC12 EH_CU_1D_AR	mg/kg	1	MCERTS	-	-	-	< 1.0	-
TPHCWG - Aromatic >EC12 - EC16 EH_CU_1D_AR	mg/kg	2	MCERTS	-	-	-	< 2.0	-
TPHCWG - Aromatic >EC16 - EC21 EH_CU_1D_AR	mg/kg	10	MCERTS	-	-	-	< 10	-
TPHCWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	MCERTS	-	-	-	< 10	-
TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_1D_AR	mg/kg	10	NONE	-	-	-	< 10	-
VOCs								
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	-	-	< 5.0	-
Benzene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
Toluene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
Ethylbenzene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
p & m-Xylene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
o-Xylene	µg/kg	5	MCERTS	-	-	-	< 5.0	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 24-013177
Project / Site name: Folkestone LUF2 Kent
Your Order No: C5608 5168 JW

Lab Sample Number				165909	165910	165911	165912	165913
Sample Reference				HP05	HP05	HP05	HP04	HP04
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.50	1.00	0.30	0.55
Date Sampled				05/04/2024	05/04/2024	05/04/2024	05/04/2024	05/04/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	-	< 0.1	< 0.1	-	< 0.1
Moisture Content	%	0.01	NONE	-	19	18	-	14
Total mass of sample received	kg	0.1	NONE	-	0.3	0.4	-	0.4
Asbestos								
Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	MMI	MMI	MMI	MMI	MMI
General Inorganics								
pH (L099)	pH Units	N/A	MCERTS	-	9	9.3	-	8.8
Total Cyanide	mg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
Free Cyanide	mg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
Total Sulphate as SO_4	mg/kg	50	MCERTS	-	1100	1400	-	900
Water Soluble Sulphate as SO_4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	1200	410	-	660
Water Soluble SO_4 16hr extraction (2:1)	mg/l	1.25	MCERTS	-	590	205	-	329
Sulphide	mg/kg	1	MCERTS	-	67	2	-	12
Elemental Sulphur	mg/kg	5	MCERTS	-	370	32	-	320
Ammoniacal Nitrogen as N	mg/kg	0.5	MCERTS	-	-	-	-	-
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	-	1.8	0.6	-	1.4
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	-	0.1	0.36	-	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	-	0.24	0.85	-	0.09
Acenaphthene	mg/kg	0.05	MCERTS	-	< 0.05	0.15	-	0.25
Fluorene	mg/kg	0.05	MCERTS	-	0.14	0.67	-	0.11
Phenanthrene	mg/kg	0.05	MCERTS	-	1.1	6.6	-	3.1
Anthracene	mg/kg	0.05	MCERTS	-	0.45	2.1	-	0.68
Fluoranthene	mg/kg	0.05	MCERTS	-	2.4	12	-	4.2
Pyrene	mg/kg	0.05	MCERTS	-	2.1	10	-	3.4
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	1.5	5.9	-	1.6
Chrysene	mg/kg	0.05	MCERTS	-	1.7	5.1	-	1.5
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	2	6	-	1.8
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	1.1	2.9	-	0.7
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	1.8	5.8	-	1.5
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	0.89	2.8	-	0.73
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	0.19	0.75	-	0.18
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	1.1	3.1	-	0.89
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-	16.9	65.3	-	20.6

Analytical Report Number: 24-013177
Project / Site name: Folkestone LUF2 Kent
Your Order No: C5608 5168 JW

Lab Sample Number				165909	165910	165911	165912	165913
Sample Reference				HP05	HP05	HP05	HP04	HP04
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.50	1.00	0.30	0.55
Date Sampled				05/04/2024	05/04/2024	05/04/2024	05/04/2024	05/04/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	11	17	-	12
Boron (water soluble)	mg/kg	0.2	MCERTS	-	1.7	0.8	-	0.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	< 0.2	< 0.2	-	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	-	< 1.8	< 1.8	-	< 1.8
Chromium (III)	mg/kg	1	NONE	-	17	25	-	19
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	17	25	-	19
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	6.7	14	-	15
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	20	48	-	40
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	< 0.3	< 0.3	-	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	19	24	-	13
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	49	48	-	39
Petroleum Hydrocarbons								
TPHCWG - Aliphatic >C5 - C6 HS_1D_AL	mg/kg	0.02	NONE	-	-	-	-	-
TPHCWG - Aliphatic >C6 - C8 HS_1D_AL	mg/kg	0.02	NONE	-	-	-	-	-
TPHCWG - Aliphatic >C8 - C10 HS_1D_AL	mg/kg	0.05	NONE	-	-	-	-	-
TPHCWG - Aliphatic >C10 - C12 EH_CU_1D_AL	mg/kg	1	MCERTS	-	-	-	-	-
TPHCWG - Aliphatic >C12 - C16 EH_CU_1D_AL	mg/kg	2	MCERTS	-	-	-	-	-
TPHCWG - Aliphatic >C16 - C21 EH_CU_1D_AL	mg/kg	8	MCERTS	-	-	-	-	-
TPHCWG - Aliphatic >C21 - C35 EH_CU_1D_AL	mg/kg	8	MCERTS	-	-	-	-	-
TPHCWG - Aliphatic >C5 - C35 EH_CU+HS_1D_AL	mg/kg	10	NONE	-	-	-	-	-
TPHCWG - Aromatic >EC5 - EC7 HS_1D_AR	mg/kg	0.01	NONE	-	-	-	-	-
TPHCWG - Aromatic >EC7 - EC8 HS_1D_AR	mg/kg	0.01	NONE	-	-	-	-	-
TPHCWG - Aromatic >EC8 - EC10 HS_1D_AR	mg/kg	0.05	NONE	-	-	-	-	-
TPHCWG - Aromatic >EC10 - EC12 EH_CU_1D_AR	mg/kg	1	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC12 - EC16 EH_CU_1D_AR	mg/kg	2	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC16 - EC21 EH_CU_1D_AR	mg/kg	10	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_1D_AR	mg/kg	10	NONE	-	-	-	-	-
VOCs								
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	-	-	-	-
Benzene	µg/kg	5	MCERTS	-	-	-	-	-
Toluene	µg/kg	5	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
p & m-Xylene	µg/kg	5	MCERTS	-	-	-	-	-
o-Xylene	µg/kg	5	MCERTS	-	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

UKAS TESTING
4041

Analytical Environmental Science

Analytical Report Number: 24-013177
Project / Site name: Folkestone LUF2 Kent

Your Order No: C5608 5168 JW

Lab Sample Number				165907
Sample Reference				BH01
Sample Number				None Supplied
Depth (m)				0.44
Date Sampled				02/04/2024
Time Taken				None Supplied
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
General Inorganics				
Total Cyanide	µg/l	10	ISO 17025	< 10
Free Cyanide	µg/l	10	ISO 17025	< 10
Sulphate as SO_4	µg/l	45	ISO 17025	28500
Sulphide	µg/l	5	NONE	5.8
Chloride	mg/l	0.15	ISO 17025	12
Ammoniacal Nitrogen as N	µg/l	15	NONE	110
Speciated PAHs				
Naphthalene	µg/l	0.01	ISO 17025	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01
Benzo(ghi)perylene	µg/l	0.01	NONE	< 0.01
Total PAH				
Total EPA-16 PAHs	µg/l	0.16	NONE	< 0.16
Heavy Metals / Metalloids				
Antimony (dissolved)	µg/l	1.7	ISO 17025	< 1.7
Arsenic (dissolved)	µg/l	1	ISO 17025	5.4
Barium (dissolved)	µg/l	0.05	ISO 17025	43
Beryllium (dissolved)	µg/l	0.2	ISO 17025	< 0.2
Boron (dissolved)	µg/l	10	ISO 17025	53
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0
Chromium (III)	µg/l	5	NONE	< 5.0
Chromium (dissolved)	µg/l	0.4	ISO 17025	1.1
Copper (dissolved)	µg/l	0.7	ISO 17025	42
Lead (dissolved)	µg/l	1	ISO 17025	4.6
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	4.2
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0
Zinc (dissolved)	µg/l	0.4	ISO 17025	12
Magnesium (dissolved)	µg/l	5	ISO 17025	1200

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number : 24-013177
Project / Site name: Folkestone LUF2 Kent

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
165904	WS01	None Supplied	0.5	Brown clay and sand with gravel
165905	WS02	None Supplied	0.5	Brown clay and sand with gravel
165906	BH01	None Supplied	0.3	Brown sandy clay with gravel
165907	BH01	None Supplied	0.44	Brown sandy clay with gravel
165908	BH01	None Supplied	1	Brown sandy clay with gravel
165910	HP05	None Supplied	0.5	Brown clay and sand with gravel
165911	HP05	None Supplied	1	Brown clay and sand with gravel
165913	HP04	None Supplied	0.55	Brown clay and sand with gravel

Analytical Report Number : 24-013177
Project / Site name: Folkestone LUF2 Kent

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode	In-house method	L010	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Elemental sulphur in soil	Determination of elemental sulphur in soil by extraction in acetonitrile followed by HPLC	In-house method based on Secondsite Property Holdings Guidance for Assessing and Managing Potential	L021B	D	MCERTS
Sulphide in leachate	Determination of sulphide in leachate by ion selective electrode	In-house method	L029	W	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES	In-house method based on Second Site Properties version 3	L038B	D	MCERTS
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES	In-house method	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
Metals by ICP-OES in leachate	Determination of metals in leachate by acidification followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L039B	W	ISO 17025
Speciated EPA-16 PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic	In-house method	L076B/L088	D/W	MCERTS
Chromium III in leachate	In-house method by calculation from total Cr and Cr VI	In-house method by calculation	L080	W	NONE

Analytical Report Number : 24-013177
Project / Site name: Folkestone LUF2 Kent

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Chromium III in soil	In-house method by calculation from total Cr and Cr VI	In-house method by calculation	L080	W	NONE
Hexavalent chromium in leachate	Determination of hexavalent chromium in leachate by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method	L080	W	ISO 17025
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method	L080	W	MCERTS
Free cyanide in leachate	Determination of free cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	ISO 17025
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	MCERTS
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	MCERTS
Total cyanide in leachate	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	ISO 17025
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	MCERTS
Chloride in leachate	Determination of Chloride colorimetrically by discrete analyser	In-house based on MEWAM Method ISBN 0117516260	L082B	W	ISO 17025
Ammoniacal Nitrogen as N in soil	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the discrete analyser (colorimetric) salicylate/nitroprusside method,10:1 water extraction.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082B	W	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099	D	MCERTS
Speciated EPA-16 PAHs and/or Semi-volatile organic compounds in leachate	SVOCs and PAHs in leachate	In-house method	L102B		ISO 17025
Ammoniacal Nitrogen as N in leachate	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the discrete analyser (colorimetric) salicylate/nitroprusside method.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082B	W	NONE

Analytical Report Number : 24-013177
Project / Site name: Folkestone LUF2 Kent

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Organic 2:1 Leachate		In-house method	L020B	W	NONE

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

Sample Deviation Report

Analytical Report Number : 24-013177
Project / Site name: Folkestone LUF2 Kent

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis.Please note that the associated result(s) may be unreliable and should be interpreted with care.

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

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH01	N/A	S	165906	c	Free cyanide in soil	L080	c
BH01	N/A	S	165906	c	Total cyanide in soil	L080	c
BH01	N/A	S	165907	c	Free cyanide in soil	L080	c
BH01	N/A	S	165907	c	Total cyanide in soil	L080	c
WS01	N/A	S	165904	c	Free cyanide in soil	L080	c
WS01	N/A	S	165904	c	Total cyanide in soil	L080	c
WS02	N/A	S	165905	c	Free cyanide in soil	L080	c
WS02	N/A	S	165905	c	Total cyanide in soil	L080	c

Brownfield Solutions Ltd
William Smith House
173 - 183 Witton Street
Northwich
Cheshire
CW9 5LP

e: j.wheaton@brownfield-solutions.co.uk

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 24-016364

Project / Site name:	Folkestone LUF2, Kent	**Samples received on:**	08/04/2024
Your job number:	C5608	**Samples instructed on/ Analysis started on:**	26/04/2024
Your order number:	C5608 5156 JW	**Analysis completed by:**	02/05/2024
Report Issue Number:	1	**Report issued on:**	03/05/2024
Samples Analysed:	4 soil samples - 2 leachate samples		

[redacted]

Joanna Wawrzeczko
Senior Reporting Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

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

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 24-016364
Project / Site name: Folkestone LUF2, Kent
Your Order No: C5608 5156 JW

Lab Sample Number				181716	181717	181718	181719
Sample Reference				WS01	WS01	WS02	WS02
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.60	0.30	1.00
Date Sampled				02/04/2024	02/04/2024	02/04/2024	02/04/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	4
Moisture Content	%	0.01	NONE	16	15	12	14
Total mass of sample received	kg	0.1	NONE	0.5	0.7	0.6	0.5
Asbestos							
Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	-	Not-detected	-
Asbestos Analyst ID	N/A	N/A	N/A	KSZ	-	KSZ	-
General Inorganics							
pH (L099)	pH Units	N/A	MCERTS	7.7	7.4	10.8	7.4
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO_4	mg/kg	50	MCERTS	660	370	3300	800
Water Soluble Sulphate as SO_4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	590	72	400	65
Water Soluble SO_4 16hr extraction (2:1)	mg/l	1.25	MCERTS	295	35.9	201	32.7
Sulphide	mg/kg	1	MCERTS	19	< 1.0	9.4	< 1.0
Elemental Sulphur	mg/kg	5	MCERTS	< 5.0	< 5.0	11	< 5.0
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	1.3	0.7	1.2	0.6
Total Phenols							
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs							
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.07	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	0.1	0.25	0.06
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.32	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.28	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	0.24	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	0.12	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.22	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.14	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.07	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Total PAH							
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	< 0.80	1.71	< 0.80

Analytical Report Number: 24-016364
Project / Site name: Folkestone LUF2, Kent
Your Order No: C5608 5156 JW

Lab Sample Number				181716	181717	181718	181719
Sample Reference				WS01	WS01	WS02	WS02
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.60	0.30	1.00
Date Sampled				02/04/2024	02/04/2024	02/04/2024	02/04/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Heavy Metals / Metalloids							
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13	15	12	8.9
Boron (water soluble)	mg/kg	0.2	MCERTS	3.4	0.2	0.6	0.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (III)	mg/kg	1	NONE	32	36	18	19
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	32	36	18	19
Copper (aqua regia extractable)	mg/kg	1	MCERTS	15	12	38	6.8
Lead (aqua regia extractable)	mg/kg	1	MCERTS	33	16	32	15
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	22	24	24	14
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	46	46	93	30
Petroleum Hydrocarbons							
TPHCWG - Aliphatic >C5 - C6 HS_1D_AL	mg/kg	0.02	NONE	< 0.020	-	< 0.020	-
TPHCWG - Aliphatic >C6 - C8 HS_1D_AL	mg/kg	0.02	NONE	< 0.020	-	< 0.020	-
TPHCWG - Aliphatic >C8 - C10 HS_1D_AL	mg/kg	0.05	NONE	< 0.050	-	< 0.050	-
TPHCWG - Aliphatic >C10 - C12 EH_CU_1D_AL	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-
TPHCWG - Aliphatic >C12 - C16 EH_CU_1D_AL	mg/kg	2	MCERTS	< 2.0	-	< 2.0	-
TPHCWG - Aliphatic >C16 - C21 EH_CU_1D_AL	mg/kg	8	MCERTS	< 8.0	-	< 8.0	-
TPHCWG - Aliphatic >C16 - C35 EH_CU_1D_AL	mg/kg	10	MCERTS	< 10	-	< 10	-
TPHCWG - Aliphatic >C21 - C35 EH_CU_1D_AL	mg/kg	8	MCERTS	< 8.0	-	< 8.0	-
TPHCWG - Aliphatic >C5 - C35 EH_CU+HS_1D_AL	mg/kg	10	NONE	< 10	-	< 10	-
TPHCWG - Aromatic >EC5 - EC7 HS_1D_AR	mg/kg	0.01	NONE	< 0.010	-	< 0.010	-
TPHCWG - Aromatic >EC7 - EC8 HS_1D_AR	mg/kg	0.01	NONE	< 0.010	-	< 0.010	-
TPHCWG - Aromatic >EC8 - EC10 HS_1D_AR	mg/kg	0.05	NONE	< 0.050	-	< 0.050	-
TPHCWG - Aromatic >EC10 - EC12 EH_CU_1D_AR	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-
TPHCWG - Aromatic >EC12 - EC16 EH_CU_1D_AR	mg/kg	2	MCERTS	< 2.0	-	< 2.0	-
TPHCWG - Aromatic >EC16 - EC21 EH_CU_1D_AR	mg/kg	10	MCERTS	< 10	-	< 10	-
TPHCWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	MCERTS	< 10	-	< 10	-
TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_1D_AR	mg/kg	10	NONE	< 10	-	< 10	-
VOCs							
Benzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
Toluene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
p & m-Xylene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
o-Xylene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-
MTBE (Methyl Tertiary Butyl Ether)	mg/kg	0.005	NONE	< 0.005	-	< 0.005	-
Benzene	mg/kg	0.005	MCERTS	< 0.005	-	< 0.005	-
Toluene	mg/kg	0.005	MCERTS	< 0.005	-	< 0.005	-
Ethylbenzene	mg/kg	0.005	MCERTS	< 0.005	-	< 0.005	-
p & m-xylene	mg/kg	0.005	MCERTS	< 0.005	-	< 0.005	-
o-Xylene	mg/kg	0.005	MCERTS	< 0.005	-	< 0.005	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

UKAS TESTING
4041

Analytical i2 Environmental Science

Analytical Report Number: 24-016364
Project / Site name: Folkestone LUF2, Kent

Your Order No: C5608 5156 JW

Lab Sample Number				181716	181717
Sample Reference				WS01	WS01
Sample Number				None Supplied	None Supplied
Depth (m)				0.30	0.60
Date Sampled				02/04/2024	02/04/2024
Time Taken				None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**		
General Inorganics					
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10
Free Cyanide	µg/l	10	ISO 17025	< 10	< 10
Sulphate as SO_4	mg/l	0.045	ISO 17025	91.3	9.45
Sulphide	µg/l	5	NONE	< 5.0	5.9
Chloride	mg/l	0.15	ISO 17025	9.4	8
Ammoniacal Nitrogen as N	µg/l	15	NONE	790	< 15
Speciated PAHs					
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	NONE	< 0.01	< 0.01
Total PAH					
Total EPA-16 PAHs	µg/l	0.16	NONE	< 0.16	< 0.16
Heavy Metals / Metalloids					
Antimony (dissolved)	µg/l	1.7	ISO 17025	< 1.7	< 1.7
Arsenic (dissolved)	µg/l	1	ISO 17025	7.7	< 1.0
Barium (dissolved)	µg/l	0.05	ISO 17025	34	3.6
Beryllium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2
Boron (dissolved)	µg/l	10	ISO 17025	110	52
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0
Chromium (III)	µg/l	5	NONE	< 5.0	< 5.0
Chromium (dissolved)	µg/l	0.4	ISO 17025	1.1	1
Copper (dissolved)	µg/l	0.7	ISO 17025	38	21
Lead (dissolved)	µg/l	1	ISO 17025	1.8	< 1.0
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5
Molybdenum (dissolved)	µg/l	0.4	ISO 17025	4.1	< 0.4
Nickel (dissolved)	µg/l	0.3	ISO 17025	4.1	2.2
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0
Zinc (dissolved)	µg/l	0.4	ISO 17025	13	5.4
Magnesium (dissolved)	µg/l	5	ISO 17025	2400	560

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number : 24-016364
Project / Site name: Folkestone LUF2, Kent

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
181716	WS01	None Supplied	0.3	Brown clay with gravel and vegetation
181717	WS01	None Supplied	0.6	Brown clay with gravel
181718	WS02	None Supplied	0.3	Brown sand with rubble
181719	WS02	None Supplied	1	Brown clay and sand with gravel and stones

Analytical Report Number : 24-016364
Project / Site name: Folkestone LUF2, Kent

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode	In-house method	L010	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Elemental sulphur in soil	Determination of elemental sulphur in soil by extraction in acetonitrile followed by HPLC	In-house method based on Secondsite Property Holdings Guidance for Assessing and Managing Potential	L021B	D	MCERTS
Sulphide in leachate	Determination of sulphide in leachate by ion selective electrode	In-house method	L029	W	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES	In-house method based on Second Site Properties version 3	L038B	D	MCERTS
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES	In-house method	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
Metals by ICP-OES in leachate	Determination of metals in leachate by acidification followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L039B	W	ISO 17025
Speciated EPA-16 PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic	In-house method	L076B/L088	D/W	MCERTS
Chromium III in leachate	In-house method by calculation from total Cr and Cr VI	In-house method by calculation	L080	W	NONE

Analytical Report Number : 24-016364
Project / Site name: Folkestone LUF2, Kent

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Chromium III in soil	In-house method by calculation from total Cr and Cr VI	In-house method by calculation	L080	W	NONE
Hexavalent chromium in leachate	Determination of hexavalent chromium in leachate by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method	L080	W	ISO 17025
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method	L080	W	MCERTS
Free cyanide in leachate	Determination of free cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	ISO 17025
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	MCERTS
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	MCERTS
Total cyanide in leachate	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	ISO 17025
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	MCERTS
Chloride in leachate	Determination of Chloride colorimetrically by discrete analyser	In-house based on MEWAM Method ISBN 0117516260	L082B	W	ISO 17025
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099	D	MCERTS
Speciated EPA-16 PAHs and/or Semi-volatile organic compounds in leachate	SVOCs and PAHs in leachate	In-house method	L102B		ISO 17025
Ammoniacal Nitrogen as N in leachate	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the discrete analyser (colorimetric) salicylate/nitroprusside method.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082B	W	NONE
Organic 2:1 Leachate		In-house method	L020B	W	NONE

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Analytical Report Number : 24-016364
Project / Site name: Folkestone LUF2, Kent

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

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

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

Sample Deviation Report

Analytical Report Number : 24-016364
Project / Site name: Folkestone LUF2, Kent

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis.Please note that the associated result(s) may be unreliable and should be interpreted with care.

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

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
WS01	N/A	S	181716	bc	BTEX and/or Volatile organic compounds in soil	L073B	bc
WS01	N/A	S	181716	bc	Free cyanide in soil	L080	c
WS01	N/A	S	181716	bc	Monohydric phenols in soil	L080	bc
WS01	N/A	S	181716	bc	Speciated EPA-16 PAHs and/or Semi-volatile organic compounds in soil	L064B	bc
WS01	N/A	S	181716	bc	Sulphide in soil	L010	c
WS01	N/A	S	181716	bc	Total cyanide in soil	L080	c
WS01	N/A	S	181716	bc	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	L076B/L088	bc
WS01	N/A	S	181717	bc	Free cyanide in soil	L080	c
WS01	N/A	S	181717	bc	Monohydric phenols in soil	L080	bc
WS01	N/A	S	181717	bc	Speciated EPA-16 PAHs and/or Semi-volatile organic compounds in soil	L064B	bc
WS01	N/A	S	181717	bc	Sulphide in soil	L010	c
WS01	N/A	S	181717	bc	Total cyanide in soil	L080	c
WS02	N/A	S	181718	bc	BTEX and/or Volatile organic compounds in soil	L073B	bc
WS02	N/A	S	181718	bc	Free cyanide in soil	L080	c
WS02	N/A	S	181718	bc	Monohydric phenols in soil	L080	bc
WS02	N/A	S	181718	bc	Speciated EPA-16 PAHs and/or Semi-volatile organic compounds in soil	L064B	bc
WS02	N/A	S	181718	bc	Sulphide in soil	L010	c
WS02	N/A	S	181718	bc	Total cyanide in soil	L080	c
WS02	N/A	S	181718	bc	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	L076B/L088	bc
WS02	N/A	S	181719	bc	Free cyanide in soil	L080	c
WS02	N/A	S	181719	bc	Monohydric phenols in soil	L080	bc
WS02	N/A	S	181719	bc	Speciated EPA-16 PAHs and/or Semi-volatile organic compounds in soil	L064B	bc
WS02	N/A	S	181719	bc	Sulphide in soil	L010	c
WS02	N/A	S	181719	bc	Total cyanide in soil	L080	c

APPENDIX C

Geotechnical Test Results

Determination of Indicative CBR Value by Lightweight Deflectometer (LWD)

IAN 73/06 (2009 amendment), LWD Manufacturer's Manual and Barounis, N. & Smith, T. (2017)

BROWNFIELD SOLUTIONS LTD
www.brownfield-solutions.com
(+44) 0800 044 8025
info@brownfield-solutions.co.uk

Client: KENT CITY COUNCIL
Site Name: FOLKESTONE
Job Number: C5608
Date(s) Tested: 26/03/2024 - 17/04/2024

Equipment: Terratest 4000 STREAM
Plate Size: 300mm
Drop Weight Mass: 10kg

Location	Depth (m)	Stratum Type	Brief Description	Evd (MN/m^2)	Poisson's Ratio	Ev1 (MN/m^2)	k_{300}	k_{762}	Estimated CBR (%)
CCO4	0.34	Made Ground - Granular/Coarse	Granular sub-base	28.5	0.15	23.71	77.25	33.99	4.3
CC05	0.35	Made Ground - Granular/Coarse	Granular sub-base	28.5	0.15	23.71	77.25	33.99	4.3
CC06	0.37	Made Ground - Granular/Coarse	Granular sub-base	35.4	0.15	29.53	96.20	42.33	6.4
CC07	0.35	Made Ground - Granular/Coarse	Granular sub-base	19.7	0.15	16.38	53.36	23.48	2.3
CC08	0.23	Made Ground - Granular/Coarse	Granular sub-base	56.3	0.15	46.88	152.73	67.20	14.2
CC10	0.34	Made Ground - Granular/Coarse	Granular sub-base	26.5	0.15	22.11	72.04	31.70	3.9
CC11	0.50	Made Ground - Granular/Coarse	Granular sub-base	70.0	0.15	58.32	190.02	83.61	20.7
CC12	0.20	Made Ground - Granular/Coarse	Granular sub-base	113.1	0.15	94.23	307.02	135.09	47.5
CC15	0.37	Made Ground - Granular/Coarse	Granular sub-base	21.3	0.15	17.78	57.92	25.48	2.6
CC16	0.11	Made Ground - Granular/Coarse	Granular sub-base	48.7	0.15	40.58	132.23	58.18	11.0

Compiled By: CHIGOZIE ORAFU **Signature:** [redacted]

Checked By: JAKE WHEATON **Signature:** [redacted]

Date: 14/05/24