VALIDATION RECORD

Project No:	C5984	**Date of Visit:**	12/11/2025
Site Name:	Gwernaffield Road, Mold	**Weather Conditions:**	Dry and cloudy
Client:	Anwyl Homes	**Site Manager:**	Sam Munroe
Engineer:	MB	**Visit time:**	11:15am – 1.00pm

Description of site works

Scope of visit:
Water sampling within the north and south field and watching brief.

All stockpiles have remained the same since the previous visit on 24/10/2025, with the exception of the stockpiles within the north field which were laid at the side of the road during the excavation of the road and drainage. These stockpiles have now been placed at depth with their respective high lead or low lead zones at the side of the road, ready for grass to be laid on top as part of the development (marked yellow on the schematic plan).

No sheen or odour was noted on the groundwater samples.

Testing Information

Location	Purpose of testing	Estimated Volume	Frequency of testing	Samples names and depth
Water sampling within the North and South field	Water sampling	N/A	N/A	W02 N = surface water within pump in the north field W02 S = 5m bgl within excavation in the south field

Testing requirements:

The water was tested for the below contaminants:

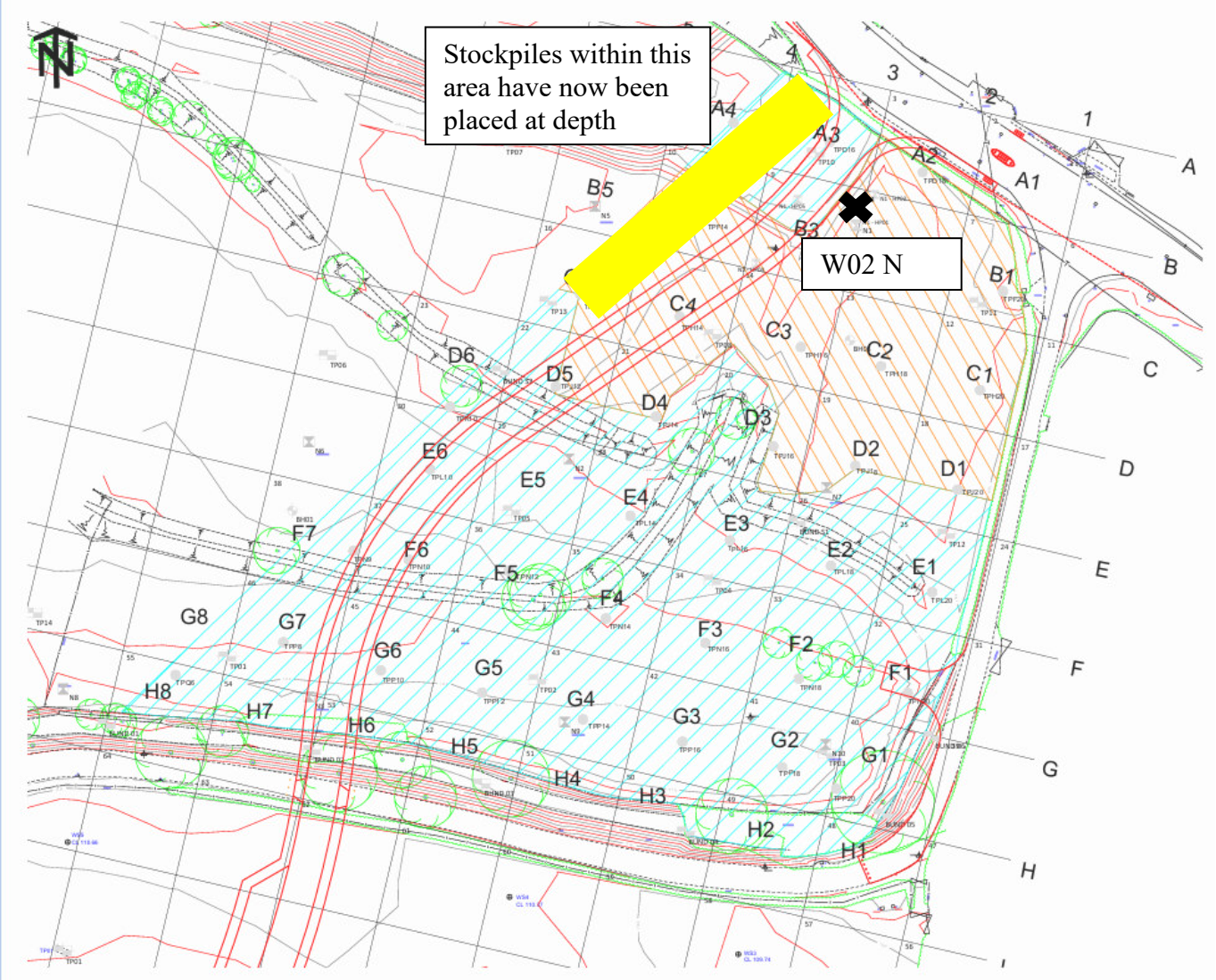
- BSL Default Water Suite: Metals, sulphates, carbonates and PAHs

Screening criteria:	Environmental Quality Standards (EQS)
Suitable usage:	The following elevations have been noted in regards to the EQS screening criteria: - Calcium within the northern and southern field. - Marginal copper within the northern and southern field - Marginal lead within the northern field - Zinc within the northern field - Nitrate (N03) within the northern and southern field - Nitrate (n02) within the northern field

	It should be noted that groundwater is flowing from the southern field towards the northern field.

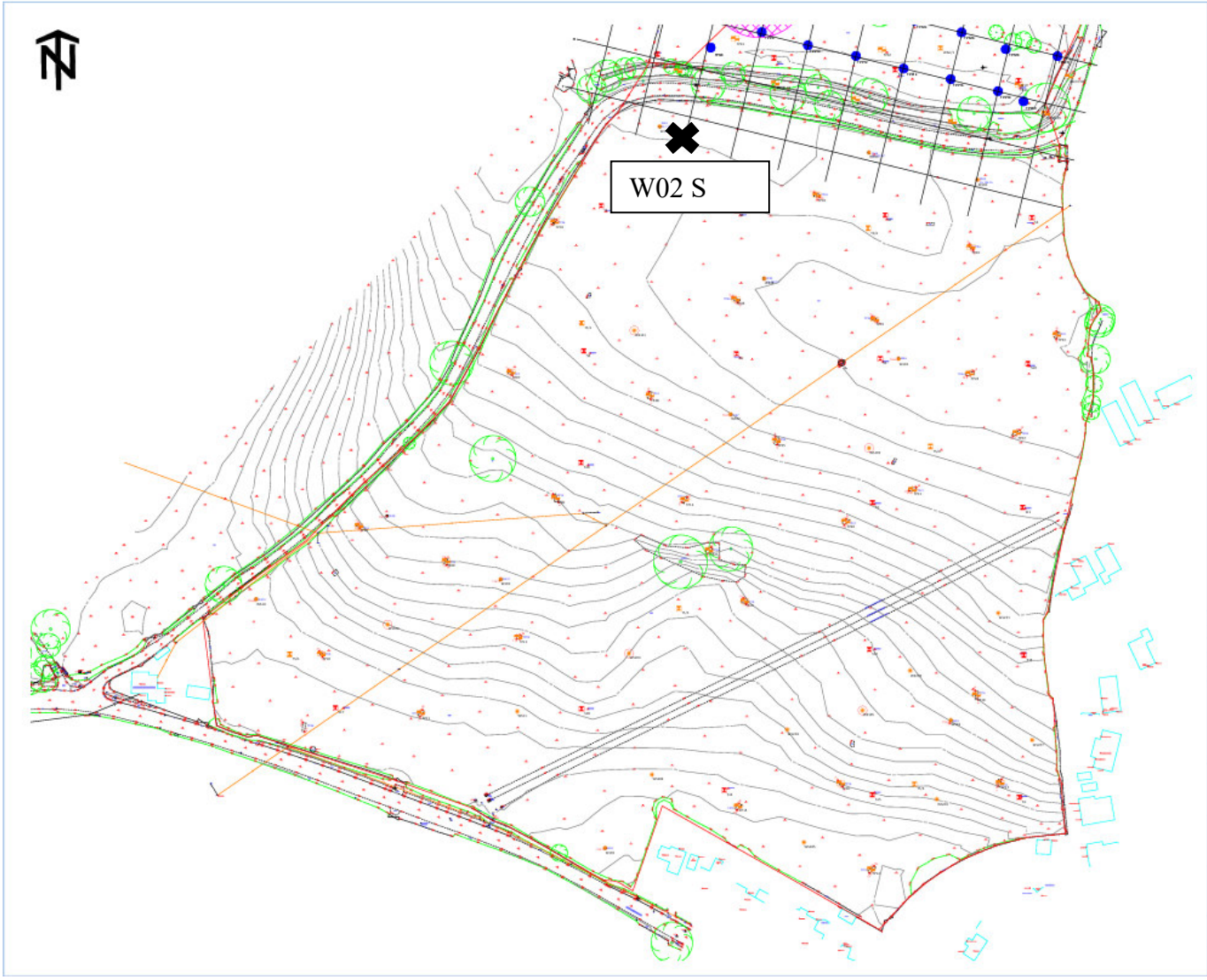
Schematic of Sample Locations :

North field



Schematic of Sample Locations :

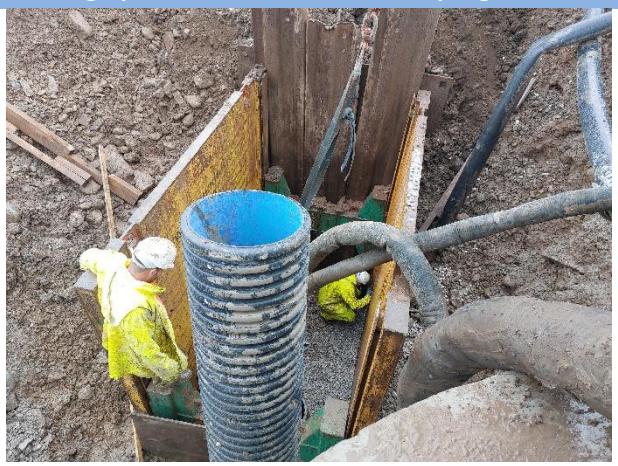
South field



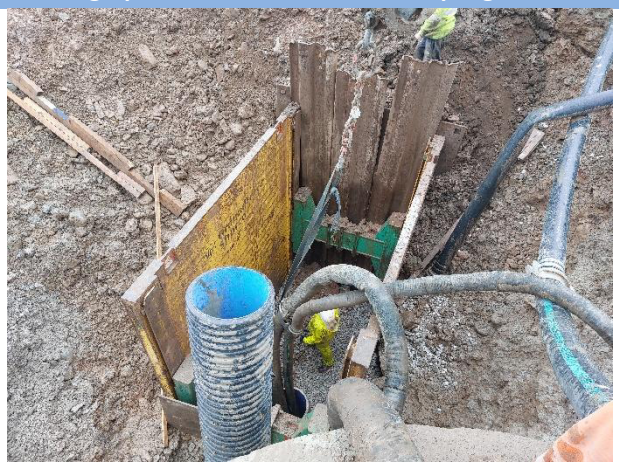
Photographs

Photograph 1 – North field water sampling location

Photograph 2 – North field water sampling location



Photograph 3 – South field water sampling location



Photograph 4 – South field water sampling location

Controlled Waters Assessment Summary			Surface/Groundwater Body:			Groundwater	
			Location:			W02 N	W02 S
Contaminant	Screening Level (EQS/DWS) (ug/l)	No. Samples	Min. Value	Max. Value	No. Samples ≥ Screening Level		
pH	-	2	7.40	7.50	-	7	8
Electrical Conductivity	-	2	710.00	730.00	-	710	730
Hardness	-	2	385.00	396.00	-	385	396
Disolved Organic Carbon (DOC)	-	2	1480.00	2190.00	-	2190	1480
Arsenic	10	2	< LOD	0.31	0	0.31	< 0.15
Boron	1000	2	39.00	43.00	0	43	39
Cadmium	0.08	2	< LOD	0.03	0	0.03	< 0.02
Calcium	250	2	140000.00	150000.00	2	140000	150000
Chromium (Total)	50	0	0.00	<LOD	0		
Chromium (III)	4.7	2	< LOD	<LOD	0	< 5.0	< 5.0
Chromium (VI)	3.4	2	< LOD	<LOD	0	< 5.0	< 5.0
Copper	1	2	1.70	2.20	2	2	2
Lead	1.2	2	< LOD	1.50	1	2	< 0.2
Manganese	50	2	1.70	14.00	0	14	2
Mercury	0.07	2	< LOD	<LOD	0	< 0.05	< 0.05
Nickel	4	2	< LOD	1.10	0	1	< 0.5
Selenium	10	2	0.70	0.90	0	1	1
Sodium	200000	0	0.00	<LOD	0		
Zinc	10.9	2	1.10	19.00	1	19	1
Free Cyanide	0	0	0.00	<LOD	0		
Total Cyanide	50	0	0.00	<LOD	0		
Total Ammonia (as NH4) plus ammonia (NH3)	50	0	0.00	<LOD	0		
Ammonia un-ionised (NH3)	No WQT	0	0.00	<LOD	0		
Ammonium (NH4)	500	0	0.00	<LOD	0		
Chloride	250000	2	35000.00	36000.00	0	36000	35000
Sulphate	250000	2	28000.00	35500.00	0	35500	28000
Sulphide	0.25	2	< LOD	<LOD	0	< 5.0	< 5.0
Nitrate (as N03)	50000	2	52500.00	64000.00	2	52500	64000
Nitrate (as N02)	10	2	< LOD	84.00	1	84	< 5.0
Phenol (Total)	7.7	0	0.00	<LOD	0		
Naphthalene	2	2	0.00	<LOD	0	<0.01	<0.01
Acenaphthylene	5.8	2	0.00	<LOD	0	<0.01	<0.01
Anthracene	0.1	2	0.00	<LOD	0	<0.01	<0.01
Fluoranthene	0.0063	2	0.00	<LOD	0	<0.01	<0.01
Benzo(b)fluoranthene	0.1	2	0.00	<LOD	0	<0.01	<0.01
Benzo(k)fluoranthene	0.1	2	0.00	<LOD	0	<0.01	<0.01
Benzo(a)pyrene	0.0017	2	0.00	<LOD	0	<0.01	<0.01
Indeno(1,2,3,cd)pyrene	0.1	2	0.00	<LOD	0	<0.01	<0.01
Benzo(ghi)perylene	0.1	2	0.00	<LOD	0	<0.01	<0.01
Total Petroleum Hydrocarbons (Sum)	10	2	< LOD	<LOD	0	< 0.16	< 0.16
Mean Average pH	**7.5**						
Mean Average Hardness	**390.5**						
	Lowest of EQS and DWS					**Values in RED are > the relevant screening levels and further assessment is required. Exceedance of the screening levels alone may not mean a risk is posed.**	
Job Number:	**C5984**					No WQT - there are no generic Water Quality Targets availble (EQS, DWS or WHO guidelines).	
Client:	**Anwyl Homes**						
Site:	**Gwernaffield Road, Mold**						

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

t:

e: m.buckley@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: info-i2analytical@normecgroup.com

Analytical Report Number : 25-061662

Project / Site name:	Gwenaffield Road Mold	**Samples received on:**	13/11/2025
Your job number:	C5984	**Samples instructed on/ Analysis started on:**	13/11/2025
Your order number:	C5984 7084 M8	**Analysis completed by:**	20/11/2025
Report Issue Number:	1	**Report issued on:**	21/11/2025
Samples Analysed:	2 water samples		

Signed:

Anna Goc
PL Head of Reporting Team
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
air	- once the analysis is complete

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

Retention period for records and reports is minimum 6 years from the date of issue of the final report.
Some records may be kept for longer according to other legal/best practice requirements.

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.

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 25-061662
Project / Site name: Gwenaffield Road Mold

Your Order No: C5984 7084 M8

Lab Sample Number				748931	748932
Sample Reference				W02 N	W02 S
Sample Number				None Supplied	None Supplied
Water Matrix				Other water	Other water
Depth (m)				None Supplied	None Supplied
Date Sampled				12/11/2025	12/11/2025
Time Taken				None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Test Limit of detection	Test Accreditation Status		
General Inorganics					
pH (L099)	pH Units	N/A	NONE	7.4	7.5
Electrical Conductivity at 20°C	µS/cm	10	NONE	710	730
Sulphate as SO_4	mg/l	0.045	NONE	35.5	28
Sulphide	µg/l	5	NONE	< 5.0	< 5.0
Chloride	mg/l	0.15	NONE	36	35
Ammoniacal Nitrogen as NH_4^+	µg/l	15	NONE	< 15	< 15
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	2.19	1.48
Nitrate as N	mg/l	0.01	NONE	11.9	14.4
Nitrate as NO_3	mg/l	0.05	NONE	52.5	64
Nitrite as NO_2	µg/l	5	NONE	84	< 5.0
Hardness - Total	mgCaCO3/l	1	NONE	385	396
Speciated PAHs					
Naphthalene	µg/l	0.01	NONE	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	NONE	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	NONE	< 0.01	< 0.01
Fluorene	µg/l	0.01	NONE	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	NONE	< 0.01	< 0.01
Anthracene	µg/l	0.01	NONE	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01
Pyrene	µg/l	0.01	NONE	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01
Chrysene	µg/l	0.01	NONE	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	NONE	< 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					
Arsenic (dissolved)	µg/l	0.15	NONE	0.31	< 0.15
Cadmium (dissolved)	µg/l	0.02	NONE	0.03	< 0.02
Chromium (dissolved)	µg/l	0.2	NONE	1	0.5
Copper (dissolved)	µg/l	0.5	NONE	1.7	2.2
Lead (dissolved)	µg/l	0.2	NONE	1.5	< 0.2
Manganese (dissolved)	µg/l	0.05	NONE	14	1.7
Mercury (dissolved)	µg/l	0.05	NONE	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	NONE	1.1	< 0.5
Selenium (dissolved)	µg/l	0.6	NONE	0.9	0.7
Zinc (dissolved)	µg/l	0.5	NONE	19	1.1

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 25-061662
Project / Site name: Gwenaffield Road Mold

Your Order No: C5984 7084 M8

Lab Sample Number				748931	748932
Sample Reference				W02 N	W02 S
Sample Number				None Supplied	None Supplied
Water Matrix				Other water	Other water
Depth (m)				None Supplied	None Supplied
Date Sampled				12/11/2025	12/11/2025
Time Taken				None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Test Limit of detection	Test Accreditation Status		
Boron (dissolved)	µg/l	10	NONE	43	39
Calcium (dissolved)	mg/l	0.012	NONE	140	150
Chromium (hexavalent)	µg/l	5	NONE	< 5.0	< 5.0
Chromium (III)	µg/l	5	NONE	< 5.0	< 5.0

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

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number : 25-061662
Project / Site name: Gwenaffield Road Mold

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited matrices: SW, PW, GW, except B - SW,GW, Hg - SW,PW, Al - SW,PW	In-house method based on USEPA Method 6020 & 200.8 for the determination of trace elements in water by ICP-MS	L012B	W	NONE
Sulphide in water	Determination of sulphide in water by ion selective electrode	In-house method	L029-PL	W	NONE
Electrical Conductivity at 20°C in water	Determination of electrical conductivity in water by electrochemical measurement. Accredited matrices: SW, PW, GW, FSE	In-house method	L031B	W	NONE
Dissolved Organic Carbon in water	Determination of dissolved organic carbon in water by TOC/DOC NDIR Analyser. Accredited matrices: SW, PW, GW, FSE, LL	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037B	W	NONE
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited matrices: SW, PW, GW, FSE, LL; PrW, DI PrW (Al, Cu, Fe,Zn)	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L039B	W	NONE
Total Hardness of water	Determination of total hardness of water by calculation from calcium and magnesium. Accredited matrices: SW, PW, GW, FSE, LL	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L045B	W	NONE
Nitrate as N in water	Determination of nitrate by reaction with sodium salicylate followed by colorimetry. Accredited matrices: SW, PW, GW, FSE, LL	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08	L078-PL	W	NONE
Nitrate in water	Determination of nitrate by reaction with sodium salicylate followed by colorimetry. Accredited matrices: SW, PW, GW, FSE, LL	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08	L078-PL	W	NONE
Chromium(III) in water	In-house method by calculation from total Cr and Cr(VI)	In-house method by calculation	L080-PL	W	NONE
Hexavalent chromium in water	Determination of hexavalent chromium in water by acidification, addition of 1,5-diphenylcarbazide, followed by colorimetry. Accredited matrices: SW, PW, GW, FSE, LL	In-house method by continuous flow analyser	L080-PL	W	NONE
Chloride in water	Determination of chloride in water by colorimetry using discrete analyser. Accredited matrices: SW, PW, GW, FSE, LL	In-house based on MEWAM Method ISBN 0117516260	L082B	W	NONE
Ammonium as NH4 in water	Determination of ammonium/ammonia/ammoniacal nitrogen by the colorimetric salicylate/nitroprusside method using discrete analyser. Accredited matrices: SW, PW, GW, FSE, LL	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082B	W	NONE
Nitrite in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by colorimetry using discrete analyser. Accredited matrices: SW, PW, GW, FSE, LL	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082B	W	NONE
pH of water at 20°C (automated)	Determination of pH of water by electrochemical measurement. Accredited matrices: SW, PW, GW, FSE, LL	In-house method	L099-PL	W	NONE
Speciated PAHs and/or Semi-volatile organic compounds in water	Determination of semi-volatile organic compounds (including PAHs) in water by extraction in dichloromethane followed by GC-MS. Accredited matrices (PAHs): SW, PW, GW	In-house method based on USEPA 8270	L102B	W	NONE

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number : 25-061662
Project / Site name: Gwenaffield Road Mold

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate in water	Determination of sulphate in water after filtration by acidification followed by ICP-OES. Accredited matrices: SW, PW, GW, PrW, DI PrW, FSE, LL	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L039B	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.

Quality control parameter failure associated with individual result applies to calculated sum of individuals.
The result for sum should be interpreted with caution

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.